

693 Peachtree Street
OPERATIONS AND MAINTENANCE SUBMITTALS - PLUMBING
(revised 7/10/2017)

MANUFACTURER	DESCRIPTION	NOTES
<u>FIXTURES</u>		
AMERICAN STANDARD	APARTMENT PEDESTAL LAVATORIES (L-5)	
BARCLAY PRODUCTS	PUBLIC WALL-HUNG LAVATORIES (L-4)	
CELADON CONSTR. PRODUCTS	APARTMENT TOILETS (WC-1)	
CELADON CONSTR. PRODUCTS	APARTMENT LAVATORY BASINS (L-1, L-2 & L-3)	ALSO FOUND IN PUBLIC ROOM 105
CELADON CONSTR. PRODUCTS	ALL LAVATORY FAUCETS (L-1, L-2, L-3, L-4 & L-5)	
CELADON CONSTR. PRODUCTS	TUB AND SHOWER VALVE & TRIM (SH-1, SH-2, BT-1)	
CELADON CONSTR. PRODUCTS	ALCOVE BATHTUBS (BT-1)	
CELADON CONSTR. PRODUCTS	FREESTANDING BATHTUBS (BT-2)	
DELTA FAUCETS	FREESTANDING TUB FILL FAUCETS (BT-2)	
CELADON CONSTR. PRODUCTS	APARTMENT KITCHEN SINKS (S-1)	CLUB AND OUTDOOR SINKS ARE S-2 (MOEN)
CELADON CONSTR. PRODUCTS	ALL KITCHEN FAUCETS (S-1, S-2 & BRS-1)	BACK OF HOUSE ARE S-3 (KOHLER)
CHICAGO FAUCETS	MOP SINK FAUCETS (MS-1)	
ELKAY	HIGH-LOW DRINKING FOUNTAINS (EWC-1)	
ELKAY	BACK-OF-HOUSE SINK (S-3)	
FIAT PRODUCTS	MOP SINK BASINS (MS-1)	
KOHLER	BACK-OF-HOUSE FAUCET (S-3)	
KOHLER	PUBLIC TOILETS (WC-4)	
MOEN	HANDHELD SHOWERS (AT ADA UNITS)	
MOEN	PUBLIC AND ADA KITCHEN SINKS (S-2, BRS-1)	
OATEY	WASHER AND ICE MACHINE OUTLET BOXES (WMB-1 & IMB-1)	
OUTDOOR SHOWER COMPANY	OUTDOOR SHOWER	
PROFLO	FIXTURE ACCESSORIES (GRID DRAINS, TRAP GUARDS, ETC.)	
PROFLO	ADA APARTMENT TOILETS (WC-2)	
<u>BACKFLOW PREVENTERS</u>		
ZURN WILKINS	DOMESTIC MAIN BACKFLOW PREVENTER	TEST ANNUALLY
WATTS	IRRIGATION, POOL, & TRASH CHUTE BACKFLOW PREVENTERS	TEST ANNUALLY
<u>HEAT TRACE</u>		
RAYCHEM GARDIAN	HEAT TRACE CABLES	TEST PRIOR TO COLD WEATHER
FARM INNOVATORS	HEAT TRACE THERMOSTAT (THERMOCUBE)	TEST PRIOR TO COLD WEATHER
<u>HOSE BIBBS</u>		
WOODFORD	HOSE BIBBS - EXTERIOR (NFWH)	SHUT OFF & DRAIN PRIOR TO COLD WEATHER
WOODFORD	HOSE BIBBS - TRASH COMPACTOR ROOM (NFHB)	SHUT OFF & DRAIN PRIOR TO COLD WEATHER
WOODFORD	HOSE BIBBS - ROOF HYDRANTS (NFHB)	SHUT OFF & DRAIN PRIOR TO COLD WEATHER
<u>PUMPS</u>		
DELTA P CARVER	DOMESTIC BOOSTER PUMP	
BELL & GOSSETT	HOT WATER CIRCULATOR PUMP	
LIBERTY PUMPS	ELEVATOR SUMP PUMP (NORTH ELEVATOR)	
LIBERTY PUMPS	ELEVATOR SUMP PUMP (SOUTH ELEVATOR)	
<u>WATER HEATERS</u>		
AO SMITH	WATER HEATERS - TANK TYPE	
EEMAX	WATER HEATERS - TANKLESS	
<u>WATER SUBMETERS</u>		
INOVONICS	WATER SUBMETERING SYSTEM	

INSTALLATION INSTRUCTIONS

Pedestal Sink

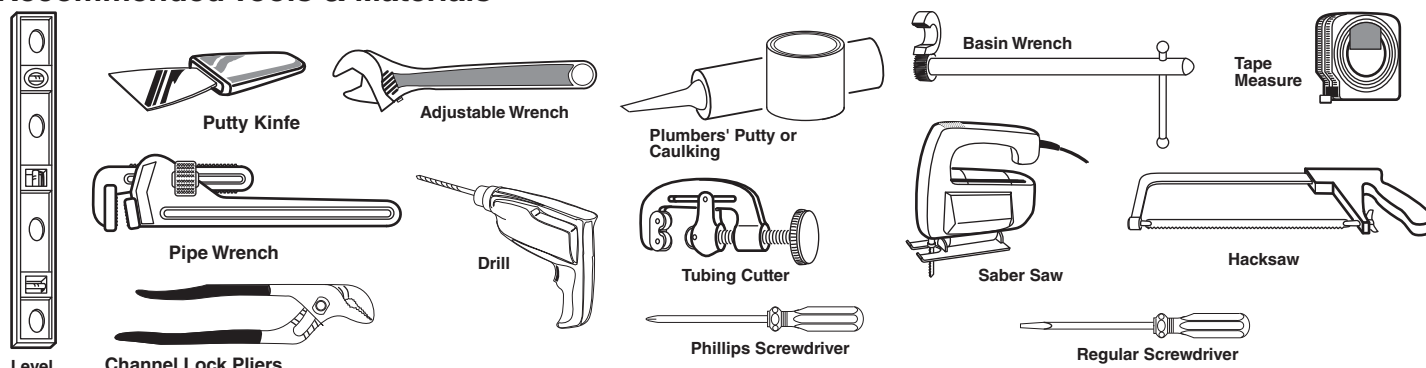
American Standard

Introduction: Thank you for selecting our products...products which have been the benchmarks of fine quality for years. To help insure that the installation process will proceed smoothly, please read these instructions carefully before you begin. Also, review the recommended tools and materials list; carefully unpack and examine your new plumbing fixture.

⚠ CAUTION: PRODUCT IS FRAGILE. TO AVOID BREAKAGE AND POSSIBLE INJURY HANDLE WITH CARE!

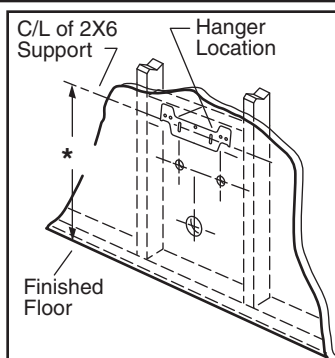
NOTE: Pictures may not exactly define contour of china and components.

Recommended Tools & Materials



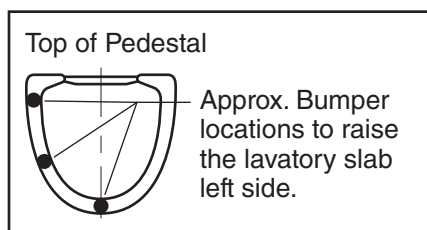
- 1** Provide suitable reinforcement behind finished wall for lavatory hanger mounting screws. *Determine horizontal center line location of support from fixture.

NOTE: If replacing an existing sink be certain to shut off water supply before removing old sink.



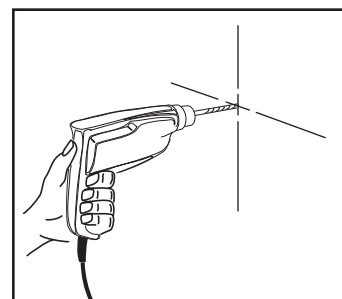
- 4** Remove lavatory and pedestal from installed position. Drill pilot holes for lavatory and pedestal anchor screws or lag bolts. **Note:** Some models are supplied with lag bolts, anchor screws, or steel hangers for lavatory installations only. Other models and all pedestals are not provided with mounting hardware. Various pedestal screw sizes and types are available to the installer at local hardware outlets.

- 2** Place lavatory and pedestal into installed position. Level and square the lavatory and pedestal assembly. Use one or more bumper cushions (supplied) to level and cushion lavatory slab to pedestal.



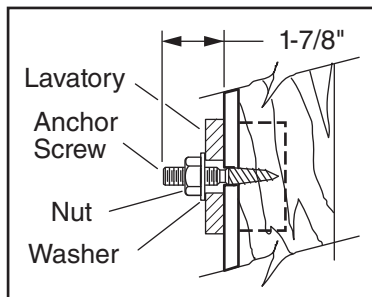
For example only

- 3** Mark lavatory and pedestal screw locations through the mounting holes. If a steel hanger is supplied mark the location of its screws when positioned as shown in step 5a.



5 ANCHOR SCREW INSTALLATION

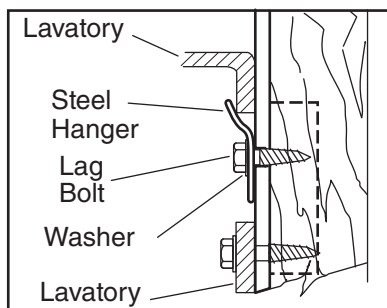
Install lavatory anchor screws leaving 1-7/8" threaded end exposed as illustrated.



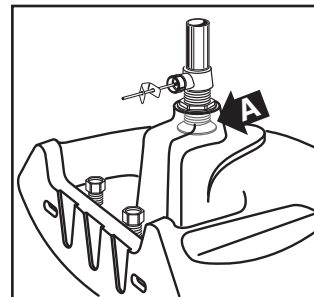
IMPORTANT: Final assembly of nut and washer or lag bolt method shown for reference only. (See steps 8 and 9).

5a LAG BOLT INSTALLATION

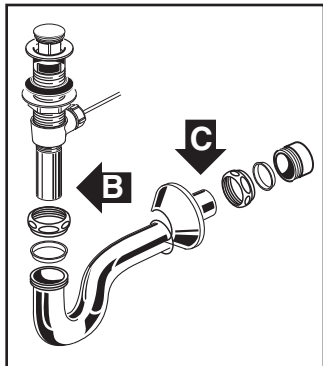
Use lag bolts to secure lavatory as illustrated.



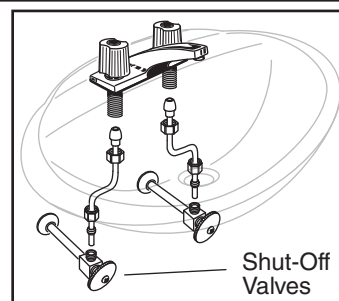
6 Following manufacturer's instructions, install faucet and drain assembly (**NOT INCLUDED - INCLUDED ONLY WITH PED TO GO PRODUCT**). Be certain to apply a bead of sealing putty on the underside of the drain (area "A") in order to ensure a watertight seal between the lavatory and drain. Remove excess putty after installing drain on lavatory.



7 Return the fitted lavatory to the installed position. Connect trap to drain assembly hand tight to check alignment. It may be necessary to cut off part of the tailpiece (area "B") or part of the horizontal leg of the trap (area "C").

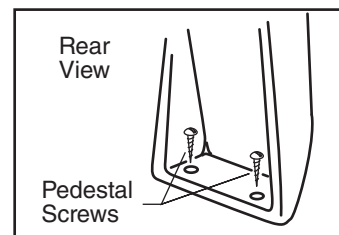


8 Secure lavatory to wall as shown in 5 or 5a. Install washers and hand tighten nuts or lag bolts. Level and square the unit. Connect hot and cold supply lines to the shut-off valves. Tighten trap joints for watertight assembly.



9 Install pedestal screws. Securely tighten lavatory anchor nuts or lag bolts.

Note: Space constraints may dictate method of fastening pedestal to floor.



AS AMERICA, INC. ONE YEAR LIMITED WARRANTY

If inspection of this AS America, Inc. ("American Standard") plumbing product, within one year after its initial purchase, confirms that it is defective in materials or workmanship, American Standard will repair or, at its option, exchange the product for a same or similar model.

This limited warranty applies only to the original purchaser and installation of these products. In the event of a limited warranty claim, proof of purchase will be required—save sales receipts.

This limited warranty does not apply to local building code compliance. Since local building codes vary considerably, the purchaser of this product should check with a local building or plumbing contractor to insure local code compliance before installation.

This limited warranty will be void if the product has been moved from its initial place of installation; if it has been subjected to faulty maintenance, abuse, misuse, accident or other damage; if it was not installed in accordance with American Standard's instructions; or if it has been modified in a manner inconsistent with the product as shipped by American Standard.

American Standard's option to repair or exchange the product under this limited warranty does not cover any labor or other costs of removal or installation including any costs of any surrounding material such as tile or marble. American Standard is not responsible for any other incidental or consequential damages attributed to a product defect or to the repair or exchange of a defective product, all of which are expressly excluded from the warranty. This limited warranty does not cover the extension beyond the duration of this limited warranty of any implied limited warranties, including those of merchantability or fitness for an intended purpose. (Some states or provinces do not allow the exclusion or limitation of implied warranties, so this exclusion may not apply to you.)

This limited warranty gives you specific legal rights. You may have other statutory rights that vary from state to state or from province to province, in which case this limited warranty does not affect such statutory rights.

For service under this warranty, it is suggested that a claim be made through the contractor or dealer from or through whom the product was purchased, or that a service request (including a description of the product model and of the defect) be sent to the following address:

In the United States:
American Standard Brands
P.O. Box 6820
Piscataway, New Jersey 08855
Attention: Director of Consumer Affairs

For residents of the United States, warranty information may also be obtained by calling the following toll free number: (800) 442-1902
www.americanstandard-us.com

In Canada:
AS Canada, ULC
5900 Avebury Ave.
Mississauga, Ontario
Canada L5R 3M3

Toll Free: (800) 387-0369
www.americanstandard.ca

In Mexico:
Customer Service Manager
AS Maquila, S.A. de C.V.
Via Morelos #330
Col. Santa Clara
Ecatepec 55540 Edo. Mexico
www.americanstandard.com.mx

THIS WARRANTY IS NOT TRANSFERABLE FROM ORIGINAL CONSUMER PURCHASER.

AS AMERICA, INC. ONE YEAR LIMITED WARRANTY

If inspection of this AS America, Inc. ("American Standard®") plumbing product, within one year after its initial purchase, confirms that it is defective in materials or workmanship, American Standard® will repair or, at its option, exchange the product for a similar model.

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American Standard®'s option to repair or exchange the product under this limited warranty does not cover any labor or other costs of removal or installation. **IN NO EVENT WILL AMERICAN STANDARD® BE LIABLE FOR THE COST OF REPAIR OR REPLACEMENT OF ANY INSTALLATION MATERIALS, INCLUDING BUT NOT LIMITED TO, TILES, MARBLE, ETC.** American Standard® will not be responsible for any other incidental or consequential damages attributable to a product defect or to the repair or exchange of a defective product, all of which are expressly excluded from this limited warranty. This limited warranty does not cover any liability for consequential or incidental damages, all of which are hereby expressly disclaimed, or the extension beyond the duration of this limited warranty of any implied limited warranties, including those of merchantability or fitness for an intended purpose. (Some states or provinces do not allow the exclusion or limitation of implied limited warranties, so this exclusion may not apply to you.)

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AS AMERICA, INC. LIMITED WARRANTY FOR LXP®, BOULEVARD® DUAL FLUSH, CHAMPION® PRO, CHAMPION®4 TOILETS

This toilet comes with a limited lifetime warranty on chinaware, a limited 10 year warranty on all mechanical parts of the toilet, and a limited 1 year warranty on the toilet seat if included with product. If inspection of this AS America, Inc. ("American Standard®") plumbing product, inclusive of the chinaware and all mechanical parts, confirms that it is defective in materials or workmanship, American Standard® will repair or, at its option, exchange the product for the same or a similar model.

This limited warranty applies only to the original non-commercial purchaser and installation of the products. In the event of a limited warranty claim, proof of purchase will be required – **save sales receipt**.

For this warranty to become effective, the warranty registration process must be completed via the internet or telephone per the warranty registration instructions.

This limited warranty does not apply to commercial installations. The warranty for commercial installations is 10 years on chinaware and mechanical parts, and 1 year on the toilet seat if included with product.

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WARNING: This warranty **DOES NOT COVER** any damages caused by the use of in-tank cleaners. These products can seriously corrode the fittings in the tank. This damage can cause leakage and property damage. **American Standard® will not be responsible or liable for any damage caused by the use of in-tank cleaners.**

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INSTALLATION INSTRUCTIONS

Pedestal Sink

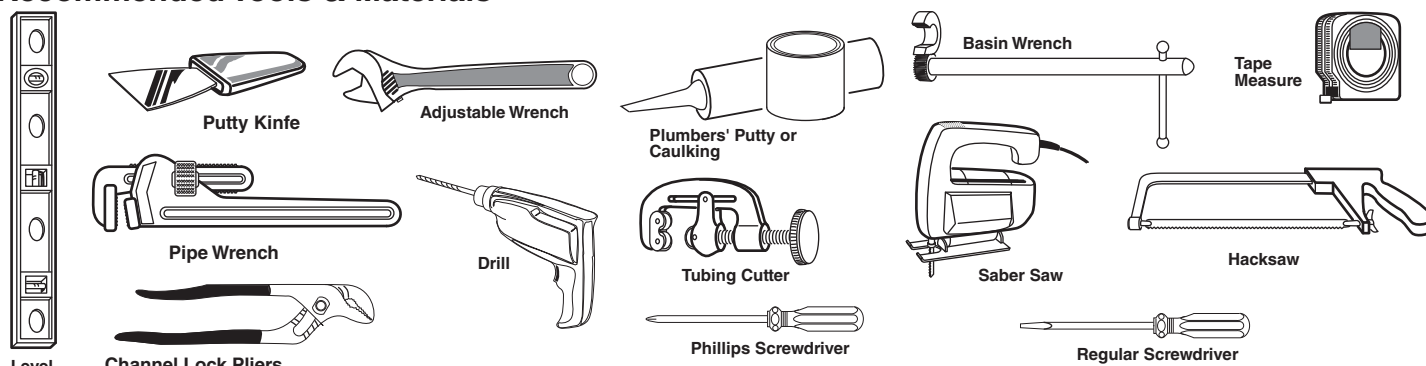
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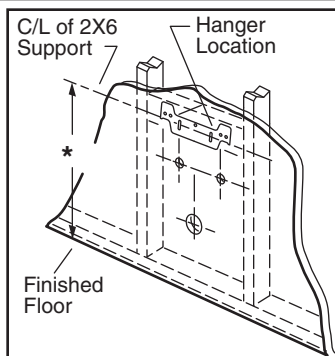
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Recommended Tools & Materials



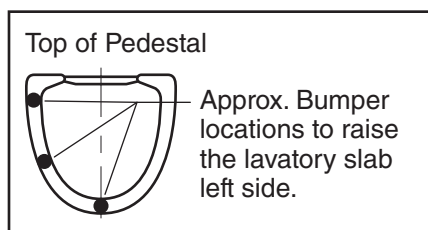
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NOTE: If replacing an existing sink be certain to shut off water supply before removing old sink.



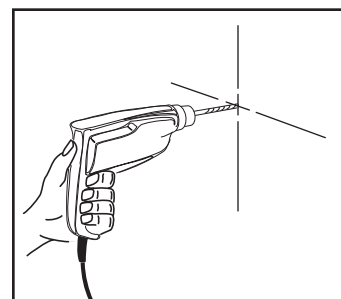
- 4** Remove lavatory and pedestal from installed position. Drill pilot holes for lavatory and pedestal anchor screws or lag bolts. **Note:** Some models are supplied with lag bolts, anchor screws, or steel hangers for lavatory installations only. Other models and all pedestals are not provided with mounting hardware. Various pedestal screw sizes and types are available to the installer at local hardware outlets.

- 2** Place lavatory and pedestal into installed position. Level and square the lavatory and pedestal assembly. Use one or more bumper cushions (supplied) to level and cushion lavatory slab to pedestal.



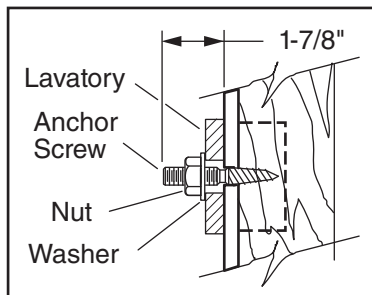
For example only

- 3** Mark lavatory and pedestal screw locations through the mounting holes. If a steel hanger is supplied mark the location of its screws when positioned as shown in step 5a.



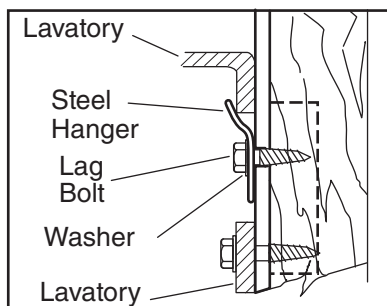
AMERICAN STANDARD - apartment pedestal lavatories

- 5** ANCHOR SCREW INSTALLATION
Install lavatory anchor screws leaving 1-7/8" threaded end exposed as illustrated.

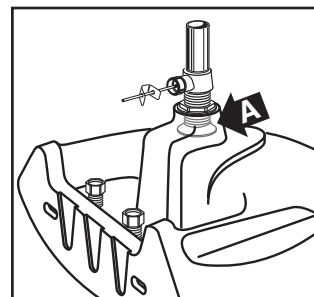


IMPORTANT: Final assembly of nut and washer or lag bolt method shown for reference only. (See steps 8 and 9).

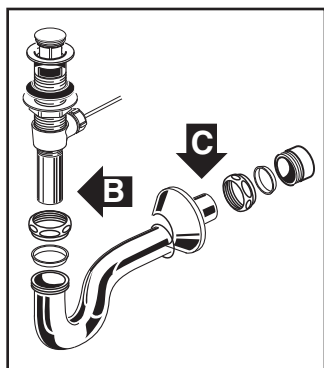
- 5a** LAG BOLT INSTALLATION
Use lag bolts to secure lavatory as illustrated.



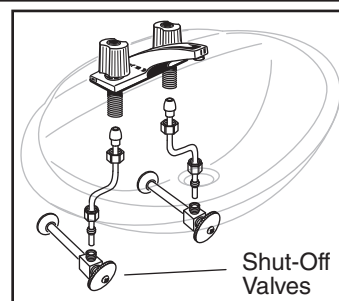
- 6** Following manufacturer's instructions, install faucet and drain assembly (**NOT INCLUDED - INCLUDED ONLY WITH PED TO GO PRODUCT**). Be certain to apply a bead of sealing putty on the underside of the drain (area "A") in order to ensure a watertight seal between the lavatory and drain. Remove excess putty after installing drain on lavatory.



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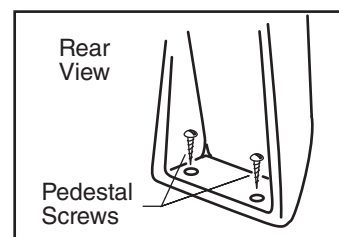


- 8** Secure lavatory to wall as shown in 5 or 5a. Install washers and hand tighten nuts or lag bolts. Level and square the unit. Connect hot and cold supply lines to the shut-off valves. Tighten trap joints for watertight assembly.



- 9** Install pedestal screws. Securely tighten lavatory anchor nuts or lag bolts.

Note: Space constraints may dictate method of fastening pedestal to floor.



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In the United States:
American Standard Brands
P.O. Box 6820
Piscataway, New Jersey 08855
Attention: Director of Consumer Affairs

For residents of the United States, warranty information may also be obtained by calling the following toll free number: (800) 442-1902
www.americanstandard-us.com

In Canada:
AS Canada, ULC
5900 Avebury Ave.
Mississauga, Ontario
Canada L5R 3M3

Toll Free: (800) 387-0369
www.americanstandard.ca

In Mexico:
Customer Service Manager
AS Maquila, S.A. de C.V.
Via Morelos #330
Col. Santa Clara
Ecatepec 55540 Edo. Mexico
www.americanstandard.com.mx

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AS AMERICA, INC. ONE YEAR LIMITED WARRANTY

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INSTALLATION INSTRUCTIONS

Tools Needed

- Screwdriver • Drill & Bits • 2 Molly Bolts, Toggle Bolts, or Large Wood Screws (depending on wall) • Level •
- Plumbers Basin Wrench to secure Faucet (Optional) • Wrench • Pencil • Tape Measure • Plumbers Putty •

Be sure to re-inforce wall before installation. We recommend a 2"x12" securely fastened to wall studs at the desired height for your installation.



Wall Hung Installation

**** Be sure water supply is turned off before beginning.**

1. Determine the height you want. Place basin against the wall. Use a level to make sure both sides are level. Mark location on wall for mounting holes on back of sink.
2. Position each metal mounting bracket against the underside rear of basin and against the wall. Mark the location of mounting bracket holes on the wall.
3. Remove the basin from the wall. **Wall should be reinforced before continuing.**
4. Start to drill hole in **2"x12" re-inforced wall** for molly bolts or toggle bolts. If drill bit hits a stud, mount bracket and bolts using large wood screws.
5. If molly bolts are used, install and expand the bolt holder and then mount brackets.
6. If toggle bolts are used, make holes large enough to accept collapsible wing nut bolts and then mount bracket.
7. Before replacing basin, it would be convenient at this point to mount the faucet according to the manufacturer's instructions.
8. Hold basin on wall brackets and ensure that it is level. Secure sink to wall using bolts through holes in back of sink.
9. Connect all supply tubes to the faucet. Connect trap and drain assembly as described by the manufacturer.

NOTE: For sinks that do not include hardware, **Hangers** (pair) or **Bracket** (one) can be purchased separately to provide added support.

DO NOT over tighten or you may damage basin.

Vitreous China

W 15 $\frac{3}{4}$ "

D 14 $\frac{3}{8}$ "

H 7"



Basin interior: 12 $\frac{3}{4}$ " x 7" • Basin depth: 5 $\frac{1}{2}$ "

Back of basin to center of faucet: 2 $\frac{1}{4}$ "

Back of basin to center of drain: 7 $\frac{1}{8}$ " • Mount holes cc: 4 $\frac{3}{4}$ "

Series™ 600 Small Wall-Hung Basin

• Vitreous china

• Overflow

Color	Product Number	Description	Price
WH	4-211WH	1-hole	\$318
WH	4-218WH	8" widespread	\$318

Schedule V

W 20 $\frac{1}{2}$ "

D 16 $\frac{3}{4}$ "

H 7 $\frac{1}{4}$ "



Basin interior: 18 $\frac{1}{8}$ " x 11" • Basin depth: 5"

Back of basin to center of faucet: 2 $\frac{3}{8}$ "

Back of basin to center of drain: 7 $\frac{1}{4}$ " • Mount holes cc: 11"

Series 600™ Large Wall-Hung Basin

• Vitreous china

• Also available as ped lav on page 46

• Overflow

Color	Product Number	Description	Price
WH	4-221WH	1-hole	\$350
WH	4-228WH	8" widespread	\$350

Schedule V

W 19 $\frac{3}{4}$ "

D 15 $\frac{1}{8}$ "

H 6 $\frac{3}{4}$ "



Basin interior: 18 $\frac{1}{2}$ " x 10 $\frac{3}{8}$ " • Basin depth: 5 $\frac{3}{4}$ "

Back of basin to center of faucet: 2"

Back of basin to center of drain: 7 $\frac{1}{8}$ " • Mount holes cc: 7"

Summit™ 500 Wall-Hung Basin

• Vitreous china

• Also available as ped lav on page 44

• Overflow

Color	Product Number	Description	Price
WH	4-761WH	1-hole	\$318
WH	4-768WH	8" widespread	\$318

Schedule V

Can be installed using toggle bolts or molly bolts (not included).

For ease of installation, order one of the following:

1. Hangers (pair) \$ 5.00
2. Bracket (one) \$12.00

Faucets not included.

Color Code **WH** White




Installation Illustration of Bathtub



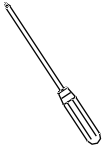

Skirted tub

C-02845L/R

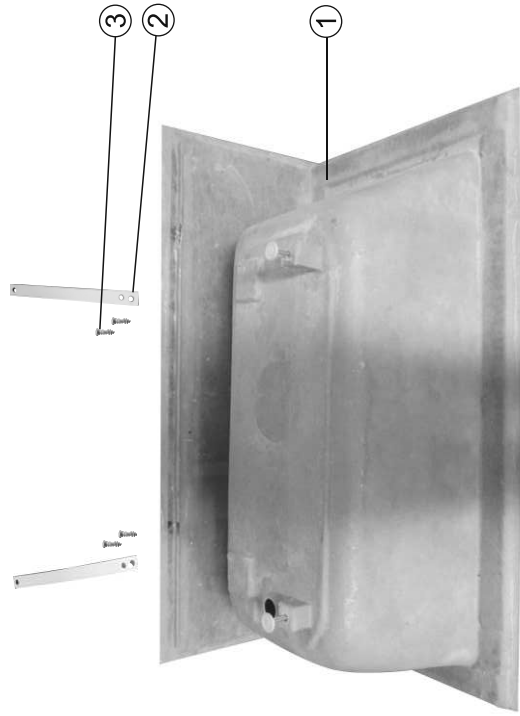
1.Packing list:

① Bathtub 1pc	② Iron support 270 2pc	③ Screw ST6*20 4pcs
		

2.Required Tools:

Screwdriver	Level
	

3.Checking: After open package, please check tub and accessories careful.



Installation process:

Step 1. Put the tub on the mat, tub mounted upside down, then install iron support ②, see fig 1.

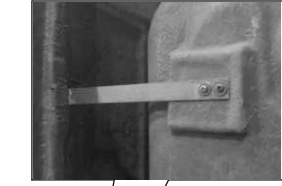


Fig 1

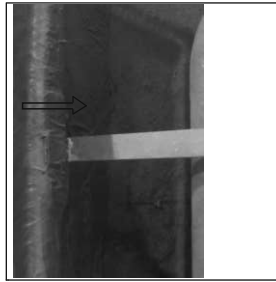


Fig 2

A. Insert the supporting cast iron bar as picture showed.



Fig 3

B. Secondly, using the level to make sure apron vertical to the ground. see fig 3.

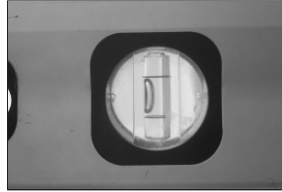


Fig 4

C. Last, using two ST6x16 screws to fix the iron support on the solid wood, see fig 4.

Step 2. After the installation of the first flat iron, go on the second one, installation see fig 5, before installation, make skirt panel vertical to the ground, with the method as fig 3, at the same time make sure skirt panel flat surface, with the method as fig 6, then begin installation for iron support, installation method as step 1.

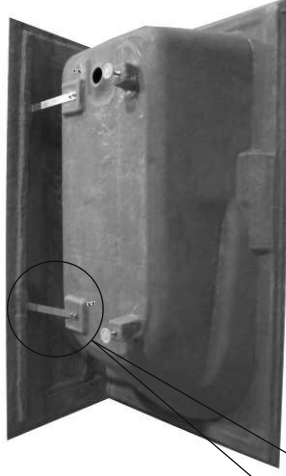


Fig 5



Fig 6

Step 3. Apron are fixed firmly with bathtubs bottom, then adjust feet to make bathtub level, see fig 7 and 8. the finished installation.

* If you use the prelevelled feet, step 3 is no necessary

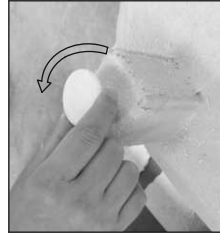
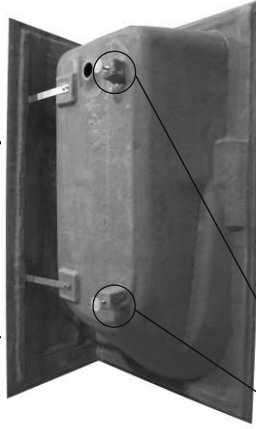


Fig 7

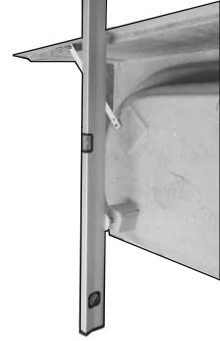


Fig 8

Cleaning and Maintenance

IMPORTANT! Use only the recommended cleaners and procedures described in this section. Use of other materials and methods may harm your whirlpool and will VOID THE WARRANTY. FAILURE TO PERFORM PERIODIC MAINTENANCE PROCEDURES MAY CAUSE SAFETY AND/OR HEALTH PROBLEMS AND MAY HARM THE BATHTUB.

Do not use wire brushes, knives or sharp objects to remove stains or other surface blemishes.

Do not use full strength bleach or ammonia cleaning solutions. Chemically active cleaning solutions can damage the bath surface.

Do not use abrasive cleansers or solvents as they will scratch and dull the acrylic surfaces.

Do not allow nail polish remover, acetone, dry-cleaning fluid, paint remover or other solvents to come into contact with the bath surface.

Always test your cleaning solution on an inconspicuous area before applying to the entire surface.

Wipe surfaces clean and rinse completely with water immediately after applying cleaner. Rinse and dry any overspray that lands on nearby surfaces.

Limited Warranty

Bathtubs, wall tile, fiberglass fixtures, and countertops are warranted for a period of FIVE years against peeling or other failure of adhesion of the coating. Refinishing of sinks, floors, shower pans, spot (chip repairs) and all other surfaces are warranted for a period of ONE year against failure of adhesion, unless some other period is otherwise stated on the face of the invoice.

Leaks & Rust Exclusion: While many of the techniques and products we use can help in stopping leaks and eliminating rust, no warranty is given that any leak or rust will cease, fail to re-occur, or that any future leaks or rust are prevented as a result of refinishing.

This warranty is subject to the following conditions any of which will **void** any warranty:

1. The surface must not be allowed to remain continuously wet from items such as bath mats left on the surfaces without drying out between uses.
2. The fixture must not be used for water storage or contain standing water for extended periods of time.
3. Damage caused by continuous wetness from leaking or dripping plumbing.
4. Damage, chips, or nicks caused by sharp or falling objects, by misuse or by accident.
5. Staining from chemicals, rust or hair dyes. Rust may return to refinished areas especially in overflow or drain areas. The return of rust is NOT covered under warranty.

6. You cannot use abrasive cleaners such as powdered cleansers. These types of materials will abrade the surface resulting in a dullness of the finish and possibly early failure of the finish.
7. Any movement in the substructure of the surface which causes movement in the refinished surfaces resulting in a crack or split in the refinished surface, grout lines, laminate seam lines, caulking lines, or countertop/backsplash seams.

The following warranty limitations apply from the date of purchase:

All Acrylic Products 5 year

Shower Enclosures 2 year

Whirlpool/Jet Air Systems and Motors 2 year.

Waiting Period

New finishes normally need 24-48 HOURS to cure thoroughly. Please do not use the fixture during this time and see to it that the repaired areas remain free of water.

Avoid placing heavy objects on a resurfaced countertop for at least three (3) days. Some finishes may be able to be used in a shorter timeframe. Please refer to your technician to see if your surface may be able to be used in a shorter time period.

CELADON

To:

Miller Mechanical Contractors and Engineers LLC

1976 Airport Industrial Park Dr SE, Marietta, GA 30060

ONE YEAR LIMITED WARRANTY

Celadon Construction Materials, LLC ("CCM") agrees to provide a one (1) year limited warranty against defects in manufacturing for all products purchased by Buyer as listed in invoices from CCM to Buyer and incorporated herein by reference.

The warranty shall commence from the date that products are delivered to the buyer as evidenced by the delivery tickets, which are incorporated herein by reference.

CCM is not the manufacturer of the goods but instead merely serves as an intermediary to sell the same. In the event there is a defect in the goods, the sole responsibility of CCM shall be to replace the goods with goods that are not defective. CCM shall have no responsibility for consequential or punitive damages and shall have no obligation to pay the labor cost to remove any defective goods and replace the same.

This limited warranty shall be deemed void if the goods are not installed properly in accordance with manufacturer's instructions and, as applicable, industry specifications and standards or the goods are damaged or abused after installation. This is the entire warranty provided by CCM. No other express or implied warranties are provided by CCM.

Signed,



Ruby Lee
President
Celadon Construction Materials, LLC



To:

Miller Mechanical Contractors and Engineers LLC

1976 Airport Industrial Park Dr SE, Marietta, GA 30060

ONE YEAR LIMITED WARRANTY

Celadon Construction Materials, LLC ("CCM") agrees to provide a one (1) year limited warranty against defects in manufacturing for all products purchased by Buyer as listed in invoices from CCM to Buyer and incorporated herein by reference.

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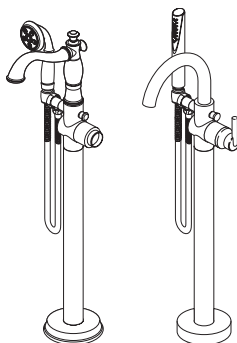
CCM is not the manufacturer of the goods but instead merely serves as an intermediary to sell the same. In the event there is a defect in the goods, the sole responsibility of CCM shall be to replace the goods with goods that are not defective. CCM shall have no responsibility for consequential or punitive damages and shall have no obligation to pay the labor cost to remove any defective goods and replace the same.

This limited warranty shall be deemed void if the goods are not installed properly in accordance with manufacturer's instructions and, as applicable, industry specifications and standards or the goods are damaged or abused after installation. This is the entire warranty provided by CCM. No other express or implied warranties are provided by CCM.

Signed,

A handwritten signature in black ink that reads "Ruby Lee". The signature is written in a cursive, flowing style. Below the signature is a horizontal line.

Ruby Lee
President
Celadon Construction Materials, LLC

**74820**

T4797-FL-LHP & T4759-FL FLOOR MOUNT TUB FILLER TRIM

**T4797-FL-LHP Y T4759-FL JUEGO DE
ACCESORIOS PARA EL LLENADO DE
BAÑERAS, INSTALACIÓN DE PISO.**

**TROUSSE DE FINITION T4797-FL-LHP
ET T4759-FL DE ROBINET DE
PLANCHER POUR BAIGNOIRE**

Write purchased model number here.
Escriba aquí el número del modelo comprado.
Inscrivez le numéro de modèle ici.

For easy installation of your Delta faucet you will need:

- To **READ ALL** the instructions completely before beginning.
- To **READ ALL** warnings, care, and maintenance information.
- To purchase the correct **water supply hook-up**.

Cleaning and Care:

Care should be given to the cleaning of this product. Although its finish is extremely durable, it can be damaged by harsh abrasives or polish. To clean, simply wipe gently with a damp cloth and blot dry with a soft towel.

Backflow Protection System

Your Delta Faucet hand shower incorporates a backflow protection system that has been tested to be in compliance with ASME A112.18.3 and ASME A112.18.1/CSA B125.1. It incorporates two certified check valves in series, which operate independently and are integral, non-serviceable parts of the wand assembly. It also incorporates a diverter mechanism that automatically diverts to the spout mode when there is a reduction in the supply pressure.

Para instalación fácil de su llave Delta usted necesitará:

- **LEER TODAS** las instrucciones completamente antes de empezar.
- **LEER TODOS** los avisos, cuidados, e información de mantenimiento.
- Comprar las conexiones correctas para el **suministro de agua**.

Limpieza y Cuidado de su Llave

Tenga cuidado al ir a limpiar este producto. Aunque su acabado es sumamente durable, puede ser afectado por agentes de limpieza o para pulir abrasivos. Para limpiar su llave, simplemente frótelas con un trapo húmedo y luego séquela con una toalla suave.

Sistema de protección contra el contraflujo

Ducha de mano Delta tiene un sistema de protección contra el contraflujo, incorporado, que ha sido probado para cumplir con los requisitos de ASME A112.18.3 y ASME A112.18.1/CSA B125.1. Este incorpora en la pieza de mano dos válvulas de retención o checadoras certificadas en una serie, las cuales operan independientemente y son piezas integrantes que no requieren servicio. También incorpora un mecanismo desviador que automáticamente desvía el agua al surtidor cuando la presión del flujo de agua se disminuye.

Pour installer votre robinet Delta facilement, vous devez:

- **LIRE TOUTES** les instructions avant de débiter;
- **LIRE TOUS** les avertissements ainsi que toutes les instructions de nettoyage et d'entretien;
- Acheter le bon nécessaire de raccordement.

Instructions de nettoyage

Il faut le nettoyer avec soin. Même si son fini est extrêmement durable, il peut être abîmé par des produits fortement abrasifs ou des produits de polissage. Il faut simplement le frotter doucement avec un chiffon humide et le sécher à l'aide d'un chiffon doux.

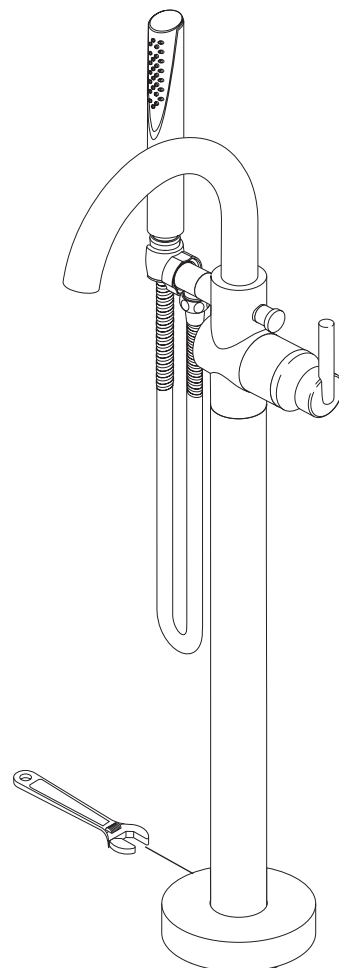
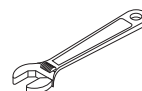
Dispositif anti-siphonnage

Douche à main Delta comporte un dispositif anti-siphonnage qui a été éprouvé et qui est conforme aux normes ASME A112.18.3 et ASME A112.18.1/CSA B125.1. Ce dispositif se compose de deux clapets indépendants homologués, montés en série dans le tube rigide, qui sont non réparables. Il est également doté d'un inverseur qui dirige automatiquement l'eau vers le bec en cas de diminution de la pression d'alimentation.

You may need:

Usted puede necesitar:

Articles dont vous pouvez
avoir besoin:

**74820**

Limited Warranty on Delta® Faucets

Parts and Finish

All parts (other than electronic parts and batteries) and finishes of this Delta® faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for as long as the original consumer purchaser owns the home in which the faucet was first installed or, for commercial users, for 5 years from the date of purchase.

Electronic Parts and Batteries (if applicable)

Electronic parts (other than batteries), if any, of this Delta® faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for 5 years from the date of purchase or, for commercial users, for one year from the date of purchase. No warranty is provided on batteries.

Delta Faucet Company will replace, FREE OF CHARGE, during the applicable warranty period, any part or finish that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price in exchange for the return of the product. **These are your exclusive remedies.**

Delta Faucet Company recommends using a professional plumber for all installation and repair. We also recommend that you use only genuine Delta® replacement parts.

Delta Faucet Company shall not be liable for any damage to the faucet resulting from misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions.

Replacement parts may be obtained by calling the applicable number below or by writing to:

In the United States and Mexico:

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
1-800-345-DELTA (3358)
customerservice@deltafaucet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
1-800-345-DELTA (3358)
customerservice@mascocanada.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims unless the purchaser has registered the product with Delta Faucet Company. This warranty applies only to Delta® faucets manufactured after January 1, 1995 and installed in the United States of America, Canada and Mexico.

DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LABOR CHARGES) FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THE FAUCET. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you special legal rights. You may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding our warranty, please view our Warranty FAQs at www.deltafaucet.com, email us at customerservice@deltafaucet.com or call us at the applicable number above.

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Garantía Limitada de las Llaves de Agua (grifos) Delta®

Piezas y acabado

Todas las piezas (excepto las piezas electrónicas y las pilas) y los acabados de esta llave de agua Delta® están garantizados al consumidor comprador original de estar libres de defectos en material y fabricación durante el tiempo que el comprador original posea la vivienda en la que la llave de agua fue originalmente instalada o, para los consumidores comerciales, durante 5 años a partir de la fecha de compra.

Componentes electrónicos y pilas (si aplicable)

Todas las piezas (salvo las pilas), si hay, de esta llave de agua Delta® están garantizadas al consumidor comprador original de estar libres de defectos en materiales y fabricación durante 5 años a partir de la fecha de compra o, para los usuarios comerciales, por un año a partir de la fecha de compra. No se garantizan las pilas.

Delta Faucet Company reemplazará, SIN CARGO, durante el período de garantía aplicable, cualquier pieza o acabado que pruebe tener defectos de material y/o fabricación bajo la instalación, uso y servicio normal. Si la reparación o su reemplazo no es práctico, Delta Faucet Company tiene la opción de reembolsarle su dinero por la cantidad del precio de compra a cambio de la devolución del producto. **Estos son sus únicos recursos.**

Delta Faucet Company recomienda que use los servicios de un plomero profesional para todas las instalaciones y reparaciones. También le recomendamos que utilice sólo las piezas de repuesto originales de Delta®.

Delta Faucet Company no será responsable por cualquier daño a la llave de agua que resulte del mal uso, abuso, negligencia o mala instalación o mantenimiento o reparación incorrecta, incluyendo el no seguir los cuidados aplicables y las instrucciones de limpieza.

Las piezas de repuesto se pueden obtener llamando al número correspondiente más abajo, o escribiendo a:

En los Estados Unidos y México:

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
1 800 345 DELTA (3358)
customerservice@deltafaucet.com

En Canadá:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
1 800 345 DELTA (3358)
customerservice@mascocanada.com

La prueba de compra (recibo original) del comprador original debe ser disponible a Delta Faucet Company para todos los reclamos a menos que el comprador haya registrado el producto con Delta Faucet Company. Esta garantía le aplica sólo a las llaves de agua de Delta® fabricadas después del 1 de enero 1995 e instaladas en los Estados Unidos de América, Canadá y México.

DELTA FAUCET COMPANY NO SE HACE RESPONSABLE POR CUALQUIER DAÑO ESPECIAL, INCIDENTAL O CONSECUENTE (INCLUYENDO LOS GASTOS DE MANO DE OBRA) POR EL INCUMPLIMIENTO DE CUALQUIER GARANTÍA EXPRESA O IMPLÍCITA DE LA LLAVE DE AGUA. Algunos estados/provincias no permiten la exclusión o limitación de daños especiales, incidentales o consecuentes, por lo que estas limitaciones y exclusiones pueden no aplicarle a usted. Esta garantía le otorga derechos legales. Usted también puede tener otros derechos que varían de estado/provincia a estado/provincia.

Esta es la garantía exclusiva por escrito de Delta Faucet Company y la garantía no es transferible.

Si usted tiene alguna pregunta o inquietud acerca de nuestra garantía, por favor, vea nuestra sección de preguntas frecuentes FAQ sobre la garantía en www.deltafaucet.com, también puede enviarnos un correo electrónico a customerservice@deltafaucet.com o llámenos al número que le corresponda anteriormente incluido.

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Garantie limitée des robinets Delta®

Pièces et finis

Toutes les pièces (à l'exception des composants électroniques et des piles) et tous les finis de ce robinet Delta® sont protégés contre les défauts du matériau et les vices de fabrication par une garantie qui est consentie au premier acheteur et qui demeure valide tant que celui-ci demeure propriétaire de la maison dans laquelle le robinet a été installé. Dans le cas d'une utilisation commerciale, la garantie est de 5 ans à compter de la date d'achat.

Composants électroniques et piles (le cas échéant)

Si ce robinet Delta® comporte des composants électroniques, ces composants (à l'exception des piles) sont protégés contre les défauts du matériau et les vices de fabrication par une garantie consentie au premier acheteur qui est d'une durée de 5 ans à compter de la date d'achat. Dans le cas d'une utilisation commerciale, la garantie est d'un an à compter de la date d'achat. Aucune garantie ne couvre les piles.

Delta Faucet Company remplacera, GRATUITEMENT, pendant la période de garantie applicable, toute pièce ou tout fini qui présentera une défectuosité du matériau et/ou un vice de fabrication pour autant que le robinet ait été installé, utilisé et entretenu normalement. S'il est impossible de réparer ou de remplacer le robinet, Delta Faucet Company pourra décider de rembourser le prix d'achat du produit pour autant que celui-ci lui soit retourné. **Il s'agit de vos seuls recours.**

Delta Faucet Company recommande de confier l'installation et la réparation à un plombier professionnel. Nous vous recommandons également d'utiliser uniquement des pièces de rechange authentiques Delta®.

Delta Faucet Company se dégage de toute responsabilité à l'égard des dommages causés au robinet en raison d'un mauvais usage, d'un usage abusif, de la négligence ou de l'utilisation d'une méthode d'installation, de maintenance ou de réparation incorrecte ou inadéquate, y compris les dommages résultant du non-respect des instructions de nettoyage et d'entretien applicables. Pour obtenir des pièces de rechange, veuillez appeler au numéro applicable ci-dessous ou écrire

à l'adresse applicable ci-dessous.

Aux États-Unis et au Mexique :

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
1-800-345-DELTA (3358)
customerservice@deltafaucet.com

Au Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
1-800-345-DELTA (3358)
customerservice@mascocanada.com

La preuve d'achat (reçu original) du premier acheteur doit être présentée à Delta Faucet Company pour toutes les demandes en vertu de la garantie, sauf si le produit a été enregistré auprès de Delta Faucet Company. La présente garantie s'applique uniquement aux robinets Delta® fabriqués après le 1er janvier 1995 et installés aux États-Unis d'Amérique, au Canada et au Mexique.

DELTA FAUCET COMPANY SE DÉGAGE DE TOUTE RESPONSABILITÉ À L'ÉGARD DES DOMMAGES PARTICULIERS, CONSÉCUTIFS OU INDIRECTS (Y COMPRIS LES FRAIS DE MAIN-D'ŒUVRE) QUI POURRAIENT RÉSULTER DE LA VIOLATION D'UNE GARANTIE IMPLICITE OU EXPLICITE QUELCONQUE SUR LE ROBINET. Dans les États ou les provinces où il est interdit de limiter ou d'exclure la responsabilité à l'égard des dommages particuliers, consécutifs ou indirects, les limites et les exclusions susmentionnées ne s'appliquent pas. La présente garantie vous donne des droits précis qui peuvent varier selon l'État ou la province où vous résidez.

La présente garantie écrite est la garantie exclusive offerte par Delta Faucet Company et elle n'est pas transférables.

Si vous avez des questions ou des préoccupations en ce qui concerne notre garantie, veuillez consulter la page Warranty FAQs à www.deltafaucet.com, faire parvenir un courriel à customerservice@deltafaucet.com ou nous appeler au numéro applicable.

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Model / Modelo / Modèle T4759-FL▲

RP51287
Stream Straightener, Gasket & Wrench
Enderezador de Chorro, Empaque y Llave
Concentrateur de Jet, Joint et Clé

RP74808▲
Holder Assembly
Soporte de Montaje
Support de Douche

RP73384▲
Handshower
Regadera Manual
Douche à main

U495D-▲60-PK
Hose
Manguera
Tuyau souple

RP74811▲
Spout Assembly
Ensamble del Tubo de Salida
Bec

RP74809▲
Finial
Perilla
Bouton

RP74810
Diverter
Assembly
Ensamble del
Desviador
Dérivation

RP46074
Valve Cartridge
Válvula de Cartucho
Cartouche

RP4993
Seats & Springs
Asientos y Resortes
Sièges et Ressorts

RP14414
O-Rings
Anillos "O"
Joints Toriques

RP22734
Bonnet
Capuchón
Chapeau

RP23336
O-Ring
Anillo "O"
Joint Torique

RP74818▲
Trim Sleeve
Manga de Franja
Manchon de Finition

RP25620
Set Screw
Tornillo de Ajuste
Vis de Calage

RP73375▲
Handle
Manija
Manette

RP74819
Nuts & Washers
Tuercas y Arandelas
Ecrus et Rondelles

Optional:
Order RP73598 for increased flow rate.
Non-pressure balance cartridge will
replace RP46074.

Opcional:
Ordene RP73598 para aumentar el
caudal. El cartucho con equilibrio sin
presión reemplazará RP46074.

Facultatif :
Commandez l'article RP73598 pour
accroître le débit. La cartouche sans
équilibre de pression remplace
l'article RP46074.

▲ Specify Finish
Especifique el Acabado
Précisez le Fini

Model / Modelo / Modèle T4797-FL-LHP▲

RP51287
Stream Straightener, Gasket & Wrench
Enderezador de Chorro, Empaque y Llave
Concentrateur de Jet, Joint et Clé

RP74808▲
Holder Assembly
Soporte de Montaje
Support de Douche

59433▲-PK
Handshower
Regadera Manual
Douche à main

U495D-▲60-PK
Hose
Manguera
Tuyau souple

RP78288▲
Spout Assembly
Ensamble del Tubo de Salida
Bec

RP78368▲
Finial
Perilla
Bouton

RP74810
Diverter
Assembly
Ensamble del
Desviador
Dérivation

RP73598
Valve Cartridge
Válvula de Cartucho
Cartouche

RP4993
Seats & Springs
Asientos y Resortes
Sièges et Ressorts

RP14414
O-Rings
Anillos "O"
Joints Toriques

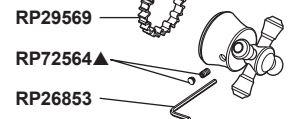
RP22734
Bonnet
Capuchón
Chapeau

RP23336
O-Ring
Anillo "O"
Joint Torique

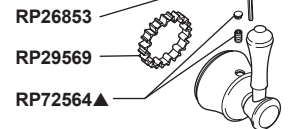
RP74818▲
Trim Sleeve
Manga de Franja
Manchon de Finition

RP74819
Nuts & Washers
Tuercas y Arandelas
Ecrus et Rondelles

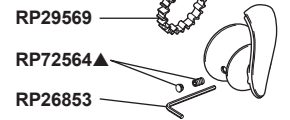
H795▲



H797▲



H798▲



▲ Specify Finish
Especifique el Acabado
Précisez le Fini

Maintenance:

Faucet leaks from tub spout:

SHUT OFF WATER SUPPLIES.

Replace seats and springs—Repair Kit RP4993.
Check condition of lower O-rings and replace if necessary (RP14414).
See Helpful Hints 1, 2, & 3.

If leak persists:

SHUT OFF WATER SUPPLIES.

Replace valve cartridge RP46074.
See Helpful Hints 1, 2 & 3.

Unable to maintain constant water temperature:

Replace cartridge or follow instructions in Helpful Hints 1, 2 & 4.

Helpful Hints:

1. Before removing valve cartridge assembly for any maintenance, be sure to note the position of the rotational limit stop on the cap. The valve cartridge assembly must always be put back in the same position. BE SAFE! After you have finished the installation, turn on valve to make sure COLD WATER FLOWS FIRST.
2. To remove valve cartridge from body, shut off water supplies and remove handle, trim sleeve and bonnet nut. Do not pry the valve cartridge out of the body with a screwdriver. Place handle on stem and rotate counterclockwise approximately 1/4 turn after the stop has been contacted. Lift valve cartridge out of body.
3. To remove seats and springs, remove valve cartridge. Separate cap assembly from the housing assembly by rotating the cap assembly counterclockwise 90° (degrees). Separate cap and housing assemblies. Remove seats and springs and replace. Place the largest diameter of the spring into the seat pocket first and then press the tapered end of the seal over the spring. Reassemble valve cartridge and replace in body following instructions given in 1 above.
4. If the water in your area has lime, rust, sand or other contaminants in it, your pressure balance valve will require periodic inspection. The frequency of the inspection will depend on the amount of contaminants in the water. To inspect valve cartridge, remove it and follow the steps in note 1 above. Turn the valve to the full mix position and shake the cartridge vigorously. If there is a rattling sound, the unit is functional and can be reinstalled following instructions given in note 1 above. If there is no rattle, replace the cartridge.

Mantenimiento:

La llave tiene fugas de agua en la salida de tina/cabeza deregadera—

CIERRE LOS SUMINISTROS DE AGUA.

Reemplace Asientos y Resortes—Equipo de Reparaciones RP4993 Verifica el condición de los anillos "O" más bajo y repongálos si será necesario (RP14414). Vea Sugerencias Útiles 1, 2, y 3.

Si la fuga de agua persiste—

CIERRE LOS SUMINISTROS DE AGUA.

Reemplace cartucho de válvula RP46074. Vea Sugerencia Útiles 1, 2 y 3.

No se puede mantener temperatura de agua constante:

Reemplace válvula de cartucho o sigue los instrucciones en Sugerencias Útiles 1, 2 y 4.

Sugerencia Útiles:

1. Antes de remover el ensamble del cartucho de la válvula para hacerle cualquier servicio, fíjese en la posición del tope del límite rotacional ubicado en la tapa. Siempre se debe reponer el ensamble de cartucho de válvula en el mismo posición. TENGA CUIDADO después de cumplir el instalación dele vuelta a la válvula para asegurar que AGUA FRIA SALGA PRIMERO.
2. Para quitar el cartucho de válvula del cuerpo, cierre los suministros de agua y quite el maneral, manga de franja y bonete. No se debe quitar el cartucho de válvula del cuerpo con atomizador. Ponga el maneral encima el vástago y giralo en el sentido contrario al de las agujas del reloj aproximado 1/4 vuelta. Levanta el cartucho de válvula aguera el cuerpo.
3. Para quitar los asientos y resortes, quite el cartucho de válvula, (vea arriba). Separa ensamble de botón de ensamble de caja girando el botón 90o en el sentido contrario al de las agujas del reloj. Separa ensambles de botón y caja. Quite los asientos y resortes y ponga los asientos y resortes nuevos. Ponga primero el diámetro mas grande del resorte adentro la bolsa del asiento y luego apreta el remate ahusado del sello hacia arriba el resorte. Reensambla el cartucho de válvula y repongalo en el cuerpo siguiendo los instrucciones en nota 1 arriba.
4. Si la agua en su area contiene cal, orín, arena o otros contaminamientos, su válvula de equilibrio de presión requerá inspecciones periódico. La frecuencia de los inspecciones depende en el tamaño de contaminamientos en la agua. Para inspeccionar el cartucho, quite el cartucho, sigue los pasos apuntado en nota 1 arriba. Dele vuelta al válvula hasta el posición completamente mixto y sacude el cartucho riguroso. Si hay traqueteo, funciona el unidad y se puede reinstalar siguiendo nota 1 de arriba. Si no hay traqueteo, reemplace el válvula de cartucho.

Entretien:

Le robinet fuit par le bec ou la pomme de douche. COUPER L'EAU.

Remplacer les sièges et les ressorts (kit de réparation RP4993. Vérifier l'état des joints toriques inférieurs et remplacer ceux-ci au besoin (RP14414). Voir les conseils 1, 2, et 3.

Si la fuite persiste, COUPER L'EAU.

Remplacer la cartouche RP46074. Voir les conseils 1, 2 et 3.

La température de l'eau n'est pas constante.

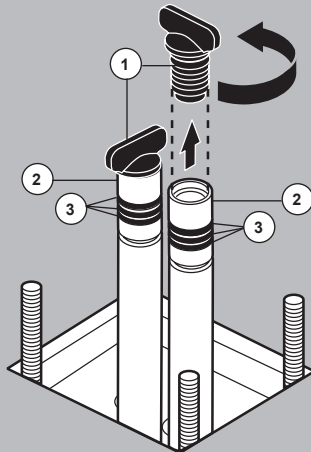
Remplacer cartouche ou suivre les instructions des conseils 1, 2 et 4.

Conseils:

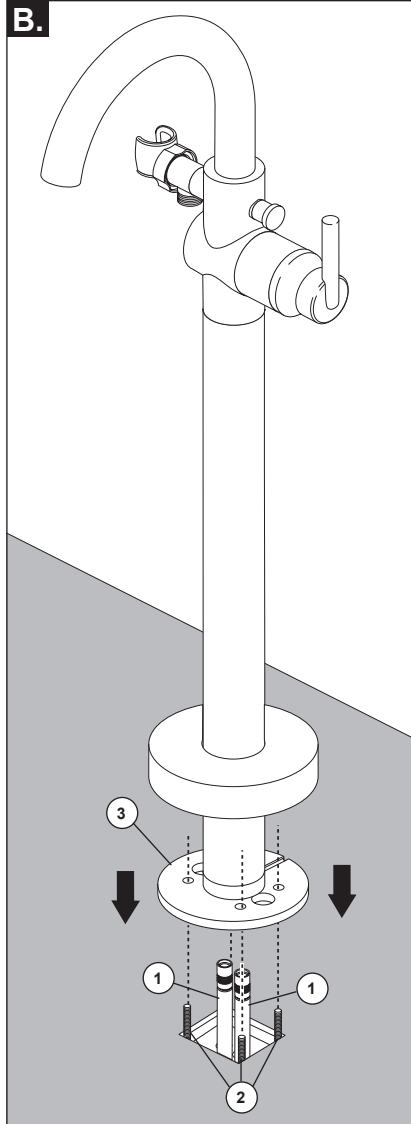
1. Avant d'enlever la cartouche de la soupape aux fins d'entretien, prenez note de la position de la butée de température maximale sur le chapeau. La cartouche doit toujours être reposée dans la même position. NE PAS PRENDRE DE RISQUES INUTILEMENT. Une fois l'installation terminée, ouvrir le robinet pour s'assurer que L'EAU FROIDE S'ÉCOULE EN PREMIER.
2. Pour déposer la cartouche du corps, couper l'eau, puis retirer la poignée, manchon de finition et le chapeau fileté. Ne pas utiliser un tournevis comme levier pour extraire la cartouche. Placer la poignée sur la tige et la tourner dans le sens antihoraire d'environ 1/4 de tour après contact des butées. Soulever la cartouche pour la retirer du corps.
3. Pour déposer les sièges et les ressorts, enlever la cartouche. Séparer la soupape du boîtier en la tournant de 90o degrés dans le sens antihoraire. Écarter ensuite la soupape du boîtier. Enlever les sièges et les ressorts, puis les reposer. Placer d'abord l'extrémité du ressort du plus grand diamètre dans le logement du siège, puis abaisser l'extrémité conique du siège sur le ressort. Remonter la cartouche et la reposer dans le corps conformément aux instruction figurant en "1" ci-dessus.
4. Si l'eau d'alimentation du robinet à équilibrage de pression renferme du calcaire, du fer, du sable ou d'autres corps étrangers, celui-ci doit faire l'objet d'inspections périodiques. La fréquence des inspections dépend de la quantité de corps étrangers dans l'eau. Pour inspecter la cartouche, la déposer et suivre et les instructions de la note 1 ci-dessus. Ouvrir la soupape en position de plein mélange et secouer la cartouche vigoureusement. Si des cliquetis se font entendre, le composant est en bon état et peut être reposé conformément aux instructions de la note 1 ci-dessus. Si on n'entend pas de cliquetis, remplacer la cartouche.

1

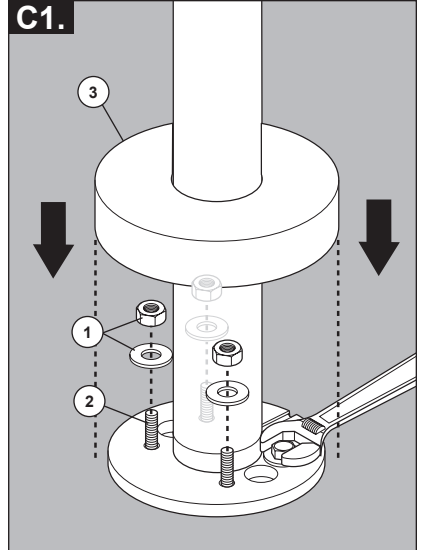
A.



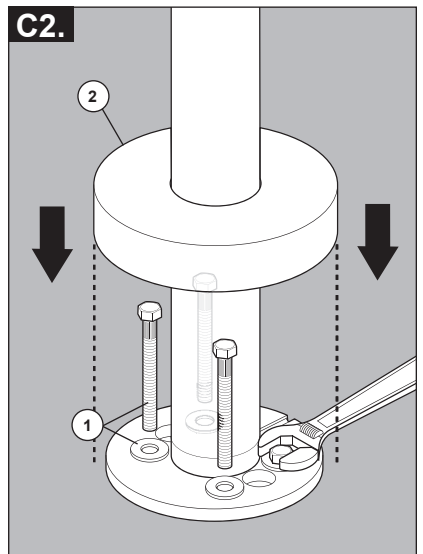
B.



C1.



C2.



A. Remove test plugs (1) from risers (2). Inspect O-rings (3) for damage. Order replacement O-rings, RP74812, if damage is found.

B. Carefully slide faucet over risers (1) and threaded studs (2) until faucet base (3) rests on the floor.

C1. Install washers and nuts (1) onto the four threaded studs (2). Ensure faucet is level; then, tighten nuts securely with wrench. Do not over tighten. Slide escutcheon (3) down to cover faucet base.

C2. For installation on R4700-FLWS, install bolts and washers (1). Ensure faucet is level; then, tighten bolts securely with wrench. Do not over tighten. Slide escutcheon (2) down to cover faucet base.

A. Retire los tapones de prueba (1) de la tubería vertical (2). Inspeccione las juntas tóricas (3) por si hay daños. Ordene las juntas tóricas de repuesto, RP74812, si encuentra algún daño.

B. Cuidadosamente deslice la llave de agua/grifo sobre las tuberías verticales (1) y de los espárragos (2) hasta que la base de la llave de agua (3) quede en el suelo.

C1. Instale las arandelas y las tuercas (1) sobre los cuatro pernos roscados (2). Asegúrese que la llave de agua esté nivelada, luego, apriete las tuercas fijamente con la llave. No apriete demasiado. Deslice el chapetón o chapa de cubierta (3) hacia abajo para cubrir la base de la llave de agua.

C2. Para la instalación en R4700-FLWS, instale los pernos y las arandelas (1). Asegúrese que la llave de agua esté nivelada, luego, apriete los pernos fijamente con la llave. No apriete demasiado. Deslice el chapetón o chapa de cubierta (2) hacia abajo para cubrir la base de la llave de agua.

A. Retirez les bouchons d'essai (1) des tubes-raccords (2). Inspectez les joints toriques (3) pour vous assurer qu'ils ne sont pas endommagés. Si vous décelez des dommages, commandez des joints toriques de rechange, article RP74812.

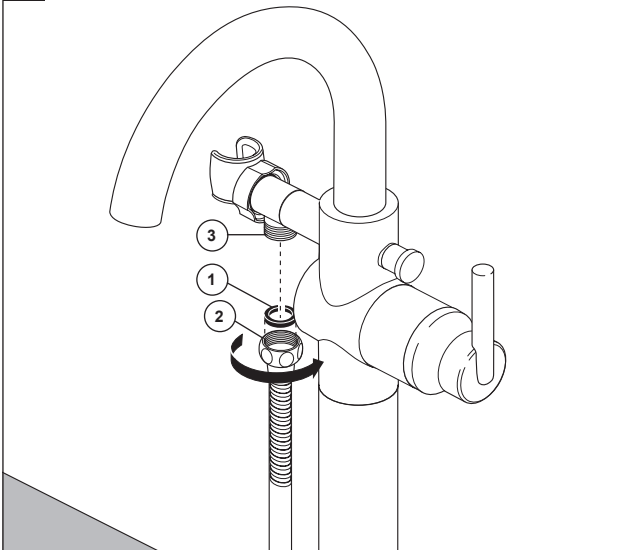
B. Glissez le robinet doucement sur les tuyaux verticaux (1) et les goujons filetés (2) jusqu'à ce que la base du robinet (3) repose sur le plancher.

C1. Placez les rondelles et les écrous (1) sur les quatre goujons filetés (2). Assurez-vous que le robinet est de niveau. Serrez ensuite les écrous solidement à l'aide d'une clé. Prenez garde de trop serrer. Abaissez la plaque de finition (3) sur la base du robinet.

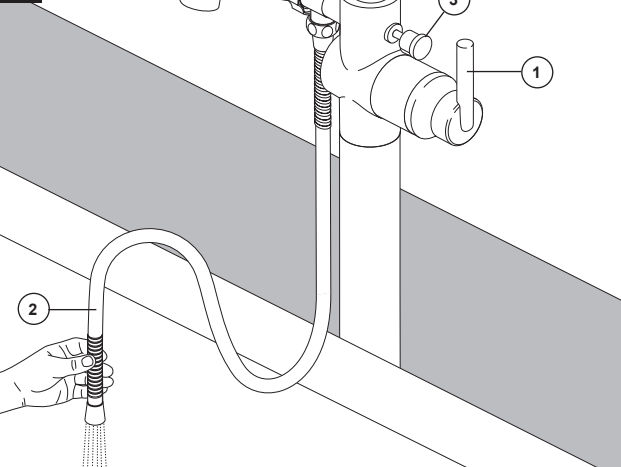
C2. Pour effectuer l'installation sur le modèle R4700-FLWS, montez les boulons et les rondelles (1). Assurez-vous que le robinet est de niveau. Serrez ensuite les boulons solidement à l'aide d'une clé. Prenez garde de trop serrer. Abaissez la plaque de finition (2) sur la base du robinet.

2

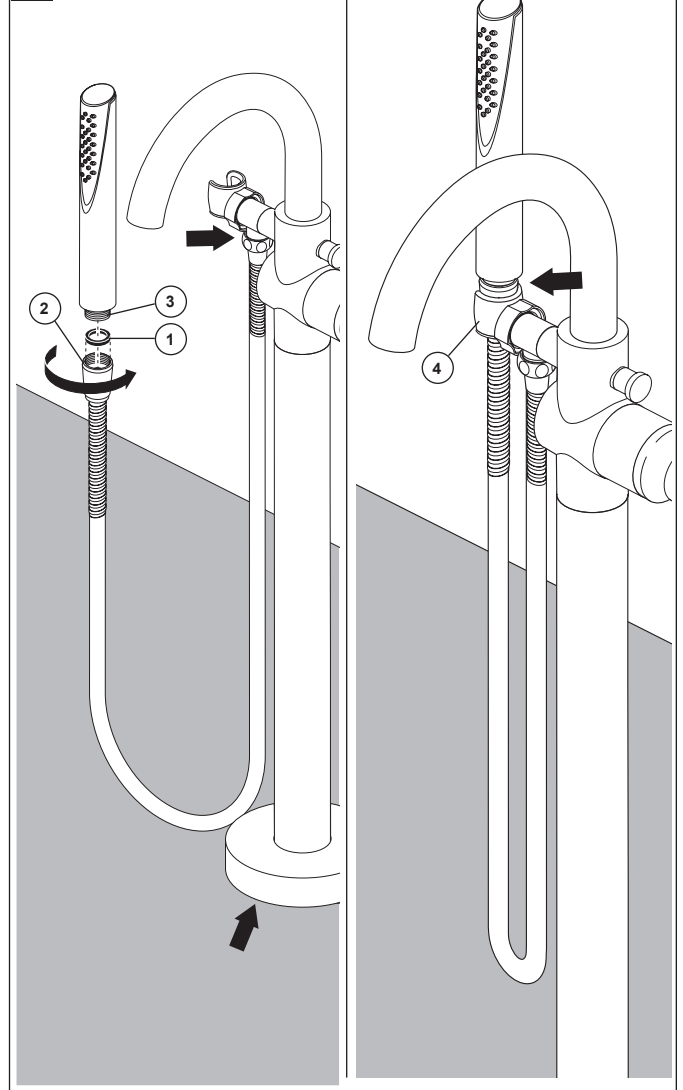
A.



B.



C.



- A.** Make sure gasket (1) is in hose end (2) (the end with flats). Thread hose onto outlet (3) and tighten securely. Do not overtighten.
- B.** Turn the supply lines on, and turn handle (1) to the full on mix position. Hold hose (2) inside tub and pull diverter (3) out. Flush faucet for 1 minute. If hose has gasket installed, use caution not to lose during flushing process. After flushing turn off water at the bath valve handle.

- C.** Make sure gasket (1) is installed in hose end (2). Hand tighten hose onto hand shower (3). Place hand shower into holder (4). Inspect for leaks at arrows. Make sure cold water flows first. If it does not, cartridge must be flipped.

- A.** Asegúrese que el empaque (1) está en el extremo de la manguera (2) (extremo con secciones achatadas). Enrosque la manguera en la toma de agua (3) y apriete bien. No apriete demasiado.
- B.** Abra las líneas de suministro de agua, y gire la manija (1) a la posición mixta, completamente abierta. Sujete la manguera (2) dentro de la bañera y hable el desviador (3) hacia fuera. Deje que el agua corra durante 1 minuto. Si ya la manguera tiene el empaque instalado, tenga

cuidado de no perderlo cuando deje el agua correr. Después de dejar correr el agua ciérrela con la manija de la válvula de la bañera.

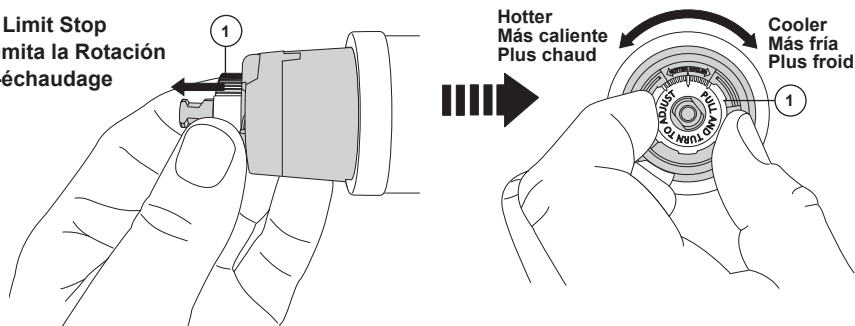
- C.** Asegúrese que el empaque (1) está instalado en el extremo de la manguera (2). Apriete a mano la manguera en la regadera o ducha de mano (3). Coloque la regadera de mano en el soporte (4). Inspeccione si hay fugas donde se indica con las flechas. Asegúrese de que el agua fría fluye primero. Si no lo hace, voltee el cartucho.

- A.** Assurez-vous que le joint (1) se trouve dans l'extrémité du tuyau souple (2) (l'extrémité avec les méplats). Vissez le tuyau souple dans la sortie (3) et serrez-le solidement. Prenez garde de trop serrer.
- B.** Ouvrez les arrivées d'eau et tournez la manette (1) pour la placer en position d'écoulement maximal de l'eau chaude et de l'eau froide. Tenez le tuyau souple (2) à l'intérieur de la baignoire et tirez sur l'inverseur (3). Rincez le robinet 1 minute. Si le joint est monté dans le raccord du

tuyau souple, prenez garde de le perdre pendant le rinçage. Après avoir rincé le robinet, fermez-le à l'aide de la manette.

- C.** Assurez-vous que le joint (1) se trouve dans l'extrémité du tuyau (2). Serrez le tuyau à la main sur la douche à main (3). Placez la douche à main dans le support (4). Vérifiez l'étanchéité aux endroits indiqués par les flèches. Assurez-vous que l'eau froide s'écoule en premier. Si ce n'est pas le cas, la cartouche est probablement à l'envers.

Adjusting the Rotational Limit Stop El Ajuste del Tope que Limita la Rotación Réglage de la butée anti-échaudage



IMPORTANT: The Rotational Limit Stop is used to limit the amount of hot water available such that, if set properly, a scald injury is less likely to occur if the handle accidentally is rotated all the way to "hot" when a person is showering or filling a tub. The first position allows the LEAST amount of hot water to mix with the cold water in the system. In the first position the water will be the coldest possible when the handle is turned all the way to hot. As you move the Rotational Limit Stop counterclockwise, you progressively add more and more hot water in the mix. The last position to the left will result in the greatest amount of hot water to the mix, and the greatest risk of scald injury if someone accidentally turns the valve handle all the way to the hot side while showering or filling a tub.

WARNING: In some instances, setting the Rotational Limit Stop in the hottest position (full counterclockwise) could result in scald injury. It is necessary to adjust the Rotational Limit Stop so that the water coming out of the valve will not scald the user when the handle of the valve is rotated to the hot side.

- According to the majority of industry standards, the maximum allowable temperature of the water exiting the valve is 120°F (Your local plumbing codes may require a water temperature less than 120°F).
- The Rotational Limit Stop may need to be readjusted seasonally if the inlet water temperature changes. For example, during the winter, the cold water temperature is colder than it is during the summer which could result in varying outlet temperatures. A water temperature for a comfortable bath or shower is typically between 90°F - 110°F.
- Run the water so that the cold water is as cold as it will get and hot water is as hot as it will get. Place the handle on the stem and rotate the handle counterclockwise until the handle stops.
- Place a thermometer in a plastic tumbler and hold in the water stream. If the water temperature is above 120°F, the Rotational Limit Stop must be repositioned clockwise to decrease valve outlet water temperature to be less than 120°F or to meet the requirements of your local plumbing codes.
- To adjust the temperature of the water coming out of the valve, pull the white Rotational Limit Stop (1) outward and rotate. Clockwise rotation will decrease the outlet temperature, counterclockwise rotation will increase the outlet temperature. Temperature change per tooth (notch) could be 4° - 16°F based on inlet water conditions. Repeat as necessary. When finished, make sure that the Rotational Limit Stop is fully retracted into the seated position. **WARNING: Do not take the Rotational Limit Stop apart.**
- MAKE SURE COLD WATER FLOWS FROM THE VALVE FIRST. MAKE SURE WATER FLOWING FROM THE VALVE AT THE HOTTEST FLOW POSSIBLE DOES NOT EXCEED 120°F OR THE MAXIMUM ALLOWED BY YOUR LOCAL PLUMBING CODE.

IMPORTANTE: el Tope del Límite Rotacional se usa para limitar la cantidad de agua caliente disponible de manera que, si se fija correctamente, una quemadura es menos probable que ocurra si la manija se gira accidentalmente hasta el lado "caliente" cuando una persona se está duchando o está llenando la bañera. La primera posición permite la cantidad MÍNIMA de agua caliente que se mezcla con el agua fría en el sistema. En la primera posición, el agua será lo más fría posible cuando la manija se gira completamente a caliente. A medida que mueve el Límite Rotacional al contrario, progresivamente deja que más agua caliente se mezcle con la fría. La última posición a la izquierda resultará en la mayor cantidad de agua caliente en la mezcla, y el mayor riesgo de sufrir lesiones por quemadura si alguien accidentalmente abre la manija de la válvula completamente hasta el lado caliente mientras se ducha o llena la bañera.

ADVERTENCIA: En algunos casos, el fijar el Tope del Límite Rotacional en la posición más caliente (completamente hacia la izquierda) podría resultar en lesión por quemadura. Es necesario ajustar el Tope del Límite Rotación de manera que el agua que sale de la válvula no escaldará a la persona que se está bañando cuando la manija de la válvula se gira hacia el lado caliente.

- De acuerdo con la mayoría de los estándares de la industria, la temperatura máxima permisible del agua que sale de la válvula es 120°F (los códigos de plomería locales pueden requerir una temperatura del agua inferior a 120° F).
- El Tope del Límite Rotacional puede necesitar un reajuste dependiendo de las estaciones si la temperatura de entrada del agua cambia. Por ejemplo, durante el invierno, la temperatura del agua fría es más fría de lo que es durante el verano resultando en diferentes temperaturas de salida. Una temperatura de agua para un baño o una ducha confortable es típicamente entre 90° F - 110° F.
- Deje correr el agua hasta que esta salga lo más fría posible y deje correr el agua caliente lo más caliente posible. Coloque la manija en la espiga y gire la manija hacia la izquierda hasta que el mango se detenga.
- Coloque un termómetro en un vaso plástico y manténgalo bajo el chorro de agua. Si la temperatura del agua está por encima de 120° F, el Tope del Límite Rotacional debe volverse a colocar girando hacia la derecha para disminuir la temperatura del agua que sale a menos de 120° F o para satisfacer los requisitos de los códigos locales de plomería.
- Para ajustar la temperatura del agua que sale de la válvula, hale (hacia fuera) el Tope del Límite Rotacional blanco (1) y gire. Al girar hacia la derecha o en sentido de las agujas del reloj disminuirá la temperatura del agua de salida, si gira al contrario, aumentará la temperatura del agua de salida. El cambio de temperatura por diente (muesca) puede ser de 4° a 16°F basado en las condiciones del agua de entrada. Repita cuantas veces sea necesario. Cuando haya terminado, asegúrese que el Tope del Límite Rotacional está totalmente hundido en la posición sentada. **ADVERTENCIA: No desarme el Límite Rotacional.**
- ASEGÚRESE QUE EL AGUA FRÍA SALGA DE LA VÁLVULA PRIMERO. ASEGÚRESE QUE EL AGUA QUE FLUYE DE LA VÁLVULA EN LA POSICIÓN MÁS CALIENTE POSIBLE NO EXCEDA 120° F O EL MÁXIMO PERMITIDO POR SU CÓDIGO DE PLOMERÍA LOCAL.

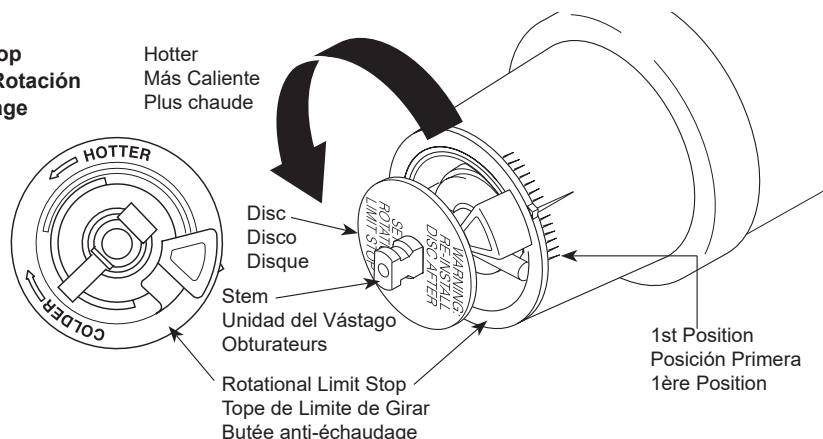
IMPORTANT : La butée de température maximale sert à limiter la quantité d'eau très chaude disponible. Ainsi, pour autant qu'elle soit réglée correctement, les risques d'ébouillantage sont moins grands si la personne qui utilise la douche ou la baignoire ou quelqu'un d'autre tourne la manette jusqu'à l'extrémité de la plage d'eau chaude par inadvertance. La première position est celle qui laisse passer le MOINS d'eau très chaude dans le mélange. Si la butée de température maximale est réglée à la première position, l'eau est aussi froide qu'elle peut l'être lorsque vous tournez la manette jusqu'à l'extrémité de la plage d'eau chaude. À mesure que vous déplacez la butée de température maximale dans le sens inverse à celui des aiguilles d'une montre, vous obtenez de plus en plus d'eau très chaude dans le mélange. La dernière position vers la gauche est celle qui laisse passer le plus d'eau très chaude dans le mélange et celle qui présente le plus grand risque d'ébouillantage si la personne qui utilise la douche ou la baignoire ou quelqu'un d'autre tourne la manette jusqu'à l'extrémité de la plage d'eau chaude par inadvertance.

AVERTISSEMENT : Dans certaines circonstances, le fait de régler la butée de température maximale à la position la plus chaude (position extrême dans le sens inverse à celui des aiguilles d'une montre) peut occasionner l'ébouillantage. Il est essentiel de régler la butée de température maximale de manière que l'eau qui s'écoule du robinet ne puisse ébouillanter l'utilisateur lorsque lui ou quelqu'un d'autre tourne la manette du robinet jusqu'à l'extrémité de la plage d'eau chaude.

- Selon la majorité des normes de l'industrie, la température maximale de l'eau s'écoulant du robinet ne doit pas dépasser 120 °F (49 °C) (le code de plomberie de votre région peut exiger une température inférieure à 120 °F).
 - La butée de température maximale peut devoir être réglée de nouveau si la température de l'eau d'alimentation varie selon les saisons. À titre d'exemple, pendant l'hiver, la température de l'eau froide est plus basse que pendant l'été, ce qui peut influencer sur la température de l'eau à la sortie du robinet. La température de l'eau pour un bain ou une douche confortable se situe généralement entre 90 °F et 110 °F (32 °C - 43 °C).
 - Laissez couler l'eau froide jusqu'à ce qu'elle soit aussi froide que possible et faites la même chose pour l'eau chaude. Placez la manette sur la tige et tournez-la dans le sens inverse à celui des aiguilles d'une montre jusqu'à ce qu'elle s'arrête.
 - Placez un thermomètre dans un gobelet en plastique et tenez le gobelet sous le jet d'eau. Si la température de l'eau est supérieure à 120 °F (49 °C), vous devez régler la butée de température maximale de manière que la température de l'eau qui s'écoule du robinet soit inférieure à 120 °F ou qu'elle
 - Pour régler la température de l'eau qui sort du robinet, tirez la butée de température maximale blanche (1) vers l'extérieur. Tournez la butée dans le sens des aiguilles d'une montre pour diminuer la température de l'eau à la sortie du robinet et dans le sens inverse à celui des aiguilles d'une montre pour accroître la température. Le changement de température par dent (cran) est de 4 °F à 16 °F (2 °C - 9 °C) selon la température de l'eau d'alimentation. Une fois que vous avez terminé, assurez-vous que la butée retourne à sa position d'origine.
- AVERTISSEMENT : Ne démontez pas la butée de température maximale.**

• ASSUREZ-VOUS QUE DE L'EAU FROIDE S'ÉCOULE DU ROBINET EN PREMIER. ASSUREZ-VOUS QUE LA TEMPÉRATURE DE L'EAU LA PLUS CHAUDE POSSIBLE QUI S'ÉCOULE DU ROBINET NE DÉPASSE PAS 120 °F (49 °C) OU LE MAXIMUM AUTORISÉ PAR LE CODE DE PLOMBERIE DE VOTRE RÉGION.

Adjusting the Rotational Limit Stop El Ajuste del Tope que Limita la Rotación Réglage de la butée anti-échaudage



IMPORTANT:

The Rotational Limit Stop is used to limit the amount of hot water available such that, if set properly, the user will not be scalded if the handle accidentally is rotated all the way to "hot" when a person is showering or filling a tub. The first position allows the **LEAST** amount of hot water to mix with the cold water in the system. In the first position the water will be the coldest possible when the handle is turned all the way to hot. As you move the Rotational Limit Stop counterclockwise, you progressively add more and more hot water in the mix. The last position to the left will result in the greatest amount of hot water to the mix, and the greatest risk of scald injury if someone accidentally turns the valve handle all the way to the hot side while showering or filling a tub.

WARNING: In some instances, setting the Rotational Limit Stop in the hottest position (full counterclockwise) could result in scald injury. It is necessary to adjust the Rotational Limit Stop so that the water coming out of the valve will not scald the user when the handle of the valve is rotated to the hot side.

- According to the majority of industry standards, the maximum allowable temperature of the water exiting the valve is 120°F (Your local plumbing codes may require a water temperature less than 120°F).

- The Rotational Limit Stop may need to be re-adjusted seasonally if the inlet water temperature changes. For example, during the winter, the cold water temperature is colder than it is during the summer which could result in varying outlet temperatures. A water temperature for a comfortable bath or shower is typically between 90°F - 110°F.

- Run the water so that the cold water is as cold as it will get and hot water is as hot as it will get. Place the handle on the stem and rotate the handle counterclockwise until the handle stops.

- Place a thermometer in a plastic tumbler and hold in the water stream. If the water temperature is above 120°F, the Rotational Limit Stop must be repositioned clockwise to decrease valve outlet water temperature to be less than 120°F or to meet the requirements of your local plumbing codes.

- To adjust the temperature of the water coming out of the valve, pull the disc back to a position where it is possible to remove the Rotational Limit Stop and readjust the teeth engagement position to the desired temperature. Clockwise will decrease the outlet temperature, counterclockwise will increase the outlet temperature. Temperature change per tooth (notch) could be 4° - 16°F based on inlet water conditions. Repeat as necessary. Push disc until fully seated.

WARNING: Failure to re-install Disc after setting Rotational Limit Stop could result in scald injury.

MAKE SURE COLD WATER FLOWS FROM THE VALVE FIRST. MAKE SURE WATER FLOWING FROM THE VALVE AT THE HOTTEST FLOW POSSIBLE DOES NOT EXCEED 120°F OR THE MAXIMUM ALLOWED BY YOUR LOCAL PLUMBING CODE.

IMPORTANTE:

El Ajuste del Tope que Limita la Rotación se usa para limitar la cantidad de agua caliente disponible de manera que, si ajustado apropiadamente, el usuario no se quemará si la manija se gira accidentalmente completamente a "hot" ("caliente") cuando una persona se está duchando o llenando la bañera. La primera posición permite la cantidad **MÍNIMA** de agua caliente mixta con la fría en el sistema. En la primera posición el agua estará lo más fría posible cuando la manija se gira completamente a caliente. Mientras que mueve el Ajuste del Tope que Limita la Rotación en dirección contrario a las manecillas del reloj, progresivamente aumentará el agua caliente en la mezcla más y más. La última posición a la izquierda es la de mayor cantidad de agua caliente en la mezcla, y tiene el mayor riesgo de lesión por quemadura si alguien accidentalmente abre la manija de la válvula completamente a la posición caliente mientras que se baña o llena la bañera.

ADVERTENCIA: En algunos casos, ajustar el Ajuste del Tope que Limita la Rotación en la posición más caliente (completamente en el sentido contrario a la dirección de las manecillas del reloj) puede resultar en lesión por quemadura. Es necesario ajustar el Tope que Limita la Rotación de manera que el agua que sale de la válvula no queme o escalde al usuario cuando la manija de la válvula se gira al lado caliente.

- De acuerdo con la mayoría de los estándares de la industria, la temperatura máxima permisible del agua que sale es 120°F (Sus códigos locales de plomería pueden requerir una temperatura de agua menor de 120°F).

- El Tope que Limita la Rotación puede requerir el ajuste estacional si la temperatura del agua cambia. Por ejemplo, durante el invierno, la temperatura del agua fría es más fría que durante el verano resultando en temperaturas variadas en el agua de salida. Una temperatura de agua para un baño o ducha confortable típicamente es entre 90°F - 110°F.

- Deje que el agua corra de manera que el agua fría esté lo más fría posible y la caliente esté lo más caliente posible. Coloque la manija en la espiga y gire la manija en dirección contraria a las manecillas del reloj hasta que la manija pare.

- Coloque el termómetro en un vaso plástico y sosténgalo bajo el chorro de agua. Si la temperatura de agua está por encima de 120°F el tope que limita la rotación debe ajustarse otra vez moviéndolo en sentido de las manecillas del reloj para reducir la temperatura del agua de salida de la válvula a menos de 120°F o para que cumpla con los requisitos de sus códigos locales de plomería.

- Para ajustar la temperatura del agua que sale de la válvula, hale el disco otra vez a la posición donde se puede remover el Tope del Limite Rotacional y reajuste el engranaje de los dientes a la posición para la temperatura deseada. Al mover en dirección de las manecillas del reloj reducirá la temperatura del agua de salida, y al contrario aumentará la temperatura del agua de salida. El cambio de temperatura por cada diente (muesca) puede ser de 4°F-16°F dependiendo de la condición del agua de entrada. Si es necesario repítalo. Presione el disco hasta que está asentado completamente.

ADVERTENCIA: Si no reinstala el Disco después de hacer el ajuste del Tope del Limite Rotacional pudiera escaldarse con agua demasiado caliente.

ASEGÚRESE QUE EL AGUA FRÍA FLUYA DE LA VÁLVULA PRIMERO. ASEGÚRESE QUE EL AGUA QUE FLUYE DE LA VÁLVULA EN LA POSICIÓN MÁS CALIENTE POSIBLE NO EXCEDA 120°F O EL MÁXIMO PERMITIDO POR SUS CÓDIGOS LOCALES DE PLOMERÍA.

IMPORTANT:

La butée antiéchaudage sert à limiter la quantité d'eau chaude disponible de sorte que l'utilisateur ne risque pas d'être ébouillanté si la manette est amenée à l'extrémité de la plage du côté « Eau chaude » par inadvertance alors que quelqu'un se trouve sous la douche ou dans la baignoire. La première position est celle qui laisse passer le MOINS d'eau chaude à mélanger avec l'eau froide. À la première position, l'eau est aussi froide que possible alors que la manette se trouve à l'extrémité de la plage du côté « Eau chaude ». En tournant la butée antiéchaudage, vous ajoutez progressivement de plus en plus d'eau chaude au mélange. La dernière position à gauche est celle qui laisse passer le plus d'eau chaude et le risque d'ébouillantage est plus élevé si quelqu'un amène la manette à l'extrémité de la plage du côté « Eau chaude » par inadvertance alors que quelqu'un d'autre se trouve sous la douche ou dans la baignoire.

MISE EN GARDE : Dans certains cas, l'ébouillantage est possible si la butée antiéchaudage se trouve à la position la plus chaude (à l'extrémité de la plage dans le sens antihoraire). Il faut régler la butée antiéchaudage de manière que l'eau s'écoulant du robinet ne puisse causer de brûlures à l'utilisateur alors que la manette est à la position « Eau chaude ».

- Selon la plupart des normes en vigueur dans l'industrie, la température de l'eau à la sortie du robinet ne doit pas dépasser 120 °F (certains codes de plomberie peuvent prescrire une température inférieure à cette valeur).

- La butée antiéchaudage peut devoir être réglée à chaque saison si la température de l'eau d'alimentation change. Par exemple, la température de l'eau froide est plus basse en hiver qu'en été, ce qui peut entraîner une variation de la température à la sortie du robinet. La température idéale pour la douche ou le bain se situe généralement entre 90 °F - 110 °F.

- Faites couler l'eau de sorte qu'elle soit aussi froide que possible et aussi chaude que possible. Placez ensuite la manette sur la tige et tournez la manette dans le sens antihoraire jusqu'à l'extrémité de la plage.

- Placez un thermomètre dans un gobelet en plastique et mettez celui-ci sous le jet d'eau. Si la température de l'eau est supérieure à 120°F, tournez la butée antiéchaudage dans le sens horaire pour abaisser la température de l'eau à la sortie du robinet sous 120°F ou à une valeur conforme aux exigences du code de plomberie de votre région.

- Pour régler la température de l'eau qui s'écoule de la soupape, amenez le disque dans une position où il est possible d'enlever la butée de température et engagez les dents dans les encoches qui correspondent à la température désirée. La température diminue dans le sens horaire et augmente dans le sens antihoraire. La variation de température est de 4 à 16 °F par cran, selon la température de l'eau d'alimentation. Refaites le réglage au besoin. Remettez le disque jusqu'à ce qu'il soit entièrement assis.

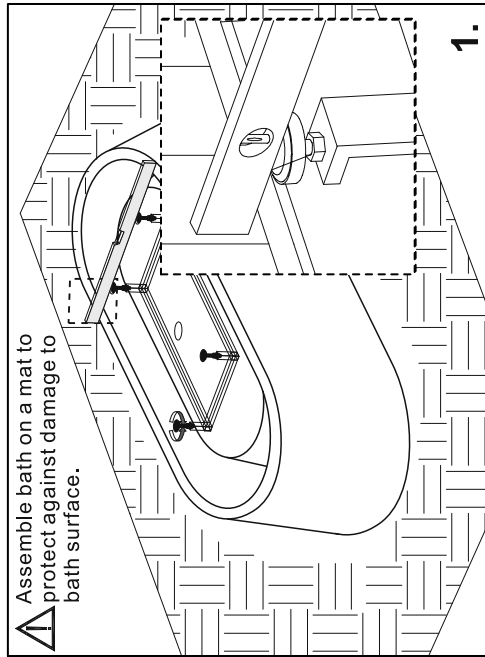
MISE EN GARDE : Il y a un risque d'ébouillantage si on omet de réinstaller le disque après avoir réglé la butée de o caliente.

ASSUREZ-VOUS QUE L'EAU FROIDE S'ÉCOULE DE LA SOUPAPE EN PREMIER. ASSUREZ-VOUS QUE LA TEMPÉRATURE DE L'EAU NE PEUT DÉPASSER 120 °F OU LA VALEUR MAXIMALE AUTORISÉE PAR LE CODE DE PLOMBERIE DE VOTRE RÉGION.

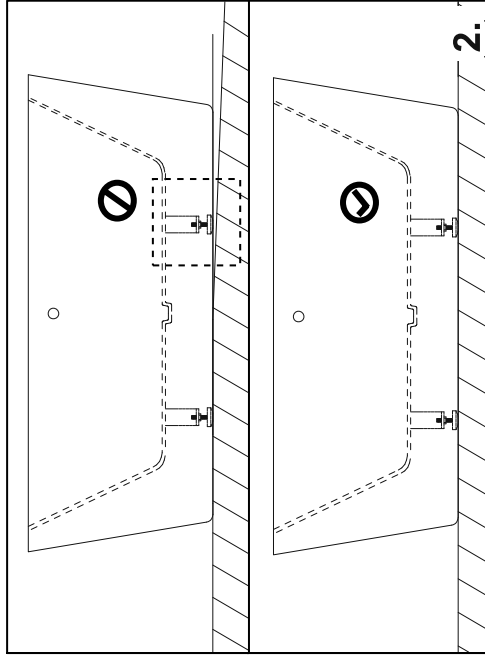
ACRYLIC BATHTUB INSTALLATION

CELADON

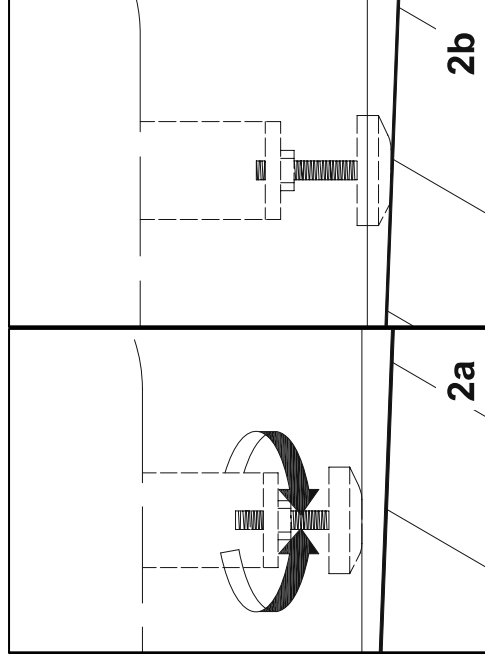
CELADON - freestanding tub



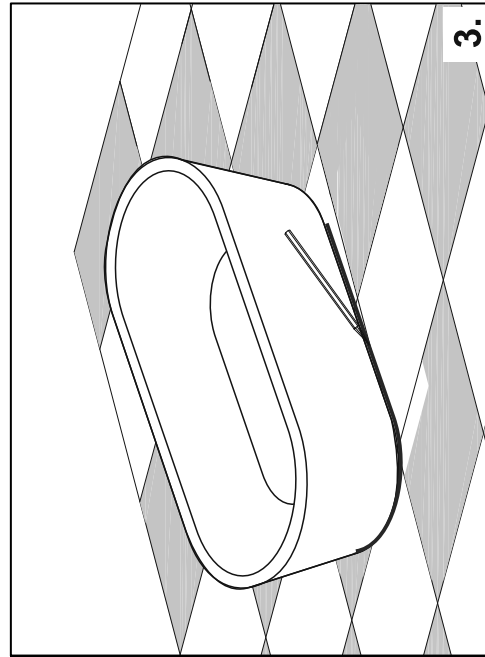
- Ensure legs are adjusted in line with the base of bath.



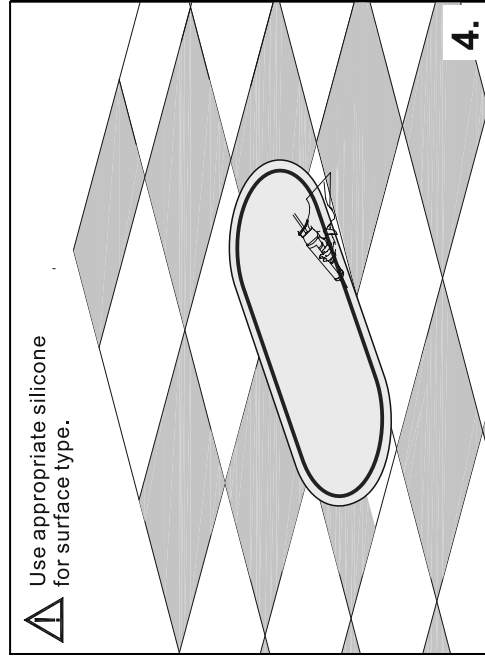
- Check that bath sits flat; if required adjust legs to compensate for floor level.



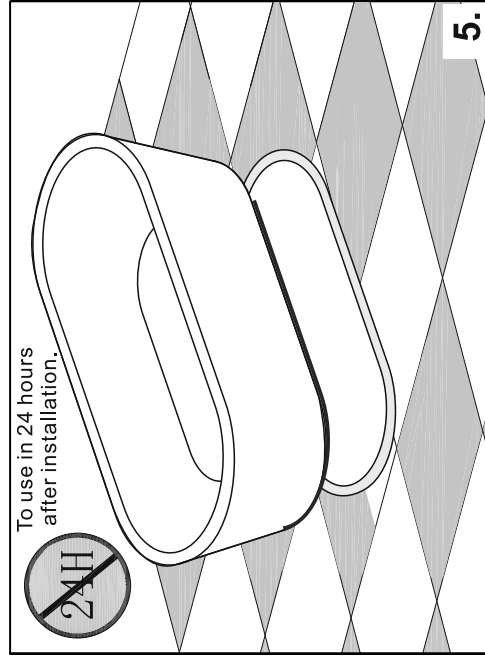
- Before step 3 set waste connection in position.



- With pencil trace outline of bath.



- Apply a thick bead of silicone within bath outline.



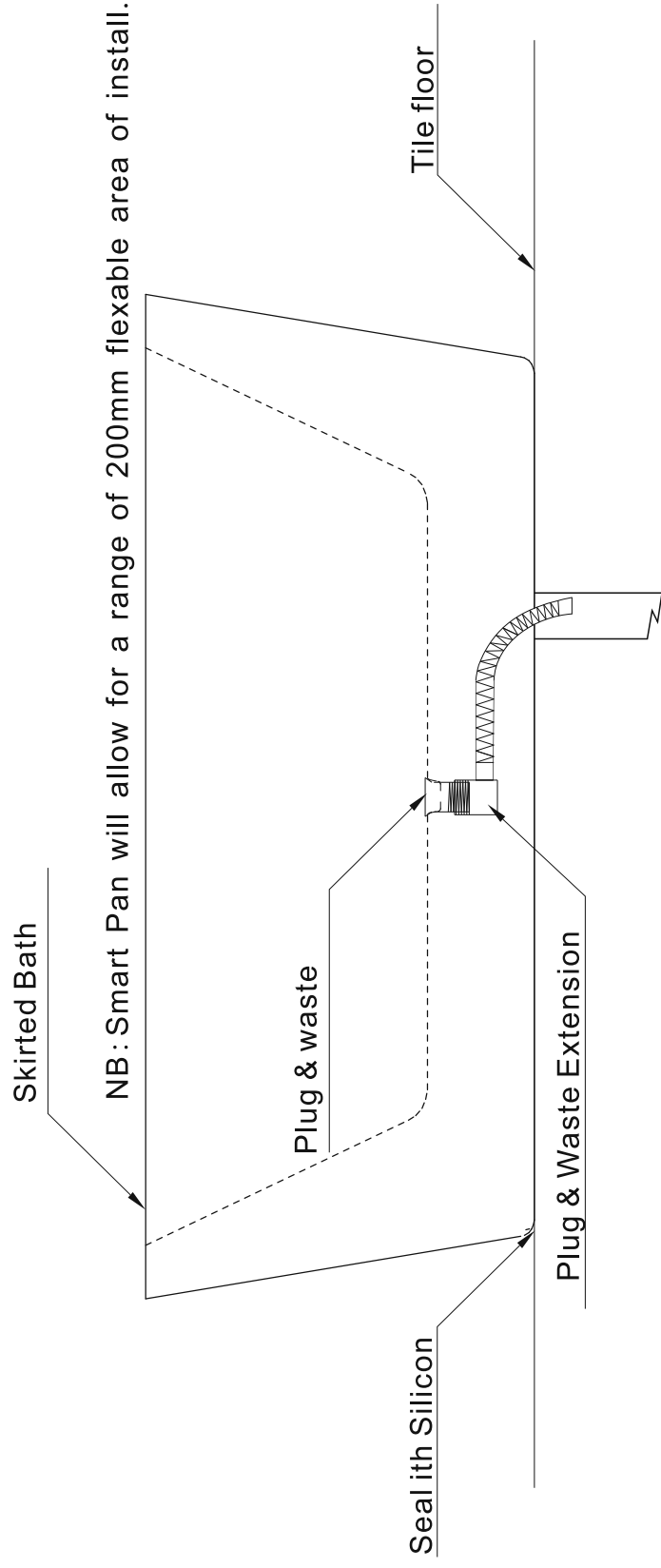
- Set bath in final position.



This installation guide does not include details of waste connection; final decision about installation of waste connection should be taken by a suitably qualified person.

ACRYLIC BATHTUB INSTALLATION

Suggested Skirted Bath Install Method
Other methods be adopted pending type of installation



Cleaning and Maintenance

IMPORTANT! Use only the recommended cleaners and procedures described in this section.

Use of other materials and methods may harm your whirlpool and will VOID THE WARRANTY. FAILURE TO PERFORM PERIODIC MAINTENANCE PROCEDURES MAY CAUSE SAFETY AND/OR HEALTH PROBLEMS AND MAY HARM THE BATHTUB.

Do not use wire brushes, knives or sharp objects to remove stains or other surface blemishes.

Do not use full strength bleach or ammonia cleaning solutions. Chemically active cleaning solutions can damage the bath surface.

Do not use abrasive cleansers or solvents as they will scratch and dull the acrylic surfaces.

Do not allow nail polish remover, acetone, dry-cleaning fluid, paint remover or other solvents to come into contact with the bath surface.

Always test your cleaning solution on an inconspicuous area before applying to the entire surface.

Wipe surfaces clean and rinse completely with water immediately after applying cleaner. Rinse and dry any overspray that lands on nearby surfaces.

Limited Warranty

Bathtubs, wall tile, fiberglass fixtures, and countertops are warranted for a period of FIVE years against peeling or other failure of adhesion of the coating. Refinishing of sinks, floors, shower pans, spot (chip repairs) and all other surfaces are warranted for a period of ONE year against failure of adhesion, unless some other period is otherwise stated on the face of the invoice.

Leaks & Rust Exclusion: While many of the techniques and products we use can help in stopping leaks and eliminating rust, no warranty is given that any leak or rust will cease, fail to re-occur, or that any future leaks or rust are prevented as a result of refinishing.

This warranty is subject to the following conditions any of which will **void** any warranty:

1. The surface must not be allowed to remain continuously wet from items such as bath mats left on the surfaces without drying out between uses.
2. The fixture must not be used for water storage or contain standing water for extended periods of time.
3. Damage caused by continuous wetness from leaking or dripping plumbing.
4. Damage, chips, or nicks caused by sharp or falling objects, by misuse or by accident.
5. Staining from chemicals, rust or hair dyes. Rust may return to refinished areas especially in overflow or drain areas. The return of rust is NOT covered under warranty.
6. You cannot use abrasive cleaners such as powdered cleansers. These types of materials will abrade the surface resulting in a dullness of the finish and possibly early failure of the finish.
7. Any movement in the substructure of the surface which causes movement in the refinished surfaces resulting in a crack or split in the refinished surface, grout lines, laminate seam lines, caulking lines, or countertop/backsplash seams.

The following warranty limitations apply from the date of purchase:

All Acrylic Products 5 year

Shower Enclosures 2 year

Whirlpool/Jet Air Systems and Motors 2 year.

Waiting Period

New finishes normally need 24-48 HOURS to cure thoroughly. Please do not use the fixture during this time and see to it that the repaired areas remain free of water.

Avoid placing heavy objects on a resurfaced countertop for at least three (3) days. Some finishes may be able to be used in a shorter timeframe. Please refer to your technician to see if your surface may be able to be used in a shorter time period.

CELADON - freestanding tub

The Celadon logo consists of the word "CELADON" in white, uppercase, sans-serif font, centered within a solid green rectangular background.

To:

Miller Mechanical Contractors and Engineers LLC

1976 Airport Industrial Park Dr SE, Marietta, GA 30060

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This limited warranty shall be deemed void if the goods are not installed properly in accordance with manufacturer's instructions and, as applicable, industry specifications and standards or the goods are damaged or abused after installation. This is the entire warranty provided by CCM. No other express or implied warranties are provided by CCM.

Signed,

A handwritten signature in black ink, appearing to read "Ruby Lee", is written over a horizontal line.

Ruby Lee
President
Celadon Construction Materials, LLC

CELADON - kitchen faucets

Single Hole Kitchen faucet with side spray

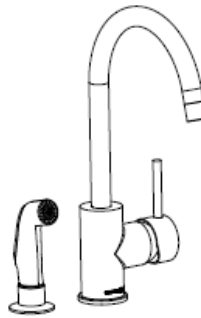


ASME A112.18.1/CSA B125.1

NSF61-2012&NSF 372

Models

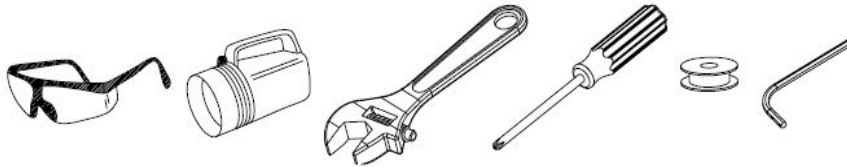
HW-8209



HW-8209

CELADON

You may need:



For easy installation of your faucet you will need:

To **READ ALL** the instructions

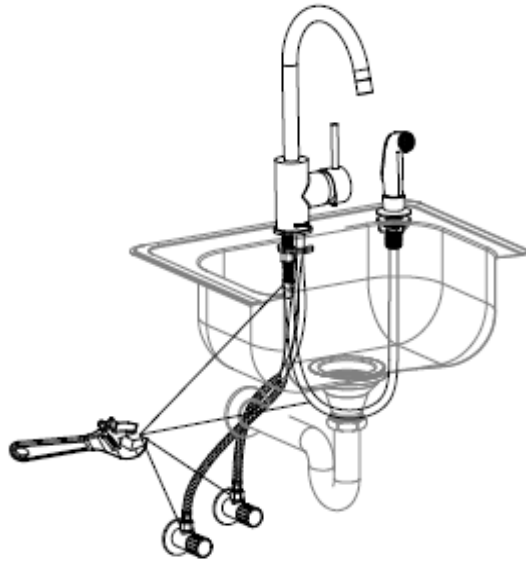
completely before beginning.

To **READ ALL** warnings, care, and

maintenance information.

To purchase the correct water

supply hook-up.



CELADON - kitchen faucets

Cleaning and Care

Care should be given to the cleaning of this product.

Although its finish is extremely durable, it can be damaged by harsh abrasive or polish. To clean, simply wipe gently with a damp cloth and blot dry with a soft towel.

WARNING

Scrubbing Bubbles Bathroom Cleaner and Lysol Basin Tub and Tile Cleaner must not be used on the clear knob handles and levers. Use of these cleaners can result in cracked or severely damaged handles. If overspray gets onto the handles, immediately wipe them dry with a soft cotton cloth.

LIFETIME FAUCET AND FINISH LIMITED WARRANTY

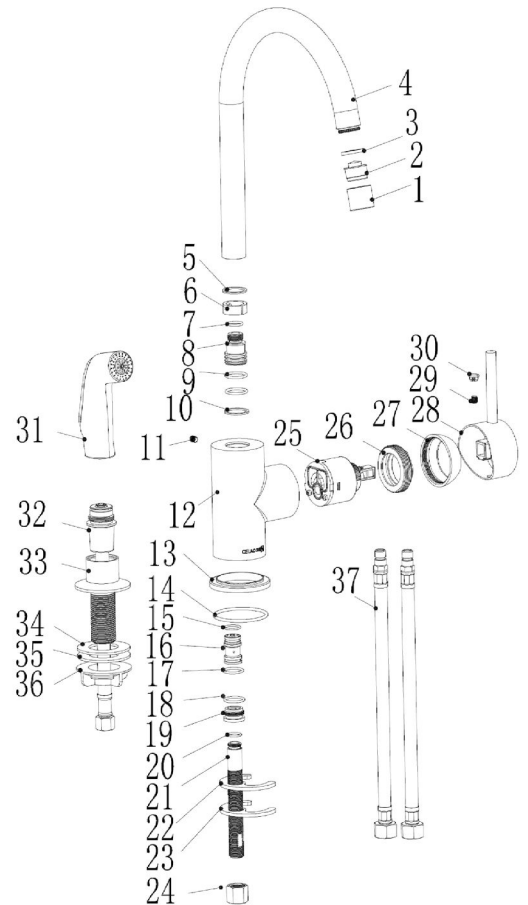
All parts and finishes of the faucet are warranted to the original consumer purchaser to be free from defects in material & workmanship for as long as the original consumer purchaser owns their home. We recommend using a professional plumber for all installation & repair. We will replace, FREE OF CHARGE, during The warranty period, any part or finish that proves Defective in material and/or workmanship under Normal installation, use & service. This warranty is extensive in that it covers replacement of all defective parts and even finish, but these are the only two things that are covered. LABOR CHARGES AND/OR DAMAGE INCURRED IN INSTALLATION, REPAIR, OR REPLACEMENT AS WELL AS ANY OTHER KIND OF LOSS OR DAMAGES ARE EXCLUDED. Proof of purchase (original sales receipt) from the original consumer purchaser must be made available to us for all warranty claims.

This warranty excludes all industrial, commercial & business usage, whose purchasers are hereby extended a five year limited warranty from the date of purchase, with all other terms of this warranty applying except the duration of the warranty.

CELADON - kitchen faucets

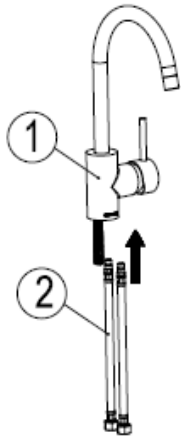
HW-8209

Part No.	Description	QTY	Part No.	Description	QTY
1	Housing	1	20	O-ring	1
2	Aerator	1	21	Screw rod	1
3	O-ring	1	22	Rubber gasket	1
4	Pipe	1	23	Metal gasket	1
5	O-ring	1	24	Nut	1
6	Plastic washer	1	25	Cartridge	1
7	O-ring	1	26	Bonnet nut	1
8	Adaptor	1	27	Cap	1
9	O-ring	2	28	Handle	1
10	Washer	1	29	Allen screw	1
11	Allen screw	1	30	Button	1
12	Body	1	31	Hand sprayer	1
13	Base	1	32	Bugle head	1
14	O-ring	1	33	Base	1
15	O-ring	1	34	Washer	1
16	Diverter body	1	35	Metal washer	1
17	O-ring	1	36	Nut	1
18	O-ring	1	37	Supply hose	2
19	Brass plug	1			



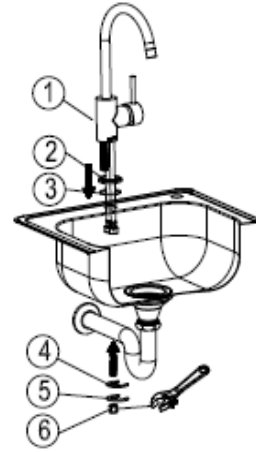
CELADON - kitchen faucets

1



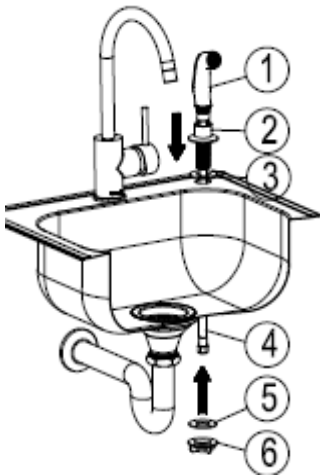
Connected the supply hose(2) with faucet(1).
Tighten it but do not overtighten.

2



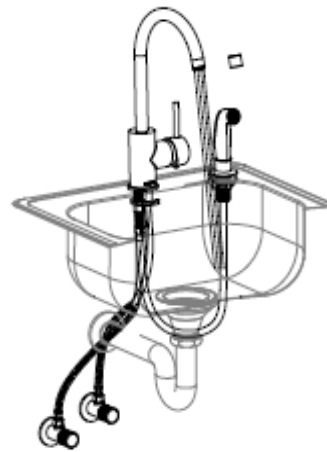
Assembly washer (2)(3) onto faucet (1), position faucet on sink . Slide gaskets(4)(5) and nut(6).
Tighten the nut.

3



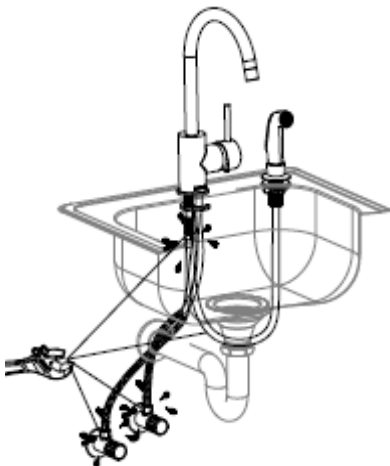
Slide the metal washer(5) and nut(6) from the side spray. insert sprayer(1) base(2) and washer(3) on the sink.
Then tighten the nut(6).

4



Remove the aerator and open faucet handle all the way on .
Turn on hot and cold water supplies and flush water lines for one minute.
Important: This flushes away any debris that could cause damage to internal parts.

5



Check all connections at arrows for leaks.
Re-tighten if necessary, but do not overtighten.

CELADON

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Signed,



Ruby Lee
President
Celadon Construction Materials, LLC

CELADON - apartment kitchen sinks

undermount

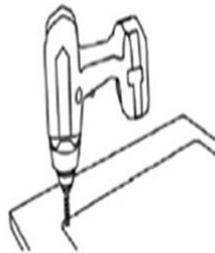


CELADON

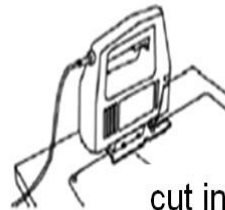
Cut out line



A: draw line(cut out size)



B:drill hole(four corner inner side)



cut inner side

C:electric saw cut hole (cut inner side)



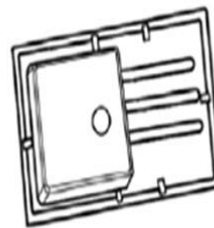
D:wipe&clean



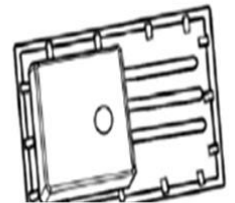
E:coat glue equal around



F:install & fix sink in cabinet hole



G:paste fixed board



H:paste more board to fixed stably

CELADON

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President
Celadon Construction Materials, LLC

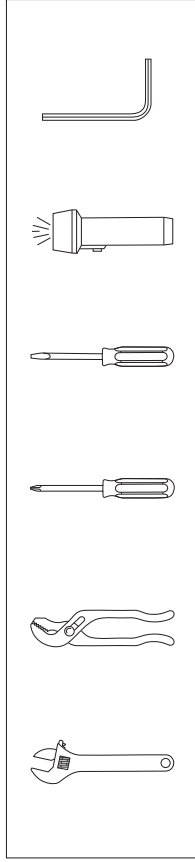
Installation Guide

Thank you for selecting this product!

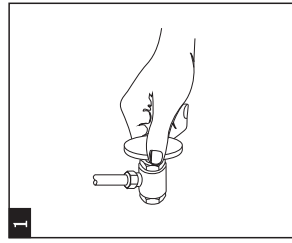
IMPORTANT NOTICES: For easy installation, please read all the instruction completely before beginning. Before installing this product ,make sure that water line trash is cleared to avoid blockage .

WARNING: Assembly by a professional plumber is a must .

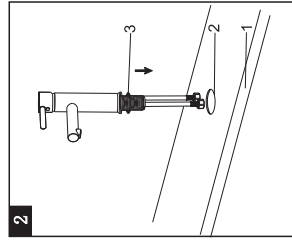
YOU MAY NEED



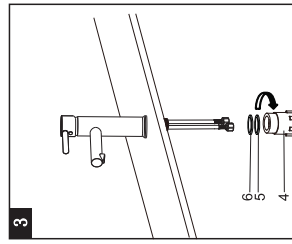
INSTALLATION PROCEDURES



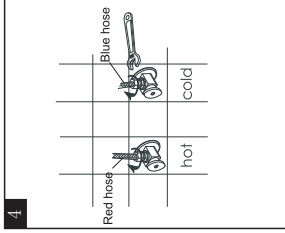
You should clean all the dirt from valve outlets. Turning off the water supply valves. This is usually found near the water meter. If you are replacing an existing faucet, remove the faucet from the sink and clean the sink surface thoroughly



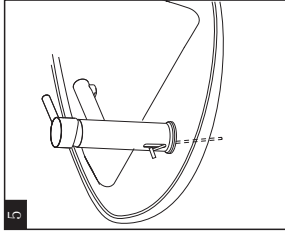
Drill a Ø33-Ø35 mm hole (2) in sink (1) . Put rubber washer (3) into base groove and then insert the faucet through the hole (2).



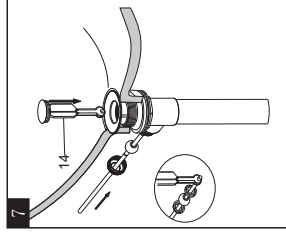
Put all hose through the plastic gasket (6) then through metal gasket (5), finally screw the fitting nut (4) tight it.



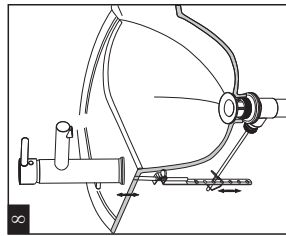
Check the flexible hoses to make it clean and connect them to the water-supplying valve(left to hot water and right to cold)



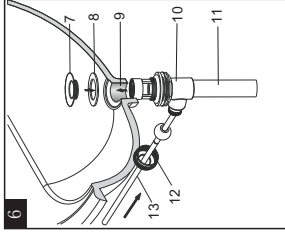
Slide lift rod as shown. Thread lift rod into lift knob.



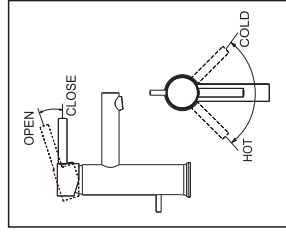
As shown, place the drain stopper (14) into the drain rod into the ball rod opening through stopper hole, and threaded it.



Insert lift rod through lift rod strap and secure with set screw. Place the ball rod through one of the holes on the lift rod strap. Secure with it the spring clip.



Insert flange(7) with washer (8) through sink drain Hole(9).Then thread the drain body(10) into the flange from under. Holding the drain body(10) in position with ball rod (13) opening facing back. Tighten the lock nut(12).Finally thread drain tailpiece (11) into drain body.



Pull the handle upward in horizontal to turn on the faucet, downward in horizontal line to turn off. Face the spout, move the handle leftward to control hot water and rightward to control cold water.

CAUTION: Maintenance

- 1.Replacement parts may be available at the store where you purchased your faucet .
- 2.Always turn off water and relieve pressure working before on your faucet.

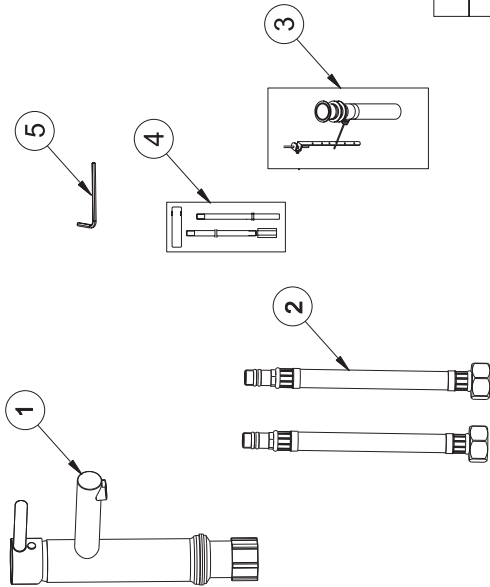
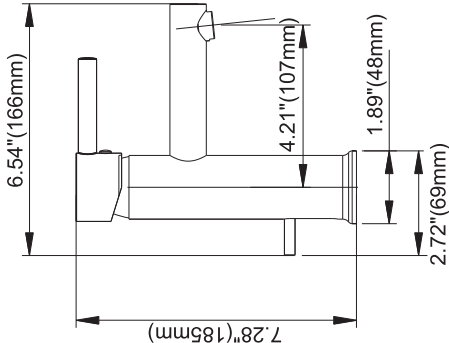
NOTES: Cleaning Instructions

- 1.To keep the faucet clean you should clean the faucet frequently.
- 2.Clean the faucet with clear water or mild ,then dry the faucet with soft cotton cloths.
- 3.Do not use any abrasive cleansers cloths ,or paper towel.
- 4.Do not use any acid or abrasive detergent.

TROUBLE-SHOOTING

If you've followed the instruction carefully and your faucet still does not work properly, take these corrective steps.

Problem	Cause	Action
Leaks underneath handle.	Cartridge has come loose.	Tighten the cartridge.
Aerator leaks or has an inconsistent water flow pattern.	Aerator is dirty or worn out or misfitted.	Unscrew the aerator to clean or replace washer , or replace the aerator .
Water will not shut off completely.	Dirty or worn out washer in cartridge.	Remove handle and cartridge to check if the washer is damaged permanently or dirty. Re-install cartridge .



ITEM	DESCRIPTION
5	Allen key
4	Lift rod
3	Pop-up
2	Hose
1	Body

CELADON

CELADON

To:

Miller Mechanical Contractors and Engineers LLC

1976 Airport Industrial Park Dr SE, Marietta, GA 30060

ONE YEAR LIMITED WARRANTY

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Signed,

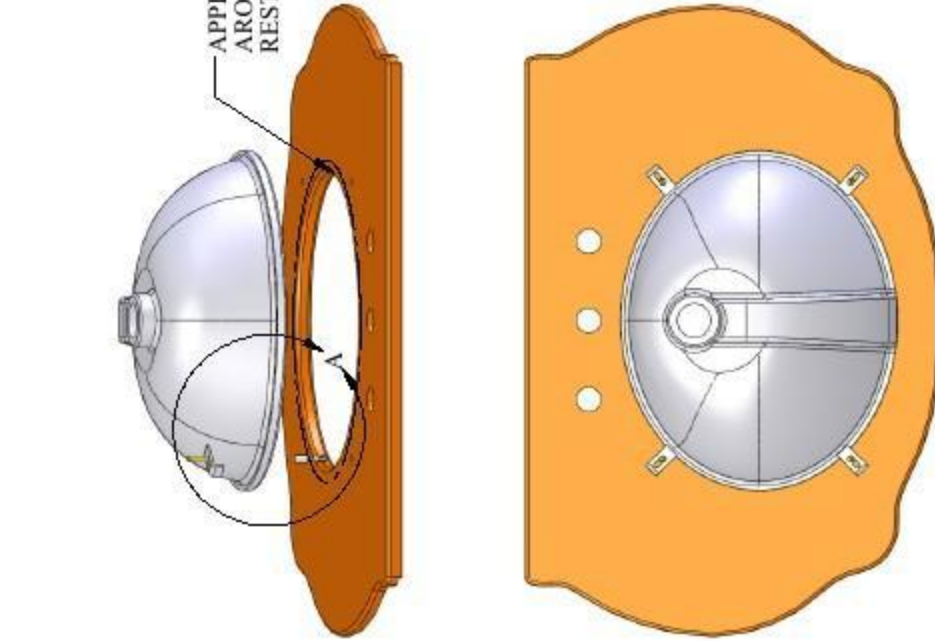


Ruby Lee
President
Celadon Construction Materials, LLC

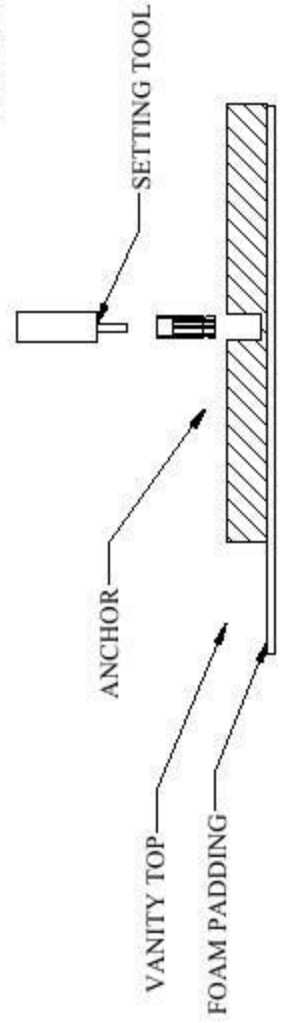
CELADON - lavatory basins

INSTALL THE ITEMS IN THE ORDER SHOWN IN THE DRAWING

APPLY SEALANT
AROUND THE MOUNT
REST AREA



DETAIL A
SCALE 1:2



CELADON

CELADON

To:

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Signed,



Ruby Lee
President
Celadon Construction Materials, LLC

Installation Instruction

Two piece toilet

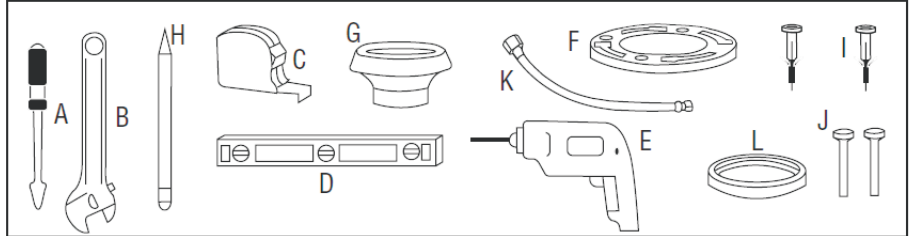
Model:AN5887/AN5888

To ensure this product is installed properly, please read these instructions carefully before you begin.
(Certain installations may require professional help.) Also be sure your installation conforms to local codes.

CAUTION: PRODUCT IS FRAGILE. TO AVOID BREAKAGE AND POSSIBLE INJURY HANDLE WITH CARE

RECOMMENDED TOOLS AND MATERIALS

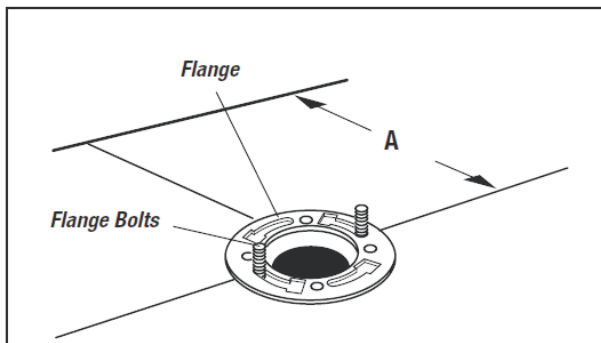
- | | |
|-----------------|-------------------------|
| A. Screwdriver | G. Wax Seal |
| B. Wrench | H. Marker |
| C. Tape Measure | I. Plugs |
| D. Level | J. Screws |
| E. Drill | K. Flexible Supply Line |
| F. Flange | L. Gasket Adapter |



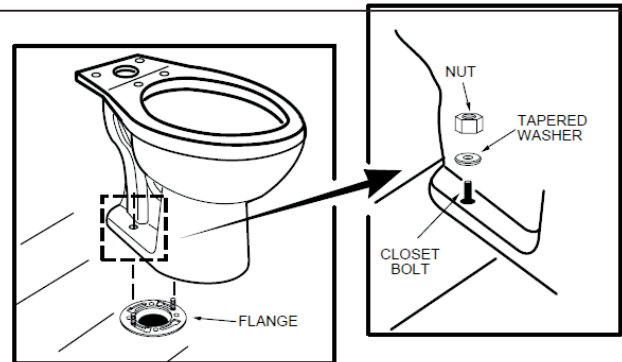
REMOVE OLD TOILET

- Close toilet supply valve and flush tank completely. Towel or sponge remaining water from tank and bowl.
 - Disconnect and remove supply line. NOTE: If replacing valve, first shut off main water supply!
 - Remove old mounting hardware, remove toilet and plug floor waste opening to prevent escaping sewer gases.
 - Remove closet bolts from flange and clean away old wax, putty, etc. from base area.
- NOTE: Mounting surface must be clean and level **before** new toilet is installed!

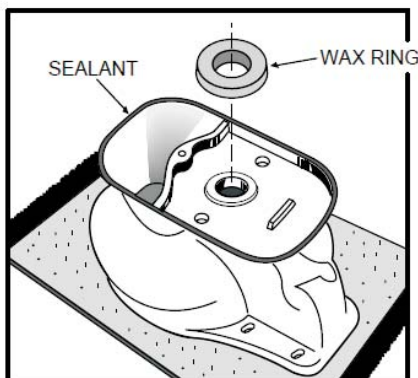
INSTALL NEW TOILET



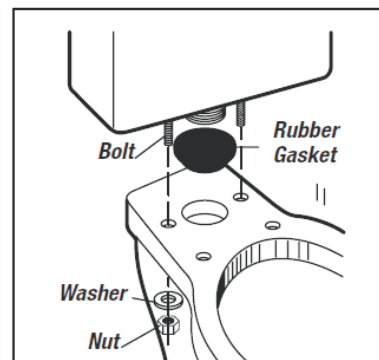
- If new installation, install a toilet flange into waste line per flange instructions. Make sure you have the correct rough in toilet.
- Remove the rag from the drain. Install the flange bolts into the flange.



- Unplug floor waste opening and install toilet on closet flange so bolts project through mounting holes.
- Install the washers, nuts, and caps on the flange bolts snug. Be careful not to over tighten because the china may break.



- Turn the bowl upside down and place it on the flattened carton box to prevent damage.
- Install a wax ring evenly around the bowl flange.



- Install the tank-to-bowl-gasket, tank bolts with washer if it is not already installed, and place tank on bowl.

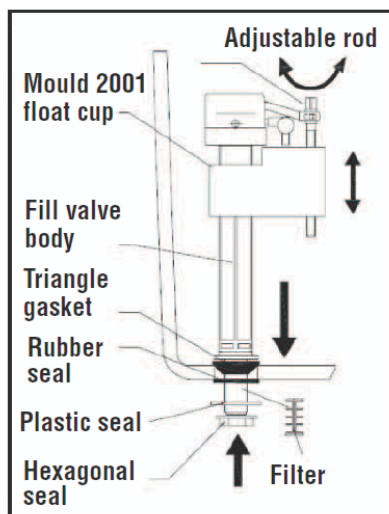
9. Snug and level the tank nuts using a socket wrench and holding the truss head screw firmly inside the tank with a screwdriver.

CAUTION: DO NOT overtighten nuts more than required for a snug fit. DO NOT spin bolts inside tank with a screwdriver.

10. Connect the water supply to the ballcock. Only hand tighten the supply line. **DO NOT USE CHINNAEL LOCKS.**

11. Turn on water, flush, and check for leaks. Adjust ballcock to proper water line heights as noted on the flush valve tube.

ADJUSTMENTS



Water level adjustment: Rotating adjustable rod will adjust the height of float cup and change water level.

To achieve original flush volume, adjust the water level to the waterline mark on the inside wall of water tank.

12. Install seat cover. (The seat cover is provided by manufacturer). Use the supplied seat bolts and washers. Check for leaks over the next several days.

REPAIRS

All replacement parts as below are available. Please identify the toilet model and what parts you require when you contact us or local retailer.

Flush valve
Fill Valve
Push Button Kit
Full set of Seat cover
Seat bolts
Seat washers
Floor fixing bolts
Bolts to Connect Tank and Bowl.

CARE AND CLEANING

For general cleaning, use a mild, nonabrasive soap and warm water. Do not use abrasive cleaners (such as cleaners contain sand or silica that will scratch the china surface). Common bowl cleaners may be used on the china surface of the bowl. Do not use "in-tank" bowl cleaners because they can contain aggressive chemicals that attack the tank components (see warranty exclusions).

WARRANTY

This product is guaranteed to be free from structural and manufacturer defects for the applicable warranty period shown below. This non-transferable guarantee applies only to the original purchaser and proof of purchase is required for all claims.

- 1 year limited warranty on fittings.
- 3 year limited warranty on ceramics

Exclusions

This warranty excludes defects resulting from:

- Improper installation whereby ANSON'S installation instructions are not followed correctly.
- If it has been altered in any way after shipping.
- If it has been used for any application other than for home use
- Improper maintenance resulting from failure to reasonably clean, care for or maintain a product in accordance to ANSON'S cleaning instructions.
- **USE OF ANY TOILET CLEANERS THAT ARE APPLIED IN THE TOILET TANK WILL VOID THE WARRANTY.** (In-tank cleaners can damage the rubber, metal and/or plastic components causing leaks and reducing performance).

Warranty Claim Procedure

If a claimable defect occurs, please contact your local retailer at _____

Before you make your claim call, please make sure you have:

1. The description of the toilet
2. Proof of sale
3. Details regarding the defect
4. Name and address of the owner and installer.

Claims must be filled out in writing and returned within six (6) months of appearance of defect. Failure to comply with this stipulation will make the warranty null and void. We reserve the right to a thirty-day (30) delay following receipt of claim in which to inspect the product. We assume no responsibility for labor costs or removing/replacing a previously installed product or transportation or return of a product.



To:

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Signed,

A handwritten signature in black ink that reads "Ruby Lee". The signature is written in a cursive, flowing style. Below the signature is a horizontal line.

Ruby Lee
President
Celadon Construction Materials, LLC

SOLID BRASS SHOWER KIT



CELADON

Models

MJ-TSP10349



MJ-TSP10349

You may need:



For easy installation of your faucet you will need:

To **READ ALL** the instructions

completely before beginning.

To **READ ALL** warnings, care, and

maintenance information.

To purchase the correct water

supply hook-up.



CELADON - tub and shower valve & trim

Cleaning and Care

Care should be given to the cleaning of this product. Although its finish is extremely durable, it can be damaged by harsh abrasive or polish. To clean, simply wipe gently with a damp cloth and blot dry with a soft towel.

WARNING

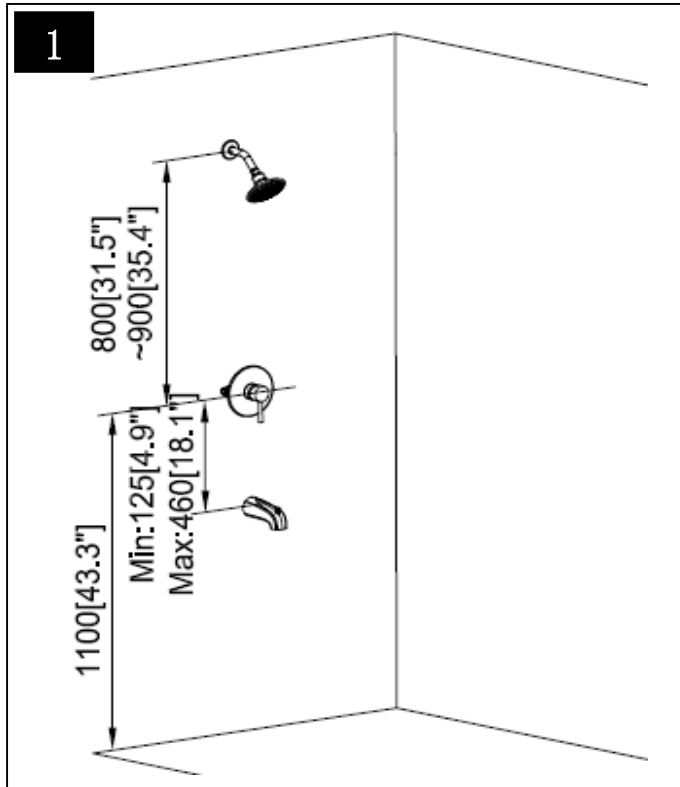
Scrubbing Bubbles Bathroom Cleaner and Lysol Basin Tub and Tile Cleaner must not be used on the clear knob handles and levers. Use of these cleaners can result in cracked or severely damaged handles. If overspray gets onto the handles, immediately wipe them dry with a soft cotton cloth.

LIFETIME FAUCET AND FINISH LIMITED WARRANTY

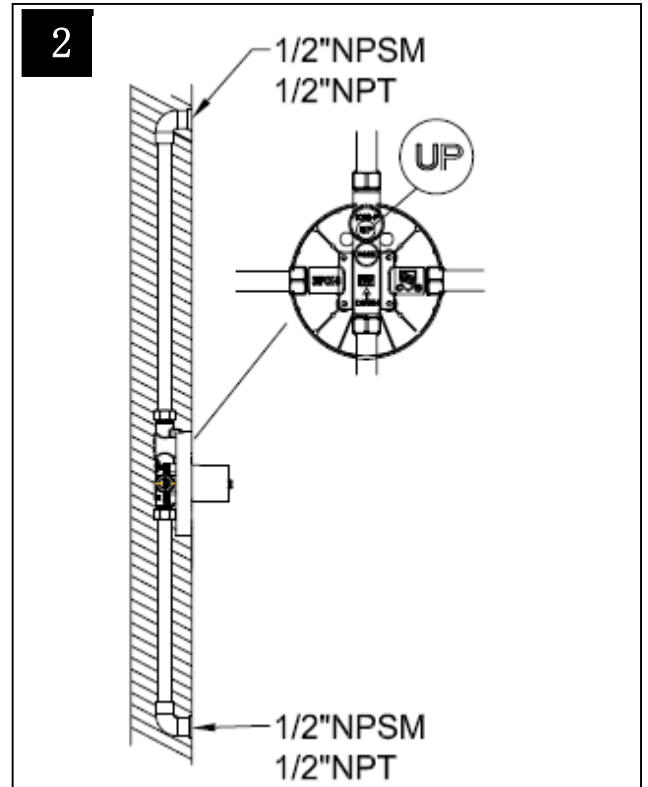
All parts and finishes of the faucet are warranted to the original consumer purchaser to be free from defects in material & workmanship for as long as the original consumer purchaser owns their home. We recommend using a professional plumber for all installation & repair. We will replace, FREE OF CHARGE, during The warranty period, any part or finish that proves Defective in material and/or workmanship under Normal installation, use & service. This warranty is extensive in that it covers replacement of all defective parts and even finish, but these are the only two things that are covered. LABOR CHARGES AND/OR DAMAGE INCURRED IN INSTALLATION, REPAIR, OR REPLACEMENT AS WELL AS ANY OTHER KIND OF LOSS OR DAMAGES ARE EXCLUDED. Proof of purchase (original sales receipt) from the original consumer purchaser must be made available to us for all warranty claims.

This warranty excludes all industrial, commercial & business usage, whose purchasers are hereby extended a five year limited warranty from the date of purchase, with all other terms of this warranty applying except the duration of the warranty.

MJ-TSP10349

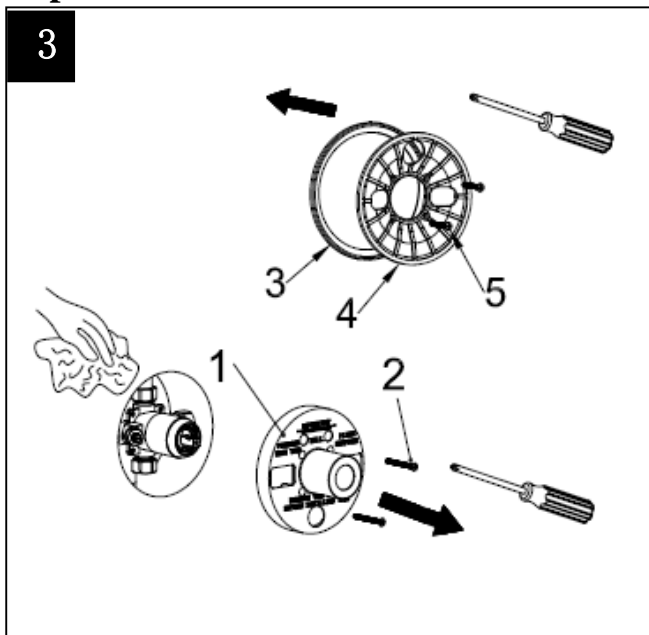


Dimensions to install the shower kits.

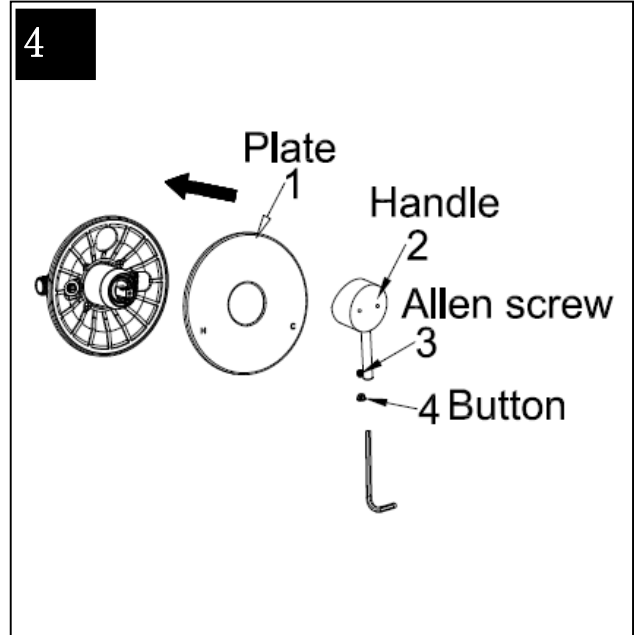


Install the valve in wall, pay attention the "up" sign.
Connect all water ways.

Step 1: Install the valve.



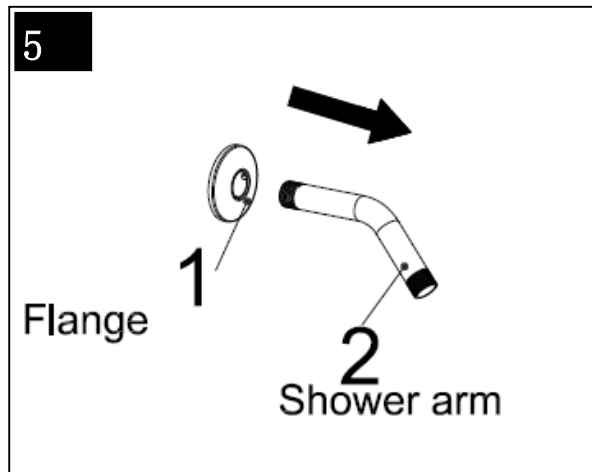
Relax screw(2), take out the plastic guide from valve.
Connect the rubber(3) with fixing plate(4).
Assembly fixing plate(4) onto valve in right position,
then slide screw(5) onto valve, tighten it.



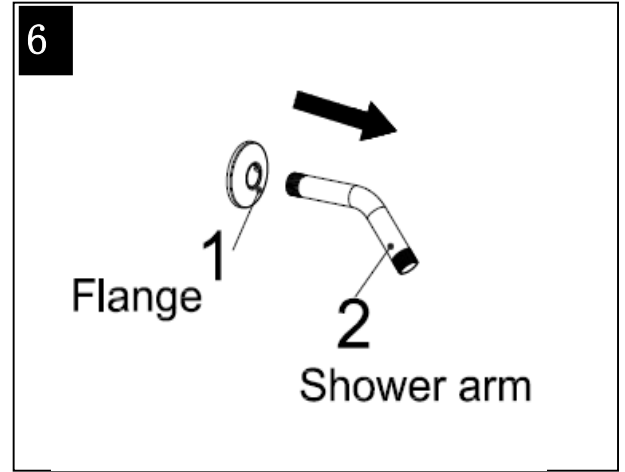
Install the plate(1) in right position onto valve.
Assembly the handle(2), then tighten the allen
screw(3) by allen key, then insert the button(4).

CELADON - tub and shower valve & trim

Step 2: Install the shower arm.

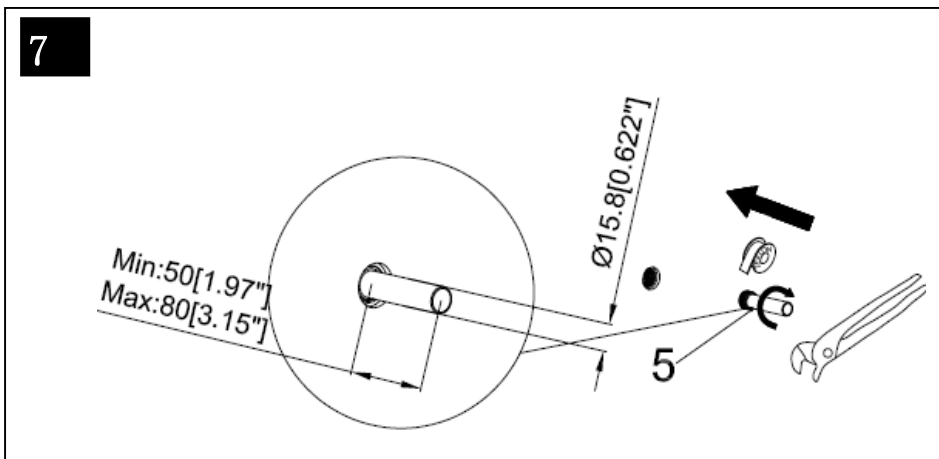


Slide the flange(1) onto shower arm(2).

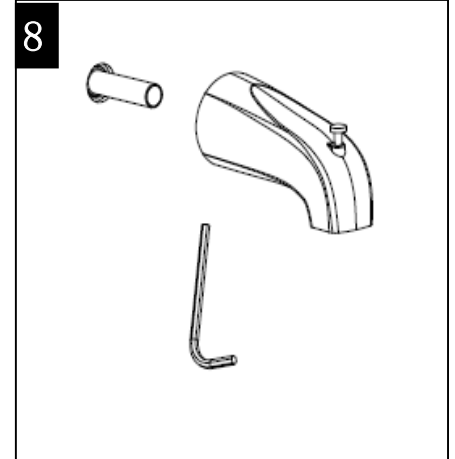


Assembly the shower arm(2) with teflon tape .

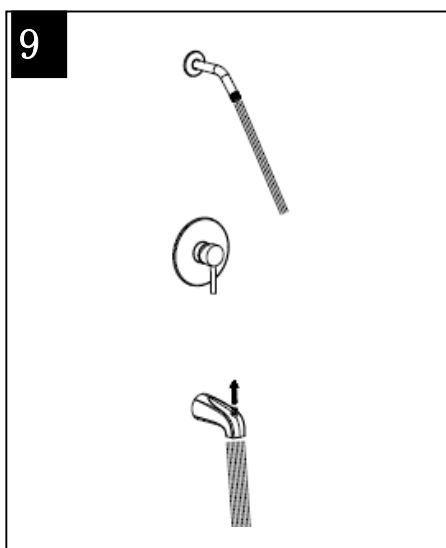
Step3: Install the spout.



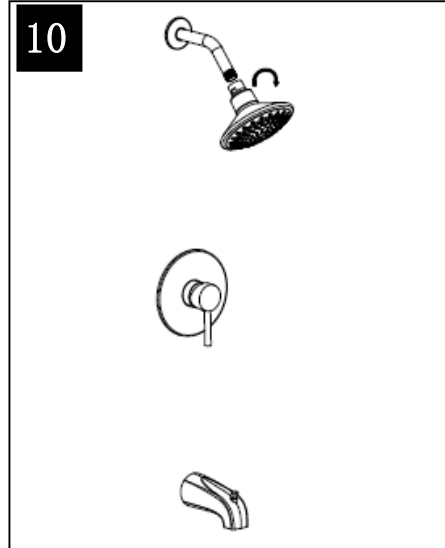
Make the hole(OD: $\text{Ø}15\text{mm}$) to assembly the adaptor(5).
Make sure the adaptor distance out of wall.(Min:50mm, Max:80mm)



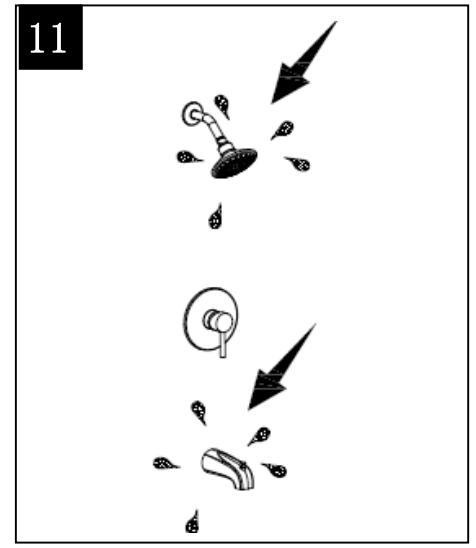
Position the spout onto adaptor, then tighten it by allen key.



Important: This flushes away any debris that could cause damage to internal parts.



Connect the shower head with shower arm.



Important: Open the valve to check all connections at arrows for leaks. Re-tighten if necessary, but do not overtighten.

CELADON - tub and shower valve & trim

The Celadon logo consists of the word "CELADON" in white, uppercase, sans-serif font, centered within a solid green rectangular background.

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Signed,

A handwritten signature in black ink, appearing to read "Ruby Lee", is written over a horizontal line.

Ruby Lee
President
Celadon Construction Materials, LLC



CELADON

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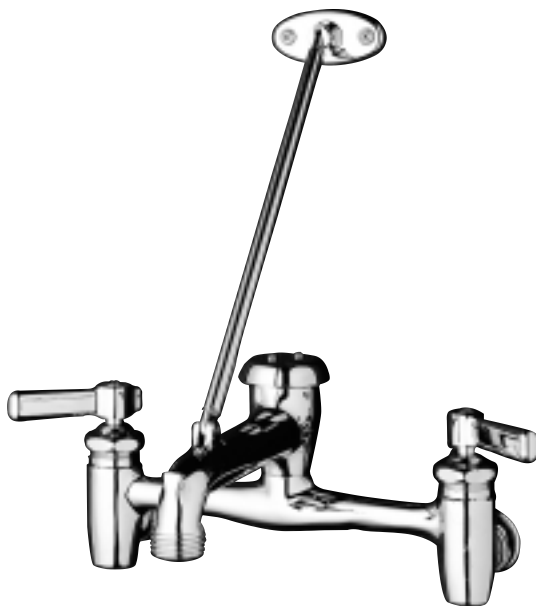


Ruby Lee
President
Celadon Construction Materials, LLC

INSTALLATION INSTRUCTIONS FOR 897 SERVICE SINK FAUCET

INSTRUCCIONES PARA LA INSTALACIÓN DEL GRIFO 897 PARA FREGADERO DE SERVICIO

DIRECTIVES DE POSE DU ROBINET MÉLANGEUR DE POSTE D'EAU 897



***INSTALLATION SHOULD BE IN ACCORDANCE WITH LOCAL PLUMBING
CODES. FLUSH ALL PIPES THOROUGHLY BEFORE INSTALLATION.***

***LA INSTALACIÓN DEBE EFECTUARSE EN CONFORMIDAD CON LOS
CÓDIGOS LOCALES DE PLOMERÍA. LAVE CON ABUNDANCIA DE AGUA
TODAS LAS TUBERÍAS ANTES DE LA INSTALACIÓN.***

***L'INSTALLATION DOIT ÊTRE CONFORME AUX CODES LOCAUX EN
MATIÈRE DE PLOMBERIE PURGER SOIGNEUSEMENT TOUS LES TUYAUX
AVANT L'INSTALLATION.***

**CHICAGO
FAUCETS** 

Last As Long As the Building



ADA Compliant

INDEX

897 Service Sink Faucet	3
“Quaturn” Cartridges	7
Care and Maintenance	9
Notes	10-11

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Cartuchos “Quaturn”	7
Cuidado y Mantenimiento	9
Notas	10-11

INDEX

Robinet Mélangeur de Poste D’eau 897	5
Cartouches “Quaturn”	8
Entretien	9
Notes	10-11

897 Service Sink

INSTALLATION INSTRUCTIONS

REFER TO PAGE 6 FOR ILLUSTRATION.

1. Water supplies must be shut off. Supply lines must have 1/2" NPT male threaded ends and should protrude 5/8" – 7/8" from the finished wall on 8" centers. Supply lines must be secured to support the faucet.
2. Apply pipe sealant to the 1/2" NPT threads of the supply lines.
3. Remove supply arms from faucet and screw onto supply lines. (See Fig. 1) Position the supply arms so they line up with the faucet inlets (8" center to center).

NOTE: The faucet must be mounted level, adjust supply arms as necessary.

4. Place the flanges over the supply arms and against the finished wall. (See Fig. 1)
5. Make sure inlet gasket is sitting in place within the union nut. (See Fig. 1) Attach faucet to supply arms and tighten union nut securely.
6. Remove the set screw from the brace rod. Place the brace rod in the slot on the spout and reattach the set screw using 3/32" hex key wrench. (See Fig. 2)
7. Place brace flange against the finished wall and center it with the spout. Secure the flange to the wall using (2) wood screws provided.

NOTE: Finished wall must be supported where the brace flange mounts to the wall to provide maximum support.

8. Turn on water supply and check supply lines and faucet connections for leaks.

SERVICE INSTRUCTIONS

1. The faucet is furnished with integral supply stops. To shut off water supply, screw stops in using 5/16" hex key wrench until water is shut off. Open the supply stop no more than three (3) complete turns.

NOTE: Stop can unscrew completely causing water to spray out from the stop opening.

2. For adjustment of cartridges, refer to page 7.

Grifo 897 Para Fregadero de Servicio

INSTRUCCIONES PARA LA INSTALACIÓN

EN LA PAGINA 6 HALLARÁ LA ILUSTRACIÓN.

1. Asegure que el suministro ha sido interrumpido / cerrado. Las líneas de suministro de agua tienen que tener una rosca de cabo macho de 1/2" NPT (12.7 mm) y tiene que sobresalir 5/8"-7/8" (15.87 mm – 22.2 mm) desde la pared acabada en centros de 8" (203 mm). Las líneas de suministro de agua tienen que estar aseguradas para sostener el grifo.
2. Aplique sellador de cañerías en la rosca de 1.2" NTP (12.7 mm) de las líneas de suministro de agua.
3. Quite los tubos de suministro de agua desde el grifo y sujete con los tornillos en las líneas de suministro de agua. (Vea la figura 1) Coloque los tubos de suministro de agua de manera que estén alineados con los agujeros de entrada del grifo (8" [203 mm] centro a centro).

NOTA: El grifo tiene que estar montado en nivel, por favor ajuste los tubos de suministro de agua si es necesario.

4. Instale el reborde conector sobre los tubos de suministro de agua y contra la pared acabada. (Vea la figura 1)
5. Asegure que el empaque de entrada está asentado en su lugar dentro de la tuerca de unión. ((Vea la figura 1) Conecte el grifo a los tubos de suministro de agua y apriete firmemente la tuerca de unión.
6. Quite el tornillo de ajustamiento desde la varilla abrazadera. Ponga la varilla abrazadera en la ranura del surtidor y vuelva a conectar los tornillos de ajustamiento usando la llave de 3/32" (1.59 mm) para tuercas Hex. (Vea la figura 2)

7. Ponga el reborde conector de la abrazadera contra la pared acabada y en el centro con el surtidor. Asegure el reborde conector en la pared usando los dos (2) tornillos suministrados.

NOTA: La pared acabada tiene que estar soportada donde el reborde conector se monta con la pared para proveer un soporte máximo.

8. Abra la llave de paso del suministro de agua y compruebe las líneas de suministro y el grifo para detectar si existe alguna fuga.

INSTRUCCIONES PARA EL SERVICIO

1. El grifo viene con interruptores de paso del suministro integrales. Para interrumpir el suministro del agua, en tornille los interruptores usando un llave tipo Hex de 5/16"(7.94 mm) hasta que el suministro de agua es interrumpido. Abra el interruptor de suministro de agua no más que tres (3) vueltas completas.

NOTA: Los interruptores de suministro de agua pueden ser destornillados completamente causando que el agua salga desde la abertura del interruptor.

2. Para ajustar los cartuchos, refiérase a las páginas 7.

Robinet Mélangeur de Poste D'eau 897

DIRECTIVES DE POSE

REPORTEZ-VOUS À LA PAGE 6 POUR ILLUSTRATION.

1. Couper l'alimentation en eau. Les conduites d'alimentation doivent avoir des extrémités à filetage mâle de 12,7 mm (1/2 po) NPT et doivent saillir de 15,87 mm à 22,2 mm du mur fini, 203 mm centre à centre. Fixer les conduites d'alimentation pour soutenir le robinet mélangeur.
2. Appliquer du produit d'étanchéité sur les filets de 12,7 mm (1/2 po) NPT des conduites d'alimentation.
3. Déposer les embouts d'alimentation du robinet mélangeur et les visser sur les conduites d'alimentation. (Voir fig. 1) Positionner les embouts d'alimentation pour qu'ils soient alignés avec les orifices d'admission du robinet mélangeur (203 mm centre à centre).

NOTA : Le robinet mélangeur doit être à l'horizontale ; au besoin, régler les embouts d'alimentation.

4. Placer les brides sur les embouts d'alimentation et contre le mur fini. (Voir fig. 1)
5. S'assurer que le joint d'admission est en appui dans l'écrou-union. (Voir fig. 1) Fixer le robinet mélangeur aux embouts d'alimentation et bien serrer l'écrou-union.
6. Déposer la vis d'arrêt de la tige de renfort. Placer la tige de renfort dans la fente du support et reposer la vis d'arrêt avec une clé hexagonale de 1,59 mm (3/32 po). (Voir fig. 2)
7. Placer la bride contre le mur fini et la centrer par rapport au support. Fixer la bride au mur au moyen des deux vis à bois fournies.

NOTA : Soutenir le mur fini à l'endroit où la bride y est fixée, pour assurer un soutien maximal.

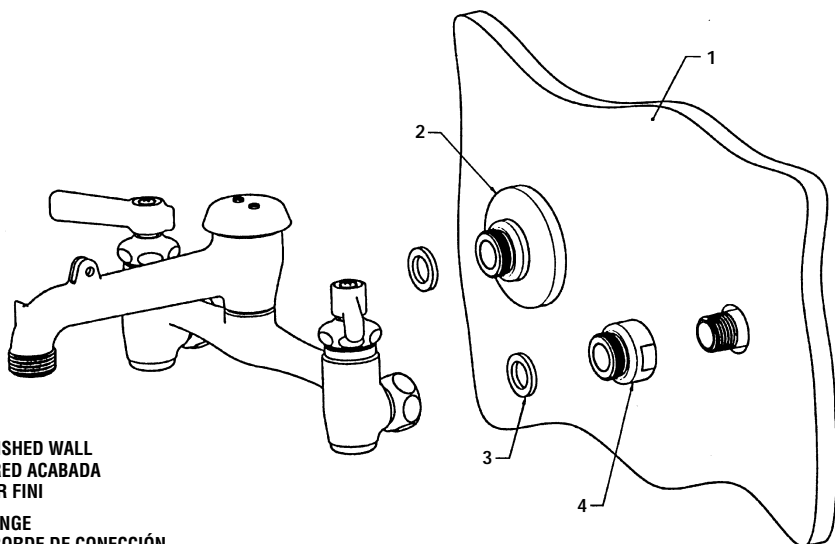
8. Ouvrir l'alimentation en eau et vérifier l'étanchéité au raccordement des conduites d'alimentation et du robinet mélangeur.

DIRECTIVES D'ENTRETIEN

1. Le robinet mélangeur fourni est équipé de butées d'alimentation intégrées. Pour couper l'alimentation en eau, serrer les butées avec une clé hexagonale de 7,94 mm (5/16 po). Dévisser la butée d'alimentation d'au plus trois tours complets.

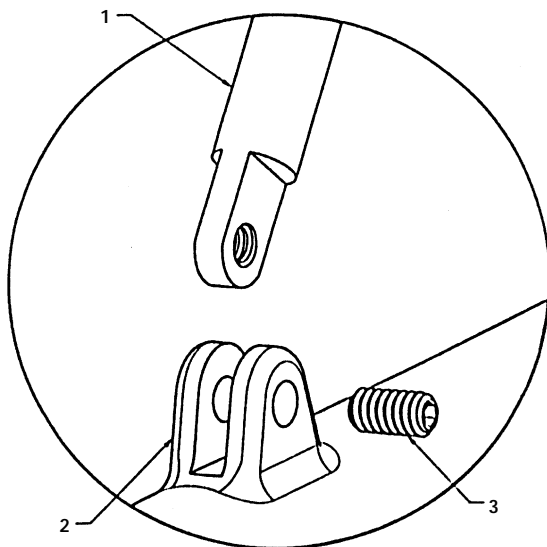
NOTA : La butée peut se dévisser complètement et provoquer le jaillissement de l'eau.

2. Pour le réglage des cartouches, consulter les pages 8.



- 1) FINISHED WALL
PARED ACABADA
MUR FINI
- 2) FLANGE
REBORDE DE CONECCIÓN
BRIDE
- 3) GASKET
ARO DE EMPAQUETADURA
JOINT
- 4) SUPPLY ARM
TUBO DE SUMINISTRO
EMBOUT D'ALIMENTATION

FIGURE 1
FIGURA 1
FIGURE 1



- 1) BRACE ROD ASSEMBLY
MONTAJE DE LA VARILLA
ABRAZADERA
TIGE DE RENFORT
- 2) SPOUT
SURTIDOR
SUPPORT
- 3) SET SCREW
TORNILLO DE AJUSTAMIENTO
VIS D'ARRÊT

FIGURE 2
FIGURA 2
FIGURE 2

“Quaturn” Cartridges

INSTALLATION INSTRUCTIONS

REFER TO PAGE 8 FOR ILLUSTRATION.

1. Always place a new cartridge in the closed position when installing into valve body.
2. TO INSTALL RIGHT HAND CARTRIDGE, push cartridge into body until it seats. Add cap nut and tighten HAND TIGHT. Add handle.
3. Hold handle in CLOSED POSITION and fully tighten cap nut to 15-25 FT. LB. torque.
4. TO INSTALL LEFT HAND CARTRIDGE, push cartridge into body until it seats. Add cap nut and tighten HAND TIGHT. Add handle.
5. Hold handle in OPEN POSITION and fully tighten cap nut to 15-25 FT. LB. torque.
6. Return handle in closed position and check handle alignment.

NOTE: Cartridges are stamped “LH” to designate left hand and “RH” to designate right hand.

Cartuchos “Quaturn”

INSTRUCCIONES DE INSTALACIÓN

EN LA PAGINA 8 HALLARÁ LA ILUSTRACIÓN.

1. Coloque siempre un cartucho nuevo en la posición cerrada al instalarlo en el cuerpo de la válvula.
2. PARA INSTALAR UN CARTUCHO DERECHO, empuje al cartucho hacia dentro del cuerpo hasta que quede completamente alojado en él. Añada la tuerca tapa hasta que quede apretada al tacto. Añada el mango.
3. Sostenga el mango en la POSICION CERRADA y apriete totalmente la tuerca tapa con un efecto de torsión de 15-25 FT/LB (2-3.45 kilográmetros).
4. PARA INSTALAR UN CARTUCHO IZQUIERDO, empuje el cartucho hacia dentro del cuerpo hasta que quede completamente alojado en él. Añada la tuerca tapa y déle vuelta hasta que quede APRETADA AL TACTO. Añada el mango.
5. Sostenga el mango en la POSICIÓN ABIERTA y apriete totalmente la tuerca tapa con un efecto de torsión de 15-25 FT/LB (2-3.45 kilográmetros).
6. Regrese el mango a la posición cerrada y compruebe la alineación del mango.

NOTA: Los mangos llevan grabadas las letras "LH" para designar el lado izquierdo y las letras "RH" para designar el lado detecho.

Cartouches “Quatern”

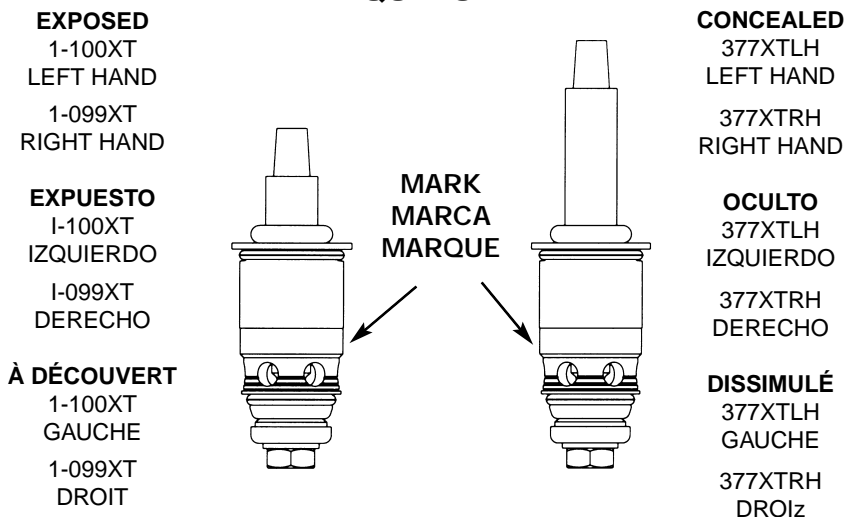
INSTRUCTIONS D'INSTALLATION

REPORTEZ-VOUS À LA PAGE 8 POUR ILLUSTRATION.

1. Placez toujours une nouvelle cartouche en position fermée lors de son installation dans le corps de la valve.
2. POUR INSTALLER UNE CARTOUCHE À DROITE, poussez la cartouche dans le corps jusqu'à ce qu'elle soit bien en place. Ajoutez l'écrou du haut et serrez À LA MAIN. Ajoutez la poignée.
3. Maintenez la poignée en POSITION FERMÉE et vissez complètement l'écrou du haut à 15-25 PIEDS/LB (2-3,45 kg) de torque.
4. POUR INSTALLER UNE CARTOUCHE À GAUCHE, poussez la cartouche dans le corps jusqu'à ce qu'elle soit bien en place. Ajoutez l'écrou du haut et serrez À LA MAIN. Ajoutez la poignée.
5. Maintenez la poignée en POSITION OUVERTE et vissez complètement l'écrou du haut à 15-25 PIEDS/LB (2-3,45 kg) de torque.
6. Faites revenir la poignée en position fermée et vérifiez son alignement.

REMARQUE : Les cartouches sont marquées “LH” pour désigner le côté gauche et “RH” pour désigner le côté droit.

“QUATURN”



Care and Maintenance

All Chicago Faucet fittings are designed and engineered to meet or exceed industry performance standards.

Care should be taken cleaning this product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage.

Use only mild soap with warm water for cleaning and protecting the life of Chicago Faucet fittings.

Cuidado y Mantenimiento

Todos los accesorios de Chicago Faucet son diseñados y fabricados para satisfacer o superar las normas de calidad de la industria.

Se debe tener cuidado al limpiar este producto. No use limpiadores abrasivos, químicos o solventes, puesto que pueden dañar la superficie.

Sólo use un jabón suave y agua tibia para limpiar y proteger la vida útil de los accesorios de Chicago Faucet.

Entretien

Tous les produits de robinetterie Chicago Faucet sont conçus et fabriqués de manière à atteindre et dépasser les normes de l'industrie.

Le nettoyage de ce produit nécessite certaines précautions. Ne pas utiliser de nettoyeur abrasif, de produit chimique ni de solvant: le fini du produit pourrait être altéré.

Nettoyer les produits de robinetterie Chicago Faucets avec de l'eau tiède et un savon doux afin de prolonger leur vie utile.

1-800-TEC-TRUE

For installation questions or other technical assistance call,
1-800-TEC-TRUE.

Si tiene alguna pregunta respecto a la instalación
o si desea asistencia técnica llame al
1-800-TEC-TRUE

Pour toute question concernant l'installation
ou d'autres détails techniques, composez
1-800-TEC-TRUE

Notes:

Notas:

Notes:

Notes:

Notas:

Notes:

CHICAGO FAUCET LIMITED WARRANTY

The CHICAGO FAUCET COMPANY ("Chicago Faucets") extends to the original consumer the following warranties for Genuine Chicago Faucets manufactured products and components, or other components under the Chicago Faucets Warranties, (collectively, the "Products") used in commercial or residential applications:

Lifetime Faucet Warranty The "Faucet", defined as any metal cast, forged, stamped or formed portion of the Product, not including electronic or moving parts or water restricting components, or other components covered under the Chicago Faucet warranties, is warranted against manufacturing defects for the life of the Product.

Five Year Cartridge Warranty - Commercial The "Cartridge", defined as the metal portion of any Product typically referred to by the product numbers containing 1-099XT and 1-100X, excluding any rubber or plastic components, is warranted against manufacturing defects for a period of five (5) years from the date of Product purchase. All Cartridges included in Chicago Faucets Single Control or Shower Products are also warranted against manufacturing defects for a period of five (5) years from the date of Product purchase.

Lifetime Cartridge Warranty - Residential For products used in residential applications, the "Cartridge", as described above, is warranted for the lifetime of the faucet.

One Year Finish Warranty - Commercial For Products used in commercial applications, the finish of the Product is warranted against manufacturing defects for a period of one (1) year from the date of Product purchase.

Five Year Finish Warranty - Residential For Products used in residential applications, the finish of the Product is warranted against manufacturing defects for a period of five (5) years from the date of Product purchase.

Other Warranties All other Products not covered above are warranted against manufacturing defects for a period of one (1) year from the Product purchase.

Restrictions Apply

For complete warranty details, contact your Chicago Faucets sales representative or Chicago Faucets, Consumer Affairs, 2100 S. Clearwater Drive, Des Plaines, Illinois, 60018.

GARANTIA LIMITADA DE CHICAGO FAUCETS

La CHICAGO FAUCET COMPANY ("Chicago Faucets") le otorga al comprador original las siguientes garantías para los productos y componentes auténticos fabricados por Chicago Faucets o demás componentes vendidos bajo las Garantías de Chicago Faucets (colectivamente denominados los "Productos") utilizados en aplicaciones comerciales o residenciales:

Garantía de los Grifos de por vida El "Grifo" (definido como cualquier porción fundida, forjada, estampada o formada en metal del Producto, sin incluir piezas electrónicas o móviles ni tampoco los componentes que restrinjan el flujo del agua u otros componentes cubiertos bajo otras garantías de Chicago Faucets) está garantizado contra defectos de fabricación durante toda la vida del Producto.

Garantía de los Cartuchos por cinco años - Aplicaciones Comerciales El "Cartucho" (definido como la porción metálica de cualquier Producto al que se le denomina típicamente por los números de producción que contienen 1-099XT y 1-100XT, excluyendo cualquier componente de plástico o de caucho) está garantizado contra defectos de fabricación durante un periodo de cinco (5) años contados a partir de la fecha de compra del Producto. Todos los Cartuchos incluidos en los Productos para Ducha (Shower) o los Productos de un Solo Control (Single Control) de Chicago Faucets también están garantizados contra defectos de fabricación durante un periodo de cinco (5) años contados a partir de la fecha de compra del Producto.

Garantía de los Cartuchos de por vida - Aplicaciones Residenciales Para los Productos usados en aplicaciones residenciales, el "Cartucho", tal como se le describió en el párrafo anterior, está garantizado durante toda la vida del Grifo.

Garantía del Acabado por un año - Aplicaciones Comerciales Para los Productos usados en aplicaciones comerciales, el acabado del Producto está garantizado contra defectos de fabricación durante un periodo de un (1) año contado a partir de la fecha de compra del Producto.

Garantía del Acabado por cinco años - Aplicaciones Residenciales Para los Productos usados en aplicaciones residenciales, el acabado del Producto está garantizado contra defectos de fabricación durante un periodo de cinco (5) años contados a partir de la fecha de compra del Producto.

Otras Garantías Todos los demás Productos que no están cubiertos por las disposiciones anteriores están garantizados contra defectos de fabricación durante un periodo de un (1) año contado a partir de la fecha de compra del Producto.

Pueden Aplicarse Restricciones

Para obtener detalles completos sobre las garantías, póngase en contacto con su representante de ventas de Chicago Faucets o directamente con Chicago Faucets, enviando una carta a: Consumer Affairs, 2100 S. Clearwater Drive, Des Plaines, Illinois, 60018.

GARANTIE LIMITÉE DU ROBINET CHICAGO FAUCETS

CHICAGO FAUCET COMPANY ("Chicago Faucets") offre au consommateur original les garanties suivantes pour les produits et éléments voir authentiques fabriqués par Chicago Faucets, ou les autres éléments sous min. Garanties de Chicago Faucets, (ensemble, les "Produits") utilisés à des fins commerciales ou résidentielles:

Garantie à vie du robinet Le "Robinet", défini comme toute partie en métal coulé, forgé, matriçé ou ouvré du Produit, à l'exclusion des pièces électroniques ou mobiles ainsi que les éléments de restriction d'eau ou les éléments mentionnés dans les garanties de Chicago Faucet, est garantie à vie contre tout vice de fabrication.

Garantie de cinq ans de la cartouche - utilisations commerciales La "Cartouche", défini comme la partie en métal de tout dont les numéros de référence Produit contiennent 1-099XT et 1-100XT, à l'exclusion des éléments de caoutchouc ou de plastique, est garantie contre tout vice de fabrication pour une période de cinq (5) ans à compter de la date d'achat du Produit. Toutes les cartouches incluses dans les Produits à contrôle unique ou Produits pour la douche sont garanties aussi contre tout vice de fabrication pour une période de cinq (5) ans à compter de la date d'achat du Produit.

Garantie à vie de la cartouche - utilisations résidentielles Pour les produits à usage résidentiel, la "Cartouche", défini ci-dessus, est garantie à vie contre tout vice de fabrication.

Garantie d'un an - utilisations commerciales La finition des Produits utilisés à des fins commerciales est garantie contre tout vice de fabrication pour une période d'un (1) an à compter de la date d'achat du Produit.

Garantie de cinq ans - utilisations résidentielles La finition des Produits à usage résidentiel est garantie contre tout vice de fabrication pour une période de cinq (5) ans à compter de la date d'achat du Produit.

Autres garanties Les Produits qui ne sont pas mentionnés ci-dessus sont garantis contre tout vice de fabrication pour une période d'un (1) an à compter de la date d'achat du Produit.

Certaines restrictions s'appliquent

Pour obtenir des renseignements détaillés sur les garanties, contactez votre revendeur Chicago Faucets ou Chicago Faucets, Consumer Affairs, 2100 S. Clearwater Drive, Des Plaines, Illinois 60018.



The Chicago Faucet Company
2100 Clearwater Drive
Des Plaines, IL 60018-5999
Phone 847/803-5000 • Fax: 847/298-3101

Last As Long As the Building

Terms and Conditions

CONTROLLING PROVISIONS – This document, including any provisions on the face hereof (the "Contract") constitutes an offer by The Chicago Faucet Company (the "Company") to provide the products described herein (the "Products") to the buyer to which this offer is addressed (the "Buyer"). If this document is deemed an acceptance of a prior offer by Buyer, such acceptance is limited to the express terms contained herein. Buyer's acceptance of this offer is limited to the terms, covenants and conditions contained in this offer. The Company hereby objects to and rejects any additional, different or varying terms proposed by Buyer, unless the Company expressly agrees to such terms in writing. Such proposal of additional, different or varying terms by Buyer shall not operate as a rejection of the Company's offer unless such variances are in the terms of the description, quantity, price or place or date of delivery of the Products, and the Company's offer shall be deemed accepted without such additional, different or varying terms. **THIS CONTRACT CONSTITUTES THE FINAL EXPRESSION OF THE TERMS BETWEEN SELLER AND BUYER REGARDING THE PRODUCTS AND IS A COMPLETE AND EXCLUSIVE STATEMENT OF THOSE TERMS. ANY TERMS, CONDITIONS, NEGOTIATIONS OR UNDERSTANDINGS WHICH ARE NOT CONTAINED IN THIS CONTRACT SHALL HAVE NO FORCE OR EFFECT UNLESS MADE IN WRITING AND SIGNED BY SELLER AND BUYER.** The Company's sales representatives are without authority to change the terms of this Contract. Buyer shall be deemed to have made an unqualified acceptance of this offer and these terms and conditions on the earliest of the following to occur: (1) the Company's receipt of a copy of this Contract signed by Buyer; (2) Buyer's payment of any amounts due under this Contract; (3) Buyer's delivery to the Company of any material to be furnished by Buyer; (4) the Company's delivery of the Products; (5) failure by Buyer to notify the Company to the contrary within one business day of placing the order; or (6) any other event constituting acceptance under applicable law. It is the express wish of the parties that this Contract and any related documents be drafted in English. Il est la volonté expresse des parties que cette convention et tous les documents s'y rattachent soient rédigés en anglais.

PRICES – Prices quoted herein are subject to change without notice and all orders that are accepted are subject to prices prevailing at time of order entry.

TERMS OF PAYMENT – Unless stipulated by the Company elsewhere, net payment is due 60 days from invoice date. A 1-1/2% cash discount will be allowed on invoices paid on or before 50 days from invoice date. Cash discounts must be calculated on the total amount of the invoice, before transportation charges and any applicable taxes. A 1-1/2% per month service charge will be added to all past due invoices. Annual rate of 18% or the maximum amount allowable by law. Buyer agrees to reimburse the Company for all costs and fees incurred by the Company in collecting any sums owed by Buyer to the Company including, without limitation, attorneys' fees and repossession fees. Buyer shall not set off any claims against amounts due to the Company.

TAX NOTICE – Buyer shall pay or reimburse the Company on demand for all taxes, fees and costs including, but not limited to, any manufacturer's tax, retailer's occupation tax, use tax, sales tax, excise tax, value added tax, duty, customs agent or broker fees, inspection or testing fee, freight costs, insurance, consular fees or any other tax, fee or charge of any nature whatsoever, including interest, imposed on, in connection with or measured by any transaction between the Company and Buyer, in addition to the prices quoted or invoiced.

CREDIT APPROVAL – All orders are subject to credit approval by the Company's Credit Department prior to acceptance of the order. At the Company's option, orders may be refused, the Company's obligations may be terminated, amounts may be declared immediately due and payable, credit terms may be changed, delivery may be withheld and/or shipments stopped in transit on accepted orders without any liability on the Company's part, if Buyer defaults in performance hereunder or if, in the Company's sole opinion, Buyer's ability to pay for the Products on the terms and conditions contained herein is in doubt. All New Accounts must submit a \$500.00 net minimum order with credit and bank references.

ORDERS – Buyer's orders are firm following the Company's acceptance and acknowledgement thereof. The Company may accept or reject orders in its sole discretion. All undelivered Products may be cancelled by Buyer only upon written approval of an authorized representative of the Company. In the event of any cancellation of an order by Buyer, Buyer shall pay to the Company its reasonable costs and expenses, plus the Company's usual rate of profit for similar work. Buyer may not alter or modify its order or any part thereof without the Company's prior, written consent. The Company reserves the right to change the price, terms of payment and delivery dates for any Products affected by any alterations or modification to which it consents.

SHIPPING AND HANDLING – Except as otherwise provided in this paragraph, all sales are F.O.B. the Company's facility (the "Facility") (EX WORKS the Facility for sales to Buyers outside the United States, pursuant to INCOTERMS 2000 of the International Chamber of Commerce, as amended ("INCOTERMS")). The Company shall have no obligation or risk of loss of or damage to Products following delivery to the Facility, even if the Company agrees to arrange for transportation as a courtesy to Buyer. Any such transportation shall be at Buyer's sole risk and expense, except to the extent described below. The Company will allow full freight at the prevailing CWT rate on shipments of the Company's products with a net invoice value of:

\$1,500 or more when shipments are within the United States, or;
\$2,500.00 or more when shipments are to Canada

and have as destination Buyer's usual business address or designated job location. Original P.O. must meet FFA (full freight allowed) terms. Subsequent additions will not be considered towards freight allowance. If Buyer requests the Company to make part shipment of an accepted order, this freight allowance shall apply only to such individual part shipments which in themselves have a net invoice value of \$1500.00 or more (continental United States) or \$2,500 (Canada). Freight allowed on shipments to Alaska shall be calculated F.A.S., Seattle, Washington. "F.A.S" shall be defined in accordance with INCOTERMS but shall not be deemed to impose any risk or obligation concerning the goods or

the shipment thereof upon the Company after the delivery of the goods to the initial carrier. Under no circumstances will a direct C.O.D. shipment be made to the wholesaler's customer. Routing of shipments shall be determined at the sole discretion of the Company.

DELIVERY – Delivery to the Facility (or, for shipments to Alaska, the initial carrier) shall constitute delivery to Buyer. The Company's responsibility and liability for loss or damage in transit cease upon such delivery, and all Products are shipped at Buyer's risk. Buyer shall check each incoming shipment carefully before acknowledging receipt from the carrier. If Products are visibly damaged, Buyer should insist that written confirmation of the damage be noted on the freight bill by the carrier. If concealed damage is noted after unpacking, Buyer should immediately notify the carrier involved and obtain verification of the damage from the carrier. Claims for shortages in orders will not be considered unless presented to the Company within 30 days after delivery hereunder. Failure to make claims within such time period shall constitute unqualified acceptance and a waiver of all such claims by Buyer. All claims for damage in transit or nondelivery must be filed against the carrier by Buyer. Partial shipments shall be permitted. All delivery dates are approximate. Delivery dates given by the Company are based on prompt receipt of all necessary information regarding the order. The Company will use reasonable efforts to meet such delivery dates, but does not guarantee to meet such dates. Failure by the Company to meet any delivery date does not constitute a cause for cancellation and/or damages of any kind. Time for delivery shall not be of the essence. Any delay in delivery due to causes beyond the Company's reasonable control, or due to any priorities or allocations necessitated by governmental orders or regulations, or due to any causes specified in the following sentence, shall extend the term of delivery by a period equal to the length of such delay. In the event of delay in delivery requested by Buyer or caused by Buyer's (1) failure to supply adequate instructions; (2) failure to arrange for transit or pickup; (3) failure to supply or approve necessary data in a timely manner; (4) requested changes; or (5) failure to provide documents required for the Company to effect delivery, the Company will store all Products at Buyer's risk and expense. Buyer shall pay all storage costs and expenses upon the Company's demand.

FORCE MAJEURE – The Company will not be responsible for delay in delivery of Products or other default under this Contract, or for any damages suffered by reasons thereof, when such delay or default is occasioned by accident, fire, flood, embargo, terrorism, strike, war, labor stoppages, inadequate transportation, shortage of materials, delay or default on the part of vendors, government regulations or any other cause beyond its control.

RETURNED GOODS – Products may not be returned to the Company unless prior written approval is obtained by Buyer from the Company. Credit will be issued on all Products returned by permission, at the prevailing price at time of purchase, less a minimum handling charge of 25% (35% if repackaging is necessary). No credit whatsoever will be allowed on Products not listed in the Company's current price list, unless defective. We will go back one price sheet subject to invalid purchase order, invoice number and/or sales order given. Transportation must be prepaid. Your account will be credited for the shipping charges if return is due to any error on our part or if the materials are found defective.

PRODUCT CHANGES – The Company reserves the right to make reasonable changes of any kind in its Products and their packaging without notice.

MINIMUM CHARGE - No invoice will be made for less than \$100.00 (One Hundred Dollars Net invoice amount).

GOVERNING LAW – This Contract shall be governed by and construed according to the internal laws of the State of Illinois, including, without limitation, the Uniform Commercial Code as adopted in Illinois, as modified by this Agreement. Neither this Contract nor sales hereunder shall be governed by the provisions of the United Nations Convention on Contracts for the International Sale of Goods. Any cause of action, claim, suit or demand by Buyer allegedly arising from or related to the terms of this Contract or the relationship of the parties shall be brought in a Court situated in the State of Illinois. Both parties hereby irrevocably admit themselves to and consent to the jurisdiction of said Court.

SEVERABILITY; WAIVER – The invalidity of any provision or clause of this Contract shall not affect the validity of any other provision or clause hereof. The Company reserves the right to correct clerical or similar errors relating to price or any other term shown in this Contract. The failure of either party to insist, in any one or more instances, upon performance of any term, covenant or condition of this Contract shall not be construed as a waiver or relinquishment or any right granted hereunder or the future performance of such term, covenant or condition.

COMPLIANCE WITH LAWS – Buyer agrees to comply with all laws and regulations applicable to the purchase, transport, use, storage, sale, lease and/or disposal of the Products including, without limitation, to the extent applicable, the U.S. Export Administration Act and all regulations thereunder, and Buyer shall cause its employees and agents to comply with such laws and regulations. Without limiting the foregoing or the applicability of any other legislation now or hereafter in effect in any state or municipality, Buyer specifically acknowledges and agrees to comply with (and cause its employees and agents to comply with) 2006 California Assembly Bill 1953, 2008 California Senate Bill 1334 ch. 580, and section 116875 of the California Health and Safety Code, and Act of June 7, 2008, No. 193, 2008 Vt. Acts and Resolves which, among other requirements, strictly limit the amount of lead in solder or flux, and in pipes, pipe or plumbing fittings and fixtures (including replacement parts) intended or used to convey or dispense water for human consumption, and generally prohibit the sale, use, offer or introduction into commerce in California or Vermont, as applicable, at any level, of any such items not meeting the lead content requirements. Certification requirements may apply. In addition, sellers of such items may be required to post warnings at the point of sale and provide buyers with information on the risks of lead exposure.

ASSIGNMENT – Neither party may assign this Contract without the prior written consent of the other party provided, however, that the Company may assign this Contract in whole or in part to any of its affiliates and/or perform through subcontractors. Subject to the foregoing, this Contract shall inure to the benefit of, and be binding upon, the parties' successors and assigns. The Company's warranty limitations and exclusions and damage limitations and exclusions, and any other provision the performance or effectiveness of which naturally survives, shall survive expiration or termination of this Contract for any reason. All of the Company's remedies herein are cumulative and not exclusive of any other remedies available to Company at law, by contract or in equity.

INDEPENDENT CONTRACTOR – Buyer is an independent contractor and neither Buyer nor any of its employees or agents shall be considered an employee or agent of the Company. Neither Buyer nor any of its employees or agents is authorized to incur any obligations or make any promises or representations on the Company's behalf.

TRADEMARKS – The Company does not grant, and Buyer does not acquire, any license, rights, title or interest to or in any of the trademarks or trade names of the Company by virtue of this Contract, and Buyer shall not use or in any way refer to the Company's trademarks or trade names without the Company's prior written permission.

BUYER'S INDEMNIFICATION OF THE COMPANY – Buyer hereby releases and agrees to promptly defend, indemnify and hold the Company and its affiliates and its and their shareholders, directors, officers, employees, successors and assigns (collectively, "Company Parties") harmless from and against all liabilities, losses, claims, judgments, actions, fines, penalties, costs, damages, attorneys' fees and expenses (collectively, "Damages") relating to (a) the alleged violation of any law by Buyer or any of its employees, agents, successors or assigns ("Buyer Parties"), (b) bodily injuries, deaths or property damage caused by the negligent or wrongful act or omission of Buyer or any of the Buyer Parties, (c) any breach of this Contract by Buyer or any of the Buyer Parties, (d) any failure to install or maintain Products in accordance with the Company's written instructions, and/or (e) Buyer's products. The provisions of this section shall be effective whether or not such loss, damage or injury was proximately caused by the sole or partial negligent acts or omissions of the Company or any Company Parties.

LIMITED WARRANTY – The Company offers limited warranties regarding certain of its products. Such limited warranties may be found in the Company's catalogs and on its website at www.chicagofaucets.com. **THE COMPANY SHALL NOT BE LIABLE TO BUYER, OR TO ANYONE CLAIMING UNDER BUYER, FOR ANY OTHER OBLIGATIONS OR LIABILITIES, INCLUDING, BUT NOT LIMITED TO, OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE OR OTHER TORT OR ANY THEORY OF STRICT LIABILITY, WITH RESPECT TO THE PRODUCTS OR THE COMPANY'S ACTS OR OMISSIONS OR OTHERWISE. THE COMPANY AND BUYER AGREE THAT THE EXPRESS WARRANTIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES. ALL OTHER EXPRESS WARRANTIES ARE DISCLAIMED. FOR COMMERCIAL PRODUCTS, ALL WARRANTIES IMPLIED BY LAW, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. FOR CONSUMER PRODUCTS, WARRANTIES IMPLIED BY LAW, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE PERIOD OF THE EXPRESS LIMITED WARRANTY FOR THE RELEVANT PRODUCT.** Some States do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. **IN NO EVENT SHALL THE COMPANY BE LIABLE FOR INCIDENTAL, COMPENSATORY, CONSEQUENTIAL, INDIRECT OR SPECIAL DAMAGES. THE COMPANY'S AGGREGATE LIABILITY WITH RESPECT TO A DEFECTIVE PRODUCT AND THIS CONTRACT SHALL BE LIMITED TO AN AMOUNT EQUAL TO THE MONIES PAID TO THE COMPANY FOR THAT DEFECTIVE PRODUCT.** Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Please see the Company's limited warranty statement for details on limitations.

Limited Warranty

TO WHOM DOES THIS WARRANTY APPLY? – The Company extends the following limited warranty to the original user only.

WHAT DOES THIS WARRANTY COVER AND HOW LONG DOES IT LAST?

This warranty covers the following Commercial Products:

LIFETIME FAUCET WARRANTY – The "Faucet," defined as any metal cast, forged, stamped or formed portion of the Product, not including electronic or moving parts or other products separately covered by this Limited Warranty or water restricting components or other components, is warranted against material manufacturing defects for the life of the Product.

FIVE YEAR FAUCET WARRANTY – Certain Products and portions of the Product are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase. Products warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase are referred to by the product numbers 42X, 43X, 15XX and E-Tronic™ - 4X, 5X, 6X, 7X, 8X and 9X. All zinc die cast portions of Product are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

FIVE YEAR CARTRIDGE WARRANTY – The "Cartridge", defined as the metal portion of any Product typically referred to by the product numbers containing 1-099, 1-100, 1-310, 377X, 217X and 274X, excluding any rubber or plastic components, is warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase. All Cartridges included in the Company's Single Control or Shower Products also are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

ONE YEAR FINISH WARRANTY – COMMERCIAL – For Products used in commercial applications, the finish of the Product is warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

ELECTRONIC FAUCETS AND METERING MECHANICALS WARRANTY – Electronic and metering faucets mechanicals are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

ELECTRONIC FAUCETS ELECTRONICS AND SOLENOID WARRANTY – Electronic faucets electronics and solenoid are warranted against material manufacturing defects for a period of three (3) years from the date of Product purchase. This warranty does not cover the life of the battery. The Company offers **NO WARRANTY** for Product batteries.

THIRTY DAY WARRANTY – PALM DEVICES – Palm devices are reconditioned and are warranted against material manufacturing defects for a period of thirty days from the date of device purchase. The Company offers **NO WARRANTY** for batteries, software (on a CD or from a website), damage the Palm device or software allegedly causes to any system, set-up instructions, adaptors or other equipment used with the device.

OTHER WARRANTIES – All other Products not covered above are warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

WHAT THIS WARRANTY DOES NOT COVER – The Company will not be liable for any labor, transportation or consequential expenses not specifically stated above. There is **NO WARRANTY** in cases of damage in transit, negligence, abuse, abnormal usage, misuse, accidents, normal wear and tear, damage due to environmental or natural elements, failure to follow the Company's instructions, unauthorized repair, incorrectly performed maintenance or repair, improper installation or storage or use of acidic, abrasive cleaning materials. In order for this Warranty to apply, Buyer must retain and provide to the Company receipts showing date of Product purchase and documenting proper maintenance. Any oral or written description of the Products is for the sole purpose of identifying the Products and shall not be construed as an express warranty. **THE COMPANY SHALL NOT BE LIABLE TO BUYER, OR TO ANYONE CLAIMING UNDER BUYER, FOR ANY OTHER OBLIGATIONS OR LIABILITIES, INCLUDING, BUT NOT LIMITED TO, OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE OR OTHER TORT OR ANY THEORY OF STRICT LIABILITY, WITH RESPECT TO THE PRODUCTS OR THE COMPANY'S ACTS OR OMISSIONS OR OTHERWISE. THE COMPANY AND BUYER AGREE THAT THE EXPRESS WARRANTIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES. ALL OTHER EXPRESS WARRANTIES ARE DISCLAIMED. FOR COMMERCIAL PRODUCTS, ALL WARRANTIES IMPLIED BY LAW, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. FOR CONSUMER PRODUCTS, WARRANTIES IMPLIED BY LAW, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE PERIOD OF THE EXPRESS LIMITED WARRANTY STATED ABOVE FOR THE RELEVANT PRODUCT.** Some States do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Any assistance the Company provides to or procures for Buyer outside the terms, limitations or exclusions of this warranty will not constitute a waiver of the terms, limitations or exclusions of this limited warranty, nor will such assistance extend or revive the warranty. The Company will not reimburse Buyer for any expenses incurred by Buyer in repairing, correcting or replacing any defective Products, except for expenses incurred with the Company's prior written permission.

HOW TO GET SERVICE – For complete warranty details, or to provide notice of a warranty claim or request warranty service, contact your Chicago Faucets Sales Representative or The Chicago Faucet Company, Customer Service, 2100 S. Clearwater Drive, Des Plaines, Illinois 60018 or 847-803-5000. As the Company's sole and exclusive obligation under this warranty (and Buyer's sole and exclusive remedy), upon prompt written notice of breach from Buyer during the warranty period, the Company will either replace or repair the defective Product or refund the wholesale purchase price, at its option, if an inspection by the Company discloses defects in material or workmanship covered by this warranty. These warranty provisions do not cover the battery shipped with the electronic products.

LIMITATION ON DAMAGES – IN NO EVENT SHALL THE COMPANY BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT OR SPECIAL DAMAGES. WITHOUT LIMITING THE FOREGOING, THE COMPANY SHALL NOT BE LIABLE FOR ANY DAMAGE A PALM DEVICE OR ANY SOFTWARE OR RELATED EQUIPMENT ALLEGEDLY CAUSES TO A SYSTEM OR OTHERWISE. THE COMPANY'S AGGREGATE LIABILITY WITH RESPECT TO A DEFECTIVE PRODUCT AND THIS CONTRACT SHALL BE LIMITED TO AN AMOUNT EQUAL TO THE MONIES PAID TO THE COMPANY FOR THAT DEFECTIVE PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

HOW DOES STATE LAW APPLY? – This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

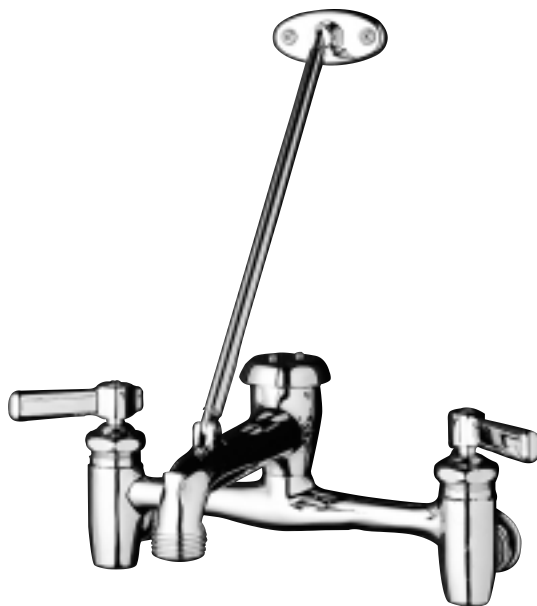
Restrictions Apply

Palm is trademarked by Palm Inc. and is not affiliated with The Chicago Faucet Company.

INSTALLATION INSTRUCTIONS FOR 897 SERVICE SINK FAUCET

INSTRUCCIONES PARA LA INSTALACIÓN DEL GRIFO 897 PARA FREGADERO DE SERVICIO

DIRECTIVES DE POSE DU ROBINET MÉLANGEUR DE POSTE D'EAU 897



***INSTALLATION SHOULD BE IN ACCORDANCE WITH LOCAL PLUMBING
CODES. FLUSH ALL PIPES THOROUGHLY BEFORE INSTALLATION.***

***LA INSTALACIÓN DEBE EFECTUARSE EN CONFORMIDAD CON LOS
CÓDIGOS LOCALES DE PLOMERÍA. LAVE CON ABUNDANCIA DE AGUA
TODAS LAS TUBERÍAS ANTES DE LA INSTALACIÓN.***

***L'INSTALLATION DOIT ÊTRE CONFORME AUX CODES LOCAUX EN
MATIÈRE DE PLOMBERIE PURGER SOIGNEUSEMENT TOUS LES TUYAUX
AVANT L'INSTALLATION.***

**CHICAGO
FAUCETS** 

Last As Long As the Building



ADA Compliant

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INSTALLATION INSTRUCTIONS

REFER TO PAGE 6 FOR ILLUSTRATION.

1. Water supplies must be shut off. Supply lines must have 1/2" NPT male threaded ends and should protrude 5/8" – 7/8" from the finished wall on 8" centers. Supply lines must be secured to support the faucet.
2. Apply pipe sealant to the 1/2" NPT threads of the supply lines.
3. Remove supply arms from faucet and screw onto supply lines. (See Fig. 1) Position the supply arms so they line up with the faucet inlets (8" center to center).

NOTE: The faucet must be mounted level, adjust supply arms as necessary.

4. Place the flanges over the supply arms and against the finished wall. (See Fig. 1)
5. Make sure inlet gasket is sitting in place within the union nut. (See Fig. 1) Attach faucet to supply arms and tighten union nut securely.
6. Remove the set screw from the brace rod. Place the brace rod in the slot on the spout and reattach the set screw using 3/32" hex key wrench. (See Fig. 2)
7. Place brace flange against the finished wall and center it with the spout. Secure the flange to the wall using (2) wood screws provided.

NOTE: Finished wall must be supported where the brace flange mounts to the wall to provide maximum support.

8. Turn on water supply and check supply lines and faucet connections for leaks.

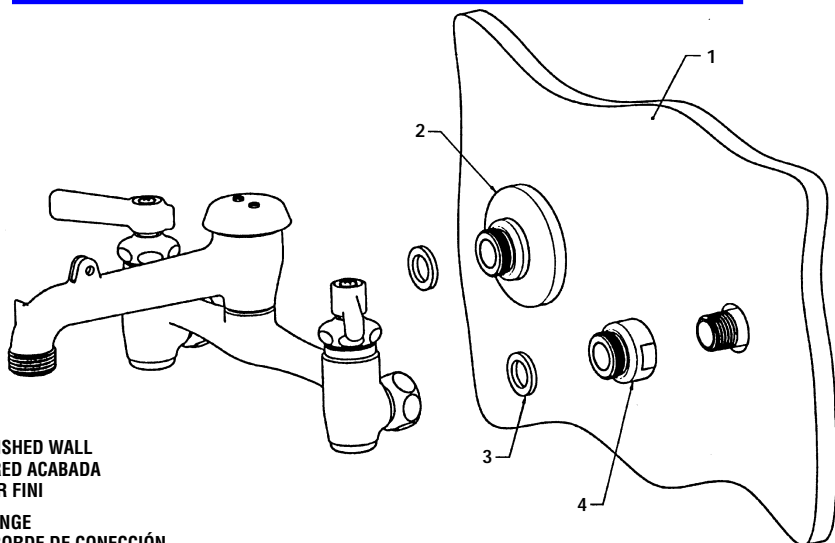
SERVICE INSTRUCTIONS

1. The faucet is furnished with integral supply stops. To shut off water supply, screw stops in using 5/16" hex key wrench until water is shut off. Open the supply stop no more than three (3) complete turns.

NOTE: Stop can unscrew completely causing water to spray out from the stop opening.

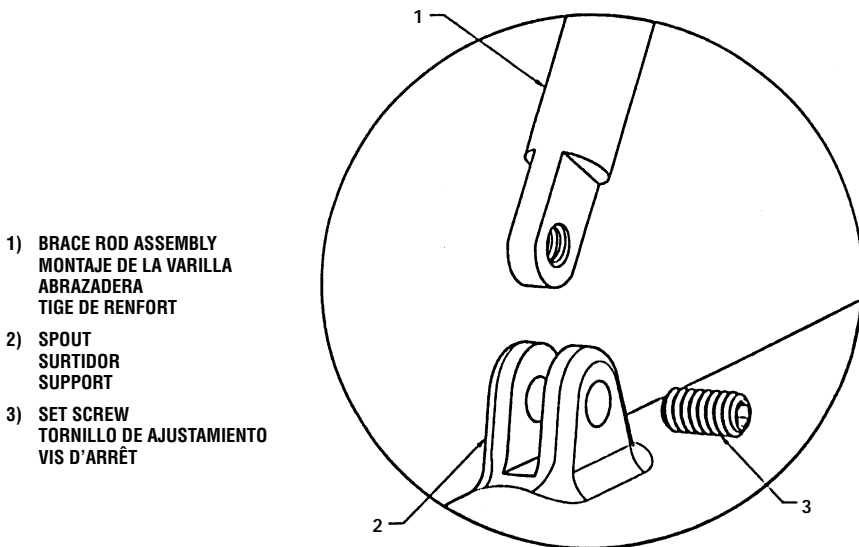
2. For adjustment of cartridges, refer to page 7.

CHICAGO FAUCETS - mop sink faucets



- 1) FINISHED WALL
PARED ACABADA
MUR FINI
- 2) FLANGE
REBORDE DE CONECCIÓN
BRIDE
- 3) GASKET
ARO DE EMPAQUETADURA
JOINT
- 4) SUPPLY ARM
TUBO DE SUMINISTRO
EMBOUT D'ALIMENTATION

FIGURE 1
FIGURA 1
FIGURE 1



- 1) BRACE ROD ASSEMBLY
MONTAJE DE LA VARILLA
ABRAZADERA
TIGE DE RENFORT
- 2) SPOUT
SURTIDOR
SUPPORT
- 3) SET SCREW
TORNILLO DE AJUSTAMIENTO
VIS D'ARRÊT

FIGURE 2
FIGURA 2
FIGURE 2

“Quaturn” Cartridges

INSTALLATION INSTRUCTIONS

REFER TO PAGE 8 FOR ILLUSTRATION.

1. Always place a new cartridge in the closed position when installing into valve body.
2. TO INSTALL RIGHT HAND CARTRIDGE, push cartridge into body until it seats. Add cap nut and tighten HAND TIGHT. Add handle.
3. Hold handle in CLOSED POSITION and fully tighten cap nut to 15-25 FT. LB. torque.
4. TO INSTALL LEFT HAND CARTRIDGE, push cartridge into body until it seats. Add cap nut and tighten HAND TIGHT. Add handle.
5. Hold handle in OPEN POSITION and fully tighten cap nut to 15-25 FT. LB. torque.
6. Return handle in closed position and check handle alignment.

NOTE: Cartridges are stamped “LH” to designate left hand and “RH” to designate right hand.

Cartuchos “Quaturn”

INSTRUCCIONES DE INSTALACIÓN

EN LA PAGINA 8 HALLARÁ LA ILUSTRACIÓN.

1. Coloque siempre un cartucho nuevo en la posición cerrada al instalarlo en el cuerpo de la válvula.
2. PARA INSTALAR UN CARTUCHO DERECHO, empuje al cartucho hacia dentro del cuerpo hasta que quede completamente alojado en él. Añada la tuerca tapa hasta que quede apretada al tacto. Añada el mango.
3. Sostenga el mango en la POSICION CERRADA y apriete totalmente la tuerca tapa con un efecto de torsión de 15-25 FT/LB (2-3.45 kilográmetros).
4. PARA INSTALAR UN CARTUCHO IZQUIERDO, empuje el cartucho hacia dentro del cuerpo hasta que quede completamente alojado en él. Añada la tuerca tapa y déle vuelta hasta que quede APRETADA AL TACTO. Añada el mango.
5. Sostenga el mango en la POSICIÓN ABIERTA y apriete totalmente la tuerca tapa con un efecto de torsión de 15-25 FT/LB (2-3.45 kilográmetros).
6. Regrese el mango a la posición cerrada y compruebe la alineación del mango.

NOTA: Los mangos llevan grabadas las letras "LH" para designar el lado izquierdo y las letras "RH" para designar el lado dextero.

Cartouches “Quatern”

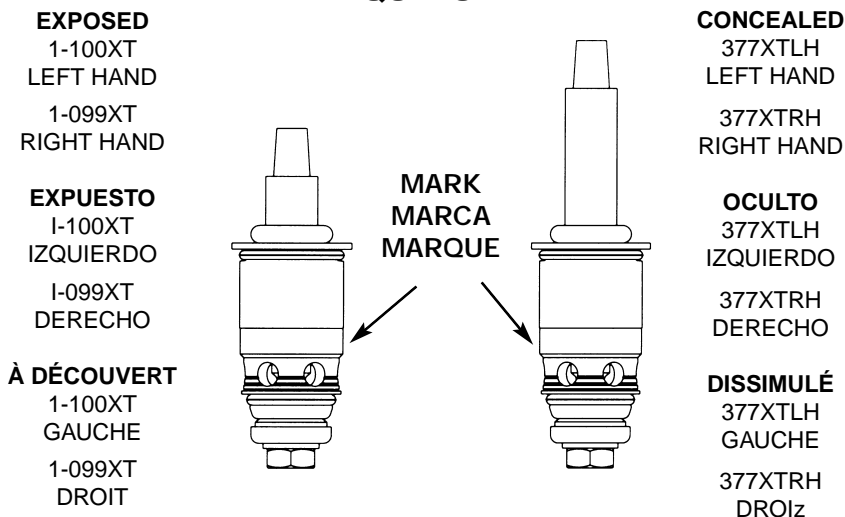
INSTRUCTIONS D'INSTALLATION

REPORTEZ-VOUS À LA PAGE 8 POUR ILLUSTRATION.

1. Placez toujours une nouvelle cartouche en position fermée lors de son installation dans le corps de la valve.
2. POUR INSTALLER UNE CARTOUCHE À DROITE, poussez la cartouche dans le corps jusqu'à ce qu'elle soit bien en place. Ajoutez l'écrou du haut et serrez À LA MAIN. Ajoutez la poignée.
3. Maintenez la poignée en POSITION FERMÉE et vissez complètement l'écrou du haut à 15-25 PIEDS/LB (2-3,45 kg) de torque.
4. POUR INSTALLER UNE CARTOUCHE À GAUCHE, poussez la cartouche dans le corps jusqu'à ce qu'elle soit bien en place. Ajoutez l'écrou du haut et serrez À LA MAIN. Ajoutez la poignée.
5. Maintenez la poignée en POSITION OUVERTE et vissez complètement l'écrou du haut à 15-25 PIEDS/LB (2-3,45 kg) de torque.
6. Faites revenir la poignée en position fermée et vérifiez son alignement.

REMARQUE : Les cartouches sont marquées “LH” pour désigner le côté gauche et “RH” pour désigner le côté droit.

“QUATURN”



Care and Maintenance

All Chicago Faucet fittings are designed and engineered to meet or exceed industry performance standards.

Care should be taken cleaning this product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage.

Use only mild soap with warm water for cleaning and protecting the life of Chicago Faucet fittings.

Cuidado y Mantenimiento

Todos los accesorios de Chicago Faucet son diseñados y fabricados para satisfacer o superar las normas de calidad de la industria.

Se debe tener cuidado al limpiar este producto. No use limpiadores abrasivos, químicos o solventes, puesto que pueden dañar la superficie.

Sólo use un jabón suave y agua tibia para limpiar y proteger la vida útil de los accesorios de Chicago Faucet.

Entretien

Tous les produits de robinetterie Chicago Faucet sont conçus et fabriqués de manière à atteindre et dépasser les normes de l'industrie.

Le nettoyage de ce produit nécessite certaines précautions. Ne pas utiliser de nettoyeur abrasif, de produit chimique ni de solvant: le fini du produit pourrait être altéré.

Nettoyer les produits de robinetterie Chicago Faucets avec de l'eau tiède et un savon doux afin de prolonger leur vie utile.

1-800-TEC-TRUE

For installation questions or other technical assistance call,
1-800-TEC-TRUE.

Si tiene alguna pregunta respecto a la instalación
o si desea asistencia técnica llame al
1-800-TEC-TRUE

Pour toute question concernant l'installation
ou d'autres détails techniques, composez
1-800-TEC-TRUE

CHICAGO FAUCETS - mop sink faucets

CHICAGO FAUCET LIMITED WARRANTY

The CHICAGO FAUCET COMPANY ("Chicago Faucets") extends to the original consumer the following warranties for Genuine Chicago Faucets manufactured products and components, or other components under the Chicago Faucets Warranties, (collectively, the "Products") used in commercial or residential applications:

Lifetime Faucet Warranty The "Faucet", defined as any metal cast, forged, stamped or formed portion of the Product, not including electronic or moving parts or water restricting components, or other components covered under the Chicago Faucet warranties, is warranted against manufacturing defects for the life of the Product.

Five Year Cartridge Warranty - Commercial The "Cartridge", defined as the metal portion of any Product typically referred to by the product numbers containing 1-099XT and 1-100X, excluding any rubber or plastic components, is warranted against manufacturing defects for a period of five (5) years from the date of Product purchase. All Cartridges included in Chicago Faucets Single Control or Shower Products are also warranted against manufacturing defects for a period of five (5) years from the date of Product purchase.

Lifetime Cartridge Warranty - Residential For products used in residential applications, the "Cartridge", as described above, is warranted for the lifetime of the faucet.

One Year Finish Warranty - Commercial For Products used in commercial applications, the finish of the Product is warranted against manufacturing defects for a period of one (1) year from the date of Product purchase.

Five Year Finish Warranty - Residential For Products used in residential applications, the finish of the Product is warranted against manufacturing defects for a period of five (5) years from the date of Product purchase.

Other Warranties All other Products not covered above are warranted against manufacturing defects for a period of one (1) year from the Product purchase.

Restrictions Apply

For complete warranty details, contact your Chicago Faucets sales representative or Chicago Faucets, Consumer Affairs, 2100 S. Clearwater Drive, Des Plaines, Illinois, 60018.

GARANTIA LIMITADA DE CHICAGO FAUCETS

La CHICAGO FAUCET COMPANY ("Chicago Faucets") le otorga al comprador original las siguientes garantías para los productos y componentes auténticos fabricados por Chicago Faucets o demás componentes vendidos bajo las Garantías de Chicago Faucets (colectivamente denominados los "Productos") utilizados en aplicaciones comerciales o residenciales:

Garantía de los Grifos de por vida El "Grifo" (definido como cualquier porción fundida, forjada, estampada o formada en metal del Producto, sin incluir piezas electrónicas o móviles ni tampoco los componentes que restrinjan el flujo del agua u otros componentes cubiertos bajo otras garantías de Chicago Faucets) está garantizado contra defectos de fabricación durante toda la vida del Producto.

Garantía de los Cartuchos por cinco años - Aplicaciones Comerciales El "Cartucho" (definido como la porción metálica de cualquier Producto al que se le denomina típicamente por los números de producción que contienen 1-099XT y 1-100XT, excluyendo cualquier componente de plástico o de caucho) está garantizado contra defectos de fabricación durante un periodo de cinco (5) años contados a partir de la fecha de compra del Producto. Todos los Cartuchos incluidos en los Productos para Ducha (Shower) o los Productos de un Solo Control (Single Control) de Chicago Faucets también están garantizados contra defectos de fabricación durante un periodo de cinco (5) años contados a partir de la fecha de compra del Producto.

Garantía de los Cartuchos de por vida - Aplicaciones Residenciales Para los Productos usados en aplicaciones residenciales, el "Cartucho", tal como se le describió en el párrafo anterior, está garantizado durante toda la vida del Grifo.

Garantía del Acabado por un año - Aplicaciones Comerciales Para los Productos usados en aplicaciones comerciales, el acabado del Producto está garantizado contra defectos de fabricación durante un periodo de un (1) año contado a partir de la fecha de compra del Producto.

Garantía del Acabado por cinco años - Aplicaciones Residenciales Para los Productos usados en aplicaciones residenciales, el acabado del Producto está garantizado contra defectos de fabricación durante un periodo de cinco (5) años contados a partir de la fecha de compra del Producto.

Otras Garantías Todos los demás Productos que no están cubiertos por las disposiciones anteriores están garantizados contra defectos de fabricación durante un periodo de un (1) año contado a partir de la fecha de compra del Producto.

Pueden Aplicarse Restricciones

Para obtener detalles completos sobre las garantías, póngase en contacto con su representante de ventas de Chicago Faucets o directamente con Chicago Faucets, enviando una carta a: Consumer Affairs, 2100 S. Clearwater Drive, Des Plaines, Illinois, 60018.

GARANTIE LIMITÉE DU ROBINET CHICAGO FAUCETS

CHICAGO FAUCET COMPANY ("Chicago Faucets") offre au consommateur original les garanties suivantes pour les produits et éléments voir authentiques fabriqués par Chicago Faucets, ou les autres éléments sous min. Garanties de Chicago Faucets, (ensemble, les "Produits") utilisés à des fins commerciales ou résidentielles:

Garantie à vie du robinet Le "Robinet", défini comme toute partie en métal coulé, forgé, matriçé ou ouvré du Produit, à l'exclusion des pièces électroniques ou mobiles ainsi que les éléments de restriction d'eau ou les éléments mentionnés dans les garanties de Chicago Faucet, est garantie à vie contre tout vice de fabrication.

Garantie de cinq ans de la cartouche - utilisations commerciales La "Cartouche", défini comme la partie en métal de tout dont les numéros de référence Produit contiennent 1-099XT et 1-100XT, à l'exclusion des éléments de caoutchouc ou de plastique, est garantie contre tout vice de fabrication pour une période de cinq (5) ans à compter de la date d'achat du Produit. Toutes les cartouches incluses dans les Produits à contrôle unique ou Produits pour la douche sont garanties aussi contre tout vice de fabrication pour une période de cinq (5) ans à compter de la date d'achat du Produit.

Garantie à vie de la cartouche - utilisations résidentielles Pour les produits à usage résidentiel, la "Cartouche", défini ci-dessus, est garantie à vie contre tout vice de fabrication.

Garantie d'un an - utilisations commerciales La finition des Produits utilisés à des fins commerciales est garantie contre tout vice de fabrication pour une période d'un (1) an à compter de la date d'achat du Produit.

Garantie de cinq ans - utilisations résidentielles La finition des Produits à usage résidentiel est garantie contre tout vice de fabrication pour une période de cinq (5) ans à compter de la date d'achat du Produit.

Autres garanties Les Produits qui ne sont pas mentionnés ci-dessus sont garantis contre tout vice de fabrication pour une période d'un (1) an à compter de la date d'achat du Produit.

Certaines restrictions s'appliquent

Pour obtenir des renseignements détaillés sur les garanties, contactez votre revendeur Chicago Faucets ou Chicago Faucets, Consumer Affairs, 2100 S. Clearwater Drive, Des Plaines, Illinois 60018.



The Chicago Faucet Company
2100 Clearwater Drive
Des Plaines, IL 60018-5999
Phone 847/803-5000 • Fax: 847/298-3101

Last As Long As the Building



Terms and Conditions

CONTROLLING PROVISIONS – This document, including any provisions on the face hereof (the "Contract") constitutes an offer by The Chicago Faucet Company (the "Company") to provide the products described herein (the "Products") to the buyer to which this offer is addressed (the "Buyer"). If this document is deemed an acceptance of a prior offer by Buyer, such acceptance is limited to the express terms contained herein. Buyer's acceptance of this offer is limited to the terms, covenants and conditions contained in this offer. The Company hereby objects to and rejects any additional, different or varying terms proposed by Buyer, unless the Company expressly agrees to such terms in writing. Such proposal of additional, different or varying terms by Buyer shall not operate as a rejection of the Company's offer unless such variances are in the terms of the description, quantity, price or place or date of delivery of the Products, and the Company's offer shall be deemed accepted without such additional, different or varying terms. **THIS CONTRACT CONSTITUTES THE FINAL EXPRESSION OF THE TERMS BETWEEN SELLER AND BUYER REGARDING THE PRODUCTS AND IS A COMPLETE AND EXCLUSIVE STATEMENT OF THOSE TERMS. ANY TERMS, CONDITIONS, NEGOTIATIONS OR UNDERSTANDINGS WHICH ARE NOT CONTAINED IN THIS CONTRACT SHALL HAVE NO FORCE OR EFFECT UNLESS MADE IN WRITING AND SIGNED BY SELLER AND BUYER.** The Company's sales representatives are without authority to change the terms of this Contract. Buyer shall be deemed to have made an unqualified acceptance of this offer and these terms and conditions on the earliest of the following to occur: (1) the Company's receipt of a copy of this Contract signed by Buyer; (2) Buyer's payment of any amounts due under this Contract; (3) Buyer's delivery to the Company of any material to be furnished by Buyer; (4) the Company's delivery of the Products; (5) failure by Buyer to notify the Company to the contrary within one business day of placing the order; or (6) any other event constituting acceptance under applicable law. It is the express wish of the parties that this Contract and any related documents be drafted in English. Il est la volonté expresse des parties que cette convention et tous les documents s'y rattachent soient rédigés en anglais.

PRICES – Prices quoted herein are subject to change without notice and all orders that are accepted are subject to prices prevailing at time of order entry.

TERMS OF PAYMENT – Unless stipulated by the Company elsewhere, net payment is due 60 days from invoice date. A 1-1/2% cash discount will be allowed on invoices paid on or before 50 days from invoice date. Cash discounts must be calculated on the total amount of the invoice, before transportation charges and any applicable taxes. A 1-1/2% per month service charge will be added to all past due invoices. Annual rate of 18% or the maximum amount allowable by law. Buyer agrees to reimburse the Company for all costs and fees incurred by the Company in collecting any sums owed by Buyer to the Company including, without limitation, attorneys' fees and repossession fees. Buyer shall not set off any claims against amounts due to the Company.

TAX NOTICE – Buyer shall pay or reimburse the Company on demand for all taxes, fees and costs including, but not limited to, any manufacturer's tax, retailer's occupation tax, use tax, sales tax, excise tax, value added tax, duty, customs agent or broker fees, inspection or testing fee, freight costs, insurance, consular fees or any other tax, fee or charge of any nature whatsoever, including interest, imposed on, in connection with or measured by any transaction between the Company and Buyer, in addition to the prices quoted or invoiced.

CREDIT APPROVAL – All orders are subject to credit approval by the Company's Credit Department prior to acceptance of the order. At the Company's option, orders may be refused, the Company's obligations may be terminated, amounts may be declared immediately due and payable, credit terms may be changed, delivery may be withheld and/or shipments stopped in transit on accepted orders without any liability on the Company's part, if Buyer defaults in performance hereunder or if, in the Company's sole opinion, Buyer's ability to pay for the Products on the terms and conditions contained herein is in doubt. All New Accounts must submit a \$500.00 net minimum order with credit and bank references.

ORDERS – Buyer's orders are firm following the Company's acceptance and acknowledgement thereof. The Company may accept or reject orders in its sole discretion. All undelivered Products may be cancelled by Buyer only upon written approval of an authorized representative of the Company. In the event of any cancellation of an order by Buyer, Buyer shall pay to the Company its reasonable costs and expenses, plus the Company's usual rate of profit for similar work. Buyer may not alter or modify its order or any part thereof without the Company's prior, written consent. The Company reserves the right to change the price, terms of payment and delivery dates for any Products affected by any alterations or modification to which it consents.

SHIPPING AND HANDLING – Except as otherwise provided in this paragraph, all sales are F.O.B. the Company's facility (the "Facility") (EX WORKS the Facility for sales to Buyers outside the United States, pursuant to INCOTERMS 2000 of the International Chamber of Commerce, as amended ("INCOTERMS")). The Company shall have no obligation or risk of loss of or damage to Products following delivery to the Facility, even if the Company agrees to arrange for transportation as a courtesy to Buyer. Any such transportation shall be at Buyer's sole risk and expense, except to the extent described below. The Company will allow full freight at the prevailing CWT rate on shipments of the Company's products with a net invoice value of:

\$1,500 or more when shipments are within the United States, or;
\$2,500.00 or more when shipments are to Canada

and have as destination Buyer's usual business address or designated job location. Original P.O. must meet FFA (full freight allowed) terms. Subsequent additions will not be considered towards freight allowance. If Buyer requests the Company to make part shipment of an accepted order, this freight allowance shall apply only to such individual part shipments which in themselves have a net invoice value of \$1500.00 or more (continental United States) or \$2,500 (Canada). Freight allowed on shipments to Alaska shall be calculated F.A.S., Seattle, Washington. "F.A.S" shall be defined in accordance with INCOTERMS but shall not be deemed to impose any risk or obligation concerning the goods or

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the shipment thereof upon the Company after the delivery of the goods to the initial carrier. Under no circumstances will a direct C.O.D. shipment be made to the wholesaler's customer. Routing of shipments shall be determined at the sole discretion of the Company.

DELIVERY – Delivery to the Facility (or, for shipments to Alaska, the initial carrier) shall constitute delivery to Buyer. The Company's responsibility and liability for loss or damage in transit cease upon such delivery, and all Products are shipped at Buyer's risk. Buyer shall check each incoming shipment carefully before acknowledging receipt from the carrier. If Products are visibly damaged, Buyer should insist that written confirmation of the damage be noted on the freight bill by the carrier. If concealed damage is noted after unpacking, Buyer should immediately notify the carrier involved and obtain verification of the damage from the carrier. Claims for shortages in orders will not be considered unless presented to the Company within 30 days after delivery hereunder. Failure to make claims within such time period shall constitute unqualified acceptance and a waiver of all such claims by Buyer. All claims for damage in transit or nondelivery must be filed against the carrier by Buyer. Partial shipments shall be permitted. All delivery dates are approximate. Delivery dates given by the Company are based on prompt receipt of all necessary information regarding the order. The Company will use reasonable efforts to meet such delivery dates, but does not guarantee to meet such dates. Failure by the Company to meet any delivery date does not constitute a cause for cancellation and/or damages of any kind. Time for delivery shall not be of the essence. Any delay in delivery due to causes beyond the Company's reasonable control, or due to any priorities or allocations necessitated by governmental orders or regulations, or due to any causes specified in the following sentence, shall extend the term of delivery by a period equal to the length of such delay. In the event of delay in delivery requested by Buyer or caused by Buyer's (1) failure to supply adequate instructions; (2) failure to arrange for transit or pickup; (3) failure to supply or approve necessary data in a timely manner; (4) requested changes; or (5) failure to provide documents required for the Company to effect delivery, the Company will store all Products at Buyer's risk and expense. Buyer shall pay all storage costs and expenses upon the Company's demand.

FORCE MAJEURE – The Company will not be responsible for delay in delivery of Products or other default under this Contract, or for any damages suffered by reasons thereof, when such delay or default is occasioned by accident, fire, flood, embargo, terrorism, strike, war, labor stoppages, inadequate transportation, shortage of materials, delay or default on the part of vendors, government regulations or any other cause beyond its control.

RETURNED GOODS – Products may not be returned to the Company unless prior written approval is obtained by Buyer from the Company. Credit will be issued on all Products returned by permission, at the prevailing price at time of purchase, less a minimum handling charge of 25% (35% if repackaging is necessary). No credit whatsoever will be allowed on Products not listed in the Company's current price list, unless defective. We will go back one price sheet subject to invalid purchase order, invoice number and/or sales order given. Transportation must be prepaid. Your account will be credited for the shipping charges if return is due to any error on our part or if the materials are found defective.

PRODUCT CHANGES – The Company reserves the right to make reasonable changes of any kind in its Products and their packaging without notice.

MINIMUM CHARGE - No invoice will be made for less than \$100.00 (One Hundred Dollars Net invoice amount).

GOVERNING LAW – This Contract shall be governed by and construed according to the internal laws of the State of Illinois, including, without limitation, the Uniform Commercial Code as adopted in Illinois, as modified by this Agreement. Neither this Contract nor sales hereunder shall be governed by the provisions of the United Nations Convention on Contracts for the International Sale of Goods. Any cause of action, claim, suit or demand by Buyer allegedly arising from or related to the terms of this Contract or the relationship of the parties shall be brought in a Court situated in the State of Illinois. Both parties hereby irrevocably admit themselves to and consent to the jurisdiction of said Court.

SEVERABILITY; WAIVER – The invalidity of any provision or clause of this Contract shall not affect the validity of any other provision or clause hereof. The Company reserves the right to correct clerical or similar errors relating to price or any other term shown in this Contract. The failure of either party to insist, in any one or more instances, upon performance of any term, covenant or condition of this Contract shall not be construed as a waiver or relinquishment or any right granted hereunder or the future performance of such term, covenant or condition.

COMPLIANCE WITH LAWS – Buyer agrees to comply with all laws and regulations applicable to the purchase, transport, use, storage, sale, lease and/or disposal of the Products including, without limitation, to the extent applicable, the U.S. Export Administration Act and all regulations thereunder, and Buyer shall cause its employees and agents to comply with such laws and regulations. Without limiting the foregoing or the applicability of any other legislation now or hereafter in effect in any state or municipality, Buyer specifically acknowledges and agrees to comply with (and cause its employees and agents to comply with) 2006 California Assembly Bill 1953, 2008 California Senate Bill 1334 ch. 580, and section 116875 of the California Health and Safety Code, and Act of June 7, 2008, No. 193, 2008 Vt. Acts and Resolves which, among other requirements, strictly limit the amount of lead in solder or flux, and in pipes, pipe or plumbing fittings and fixtures (including replacement parts) intended or used to convey or dispense water for human consumption, and generally prohibit the sale, use, offer or introduction into commerce in California or Vermont, as applicable, at any level, of any such items not meeting the lead content requirements. Certification requirements may apply. In addition, sellers of such items may be required to post warnings at the point of sale and provide buyers with information on the risks of lead exposure.

ASSIGNMENT – Neither party may assign this Contract without the prior written consent of the other party provided, however, that the Company may assign this Contract in whole or in part to any of its affiliates and/or perform through subcontractors. Subject to the foregoing, this Contract shall inure to the benefit of, and be binding upon, the parties' successors and assigns. The Company's warranty limitations and exclusions and damage limitations and exclusions, and any other provision the performance or effectiveness of which naturally survives, shall survive expiration or termination of this Contract for any reason. All of the Company's remedies herein are cumulative and not exclusive of any other remedies available to Company at law, by contract or in equity.

INDEPENDENT CONTRACTOR – Buyer is an independent contractor and neither Buyer nor any of its employees or agents shall be considered an employee or agent of the Company. Neither Buyer nor any of its employees or agents is authorized to incur any obligations or make any promises or representations on the Company's behalf.

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TRADEMARKS – The Company does not grant, and Buyer does not acquire, any license, rights, title or interest to or in any of the trademarks or trade names of the Company by virtue of this Contract, and Buyer shall not use or in any way refer to the Company's trademarks or trade names without the Company's prior written permission.

BUYER'S INDEMNIFICATION OF THE COMPANY – Buyer hereby releases and agrees to promptly defend, indemnify and hold the Company and its affiliates and its and their shareholders, directors, officers, employees, successors and assigns (collectively, "Company Parties") harmless from and against all liabilities, losses, claims, judgments, actions, fines, penalties, costs, damages, attorneys' fees and expenses (collectively, "Damages") relating to (a) the alleged violation of any law by Buyer or any of its employees, agents, successors or assigns ("Buyer Parties"), (b) bodily injuries, deaths or property damage caused by the negligent or wrongful act or omission of Buyer or any of the Buyer Parties, (c) any breach of this Contract by Buyer or any of the Buyer Parties, (d) any failure to install or maintain Products in accordance with the Company's written instructions, and/or (e) Buyer's products. The provisions of this section shall be effective whether or not such loss, damage or injury was proximately caused by the sole or partial negligent acts or omissions of the Company or any Company Parties.

LIMITED WARRANTY – The Company offers limited warranties regarding certain of its products. Such limited warranties may be found in the Company's catalogs and on its website at www.chicagofaucets.com. **THE COMPANY SHALL NOT BE LIABLE TO BUYER, OR TO ANYONE CLAIMING UNDER BUYER, FOR ANY OTHER OBLIGATIONS OR LIABILITIES, INCLUDING, BUT NOT LIMITED TO, OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE OR OTHER TORT OR ANY THEORY OF STRICT LIABILITY, WITH RESPECT TO THE PRODUCTS OR THE COMPANY'S ACTS OR OMISSIONS OR OTHERWISE. THE COMPANY AND BUYER AGREE THAT THE EXPRESS WARRANTIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES. ALL OTHER EXPRESS WARRANTIES ARE DISCLAIMED. FOR COMMERCIAL PRODUCTS, ALL WARRANTIES IMPLIED BY LAW, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. FOR CONSUMER PRODUCTS, WARRANTIES IMPLIED BY LAW, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE PERIOD OF THE EXPRESS LIMITED WARRANTY FOR THE RELEVANT PRODUCT.** Some States do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. **IN NO EVENT SHALL THE COMPANY BE LIABLE FOR INCIDENTAL, COMPENSATORY, CONSEQUENTIAL, INDIRECT OR SPECIAL DAMAGES. THE COMPANY'S AGGREGATE LIABILITY WITH RESPECT TO A DEFECTIVE PRODUCT AND THIS CONTRACT SHALL BE LIMITED TO AN AMOUNT EQUAL TO THE MONIES PAID TO THE COMPANY FOR THAT DEFECTIVE PRODUCT.** Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Please see the Company's limited warranty statement for details on limitations.

Limited Warranty

TO WHOM DOES THIS WARRANTY APPLY? – The Company extends the following limited warranty to the original user only.

WHAT DOES THIS WARRANTY COVER AND HOW LONG DOES IT LAST?

This warranty covers the following Commercial Products:

LIFETIME FAUCET WARRANTY – The "Faucet," defined as any metal cast, forged, stamped or formed portion of the Product, not including electronic or moving parts or other products separately covered by this Limited Warranty or water restricting components or other components, is warranted against material manufacturing defects for the life of the Product.

FIVE YEAR FAUCET WARRANTY – Certain Products and portions of the Product are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase. Products warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase are referred to by the product numbers 42X, 43X, 15XX and E-Tronic™ - 4X, 5X, 6X, 7X, 8X and 9X. All zinc die cast portions of Product are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

FIVE YEAR CARTRIDGE WARRANTY – The "Cartridge", defined as the metal portion of any Product typically referred to by the product numbers containing 1-099, 1-100, 1-310, 377X, 217X and 274X, excluding any rubber or plastic components, is warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase. All Cartridges included in the Company's Single Control or Shower Products also are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

ONE YEAR FINISH WARRANTY – COMMERCIAL – For Products used in commercial applications, the finish of the Product is warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

ELECTRONIC FAUCETS AND METERING MECHANICALS WARRANTY – Electronic and metering faucets mechanicals are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

ELECTRONIC FAUCETS ELECTRONICS AND SOLENOID WARRANTY – Electronic faucets electronics and solenoid are warranted against material manufacturing defects for a period of three (3) years from the date of Product purchase. This warranty does not cover the life of the battery. The Company offers **NO WARRANTY** for Product batteries.

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THIRTY DAY WARRANTY – PALM DEVICES – Palm devices are reconditioned and are warranted against material manufacturing defects for a period of thirty days from the date of device purchase. The Company offers **NO WARRANTY** for batteries, software (on a CD or from a website), damage the Palm device or software allegedly causes to any system, set-up instructions, adaptors or other equipment used with the device.

OTHER WARRANTIES – All other Products not covered above are warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

WHAT THIS WARRANTY DOES NOT COVER – The Company will not be liable for any labor, transportation or consequential expenses not specifically stated above. There is **NO WARRANTY** in cases of damage in transit, negligence, abuse, abnormal usage, misuse, accidents, normal wear and tear, damage due to environmental or natural elements, failure to follow the Company's instructions, unauthorized repair, incorrectly performed maintenance or repair, improper installation or storage or use of acidic, abrasive cleaning materials. In order for this Warranty to apply, Buyer must retain and provide to the Company receipts showing date of Product purchase and documenting proper maintenance. Any oral or written description of the Products is for the sole purpose of identifying the Products and shall not be construed as an express warranty. **THE COMPANY SHALL NOT BE LIABLE TO BUYER, OR TO ANYONE CLAIMING UNDER BUYER, FOR ANY OTHER OBLIGATIONS OR LIABILITIES, INCLUDING, BUT NOT LIMITED TO, OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE OR OTHER TORT OR ANY THEORY OF STRICT LIABILITY, WITH RESPECT TO THE PRODUCTS OR THE COMPANY'S ACTS OR OMISSIONS OR OTHERWISE. THE COMPANY AND BUYER AGREE THAT THE EXPRESS WARRANTIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES. ALL OTHER EXPRESS WARRANTIES ARE DISCLAIMED. FOR COMMERCIAL PRODUCTS, ALL WARRANTIES IMPLIED BY LAW, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. FOR CONSUMER PRODUCTS, WARRANTIES IMPLIED BY LAW, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE PERIOD OF THE EXPRESS LIMITED WARRANTY STATED ABOVE FOR THE RELEVANT PRODUCT.** Some States do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Any assistance the Company provides to or procures for Buyer outside the terms, limitations or exclusions of this warranty will not constitute a waiver of the terms, limitations or exclusions of this limited warranty, nor will such assistance extend or revive the warranty. The Company will not reimburse Buyer for any expenses incurred by Buyer in repairing, correcting or replacing any defective Products, except for expenses incurred with the Company's prior written permission.

HOW TO GET SERVICE – For complete warranty details, or to provide notice of a warranty claim or request warranty service, contact your Chicago Faucets Sales Representative or The Chicago Faucet Company, Customer Service, 2100 S. Clearwater Drive, Des Plaines, Illinois 60018 or 847-803-5000. As the Company's sole and exclusive obligation under this warranty (and Buyer's sole and exclusive remedy), upon prompt written notice of breach from Buyer during the warranty period, the Company will either replace or repair the defective Product or refund the wholesale purchase price, at its option, if an inspection by the Company discloses defects in material or workmanship covered by this warranty. These warranty provisions do not cover the battery shipped with the electronic products.

LIMITATION ON DAMAGES – IN NO EVENT SHALL THE COMPANY BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT OR SPECIAL DAMAGES. WITHOUT LIMITING THE FOREGOING, THE COMPANY SHALL NOT BE LIABLE FOR ANY DAMAGE A PALM DEVICE OR ANY SOFTWARE OR RELATED EQUIPMENT ALLEGEDLY CAUSES TO A SYSTEM OR OTHERWISE. THE COMPANY'S AGGREGATE LIABILITY WITH RESPECT TO A DEFECTIVE PRODUCT AND THIS CONTRACT SHALL BE LIMITED TO AN AMOUNT EQUAL TO THE MONIES PAID TO THE COMPANY FOR THAT DEFECTIVE PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

HOW DOES STATE LAW APPLY? – This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Restrictions Apply

Palm is trademarked by Palm Inc. and is not affiliated with The Chicago Faucet Company.

LIMITED WARRANTY ON DELTA® FAUCETS
LIMITED WARRANTY ON DELTA® FAUCETS
Limited Warranty on Delta® Faucets

Parts and Finish

All parts (other than electronic parts and batteries) and finishes of this Delta® faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for as long as the original consumer purchaser owns the home in which the faucet was first installed or, for commercial users, for five (5) years from the date of purchase.

Electronic Parts and Batteries (if applicable)

Electronic parts (other than batteries), if any, of this Delta® faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for five (5) years from the date of purchase or, for commercial users, for one (1) year from the date of purchase. No warranty is provided on batteries.

What We Will Do

Delta Faucet Company will repair or replace, free of charge, during the applicable warranty period (as described above), any part or finish that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price in exchange for the return of the product. **These are your exclusive remedies.**

What Is Not Covered

Any labor charges incurred by the purchaser to repair, replace, install or remove this product are not covered by this warranty. Delta Faucet Company shall not be liable for any damage to the faucet resulting from reasonable wear and tear, misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions. Delta Faucet Company recommends using a professional plumber for all installation and repair. We also recommend that you use only genuine Delta® replacement parts.

What You Must Do To Obtain Warranty Service or Replacement Parts

A warranty claim may be made and replacement parts may be obtained by calling 1-800-345-DELTA (3358) or by writing to:

In the United States and Mexico:

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
customerservice@deltafaucet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
customerservice@mascocanada.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims unless the purchaser has registered the product with Delta Faucet Company. This warranty applies only to Delta® faucets manufactured after January 1, 1995 and installed in the United States of America, Canada and Mexico.

Limitation on Duration of Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE STATUTORY PERIOD OR THE DURATION OF THIS WARRANTY, WHICHEVER IS SHORTER. Some states/provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Limitation of Special, Incidental or Consequential Damages. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LABOR CHARGES TO REPAIR, REPLACE, INSTALL OR REMOVE THIS PRODUCT), WHETHER ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY DAMAGE TO THE FAUCET RESULTING FROM REASONABLE WEAR AND TEAR, MISUSE, ABUSE, NEGLIGENCE OR IMPROPER OR INCORRECTLY PERFORMED INSTALLATION, MAINTENANCE OR REPAIR, INCLUDING FAILURE TO FOLLOW THE APPLICABLE INSTALLATION, CARE AND CLEANING INSTRUCTIONS. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so the above limitations and exclusions may not apply to you.

Additional Rights

This warranty gives you specific legal rights, and you may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding our warranty, please call, mail or email us as provided above or view our **Warranty FAQs** at www.deltafaucet.com.

LIMITED WARRANTY ON DELTA® BATHING PRODUCTS

LIMITED WARRANTY ON DELTA® BATHING PRODUCTS

Limited Warranty on Bathing Products

This bathing product is warranted to the original consumer purchaser or commercial user, as applicable, to be free from defects in material and workmanship for the applicable period specified below:

Delta® Tubs, Shower Bases, and Walls

Ten (10) years from the date of purchase by the original consumer purchaser or, for commercial users, one (1) year from the date of purchase.

Delta® Glass and Frameless Shower Enclosures and Shower Doors

Five (5) years from the date of purchase by the original consumer purchaser or, for commercial users, one (1) year from the date of purchase.

Peerless® Tubs, Shower Bases, Shower Enclosures, and Walls

Three (3) years from the date of purchase by the original consumer purchaser or, for commercial users, one (1) year from the date of purchase.

All Other Tubs, Shower Bases, Shower Enclosures, and Walls

One (1) year from the date of purchase by the original consumer purchaser or commercial user.

What We Will Do

Delta Faucet Company will repair or replace, free of charge, during the applicable warranty period, any part that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price (the return of the product may be required at Delta Faucet Company's option). **These are your exclusive remedies.**

What Is Not Covered

Any labor charges incurred by the purchaser to repair, replace, install or remove this product are not covered by this warranty. Delta Faucet Company shall not be liable for any damage to the product resulting from reasonable wear and tear, misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions. Delta Faucet Company recommends using a professional plumber for all installation and repair. We also recommend that you use only genuine Delta®/Peerless® replacement parts.

What You Must Do To Obtain Warranty Service or Replacement Parts

A warranty claim may be made and replacement parts may be obtained by calling **1-800-355-2721** or by writing to:

In the United States and Mexico:

Delta Faucet Company
Bathing Products
55 E. 111th Street
Indianapolis, IN 46280
consumercare@deltafaucet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
customerservice@mascocanada.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims unless the purchaser has registered the product with Delta Faucet Company. This warranty applies only to bathing products that are installed in the United States of America, Canada and Mexico.

DO NOT USE CERTAIN CLEANING PRODUCTS. Cleaning products containing the following chemicals can cause this bathing product to crack or discolor and use of cleaning products containing

these chemicals will void this warranty:

- Naphtha
- Amyl Acetate
- Hydrogen Peroxide Solution (common hydrogen peroxide)
- Toluene
- Ethyl Acetate
- Lye (common in drain cleaners)
- Acetone

Limitation on Duration of Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE STATUTORY PERIOD OR THE DURATION OF THIS WARRANTY, WHICHEVER IS SHORTER. Some states/provinces do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

Limitation of Special, Incidental or Consequential Damages. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LABOR CHARGES TO REPAIR, REPLACE, INSTALL OR REMOVE THIS PRODUCT), WHETHER ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY DAMAGE TO THE PRODUCT RESULTING FROM REASONABLE WEAR AND TEAR, MISUSE, ABUSE, NEGLIGENCE OR IMPROPER OR INCORRECTLY PERFORMED INSTALLATION, MAINTENANCE OR REPAIR, INCLUDING FAILURE TO FOLLOW THE APPLICABLE INSTALLATION, CARE AND CLEANING INSTRUCTIONS. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you.

Additional Rights

This warranty gives you special legal rights, and you may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding technical support, installation or our warranty, please call, mail or **email us** as provided above or visit our website at **www.deltabathing.com**.

LIMITED WARRANTY ON DELTA® TOILETS
LIMITED WARRANTY ON DELTA® TOILETS
LIMITED WARRANTY ON DELTA® TOILETS

Chinaware

Chinaware parts of the Delta® toilet are warranted to the original consumer purchaser to be free from defects in material and workmanship for as long as the original consumer purchaser owns the home in which the toilet was first installed or, for commercial users, for five (5) years from the date of purchase.

Mechanical Parts

Mechanical parts of the Delta® toilet are warranted to the original consumer purchaser to be free from defects in material and workmanship for one (1) year from the date of purchase.

Electronic Parts and Batteries (if applicable)

Electronic parts (other than batteries), if any, of this Delta® toilet are warranted to the original consumer purchaser to be free from defects in material and workmanship for five (5) years from the date of purchase or, for commercial users, for one (1) year from the date of purchase. No warranty is provided on batteries.

Toilet Seats

Toilet seats of the Delta® toilet are warranted to the original consumer purchaser to be free from defects in material and workmanship for one (1) year from the date of purchase. Toilet seats of the Delta® toilet are not designed or intended for commercial use; therefore, no warranty is given on the toilet seat if used for commercial purposes.

What We Will Do

Delta Faucet Company will repair or replace, free of charge, during the applicable warranty period, any part that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price in exchange for the return of the product. **These are your exclusive remedies.**

What Is Not Covered

Any labor charges incurred by the purchaser to repair, replace, install or remove this product are not covered by this warranty. Delta Faucet Company shall not be liable for any damage to the product resulting from reasonable wear and tear, misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions. Delta Faucet Company recommends using a professional plumber for all installation and repair. We also recommend that you use only genuine Delta® replacement parts.

What You Must Do To Obtain Warranty Service or Replacement Parts

A warranty claim may be made and replacement parts may be obtained by calling 1-855-345-1345 or by writing to:

In the United States and Mexico:

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
customerservice@deltatoilet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
customerservice@deltatoilet.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims unless the purchaser has registered the product with Delta Faucet Company. This warranty applies only to Delta® toilets installed in the United States of America, Canada and Mexico.

DO NOT USE IN-TANK BOWL CLEANERS. Products containing chlorine or chlorine-related products can seriously damage fittings in the tank, which can cause leakage and property damage. Delta Faucet Company shall not be responsible or liable for any tank fitting failure or damage caused by the use of in-tank bowl cleaners.

Limitation on Duration of Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE STATUTORY PERIOD OR THE DURATION OF THIS WARRANTY, WHICHEVER IS SHORTER. Some states/provinces do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

Limitation of Special, Incidental or Consequential Damages. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LABOR CHARGES TO REPAIR, REPLACE, INSTALL OR REMOVE THIS PRODUCT), WHETHER ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY DAMAGE TO THE TOILET RESULTING FROM REASONABLE WEAR AND TEAR, MISUSE, ABUSE, NEGLIGENCE OR IMPROPER OR INCORRECTLY PERFORMED INSTALLATION, MAINTENANCE OR REPAIR, INCLUDING FAILURE TO FOLLOW THE APPLICABLE INSTALLATION, CARE AND CLEANING INSTRUCTIONS. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you.

Additional Rights

This warranty gives you special legal rights, and you may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding technical support, installation or our warranty, please call, mail or email us as provided above or visit our website at www.deltatoilet.com or www.deltafaucet.com/customersupport/faq.

LIMITED WARRANTY ON DELTA® LEAK DETECTORS

LIMITED WARRANTY ON DELTA® LEAK DETECTORS

Two-Year Limited Warranty on Delta® Leak Detectors

Parts

All parts (other than batteries) of this Delta® Leak Detector are warranted to the original consumer purchaser to be free from defects in material and workmanship for two (2) years from the date of the original retail purchase (the "Warranty Period"). No warranty is provided on batteries.

What We Will Do

Delta Faucet Company will repair or replace, free of charge, during the Warranty Period, any part that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price in exchange for the return of the product. **These are your exclusive remedies.**

What Is Not Covered

Delta Faucet Company shall not be liable for (a) any damage to the Leak Detector caused in any way by reasonable wear and tear, misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable maintenance and installation instructions, or (b) any water or other property damage to the building in which the Leak Detector is installed, or (c) any personal injury caused in any way by the Leak Detector, in each case even if the product does not function properly. If moisture is present in the battery compartment, the product should be replaced and this warranty will no longer be valid.

What You Must Do To Obtain Warranty Service

A warranty claim may be made by calling 1-800-345-DELTA (3358) or by writing to:

In the United States and Mexico:

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
customerservice@deltafaucet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
customerservice@mascocanada.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims. This warranty applies only to Delta[®] Leak Detectors installed in the United States of America, Canada and Mexico.

Limitation on Duration of Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE STATUTORY PERIOD OR THE DURATION OF THIS WARRANTY, WHICHEVER IS SHORTER. Some states/provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Limitation of Special, Incidental or Consequential Damages. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING WATER OR OTHER DAMAGE TO THE HOME IN WHICH THE LEAK DETECTOR IS INSTALLED, EVEN IF THE PRODUCT DOES FUNCTION PROPERLY), WHETHER ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. DELTA FAUCET COMPANY SHALL

NOT BE LIABLE FOR ANY DAMAGE TO THE LEAK DETECTOR RESULTING FROM REASONABLE WEAR AND TEAR, MISUSE, ABUSE, NEGLIGENCE OR IMPROPER OR INCORRECTLY PERFORMED INSTALLATION, MAINTENANCE OR REPAIR, INCLUDING FAILURE TO FOLLOW THE APPLICABLE MAINTENANCE AND INSTALLATION INSTRUCTIONS. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so the above limitations and exclusions may not apply to you. **Note to residents of the State of New Jersey: The foregoing Limited Warranty will not apply to you, except as otherwise permitted by New Jersey law.**

Additional Rights

This warranty gives you specific legal rights, and you may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding our warranty, please call, mail or email us as provided above or view our **Warranty FAQs** at **www.deltafaucet.com/leakdetection**.

Drinking Solutions Care and Cleaning

Learn to clean and care for the surfaces of your fountains, bottle filling stations, water dispensers and more. See below for cleaning information for all drinking solutions products.

Stainless Steel Surfaces

- General cleaning: Use an ordinary, mild detergent and soft cloth. Wipe the surface and towel dry.
- Steel soap pads should never be used; particles can adhere to a stainless steel surface and will eventually rust.
- Light scratches are normal for stainless steel. They will blend into the uniform finish pattern with time.

Polyvinyl Surfaces

- General cleaning: Use an ordinary, mild detergent and soft cloth. Wipe the surface and towel dry.
- Wipe the surface clean to remove debris or buildup.

Composite Surfaces

- General cleaning: Use a soft sponge or cloth with water or nonabrasive foam cleaner. Wipe the surface and towel dry.
- Mild abrasives such as liquid automotive cleaning compound or baking soda paste will remove simple scratches and stains.
- Harsh abrasive cleaners should not be used.
- Periodic applications of automobile wax or like products will keep the finish looking like new.

Drinking Solutions Care and Cleaning

Plastic Surfaces

- General cleaning: Use an ordinary, mild detergent and soft cloth. Wipe the surface and towel dry.
- Wipe the surface clean to remove debris or buildup. This will not hurt the antimicrobial properties of the material.

Chrome Surfaces

- General cleaning: Use an ordinary mild food safe detergent and soft cloth. Wipe the surface and towel dry.
- Harsh abrasive cleaners should not be used.
- Wipe the surface clean to remove debris or buildup.

Electronic Displays and Sensors

- Wipe with a soft and dry cloth; preferably microfiber.
- If necessary, lightly mist with deionized water and wipe dry.

Powder-Coated Surfaces

- General cleaning: Use an ordinary, mild detergent and soft cloth. Rinse the surface and towel dry.
- Steel soap pads or harsh abrasive cleaners should never be used.

Stone Aggregate Surfaces

- Spray clean with garden hose to remove dirt and debris.

ELKAY® With **FLEXI-GUARD**®

INSTALLATION, CARE & USE MANUAL

SWIRLFLO® Refrigerated fountains with FLEXI-GUARD®



ERP2-8C



ERP2-8RAC

INSTALLER



CAUTION:

Review these instructions before beginning installation. Be sure that installation conforms to all plumbing, electrical and other applicable codes.



WARNING:

When installation is complete, ensure these instructions are left in the plastic bag provided inside the installed unit for future reference.



WARNING:

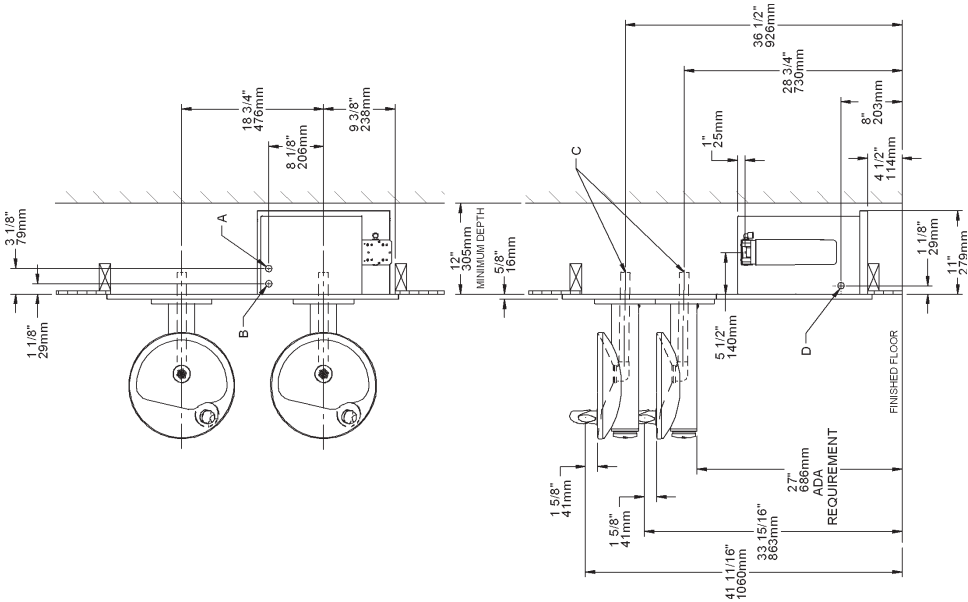
Service to be performed by authorized service personnel only.

NOTE: It is common practice to ground electrical hardware such as telephones, computers and other devices to available water lines. This can, however, cause electrical feedback in the plumbing circuit, which results in an “electrolysis” effect occurring in the fountain. This may result in water which has a metallic taste to it or has a noticeable increase in the metallic content of the water.

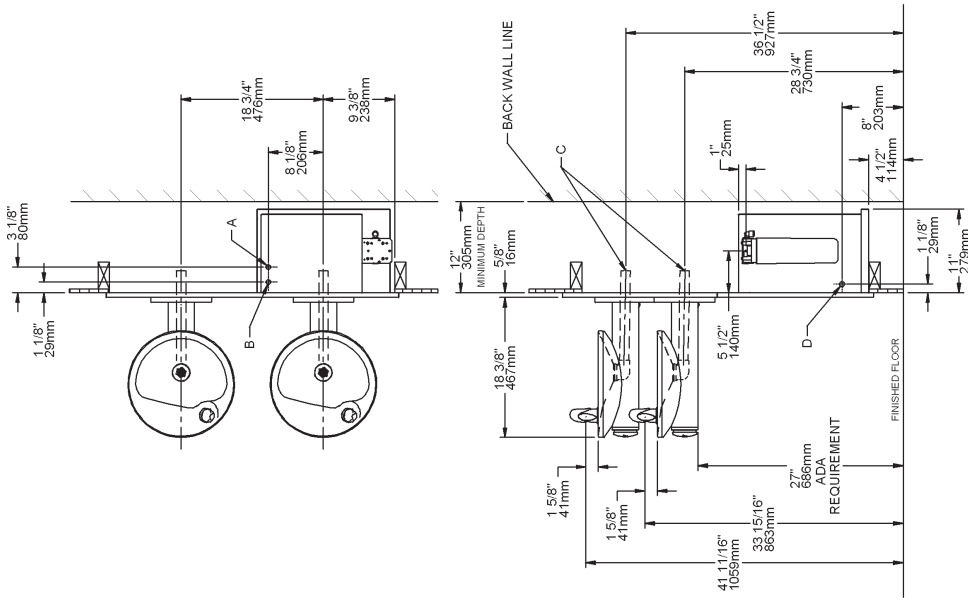
When inspecting plumbing circuit, remember the line may be grounded some distance from the installation, and may occur outside the building or area in which the unit is being installed.

This condition can be avoided (in most cases) by using recommended materials during installation. Any drain fittings provided by the installer should be made of **plastic** which will electronically isolate the fountain from the remainder of the building’s plumbing circuits.

Model LRPB2-8RAC



Model LRPB2-8C



LEGEND
A = 1/4" O.D. Tube - Water Outlet Connection
B = 3/8" O.D. Tube - Water Inlet Connection
C = 1-1/4" Waste Tube
D = ELECTRICAL INLET

Figure 1 - Rough-in Dimensions

Note: Danger! Electric shock hazard. Disconnect power before servicing unit.

Uses HFC-134A refrigerant

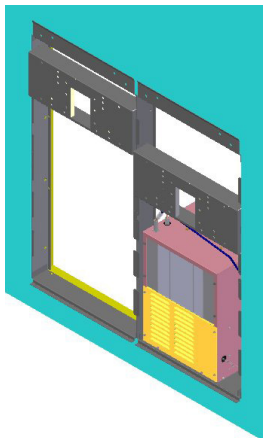


Figure 2 - Chiller Installation

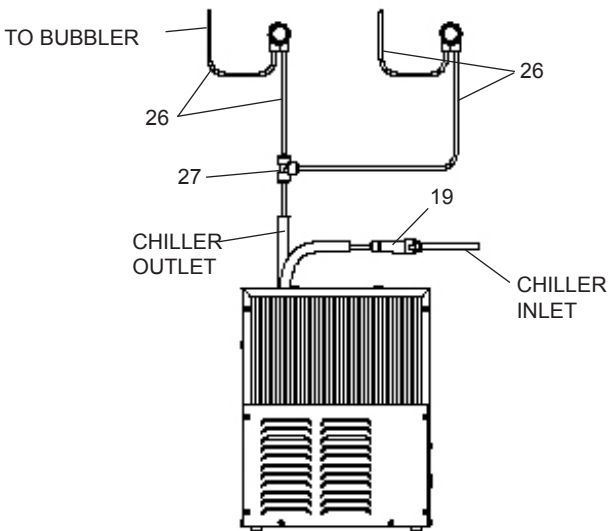


Figure 3 - ERPB Tube Routing

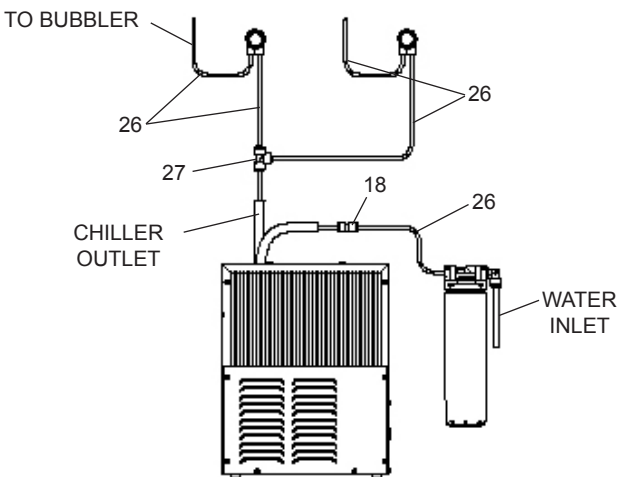


Figure 4 - LRPB Tube Routing

REQUIRED TOOLS AND MATERIALS

These tables show special tools and/or additional materials (not provided) which are necessary to complete installation of these units:

Special Tools

Item	Description	Quantity
	NONE	

Additional Materials

Item	Description	Quantity
1	Unplated copper inlet pipe	
2	Service Stop	

1. **Install chiller:** Remove front panel of chiller. **Remove and discard cardboard inner pack from between compressor and side panel.** Slide chiller onto the shelf and position it to the left as per dimensions in Figure 1.

Note: Building construction must allow for adequate air flow on both sides, top and back of chiller. A minimum of 4" (102mm) on both sides and top is required. See chiller installation for additional instructions.

2. **Make water supply connections.** Install a shut-off valve and union connection to building water supply (valve and union not provided). Turn on water supply and flush the line thoroughly.
3. **ERP Models:** Make connection between remote chiller and building supply line. Inlet port is marked on the chiller (1/4" O.D. copper tube). Bend the copper tube (provided) at an appropriate length from chiller to opening in frame. Install the in-line strainer (provided with chiller) by pushing it until it reaches a positive stop, approximately 3/4" (19mm) on the marked chiller inlet port. Connect building supply line to strainer. (See Figure 3)

Caution: DO NOT SOLDER tubes inserted into the strainer as damage to o-rings may result.

4. **LRPB Models:** Mount filter head assembly to side of chiller (See Figure 4). Make connections between filter and building supply line (3/8" O.D. tube not provided). Inlet port is marked on the chiller (1/4" O. D. copper tube). Install a 1/4" x 1/4" union (provided) on the marked chiller inlet port. Insert the 1/4" poly tubing (provided) into the fitting on filter and connect the union to the chiller. (See Figure 4)

Caution: DO NOT SOLDER tubes inserted into the strainer as damage to o-rings may result.

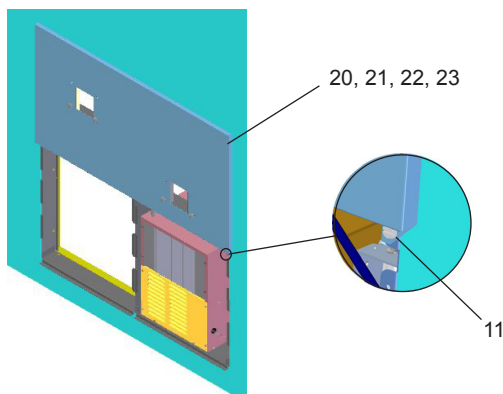


Figure 5 - Upper Panel Installation

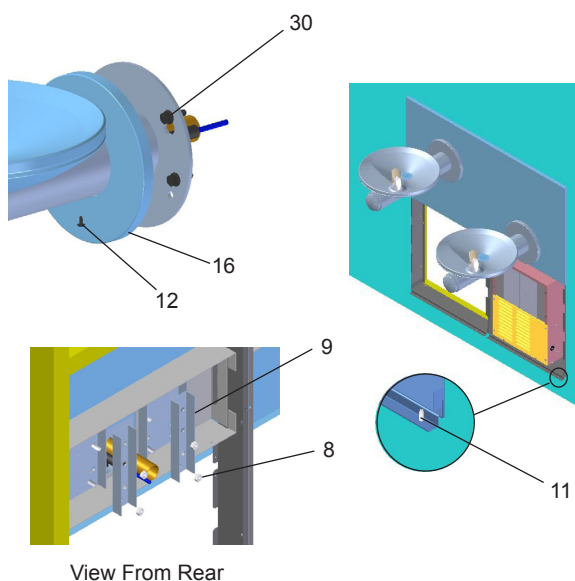


Figure 6 - Fountain Installation

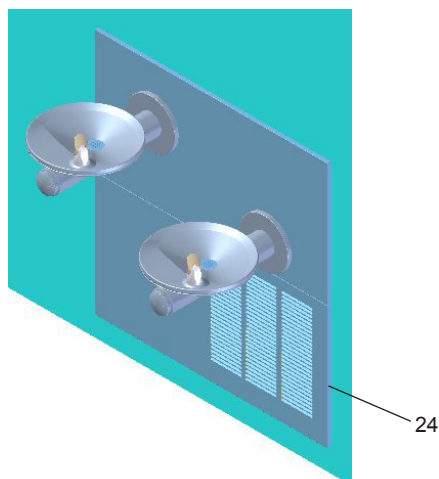


Figure 7 - Lower Panel Installation

5. **Hang** the upper panel on the mounting frame hanger. Be sure that the panel is engaged with hanger at the top of frame before releasing it. Align holes in the panel with holes in the mounting frame. Install two (2) #10-24 x 5/8" (16mm) screws (Item 11 - Figure 5) in holes and tighten securely.
6. **Install** the fountain. Remove the screw (Item 12) from cover plate and slide cover plate (Item 16) toward basin. Mount the fountain to the upper panel and frame with (4) 5/16" x 1" (25mm) bolts (Item 27), brackets (Item 9) and nuts (Item 8) provided. Tighten securely. **Brackets (Item 9) must be installed as shown to properly support fountains.** (See Figure 6)
7. **Attach waste tube** (1-1/4" O.D.) to 1-1/4" O.D. slip trap (provided by others).
8. **ERPB Models:** Make connections between remote chiller outlet tube and fountain. Outlet port is marked on the chiller (1/4" O.D. copper tube). Install a 1/4" x 1/4" tee (provided) on the marked chiller outlet port. Insert the 1/4" poly tubing coming from the fountain into the union. Turn on the water supply and check for leaks.

CAUTION: DO NOT SOLDER tubes inserted into the strainer as damage to o-rings may result.

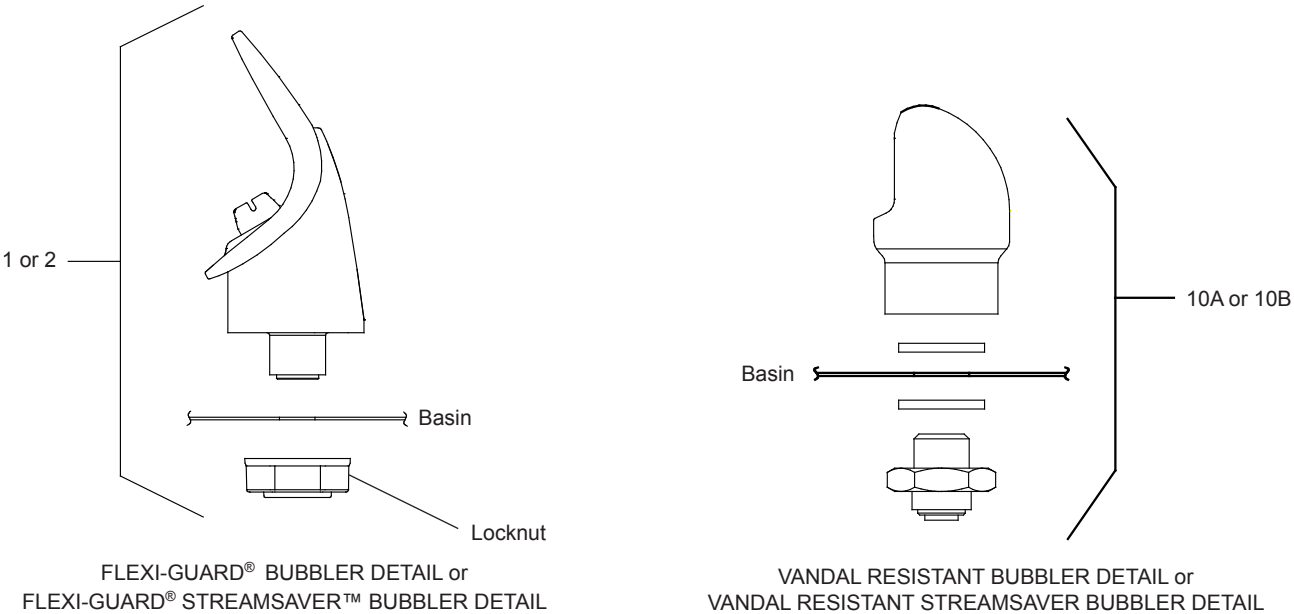
LRPB Models: Make connections between remote chiller outlet tube and fountain. Outlet port is marked on the chiller (1/4" O.D. copper tube). Install a 1/4" x 1/4" tee (provided) on the marked chiller outlet port. Insert the 1/4" poly tubing coming from the fountain into the union.

CAUTION: DO NOT SOLDER tubes inserted into the strainer as damage to o-rings may result.

9. **These products are designed to operate on 20-105 PSI supply line pressure.** If inlet pressure is above 105 PSI, a pressure regulator must be installed in the supply line.

CAUTION: Any damage caused by connecting these products to a supply line with pressure lower than 20 PSI or higher than 105 PSI IS NOT covered under warranty.

10. **Make electrical connections to the chiller.** See chiller instructions.
11. **Check stream height from bubbler.** Stream height is factory set at 35 PSI. If supply pressure varies greatly from this, remove push button (Item 3 - Figure 11) and adjust the screw on the regulator (Item 4 - Figure 11). To remove push button, remove set screw from bottom of sleeve (Item 6). Insert a small punch in screw hole and push up while grasping the push button and pull forward removing the push button. Clockwise adjustment will raise stream height and counterclockwise movement will lower stream height. For best adjustment stream should hit basin approximately 6-1/2" from the bubbler. Reassemble push button by pushing in on button until the push button catches in the sleeve. Reinstall the setscrew (Item 6) in the sleeve (Item 17).
12. **Mount lower panel.** Loosen the three (3) #10-24 x 5/8" (16mm) screws (Item 11 - Figure 6) at frame bottom lip. Slide upper tongue of lower panel under lower edge of already installed upper panel. Tighten previously loosened screws securely. (See Figure 7)



NOTE:
When installing replacement bubbler and pedestal, tighten locknut only to hold parts snug in position. Do Not Overtighten.

Figure 8 - Bubbler Details

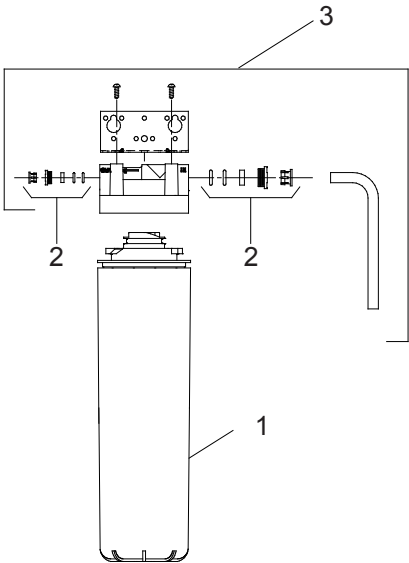


Figure 9 - Filter Assembly
(When provided)

WaterSentry® Filter Detail

WATERSENTRY® FILTER PARTS LIST (See Fig. 9)		
ITEM NO.	PART NO.	DESCRIPTION
1	51299C	Filter Assy - 1500 Gallon
2	98926C	Kit-Filter Head Fitting Includes John Guest Fittings
3	51469C	Assy-Filter Head & Mounting Bracket/John Guest Ftgs/Screws

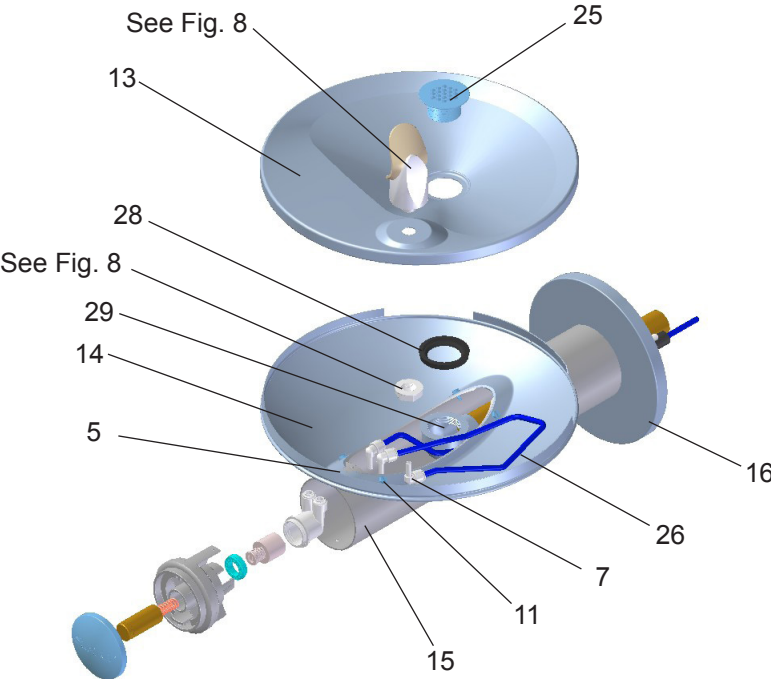


Figure 10 - Fountain Body Assembly

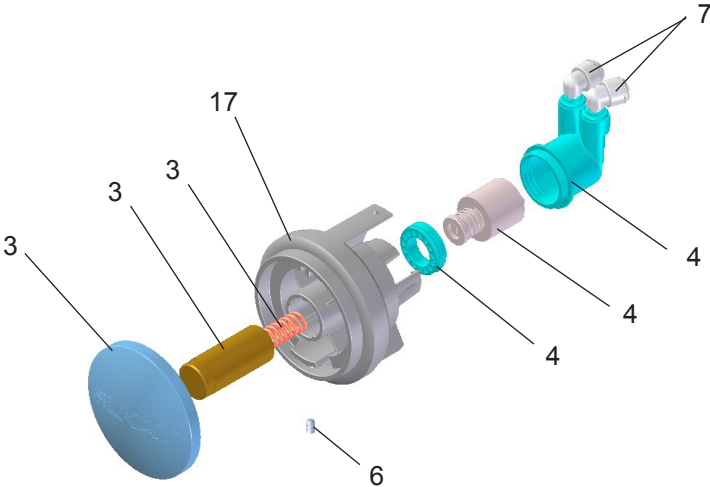


Figure 11 - Push Button Assembly

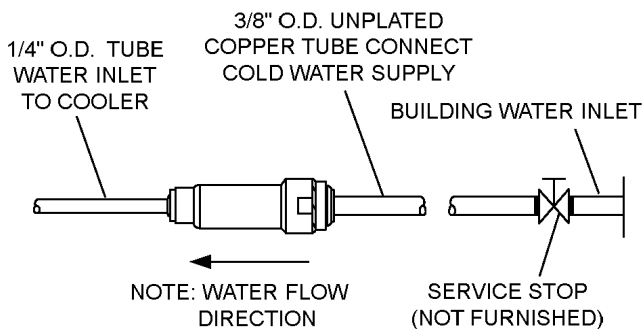


Figure 12 – Water Supply Connections

PARTS LIST		
ITEM NO.	PART NO.	DESCRIPTION
1	56073C	Bubbler Assy
2	98501C	Bubbler Assy (Stream Saver)
3	98871C	Kit - Push Button/Spring/Washer
4	98530C	Kit - Regulator/Holder/Nut
5	38417001	Screw - #8-18 x .37 HHSM
6	75632C	Setscrew - #10-32 x .38
7	70817C	Fttnng - Elbow 1/4 x 1/4
8	70020C	Nut - Hex 5/16-18
9	28395C	Bracket - Support
10A	97446C	Bubbler Assembly VR
10B	98481C	Bubbler Assy. VR StreamSaver
11	111008343890	Screw - #10-24 x .62 HHSM
12	70432C	Screw - #8-32 x .38 THSM
13	28708C	Basin - Swirlflow
14	28473C	Lower Shell
15	45767C	Fountain Body
16	28343C	Cover Plate
17	45781C	Sleeve
18	1000002162	Kit - Union 1/4" x 1/4" (3 Pack)
19	55996C	Strainer (Provided with Chiller)
20	28383C	Back Panel RH ADA
21	28384C	Back Panel LH ADA
22	1000003513	Back Panel RH ADA (Green Spec)
23	1000003514	Back Panel LH ADA (Green Spec)
24	27026C	Lower Panel
25	45768C	Drain - Plug 1-1/2"
26	56092C	Poly Tubing (Cut To Length)
27	1000001994	Kit - Tee - 1/4" (3 Pack)
28	56163C	Gasket - Drain
29	45769C	Assy - Drain/Tailpipe
30	75560C	Screw - 5/16-18 x 1.00 HHMS

Installation Package

The components for installation are packed in three separate boxes, regardless of the type of unit being installed. The boxes contain the following:

- Box No. 1: Wall Frame(s)
- Box No. 2: Remote Chiller, ECH8
- Box No. 3: Fountain Arm and Panels

Additional materials, as noted in the Parts List, are also shipped in these boxes.

TROUBLESHOOTING & MAINTENANCE

Orifice Assembly: Mineral deposits on orifice can cause water flow to spurt or not regulate. Mineral deposits may be removed from the orifice by poking with a small round file not over 1/8" diameter, or using a small diameter wire.

CAUTION: DO NOT file or cut orifice material.

Stream Regulator: If orifice is clean, regulate flow as in Step 11 of the installation instructions. If replacement is necessary, see parts list for correct regulator part number.

Actuation of Quick Connect Water Fittings:

Cooler is provided with lead-free connectors which utilize an o-ring water seal. To remove tubing from the fitting, relieve water pressure, push in on the gray collar while pulling on the tubing. (See Figure 13) To insert tubing, push tube straight into fitting until it reaches a positive stop approximately 3/4").

OPERATION OF QUICK CONNECT FITTINGS

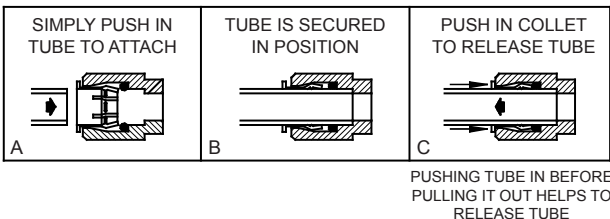


Figure 13 – Quick Connect Fittings

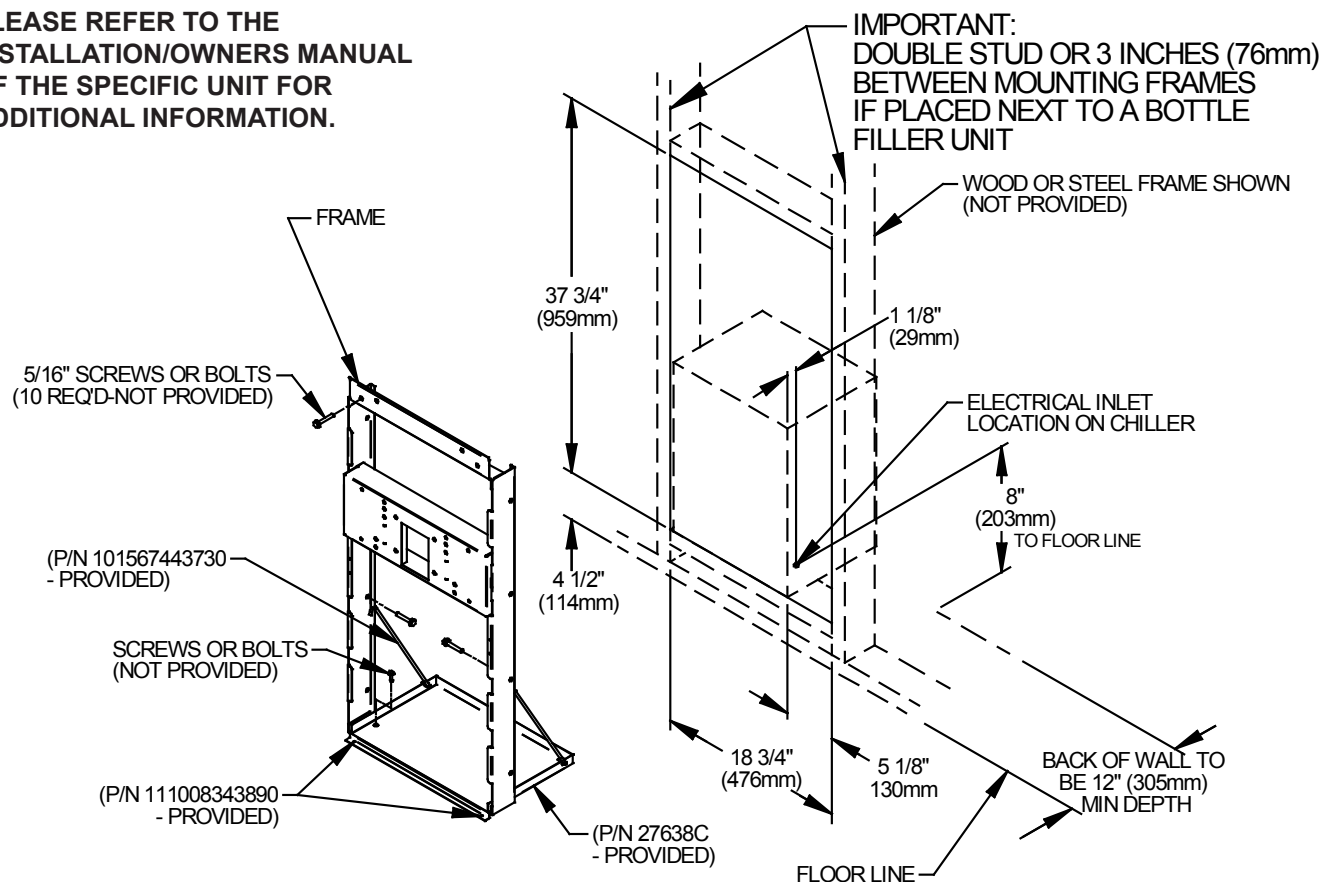
FOR PARTS, CONTACT YOUR LOCAL DISTRIBUTOR OR CALL 1.800.834.4816
REPAIR SERVICE INFORMATION TOLL FREE NUMBER 1.800.260.6640

ELKAY MANUFACTURING COMPANY • 2222 CAMDEN COURT • OAK BROOK, IL 60523 • 630.574.8484

SINGLE-STATION MOUNTING FRAME INSTRUCTIONS

ACTUAL FRAME MAY VARY FROM THE ONE ILLUSTRATED. PLEASE REFER TO THE INSTALLATION/OWNERS MANUAL OF THE SPECIFIC UNIT FOR ADDITIONAL INFORMATION.

MF100



- Cut a square rectangular wall opening** 18 3/4" (476mm) W x 37 3/4" (959mm) H and 4 1/2" (114mm) above the floor line. These dimensions are required to obtain proper rim and bubbler heights for compliance with ANSI standard A117.1.
- Reinforce the wall opening** on all sides so that it will adequately support the water fountain. This reinforcement must support up to 150 lbs static load and provide a means for securing the frame assembly in place.
NOTE: Building construction must allow for adequate air flow on both sides and top of remote chiller unit. Minimum of 4" (102mm) is required.
- Install plumbing and electrical rough-ins.** A junction box for a (3) wire, 10 amp branch circuit is provided on the inside of the chiller. (Standard 120 Volts, 60 Hz and single phase)
- Remove frame and related hardware** from packaging. Release the two shelf rods by cutting cable ties. Install the frame squarely in wall opening with frame upright edges flush with the finished wall face. Place shelf inside frame and line up the (2) holes on each. Insert loose ends of rods into holes on sides of shelf panel. Using appropriately sized screws or bolts (not provided), fasten the shelf and frame to bottom of wall opening. Secure the frame sides and top to the wall using (10) 5/16" bolts or screws (not provided).
NOTE: Be sure that frame is squared in location. Do not use less than the required screw quantity and size.

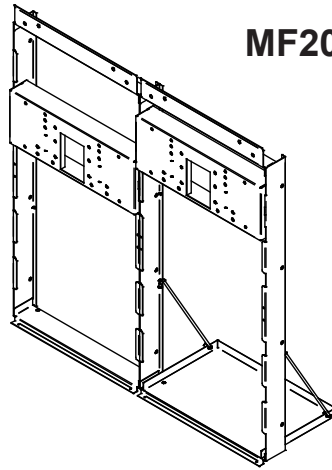
For Technical Service, please contact us at 1.800.476.4106

DUAL-STATION MOUNTING FRAME INSTRUCTIONS

MF200

ACTUAL FRAME MAY VARY FROM THE ONE ILLUSTRATED. PLEASE REFER TO THE INSTALLATION/OWNERS MANUAL OF THE SPECIFIC UNIT FOR ADDITIONAL INFORMATION.

REVERSED CONFIGURATION:
HIGHER UNIT ON THE RIGHT



IMPORTANT:
DOUBLE STUD OR 3 INCHES (76mm) BETWEEN MOUNTING FRAMES IF PLACED NEXT TO A BOTTLE FILLER UNIT

5/16" SCREWS OR BOLTS
(12 REQ'D - NOT PROVIDED)

FRAME

(4 REQ'D - P/N 111577343890
- PROVIDED)

(P/N 111008343890
- PROVIDED)

SCREWS OR BOLTS
(NOT PROVIDED)

(4 REQ'D - P/N 111577243890
- PROVIDED)

37 3/4"
959mm

4 1/2"
114mm

WOOD OR STEEL FRAME
SHOWN (NOT PROVIDED)

1 1/8"
29mm

ELECTRICAL INLET
LOCATION ON
CHILLER

8"
203mm
TO FLOOR LINE

37 1/2"
953mm

5 1/8"
130mm

BACK OF WALL
TO BE 12"
(305mm) MIN
DEPTH

FLOOR LINE

(P/N 101567443730
- PROVIDED)

STANDARD CONFIGURATION:
HIGHER UNIT ON THE LEFT

1. **Cut a square rectangular wall opening** 37 1/2" (953mm) W x 37 3/4" (959mm) H and 4 1/2" (114mm) above the floor line. These dimensions are required to obtain proper rim and bubbler heights for compliance with ANSI standard A117.1.
2. **Reinforce the wall opening** on all sides so that it will adequately support the water fountain. This reinforcement must support up to 150 lbs static load and provide a means for securing the frame assembly in place.
NOTE: Building construction must allow for adequate air flow on both sides and top of remote chiller unit. Minimum of 4" (102mm) is required.
3. **Install plumbing and electrical rough-ins.** A junction box for a (3) wire, 10 amp branch circuit is provided on the inside of the chiller. (Standard 120 Volts, 60 Hz and single phase)
4. **Remove frame assembly and related hardware** from packaging. Attach the two frames together thru the upright supports with (4) 5/16" x 3/4" (19mm) long bolts and nuts (provided). Tighten securely.
5. **Install the frame assembly** squarely in wall opening with frame upright support edges flush with the finished wall face. Secure the frame to the wall thru holes with (12) 5/16" bolts or screws (not provided). Tighten securely.
NOTE: Be sure that frame is squared in location. Do not use less than required screw quantity and size.
6. **Attach the chiller shelf support rods** to the right side frame uprights at the second set of holes counting from the bottom and to the shelf at the (2) side holes. Line up the other shelf holes with the frame bottom holes and fasten the assembly to the wall using appropriately sized screws or bolts and nuts (not provided).

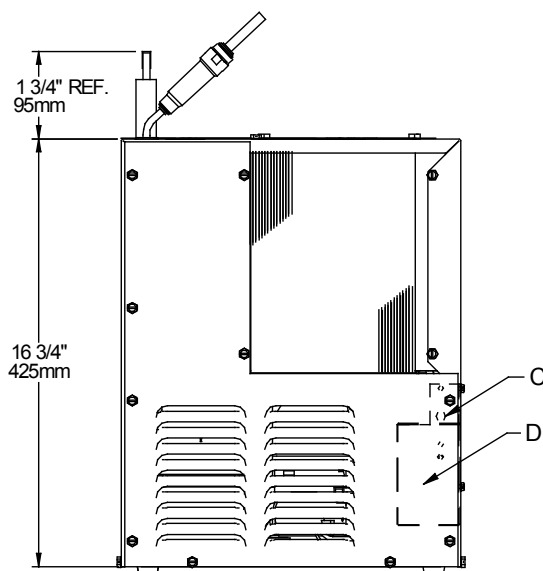
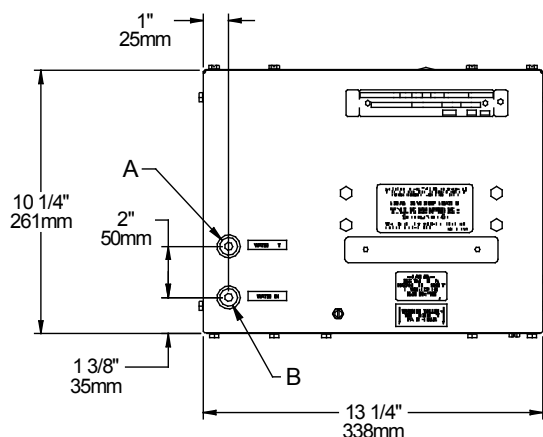
For Technical Service, please contact us at 1.800.476.4106

ELKAY® Refrigeration Package

INSTALLATION, CARE & USE MANUAL

Note: Danger! Electric shock hazard. Disconnect power before servicing unit.

USES HFC-134A REFRIGERANT



LEGEND

- A = 1/4" O.D. TUBE WATER OUTLET
B = 1/4" O.D. TUBE WATER INLET
C = TEMPERATURE ADJUSTMENT
D = ELECTRICAL

INSTALLATION

1. When mounting unit in an open area, to insure proper ventilation, maintain a 4" (102mm) clearance from cabinet louvers on each side of cooler. When mounting unit in a cavity or behind a wall maintain minimum space of 4" (102mm) on each side, 4" (102mm) on the top and a depth of 12" (305mm).
2. Water inlet is 1/4" (6 mm) O.D. tube. Contractor to supply the connections as required.
3. Connecting lines to be of unplated copper, thoroughly flushed to remove all foreign matter before being connected to cooler. If flushing does not remove all particles, a water strainer should be installed in supply line. This cooler is manufactured in such a manner that it does not in any way cause taste, odor, color or sediment problems.
4. Connect cooler to building supply line with a shut-off valve and install the in-line strainer between the valve and cooler.
5. Electrical: Make sure power supply is identical in voltage, cycle, and phase to that specified on cooler serial plate. Never wire compressor directly to the power supply.
6. This chiller has been designed for use with potable water **ONLY**.

START-UP

1. Open supply line valve.
2. Purge air from all water lines by operating bubbler valve of fountain to which cooler is connected. Steady stream assures all air is removed.
3. Rotate fan to insure proper clearance and free fan action.
4. Connect to electrical power.

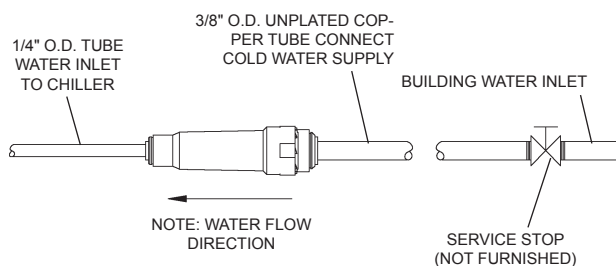
TROUBLE SHOOTING & MAINTENANCE

Temperature Control: Factory set at 50°F (± 5°) under normal conditions. For colder water, adjust screw on item no. 9 in clockwise direction.

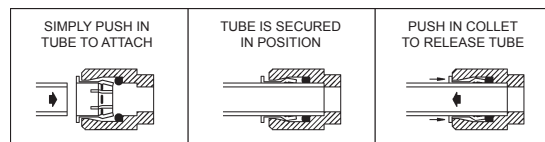
Ventilation: Cabinet louvers and condenser fins should be periodically cleaned with brush, air hose or vacuum cleaner. Excess dirt or poor ventilation can cause no cold water and compressor cycling on the compressor overload protector.

Lubrication: Motors are lifetime lubricated.

Actuation of Quick Connect Water Fittings: Cooler is provided with lead-free connectors which utilize an o-ring seal. To remove tubing from the fittings, relieve water pressure, push in on gray collar while pulling on the tubing. To insert tubing, push tube straight into fitting until it reaches a positive stop, approximately 3/4".



OPERATION OF QUICK CONNECT FITTINGS



PUSHING TUBE IN BEFORE PULLING IT OUT HELPS TO RELEASE TUBE

115V ITEMIZED PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION
1	98724C	KIT - EVAP REPLACE ASSY
2	28478C	CABINET
3	98776C	KIT - CONDENSER/DRIER
4	98775C	KIT - FAN MTR/BLADE/NUT/SHROUD
5	20282C	BRACKET - FAN MOUNTING
6	98778C	KIT - HEAT EXCHANGER/DRIER
7	66703C	DRIER
*8	36322C	COMPRESSOR SERVICE PAK
9	98773C	KIT - COLD CONTROL/SCREWS
10	28477C	PANEL - FRONT
11	0000000238	KIT - ELECT/RELAY/COVER/OL
12	98777C	KIT - COMPRESSOR MTG HDWE
13	50930C	BUMPER
14	27303C	BASEPLATE
15	22300C	PANEL - REAR
16	55996C	IN-LINE STRAINER

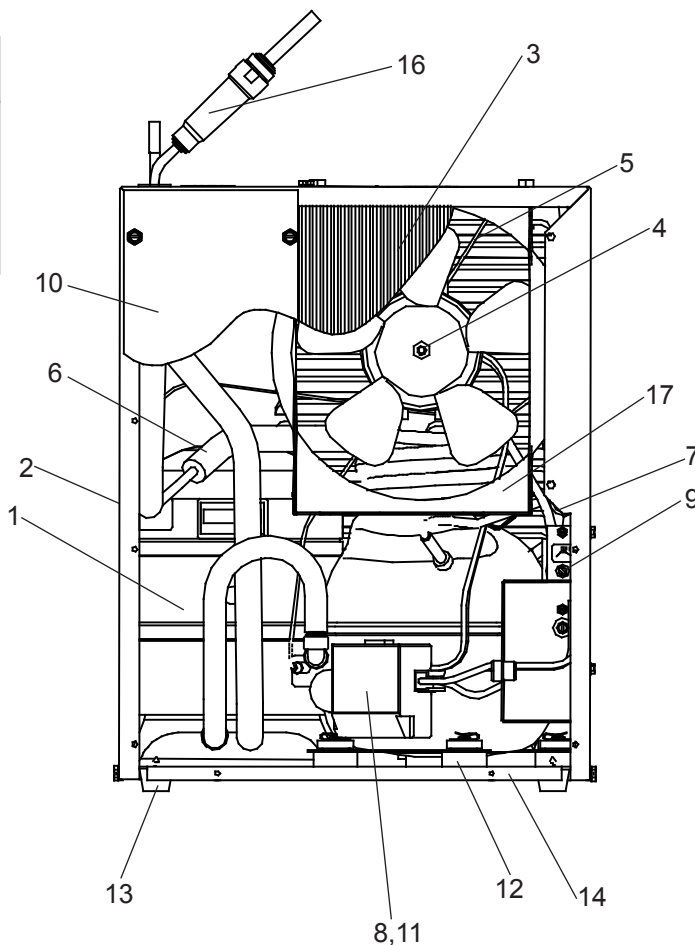
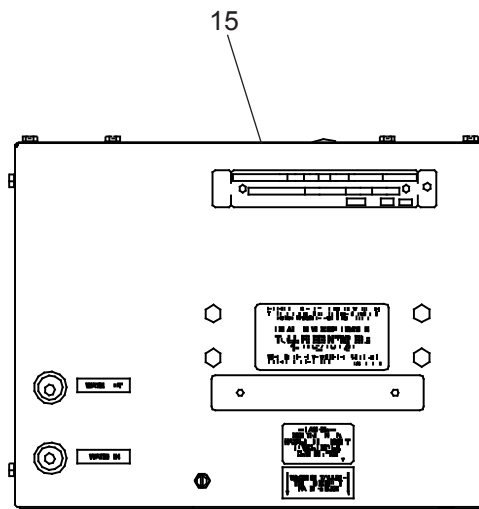
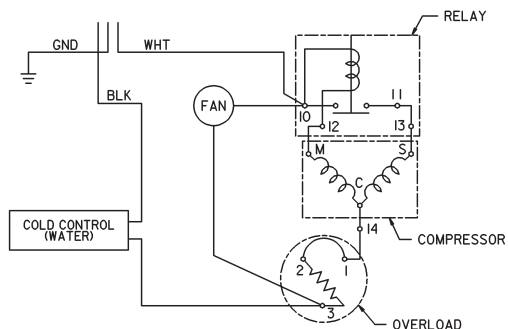
***INCLUDES RELAY & OVERLOAD. IF UNDER WARRANTY, REPLACE WITH SAME COMPRESSOR USED IN ORIGINAL ASSEMBLY.**

NOTE: All correspondence pertaining to any of the above water cooler or orders for repair parts MUST include model number and serial number of cooler, name and part number of replacement part.

220V - 50/60HZ ITEMIZED PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION
4	0000000244	KIT - FAN MTR/BLADE/NUT/SHROUD (50 HZ)
	0000000245	KIT - FAN MTR/BLADE/NUT/W/O SHRD (60 HZ)
*8	1000002147	COMP. SERVICE PAK (50 HZ)
	1000002146	COMP. SERVICE PAK (60 HZ)
11	98751C	KIT - ELECT/RELAY/COVER/OL (50 HZ)
	98752C	KIT - ELECT/RELAY/COVER/OL (60 HZ)
17	56237C	SHROUD

WIRING DIAGRAM



LIMITED PRODUCT WARRANTY SOFTWARE LICENSE

FIRST YEAR - - The Manufacturer warrants every cooler, bottle filling station, packaged water chiller, fountain and accessory to be free from defects in materials and workmanship under normal use for one (1) year from date of install or eighteen (18) months from date of shipment from factory, whichever occurs first. The Manufacturer warrants every LK44 Series outdoor tubular fountain and bottle filling station to be free from defects in materials and workmanship under normal use for five (5) years from the date of install or sixty-six (66) months from date of shipment from factory, whichever occurs first. This extended warranty does not apply to freeze resistant assemblies.

SECOND THROUGH FIFTH YEARS - The Manufacturer warrants the compressor and hermetically sealed refrigeration system, including cooling coils or tank assembly when part of the hermetically sealed refrigeration system, to be free from defects in material and workmanship under normal use for an additional four (4) years from the end of the one (1) year period described above. Packaged water chillers are not subject to the additional four (4) year warranty when used in chilled water commercial/industrial applications other than for potable water.

INSTALLATION AND OPERATION - The foregoing Limited Warranty applies only when the product is installed and operated in accordance with the Manufacturer's written instructions included with each unit. These products are designed to operate on 20 psi to 105 psi supply line pressure. Non-filtered Bi-level units require a minimum of 40 psi supply line pressure to ensure adequate stream height from each bubbler when activated simultaneously. Bi-level filtered models, regardless of supply line pressure, cannot provide adequate stream height from each bubbler when activated simultaneously. The Limited Warranty does not apply to products, which on examination by the Manufacturer or its agent, are found to have been subjected to accident, alteration, abuse, misuse, misapplications, corrosive type atmospheres, or abnormal use.

OWNER'S OBLIGATIONS - It is the owner's obligation to pay for any repairs or maintenance not covered by the Limited Warranty, including service calls related to non-warranty issues. Any appearance imperfections are to be noted at time of installation, and the installer or the supplier notified without delay. In the case of products located within the United States or Canada, it is the owner's responsibility to allow access to the unit for the authorized service center to repair on site and/or remove unit from wall to repair at the authorized service center's discretion. In the case of products located outside the United States or Canada, the owner is to return any part for which replacement is sought to the closest authorized service center or to the manufacturer's factory repair department.

MANUFACTURER'S OBLIGATIONS - When the product is located within the United States or Canada, the Manufacturer's obligation under this Limited Warranty is limited to the labor and parts to repair or replace any part which is expressly covered by this Limited Warranty at one of its authorized service centers or at its factory repair department. The warranty applicable to any replacement unit shall be the remaining warranty period on the replaced unit. The Manufacturer's obligation also includes cost of outbound freight (but not express freight) of the part or parts from an authorized service center or the factory repair department, but only if the Manufacturer determines that the part or parts, and the purported defect or defects, are covered by this Limited Warranty.

When the product is located outside the United States or Canada, the Manufacturer's obligation under this Limited Warranty is limited to providing a replacement part for any part expressly covered by this Limited Warranty which, upon examination by the Manufacturer or its agent, is found to be defective, but does not include any obligation to provide labor or to pay labor costs incurred in connection with the replacement. The Manufacturer's obligations also include cost of outbound freight (but not express freight) of the part or parts from the factory repair department to (but not beyond) the port in the United States from which the part or parts are shipped to the ultimate destination, but only if the Manufacturer determines that the part or parts, and the purported defect or defects, are covered by this Limited Warranty.

WHAT WARRANTY DOES NOT COVER - This Limited Warranty does not include payment for any field labor to provide for normal maintenance including adjustments such as water stream height, water temperature or electric eye sensitivity. The water system and regulating valve are not covered by this Limited Warranty if they become inoperative due to liming, sand or similar residue. This Limited Warranty is voided if repairs are made by an unauthorized party or the serial number data plate is removed or defaced. Normal deterioration of finish due to use and exposure is not covered by this Limited Warranty. Corrosion of materials is also not covered by this Limited Warranty. The Manufacturer is not liable for repairs, whether cosmetic or structural, to walls where cooler, bottle filler, fountain and packaged water coolers are built into the wall. If inlet pressure is above 105 psi, a pressure regulator must be installed in the supply line. Any damage caused by reason of connecting this water cooler, bottle filler, fountain or packaged water cooler to supply line pressures lower than 20 psi or higher than 105 psi is not covered by this warranty.

PERSONS ENTITLED TO BENEFIT OF WARRANTY - This Limited Warranty is applicable only to (i) purchasers who purchase the product for the resale in the ordinary course of business, and (ii) the first person who purchases the product other than resale.

SOFTWARE LICENSE PROVISIONS - To the extent the product includes embedded software, the owner and those using the product are granted a restricted, non-exclusive license to use such embedded software. Title to the embedded software shall at times remain with the embedded software licensor. The owner and those using the product shall not remove or alter notices, legends or trademarks contained in the embedded software, nor shall they translate, reverse engineer, decompile or disassemble the embedded software except to the extent applicable law specifically prohibits this restriction. The embedded software is provided "as is" and any warranty offered herein is by or through the Manufacturer. Further information concerning this license of embedded software is available from the Manufacturer.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES, EXPRESSED OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. EXCEPT AS EXPRESSLY PROVIDED HEREIN, THE MANUFACTURER MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO ANY PERSON. THIS WARRANTY MAY NOT BE ALTERED, VARIED, **OR EXTENDED**, EXCEPT BY A WRITTEN INSTRUMENT EXECUTED BY THE MANUFACTURER. THE REMEDY OF REPAIR OR, WHERE APPLICABLE, REPLACEMENT AS PROVIDED UNDER THIS LIMITED WARRANTY IS EXCLUSIVE. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES TO ANY PERSON, WHETHER OR NOT OCCASIONED BY NEGLIGENCE OF THE MANUFACTURER, INCLUDING WITHOUT LIMITATION DAMAGES FOR LOSS OF USE, COSTS OR SUBSTITUTION, PROPERTY DAMAGE, OR OTHER MONETARY LOSS.

This Limited Warranty gives specific legal rights and in some states of the United States there may be other rights which vary from state to state.

DATE OF INSTALLATION _____

SERIAL NUMBER _____
(To Be Filled in By Installer)

Elkay Sales, Inc
2222 Camden Court
Oak Brook, Illinois 60523
630.574.8484

Form to be left with the owner by the installer.

**GARANTÍA LIMITADA DEL PRODUCTO
LICENCIA DE SOFTWARE**

PRIMER AÑO: El fabricante garantiza que todo enfriador de agua, estación llenadora de botellas, enfriador de agua empaquetado, fuente de agua potable y accesorio sea libre de defectos de material y mano de obra bajo uso normal durante un (1) año a partir de la fecha de instalación o dieciocho (18) meses a partir de la fecha de envío de la fábrica, lo que ocurra primero. El fabricante garantiza que todas las estaciones llenadoras de botellas y bebederos tubulares para exteriores de la serie LK44 estarán libres de defectos en sus materiales y en la mano de obra bajo uso normal por cinco (5) años desde la fecha de instalación o sesenta y seis (66) meses a partir de la fecha de envío desde la fábrica, lo que ocurra primero. Esta garantía extendida no se aplica a los conjuntos resistentes a la congelación.

SEGUNDO HASTA EL QUINTO AÑO: El fabricante garantiza que el compresor y el sistema de refrigeración herméticamente sellado, que incluye serpientes de enfriamiento o conjuntos de tanque cuando son parte del sistema de refrigeración herméticamente sellado, estarán libres de defectos en sus materiales y en la mano de obra bajo condiciones de uso normal durante cuatro (4) años adicionales a partir del término del período de un (1) año descrito anteriormente. Los enfriadores de agua empaquetados no están sujetos a la garantía de cuatro (4) años adicionales cuando se usan en aplicaciones comerciales o industriales de agua enfriada que no sean para agua potable.

INSTALACIÓN Y FUNCIONAMIENTO: La garantía limitada mencionada anteriormente solo se aplica cuando el producto se instala y opera de acuerdo con las instrucciones por escrito del fabricante que se incluyen con cada unidad. Estos productos están diseñados para funcionar con presiones de tubería de suministro de 20 a 105 psi. Las unidades de dos niveles sin filtración requieren un mínimo de 40 psi de presión de tubería de suministro para garantizar una altura de flujo adecuada de cada boquilla cuando se activen simultáneamente. Los modelos de dos niveles con filtro, sin considerar la presión de tubería de suministro, no pueden producir una altura de flujo adecuada de cada boquilla cuando se activan simultáneamente. La garantía limitada no se aplica a los productos que, una vez sometidos a revisión por parte del fabricante o su agente, se determine que han sufrido accidentes, alteraciones, o han sido sometidos a abuso, uso indebido, aplicación incorrecta, ambientes corrosivos o uso anormal.

OBLIGACIONES DEL PROPIETARIO: Es obligación del propietario pagar cualquier reparación o mantenimiento que no esté cubierto por la garantía limitada, lo que incluye llamadas al servicio técnico relacionadas con problemas que no cubre la garantía. Cualquier imperfección que se observe se debe señalar al momento de la instalación y se debe informar inmediatamente al instalador o al proveedor. En el caso de productos que se encuentren dentro de los Estados Unidos o Canadá, será responsabilidad del propietario permitir el acceso a la unidad para que el centro de servicio técnico autorizado realice la reparación en el lugar o retire la unidad para repararla, según sea su criterio. En el caso de productos que se encuentren fuera de los Estados Unidos o Canadá, el propietario debe devolver cualquier pieza que se solicite reemplazar, al centro de servicio técnico autorizado más cercano o al Departamento de Reparaciones del fabricante.

OBLIGACIONES DEL FABRICANTE: Cuando el producto se encuentre dentro de los Estados Unidos o Canadá, la obligación del fabricante según esta garantía limitada estará restringida a la mano de obra y piezas necesarias para reparar o reemplazar cualquier pieza que esté expresamente cubierta por esa garantía limitada en uno de sus centros de servicio técnico o en el Departamento de Reparaciones del fabricante. La garantía aplicable a cualquier unidad que se reemplace corresponderá al período de garantía restante de la unidad reemplazada. La obligación del fabricante también incluye el costo del flete de salida (pero no el flete expreso), de la pieza o piezas desde un centro de servicio técnico autorizado o del Departamento de Reparaciones del fabricante, pero solo si el fabricante determina que la pieza o piezas y el supuesto defecto o defectos están cubiertos por esta garantía limitada.

Cuando el producto se encuentre fuera de los Estados Unidos o Canadá, la obligación del fabricante según esta garantía limitada estará restringida a proporcionar la pieza de reemplazo para cualquier pieza cubierta expresamente por esta garantía limitada, que luego de ser sometida a revisión por el fabricante o su agente se determine que está defectuosa, pero no considera ninguna obligación de proporcionar mano de obra ni de pagar costos de mano de obra incurridos en relación con el reemplazo. La obligación del fabricante también incluye el costo del flete de salida (pero no el flete expreso), de la pieza o piezas desde el Departamento de Reparaciones del fabricante hasta (pero no más allá) el puerto en los Estados Unidos desde el cual la pieza o piezas se envíen a su destino final, pero solo si el fabricante determina que la pieza o piezas y el supuesto defecto o defectos están cubiertos por esta garantía limitada.

LO QUE NO CUBRE ESTA GARANTÍA: Esta garantía limitada no incluye el pago de mano de obra en terreno para realizar mantenimiento normal, lo que incluye ajustes tales como la altura del flujo de agua, la temperatura del agua o la sensibilidad de la célula fotoeléctrica. El sistema de agua y la válvula reguladora no están cubiertos por esta garantía limitada si dejan de funcionar a causa de la presencia de calcificación, arena o residuos similares. Esta garantía limitada quedará nula si una parte no autorizada realiza reparaciones o si se retira o deforma la placa de datos del número de serie. El deterioro normal del acabado debido al uso y la exposición no están cubiertos por esta garantía limitada. Esta garantía limitada tampoco cubre la corrosión de los materiales. El fabricante no será responsable por reparaciones estéticas o estructurales, a las paredes en las que estén empotrados los enfriadores, las llenadoras de botellas, las fuentes de agua potable y los enfriadores de agua empaquetados. Si la presión de entrada es mayor que 105 psi, se debe instalar un regulador de presión en la tubería de suministro. Cualquier daño provocado a causa de la conexión de este enfriador de agua, llenadora de botellas, fuente de agua potable o enfriador de agua empaquetado a presiones de tubería de suministro inferiores a 20 psi o superiores a 105 psi no está cubierto por esta garantía.

PERSONAS CON DERECHO A LOS BENEFICIOS DE LA GARANTÍA: Esta garantía limitada se aplica solo a (i) compradores que adquirieron el producto para la reventa como parte del desarrollo normal de las actividades comerciales y (ii) la primera persona que compra el producto excepto para la reventa.

DISPOSICIONES DE LA LICENCIA DE SOFTWARE - En la medida que el producto incluye software integrado, se otorga al dueño, y a aquellos que utilicen el producto, una licencia restringida y no exclusiva para utilizar tal software integrado. El derecho al software integrado permanecerá, en todo momento, en poder del creador del software integrado. El dueño y aquellos que usen el producto no eliminarán ni modificarán las notas, leyendas o marcas registradas contenidas en el software integrado; ni traducirán, copiarán ingeniería inversa, descompilarán o desensamblarán el software integrado; excepto en la medida en que la ley correspondiente prohíba específicamente esta restricción. El software integrado se proporciona "tal como está" y cualquier garantía ofrecida aquí se aplica por o a través del fabricante. Para obtener mayor información disponible sobre esta licencia de software integrado, comuníquese con el fabricante.

ESTA GARANTÍA LIMITADA REEMPLAZA A TODAS LAS DEMÁS GARANTÍAS, EXPRESAS O IMPLÍCITAS QUE SE APLIQUEN POR LEY O DE ALGUNA OTRA MANERA, LO QUE INCLUYE, ENTRE OTRAS, LAS GARANTÍAS IMPLÍCITAS DE COMERCIABILIDAD E IDONEIDAD PARA UN PROPÓSITO EN PARTICULAR. A EXCEPCIÓN DE LO AQUÍ DISPUESTO EXPRESAMENTE, EL FABRICANTE NO PROPORCIONA NINGUNA GARANTÍA EXPRESA O IMPLÍCITA QUE SE APLIQUEN POR LEY O EN OTRAS CIRCUNSTANCIAS, LO QUE INCLUYE, ENTRE OTRAS, GARANTÍAS IMPLÍCITAS DE COMERCIABILIDAD E IDONEIDAD PARA UN PROPÓSITO EN PARTICULAR. ESTA GARANTÍA NO SE PUEDE ALTERAR, MODIFICAR NI EXTENDER, EXCEPTO MEDIANTE UN DOCUMENTO POR ESCRITO FIRMADO POR EL FABRICANTE. LA SOLUCIÓN O REPARACIÓN, O CUANDO CORRESPONDA, EL REEMPLAZO, SEGÚN LO DISPUESTO POR ESTA GARANTÍA LIMITADA ES EXCLUSIVO. EN NINGÚN CASO EL FABRICANTE SERÁ RESPONSABLE POR NINGÚN DAÑO INDIRECTO O INCIDENTAL ANTE NINGUNA PERSONA, SEA O NO A CAUSA DE NEGLIGENCIA DEL FABRICANTE, LO QUE INCLUYE, ENTRE OTROS, DAÑOS POR PÉRDIDA DE USO, COSTOS O SUSTITUCIÓN, DAÑO A LA PROPIEDAD U OTRAS PÉRDIDAS MONETARIAS.

Esta garantía limitada otorga derechos legales específicos y en algunos estados de los Estados Unidos puede haber otros derechos que varían de un estado a otro.

FECHA DE INSTALACIÓN _____

NÚMERO DE SERIE _____

(Debe llenarlos el instalador)

**Elkay Sales, Inc
2222 CAMDEN COURT
OAK BROOK, ILLINOIS 60523
630.574.8484**

El instalador debe dejar el formulario en posesión del propietario.

**GARANTIE LIMITÉE DU PRODUIT
LICENCE DE LOGICIEL**

PREMIÈRE ANNÉE - Le Fabricant garantit que chaque refroidisseur, chaque station de remplissage de bouteilles, chaque refroidisseur d'eau monobloc, chaque fontaine et chaque accessoire est exempt de tout défaut de matériaux ou de fabrication dans le cadre d'une utilisation normale d'un (1) an à compter de la date d'installation, ou de dix-huit (18) mois à compter de la date d'expédition de l'usine. Le Fabricant garantit que chaque fontaine tubulaire extérieure et station de remplissage de bouteilles Série LK44 est exempte de tout défaut de matériaux ou de fabrication dans le cadre d'une utilisation normale de cinq (5) ans à compter de la date d'installation, ou de soixante-six (66) mois à compter de la date d'expédition de l'usine, à la première de ces occurrences. La présente garantie étendue ne s'applique pas ensembles résistant au gel.

DEUXIÈME À CINQUIÈME ANNÉE - Le Fabricant garantit que le compresseur et le système de réfrigération hermétiquement scellé, y compris les serpents de refroidissement ou l'ensemble réservoir, lorsqu'ils font partie du système de réfrigération hermétiquement scellé, sont exempts de tout défaut de matériaux ou de fabrication dans le cadre d'une utilisation normale de quatre (4) années supplémentaires à compter de la fin de la période d'un (1) an indiquée ci-dessus. Les refroidisseurs d'eau monobloc ne sont pas soumis à la garantie supplémentaire de quatre (4) ans lorsqu'ils sont utilisés dans des applications commerciales/industrielles de refroidissement d'eau autres que pour l'eau potable.

INSTALLATION ET FONCTIONNEMENT - Cette Garantie limitée n'est applicable que si le produit est installé et utilisé conformément aux instructions écrites du Fabricant, lesquelles instructions sont incluses dans chaque unité. Ces produits sont conçus pour fonctionner avec une pression de conduite d'alimentation de 20 psi à 105 psi. Les unités à deux niveaux sans filtre nécessitent une pression de conduite d'alimentation minimale de 40 psi pour assurer une hauteur de jet adéquate pour chaque barboteur en cas d'activation simultanée. Quelle que soit la pression de la conduite d'alimentation, les modèles à deux niveaux avec filtre, lorsqu'ils sont activés simultanément, ne peuvent fournir une hauteur de jet adéquate pour chaque barboteur. Cette Garantie limitée ne s'applique pas aux produits qui, après examen du Fabricant ou de son mandataire, ont permis de constater qu'ils ont fait l'objet d'un accident, d'une altération, d'un usage abusif ou d'un mauvais usage, d'une application erronée ou exposés dans un environnement de type corrosif ou utilisés de façon anormale.

OBLIGATIONS DU PROPRIÉTAIRE - Le propriétaire a l'obligation de payer pour toute réparation ou tout entretien non couvert(e) par cette Garantie limitée, y compris les appels de service non couverts par ladite garantie. Toutes imperfections sur l'aspect du produit doivent être notées au moment de l'installation, et l'installateur ou le fournisseur doit en être averti immédiatement. En ce qui concerne les produits situés aux États-Unis ou au Canada, le propriétaire du produit a la responsabilité de permettre au centre de réparation homologué d'accéder à l'unité en vue de la réparer sur site et/ou de la détacher du mur pour la réparer à la discrétion du centre de réparation homologué. En ce qui concerne les produits situés en dehors des États-Unis ou du Canada, le propriétaire est tenu de renvoyer tout composant à remplacer au centre de réparation homologué le plus proche ou au service de réparation en usine.

OBLIGATIONS DU FABRICANT - En ce qui concerne les produits situés aux États-Unis ou au Canada, l'obligation du Fabricant dans le cadre de cette Garantie limitée ne concerne que la main d'œuvre et les pièces nécessaires pour réparer ou remplacer toute pièce explicitement couverte par cette Garantie limitée à un de ses centres de réparation homologués ou à son service de réparation en usine. La garantie applicable à toute unité de remplacement doit être la période restante de la garantie de l'unité remplacée. Le Fabricant est également tenu de payer les frais de fret sortant (mais non un envoi en express) de la ou des pièces émanant d'un centre de réparation autorisé ou du service de réparation en usine, mais seulement si le Fabricant établit que la ou les pièces, ainsi que le(s) prétendu(s) défauts sont couverts par cette Garantie limitée.

Lorsque le produit est situé en dehors des États-Unis ou du Canada, l'obligation du Fabricant dans le cadre de cette Garantie limitée est limitée à la fourniture d'une pièce de rechange pour toute pièce explicitement couverte par cette Garantie limitée qui, suite à un examen du Fabricant qui de son mandataire, est jugée défectueuse ; cette obligation n'inclut pas la fourniture d'une main d'œuvre ni le paiement de frais de main d'œuvre encourus en relation avec le remplacement de la pièce de rechange. Le Fabricant est également tenu de payer les frais de fret sortant (et non le fret express) d'une ou des pièces émanant du service de réparation en usine jusqu'au port des États-Unis (mais pas au-delà) où la ou les pièces seront expédiées vers leur destination finale, mais seulement si le Fabricant établit que la ou les pièces ainsi que le(s) prétendu(s) défaut(s) est/sont couvert(s) par cette Garantie limitée.

ÉLÉMENTS NON COUVERTS PAR LA GARANTIE - Cette Garantie limitée n'inclut pas le paiement de frais de main d'œuvre sur place concernant l'entretien normal, y compris les réglages nécessaires tels que la hauteur du jet d'eau, la température de l'eau ou la sensibilité de la cellule photoélectrique. Le système d'alimentation et la vanne de réglage ne sont pas couverts par cette Garantie limitée si leur fonctionnement est entravé par la chaux, le sable ou résidu similaire. Cette Garantie limitée est annulée si des réparations sont effectuées par une personne non autorisée, ou si la plaque signalétique du numéro de série est enlevée ou rendue illisible. La détérioration normale de la finition due à l'usage et l'exposition n'est pas couverte par cette Garantie limitée. La corrosion des matériaux n'est pas couverte non plus par cette Garantie limitée. Le Fabricant n'est pas responsable des réparations esthétiques ou structurelles effectuées sur les murs où le refroidisseur, la remplisseuse de bouteilles, la fontaine et le refroidisseur d'eau monobloc sont installés au mur. Si la pression d'entrée est supérieure à 105 psi, un régulateur de pression doit être installé dans la conduite d'alimentation. Tout dommage causé par le raccordement de ce refroidisseur d'eau, cette remplisseuse de bouteilles, cette fontaine et ce refroidisseur d'eau monobloc à une conduite d'alimentation ayant une pression inférieure à 20 psi ou supérieure à 105 psi n'est pas couvert par cette garantie.

PERSONNES HABILITÉES À BÉNÉFICIER DE LA GARANTIE - Cette Garantie limitée est applicable uniquement (i) aux acheteurs qui achètent le produit pour la revente dans le cadre normal des activités commerciales et, (ii) au premier acheteur qui achète le produit dans un but autre que la revente.

DISPOSITIONS DE LA LICENCE DE LOGICIEL - Dans la mesure où le produit comporte un logiciel intégré, une licence restreinte et non exclusive est accordée au propriétaire et aux utilisateurs du produit pour l'utilisation de ce logiciel intégré. Les droits du logiciel intégré sont détenus en permanence par le donneur de licence du logiciel intégré. Le propriétaire et les utilisateurs du produit ne devront ni supprimer ni modifier les avis, légendes et marques de commerce contenus dans le logiciel intégré et ne devront pas traduire, rétroconcevoir, décompiler ni désassembler le logiciel intégré sauf dans la mesure où la loi en vigueur interdit spécifiquement une telle restriction. Le logiciel intégré est fourni « en l'état » et toute garantie offerte aux présentes est offerte par ou à travers le Fabricant. De plus amples renseignements concernant cette licence de logiciel intégré sont disponibles auprès du Fabricant.

CETTE GARANTIE LIMITÉE REMPLACE TOUTES LES AUTRES GARANTIES EXPRESSES, EXPLICITES OU IMPLIQUES, EN VERTU DE LOI OU AUTREMENT, Y COMPRIS MAIS SANS SE LIMITER AUX GARANTIES IMPLIQUES DE QUALITÉ MARCHANDE ET D'ADÉQUATION À DES FINS PARTICULIÈRES. SAUF DISPOSITIONS EXPRESSES DE CE DOCUMENT, LE FABRICANT N'ACCORDE AUCUNE GARANTIE EXPRESSE, EXPLICITE OU IMPLICITE, EN VERTU DE LOI OU AUTREMENT, Y COMPRIS MAIS SANS SE LIMITER AUX GARANTIES IMPLIQUES DE QUALITÉ MARCHANDE ET D'ADÉQUATION À DES FINS PARTICULIÈRES. CETTE GARANTIE NE PEUT ÊTRE MODIFIÉE, CHANGÉE OU PROROGÉE, SAUF PAR UN INSTRUMENT ÉCRIT SIGNÉ PAR LE FABRICANT. LE RECOURS À LA RÉPARATION OU, SI BESOIN, AU REMPLACEMENT TEL QUE PRÉVU AUX TERMES DE CETTE GARANTIE LIMITÉE EST EXCLUSIF. EN AUCUN CAS, LE FABRICANT NE PEUT ÊTRE TENU RESPONSABLE DES DOMMAGES CONSÉCUTIFS OU FORTUITS À TOUTE PERSONNE. QU'ILS SOIENT OU NON CAUSÉS PAR UNE NÉGLIGENCE DU FABRICANT, Y COMPRIS MAIS SANS SE LIMITER AUX DOMMAGES-INTÉRÊTS POUR PERTE DE JOUISSANCE, AUX COÛTS OU À LA SUBSTITUTION, AUX DOMMAGES MATÉRIELS OU AUTRES PERTES PÉCUNIAIRES.

Cette garantie limitée vous donne des droits juridiques spécifiques et, dans certains États des États-Unis vous pouvez bénéficier d'autres droits qui varient selon les juridictions.

DATE D'INSTALLATION _____

NUMÉRO DE SÉRIE _____

(À remplir par l'installateur)

**Elkay Sales, Inc
2222 CAMDEN COURT
OAK BROOK, ILLINOIS 60523
630.574.8484**

Formulaire à laisser au propriétaire par l'installateur.

ELKAY® With **FLEXI-GUARD**®

INSTALLATION, CARE & USE MANUAL

SWIRLFLO® Refrigerated fountains with FLEXI-GUARD®



ERP2-8C



ERP2-8RAC

INSTALLER



CAUTION:

Review these instructions before beginning installation. Be sure that installation conforms to all plumbing, electrical and other applicable codes.



WARNING:

When installation is complete, ensure these instructions are left in the plastic bag provided inside the installed unit for future reference.



WARNING:

Service to be performed by authorized service personnel only.

NOTE: It is common practice to ground electrical hardware such as telephones, computers and other devices to available water lines. This can, however, cause electrical feedback in the plumbing circuit, which results in an “electrolysis” effect occurring in the fountain. This may result in water which has a metallic taste to it or has a noticeable increase in the metallic content of the water.

When inspecting plumbing circuit, remember the line may be grounded some distance from the installation, and may occur outside the building or area in which the unit is being installed.

This condition can be avoided (in most cases) by using recommended materials during installation. Any drain fittings provided by the installer should be made of **plastic** which will electronically isolate the fountain from the remainder of the building’s plumbing circuits.

Note: Danger! Electric shock hazard. Disconnect power before servicing unit.

Uses HFC-134A refrigerant

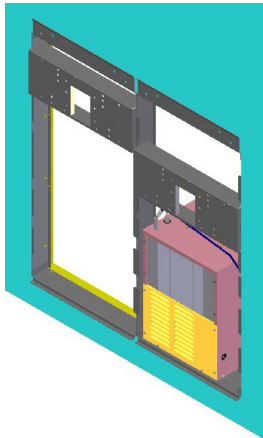


Figure 2 - Chiller Installation

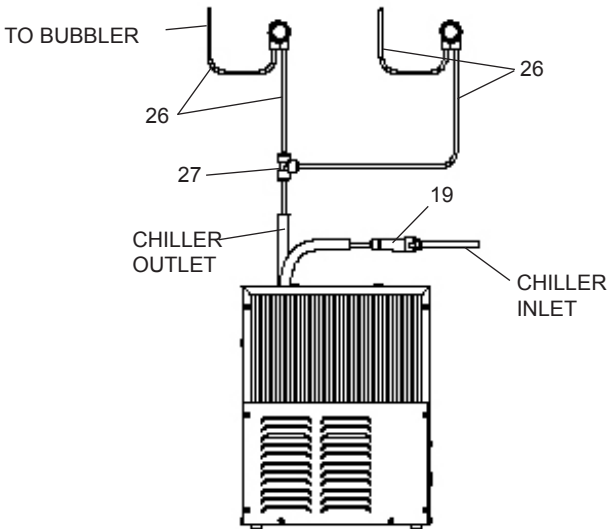


Figure 3 - ERPB Tube Routing

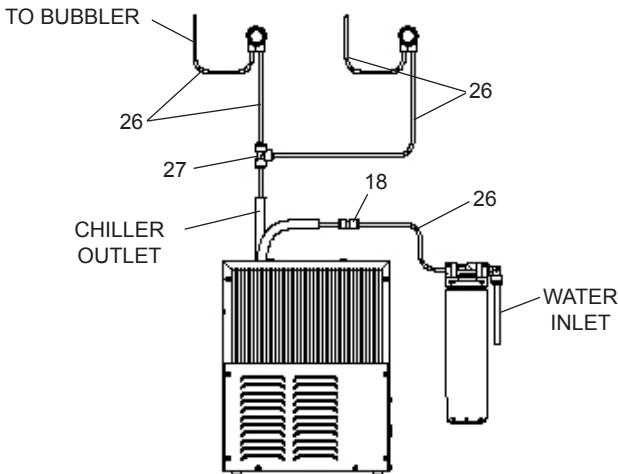


Figure 4 - LRPB Tube Routing

REQUIRED TOOLS AND MATERIALS

These tables show special tools and/or additional materials (not provided) which are necessary to complete installation of these units:

Special Tools

Item	Description	Quantity
	NONE	

Additional Materials

Item	Description	Quantity
1	Unplated copper inlet pipe	
2	Service Stop	

1. **Install chiller:** Remove front panel of chiller. **Remove and discard cardboard inner pack from between compressor and side panel.** Slide chiller onto the shelf and position it to the left as per dimensions in Figure 1.

Note: Building construction must allow for adequate air flow on both sides, top and back of chiller. A minimum of 4" (102mm) on both sides and top is required. See chiller installation for additional instructions.

2. **Make water supply connections.** Install a shut-off valve and union connection to building water supply (valve and union not provided). Turn on water supply and flush the line thoroughly.

3. **ERPB Models:** Make connection between remote chiller and building supply line. Inlet port is marked on the chiller (1/4" O.D. copper tube). Bend the copper tube (provided) at an appropriate length from chiller to opening in frame. Install the in-line strainer (provided with chiller) by pushing it until it reaches a positive stop, approximately 3/4" (19mm) on the marked chiller inlet port. Connect building supply line to strainer. (See Figure 3)

Caution: DO NOT SOLDER tubes inserted into the strainer as damage to o-rings may result.

4. **LRPB Models:** Mount filter head assembly to side of chiller (See Figure 4). Make connections between filter and building supply line (3/8" O.D. tube not provided). Inlet port is marked on the chiller (1/4" O. D. copper tube). Install a 1/4" x 1/4" union (provided) on the marked chiller inlet port. Insert the 1/4" poly tubing (provided) into the fitting on filter and connect the union to the chiller. (See Figure 4)

Caution: DO NOT SOLDER tubes inserted into the strainer as damage to o-rings may result.

ELKAY - drinking fountains

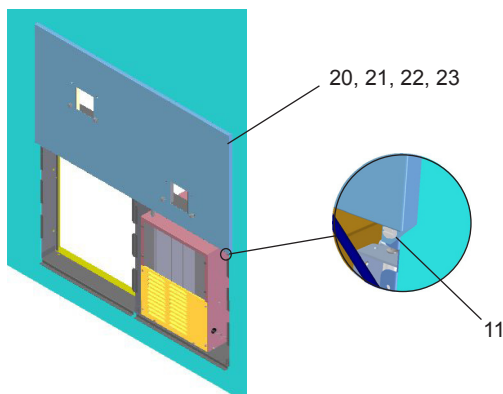


Figure 5 - Upper Panel Installation

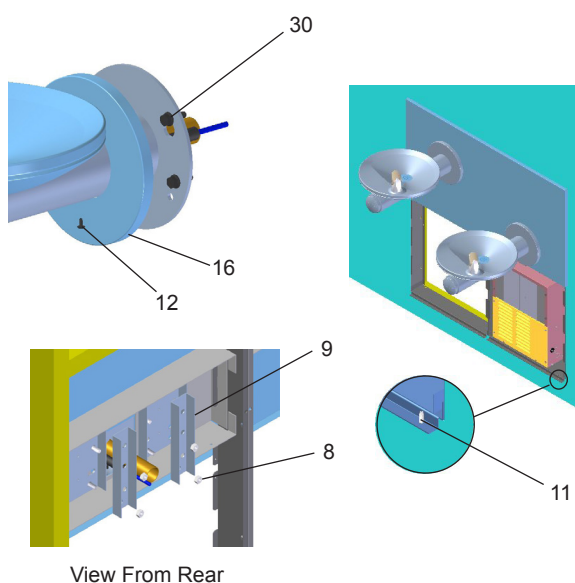


Figure 6 - Fountain Installation

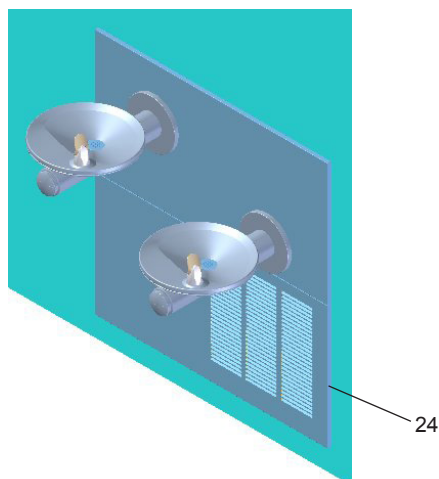


Figure 7 - Lower Panel Installation

5. **Hang** the upper panel on the mounting frame hanger. Be sure that the panel is engaged with hanger at the top of frame before releasing it. Align holes in the panel with holes in the mounting frame. Install two (2) #10-24 x 5/8" (16mm) screws (Item 11 - Figure 5) in holes and tighten securely.
6. **Install** the fountain. Remove the screw (Item 12) from cover plate and slide cover plate (Item 16) toward basin. Mount the fountain to the upper panel and frame with (4) 5/16" x 1" (25mm) bolts (Item 27), brackets (Item 9) and nuts (Item 8) provided. Tighten securely. **Brackets (Item 9) must be installed as shown to properly support fountains.** (See Figure 6)
7. **Attach waste tube** (1-1/4" O.D.) to 1-1/4" O.D. slip trap (provided by others).
8. **ERPB Models:** Make connections between remote chiller outlet tube and fountain. Outlet port is marked on the chiller (1/4" O.D. copper tube). Install a 1/4" x 1/4" tee (provided) on the marked chiller outlet port. Insert the 1/4" poly tubing coming from the fountain into the union. Turn on the water supply and check for leaks.

CAUTION: DO NOT SOLDER tubes inserted into the strainer as damage to o-rings may result.

LRPB Models: Make connections between remote chiller outlet tube and fountain. Outlet port is marked on the chiller (1/4" O.D. copper tube). Install a 1/4" x 1/4" tee (provided) on the marked chiller outlet port. Insert the 1/4" poly tubing coming from the fountain into the union.

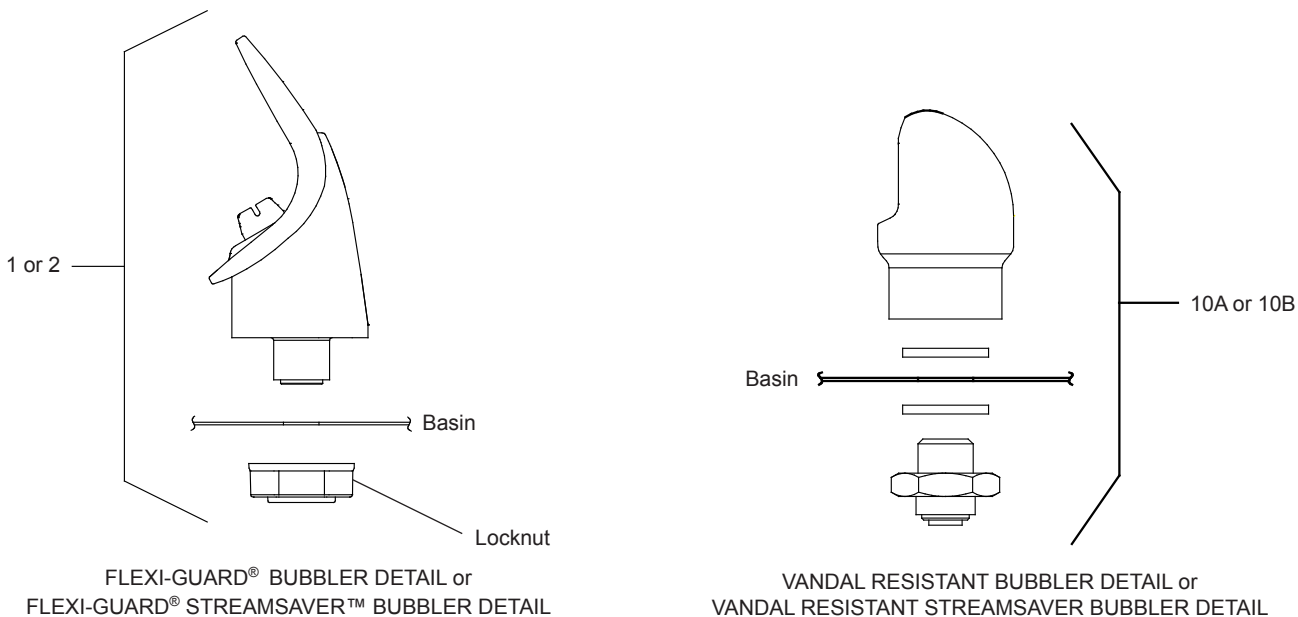
CAUTION: DO NOT SOLDER tubes inserted into the strainer as damage to o-rings may result.

9. **These products are designed to operate on 20-105 PSI supply line pressure.** If inlet pressure is above 105 PSI, a pressure regulator must be installed in the supply line.

CAUTION: Any damage caused by connecting these products to a supply line with pressure lower than 20 PSI or higher than 105 PSI IS NOT covered under warranty.

10. **Make electrical connections to the chiller.** See chiller instructions.
11. **Check stream height from bubbler.** Stream height is factory set at 35 PSI. If supply pressure varies greatly from this, remove push button (Item 3 - Figure 11) and adjust the screw on the regulator (Item 4 - Figure 11). To remove push button, remove set screw from bottom of sleeve (Item 6). Insert a small punch in screw hole and push up while grasping the push button and pull forward removing the push button. Clockwise adjustment will raise stream height and counterclockwise movement will lower stream height. For best adjustment stream should hit basin approximately 6-1/2" from the bubbler. Reassemble push button by pushing in on button until the push button catches in the sleeve. Reinstall the setscrew (Item 6) in the sleeve (Item 17).
12. **Mount lower panel.** Loosen the three (3) #10-24 x 5/8" (16mm) screws (Item 11 - Figure 6) at frame bottom lip. Slide upper tongue of lower panel under lower edge of already installed upper panel. Tighten previously loosened screws securely. (See Figure 7)

ELKAY - drinking fountains



NOTE:
 When installing replacement bubbler and pedestal, tighten locknut only to hold parts snug in position. Do Not Overtighten.

Figure 8 - Bubbler Details

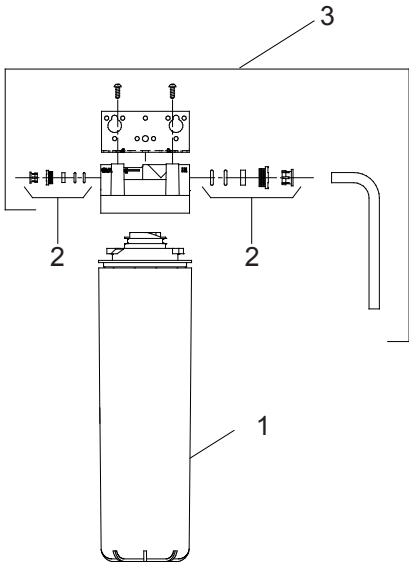


Figure 9 - Filter Assembly
 (When provided)

WaterSentry® Filter Detail

WATERSENTRY® FILTER PARTS LIST (See Fig. 9)		
ITEM NO.	PART NO.	DESCRIPTION
1	51299C	Filter Assy - 1500 Gallon
2	98926C	Kit-Filter Head Fitting Includes John Guest Fittings
3	51469C	Assy-Filter Head & Mounting Bracket/John Guest Ftgs/Screws

ELKAY - drinking fountains

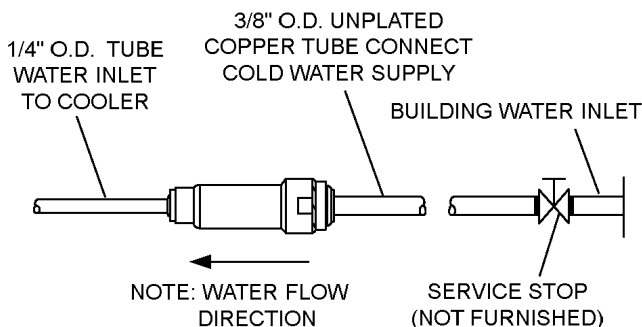


Figure 12 – Water Supply Connections

PARTS LIST		
ITEM NO.	PART NO.	DESCRIPTION
1	56073C	Bubbler Assy
2	98501C	Bubbler Assy (Stream Saver)
3	98871C	Kit - Push Button/Spring/Washer
4	98530C	Kit - Regulator/Holder/Nut
5	38417001	Screw - #8-18 x .37 HHSM
6	75632C	Setscrew - #10-32 x .38
7	70817C	Fttnng - Elbow 1/4 x 1/4
8	70020C	Nut - Hex 5/16-18
9	28395C	Bracket - Support
10A	97446C	Bubbler Assembly VR
10B	98481C	Bubbler Assy. VR StreamSaver
11	111008343890	Screw - #10-24 x .62 HHSM
12	70432C	Screw - #8-32 x .38 THSM
13	28708C	Basin - Swirlflow
14	28473C	Lower Shell
15	45767C	Fountain Body
16	28343C	Cover Plate
17	45781C	Sleeve
18	1000002162	Kit - Union 1/4" x 1/4" (3 Pack)
19	55996C	Strainer (Provided with Chiller)
20	28383C	Back Panel RH ADA
21	28384C	Back Panel LH ADA
22	1000003513	Back Panel RH ADA (Green Spec)
23	1000003514	Back Panel LH ADA (Green Spec)
24	27026C	Lower Panel
25	45768C	Drain - Plug 1-1/2"
26	56092C	Poly Tubing (Cut To Length)
27	1000001994	Kit - Tee - 1/4" (3 Pack)
28	56163C	Gasket - Drain
29	45769C	Assy - Drain/Tailpipe
30	75560C	Screw - 5/16-18 x 1.00 HHMS

Installation Package

The components for installation are packed in three separate boxes, regardless of the type of unit being installed. The boxes contain the following:

- Box No. 1: Wall Frame(s)
- Box No. 2: Remote Chiller, ECH8
- Box No. 3: Fountain Arm and Panels

Additional materials, as noted in the Parts List, are also shipped in these boxes.

TROUBLESHOOTING & MAINTENANCE

Orifice Assembly: Mineral deposits on orifice can cause water flow to spurt or not regulate. Mineral deposits may be removed from the orifice by poking with a small round file not over 1/8" diameter, or using a small diameter wire.

CAUTION: DO NOT file or cut orifice material.

Stream Regulator: If orifice is clean, regulate flow as in Step 11 of the installation instructions. If replacement is necessary, see parts list for correct regulator part number.

Actuation of Quick Connect Water Fittings:
 Cooler is provided with lead-free connectors which utilize an o-ring water seal. To remove tubing from the fitting, relieve water pressure, push in on the gray collar while pulling on the tubing. (See Figure 13) To insert tubing, push tube straight into fitting until it reaches a positive stop approximately 3/4").

OPERATION OF QUICK CONNECT FITTINGS

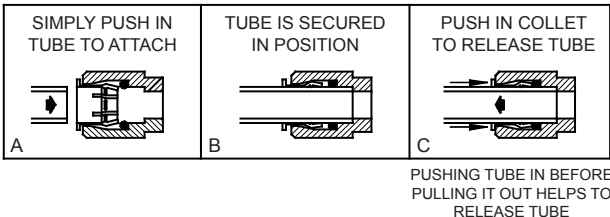


Figure 13 – Quick Connect Fittings

FOR PARTS, CONTACT YOUR LOCAL DISTRIBUTOR OR CALL 1.800.834.4816
 REPAIR SERVICE INFORMATION TOLL FREE NUMBER 1.800.260.6640

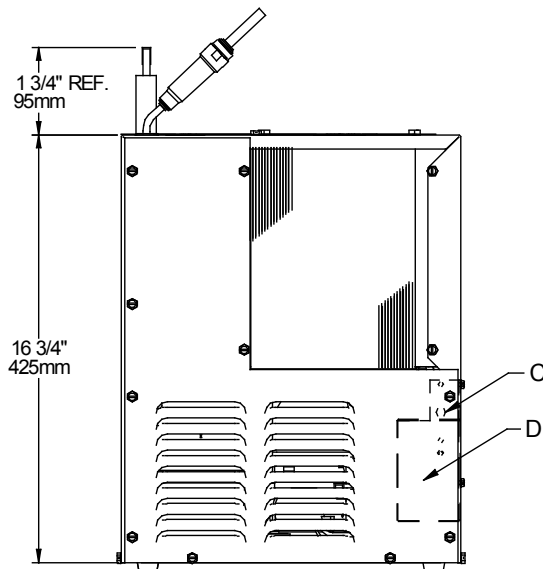
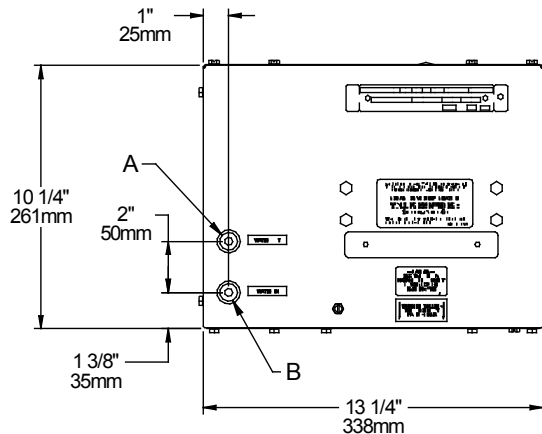
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ELKAY® Refrigeration Package

INSTALLATION, CARE & USE MANUAL

Note: Danger! Electric shock hazard. Disconnect power before servicing unit.

USES HFC-134A REFRIGERANT



LEGEND

- A = 1/4" O.D. TUBE WATER OUTLET
- B = 1/4" O.D. TUBE WATER INLET
- C = TEMPERATURE ADJUSTMENT
- D = ELECTRICAL

INSTALLATION

- When mounting unit in an open area, to insure proper ventilation, maintain a 4" (102mm) clearance from cabinet louvers on each side of cooler. When mounting unit in a cavity or behind a wall maintain minimum space of 4" (102mm) on each side, 4" (102mm) on the top and a depth of 12" (305mm).
- Water inlet is 1/4" (6 mm) O.D. tube. Contractor to supply the connections as required.
- Connecting lines to be of unplated copper, thoroughly flushed to remove all foreign matter before being connected to cooler. If flushing does not remove all particles, a water strainer should be installed in supply line. This cooler is manufactured in such a manner that it does not in any way cause taste, odor, color or sediment problems.
- Connect cooler to building supply line with a shut-off valve and install the in-line strainer between the valve and cooler.
- Electrical: Make sure power supply is identical in voltage, cycle, and phase to that specified on cooler serial plate. Never wire compressor directly to the power supply.
- This chiller has been designed for use with potable water **ONLY**.

START-UP

- Open supply line valve.
- Purge air from all water lines by operating bubbler valve of fountain to which cooler is connected. Steady stream assures all air is removed.
- Rotate fan to insure proper clearance and free fan action.
- Connect to electrical power.

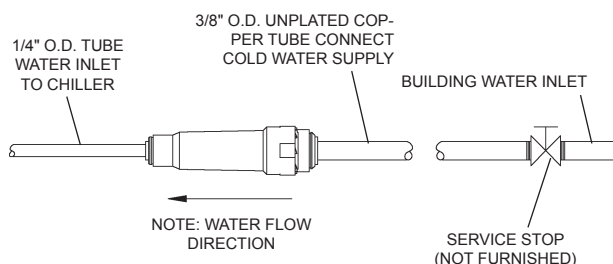
TROUBLE SHOOTING & MAINTENANCE

Temperature Control: Factory set at 50°F (± 5°) under normal conditions. For colder water, adjust screw on item no. 9 in clockwise direction.

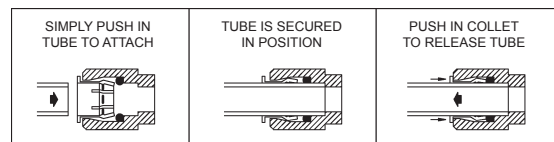
Ventilation: Cabinet louvers and condenser fins should be periodically cleaned with brush, air hose or vacuum cleaner. Excess dirt or poor ventilation can cause no cold water and compressor cycling on the compressor overload protector.

Lubrication: Motors are lifetime lubricated.

Actuation of Quick Connect Water Fittings: Cooler is provided with lead-free connectors which utilize an o-ring seal. To remove tubing from the fittings, relieve water pressure, push in on gray collar while pulling on the tubing. To insert tubing, push tube straight into fitting until it reaches a positive stop, approximately 3/4".



OPERATION OF QUICK CONNECT FITTINGS



PUSHING TUBE IN BEFORE PULLING IT OUT HELPS TO RELEASE TUBE

ELKAY - drinking fountains

ELKH 1N ELKH 2N ELKH 3N

115V ITEMIZED PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION
1	98724C	KIT - EVAP REPLACE ASSY
2	28478C	CABINET
3	98776C	KIT - CONDENSER/DRIER
4	98775C	KIT - FAN MTR/BLADE/NUT/SHROUD
5	20282C	BRACKET - FAN MOUNTING
6	98778C	KIT - HEAT EXCHANGER/DRIER
7	66703C	DRIER
*8	36322C	COMPRESSOR SERVICE PAK
9	98773C	KIT - COLD CONTROL/SCREWS
10	28477C	PANEL - FRONT
11	0000000238	KIT - ELECT/RELAY/COVER/OL
12	98777C	KIT - COMPRESSOR MTG HDWE
13	50930C	BUMPER
14	27303C	BASEPLATE
15	22300C	PANEL - REAR
16	55996C	IN-LINE STRAINER

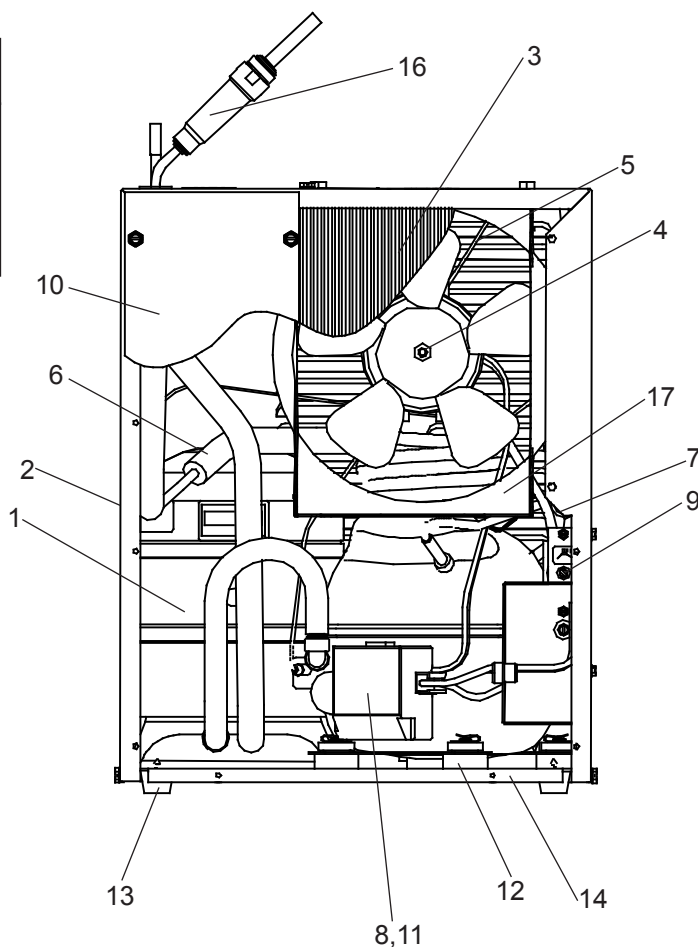
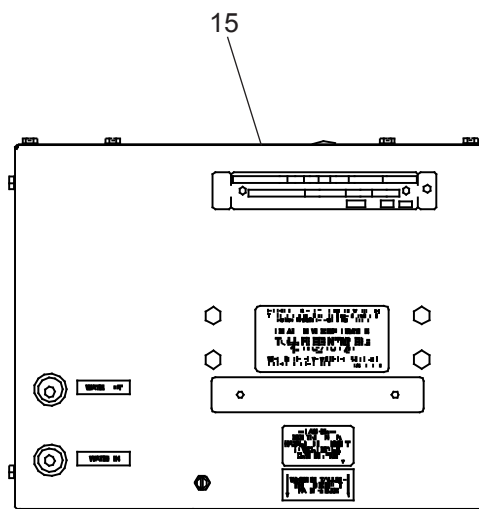
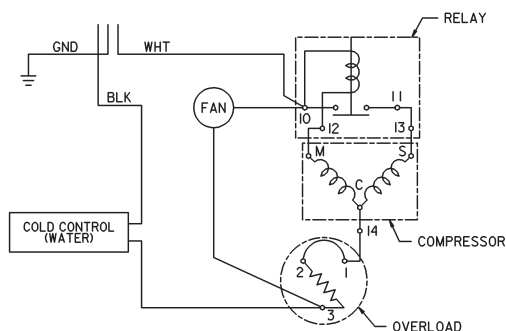
***INCLUDES RELAY & OVERLOAD. IF UNDER WARRANTY, REPLACE WITH SAME COMPRESSOR USED IN ORIGINAL ASSEMBLY.**

NOTE: All correspondence pertaining to any of the above water cooler or orders for repair parts MUST include model number and serial number of cooler, name and part number of replacement part.

220V - 50/60HZ ITEMIZED PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION
4	0000000244	KIT - FAN MTR/BLADE/NUT/SHROUD (50 HZ)
	0000000245	KIT - FAN MTR/BLADE/NUT/W/O SHRD (60 HZ)
*8	1000002147	COMP. SERVICE PAK (50 HZ)
	1000002146	COMP. SERVICE PAK (60 HZ)
11	98751C	KIT - ELECT/RELAY/COVER/OL (50 HZ)
	98752C	KIT - ELECT/RELAY/COVER/OL (60 HZ)
17	56237C	SHROUD

WIRING DIAGRAM



REPAIR SERVICE INFORMATION TOLL FREE NUMBER 1.800.260.6640

FOR PARTS, CONTACT YOUR LOCAL DISTRIBUTOR OR CALL 1.800.834.4816

ELKAY MANUFACTURING COMPANY • 2222 CAMDEN COURT • OAK BROOK, IL 60523 • 630.574.8484

PRINTED IN U.S.A.

Drinking Solutions Care and Cleaning

Learn to clean and care for the surfaces of your fountains, bottle filling stations, water dispensers and more. See below for cleaning information for all drinking solutions products.

Stainless Steel Surfaces

- General cleaning: Use an ordinary, mild detergent and soft cloth. Wipe the surface and towel dry.
- Steel soap pads should never be used; particles can adhere to a stainless steel surface and will eventually rust.
- Light scratches are normal for stainless steel. They will blend into the uniform finish pattern with time.

Polyvinyl Surfaces

- General cleaning: Use an ordinary, mild detergent and soft cloth. Wipe the surface and towel dry.
- Wipe the surface clean to remove debris or buildup.

Composite Surfaces

- General cleaning: Use a soft sponge or cloth with water or nonabrasive foam cleaner. Wipe the surface and towel dry.
- Mild abrasives such as liquid automotive cleaning compound or baking soda paste will remove simple scratches and stains.
- Harsh abrasive cleaners should not be used.
- Periodic applications of automobile wax or like products will keep the finish looking like new.

Drinking Solutions Care and Cleaning

Plastic Surfaces

- General cleaning: Use an ordinary, mild detergent and soft cloth. Wipe the surface and towel dry.
- Wipe the surface clean to remove debris or buildup. This will not hurt the antimicrobial properties of the material.

Chrome Surfaces

- General cleaning: Use an ordinary mild food safe detergent and soft cloth. Wipe the surface and towel dry.
- Harsh abrasive cleaners should not be used.
- Wipe the surface clean to remove debris or buildup.

Electronic Displays and Sensors

- Wipe with a soft and dry cloth; preferably microfiber.
- If necessary, lightly mist with deionized water and wipe dry.

Powder-Coated Surfaces

- General cleaning: Use an ordinary, mild detergent and soft cloth. Rinse the surface and towel dry.
- Steel soap pads or harsh abrasive cleaners should never be used.

Stone Aggregate Surfaces

- Spray clean with garden hose to remove dirt and debris.

LIMITED PRODUCT WARRANTY SOFTWARE LICENSE

FIRST YEAR - - The Manufacturer warrants every cooler, bottle filling station, packaged water chiller, fountain and accessory to be free from defects in materials and workmanship under normal use for one (1) year from date of install or eighteen (18) months from date of shipment from factory, whichever occurs first. The Manufacturer warrants every LK44 Series outdoor tubular fountain and bottle filling station to be free from defects in materials and workmanship under normal use for five (5) years from the date of install or sixty-six (66) months from date of shipment from factory, whichever occurs first. This extended warranty does not apply to freeze resistant assemblies.

SECOND THROUGH FIFTH YEARS - The Manufacturer warrants the compressor and hermetically sealed refrigeration system, including cooling coils or tank assembly when part of the hermetically sealed refrigeration system, to be free from defects in material and workmanship under normal use for an additional four (4) years from the end of the one (1) year period described above. Packaged water chillers are not subject to the additional four (4) year warranty when used in chilled water commercial/industrial applications other than for potable water.

INSTALLATION AND OPERATION - The foregoing Limited Warranty applies only when the product is installed and operated in accordance with the Manufacturer's written instructions included with each unit. These products are designed to operate on 20 psi to 105 psi supply line pressure. Non-filtered Bi-level units require a minimum of 40 psi supply line pressure to ensure adequate stream height from each bubbler when activated simultaneously. Bi-level filtered models, regardless of supply line pressure, cannot provide adequate stream height from each bubbler when activated simultaneously. The Limited Warranty does not apply to products, which on examination by the Manufacturer or its agent, are found to have been subjected to accident, alteration, abuse, misuse, misapplications, corrosive type atmospheres, or abnormal use.

OWNER'S OBLIGATIONS - It is the owner's obligation to pay for any repairs or maintenance not covered by the Limited Warranty, including service calls related to non-warranty issues. Any appearance imperfections are to be noted at time of installation, and the installer or the supplier notified without delay. In the case of products located within the United States or Canada, it is the owner's responsibility to allow access to the unit for the authorized service center to repair on site and/or remove unit from wall to repair at the authorized service center's discretion. In the case of products located outside the United States or Canada, the owner is to return any part for which replacement is sought to the closest authorized service center or to the manufacturer's factory repair department.

MANUFACTURER'S OBLIGATIONS - When the product is located within the United States or Canada, the Manufacturer's obligation under this Limited Warranty is limited to the labor and parts to repair or replace any part which is expressly covered by this Limited Warranty at one of its authorized service centers or at its factory repair department. The warranty applicable to any replacement unit shall be the remaining warranty period on the replaced unit. The Manufacturer's obligation also includes cost of outbound freight (but not express freight) of the part or parts from an authorized service center or the factory repair department, but only if the Manufacturer determines that the part or parts, and the purported defect or defects, are covered by this Limited Warranty.

When the product is located outside the United States or Canada, the Manufacturer's obligation under this Limited Warranty is limited to providing a replacement part for any part expressly covered by this Limited Warranty which, upon examination by the Manufacturer or its agent, is found to be defective, but does not include any obligation to provide labor or to pay labor costs incurred in connection with the replacement. The Manufacturer's obligations also include cost of outbound freight (but not express freight) of the part or parts from the factory repair department to (but not beyond) the port in the United States from which the part or parts are shipped to the ultimate destination, but only if the Manufacturer determines that the part or parts, and the purported defect or defects, are covered by this Limited Warranty.

WHAT WARRANTY DOES NOT COVER - This Limited Warranty does not include payment for any field labor to provide for normal maintenance including adjustments such as water stream height, water temperature or electric eye sensitivity. The water system and regulating valve are not covered by this Limited Warranty if they become inoperative due to liming, sand or similar residue. This Limited Warranty is voided if repairs are made by an unauthorized party or the serial number data plate is removed or defaced. Normal deterioration of finish due to use and exposure is not covered by this Limited Warranty. Corrosion of materials is also not covered by this Limited Warranty. The Manufacturer is not liable for repairs, whether cosmetic or structural, to walls where cooler, bottle filler, fountain and packaged water coolers are built into the wall. If inlet pressure is above 105 psi, a pressure regulator must be installed in the supply line. Any damage caused by reason of connecting this water cooler, bottle filler, fountain or packaged water cooler to supply line pressures lower than 20 psi or higher than 105 psi is not covered by this warranty.

PERSONS ENTITLED TO BENEFIT OF WARRANTY - This Limited Warranty is applicable only to (i) purchasers who purchase the product for the resale in the ordinary course of business, and (ii) the first person who purchases the product other than resale.

SOFTWARE LICENSE PROVISIONS - To the extent the product includes embedded software, the owner and those using the product are granted a restricted, non-exclusive license to use such embedded software. Title to the embedded software shall at times remain with the embedded software licensor. The owner and those using the product shall not remove or alter notices, legends or trademarks contained in the embedded software, nor shall they translate, reverse engineer, decompile or disassemble the embedded software except to the extent applicable law specifically prohibits this restriction. The embedded software is provided "as is" and any warranty offered herein is by or through the Manufacturer. Further information concerning this license of embedded software is available from the Manufacturer.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES, EXPRESSED OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. EXCEPT AS EXPRESSLY PROVIDED HEREIN, THE MANUFACTURER MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO ANY PERSON. THIS WARRANTY MAY NOT BE ALTERED, VARIED, **OR EXTENDED**, EXCEPT BY A WRITTEN INSTRUMENT EXECUTED BY THE MANUFACTURER. THE REMEDY OF REPAIR OR, WHERE APPLICABLE, REPLACEMENT AS PROVIDED UNDER THIS LIMITED WARRANTY IS EXCLUSIVE. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES TO ANY PERSON, WHETHER OR NOT OCCASIONED BY NEGLIGENCE OF THE MANUFACTURER, INCLUDING WITHOUT LIMITATION DAMAGES FOR LOSS OF USE, COSTS OR SUBSTITUTION, PROPERTY DAMAGE, OR OTHER MONETARY LOSS.

This Limited Warranty gives specific legal rights and in some states of the United States there may be other rights which vary from state to state.

DATE OF INSTALLATION _____

SERIAL NUMBER _____
(To Be Filled in By Installer)

Elkay Sales, Inc
2222 Camden Court
Oak Brook, Illinois 60523
630.574.8484

Form to be left with the owner by the installer.

what to do if you have a problem

Elkay is proud of the quality of its stainless steel sinks. Many sinks are warranted to be free of manufacturing defects for a lifetime of normal residential use to the original owner of the sink. For a full warranty explanation, and limitations, please consult your warranty sheet.

If you feel you have a defective sink, please contact your plumber for the name of your local Elkay representative, or contact the Consumer Service Department of Elkay at 1-800-22ELKAY (1-800-223-5529). Please provide your sink model number, the date of installation, and a description of the problem.

accessories

Elkay colanders, cutting boards, rinsing baskets and bottom grids are not designed as "Dishwasher Safe" or "Microwave Safe". These products should be hand washed in a mild detergent, rinsed thoroughly and hand dried.

To maintain the beauty and quality of your cutting board, please follow these simple instructions:

- Clean by washing with hot soapy water after preparing each food item and before you go on to the next item.
- A solution of 1 teaspoon of chlorine bleach in 1 quart of water should be used to sanitize surfaces. Flood the surface with the solution and allow it to stand for several minutes.
- Rinse thoroughly and air dry or pat dry with clean paper towels.
- For wood cutting boards – apply a coat of mineral oil to all wood surfaces on a monthly basis or more frequently if needed.
- Do NOT place your cutting board in the dishwasher.
- Do NOT place your cutting board in the microwave.
- Do NOT immerse your cutting board in water.
- Do NOT allow hot surfaces to come in contact with your cutting board.
- Do NOT store your cutting board on or in your stainless steel sink when not in use.
- The following are recommendations from the USDA regarding cutting boards:
 - ▶ Always use a clean cutting board.
 - ▶ If possible, use one cutting board for fresh produce and a separate one for raw meat, poultry, and seafood.
 - ▶ Once cutting boards become excessively worn or develop hard-to-clean grooves, you should replace them.

**ELKAY®****ELKAY®**

2222 Camden Court
Oak Brook, IL 60523

elkayusa.com

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care & cleaning



suggestions for the care and cleaning of your Elkay stainless steel sink

Your Elkay sink is made from the finest nickel bearing stainless steel. Its mellow surface harmonizes with any color scheme... Any décor. Timeless. Elegant. And, like fine silver, its beautiful finish becomes lovelier with use and age. Your Elkay sink is solid stainless steel and with proper care and maintenance will give you a lifetime of service.

recommended cleansers

Safe for all types of Elkay stainless steel sink finishes is Elkay's Stainless Butler Stainless Steel Cleaner and Polisher. The non-abrasive formula is safe and effective for day to day cleaning.

For satin finish sinks:

For stains or light scratches, we suggest a mildly aggressive cleaner such as Shiny Sinks Plus® or Flitz®. For stubborn stains and more noticeable scratches, we suggest a more aggressive cleaner such as Bar Keeper's Friend®, Zud®, Lawrence Right Work, Ajax®, Comet®, Maas® or Nev'r-Dull®. For extremely stubborn stains you may also try to use a Scotch-Brite™ Pad. When using any of these cleaners, it is critical that you rub in the direction of the grain lines of the sink and rinse completely and towel dry.

For high gloss mirror finish sinks:

Use only mild liquid dishwashing detergent with a soft sponge to clean and then rinse thoroughly. Follow with a soft cloth to dry. Do not use an abrasive cleanser or cloth as it will permanently scratch the finish.

recommendations for proper maintenance

- Do... Rinse thoroughly after each use. "Thorough" rinsing can be done by running the water for a few minutes and rubbing the cleaned area with a clean sponge.
- Do... Towel dry after each use to prevent mineral deposits from building up on the surface of the sink.

- Do... Clean the sink once a week. For satin finish sinks be sure to rub in the direction of the satin finish lines, using an Elkay recommended cleanser.
- Do... Use an Elkay bottom grid or rinsing basket to "protect" the finish. Elkay bottom grids can remain in the sink and will not cause rusting or pitting.
- Do NOT... Rub the sink across the satin finish lines. Scouring across the satin finish lines can damage the original sink finish.
- Do NOT... Allow soap or other household cleansers to dry on the surface of the sink. Most brands contain chemical additives which will affect the original finish.
- Do NOT... Use solutions of chlorine bleach and water in the sink. Chlorides, which are found in most soaps, detergents, bleaches, and cleansers, are very aggressive to stainless steel. If left on the sink too long they can cause surface pitting.
- Do NOT... Use a steel wool pad to clean your sink. If a more abrasive product is needed, use a green Scotch Brite pad being sure to rub in the direction of the satin finish lines. Steel wool pads have a tendency to break apart and small particles of steel can become embedded in the surface of the sink. The steel particles will rust and will give the appearance that the sink itself is rusting.
- Do NOT... Use rubber mats or dishpans in the sink. Leaving rubber mats or dishpans in the sink can lead to surface rust or possible pitting. However, if you insist on using mats or dishpans, please remove them after each use and rinse thoroughly.
- Do NOT... Leave wet sponges, cloths, or cleaning pads on the sink. This can lead to surface rust.
- Do NOT... Use abrasive cleanser or cloth on high gloss finish mirror portions of the sink.

Following these recommendations for the care and cleaning of your stainless steel sink will insure that it will provide you with many years of service.

chlorides

Today, chlorides are found in most all soap, detergents, bleaches and cleansers; chlorides can be aggressive to stainless steel. However, chlorides are very water soluble. Therefore, THOROUGH RINSING of your sink after each use to remove any chloride residue and a weekly cleaning is all that is required to keep your sink looking bright and shiny.

scratches

Like many metallic surfaces, your stainless steel sink will scratch. These are merely usage scratches and over time will blend into the overall finish of your sink with proper cleaning.

knives

Your sink is designed to serve as many things but not as a cutting board or chopping block. This type of use will lead to deep scratches in the sink finish and will dull your knives. Elkay does offer various cutting boards which will provide an additional work area.

water quality

The quality of your water can affect your sink's appearance. If your water has a high iron content, a brown surface stain can form on the sink giving the appearance of rust. Additionally, in areas with a high concentration of minerals, or with over-softened water, a white film may develop on the sink. To combat these problems, we suggest that the sink be towel dried after use, and again, on a weekly basis, the sink should be cleaned using a recommended cleanser.

foods

Heavy salt concentration or foods containing high levels of salt should not be allowed to dry on the sink surface. Rinse your sink thoroughly after use.

Elkay Sinks, Faucets and Accessories Care and Cleaning

Sinks

Stainless Steel

- General cleaning: use an ordinary mild detergent and soft cloth, rinse and towel dry.
- Steel soap pads should never be used; particles can adhere to a stainless steel sink surface and will eventually rust.
- Light scratches are normal for stainless steel sinks; over time they will blend into the uniform finish pattern.
- Do not use dish mats as these can trap soap and dirt making sink maintenance more time-consuming.
- We recommend the use of an Elkay bottom grid or rinsing basket to protect your sink.
- Avoid storing open containers of household cleaners and chemicals containing chloride such as bleach, acid, and drain cleaners or toilet bowl cleaner beneath the sink. Vapor emission from the chlorides can cause corrosion and pitting to the exposed stainless steel and other metals including faucet water supply lines.

Stainless Steel Mirror or Hammered Mirror

- General cleaning: use an ordinary mild detergent and soft cloth, rinse and towel dry.
- Never use abrasive cleaners, including steel soap pads.

Antique Copper Hammered

- General cleaning: use non-abrasive, non-detergent soap and a soft cloth, rinse and towel dry.
- Never use abrasives, metal (copper) cleaners, scouring pads, lime or rust removal, alkaline-based, ammonia-based or acidic-based chemicals or cleaning products.
- Acidic foods such as juices and ketchup can remove the patina if left on the sink.
- Hard water spots and mineral deposits can be difficult to remove and may result in damage to the patina.
- Light scratches are normal for copper sinks; over time they will blend into the uniform finish pattern.
- Copper has a living finish and its surface tarnishes naturally. You can expect tarnish, scratches, and dents to appear in your sink over time.

CuVerro® Anti-microbial Copper

- Clean the surface to regular hospital protocols (i.e. appropriate disinfectants, frequency, etc.); be sure to rub in the direction of the satin finish grain lines; rinse and towel dry.
- Use a cleaner that will not leave a wax film or coating on the surface, so that cleaning will not interfere with the antimicrobial action of the surface.
- Never use abrasives, metal (copper) cleaners, scouring pads, lime or rust removal, alkaline-based, ammonia-based or acidic-based chemicals or cleaning products.
- Light scratches are normal for copper sinks; over time they will blend into the uniform finish pattern.

Cast Brass

- General cleaning: use a non-abrasive, non-detergent soap with a soft cloth, rinse and towel dry.
- Never use abrasives, metal cleaners, scouring pads, lime or rust removal, alkaline-based, ammonia-based or acidic-based chemicals or cleaning products.
- Brass has a living finish and its surface tarnishes naturally. You can expect tarnish, scratches, and dents to appear in your sink over time.
- Surface waxing is recommended. Each sink provides a factory applied layer of wax. However, after time and use, this wax layer will need to be rejuvenated. Johnson's or Trewax Sealer Finish for floors is recommended. Do not use any waxes that contain polishing agents.

e-granite™ or Quartz

- Most dirt and stains: Wipe with a damp cotton cloth/sponge and soapy water. Towel dry with a cotton cloth. *It is recommended that you clean your sink prior to first use.*
- Stubborn stains and water marks: Wipe with a Mr. Clean® Magic Eraser® and either water or a 50/50 white vinegar and water solution. Towel dry with a cotton cloth.
- Difficult stains: Use a 3M Scotch-Brite™ Heavy Duty Scour Pad with either water, 50/50 white vinegar/water solution or non-abrasive cleaner. Start cleaning in a circular motion with constant pressure over the area of the stain, rinse thoroughly with water and dry with a cotton cloth. Let dry 5-10 minutes. If stain persists, repeat.

Elkay Sinks, Faucets and Accessories Care and Cleaning

Sinks (cont.)

Fine Fireclay

- General cleaning: use soapy water or vinegar-based cleaner and a sponge and towel dry.
- Water marks: wipe with damp cloth and towel dry.
- Difficult stains: use a 50/50 water/bleach solution or non-abrasive cleaners (follow cleaner manufacturer's instructions), rinse and towel dry.
- Do not use strong chemicals such as paint removers or oven cleaners, straight or undiluted bleach solution, abrasive cleaning products, scouring pads, steel wool or caustic solutions containing ammonia or alkalis.
- Do not set hot pans directly into sink.
- Run cold water when pouring boiling water into sink.

Faucets

- Simply wipe gently with a damp cloth and blot dry with a soft towel.
- Avoid build-up of soap or mineral deposits, as these tend to have an adverse effect on the appearance of the product.
- NEVER use cleaning products of any kind on this product—especially those containing ammonia, bleach or alcohol—or those with any form of abrasive.

Accessories

- Elkay colanders, cutting boards, rinsing baskets and bottom grids are not designed as "Dishwasher Safe" or "Microwave Safe". These products should be hand washed in a mild detergent, rinsed thoroughly and hand dried.
- For wood cutting boards – apply a coat of mineral oil to all wood surfaces on a monthly basis or more frequently if needed.
- The following are recommendations from the USDA regarding cutting boards:
 - Always use a clean cutting board.
 - If possible, use one cutting board for fresh produce and a separate one for raw meat, poultry, and seafood.
 - Once cutting boards become excessively worn or develop hard-to-clean grooves, you should replace them.

STEP ONE

Place sink upside down on countertop surface. Place sink in exact position for installation and pencil completely around sink to create a sink outline.

STEP TWO

Scribe actual opening 5/16" inside the sink outline, all the way around.

SAMPLE CUTOUT SIZES		
SINK SIZE	CUTOUT LENGTH	CUTOUT WIDTH
25 x 22	24 3/8	21 3/8
33 x 22	32 3/8	21 3/8
37 x 22	36 3/8	21 3/8
38 x 22	37 3/8	21 3/8
40 x 22	39 3/8	21 3/8
43 x 22	42 3/8	21 3/8
48 x 22	47 3/8	21 3/8
54 x 22	53 3/8	21 3/8

STEP THREE

Cut out on inside of this line (following the manufacturer's instructions). Install faucet to sink and tighten.

STEP FOUR

Apply a silicone caulk around entire perimeter of opening. Set bowl into opening.

STEP FIVE

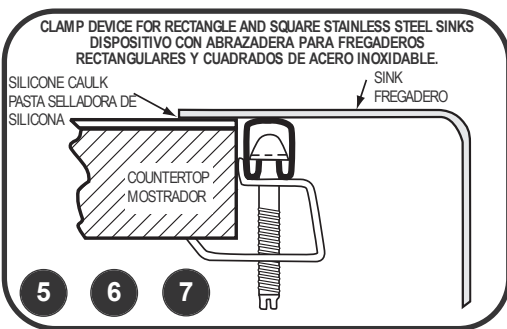
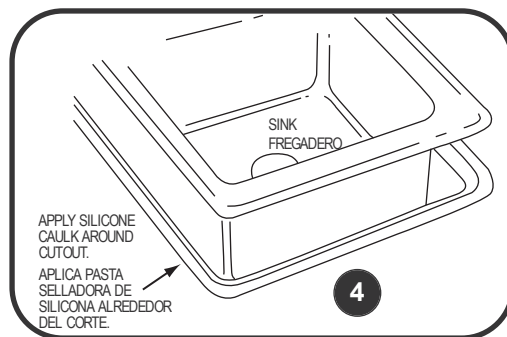
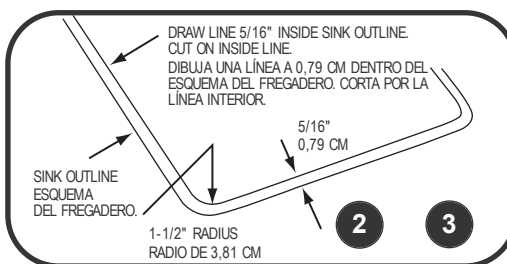
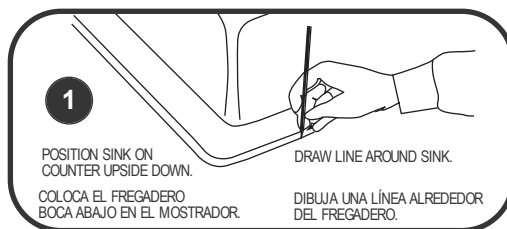
From underside of sink, place one clamp near center, tighten by hand enough to hold sink in place. This applies to all four sides. Fasten balance of clamps in position and hand tighten. (Usually 3 clamps on end, balance divided equally front and back). Space clamps as equally as possible. For countertops thicker than 3/4" up to 1-1/2", Elkay recommends using LK364.

STEP SIX

From the top side, check seal between rim and countertop. Adjust clamps to high spot if necessary.

STEP SEVEN

Tighten clamp evenly with screwdriver or socket wrench in rotation until sink is seated with countertop. **Caution:** Do not over-tighten clamps.



PASO UNO

Coloca el fregadero boca abajo en la superficie del mostrador. Coloca el fregadero en la posición exacta para la instalación y delinea con un lápiz alrededor del fregadero.

PASO DOS

Traza la línea de la abertura real 0,79 cm más adentro del borde delineado del fregadero, bordeándolo por completo.

EJEMPLOS DE LÍNEA DE CORTE		
Medida de Fregadero	Longitud del Corte	Anchura del Corte
635mm x 558mm	619.1mm	542.9mm
838.2mm x 558mm	822.3mm	542.9mm
939.8mm x 558mm	923.9mm	542.9mm
965.2mm x 558mm	949.3mm	542.9mm
1016mm x 558mm	1000.1mm	542.9mm
1092.2mm x 558mm	1076.3mm	542.9mm
1219.2mm x 558mm	1203.3mm	542.9mm
1371.6mm x 558mm	1355.7mm	542.9mm

PASO TRES

Corta dentro de esta línea (siguiendo las instrucciones del fabricante). Si el fregadero viene con una plataforma para grifo, instala el grifo en el fregadero y apriétalo.

PASO CUATRO

Aplica pasta selladora de silicona alrededor de todo el perímetro de la abertura. Coloca el tazón en la abertura.

PASO CINCO

Desde debajo del fregadero, coloca una abrazadera cerca del centro, ajústala con la mano lo suficiente como para mantener el fregadero en su lugar. Esto debe hacerse en los cuatro lados. Sujeta el contrapeso de las abrazaderas en su lugar y apriétalo con la mano. (Generalmente 3 abrazaderas en el extremo, el contrapeso dividido igualmente entre la parte frontal y posterior). Coloca las abrazaderas a la misma distancia una de la otra, tanto como sea posible. Para mostrador grueso de 19mm hasta 38mm Elkay recomienda utilizar LK364.

PASO SEIS

Desde el lado superior, revisa el sello entre el borde y el mostrador. Ajusta las abrazaderas a un punto más alto si es necesario.

PASO SIETE

Aprieta la abrazadera de forma pareja con un destornillador o llave de dados en rotación hasta que el fregadero se asiente en el mostrador. **Precaución:** No aprietes demasiado las abrazaderas.

What You Will Need

The tools you will need to install your stainless steel sink are few and commonly found in the average home toolbox.

Here is a list of what you will need:

- Caulking for mounting sink rim.
- Plumbers putty for mounting faucet and strainers.
- Yardstick or Rule (at least 3-feet long).
- Flashlight.
- Long, thin screwdriver (shank at least six inches).
- Adjustable wrenches (2), or open ends.
- Pipe wrench.

Lo Que Necesitarás

Las herramientas que necesitarás para instalar tu fregadero de acero inoxidable son pocas y pueden encontrarse normalmente en una caja de herramientas común del hogar.

A continuación una lista de lo que necesitarás:

- Masilla para instalar el borde del fregadero.
- Masilla de plomero para instalar el grifo y los escurridores.
- Vara de medir o Regla (de al menos 91 cm).
- Linterna.
- Destornillador largo y fino (vástago de al menos 15,24 cm).
- 2 Llaves ajustables, o de extremos abiertos.
- Llave para tubería.

Los tornillos de instalación vienen con el fregadero.

Use and Care Hints

Satin Finish

Regular cleaning is important to maintain the appearance of your Elkay sink.

Easy Cleaning Instructions

Rinsing is the most important part of sink care. An Elkay stainless steel sink finish will retain its original bright appearance if the sink is **rinsed** thoroughly after each use. "Thorough" rinsing can be done by running the water throughout the sink for a few minutes after each use. Typically, a rinse and towel drying after each use takes care of most everyday clean ups.

Recommendations for Proper Maintenance

- **Do...** Use only a mild liquid dishwashing detergent with a soft sponge to clean and then thoroughly rinse the sink.
- **Do...** Rinse thoroughly after each use. "Thorough" rinsing can be done by running water for a few minutes and rubbing the cleaned area with a sponge.
- **Do...** Towel dry after each use to prevent mineral deposits from building up on the surface of the sink.
- **Do Not...** Allow liquid soap or other household cleansers to dry on the surface of the sink. Most brands contain chemical additives which will affect the original finish.
- **Do Not...** Use solutions of chlorine bleach and water in the sink. Chlorides, which are found in most soaps, detergents, bleaches, and cleansers, are very aggressive to stainless steel. If left on the sink too long they can cause surface pitting.
- **Do Not...** Use a steel wool pad to clean your sink. Steel wool pads have a tendency to break apart and small particles of steel can become embedded in the surface of the sink. The steel particles will rust and will give the appearance that the sink itself is rusting.
- **Do Not...** Use abrasive cleansers or abrasive pads as it will scratch the surface.
- **Do Not...** Leave wet sponges, cloths, or cleaning pads on the sink. This can lead to surface rust.

Following these recommendations for the care and cleaning of your stainless steel sink will insure that it will provide you with many years of service.

Chlorides

Today, chlorides are found in most all soap, detergents, bleaches and cleansers; chlorides can be oppressive to stainless steel. However, chlorides are very water soluble. Therefore, THOROUGH RINSING of your sink after each use to remove any chloride residue and a weekly scouring is all that is required to keep your sink looking bright and shiny.

Water Quality

The quality of your water can affect your sink's appearance. If your water has a high iron content, a brown surface stain can form on the sink giving the appearance of rust. Additionally, in areas with a high concentration of minerals, or with over-softened water, a white film may develop on the sink. To combat these problems, we suggest that the sink be towel dried after use.

Discoloration, Rust and Possible Pitting

Wet sponges, cloths, cleaning pads and rubber mats left on the sink can lead to discoloration. Steel wool pads should never be used to clean your sink as they leave small iron particles in the grain lines which rust and can damage the sink. Continued usage in this manner may eventually lead to the sink itself rusting and pitting.

Liquid Soap

Do not allow concentrated liquid detergent to dry on your sink. Most brands contain chemical additives which will affect the original finish.

Spotting

The quality of your water can affect your sink's appearance. In areas with hard water, a brown surface stain can form on the sink giving the appearance of rust. This phenomena also occurs in water with high iron content. Additionally, in areas with a high concentration of minerals, or with over-softened water, a white film may develop on the sink. To combat this problem, we suggest that the sink be towel dried after use.

Foods

Heavy salt concentration or foods containing high levels of salt should not be allowed to dry onto the sink surface. Rinse your sink thoroughly after use.

ELKAY LIMITED SINK WARRANTY

Elkay warrants to the original purchaser of an Elkay stainless steel sink that Elkay will, at its option, replace or repair, without charge, such product if it fails due to a manufacturing defect for a lifetime of normal residential use. Product replacement does not include transportation cost or labor installation cost. This warranty covers only stainless steel self-rimming drop-in sinks installed in a conventional countertop surface and stainless steel undermount sinks installed in a conventional solid surface countertop and applies to residential installations only. Elkay reserves the right to examine product in question and its installation prior to replacement.

WASTE FITTINGS AND ACCESSORIES ARE NOT WARRANTED OTHER WARRANTY CONDITIONS ON SINKS

This warranty applies to sinks purchased after March 1st 2001 as shown on the purchaser's dated receipt. For sinks purchased prior to March 1st 2001, the applicable warranty at that time will be in effect. Our warranty does not cover product failure or damage caused by the use of optional Elkay accessories, abusive treatment, misuse, environmental factors, normal wear including dents and scratches, improper care and cleaning, use of aggressive and abrasive cleaners, damage due to handling or failure to follow the recommended procedures for installation, care and maintenance as detailed in the installation and care guide provided with every sink. This warranty is extended only to the original consumer purchaser of the product. This warranty does not cover shipping costs, labor costs, or any other charges for such items as installation or replacement of the sink, diagnosis or replacement of any faucet or component part, or any other expense or loss.

This warranty does not cover obsolete, discontinued nor display products, whether such items are purchased at discount outlets and/or on-line or sold on clearance or close out.

All incidental or consequential damages are specifically excluded. No additional warranties, express or implied are given, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN SERVICE UNDER WARRANTY

1. Write to: Elkay Manufacturing Company
Attention: Consumer Services
2222 Camden Court
Oak Brook, IL 60523
2. Include a letter containing the following information:
 - a. Date of purchase and installation
 - b. Proof of Purchase (copy of original dated invoice)
 - c. Description of nature of defect
 - d. Model number or description of model and/or component part if possible.

Consejos de Uso y Mantenimiento

Acabado Satinado

La limpieza regular es importante para mantener la apariencia de tu fregadero Elkay.

Instrucciones para una Limpieza Fácil

Enjuagar es el paso más importante del cuidado del fregadero. El acabado de un fregadero de acero inoxidable Elkay mantendrá su apariencia brillante original si el fregadero se enjuaga completamente después de cada uso. Un enjuague «completo» puede hacerse dejando correr agua por el fregadero durante unos minutos después de cada uso. Generalmente, enjuagar y secar con toalla después de cada uso es lo principal de la mayoría de las limpiezas diarias.

Recomendaciones para un Mantenimiento Adecuado

- **Se Recomienda...** Usar sólo un detergente líquido y suave para fregar con una esponja para limpiar y luego enjuagar abundantemente el fregadero.
- **Se Recomienda...** Enjuagar completamente después de cada uso. Un enjuague «completo» puede hacerse dejando correr agua durante unos minutos y frotando el área limpia con una esponja.
- **Se Recomienda...** Secar con una toalla después de cada uso para evitar que se acumulen depósitos minerales en la superficie del fregadero.
- **No Se Recomienda...** Dejar que jabón líquido u otros limpiadores del hogar se sequen en la superficie del fregadero. La mayoría de las marcas contienen aditivos químicos que afectarán el acabado original.
- **No Se Recomienda...** Usar soluciones de blanqueador con cloro y agua en el fregadero. Los cloruros, que pueden hallarse en la mayoría de los jabones, detergentes, blanqueadores y limpiadores, son muy agresivos para el acero inoxidable. Si se dejan en el fregadero durante mucho tiempo pueden causar picaduras en la superficie.
- **No Se Recomienda...** Usar una esponja de alambre para limpiar tu fregadero. Las esponjas de alambre tienden a romperse y pequeñas partículas de acero pueden insertarse en la superficie del fregadero. Las partículas de acero se oxidarán y darán la apariencia de que el fregadero se está oxidando.
- **No Se Recomienda...** Usar limpiadores o almohadillas abrasivas, ya que dañarán la superficie.
- **No Se Recomienda...** Dejar esponjas, paños, o almohadillas de limpieza húmedas en el fregadero. Esto podría provocar que la superficie se oxide.

Seguir estas recomendaciones para el cuidado y la limpieza de tu fregadero de acero inoxidable asegurará que te brindará muchos años de servicio.

Cloruros

En la actualidad, la mayoría de los jabones, detergentes, blanqueadores y limpiadores contienen cloruros; estos son muy agresivos para el acero inoxidable. Sin embargo, los cloruros son muy solubles en agua. Por lo tanto, ENJUAGAR ABUNDANTEMENTE tu fregadero después de cada uso para quitar cualquier residuo de cloruro, y pulirlo una vez a la semana es todo lo que se necesita para mantener el fregadero brillante y reluciente.

Calidad del agua

La calidad del agua puede afectar la apariencia de tu fregadero. Si el agua tiene un gran contenido de hierro, una mancha superficial marrón puede formarse en el fregadero, dando la apariencia de óxido. Adicionalmente, en áreas con una gran concentración de minerales, o con agua demasiado suave, una película blanca puede formarse en el fregadero. Para combatir estos problemas, sugerimos secar con toalla el fregadero después de usarlo.

Decoloración, Óxido y Posibles Picaduras

Las esponjas húmedas, paños, almohadillas de limpieza y tapetes de goma que se dejen en el fregadero pueden causar decoloración. Las esponjas de alambre nunca deben usarse para limpiar tu fregadero, porque dejan pequeñas partículas de hierro en las líneas de la veta, las que pueden oxidarse y dañar el fregadero. El uso continuo de esta manera puede provocar finalmente que el fregadero se oxide y se pique.

Jabón líquido

No permitas que el detergente líquido concentrado se seque sobre tu fregadero. La mayoría de las marcas contienen aditivos químicos que afectarán el acabado original.

Manchas

La calidad del agua puede afectar la apariencia de tu fregadero. En áreas con agua dura, una mancha superficial marrón puede formarse en el fregadero, dando la apariencia de óxido. Este fenómeno también ocurre en agua con alto contenido de hierro. Adicionalmente, en áreas con una gran concentración de minerales, o con agua demasiado suave, una película blanca puede formarse en el fregadero. Para combatir este problema, sugerimos secar con toalla el fregadero después de usarlo.

Alimentos

La alta concentración de sal o los alimentos con alto contenido de sal no deben dejarse secar en la superficie del fregadero. Enjuaga tu fregadero abundantemente después de usarlo.

GARANTÍA LIMITADA DE POR VIDA DE ELKAY PARA EL FREGADERO

Elkay garantiza al comprador original de un fregadero Elkay de acero inoxidable que Elkay, a su criterio, reparará o reemplazará, sin cargo alguno, dicho producto si presenta defectos de fabricación durante toda una vida de uso residencial normal. El reemplazo del producto no incluye los costos de transporte ni de la mano de obra de instalación. Esta garantía sólo cubre los fregaderos empotrados con rebordes, de acero inoxidable instalados en un mostrador convencional y los fregaderos de acero inoxidable instalados en un mostrador convencional de superficie sólida, además, sólo se aplica a instalaciones residenciales. Elkay se reserva el derecho de examinar el producto en cuestión y su instalación antes de reemplazarlo.

LOS ACCESORIOS Y ACOPLAMIENTOS DEL DESAGÜE NO ESTÁN GARANTIZADOS

OTRAS CONDICIONES DE LA GARANTÍA DE FREGADEROS

Esta garantía cubre los fregaderos comprados después del 1ro de marzo de 2001, según la fecha registrada en los recibos del comprador. Los fregaderos comprados antes del 1ro de marzo están cubiertos por la garantía vigente en la fecha de compra. Nuestra garantía no cubre la falla o daño del producto causado por: uso de accesorios opcionales de Elkay, uso abusivo e inapropiado, factores ambientales, desgaste normal incluyendo arañazos y abolladuras, limpieza y cuidado inapropiados, uso de limpiadores agresivos y abrasivos, daños debidos al manejo o errores al seguir los procedimientos recomendados de instalación, cuidado y mantenimiento detallados en la guía de instalación y cuidado, adjunta a cada fregadero. Esta garantía se extiende únicamente al comprador y usuario original del producto. La garantía no cubre costos de transporte, mano de obra o cualquier otro costo por conceptos tales como la instalación o reemplazo del fregadero, diagnóstico o reemplazo de cualquier grifo o pieza ni cualquier otra pérdida o gasto. Esta garantía no cubre productos obsoletos, descontinuados o en exhibición, si tales artículos se compran en tiendas de descuento y/o en internet o se venden en rebaja o liquidación.

Todos los daños directos o indirectos quedan específicamente excluidos. No se ofrecen otras garantías adicionales, expresas o implícitas, incluyendo, pero no limitándose a, cualquier garantía implícita de comerciabilidad o idoneidad para un propósito en particular.

Algunos Estados no permiten la exclusión o limitación de daños directos o indirectos, ni límites a la duración de una garantía implícita; por lo tanto las exclusiones o limitaciones anteriores pueden no ser pertinentes en su caso.

Esta garantía le otorga a usted derechos legales específicos, y usted puede también tener otros derechos, que varían según el estado.

PARA OBTENER SERVICIO BAJO ESTA GARANTÍA

1. Escriba a: Elkay Manufacturing Company
Atención: Consumer Services
2222 Camden Court
Oak Brook, IL 60523
2. Incluya una carta que contenga la siguiente información:
 - a. Fecha de compra e instalación
 - b. Comprobante de Compra (copia de la factura original fechada)
 - c. Descripción del defecto
 - d. Número de modelo o descripción del modelo y/o pieza si es posible

Elkay Residential Sinks Limited Lifetime Warranty

Elkay warrants to the original purchaser of an Elkay stainless steel sink that Elkay will, at its option, replace or repair, without charge, such product if it fails due to a manufacturing defect for a lifetime of normal residential use. Product replacement does not include transportation cost or labor installation cost. This warranty covers only stainless steel self-rimming drop-in sinks installed in a conventional countertop surface and stainless steel undermount sinks installed in a conventional solid surface countertop and applies to residential installations only. Elkay reserves the right to examine product in question and its installation prior to replacement.

WASTE FITTINGS AND ACCESSORIES ARE NOT WARRANTED

Other Warranty Conditions on Sinks

This warranty applies to sinks purchased after March 1st 2001 as shown on the purchaser's dated receipt. For sinks purchased prior to March 1st 2001, the applicable warranty at that time will be in effect. Our warranty does not cover product failure or damage caused by the use of optional Elkay accessories, abusive treatment, misuse, environmental factors, normal wear including dents and scratches, improper care and cleaning, use of aggressive and abrasive cleaners, damage due to handling or failure to follow the recommended procedures for installation, care and maintenance as detailed in the installation and care guide provided with every sink. This warranty is extended only to the original consumer purchaser of the product.

This warranty does not cover shipping costs, labor costs, or any other charges for such items as installation or replacement of the sink, diagnosis or replacement of any faucet or component part, or any other expense or loss.

All incidental or consequential damages are specifically excluded. No additional warranties, express or implied are given, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

To Obtain Service Under Warranty

1. Write to: Elkay Manufacturing Company
Attention: Consumer Services
2222 Camden Court
Oak Brook, IL 60523
2. Include a letter containing the following information:
 - a. Date of purchase and installation.
 - b. Proof of Purchase (copy of original dated invoice).
 - c. Description of nature of defect.
 - d. Model number or description of model and/or component part if possible.

what to do if you have a problem

Elkay is proud of the quality of its stainless steel sinks. Many sinks are warranted to be free of manufacturing defects for a lifetime of normal residential use to the original owner of the sink. For a full warranty explanation, and limitations, please consult your warranty sheet.

If you feel you have a defective sink, please contact your plumber for the name of your local Elkay representative, or contact the Consumer Service Department of Elkay at 1-800-22ELKAY (1-800-223-5529). Please provide your sink model number, the date of installation, and a description of the problem.

accessories

Elkay colanders, cutting boards, rinsing baskets and bottom grids are not designed as "Dishwasher Safe" or "Microwave Safe". These products should be hand washed in a mild detergent, rinsed thoroughly and hand dried.

To maintain the beauty and quality of your cutting board, please follow these simple instructions:

- Clean by washing with hot soapy water after preparing each food item and before you go on to the next item.
- A solution of 1 teaspoon of chlorine bleach in 1 quart of water should be used to sanitize surfaces. Flood the surface with the solution and allow it to stand for several minutes.
- Rinse thoroughly and air dry or pat dry with clean paper towels.
- For wood cutting boards – apply a coat of mineral oil to all wood surfaces on a monthly basis or more frequently if needed.
- Do NOT place your cutting board in the dishwasher.
- Do NOT place your cutting board in the microwave.
- Do NOT immerse your cutting board in water.
- Do NOT allow hot surfaces to come in contact with your cutting board.
- Do NOT store your cutting board on or in your stainless steel sink when not in use.
- The following are recommendations from the USDA regarding cutting boards:
 - ▶ Always use a clean cutting board.
 - ▶ If possible, use one cutting board for fresh produce and a separate one for raw meat, poultry, and seafood.
 - ▶ Once cutting boards become excessively worn or develop hard-to-clean grooves, you should replace them.

ELKAY - sink (back of house)

ELKAY®

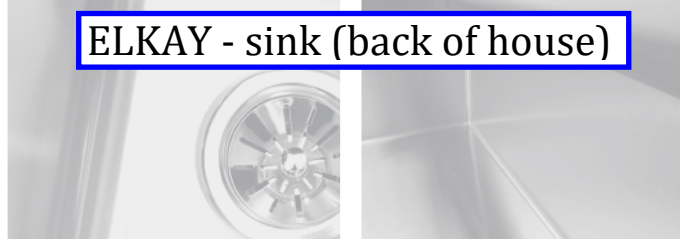
ELKAY®

2222 Camden Court
Oak Brook, IL 60523

elkayusa.com

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care & cleaning



suggestions for the care and cleaning of your Elkay stainless steel sink

Your Elkay sink is made from the finest nickel bearing stainless steel. Its mellow surface harmonizes with any color scheme... Any décor. Timeless. Elegant. And, like fine silver, its beautiful finish becomes lovelier with use and age. Your Elkay sink is solid stainless steel and with proper care and maintenance will give you a lifetime of service.

recommended cleansers

Safe for all types of Elkay stainless steel sink finishes is Elkay's Stainless Butler Stainless Steel Cleaner and Polisher. The non-abrasive formula is safe and effective for day to day cleaning.

For satin finish sinks:

For stains or light scratches, we suggest a mildly aggressive cleaner such as Shiny Sinks Plus® or Flitz®. For stubborn stains and more noticeable scratches, we suggest a more aggressive cleaner such as Bar Keeper's Friend®, Zud®, Lawrence Right Work, Ajax®, Comet®, Maas® or Nevr-Dull®. For extremely stubborn stains you may also try to use a Scotch-Brite™ Pad. When using any of these cleaners, it is critical that you rub in the direction of the grain lines of the sink and rinse completely and towel dry.

For high gloss mirror finish sinks:

Use only mild liquid dishwashing detergent with a soft sponge to clean and then rinse thoroughly. Follow with a soft cloth to dry. Do not use an abrasive cleanser or cloth as it will permanently scratch the finish.

recommendations for proper maintenance

- Do... Rinse thoroughly after each use. "Thorough" rinsing can be done by running the water for a few minutes and rubbing the cleaned area with a clean sponge.
- Do... Towel dry after each use to prevent mineral deposits from building up on the surface of the sink.

- Do... Clean the sink once a week. For satin finish sinks be sure to rub in the direction of the satin finish lines, using an Elkay recommended cleanser.
- Do... Use an Elkay bottom grid or rinsing basket to "protect" the finish. Elkay bottom grids can remain in the sink and will not cause rusting or pitting.
- Do NOT... Rub the sink across the satin finish lines. Scouring across the satin finish lines can damage the original sink finish.
- Do NOT... Allow soap or other household cleansers to dry on the surface of the sink. Most brands contain chemical additives which will affect the original finish.
- Do NOT... Use solutions of chlorine bleach and water in the sink. Chlorides, which are found in most soaps, detergents, bleaches, and cleansers, are very aggressive to stainless steel. If left on the sink too long they can cause surface pitting.
- Do NOT... Use a steel wool pad to clean your sink. If a more abrasive product is needed, use a green Scotch Brite pad being sure to rub in the direction of the satin finish lines. Steel wool pads have a tendency to break apart and small particles of steel can become embedded in the surface of the sink. The steel particles will rust and will give the appearance that the sink itself is rusting.
- Do NOT... Use rubber mats or dishpans in the sink. Leaving rubber mats or dishpans in the sink can lead to surface rust or possible pitting. However, if you insist on using mats or dishpans, please remove them after each use and rinse thoroughly.
- Do NOT... Leave wet sponges, cloths, or cleaning pads on the sink. This can lead to surface rust.
- Do NOT... Use abrasive cleanser or cloth on high gloss finish mirror portions of the sink.

Following these recommendations for the care and cleaning of your stainless steel sink will insure that it will provide you with many years of service.

chlorides

Today, chlorides are found in most all soap, detergents, bleaches and cleansers; chlorides can be aggressive to stainless steel. However, chlorides are very water soluble. Therefore, THOROUGH RINSING of your sink after each use to remove any chloride residue and a weekly cleaning is all that is required to keep your sink looking bright and shiny.

scratches

Like many metallic surfaces, your stainless steel sink will scratch. These are merely usage scratches and over time will blend into the overall finish of your sink with proper cleaning.

knives

Your sink is designed to serve as many things but not as a cutting board or chopping block. This type of use will lead to deep scratches in the sink finish and will dull your knives. Elkay does offer various cutting boards which will provide an additional work area.

water quality

The quality of your water can affect your sink's appearance. If your water has a high iron content, a brown surface stain can form on the sink giving the appearance of rust. Additionally, in areas with a high concentration of minerals, or with over-softened water, a white film may develop on the sink. To combat these problems, we suggest that the sink be towel dried after use, and again, on a weekly basis, the sink should be cleaned using a recommended cleanser.

foods

Heavy salt concentration or foods containing high levels of salt should not be allowed to dry on the sink surface. Rinse your sink thoroughly after use.



Elkay Sinks, Faucets and Accessories Care and Cleaning

Sinks

Stainless Steel

- General cleaning: use an ordinary mild detergent and soft cloth, rinse and towel dry.
- Steel soap pads should never be used; particles can adhere to a stainless steel sink surface and will eventually rust.
- Light scratches are normal for stainless steel sinks; over time they will blend into the uniform finish pattern.
- Do not use dish mats as these can trap soap and dirt making sink maintenance more time-consuming.
- We recommend the use of an Elkay bottom grid or rinsing basket to protect your sink.
- Avoid storing open containers of household cleaners and chemicals containing chloride such as bleach, acid, and drain cleaners or toilet bowl cleaner beneath the sink. Vapor emission from the chlorides can cause corrosion and pitting to the exposed stainless steel and other metals including faucet water supply lines.

Stainless Steel Mirror or Hammered Mirror

- General cleaning: use an ordinary mild detergent and soft cloth, rinse and towel dry.
- Never use abrasive cleaners, including steel soap pads.

Antique Copper Hammered

- General cleaning: use non-abrasive, non-detergent soap and a soft cloth, rinse and towel dry.
- Never use abrasives, metal (copper) cleaners, scouring pads, lime or rust removal, alkaline-based, ammonia-based or acidic-based chemicals or cleaning products.
- Acidic foods such as juices and ketchup can remove the patina if left on the sink.
- Hard water spots and mineral deposits can be difficult to remove and may result in damage to the patina.
- Light scratches are normal for copper sinks; over time they will blend into the uniform finish pattern.
- Copper has a living finish and its surface tarnishes naturally. You can expect tarnish, scratches, and dents to appear in your sink over time.

CuVerro® Anti-microbial Copper

- Clean the surface to regular hospital protocols (i.e. appropriate disinfectants, frequency, etc.); be sure to rub in the direction of the satin finish grain lines; rinse and towel dry.
- Use a cleaner that will not leave a wax film or coating on the surface, so that cleaning will not interfere with the antimicrobial action of the surface.
- Never use abrasives, metal (copper) cleaners, scouring pads, lime or rust removal, alkaline-based, ammonia-based or acidic-based chemicals or cleaning products.
- Light scratches are normal for copper sinks; over time they will blend into the uniform finish pattern.

Cast Brass

- General cleaning: use a non-abrasive, non-detergent soap with a soft cloth, rinse and towel dry.
- Never use abrasives, metal cleaners, scouring pads, lime or rust removal, alkaline-based, ammonia-based or acidic-based chemicals or cleaning products.
- Brass has a living finish and its surface tarnishes naturally. You can expect tarnish, scratches, and dents to appear in your sink over time.
- Surface waxing is recommended. Each sink provides a factory applied layer of wax. However, after time and use, this wax layer will need to be rejuvenated. Johnson's or Trewax Sealer Finish for floors is recommended. Do not use any waxes that contain polishing agents.

e-granite™ or Quartz

- Most dirt and stains: Wipe with a damp cotton cloth/sponge and soapy water. Towel dry with a cotton cloth. *It is recommended that you clean your sink prior to first use.*
- Stubborn stains and water marks: Wipe with a Mr. Clean® Magic Eraser® and either water or a 50/50 white vinegar and water solution. Towel dry with a cotton cloth.
- Difficult stains: Use a 3M Scotch-Brite™ Heavy Duty Scour Pad with either water, 50/50 white vinegar/water solution or non-abrasive cleaner. Start cleaning in a circular motion with constant pressure over the area of the stain, rinse thoroughly with water and dry with a cotton cloth. Let dry 5-10 minutes. If stain persists, repeat.



Elkay Sinks, Faucets and Accessories Care and Cleaning

Sinks (cont.)

Fine Fireclay

- General cleaning: use soapy water or vinegar-based cleaner and a sponge and towel dry.
- Water marks: wipe with damp cloth and towel dry.
- Difficult stains: use a 50/50 water/bleach solution or non-abrasive cleaners (follow cleaner manufacturer's instructions), rinse and towel dry.
- Do not use strong chemicals such as paint removers or oven cleaners, straight or undiluted bleach solution, abrasive cleaning products, scouring pads, steel wool or caustic solutions containing ammonia or alkalis.
- Do not set hot pans directly into sink.
- Run cold water when pouring boiling water into sink.

Faucets

- Simply wipe gently with a damp cloth and blot dry with a soft towel.
- Avoid build-up of soap or mineral deposits, as these tend to have an adverse effect on the appearance of the product.
- NEVER use cleaning products of any kind on this product—especially those containing ammonia, bleach or alcohol—or those with any form of abrasive.

Accessories

- Elkay colanders, cutting boards, rinsing baskets and bottom grids are not designed as "Dishwasher Safe" or "Microwave Safe". These products should be hand washed in a mild detergent, rinsed thoroughly and hand dried.
- For wood cutting boards – apply a coat of mineral oil to all wood surfaces on a monthly basis or more frequently if needed.
- The following are recommendations from the USDA regarding cutting boards:
 - Always use a clean cutting board.
 - If possible, use one cutting board for fresh produce and a separate one for raw meat, poultry, and seafood.
 - Once cutting boards become excessively worn or develop hard-to-clean grooves, you should replace them.

ELKAY®

Top Mount Installation Instructions Instrucciones de Instalación de Montaje sobre Cubierta

STEP ONE

Place sink upside down on countertop surface. Place sink in exact position for installation and pencil completely around sink to create a sink outline.

STEP TWO

Scribe actual opening 5/16" inside the sink outline, all the way around.

SAMPLE CUTOUT SIZES		
SINK SIZE	CUTOUT LENGTH	CUTOUT WIDTH
25 x 22	24 3/8	21 3/8
33 x 22	32 3/8	21 3/8
37 x 22	36 3/8	21 3/8
38 x 22	37 3/8	21 3/8
40 x 22	39 3/8	21 3/8
43 x 22	42 3/8	21 3/8
48 x 22	47 3/8	21 3/8
54 x 22	53 3/8	21 3/8

STEP THREE

Cut out on inside of this line (following the manufacturer's instructions). Install faucet to sink and tighten.

STEP FOUR

Apply a silicone caulk around entire perimeter of opening. Set bowl into opening.

STEP FIVE

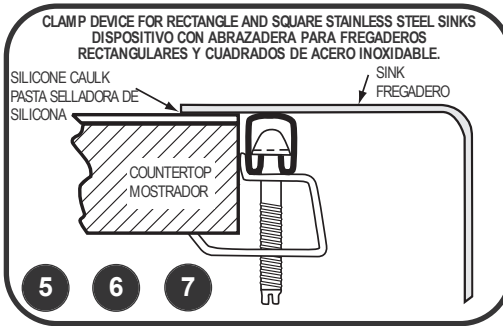
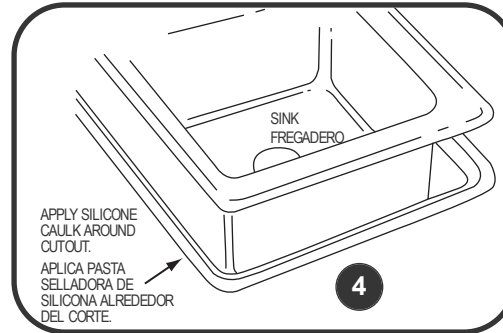
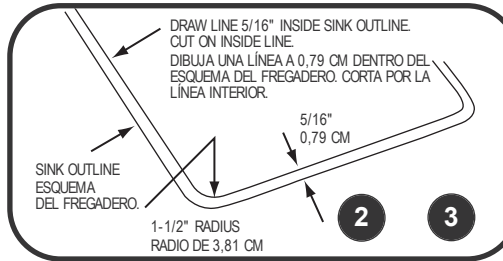
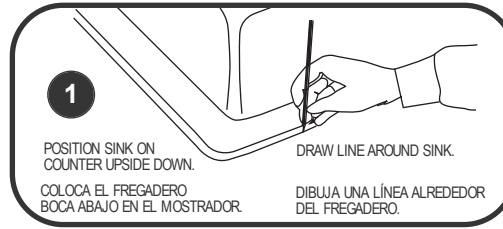
From underside of sink, place one clamp near center, tighten by hand enough to hold sink in place. This applies to all four sides. Fasten balance of clamps in position and hand tighten. (Usually 3 clamps on end, balance divided equally front and back). Space clamps as equally as possible. For countertops thicker than 3/4" up to 1-1/2", Elkay recommends using LK364.

STEP SIX

From the top side, check seal between rim and countertop. Adjust clamps to high spot if necessary.

STEP SEVEN

Tighten clamp evenly with screwdriver or socket wrench in rotation until sink is seated with countertop. **Caution:** Do not over-tighten clamps.



PASO UNO

Coloca el fregadero boca abajo en la superficie del mostrador. Coloca el fregadero en la posición exacta para la instalación y delinea con un lápiz alrededor del fregadero.

PASO DOS

Traza la línea de la abertura real 0,79 cm más adentro del borde delineado del fregadero, bordeándolo por completo.

EJEMPLOS DE LÍNEA DE CORTE		
Medida de Fregadero	Longitud del Corte	Anchura del Corte
635mm x 558mm	619.1mm	542.9mm
838.2mm x 558mm	822.3mm	542.9mm
939.8mm x 558mm	923.9mm	542.9mm
965.2mm x 558mm	949.3mm	542.9mm
1016mm x 558mm	1000.1mm	542.9mm
1092.2mm x 558mm	1076.3mm	542.9mm
1219.2mm x 558mm	1203.3mm	542.9mm
1371.6mm x 558mm	1355.7mm	542.9mm

PASO TRES

Corta dentro de esta línea (siguiendo las instrucciones del fabricante). Si el fregadero viene con una plataforma para grifo, instala el grifo en el fregadero y apriétalo.

PASO CUATRO

Aplica pasta selladora de silicona alrededor de todo el perímetro de la abertura. Coloca el tazón en la abertura.

PASO CINCO

Desde debajo del fregadero, coloca una abrazadera cerca del centro, ajústala con la mano lo suficiente como para mantener el fregadero en su lugar. Esto debe hacerse en los cuatro lados. Sujeta el contrapeso de las abrazaderas en su lugar y apriétalo con la mano. (Generalmente 3 abrazaderas en el extremo, el contrapeso dividido igualmente entre la parte frontal y posterior). Coloca las abrazaderas a la misma distancia una de la otra, tanto como sea posible. Para mostrador grueso de 19mm hasta 38mm Elkay recomienda utilizar LK364.

PASO SEIS

Desde el lado superior, revisa el sello entre el borde y el mostrador. Ajusta las abrazaderas a un punto más alto si es necesario.

PASO SIETE

Aprieta la abrazadera de forma pareja con un destornillador o llave de dados en rotación hasta que el fregadero se asiente en el mostrador. **Precaución:** No aprietes demasiado las abrazaderas.

What You Will Need

The tools you will need to install your stainless steel sink are few and commonly found in the average home toolbox.

Here is a list of what you will need:

- Caulking for mounting sink rim.
- Plumbers putty for mounting faucet and strainers.
- Yardstick or Rule (at least 3-feet long).
- Flashlight.
- Long, thin screwdriver (shank at least six inches).
- Adjustable wrenches (2), or open ends.
- Pipe wrench.

Lo Que Necesitarás

Las herramientas que necesitarás para instalar tu fregadero de acero inoxidable son pocas y pueden encontrarse normalmente en una caja de herramientas común del hogar.

A continuación una lista de lo que necesitarás:

- Masilla para instalar el borde del fregadero.
- Masilla de plomero para instalar el grifo y los escurridores.
- Vara de medir o Regla (de al menos 91 cm).
- Linterna.
- Destornillador largo y fino (vástago de al menos 15,24 cm).
- 2 Llaves ajustables, o de extremos abiertos.
- Llave para tubería.

Los tornillos de instalación vienen con el fregadero.

Use and Care Hints

Satin Finish

Regular cleaning is important to maintain the appearance of your Elkay sink.

Easy Cleaning Instructions

Rinsing is the most important part of sink care. An Elkay stainless steel sink finish will retain its original bright appearance if the sink is **rinsed** thoroughly after each use. "Thorough" rinsing can be done by running the water throughout the sink for a few minutes after each use. Typically, a rinse and towel drying after each use takes care of most everyday clean ups.

Recommendations for Proper Maintenance

- **Do...** Use only a mild liquid dishwashing detergent with a soft sponge to clean and then thoroughly rinse the sink.
- **Do...** Rinse thoroughly after each use. "Thorough" rinsing can be done by running water for a few minutes and rubbing the cleaned area with a sponge.
- **Do...** Towel dry after each use to prevent mineral deposits from building up on the surface of the sink.
- **Do Not...** Allow liquid soap or other household cleansers to dry on the surface of the sink. Most brands contain chemical additives which will affect the original finish.
- **Do Not...** Use solutions of chlorine bleach and water in the sink. Chlorides, which are found in most soaps, detergents, bleaches, and cleansers, are very aggressive to stainless steel. If left on the sink too long they can cause surface pitting.
- **Do Not...** Use a steel wool pad to clean your sink. Steel wool pads have a tendency to break apart and small particles of steel can become embedded in the surface of the sink. The steel particles will rust and will give the appearance that the sink itself is rusting.
- **Do Not...** Use abrasive cleansers or abrasive pads as it will scratch the surface.
- **Do Not...** Leave wet sponges, cloths, or cleaning pads on the sink. This can lead to surface rust.

Following these recommendations for the care and cleaning of your stainless steel sink will insure that it will provide you with many years of service.

Chlorides

Today, chlorides are found in most all soap, detergents, bleaches and cleansers; chlorides can be oppressive to stainless steel. However, chlorides are very water soluble. Therefore, THOROUGH RINSING of your sink after each use to remove any chloride residue and a weekly scouring is all that is required to keep your sink looking bright and shiny.

Water Quality

The quality of your water can affect your sink's appearance. If your water has a high iron content, a brown surface stain can form on the sink giving the appearance of rust. Additionally, in areas with a high concentration of minerals, or with over-softened water, a white film may develop on the sink. To combat these problems, we suggest that the sink be towel dried after use.

Discoloration, Rust and Possible Pitting

Wet sponges, cloths, cleaning pads and rubber mats left on the sink can lead to discoloration. Steel wool pads should never be used to clean your sink as they leave small iron particles in the grain lines which rust and can damage the sink. Continued usage in this manner may eventually lead to the sink itself rusting and pitting.

Liquid Soap

Do not allow concentrated liquid detergent to dry on your sink. Most brands contain chemical additives which will affect the original finish.

Spotting

The quality of your water can affect your sink's appearance. In areas with hard water, a brown surface stain can form on the sink giving the appearance of rust. This phenomena also occurs in water with high iron content. Additionally, in areas with a high concentration of minerals, or with over-softened water, a white film may develop on the sink. To combat this problem, we suggest that the sink be towel dried after use.

Foods

Heavy salt concentration or foods containing high levels of salt should not be allowed to dry onto the sink surface. Rinse your sink thoroughly after use.

ELKAY LIMITED SINK WARRANTY

Elkay warrants to the original purchaser of an Elkay stainless steel sink that Elkay will, at its option, replace or repair, without charge, such product if it fails due to a manufacturing defect for a lifetime of normal residential use. Product replacement does not include transportation cost or labor installation cost. This warranty covers only stainless steel self-rimming drop-in sinks installed in a conventional countertop surface and stainless steel undermount sinks installed in a conventional solid surface countertop and applies to residential installations only. Elkay reserves the right to examine product in question and its installation prior to replacement.

WASTE FITTINGS AND ACCESSORIES ARE NOT WARRANTED OTHER WARRANTY CONDITIONS ON SINKS

This warranty applies to sinks purchased after March 1st 2001 as shown on the purchaser's dated receipt. For sinks purchased prior to March 1st 2001, the applicable warranty at that time will be in effect. Our warranty does not cover product failure or damage caused by the use of optional Elkay accessories, abusive treatment, misuse, environmental factors, normal wear including dents and scratches, improper care and cleaning, use of aggressive and abrasive cleaners, damage due to handling or failure to follow the recommended procedures for installation, care and maintenance as detailed in the installation and care guide provided with every sink. This warranty is extended only to the original consumer purchaser of the product. This warranty does not cover shipping costs, labor costs, or any other charges for such items as installation or replacement of the sink, diagnosis or replacement of any faucet or component part, or any other expense or loss.

This warranty does not cover obsolete, discontinued nor display products, whether such items are purchased at discount outlets and/or on-line or sold on clearance or close out.

All incidental or consequential damages are specifically excluded. No additional warranties, express or implied are given, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN SERVICE UNDER WARRANTY

1. Write to: Elkay Manufacturing Company
Attention: Consumer Services
2222 Camden Court
Oak Brook, IL 60523
2. Include a letter containing the following information:
 - a. Date of purchase and installation
 - b. Proof of Purchase (copy of original dated invoice)
 - c. Description of nature of defect
 - d. Model number or description of model and/or component part if possible.



sinks + faucets

ELKAY - sink (back of house)

Elkay Residential Sinks Limited Lifetime Warranty

Elkay warrants to the original purchaser of an Elkay stainless steel sink that Elkay will, at its option, replace or repair, without charge, such product if it fails due to a manufacturing defect for a lifetime of normal residential use. Product replacement does not include transportation cost or labor installation cost. This warranty covers only stainless steel self-rimming drop-in sinks installed in a conventional countertop surface and stainless steel undermount sinks installed in a conventional solid surface countertop and applies to residential installations only. Elkay reserves the right to examine product in question and its installation prior to replacement.

WASTE FITTINGS AND ACCESSORIES ARE NOT WARRANTED

Other Warranty Conditions on Sinks

This warranty applies to sinks purchased after March 1st 2001 as shown on the purchaser's dated receipt. For sinks purchased prior to March 1st 2001, the applicable warranty at that time will be in effect. Our warranty does not cover product failure or damage caused by the use of optional Elkay accessories, abusive treatment, misuse, environmental factors, normal wear including dents and scratches, improper care and cleaning, use of aggressive and abrasive cleaners, damage due to handling or failure to follow the recommended procedures for installation, care and maintenance as detailed in the installation and care guide provided with every sink. This warranty is extended only to the original consumer purchaser of the product.

This warranty does not cover shipping costs, labor costs, or any other charges for such items as installation or replacement of the sink, diagnosis or replacement of any faucet or component part, or any other expense or loss.

All incidental or consequential damages are specifically excluded. No additional warranties, express or implied are given, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

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This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

To Obtain Service Under Warranty

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Attention: Consumer Services
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2. Include a letter containing the following information:
 - a. Date of purchase and installation.
 - b. Proof of Purchase (copy of original dated invoice).
 - c. Description of nature of defect.
 - d. Model number or description of model and/or component part if possible.



1) Sealers – New Installations:

Immediately following installation of a new floor or thorough cleaning of an older floor, the floor can be sealed with a penetrating sealer. Such sealers are available at paint or tile stores and must state that they are approved for use on Terrazzo products. Sealers are not permanent and can be reapplied (after a thorough cleaning) approximately once a year, or as recommended by the manufacturer of the sealer.

2) Regular Cleaning:

To maintain the original terrazzo surface appearance, clean regularly with a liquid detergent such as Joy, Liquid Ajax, or Spic n Span (for the latter, prepare a solution containing ½ cup of Spic n Span in a gallon of water). Scrub with a stiff bristled, nonmetallic scrub brush and then rinse thoroughly.

NOTE: Do not use any acid, e.g., muriatic or cleaning agents that contain acid.

3) Special or Unusual Conditions:

a. Scum on Surface caused by soap, makeup, etc.:

Use a cleaning powder, such as Ajax, plus lots of elbow grease.

b. Surface cleaning:

Heel marks, plaster, etc. may require abrasive removal. This can be done with a wet emery cloth. If emery cloth is ineffective, use an 80 to 100 grit aluminum oxide coated paper. Abrasive cloth or paper will result in a very faint grinding away of the floor surface.

c. Penetrated stains:

Stains such as caused by oil, putty, etc., may be removed by scouring with a cleanser and then soaking floor overnight- -if need be- -with a commercial bleach such as Linco, etc.



INSTALLATION INSTRUCTIONS

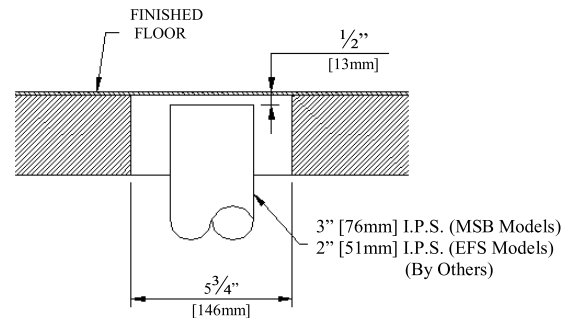
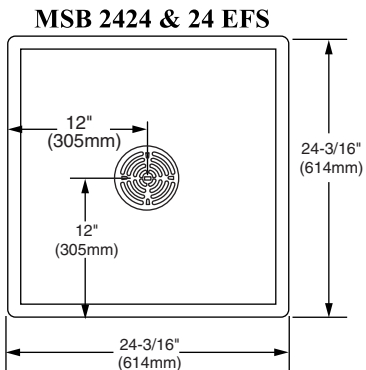
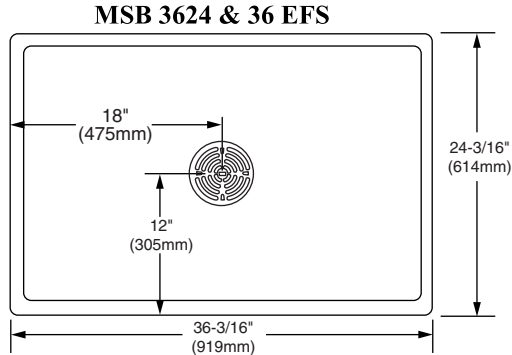
MOP SERVICE BASIN
MODELS MSB2424 & MSB3624

&

EVERYTHING FLOOR SINK
MODELS 24 EFS & 36 EFS

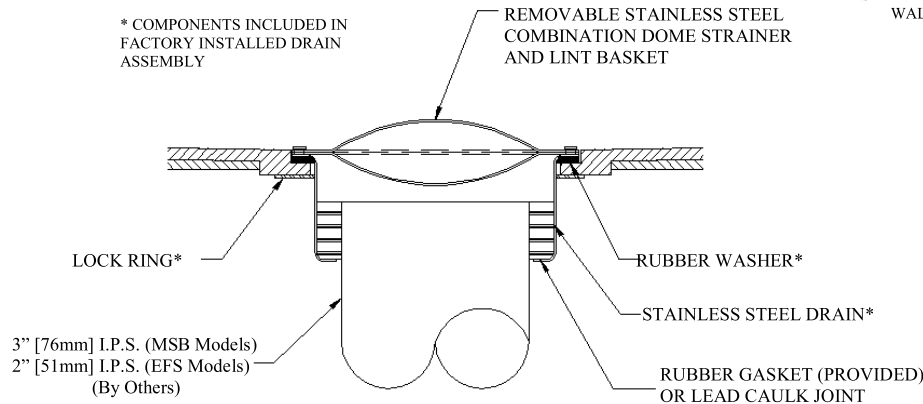
INSTRUCTIONS

1. Level basin and shim as necessary.
2. Drain to be connected to 3" I.P.S. in MSB models and 2" I.P.S. in EFS models with rubber gasket (provided) or lead caulk joint.
3. Apply silicone sealant at all points where basin meets wall.
4. Do not install lint basket and dome strainer until room is ready for use.

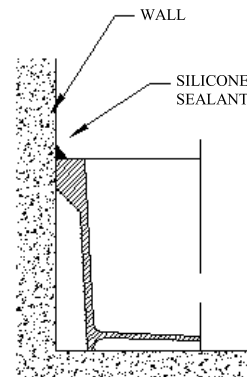


**SUGGESTED INSTALLATION
THRU DRAIN PIPE**

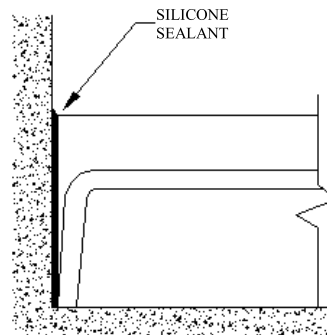
* COMPONENTS INCLUDED IN
FACTORY INSTALLED DRAIN
ASSEMBLY



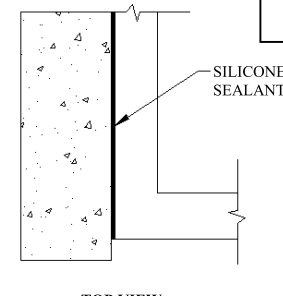
SECTION THRU DRAIN CONNECTION



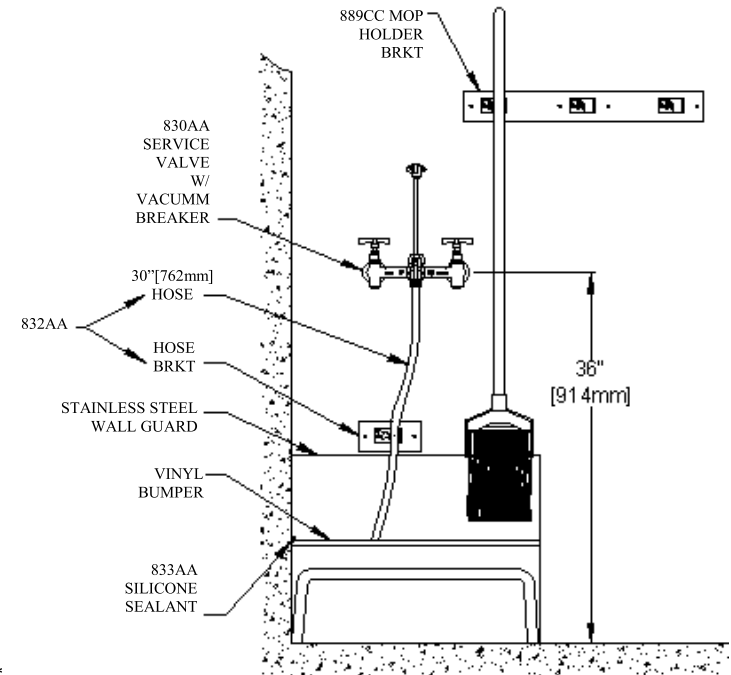
**AGAINST CONCRETE BLOCK
OR WALL BOARD (FINISHED
OR UNFINISHED)**



FRONT VIEW



TOP VIEW



OPTIONAL EQUIPMENT

MSB MODEL CONTENTS

- 1 - MOP SERVICE BASIN (24" X 24" OR 36" X 24")
- 1 - QDC 3XH
- 1 - INSTRUCTION SHEET

EFS CONTENTS

- 1 - MOP SERVICE BASIN (24" X 24" OR 36" X 24")
- 1 - QDC 32
- 1 - INSTRUCTION SHEET

**FIAT CUSTOMER SERVICE
UNITED STATES**
1-800-442-1902
www.fiatproducts.com

**FIAT CUSTOMER SERVICE
CANADA**
1-800-387-0369
www.fiat.ca

INSTRUCTIONS D'INSTALLATION

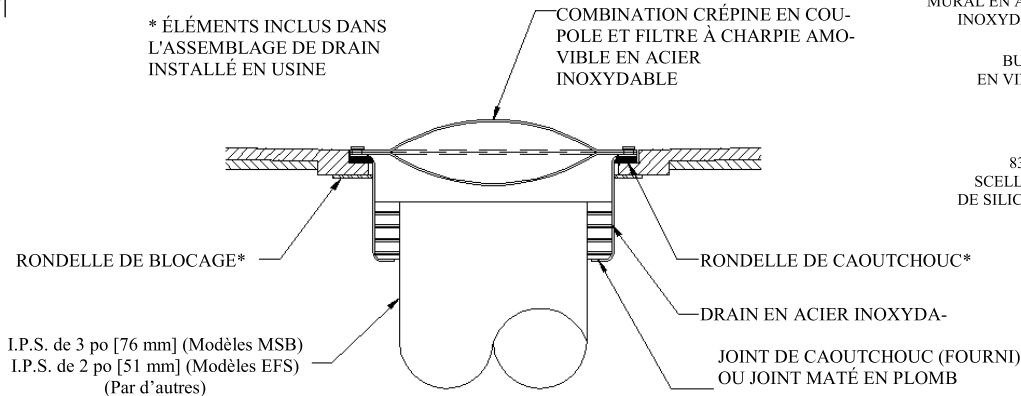
CUVE D'ENTRETIEN DE VADROUILLES ET ÉVIER DE PLANCHER TOUT USAGE

MODÈLES MSB2424 ET MSB3624 MODÈLES 24 EFS ET 36 EFS

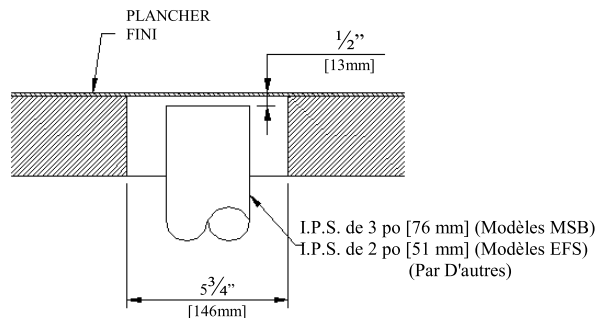
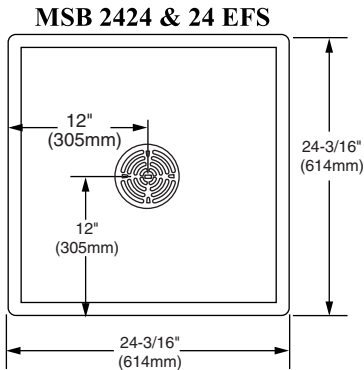
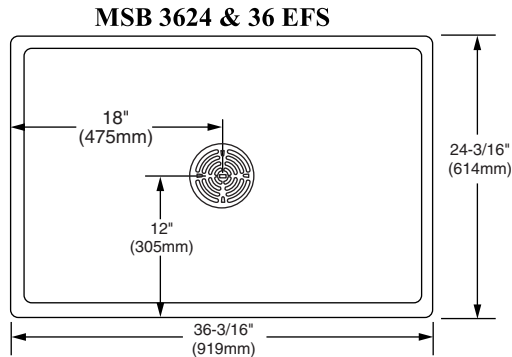
INSTRUCTIONS

1. Mettre la cuve de niveau et caler au besoin.
2. Le drain doit être raccordé à l'I.P.S. de 3 po pour les modèles MSB et à l'I.P.S. de 2 po pour les modèles EFS avec un joint d'étanchéité en caoutchouc (fourni) ou un joint maté en plomb.
3. Appliquez un scellant de silicone à tous les points où la cuve touche au mur.
4. N'installez pas de crépine en coupole et de filtre à charpie jusqu'à ce que la pièce soit prête à être utilisée.

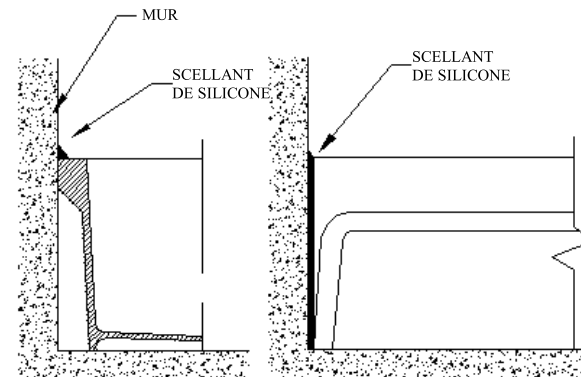
* ÉLÉMENTS INCLUS DANS L'ASSEMBLAGE DE DRAIN INSTALLÉ EN USINE



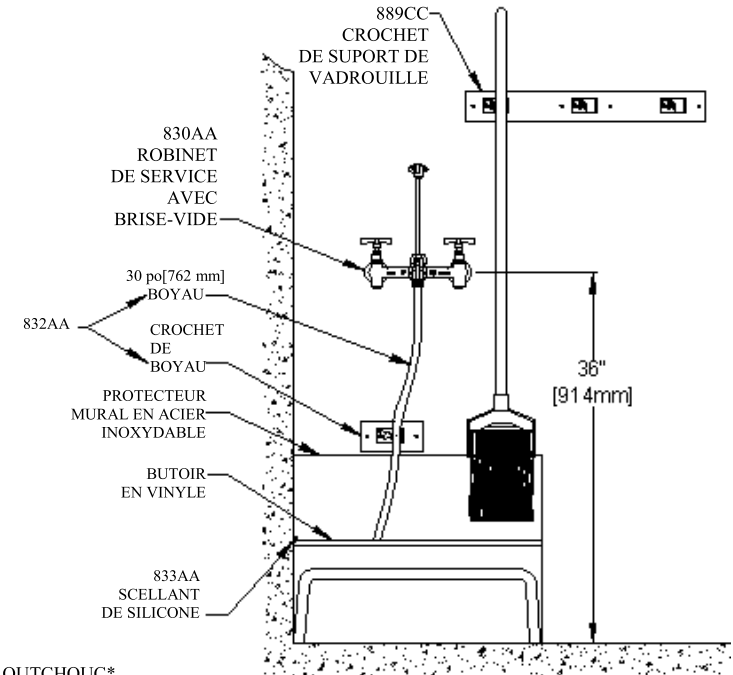
VUE TRANSVERSALE DU RACCORD DE RENVOI



INSTALLATION SUGGÉRÉE
PAR LE TUYAU D'ÉVACUATION



CONTRE UN BLOC EN BÉTON
OU UNE PLANCHE MURALE
(FINIS OU NON FINIS)



ÉQUIPEMENT FACULTATIF

CONTENU DU MODÈLE MSB

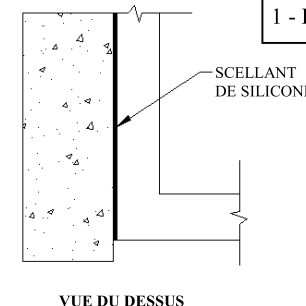
- 1 - CUVE D'ENTRETIEN DE VADROUILLES (24 po X 24 po OU 36 po X 24 po)
- 1 - QDC 3XH
- 1 - FEUILLE D'INSTRUCTIONS

CONTENU DU MODÈLE EFS

- 1 - CUVE D'ENTRETIEN DE VADROUILLES (24 po X 24 po OU 36 po X 24 po)
- 1 - QDC 32
- 1 - FEUILLE D'INSTRUCTIONS

SERVICE À LA CLIENTÈLE FIAT
ÉTATS-UNIS
1-800-442-1902
www.fiatproducts.com

SERVICE À LA CLIENTÈLE FIAT
CANADA
1-800-387-0369
www.fiat.ca



VUE DU DESSUS

Recommended Cleaning & Maintenance Procedures for Terrazzo Precast Shower Floors and Mop Service Basins



1) Sealers – New Installations:

Immediately following installation of a new floor or thorough cleaning of an older floor, the floor can be sealed with a penetrating sealer. Such sealers are available at paint or tile stores and must state that they are approved for use on Terrazzo products. Sealers are not permanent and can be reapplied (after a thorough cleaning) approximately once a year, or as recommended by the manufacturer of the sealer.

2) Regular Cleaning:

To maintain the original terrazzo surface appearance, clean regularly with a liquid detergent such as Joy, Liquid Ajax, or Spic n Span (for the latter, prepare a solution containing ½ cup of Spic n Span in a gallon of water). Scrub with a stiff bristled, nonmetallic scrub brush and then rinse thoroughly.

NOTE: Do not use any acid, e.g., muriatic or cleaning agents that contain acid.

3) Special or Unusual Conditions:

a. Scum on Surface caused by soap, makeup, etc.:

Use a cleaning powder, such as Ajax, plus lots of elbow grease.

b. Surface cleaning:

Heel marks, plaster, etc. may require abrasive removal. This can be done with a wet emery cloth. If emery cloth is ineffective, use an 80 to 100 grit aluminum oxide coated paper. Abrasive cloth or paper will result in a very faint grinding away of the floor surface.

c. Penetrated stains:

Stains such as caused by oil, putty, etc., may be removed by scouring with a cleanser and then soaking floor overnight- -if need be- -with a commercial bleach such as Linco, etc.

Terrazzo Repair Instructions



-
- 1) Set aside a couple of cups of the portland cement to be used for the final finishing stages of the repair.
 - 2) Cut or chisel the length of the crack to create a notch 1" wide and ½" to 1" deep. The edges of the notch should not be smooth. Roughen up the edges if necessary so that the repair will bond firmly to the existing floor.
 - 3) Wet the notched area thoroughly.
 - 4) Mix the portland cement with the terrazzo chips to create a consistency which is not runny nor is it thick like dough. A consistency you can hold in your hand.
 - 5) Fill the notch by hand and mound it above the finished floor by approximately 1/8".
 - 6) Pat repair with a flat sided tool to vibrate the material in order to release air bubbles and excess water.
 - 7) Wet a cloth and lay it over the repair. Leave the repair covered for 24 hours. During this time the repair will dry.
 - 8) After 24 hours, peel the cloth off of the repair. Push on the repair with your hand; it should adhere firmly to the existing base.
 - 9) Grind the repair to the original base surface. Use an 80 grit masonry wheel for sanding or polishing. An angled grinding tool works best for the application.
- NOTE:** This grinding will create a lot of dust. You should wear a filtering mask and isolate the area with a plastic cover over the doorway. If the grinding tool allows, wetting the floor surface prior to grinding will reduce dust.
- 10) Take some of the reserve portland cement and make a slurry (pretty wet consistency, similar to paint) and rub over the repair.
 - 11) Now dust the slurry covered repair with some of the reserve dry portland cement. Allow the powder to set a couple of minutes until it becomes wet.
 - 12) Take a rag and wipe off the excess. This will grout any pitting created during the repair.
-

Limited One Year Warranty

FIAT PRODUCTS® LIMITED ONE YEAR WARRANTY

AS America, Inc. offers a limited warranty on Fiat Products to the original Purchaser consumer, both residential and commercial that products of its own manufacture shall be free of defects in material and workmanship for a period of One Year.

Under this warranty Fiat Products will, at its sole discretion, upon receipt of a written claim and proof of purchase, either (1) repair the product, (2) replace the product or any part therein with a Fiat Product of equal or similar type and size, or (3) refund to the consumer the wholesale price of the product received by Fiat Products. If Fiat Products elects to refund the wholesale price to the consumer, Fiat Products shall have no further obligation to its wholesale customer, or any contractor with respect to such product. Goods proven to be defective will be replaced after proper inspection, but no claims for damages incurred or for work done thereon will be allowed. Replacements when supplied will be shipped at no cost to the consumer.

This warranty **does not apply** to local building code compliance. Since local building codes vary considerably, the purchaser of the product should check with a local building or plumbing contractor to ensure local code compliance before installation.

This warranty **will be void** if:

- 1) the product has been moved from its initial place of installation;
- 2) if it has been subjected to faulty maintenance, abuse, misuse, accident or other damage;
- 3) if it was not installed in accordance with Fiat Products instructions; or
- 4) if it has been modified in a manner inconsistent with the product as shipped by Fiat Products.

This warranty **DOES NOT COVER** any damages caused by the use of non-approved cleaners, improper installations or excessive abuse.

Fiat Products' right to repair or exchange the product under this warranty does not cover any labor or other costs of removal or installation including any costs of any surround material such as tile or marble.

Fiat Products is not responsible for any other incidental or consequential damages attributed to a product defect or to the repair or exchange of a defective product, all of which are expressly excluded from this warranty. (Some states or provinces do not allow the exclusion or limitation of implied warranties, so this exclusion may not apply to you.)

This warranty gives you specific rights. You may have other statutory rights that may vary from state to state or province to province, in which case this warranty does not affect such statutory rights.

In the United States:

AS America, Inc.
P.O. Box 6820
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Attention: Director of Consumer Affairs
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www.fiatproducts.com

In Canada:

AS Canada, ULC
5900 Avebury Rd.
Mississauga, Ontario
Canada L5R 3M3
Toll Free: (800) 387-0369
www.fiatproducts.com

In Mexico:

American Standard B&K Mexico
S. de R.L. de C.V.
Via Morelos #330
Col. Santa Clara
Ecatepec 55540 Edo. Mexico
Toll Free: 01-800-839-1200
www.fiatproducts.com

THIS WARRANTY IS NOT TRANSFERABLE FROM ORIGINAL CONSUMER PURCHASER.

Limited One Year Warranty



-
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-

Limited One Year Warranty**FIAT PRODUCTS®
LIMITED ONE YEAR WARRANTY**

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This warranty **will be void** if:

- 1) the product has been moved from its initial place of installation; 2) if it has been subjected to faulty maintenance, abuse, misuse, accident or other damage; 3) if it was not installed in accordance with Fiat Products instructions; or 4) if it has been modified in a manner inconsistent with the product as shipped by Fiat Products.

This warranty **DOES NOT COVER** any damages caused by the use of non-approved cleaners, improper installations or excessive abuse.

Fiat Products' right to repair or exchange the product under this warranty does not cover any labor or other costs of removal or installation including any costs of any surround material such as tile or marble.

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Attention: Director of Consumer Affairs
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Canada L5R 3M3
Toll Free: (800) 387-0369
www.fiatproducts.com

In Mexico:

American Standard B&K Mexico
S. de R.L. de C.V.
Via Morelos #330
Col. Santa Clara
Ecatepec 55540 Edo. Mexico
Toll Free: 01-800-839-1200
www.fiatproducts.com

THIS WARRANTY IS NOT TRANSFERABLE FROM ORIGINAL CONSUMER PURCHASER.

Limited One Year Warranty



Care & Cleaning

For best results, keep the following in mind when caring for your KOHLER® product:

- Always test your cleaning solution on an inconspicuous area before applying to the entire surface.
- Wipe surfaces clean and rinse completely with water immediately after applying cleaner. Rinse and dry any overspray that lands on nearby surfaces.
- Do not allow cleaner to soak.
- Use a soft, dampened sponge or cloth. Never use an abrasive material such as a brush or scouring pad to clean surfaces.
- [Click here](#) for warranty information, or call 1-800-4KOHLER (1-800-456-4537).

* Success with cleaners and procedures is dependent upon such factors as the hardness and temperature of the water, using exact measurements of ingredients, changes in cleaning formulas and the condition of the product being cleaned. Since there are variations within these factors, Kohler cannot guarantee the effectiveness of the formulas.

Kitchen Sinks



Enameled Cast Iron
Kitchen Sinks



Vitreous China &
Fireclay Kitchen
Sinks



Stainless Steel
Kitchen Sinks



Undertone®
Preserve™ Stainless
Steel



Neoroc™ Kitchen
Sinks

Bathroom Sinks



Cast Iron Bathroom
Sinks



Vitreous China
Bathroom Sinks



Stainless Steel Bathroom Sinks

Faucets & Fittings



Chrome & Vibrant®
PVD Colors/Finishes



Vitreous China
Faucets and
Finishes

Baths & Whirlpools



Cast Iron Bathtubs
and Whirlpools



Acrylic Bathtubs
and Whirlpools

Shower Bases



Cast Iron Shower
Bases



Acrylic Shower
Bases

Toilets, Bidets & Urinals



Vitreous China
Toilets & Bidets



Waterless Urinal

Toilet Seats

Furniture



Toilet Seats



Bidet Seats



Wood Furniture



Countertop
Surfaces

Special Surfaces



Muted Green Cabinets



Bronze Walling
Surfaces



Shower Doors



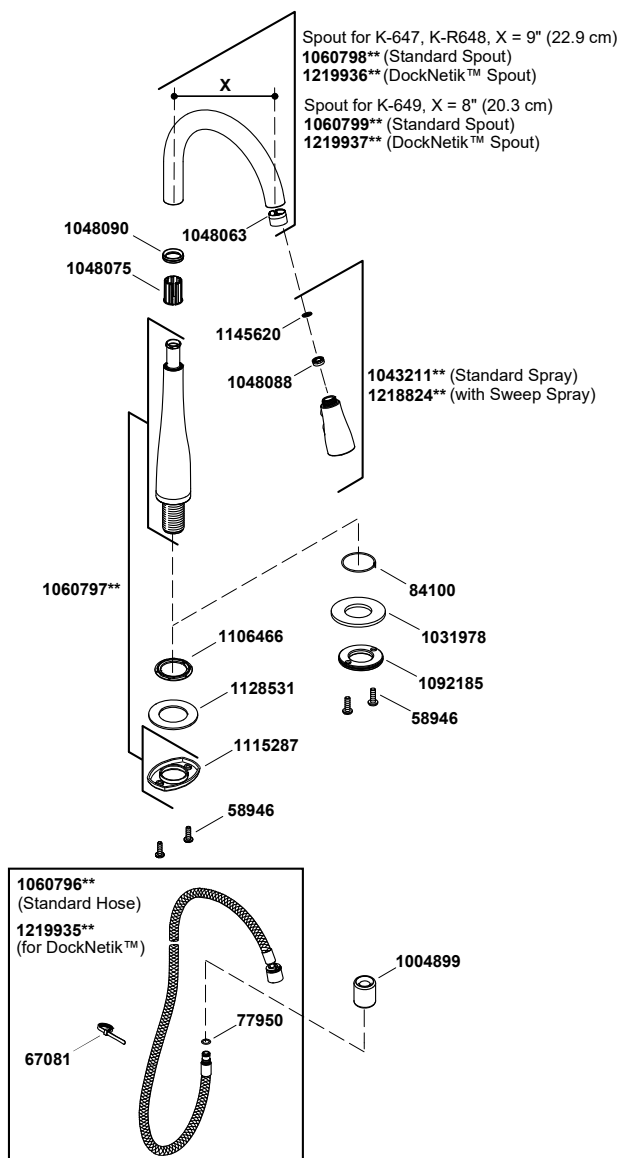
Spun Glass®
Surfaces



Choreograph System



two-hole kitchen sink faucet with 16-1/8" pull-down swing spout, D
K-647-CP





Warranty Information

All Kohler Plumbing Products carry Kohler's **one-year limited warranty** unless otherwise noted.

KOHLER® One-Year Limited Warranty

KOHLER® Faucet Lifetime Limited Warranty

Lifetime Limited Warranty for KOHLER® Cast Iron Components

KOHLER® Enameled Cast Iron Bath and Shower Base Lifetime Limited Warranty

KOHLER® Enameled Cast Iron Kitchen Sink Lifetime Limited Warranty

KOHLER® Stainless Steel Sinks - Lifetime Limited Warranty

KOHLER® Steam Generator Three-Year Limited Warranty

KOHLER® PRO Cook™ Cooking Vessel Five-Year Limited Warranty

KOHLER® Electronic Faucets, Valves, and Controls Five-Year Limited Warranty

KOHLER® Water Filter Systems Five-Year Limited Warranty

KOHLER® Intelligent Toilet and C3 Cleansing Seat Three-Year Limited Warranty

KOHLER® Rising Wall Bath Limited Warranty



KOHLER® One-Year Limited Warranty

KOHLER plumbing products are warranted to be free of defects in material and workmanship for one year from date of installation.

Kohler Co. will, at its election, repair, replace or make appropriate adjustment where Kohler Co. inspection discloses any such defects occurring in normal usage within one (1) year after installation. Kohler Co. is not responsible for removal or installation costs. **Use of in-tank toilet cleaners will void the warranty.**

To obtain warranty service contact Kohler Co. either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA, or by calling 1-800-4-KOHLER 1-800 456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

IMPLIED WARRANTIES INCLUDING THAT OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of special, incidental or consequential damages, so these limitation and exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state/province to state/province.

This is Kohler Co.'s exclusive written warranty.





KOHLER Faucet Lifetime Limited Warranty

Kohler Co. warrants its Faucets* manufactured after January 1, 1997, to be leak and drip free during normal residential use for as long as the original consumer purchaser owns his or her home. If the Faucet should leak or drip during normal use, Kohler Co. will, free of charge, mail to the purchaser the cartridge necessary to put the Faucet in good working condition. This warranty applies only to Kohler Faucets installed in the United States of America, Canada or Mexico ("North America").

Kohler Co. also warrants all other aspects of the faucet or accessories ("Faucet")*, (except gold, non-Vibrant®, non-chrome finishes) to be free of defects in material and workmanship during normal residential use for as long as the original consumer purchaser owns his or her home. This warranty applies only to Kohler Faucets installed in North America. If a defect is found in normal residential use, Kohler Co. will, at its election, repair, provide a replacement part or product, or make appropriate adjustment. Damage to a product caused by accident, misuse, or abuse is not covered by this warranty. Improper care and cleaning will void the warranty**. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the Faucet.

If the Faucet is used commercially or is installed outside of North America, or if the finish is gold, non-Vibrant or a painted or powder coated color finish, Kohler Co. warrants the Faucet to be free from defects in material and workmanship for one (1) year from the date the product is installed, under Kohler Co.'s standard one-year limited warranty.

If you believe that you have a warranty claim, contact Kohler Co., either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn.:  

Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, the date the product was purchased and from whom the product was purchased. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, call 1-800-4-KOHLER 1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THESE WARRANTIES IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ALL LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations of how long an implied warranty lasts or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights that vary from state/province to state/province.

This is Kohler Co.'s exclusive written warranty.

*Trend® faucets, MasterShower® tower, BodySpa systems and components; WaterHaven tower, systems and components; Tripoint® faucets, Polished Gold, non-Vibrant and painted or powder coated finishes, fittings; all items within the "Fixture Related" section of the Kohler Faucets Price Book, drains, Duostrainer® sink strainers, soap/lotion dispensers Moxie™ Wireless Speaker and faucets used in commercial settings, and outside North America, are covered by Kohler Co.'s one-year limited warranty.

**Never use cleaners containing abrasive cleansers, ammonia, bleach, acids, waxes, alcohol, solvents or other products not recommended for chrome. This will void the warranty.



This is Kohler Co.'s exclusive written warranty.

Lifetime Limited Warranty for KOHLER® Cast Iron Components

Kohler Co. warrants the cast iron components of products manufactured after February 10, 2000, to be free of defects in material and workmanship during normal residential use for as long as the original consumer purchaser owns his or her home. Gloss reduction, scratching, staining and alkaline etching of the finish over time due to use, cleaning practices or water or atmospheric conditions, are not manufacturing defects but are indicative of normal wear and tear. This warranty applies only for KOHLER Cast Iron products installed in the United States of America, Canada or Mexico (North America).

If a defect is found in normal residential use, Kohler Co. will, at its election, repair, replace or make appropriate adjustment. Damage caused by accident, misuse, or abuse is not covered by this warranty. Improper care and cleaning will void the warranty. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the product.

If the cast iron product is used commercially or is installed outside of North America, Kohler Co. warrants the cast iron product to be free from defects in material and workmanship for one (1) year from the date the product is installed, with all other terms of

this warranty applying except duration. All other components other than the enameled cast iron carry Kohler Co.'s one-year limited warranty unless otherwise specified.

If you believe that you have a warranty claim, contact Kohler Co., either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing: Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, the date the product was purchased and from whom the product was purchased. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, call 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THIS WARRANTY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states/provinces do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights, which vary, from state/province to state/province. This warranty is to the original consumer purchaser only, and excludes product damage due to installation error, product abuse, or product misuse, whether performed by a contractor, service company or the consumer.



This is Kohler Co.'s exclusive written warranty.



KOHLER® Enameled Cast Iron Bath and Shower Base Lifetime Limited Warranty

Kohler Co. warrants the enameled cast iron component of baths and shower bases manufactured after November 19, 2015 to be free of defects in material and workmanship during normal residential use for as long as the original consumer purchaser owns his or her home. Kohler Co. further warrants that the enameled cast iron component of the product will not chip, crack or burn for as long as the original consumer purchaser owns his or her home. Gloss reduction, scratching, staining and alkaline etching of the finish over time due to use, cleaning practices or water or atmospheric conditions, are not manufacturing defects but are indicative of normal wear and tear. This warranty applies only to KOHLER Cast Iron baths and shower bases installed in the United States of America, Canada or Mexico (North America).

If the cast iron bath or shower base is used commercially or is installed outside of North America, Kohler Co. warrants that for ten (10) years from the date the product is installed the cast iron product will be free from defects in material and workmanship, and will not chip, crack or burn. All other terms of this warranty apply except for duration. All other components other than the enameled cast iron component carry Kohler Co.'s one-year limited warranty unless otherwise specified.

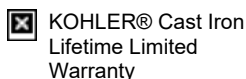
If a defect in material or workmanship is found in normal use during the applicable warranty period, Kohler Co. will, at its election, replace the defective cast iron component or make other appropriate adjustment. Damage caused by misuse or abuse is not covered by this warranty. Improper care and cleaning will void the warranty. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for removal, installation, labor charges, or other incidental or

consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the cast iron bath or shower base.



If you believe that you have a warranty claim, contact Kohler Co., either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing: Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, the date the product was purchased and from whom the product was purchased. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, call 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THIS WARRANTY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIMS ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on the duration of an implied warranty or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights that vary from state/province to state/province. This warranty is extended to the original consumer purchaser only, and excludes product damage due to installation error, or product abuse or product misuse, whether attributable to the consumer, a contractor, service company or other third party.



KOHLER® Cast Iron
Lifetime Limited
Warranty

*KOHLER Cast Iron baths and shower bases installed in North America carry a Lifetime Limited Warranty for as long as the original consumer purchaser owns his or her home.



KOHLER® Enameled Cast Iron Kitchen Sink Lifetime Limited Warranty

Kohler Co. warrants the enameled cast iron component of kitchen, entertainment or utility sinks manufactured after April 29, 2008 to be free of defects in material and workmanship during normal residential use for as long as the original consumer purchaser owns his or her home. Kohler Co. further warrants that the enameled cast iron component of the product will not chip, crack or burn for as long as the original consumer purchaser owns his or her home. Gloss reduction, scratching, staining and alkaline etching of the finish over time due to use, cleaning practices or water or atmospheric conditions, are not manufacturing defects but are indicative of normal wear and tear. This warranty applies only to KOHLER Cast Iron kitchen, entertainment and utility sinks installed in the United States of America, Canada or Mexico (North America).

If the cast iron kitchen, entertainment or utility sink is used commercially or is installed outside of North America, Kohler Co. warrants that for one (1) year from the date the product is installed the cast iron product will be free from defects in material and workmanship, and will not chip, crack or burn. All other terms of this warranty apply except for duration. All other components other than the enameled cast iron component carry Kohler Co.'s one-year limited warranty unless otherwise specified.

If a defect is found in normal residential use, Kohler Co. will, at its election, replace the defective cast iron component, or make other appropriate adjustment. Damage caused by misuse or abuse is not covered by this warranty. Improper care and cleaning will void the warranty. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for removal, installation, labor charges, or

other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the kitchen, entertainment or utility sink.

If you believe that you have a warranty claim, contact your Dealer, Plumbing Contractor, Home Center or E-tailer, or write to Kohler at: Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, and the date the product was purchased and from whom the product was purchased. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, call 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THIS WARRANTY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIMS ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on the duration of an implied warranty or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights that vary from state/province to state/province. This warranty is extended to the original consumer purchaser only, and excludes product damage due to installation error, or product abuse or product misuse, whether attributable to the consumer, a contractor, service company or other third party.



*KOHLER Cast Iron kitchen sinks installed in North America carry a Lifetime Limited Warranty for as long as the original consumer purchaser owns his or her home.




Lifetime Limited Warranty for KOHLER® Stainless Steel Sinks

Kohler Co. warrants its stainless steel kitchen, bar, and utility sinks manufactured after October 24, 2012, to be free of defects in material and workmanship during normal residential use for as long as the original consumer purchaser owns his or her home. Gloss reduction, scratching, staining and acid or alkaline etching of the finish over time due to use, cleaning practices or water or atmospheric conditions, are not manufacturing defects but are indicative of normal wear and tear. This warranty applies only to KOHLER stainless steel kitchen, bar, and utility sinks installed in the United States of America, Canada or Mexico (North America).

If a defect is found in normal residential use, Kohler Co. will, at its election, repair, replace or make appropriate adjustment. Damage caused by accident, misuse, or abuse, such as dents and scratches after installation, is not covered by this warranty. Improper care and cleaning will void the warranty. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the product.

If the stainless steel kitchen, bar, or utility sink is used commercially or is installed outside of North America, Kohler Co. warrants the stainless steel sink to be free from defects in material and workmanship for one (1) year from the date the product is installed, with all other terms of this warranty applying except duration. All other components other than the stainless steel component carry Kohler Co.'s one-year limited warranty unless otherwise specified.

 If you believe that you have a warranty claim, contact your Dealer, Plumbing Contractor, Home Center or E-tailer, or write to Kohler at: Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, and the date the product was purchased and from whom the product was purchased. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, call 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico or visit www.kohler.com within the USA, <http://www.ca.kohler.com> from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THIS WARRANTY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIMS ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states/provinces do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights that vary from state/province to state/province. This warranty is to the original consumer purchaser only, and excludes product damage due to installation error, product abuse, or product misuse, whether performed by a contractor, service company or the consumer.



This is Kohler Co.'s exclusive written warranty.



KOHLER® Steam Generator Three-Year Limited Warranty

Kohler steam generator units manufactured after September 15, 2001, are warranted to the original consumer purchaser to be free of manufacturing defects in material and workmanship during normal residential usage for three (3) years from the date of installation. This warranty only applies to KOHLER steam generator units installed in the United States of America, Canada or Mexico ("North America").

If a defect is found in normal residential usage, Kohler Co. will, at its election, repair or replace the unit, or make appropriate adjustment. Damage caused by accident, misuse or abuse is not covered by this warranty. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, removal charges, installation, or other consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the unit.

If this unit is used commercially or installed outside of North America, Kohler Co. warrants the unit to be free from defects in material and workmanship for one (1) year from the date of installation with all other terms of this warranty applying except duration.

To obtain warranty service contact Kohler Co., either through your Dealer, Plumbing Contractor, Home Center or E-tailer or by writing Kohler Co., Attn: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA, or by calling 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THESE WARRANTIES IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on how long an implied warranty lasts, or

the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights, which vary from state/providence to state/providence.

This is Kohler Co.'s exclusive written warranty.

KOHLER® PRO Cook™ Cooking Vessel Five-Year Limited Warranty

Kohler PRO Cook cooking vessels installed in residential settings are warranted to be free of defects in material and workmanship for five (5) years from the date of installation. The KOHLER PRO Cook cooking vessels used in commercial settings are warranted to be free of defects in material and workmanship for one (1) year from the date of installation under Kohler Co.'s one-year limited warranty. The sink components of the PRO CookCenter™ and PRO CookSink are covered by Kohler Co.'s one-year limited warranty (or Kohler's Lifetime Limited Warranty for Kohler Cast Iron).

If a defect is found in normal residential usage, Kohler Co. will, at its election, repair, replace, or make appropriate adjustment where Kohler Co. inspection discloses any such defects. Damage caused by accident, misuse or abuse is not covered by this warranty. Kohler Co. is not responsible for labor charges, removal charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the product.

To obtain warranty service contact Kohler Co., either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn: Customer Care Center 444 Highland Drive, Kohler, WI 53044, USA, or by calling 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or

visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THIS WARRANTY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state/province to state/province.

This is Kohler Co.'s exclusive written warranty.

KOHLER® Electronic Faucets, Valves, and Controls Five-Year Limited Warranty

Kohler Co. warrants that its electronic faucets, valves and controls will be free of defects in material and workmanship during normal residential use for five years from the date the product is installed. This warranty applies only to electronic faucets, valves and controls installed in the United States of America, Canada and Mexico ("North America").

If a defect is found in normal residential use, Kohler Co. will, at its election, repair, provide a replacement part or product, or make appropriate adjustment where Kohler Co.'s inspection discloses any such defect. Damage caused by accident, misuse, or abuse is not covered by this warranty. Improper care and cleaning will void the warranty*. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, installation, or other incidental or

consequential costs other than those noted above. In no event shall the liability of Kohler Co. exceed the purchase price of the faucet, valve or control.

If the electronic faucets, valves or controls are used commercially or are installed outside of North America, Kohler Co. warrants that the faucet, valve or control will be free from defects in material and workmanship for one (1) year from the date the product is installed with all other terms of this warranty applying except duration.

If you believe that you have a warranty claim, contact your Home Center, Dealer, Plumber, Contractor or E-tailer. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, the date the product was purchased, from whom the product was purchased and the installation date. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, write Kohler Co., Attn: Customer Care Center, Kohler, Wisconsin 53044 USA, or by calling 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights that vary from state/province to state/province. This warranty is to the original consumer purchaser only, and excludes product damage due to installation error, product abuse, or product misuse, whether performed by a contractor, service company, or the consumer.

This is Kohler Co.'s exclusive written warranty.

***Never use cleaners containing abrasive cleansers, ammonia, bleach, acids, waxes, alcohol, solvents or other products not recommended for chrome. This will void the warranty.**

KOHLER® Water Filter Systems Five-Year Limited Warranty

KOHLER K-200 water filter systems (excluding the K-201, K-202, and K-203 disposable replacement cartridges) used in the United States and Canada are warranted to be free of defects in material and workmanship for five (5) years from the date of purchase in normal residential use. (The service life of any disposable replacement cartridge varies with local water conditions and water consumption and thus is not warranted other than to be free of defects in material and workmanship at the time of purchase.)

All products must be installed and operated in accordance with the manufacturer's recommended procedures and guidelines. Improper use or installation could void this warranty.

If a defect is found in normal residential usage in the United States or Canada, Kohler Co. will, at its election, repair or replace the unit, or make appropriate adjustment. Damage caused by accident, misuse, or abuse is not covered by this warranty. Kohler Co. is not responsible for labor charges, removal charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the product. **These water filter systems have not been tested or certified to meet regulatory standards outside the United States and Canada. To the extent permitted by law, Kohler Co. hereby disclaims all warranties for water filter systems used outside of the United States or Canada whether express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.**

To obtain warranty service contact Kohler Co. either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn: Customer Care Center 444 Highland Drive, Kohler, WI 53044, USA, or by calling 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THIS WARRANTY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of special, incidental, or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state/province to state/province. This limited warranty provides specific legal rights as they apply within the USA. Other rights may be available, but may vary from country to country.

This is Kohler Co.'s exclusive written warranty.

KOHLER® Intelligent Toilet and C3 Cleansing Seat Three-Year Limited Warranty

Kohler Co. warrants that its toilets with integrated cleansing functionality ("Intelligent Toilets") and electric cleansing seats will be free of defects in material and workmanship during normal residential use for three years from the date the product is installed. This warranty applies only to intelligent toilets and electric cleansing seats installed in the United States of America, Canada and Mexico ("North America").

If a defect is found in normal residential use, Kohler Co. will, at its election, repair, provide a replacement part or product, or make appropriate adjustment where Kohler Co.'s

inspection discloses any such defect. Damage caused by accident, misuse, or abuse is not covered by this warranty. Improper care and cleaning will void the warranty*. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, installation, or other incidental or consequential costs other than those noted above. In no event shall the liability of Kohler Co. exceed the purchase price of the intelligent toilet or electric cleansing seat.

If the intelligent toilets or electric cleansing seats are used commercially or are installed outside of North America, Kohler Co. warrants that the intelligent toilet or electric cleansing seat will be free from defects in material and workmanship for one (1) year from the date the product is installed, with all other terms of this warranty applying except duration.

If you believe that you have a warranty claim, contact your Home Center, Dealer, Plumber, Contractor or E-tailer. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, the date the product was purchased, from whom the product was purchased and the installation date. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, write Kohler Co., Attn: Customer Care Center, Kohler, Wisconsin 53044 USA, or by calling 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada or www.mx.kohler.com in Mexico.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states/provinces do not allow limitations of how long an implied warranty last or the exclusion or limitation of such damages, so these limitations and exclusions

~~may~~ not apply to you. This warranty gives the consumer specific legal rights. You ~~may~~ also have other rights that vary from state/province to state/province. This warranty is to the original consumer purchaser only, and excludes product damage due to installation error, product abuse, or product misuse, whether performed by a contractor, service company, or the consumer.

This is Kohler Co.'s exclusive written warranty.

* Never use cleaners containing abrasive cleansers, ammonia, bleach, acids, waxes, alcohol, solvents or other products not recommended for stainless steel or polypropylene plastic. This will void the warranty.

KOHLER® Rising Wall Bath Limited Warranty

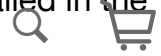
Ten-Year Limited Warranty for the Bath Component

Lifetime Limited Warranty for the Inflatable Door Seal Component

One-Year Limited Warranty on All Other Components

Kohler Co. warrants the bath component of the Elevance Wall Bath manufactured after September 1, 2010, to be free of defects in material and workmanship during normal residential use for ten years from the date of installation. Kohler Co. warrants the inflatable door seal component to be free from defects in material and workmanship during normal residential use for as long as the original consumer owns his or her home, provided the Elevance Wall Bath is installed by a qualified installer. Kohler Co. warrants all other components to be free from defects in material and workmanship for one-year from the

date of installation. These warranties only apply to Elevance Wall Baths installed in the United States of America, Canada and Mexico (North America).



If the Elevance Wall Bath is used commercially or is installed outside of North America, Kohler Co. warrants that for one (1) year from the date the Elevance Wall Bath is installed the bath and inflatable door seal components and all other components to be free from defects in material and workmanship. All other terms of this warranty apply except for duration.

If a defect is found in normal residential use, Kohler Co. will, at its election, repair, replace or make appropriate adjustment where Kohler Co. inspection discloses any such defects. Damage caused by accident, improper installation, misuse or abuse is not covered by this warranty. This warranty expressly excludes labor charges, removal charges, installation, or other incidental or consequential costs. Improper care and cleaning will void the warranty. In no event shall the liability of Kohler Co. exceed the purchase price of the product. If the warranty claim is for the inflatable door seal component, proof of purchase by the original consumer purchaser is required.

If you believe that you have a warranty claim, contact your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, the date the product was purchased, from whom the product was purchased and the name and address of the qualified installer. Also include your original receipt. For other information or to obtain the name and address of the service and repair facility nearest you or to contact a qualified installer, call 1-800-4KOHLER (1-800-456-4537) from within the USA and Canada and 001-800-456-4537 from within Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THESE WARRANTIES IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some

states/provinces do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state/province to state/province.

This is Kohler Co.'s exclusive written warranty.

KOHLER®Choreograph Shower Walls and Accessories Limited Warranty

Kohler Co. warrants all Choreograph™ products (including Choreograph™ accessories) to be free of defects in material and workmanship during normal residential use for ten (10) years from the date of sale. If a Choreograph™ product or accessory is used commercially or is installed outside of the United States of America, Canada or Mexico, Kohler Co. warrants the Choreograph™ product or accessory to be free of defects in material and workmanship during normal use for three (3) years from the date of sale.

If Kohler Co.'s inspection of your Choreograph™ product or accessory discloses a defect in material or workmanship within the applicable period of coverage stated above, Kohler Co. will, at its election, repair, replace or make appropriate adjustment. Kohler Co. is not responsible for labor charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the Choreograph™ product or accessory. Damages due to improper handling, installation or maintenance are not considered manufacturing defects and are not covered by this warranty. This warranty is valid for the original, consumer purchaser only. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims.

To obtain warranty service, contact Kohler Co, either through your plumbing contractor, home center, wholesaler, dealer, or E-tailer, or by calling or writing Kohler Co, Attn:

Customer Care Center, 444 Highland Drive, Kohler, Wisconsin 53044, 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

TO THE EXTENT PERMITTED BY LAW, ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. KOHLER CO. AND SELLER HEREBY DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you specific legal rights. You may have other rights which vary from state/province to state/province.



This is the exclusive written warranty for Kohler Co.

KOHLER® Neoroc Sinks Lifetime Limited Warranty

Kohler Co. warrants its kitchen, bar and utility sinks that are made of Neoroc material ("Neoroc Sinks") to be free of defects in material and workmanship during normal residential use for as long as the original consumer purchaser owns his or her home. Finish reduction, scratching, staining and acid or alkaline etching of the finish over time due to use, cleaning practices or water or atmospheric conditions, are not manufacturing defects but are indicative of normal wear and tear. This warranty applies only to KOHLER

Neoroc Sinks installed in the United States of America, Canada or Mexico (North America).






If a defect is found in normal residential use, Kohler Co. will, at its election, repair, replace or make appropriate adjustment. Damage caused by accident, misuse, or abuse, such as scratches after installation, is not covered by this warranty. Improper care and cleaning will void the warranty. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the product.

If a Neoroc Sink is used commercially or is installed outside of North America, Kohler Co. warrants the Neoroc Sink to be free from defects in material and workmanship for one (1) year from the date the product is installed, with all other terms of this warranty applying except duration. All other components other than the Neoroc component carry Kohler Co.'s one-year limited warranty unless otherwise specified.

If you believe that you have a warranty claim, contact your Dealer, Plumbing Contractor, Home Center or E-tailer, or write to Kohler Co. at, Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, and the date the product was purchased and from whom the product was purchased. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, call 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THIS WARRANTY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

 PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIMS ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.  

Some states/provinces do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights that vary from state/province to state/province. This warranty is to the original consumer purchaser only, and excludes product damage due to installation error, product abuse, or product misuse, whether performed by a contractor, service company or the consumer.

This is the exclusive written warranty for Kohler Co.

* Never use cleaners containing abrasive cleansers, ammonia, bleach, acids, waxes, alcohol, solvents or other products not recommended for chrome. This will void the warranty.

** Trend® faucets; MasterShower™ tower; BodySpa™ systems and components; WaterHaven™ tower, systems and components; Polished Gold finishes; fittings; all items within the "Fixture Related" section of the Kohler Faucets Price Book, drains, Duostrainer® sink strainers, soap/lotion dispensers; and faucets used in commercial settings and outside North America, are covered by Kohler Co.'s one-year limited warranty.

*** Never use cleaners containing abrasive cleansers, ammonia, bleach, acids, waxes, alcohol, solvents or other products not recommended for chrome. This will void the warranty.



OUR COMPANY



KOHLER CO.



HELP



TRADE



SOCIAL

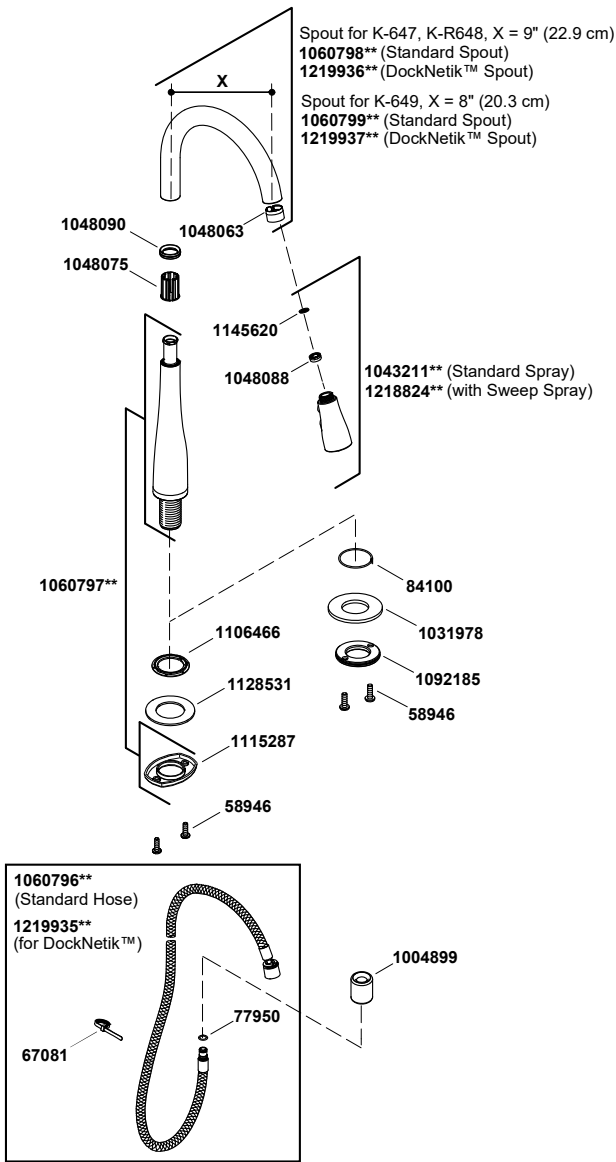




Simplice®



two-hole kitchen sink faucet with 16-1/8" pull-down swing spout, D
K-647-CP





Chrome & Vibrant® PVD Colors/Finishes

- Do not use cleaners containing ammonia, bleach or acid.
- Rinse thoroughly and use a soft cloth to wipe the product dry after each use.
- The Oil-Rubbed Bronze finish should be cleaned only with Windex Original.

Success with cleaners and procedures is dependent upon such factors as the hardness and temperature of the water, using exact measurements of ingredients, changes in cleaning formulas and the condition of the product being cleaned. Since there are variations within these factors, Kohler cannot guarantee the effectiveness of the formulas mentioned.

Care Tip

The ideal cleaning technique is to always blot dry any water from metal surfaces. Allowing water to evaporate on metal will form water deposits. It is important to use a dabbing action to dry metal, not an

KOHLER - faucet (back of house)

abrasive or rubbing action. Cleaning with a damp sponge and buff drying should keep your product looking beautiful.

Products to Consider

- Clorox Disinfecting Bathroom Cleaner
- Comet Bathroom Cleaner
- Fantastik Antibacterial Heavy Duty
- Green Works All-Purpose
- Green Works Glass Cleaner
- Windex Original



Warranty Information

All Kohler Plumbing Products carry Kohler's **one-year limited warranty** unless otherwise noted.

KOHLER® One-Year Limited Warranty

KOHLER® Faucet Lifetime Limited Warranty

Lifetime Limited Warranty for KOHLER® Cast Iron Components

KOHLER® Enameled Cast Iron Bath and Shower Base Lifetime Limited Warranty

KOHLER® Enameled Cast Iron Kitchen Sink Lifetime Limited Warranty

KOHLER® Stainless Steel Sinks - Lifetime Limited Warranty

KOHLER® Steam Generator Three-Year Limited Warranty

KOHLER® PRO Cook™ Cooking Vessel Five-Year Limited Warranty

KOHLER® Electronic Faucets, Valves, and Controls Five-Year Limited Warranty

KOHLER® Water Filter Systems Five-Year Limited Warranty

KOHLER® Intelligent Toilet and C3 Cleansing Seat Three-Year Limited Warranty

KOHLER® Rising Wall Bath Limited Warranty



KOHLER® One-Year Limited Warranty

KOHLER plumbing products are warranted to be free of defects in material and workmanship for one year from date of installation.

Kohler Co. will, at its election, repair, replace or make appropriate adjustment where Kohler Co. inspection discloses any such defects occurring in normal usage within one (1) year after installation. Kohler Co. is not responsible for removal or installation costs. **Use of in-tank toilet cleaners will void the warranty.**

To obtain warranty service contact Kohler Co. either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA, or by calling 1-800-4-KOHLER 1-800 456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

IMPLIED WARRANTIES INCLUDING THAT OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. KOHLER CO. AND/OR SELLER DISCLAIM ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of special, incidental or consequential damages, so these limitation and exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state/province to state/province.

This is Kohler Co.'s exclusive written warranty.





KOHLER Faucet Lifetime Limited Warranty

Kohler Co. warrants its Faucets* manufactured after January 1, 1997, to be leak and drip free during normal residential use for as long as the original consumer purchaser owns his or her home. If the Faucet should leak or drip during normal use, Kohler Co. will, free of charge, mail to the purchaser the cartridge necessary to put the Faucet in good working condition. This warranty applies only to Kohler Faucets installed in the United States of America, Canada or Mexico ("North America").

Kohler Co. also warrants all other aspects of the faucet or accessories ("Faucet")*, (except gold, non-Vibrant®, non-chrome finishes) to be free of defects in material and workmanship during normal residential use for as long as the original consumer purchaser owns his or her home. This warranty applies only to Kohler Faucets installed in North America. If a defect is found in normal residential use, Kohler Co. will, at its election, repair, provide a replacement part or product, or make appropriate adjustment. Damage to a product caused by accident, misuse, or abuse is not covered by this warranty. Improper care and cleaning will void the warranty**. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the Faucet.

If the Faucet is used commercially or is installed outside of North America, or if the finish is gold, non-Vibrant or a painted or powder coated color finish, Kohler Co. warrants the Faucet to be free from defects in material and workmanship for one (1) year from the date the product is installed, under Kohler Co.'s standard one-year limited warranty.

KOHLER - faucet (back of house)

If you believe that you have a warranty claim, contact Kohler Co., either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn.:  

Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, the date the product was purchased and from whom the product was purchased. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, call 1-800-4-KOHLER 1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

KOHLER CO. AND/OR SELLER ARE PROVIDING THESE WARRANTIES IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ALL LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations of how long an implied warranty lasts or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights that vary from state/province to state/province.

This is Kohler Co.'s exclusive written warranty.

*Trend® faucets, MasterShower® tower, BodySpa systems and components; WaterHaven tower, systems and components; Tripoint® faucets, Polished Gold, non-Vibrant and painted or powder coated finishes, fittings; all items within the "Fixture Related" section of the Kohler Faucets Price Book, drains, Duostrainer® sink strainers, soap/lotion dispensers Moxie™ Wireless Speaker and faucets used in commercial settings, and outside North America, are covered by Kohler Co.'s one-year limited warranty.

**Never use cleaners containing abrasive cleansers, ammonia, bleach, acids, waxes, alcohol, solvents or other products not recommended for chrome. This will void the warranty.



Vitreous China Toilets & Bidets

- Soft abrasive cleaners may be used when necessary to clean KOHLER® vitreous china products. Strong abrasive cleaners will scratch and dull the surface.
- Most toilet bowl cleaners are safe to use on vitreous china. Follow label directions and use toilet bowl cleaners on the inside of the bowl only.
- Do not use in-tank toilet cleaners as they can damage the flush valve or other working parts.
- Wipe any splashes of cleaner solutions from plastic or plated surfaces immediately.

Success with cleaners and procedures is dependent upon such factors as the hardness and temperature of the water, using exact measurements of ingredients, changes in cleaning formulas and the condition of the product being cleaned. Since there are variations within these factors, Kohler cannot guarantee the effectiveness of the formulas mentioned.

Care Tip

Over time, hard water deposits may clog toilet rim holes and trapways. To clean, purchase a commercial cleaner that's recommended for the removal of hard water deposits. Follow all instructions on the package.

Products to Consider

- Clorox Disinfecting Bathroom Cleaner
- Comet Bathroom Cleaner
- Fantastik Antibacterial Heavy Duty
- Formula 409 Antibacterial All Purpose
- Green Works All-Purpose
- Lysol Bathroom Cleaner
- Soft Scrub Gel with Bleach
- Soft Scrub Lemon Cleanser
- Tilex Bathroom Cleaner

For rust removal:

- Super Iron Out Rust Stain Remover
- Bar Keepers Friend



Warranty Information

All Kohler Plumbing Products carry Kohler's **one-year limited warranty** unless otherwise noted.

KOHLER® One-Year Limited Warranty

KOHLER® Faucet Lifetime Limited Warranty

Lifetime Limited Warranty for KOHLER® Cast Iron Components

KOHLER® Enameled Cast Iron Bath and Shower Base Lifetime Limited Warranty

KOHLER® Enameled Cast Iron Kitchen Sink Lifetime Limited Warranty

KOHLER® Stainless Steel Sinks - Lifetime Limited Warranty

KOHLER® Steam Generator Three-Year Limited Warranty

KOHLER® PRO Cook™ Cooking Vessel Five-Year Limited Warranty

KOHLER® Electronic Faucets, Valves, and Controls Five-Year Limited Warranty

KOHLER® Water Filter Systems Five-Year Limited Warranty

KOHLER® Intelligent Toilet and C3 Cleansing Seat Three-Year Limited Warranty

KOHLER® Rising Wall Bath Limited Warranty



KOHLER® One-Year Limited Warranty

KOHLER plumbing products are warranted to be free of defects in material and workmanship for one year from date of installation.

Kohler Co. will, at its election, repair, replace or make appropriate adjustment where Kohler Co. inspection discloses any such defects occurring in normal usage within one (1) year after installation. Kohler Co. is not responsible for removal or installation costs. **Use of in-tank toilet cleaners will void the warranty.**

To obtain warranty service contact Kohler Co. either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA, or by calling 1-800-4-KOHLER 1-800 456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit www.kohler.com within the USA, www.ca.kohler.com from within Canada, or www.mx.kohler.com in Mexico.

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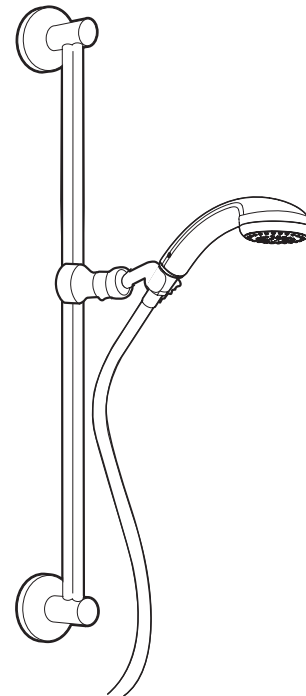


INS1987A

Installation Guide

Guía de Instalación

Guide d'installation



HANDSHOWER SLIDEBAR ASSEMBLY

MODEL 8300, 52710 Series

ENSAMBLE DE HANDSHOWER CON BARRA

MODELO Serie 8300, 52710

ASSEMBLAGE DE BARRE À GLISSIÈRE

MODÈLE 8300, 52710

Please Contact Moen First

For Installation Help, Missing or Replacement Parts(USA)

1-800-BUY-MOEN (1-800-289-6636)

Mon - Fri 8:00 AM to 7:00 PM, Eastern

Sat. 9:00 AM to 3:00 PM Eastern

WWW.MOEN.COM

(Canada)

1-800-465-6130

Mon - Fri 7:30 AM to 8:00 PM, Eastern

WWW.MOEN.CA

Shower heads:

Standard 9.5 L/min (2.5 gpm) max. and High Efficiency 7.6 L/min (2.0 gpm) max. or less

For use with automatic compensating valves rated at 5.7 L/min (1.5 gpm) or less

Automatic Compensating Valves:

Posi-Temp® and CFG®: For use with Showerheads rated at 5.7 L/min (1.5 gpm) or higher

ExactTemp® and ioDigital™: For use with Showerheads rated at 9.5 L/min (2.5 gpm) or higher

Moentrol®: For use with Showerheads rated at 4.9 L/min (1.3 gpm) or higher

Por favor, contáctese primero con Moen

Para obtener ayuda de instalación, piezas faltantes o de recambio

01-800-718-4345

Lunes a viernes de 8:00 a 20:00 hs.

(Costa Este)

Sáb. 8:00 a 18:30 hs. (Costa Este)

WWW.MOEN.SA? MX

Roseta:

Estándar 9.5 L/min (2.5 gpm) máx. y alta eficiencia 7.6 L/min (2.0 gpm) máx. o menos

Para usarse con válvulas de compensación automática de 5.7 L/min (1.5 gpm) o menos

Válvulas de compensación automática:

Posi-Temp® y CFG®: para usarse con rosetas de 5.7 L/min (1.5 gpm) o más

ExactTemp® y ioDigital™: para usarse con rosetas de 9.5 L/min (2.5 gpm) o más

Moentrol®: para usarse con rosetas de 4.9 L/min (1.3 gpm) o más

Veuillez d'abord contacter Moen

en cas de problèmes avec l'installation, ou pour obtenir toute pièce manquante ou de rechange

1-800-465-6130

Du lundi au vendredi:

de 7 h 30 à 20 h, HE

WWW.MOEN.CA

Pommes de douche :

Standards 2,5 gpm (9,5 L/min) max. ou à haute efficacité 2,0 gpm max. (7,6 L/min) ou moins

À utiliser avec des soupapes de compensation automatiques dont le débit nominal est de 5,7 L/min (1,5 gpm) ou moins

Soupapes de compensation automatique :

Posi-Temp® et CFG®: À utiliser avec des pommes de douche dont le débit nominal est de 5,7 L/min (1,5 gpm) ou plus

ExactTemp® et ioDigital™: À utiliser avec des pommes de douche dont le débit nominal est de 9,5 L/min (2,5 gpm) ou plus

Moentrol®: À utiliser avec des pommes de douche dont le débit nominal est de 4,9 L/min (1,3 gpm) ou plus

HELPFUL TOOLS

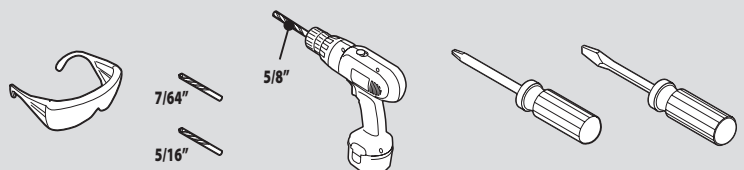
For safety and ease of faucet replacement, Moen recommends the use of these helpful tools.

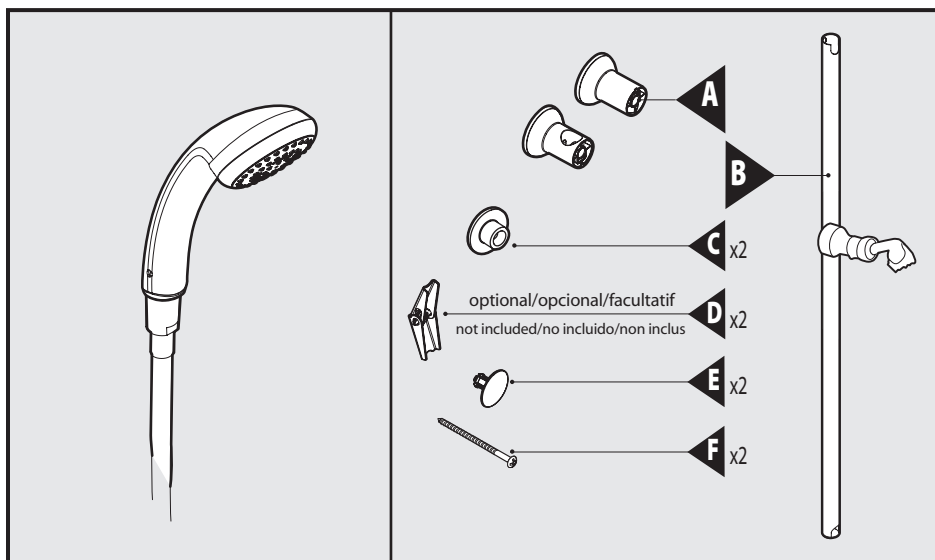
HERRAMIENTAS ÚTILES

Para que el cambio de la llave sea fácil y seguro, Moen le recomienda usar estas útiles herramientas.

OUTILS UTILES

Par mesure de sécurité et pour faciliter l'installation, Moen suggère l'utilisation des outils suivants.





Parts List

- A. Brackets
- B. Slide Bar & Clamp
- C. Bracket Adapter
- D. Toggle (x2)
- E. Plug Button (x2)
- F. Toggle Screws (x2)

Lista de piezas

- A. Ménsulas
- B. Barra deslizante y abrazadera
- C. Adaptador de la ménsula
- D. Articulación (x2)
- E. Botón tapón (x2)
- F. Tornillos de la articulación (x2)

CAUTION — TIPS FOR REMOVAL OF OLD FAUCET:

Always turn water supply OFF before removing existing faucet or disassembling the valve. Open faucet handle to relieve water pressure and ensure that complete water shut-off has been accomplished.

PRECAUCIÓN — CONSEJOS PARA CAMBIAR LA LLAVE MEZCLADORA:

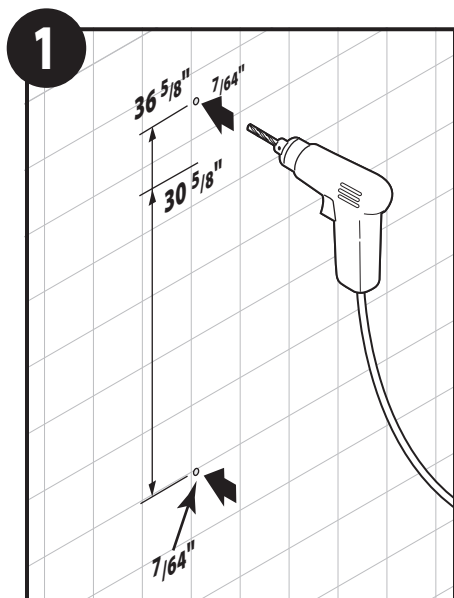
Siempre CIERRE la toma de agua antes de quitar la llave existente o desmontar la válvula. Abra la llave para liberar la presión, y asegúrese de que esté bien cerrada el agua.

ATTENTION — SUGGESTIONS POUR ENLEVER L'ANCIEN ROBINET:

Toujours couper l'alimentation en eau avant d'enlever ou de démonter le robinet. Ouvrir le robinet pour libérer la pression d'eau et pour s'assurer que l'alimentation en eau a bien été coupée.

Liste des pièces

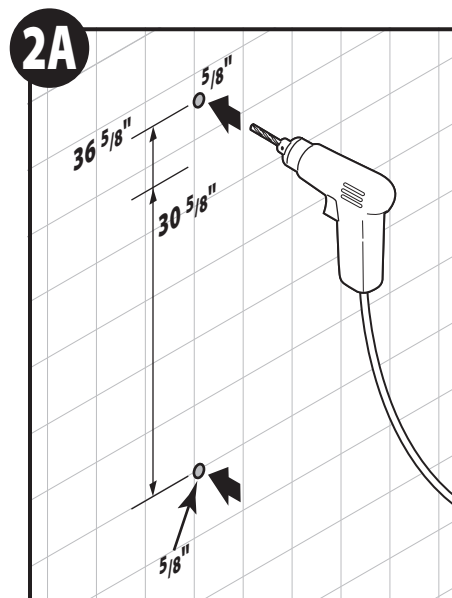
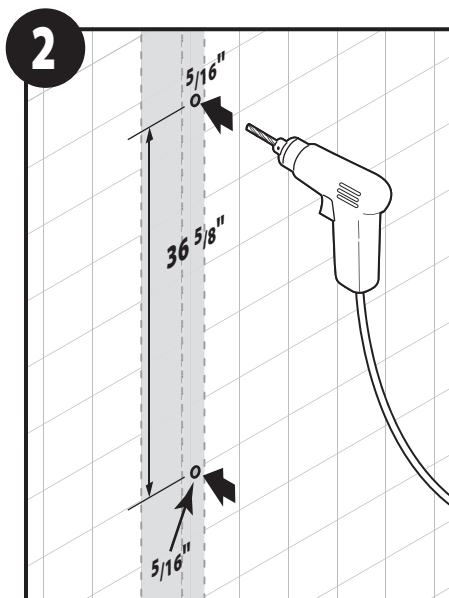
- A. Support
- B. Barre coulissante et pince
- C. Adaptateur de support
- D. Dispositif d'ancrage (2)
- E. Bouton de bouchage (2)
- F. Vis de dispositif d'ancrage (2)

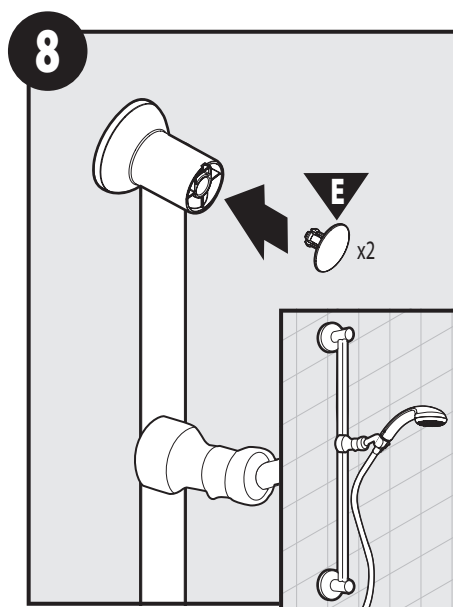
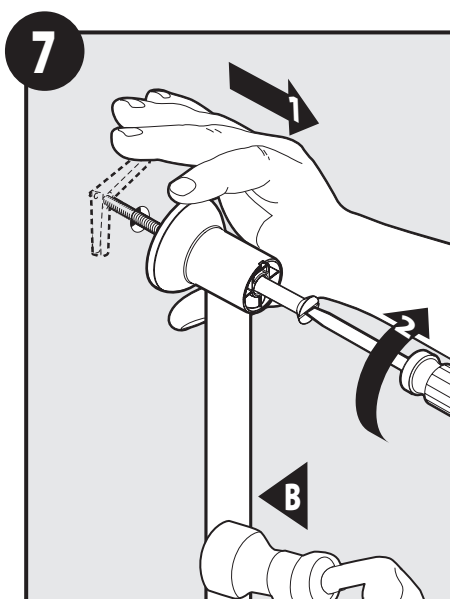
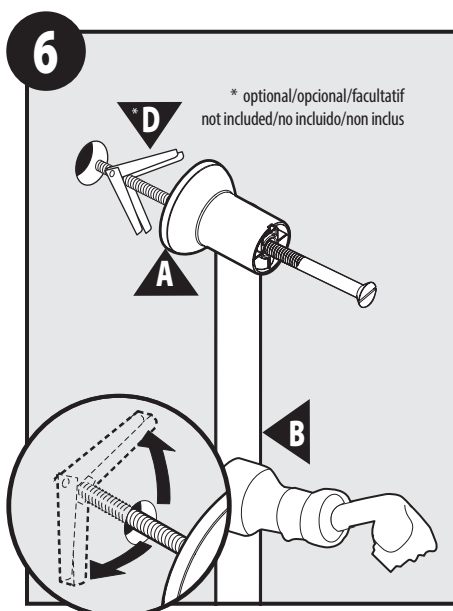
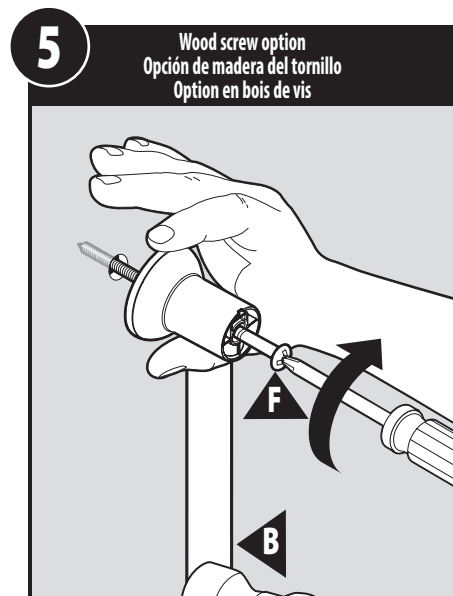
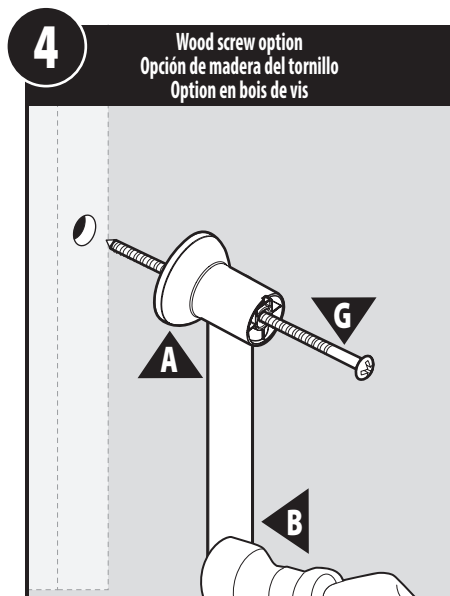
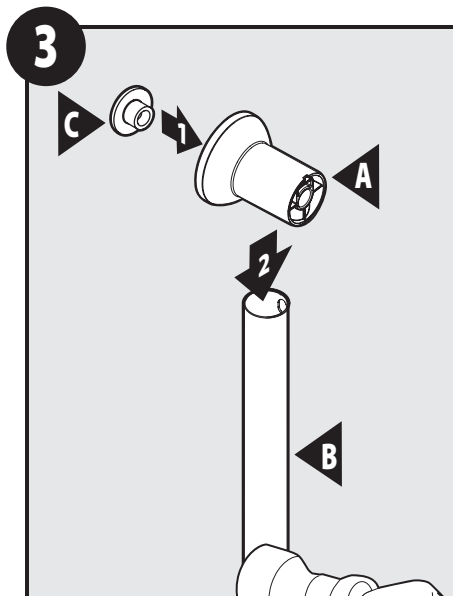


Drill pilot hole to determine if there's a stud. If no wood stud, go to step 2.

Perfore el agujero experimental para determinarse si hay de madera. Si ninguna madera, dirijase al paso 2A.

Forez le trou pilote pour déterminer s'il y a en bois. Si aucun bois, aller à l'étape 2A.





Moen Limited Lifetime Warranty

Moen products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser for as long as the original consumer purchaser owns their home (the "Warranty Period" for homeowners), that this faucet will be leak- and drip-free during normal use and all parts and finishes of this faucet will be free from defects in material and manufacturing workmanship. All other purchasers (including purchasers for industrial, commercial and business use) are warranted for a period of 5 years from the original date of purchase (the "Warranty Period" for non-homeowners).

If this faucet should ever develop a leak or drip during the Warranty Period, Moen will FREE OF CHARGE provide the parts necessary to put the faucet back in good working condition and will replace FREE OF CHARGE any part or finish that proves defective in material and manufacturing workmanship, under normal installation, use and service. Replacement parts may be obtained by calling 1-800-289-6636 (Canada 1-800-465-6130), or by writing to the address shown. Proof of purchase (original sales receipt) from the original consumer purchaser must accompany all warranty claims. Defects or damage caused by the use of other than genuine Moen parts is not covered by this warranty. This warranty is applicable only to faucets purchased after December, 1995 and shall be effective from the date of purchase as shown on purchaser's receipt.

This warranty is extensive in that it covers replacement of all defective parts and finishes. However, damage due to installation error, product abuse, product misuse, or use of cleaners containing abrasives, alcohol or other organic solvents, whether performed by a contractor, service company, or yourself, are excluded from this warranty. Moen will not be responsible for labor charges and/or damage incurred in installation, repair or replacement, nor for any indirect, incidental or consequential damages, losses, injury or costs of any nature relating to this faucet. Except as provided by law, this warranty is in lieu of and excludes all other warranties, conditions and guarantees, whether expressed or implied, statutory or otherwise, including without restriction those of merchantability or of fitness for use.

Some states, provinces and nations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state, province to province, nation to nation. Moen will advise you of the procedure to follow in making warranty claims. Simply write to Moen Incorporated using the address below. Explain the defect and include proof of purchase and your name, address, area code and telephone number.

Moen le otorga Garantía limitada de por vida

Los productos Moen son fabricados bajo las más estrictas normas de calidad y mano de obra. Moen le garantiza al comprador original que durante el tiempo que la tenga su casa (el "periodo de garantía", para los propietarios), esta llave no tendrá ni goteras ni fugas durante el uso normal, y que todas las piezas y acabados estarán libres de defectos en material y mano de obra. Asimismo, a todos nuestros otros consumidores (industriales, comerciales y empresariales), les otorgamos 5 años de garantía a partir de la fecha original de compra (el "periodo de garantía" para usos no domésticos).

Si en esta llave mezcladora se llegara a producir alguna fuga o gotera durante el periodo de garantía, Moen le proporcionará SIN COSTO ALGUNO las piezas necesarias para que vuelva a funcionar en perfectas condiciones y reemplazará también SIN COSTO para usted, cualquier pieza o acabado que pudiera tener algún defecto en la fabricación o mano de obra, bajo condiciones normales de instalación, uso y servicio. Las piezas de repuesto se pueden obtener llamando en la República Mexicana al 01-800-718-4345 o si escribe en la dirección que aparece aquí. Para que el comprador original pueda hacer efectiva la garantía, cualquier reclamación deberá ir acompañada por el comprobante de compra (nota de venta original). La garantía no cubre los defectos o daños causados por el uso de otras partes que no sean piezas originales Moen. Esta garantía es aplicable sólo para las llaves compradas después de diciembre de 1995, y entrará en vigencia a partir de la fecha que aparece en la nota de compra.

Esta garantía es amplia en el sentido que cubre el reemplazo de todas las partes y acabados defectuosos. Sin embargo, se excluyen de esta garantía los daños causados por un error de instalación, abuso del producto, mal uso del mismo, o uso de limpiadores que contengan abrasivos, alcohol u otros solventes orgánicos, ya sea por parte del contratista, compañía de servicio o usted mismo. Moen no se hace tampoco responsable por los gastos de mano de obra ni por los daños incurridos en la instalación, reparación o sustitución, ni por ningún daño indirecto, directo o consecuente, ni por pérdidas, lesiones o costos de alguna otra índole relacionados con esta llave. A menos que lo estipule la ley, esta garantía reemplaza y excluye cualquier otra garantía y condiciones, ya sea expresas o implícitas, establecidas por la ley o de otra manera, incluyendo sin restricción aquellas en que el producto se encuentra en condiciones aptas para la venta o se adecúa al uso específico para el cual fue adquirido.

Algunos estados, provincias y naciones no permiten la exclusión o limitación de los daños incidentales o consecuentes, de modo que las limitaciones o exclusiones mencionadas pueden no ser aplicables a usted. Esta garantía le otorga derechos legales específicos y usted puede también tener otros derechos que cambian de un estado a otro o de una provincia o nación a otra. Moen lo asesorará en el procedimiento a seguir para hacer válida esta garantía. Sencillamente escriba a Moen Incorporated utilizando la dirección que aparece a continuación. Explique el tipo de defecto e incluya comprobantes de compra, su nombre, dirección, código de área y número de teléfono.

Garantie à vie limitée de Moen

Les produits Moen sont fabriqués selon les normes les plus élevées de qualité et de main-d'œuvre. Moen garantit à l'acheteur original, tant qu'il sera propriétaire de la maison (la « période de garantie » des propriétaires), que ce robinet sera libre de toute fuite pendant son usage normal et qu'aucune pièce et qu'aucun fini de ce robinet ne présenteront de défaut de matériel et de main-d'œuvre en usine. Tous les autres achats (y compris les achats à des fins industrielles, commerciales et d'affaires) sont garantis pendant cinq (5) ans à compter de la date d'achat originale (période de garantie commerciale).

Si ce robinet fuit ou dégorge pendant la période de garantie, Moen s'engage à fournir GRATUITEMENT les pièces de rechange requises pour remettre le robinet en état de fonctionnement ainsi qu'à remplacer GRATUITEMENT toute pièce ou tout fini dont le matériel, la fabrication ou la main-d'œuvre, lors de l'installation, de l'usage et du service habituels, s'avèrent défectueux. On peut obtenir les pièces de rechange en composant le 1-800-465-6130 ou en écrivant à l'adresse indiquée ci-dessous. Le reçu de vente original de l'acheteur initial du robinet doit accompagner toute réclamation. Les défauts ou les dommages causés par l'utilisation de pièces non fournies par Moen ne sont pas couverts par cette garantie. Cette garantie s'applique uniquement aux robinets achetés après décembre 1995 et entre en vigueur à compter de la date d'achat indiquée sur le reçu de caisse du client.

Cette garantie s'étend aussi au remplacement de toute pièce ou de tout fini défectueux. Cependant, sont exclus de cette garantie, les dommages causés par une erreur d'installation, un abus du produit, une mauvaise utilisation du produit, l'utilisation de produits de nettoyage contenant des agents abrasifs, de l'alcool ou des solvants organiques, qu'ils soient utilisés par un entrepreneur, une entreprise de service ou le consommateur. Moen décline toute responsabilité quant aux frais de main-d'œuvre et aux dommages causés durant l'installation, la réparation ou le remplacement, et aux dommages, pertes, blessures ou coûts, indirects ou consécutifs, connexes à ce robinet. Sauf lorsque la loi le stipule, cette garantie remplace et exclut toutes les autres garanties et conditions, qu'elles soient indiquées expressément ou non, obligatoires ou autres, y compris, sans restriction, celles qui visent la commercialisation ou l'aptitude d'utilisation.

Certains pays, états ou provinces ne permettent aucune exclusion, ni limitation suite aux dommages indirects ou consécutifs. Les limitations ou les exclusions précitées ne s'appliqueraient pas dans ces cas. Cette garantie accorde des droits juridiques et il est possible que d'autres droits soient applicables selon l'état, la province ou le pays. Moen avisera le consommateur de la procédure à suivre pour soumettre une réclamation. Il suffit d'écrire à Moen inc. à l'adresse indiquée ci-dessous, pour expliquer le défaut, d'inclure une preuve d'achat, d'inscrire son nom, son adresse ainsi que son indicatif régional et son numéro de téléphone.



Moen Incorporated
25300 Al Moen Drive
North Olmsted, Ohio 44070-8022
U.S.A.

Moen de Mexico, S.A. de C.V.
Carretera Saltillo-Monterrey KM 14.7
Ramos Arizpe, Coahuila
Mexico 25900

Moen Inc.
2816 Bristol Circle
Oakville, Ontario L6H 5S7
Canada

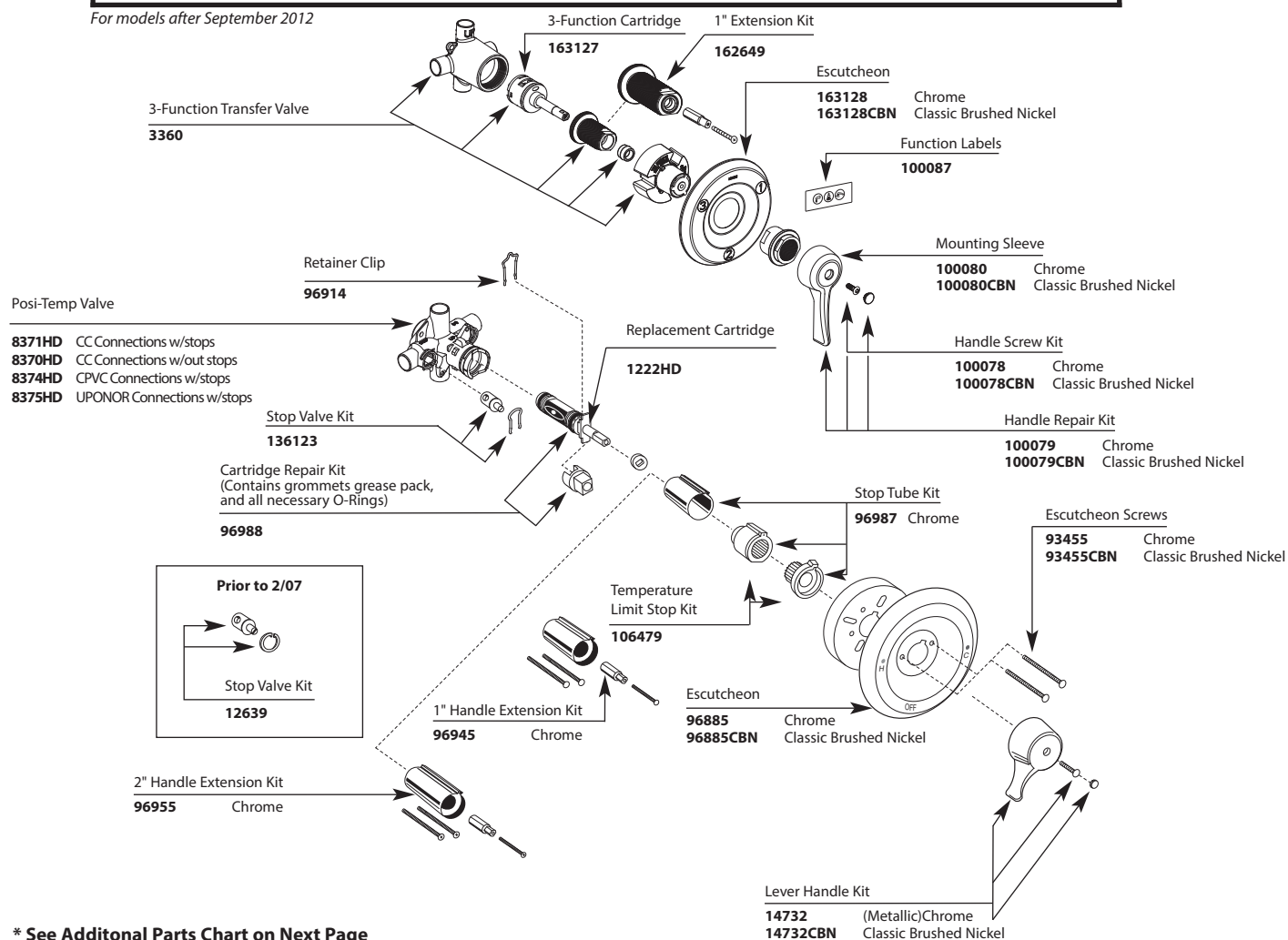
INS1987A - 8/14

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■ Order by Part Number *There is more than 1 version of this model.
Page down to identify the version you have.*

COMMERCIAL TUB/SHOWER SYSTEMS							
MODEL	3-FUNCTION TRANSFER VALVE	HANDSHOWER	TUB SPOUT	SHOWERHEAD	DROPELL	SLIDE BAR	WALL BRACKET
8360 Three-Function Transfer Valve	X						
8370 Posi-Temp® Valve Control							
8375 Posi-Temp® Shower				X			
8389 Posi-Temp® Tub/Shower			X	X			
8341 Posi-Temp® Tub/Shower System	X	X	X		X	X	
8342 Posi-Temp® Shower System	X	X		X	X	X	
8343 Posi-Temp® Tub/Shower System	X	X	X	X	X	X	
8346 Posi-Temp® Hand Shower System		X			X	X	
8348 Posi-Temp® Hand Shower System		X			X		X
52710 Hand Shower System without Valve		X			X	X	
52715 Hand Shower System without Valve		X			X	X	
52740EP17 Three-Function Hand Shower System without Valve		X			X	X	
Models beginning in T are trim kits and do not include valve(s).							
Models ending in CBN are identical to base but have a Classic Brushed Nickel finish.							

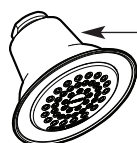
For models after September 2012



* See Additional Parts Chart on Next Page

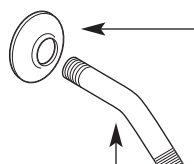
■ Order by Part Number

*There is more than 1 version of this model.
Page down to identify the version you have.*



Shower Head

5263	2.5 gpm, Chrome
5263CBN	2.5 gpm, Classic Brushed Nickel
5263EP17	1.75 gpm, Chrome
5263EP17CBN	1.75 gpm, Classic Brushed Nickel
5263EP15	1.5 gpm, Chrome
5263EP15CBN	1.5 gpm, Classic Brushed Nickel



Shower Arm & Flange

A705	Chrome
A705CBN	Classic Brushed Nickel

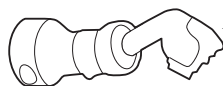
Shower Arm

10154	Chrome
10154CBN	Classic Brushed Nickel



Drop Ell

A725	Chrome
A725CBN	Classic Brushed Nickel



Clamp

100686	Chrome
101686CBN	Classic Brushed Nickel



Wall Bracket

104414	Chrome
---------------	--------



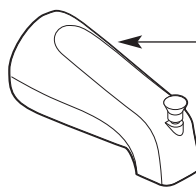
Hand Held Shower Wand

8349	2.5 gpm, Chrome
8349CBN	2.5 gpm, Classic Brushed Nickel
8349EP17	1.75 gpm, Chrome
8349EP17CBN	1.75 gpm, Classic Brushed Nickel
8349EP15	1.5 gpm, Chrome
8349EP15CBN	1.5 gpm, Classic Brushed Nickel



Hand Held Shower Wand

3863	Chrome
-------------	--------



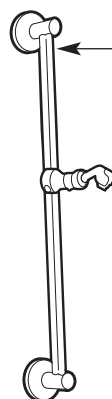
Tub Spout

15856	Chrome
15856CBN	Classic Brushed Nickel



Metal Hose

A726	69" Metal, Chrome
A726ST	69" Metal, Classic Brushed Nickel
A780	80" Metal, Chrome
A723	59" Plastic



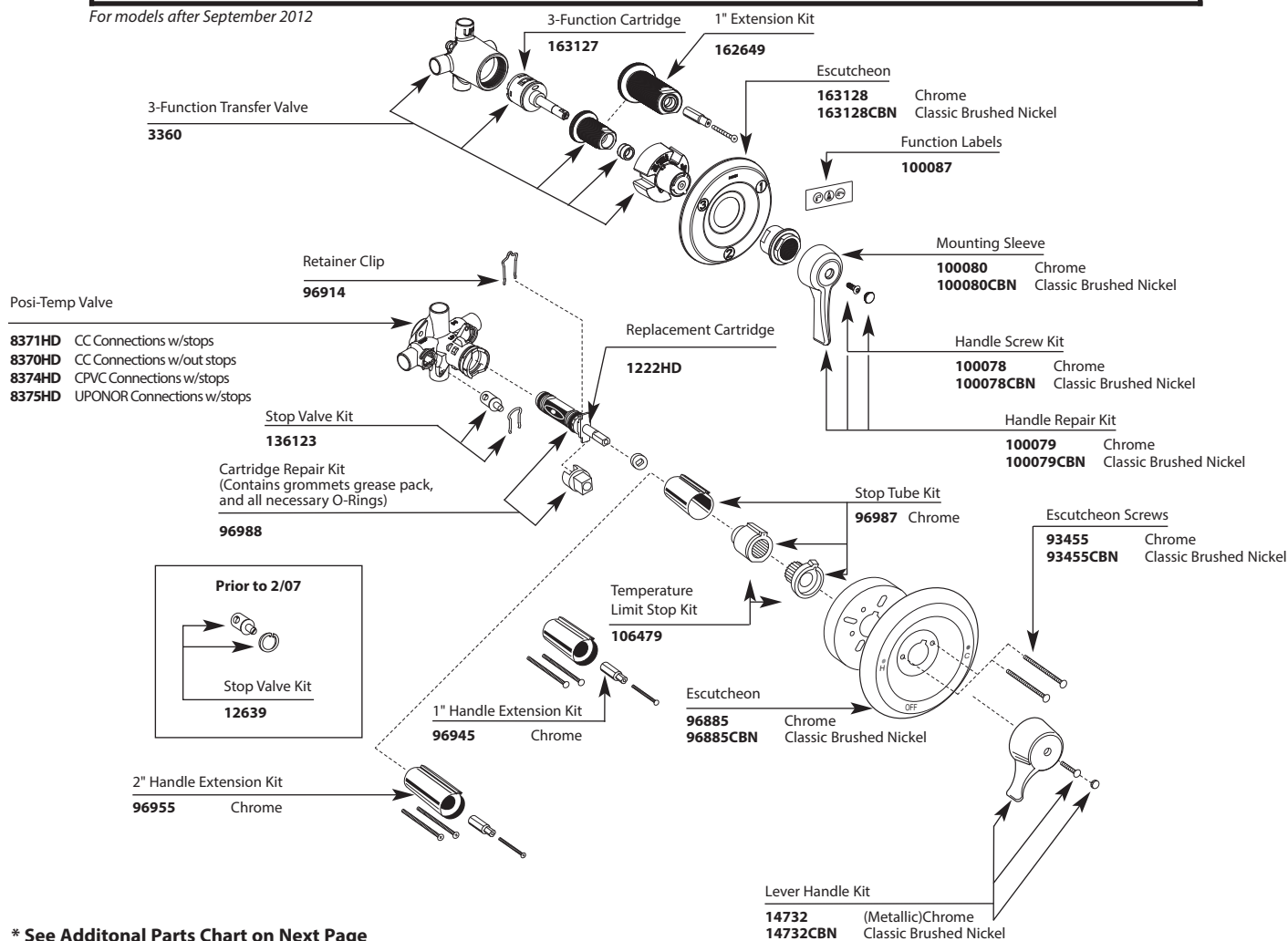
Slidebar & Clamp

101629	Chrome
101629CBN	Classic Brushed Nickel

■ Order by Part Number *There is more than 1 version of this model.
Page down to identify the version you have.*

COMMERCIAL TUB/SHOWER SYSTEMS								
MODEL	3-FUNCTION TRANSFER VALVE	HANDSHOWER	TUB SPOUT	SHOWERHEAD	VACUUM BREAKER	DROP ELL	SLIDE BAR	WALL BRACKET
8360 Three-Function Transfer Valve	X							
8370 Posi-Temp® Valve Control								
8375 Posi-Temp® Shower				X				
8389 Posi-Temp® Tub/Shower			X	X				
8341 Posi-Temp® Tub/Shower System	X	X	X		X	X	X	
8342 Posi-Temp® Shower System	X	X		X	X	X	X	
8343 Posi-Temp® Tub/Shower System	X	X	X	X	X	X	X	
8346 Posi-Temp® Hand Shower System		X			X	X	X	
8348 Posi-Temp® Hand Shower System		X			X	X		X
52710 Hand Shower System without Valve		X			X	X	X	
52715 Hand Shower System without Valve		X			X	X	X	
52740EP17 Three-Function Hand Shower System without Valve		X			X	X	X	
Models beginning in T are trim kits and do not include valve(s).								
Models ending in CBN are identical to base but have a Classic Brushed Nickel finish.								

For models after September 2012

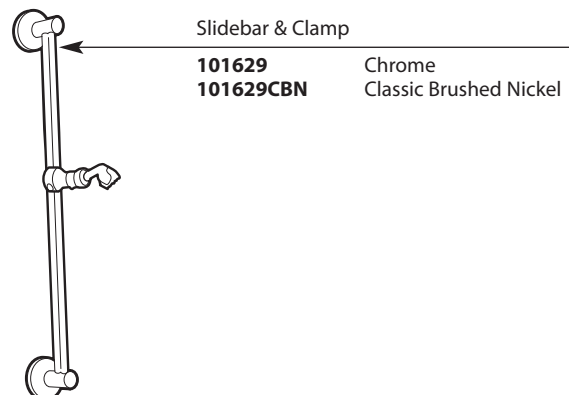
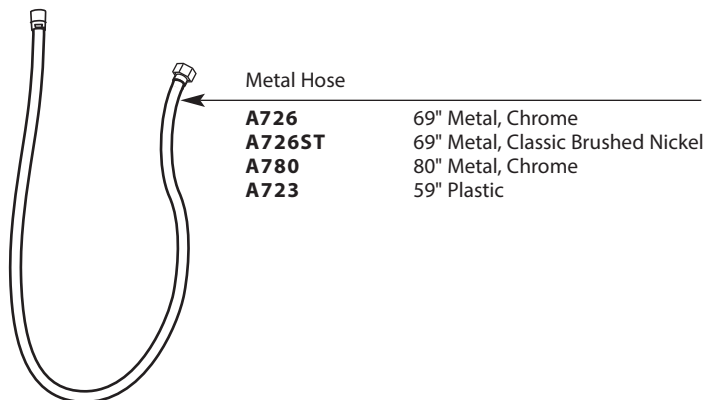
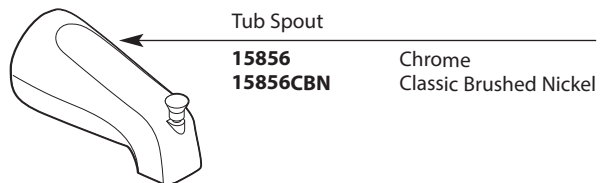
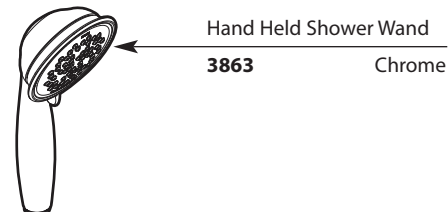
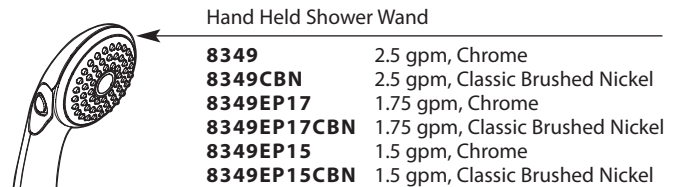
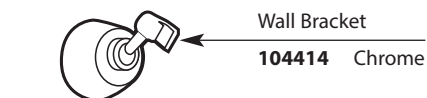
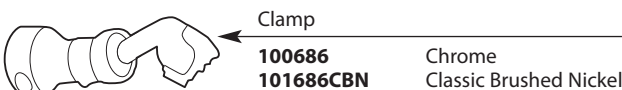
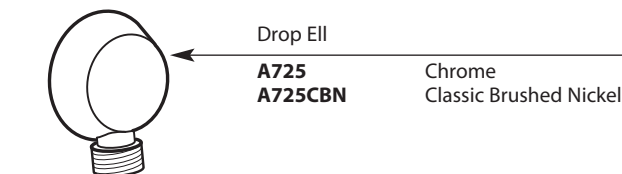
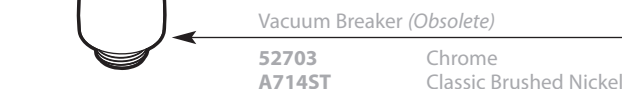
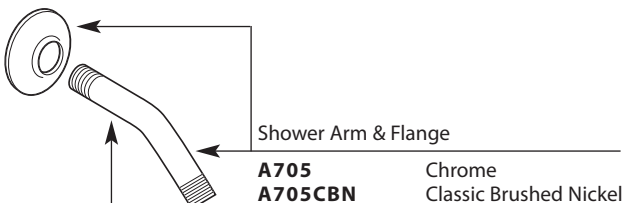
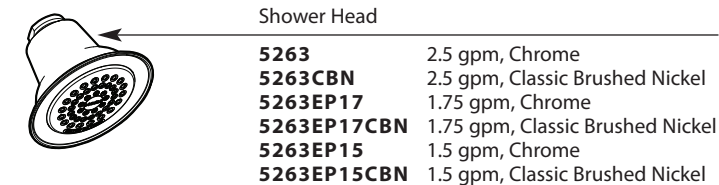


* See Additional Parts Chart on Next Page

■ Order by Part Number

*There is more than 1 version of this model.
Page down to identify the version you have.*

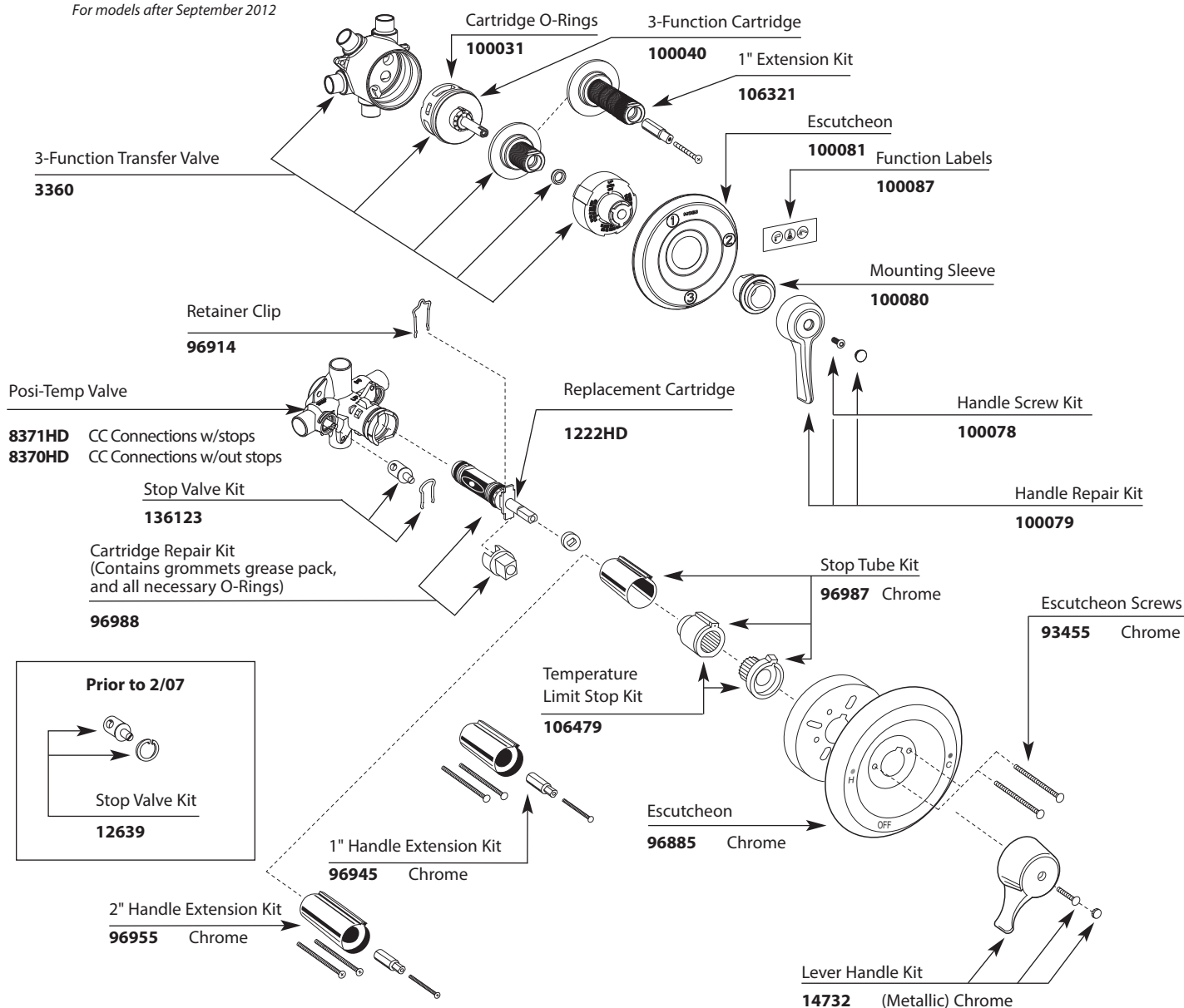
Illustrated Parts



Three-Function Commercial Tub/Shower System

MODEL	Handshower	Tub Filler	Showerhead	Vacuum Breaker	Drop Ell	Slide Bar	Wall Bracket
8360 3 Function Transfer Valve							
8341 Posi-Temp & 3 Function Transfer Valve	x	x		x	x	x	
8342 Posi-Temp & 3 Function Transfer Valve	x		x	x	x	x	
8343 Posi-Temp & 3 Function Transfer Valve	x	x	x	x	x	x	
8348 Posi-Temp	x			x	x		x
8346 Posi-Temp	x			x	x	x	
52710 Less Valves	x			x	x	x	
52710BN Less Valves	x			x	x	x	

For models after September 2012

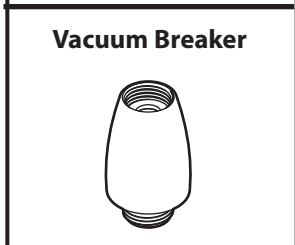


■ Order by Part Number

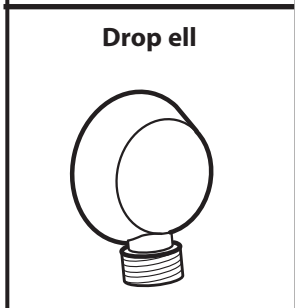
* **Parts Chart**



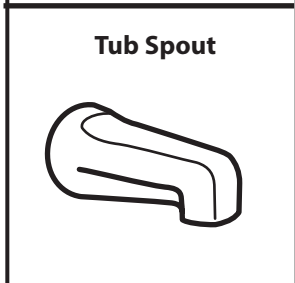
Shower Head, Arm, Flange
12894



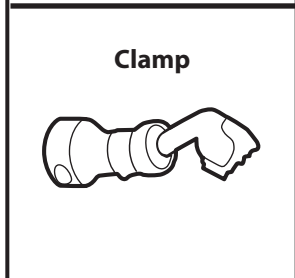
Vacuum Breaker (Obsolete)
52703



Drop ell
A725



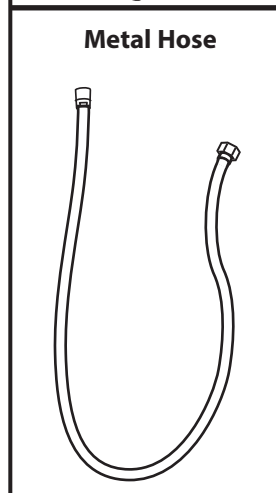
Tub Spout
3804



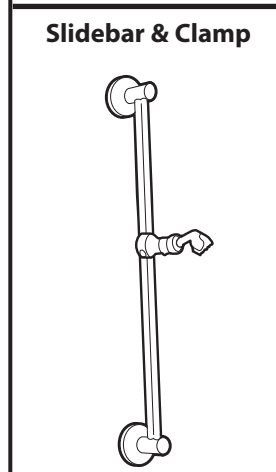
Clamp
100686



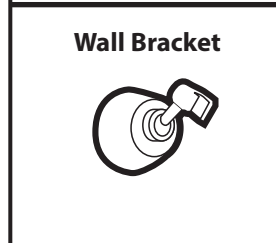
Hand Held Shower Wand
8349



Metal Hose
A726



Slidebar & Clamp
101629



Wall Bracket
104414



Moen Handshower and Slidebar Warranty

Moen® products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser all parts of this product to be free from defects in material and workmanship during normal use, for (1) year from date of purchase. A replacement for any defective part will be supplied free of charge for installation by you. Defects or damage caused by the use of other than genuine Moen parts are not covered by this warranty. This warranty shall be effective from the date of purchase as shown on the purchaser's receipt. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty is valid for the original purchaser only and excludes product damage due to installation error, product abuse, or product misuse, whether performed by a contractor, service company, or yourself. Moen will not be responsible for labor charges, and/or damage incurred in installation, repair or replacement, nor for incidental or consequential damages.

Some states, provinces, and nations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state, province to province, and nation to nation. Moen Incorporated will advise you of the procedure to follow in making warranty claims. Simply write to Moen explaining the defect and include proof of purchase and your name, address and telephone number. The address is: Moen Incorporated 25300 Al Moen Drive, North Olmsted, Ohio 44070-8022, or call our toll-free consumer Helpline: 1-800-289-6636.

In Canada, write to **Moen**, 2816 Bristol Circle, Oakville, Ontario L6H5S7 or call: Toronto, 905-829-3400; Rest of Canada, 1-800-465-6130, and ask for Product Service.

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As the #1 faucet brand in North America, Moen offers a diverse selection of thoughtfully designed kitchen and bath faucets, showerheads, accessories, bath safety products, garbage disposals and kitchen sinks for residential and commercial applications each delivering the best possible combination of meaningful innovation, useful features, and lasting value.

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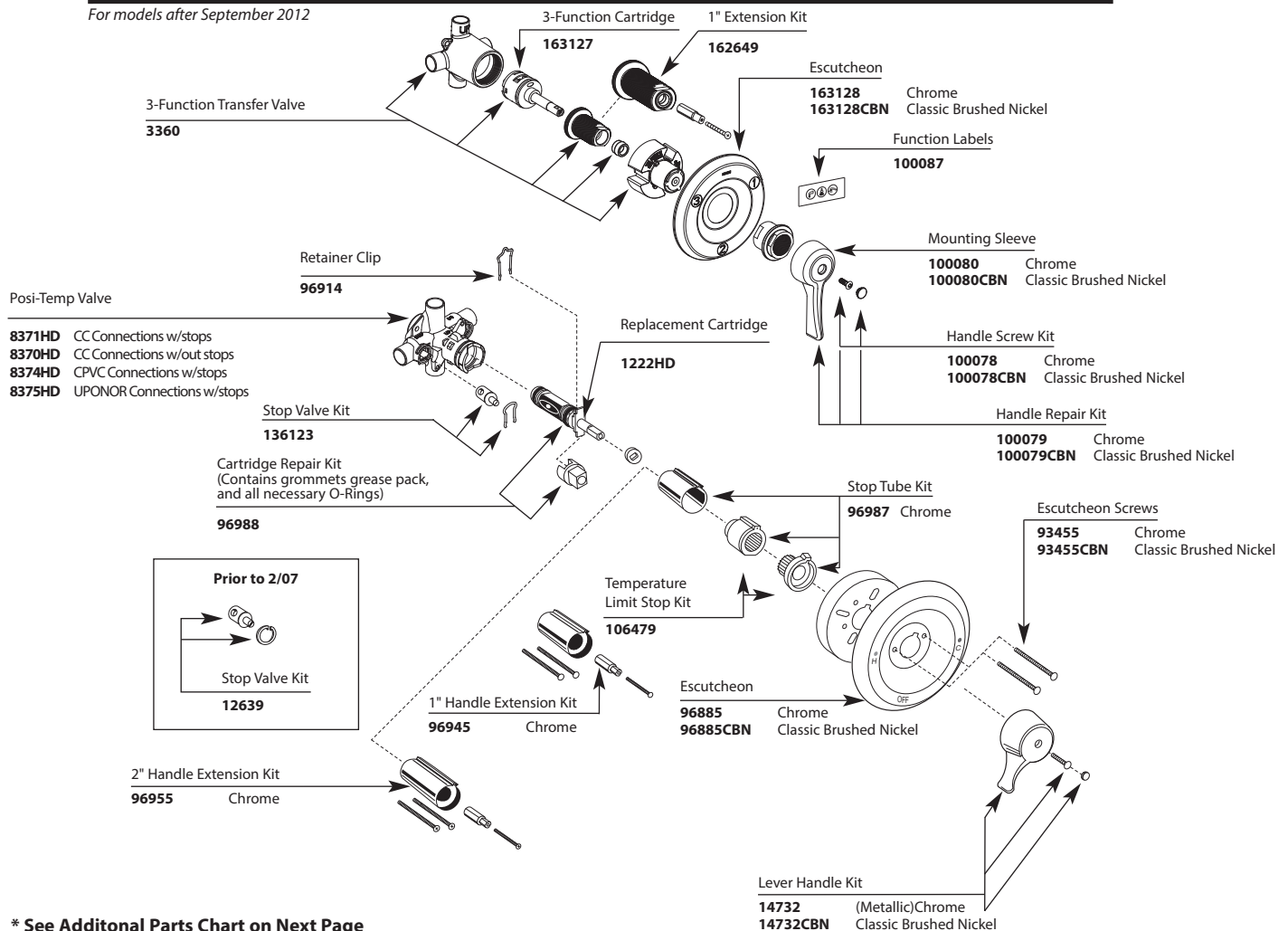
Illustrated Parts

■ Order by Part Number *There is more than 1 version of this model.
Page down to identify the version you have.*

COMMERCIAL TUB/SHOWER SYSTEMS							
MODEL	3-FUNCTION TRANSFER VALVE	HANDSHOWER	TUB SPOUT	SHOWERHEAD	DROPELL	SLIDE BAR	WALL BRACKET
8360 Three-Function Transfer Valve	X						
8370 Posi-Temp® Valve Control							
8375 Posi-Temp® Shower				X			
8389 Posi-Temp® Tub/Shower			X	X			
8341 Posi-Temp® Tub/Shower System	X	X	X		X	X	
8342 Posi-Temp® Shower System	X	X		X	X	X	
8343 Posi-Temp® Tub/Shower System	X	X	X	X	X	X	
8346 Posi-Temp® Hand Shower System		X			X	X	
8348 Posi-Temp® Hand Shower System		X			X		X
52710 Hand Shower System without Valve		X			X	X	
52715 Hand Shower System without Valve		X			X	X	
52740EP17 Three-Function Hand Shower System without Valve		X			X	X	

Models beginning in T are trim kits and do not include valve(s).
Models ending in CBN are identical to base but have a Classic Brushed Nickel finish.

For models after September 2012



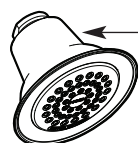
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Illustrated Parts

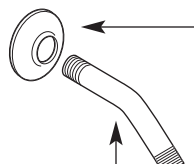
Order by Part Number

There is more than 1 version of this model.
Page down to identify the version you have.



Shower Head

5263	2.5 gpm, Chrome
5263CBN	2.5 gpm, Classic Brushed Nickel
5263EP17	1.75 gpm, Chrome
5263EP17CBN	1.75 gpm, Classic Brushed Nickel
5263EP15	1.5 gpm, Chrome
5263EP15CBN	1.5 gpm, Classic Brushed Nickel



Shower Arm & Flange

A705	Chrome
A705CBN	Classic Brushed Nickel

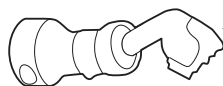
Shower Arm

10154	Chrome
10154CBN	Classic Brushed Nickel



Drop Ell

A725	Chrome
A725CBN	Classic Brushed Nickel



Clamp

100686	Chrome
101686CBN	Classic Brushed Nickel



Wall Bracket

104414	Chrome
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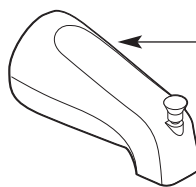
Hand Held Shower Wand

8349	2.5 gpm, Chrome
8349CBN	2.5 gpm, Classic Brushed Nickel
8349EP17	1.75 gpm, Chrome
8349EP17CBN	1.75 gpm, Classic Brushed Nickel
8349EP15	1.5 gpm, Chrome
8349EP15CBN	1.5 gpm, Classic Brushed Nickel



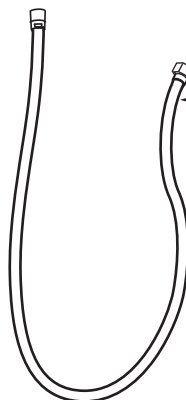
Hand Held Shower Wand

3863	Chrome
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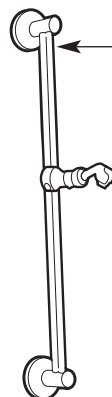
Tub Spout

15856	Chrome
15856CBN	Classic Brushed Nickel



Metal Hose

A726	69" Metal, Chrome
A726ST	69" Metal, Classic Brushed Nickel
A780	80" Metal, Chrome
A723	59" Plastic



Slidebar & Clamp

101629	Chrome
101629CBN	Classic Brushed Nickel



Moen Handshower and Slidebar Warranty

Moen® products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser all parts of this product to be free from defects in material and workmanship during normal use, for (1) year from date of purchase. A replacement for any defective part will be supplied free of charge for installation by you. Defects or damage caused by the use of other than genuine Moen parts are not covered by this warranty. This warranty shall be effective from the date of purchase as shown on the purchaser's receipt. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty is valid for the original purchaser only and excludes product damage due to installation error, product abuse, or product misuse, whether performed by a contractor, service company, or yourself. Moen will not be responsible for labor charges, and/or damage incurred in installation, repair or replacement, nor for incidental or consequential damages.

Some states, provinces, and nations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state, province to province, and nation to nation. Moen Incorporated will advise you of the procedure to follow in making warranty claims. Simply write to Moen explaining the defect and include proof of purchase and your name, address and telephone number. The address is: Moen Incorporated 25300 Al Moen Drive, North Olmsted, Ohio 44070-8022, or call our toll-free consumer Helpline: 1-800-289-6636.

In Canada, write to **Moen**, 2816 Bristol Circle, Oakville, Ontario L6H5S7 or call: Toronto, 905-829-3400; Rest of Canada, 1-800-465-6130, and ask for Product Service.

© 2017 Moen Incorporated

As the #1 faucet brand in North America, Moen offers a diverse selection of thoughtfully designed kitchen and bath faucets, showerheads, accessories, bath safety products, garbage disposals and kitchen sinks for residential and commercial applications each delivering the best possible combination of meaningful innovation, useful features, and lasting value.

[Contact Us](#)[About Moen](#)

DELTA - handicap apartment shower diverter tee

LIMITED WARRANTY ON DELTA® FAUCETS

LIMITED WARRANTY ON DELTA® FAUCETS

Limited Warranty on Delta® Faucets

Parts and Finish

All parts (other than electronic parts and batteries) and finishes of this Delta® faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for as long as the original consumer purchaser owns the home in which the faucet was first installed or, for commercial users, for five (5) years from the date of purchase.

Electronic Parts and Batteries (if applicable)

Electronic parts (other than batteries), if any, of this Delta® faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for five (5) years from the date of purchase or, for commercial users, for one (1) year from the date of purchase. No warranty is provided on batteries.

What We Will Do

Delta Faucet Company will repair or replace, free of charge, during the applicable warranty period (as described above), any part or finish that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price in exchange for the return of the product. **These are your exclusive remedies.**

What Is Not Covered

Any labor charges incurred by the purchaser to repair, replace, install or remove this product are not covered by this warranty. Delta Faucet Company shall not be liable for any damage to the faucet resulting from reasonable wear and tear, misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions. Delta Faucet Company recommends using a professional plumber for all installation and repair. We also recommend that you use only genuine Delta® replacement parts.

What You Must Do To Obtain Warranty Service or Replacement Parts

A warranty claim may be made and replacement parts may be obtained by calling 1-800-345-DELTA (3358) or by writing to:

In the United States and Mexico:

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
customerservice@deltafaucet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
customerservice@mascocanada.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims unless the purchaser has registered the product with Delta Faucet Company. This warranty applies only to Delta® faucets manufactured after January 1, 1995 and installed in the United States of America, Canada and Mexico.

Limitation on Duration of Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE STATUTORY PERIOD OR THE DURATION OF THIS WARRANTY, WHICHEVER IS SHORTER. Some states/provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Limitation of Special, Incidental or Consequential Damages. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LABOR CHARGES TO REPAIR, REPLACE, INSTALL OR REMOVE THIS PRODUCT), WHETHER ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY DAMAGE TO THE FAUCET RESULTING FROM REASONABLE WEAR AND TEAR, MISUSE, ABUSE, NEGLIGENCE OR IMPROPER OR INCORRECTLY PERFORMED INSTALLATION, MAINTENANCE OR REPAIR, INCLUDING FAILURE TO FOLLOW THE APPLICABLE INSTALLATION, CARE AND CLEANING INSTRUCTIONS. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so the above limitations and exclusions may not apply to you.

Additional Rights

This warranty gives you specific legal rights, and you may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding our warranty, please call, mail or email us as provided above or view our **Warranty FAQs** at **www.deltafaucet.com**.

LIMITED WARRANTY ON DELTA® BATHING PRODUCTS

LIMITED WARRANTY ON DELTA® BATHING PRODUCTS

Limited Warranty on Bathing Products

This bathing product is warranted to the original consumer purchaser or commercial user, as applicable, to be free from defects in material and workmanship for the applicable period specified below:

Delta® Tubs, Shower Bases, and Walls

Ten (10) years from the date of purchase by the original consumer purchaser or, for commercial users, one (1) year from the date of purchase.

Delta® Glass and Frameless Shower Enclosures and Shower Doors

Five (5) years from the date of purchase by the original consumer purchaser or, for commercial users, one (1) year from the date of purchase.

Peerless® Tubs, Shower Bases, Shower Enclosures, and Walls

Three (3) years from the date of purchase by the original consumer purchaser or, for commercial users, one (1) year from the date of purchase.

All Other Tubs, Shower Bases, Shower Enclosures, and Walls

One (1) year from the date of purchase by the original consumer purchaser or commercial user.

What We Will Do

Delta Faucet Company will repair or replace, free of charge, during the applicable warranty period, any part that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price (the return of the product may be required at Delta Faucet Company's option). **These are your exclusive remedies.**

What Is Not Covered

Any labor charges incurred by the purchaser to repair, replace, install or remove this product are not covered by this warranty. Delta Faucet Company shall not be liable for any damage to the product resulting from reasonable wear and tear, misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions. Delta Faucet Company recommends using a professional plumber for all installation and repair. We also recommend that you use only genuine Delta®/Peerless® replacement parts.

What You Must Do To Obtain Warranty Service or Replacement Parts

A warranty claim may be made and replacement parts may be obtained by calling **1-800-355-2721** or by writing to:

In the United States and Mexico:

Delta Faucet Company
Bathing Products
55 E. 111th Street
Indianapolis, IN 46280
consumercare@deltafaucet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
customerservice@mascocanada.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims unless the purchaser has registered the product with Delta Faucet Company. This warranty applies only to bathing products that are installed in the United States of America, Canada and Mexico.

DO NOT USE CERTAIN CLEANING PRODUCTS. Cleaning products containing the following chemicals can cause this bathing product to crack or discolor and use of cleaning products containing

these chemicals will void this warranty:

- Naphtha
- Amyl Acetate
- Hydrogen Peroxide Solution (common hydrogen peroxide)
- Toluene
- Ethyl Acetate
- Lye (common in drain cleaners)
- Acetone

Limitation on Duration of Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE STATUTORY PERIOD OR THE DURATION OF THIS WARRANTY, WHICHEVER IS SHORTER. Some states/provinces do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

Limitation of Special, Incidental or Consequential Damages. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LABOR CHARGES TO REPAIR, REPLACE, INSTALL OR REMOVE THIS PRODUCT), WHETHER ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY DAMAGE TO THE PRODUCT RESULTING FROM REASONABLE WEAR AND TEAR, MISUSE, ABUSE, NEGLIGENCE OR IMPROPER OR INCORRECTLY PERFORMED INSTALLATION, MAINTENANCE OR REPAIR, INCLUDING FAILURE TO FOLLOW THE APPLICABLE INSTALLATION, CARE AND CLEANING INSTRUCTIONS. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you.

Additional Rights

This warranty gives you special legal rights, and you may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding technical support, installation or our warranty, please call, mail or **email us** as provided above or visit our website at **www.deltabathing.com**.

LIMITED WARRANTY ON DELTA® TOILETS

LIMITED WARRANTY ON DELTA® TOILETS

LIMITED WARRANTY ON DELTA® TOILETS

Chinaware

Chinaware parts of the Delta® toilet are warranted to the original consumer purchaser to be free from defects in material and workmanship for as long as the original consumer purchaser owns the home in which the toilet was first installed or, for commercial users, for five (5) years from the date of purchase.

Mechanical Parts

Mechanical parts of the Delta® toilet are warranted to the original consumer purchaser to be free from defects in material and workmanship for one (1) year from the date of purchase.

Electronic Parts and Batteries (if applicable)

Electronic parts (other than batteries), if any, of this Delta® toilet are warranted to the original consumer purchaser to be free from defects in material and workmanship for five (5) years from the date of purchase or, for commercial users, for one (1) year from the date of purchase. No warranty is provided on batteries.

Toilet Seats

Toilet seats of the Delta® toilet are warranted to the original consumer purchaser to be free from defects in material and workmanship for one (1) year from the date of purchase. Toilet seats of the Delta® toilet are not designed or intended for commercial use; therefore, no warranty is given on the toilet seat if used for commercial purposes.

What We Will Do

Delta Faucet Company will repair or replace, free of charge, during the applicable warranty period, any part that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price in exchange for the return of the product. **These are your exclusive remedies.**

What Is Not Covered

Any labor charges incurred by the purchaser to repair, replace, install or remove this product are not covered by this warranty. Delta Faucet Company shall not be liable for any damage to the product resulting from reasonable wear and tear, misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions. Delta Faucet Company recommends using a professional plumber for all installation and repair. We also recommend that you use only genuine Delta® replacement parts.

What You Must Do To Obtain Warranty Service or Replacement Parts

A warranty claim may be made and replacement parts may be obtained by calling 1-855-345-1345 or by writing to:

In the United States and Mexico:

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
customerservice@deltatoilet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
customerservice@deltatoilet.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims unless the purchaser has registered the product with Delta Faucet Company. This warranty applies only to Delta® toilets installed in the United States of America, Canada and Mexico.

DO NOT USE IN-TANK BOWL CLEANERS. Products containing chlorine or chlorine-related products can seriously damage fittings in the tank, which can cause leakage and property damage. Delta Faucet Company shall not be responsible or liable for any tank fitting failure or damage caused by the use of in-tank bowl cleaners.

Limitation on Duration of Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE STATUTORY PERIOD OR THE DURATION OF THIS WARRANTY, WHICHEVER IS SHORTER. Some states/provinces do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

Limitation of Special, Incidental or Consequential Damages. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LABOR CHARGES TO REPAIR, REPLACE, INSTALL OR REMOVE THIS PRODUCT), WHETHER ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY DAMAGE TO THE TOILET RESULTING FROM REASONABLE WEAR AND TEAR, MISUSE, ABUSE, NEGLIGENCE OR IMPROPER OR INCORRECTLY PERFORMED INSTALLATION, MAINTENANCE OR REPAIR, INCLUDING FAILURE TO FOLLOW THE APPLICABLE INSTALLATION, CARE AND CLEANING INSTRUCTIONS. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you.

Additional Rights

This warranty gives you special legal rights, and you may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding technical support, installation or our warranty, please call, mail or email us as provided above or visit our website at www.deltatoilet.com or www.deltafaucet.com/customersupport/faq.

LIMITED WARRANTY ON DELTA® LEAK DETECTORS

LIMITED WARRANTY ON DELTA® LEAK DETECTORS

Two-Year Limited Warranty on Delta® Leak Detectors

Parts

All parts (other than batteries) of this Delta® Leak Detector are warranted to the original consumer purchaser to be free from defects in material and workmanship for two (2) years from the date of the original retail purchase (the "Warranty Period"). No warranty is provided on batteries.

What We Will Do

Delta Faucet Company will repair or replace, free of charge, during the Warranty Period, any part that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price in exchange for the return of the product. **These are your exclusive remedies.**

What Is Not Covered

Delta Faucet Company shall not be liable for (a) any damage to the Leak Detector caused in any way by reasonable wear and tear, misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable maintenance and installation instructions, or (b) any water or other property damage to the building in which the Leak Detector is installed, or (c) any personal injury caused in any way by the Leak Detector, in each case even if the product does not function properly. If moisture is present in the battery compartment, the product should be replaced and this warranty will no longer be valid.

What You Must Do To Obtain Warranty Service

A warranty claim may be made by calling 1-800-345-DELTA (3358) or by writing to:

In the United States and Mexico:

Delta Faucet Company
Product Service
55 E. 111th Street
Indianapolis, IN 46280
customerservice@deltafaucet.com

In Canada:

Masco Canada Limited, Plumbing Group
Technical Service Centre
350 South Edgeware Road
St. Thomas, Ontario, Canada N5P 4L1
customerservice@mascocanada.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims. This warranty applies only to Delta[®] Leak Detectors installed in the United States of America, Canada and Mexico.

Limitation on Duration of Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE STATUTORY PERIOD OR THE DURATION OF THIS WARRANTY, WHICHEVER IS SHORTER. Some states/provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Limitation of Special, Incidental or Consequential Damages. DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING WATER OR OTHER DAMAGE TO THE HOME IN WHICH THE LEAK DETECTOR IS INSTALLED, EVEN IF THE PRODUCT DOES FUNCTION PROPERLY), WHETHER ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. DELTA FAUCET COMPANY SHALL

NOT BE LIABLE FOR ANY DAMAGE TO THE LEAK DETECTOR RESULTING FROM REASONABLE WEAR AND TEAR, MISUSE, ABUSE, NEGLIGENCE OR IMPROPER OR INCORRECTLY PERFORMED INSTALLATION, MAINTENANCE OR REPAIR, INCLUDING FAILURE TO FOLLOW THE APPLICABLE MAINTENANCE AND INSTALLATION INSTRUCTIONS. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so the above limitations and exclusions may not apply to you. **Note to residents of the State of New Jersey: The foregoing Limited Warranty will not apply to you, except as otherwise permitted by New Jersey law.**

Additional Rights

This warranty gives you specific legal rights, and you may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding our warranty, please call, mail or email us as provided above or view our **Warranty FAQs** at **www.deltafaucet.com/leakdetection**.



Buy it for looks. Buy it for life.®

Please contact Moen first

For Installation Help, Missing or Replacement Parts (USA)

1-800-BUY-MOEN (1-800-289-6636)

Mon - Fri 8:00 AM to 7:00 PM, Eastern

Sat. 9:00 AM to 3:00 PM Eastern

WWW.MOEN.COM

(Canada)

1-800-465-6130

Mon - Fri 7:30 AM to 7:00 PM, Eastern

www.moen.ca

Por favor, contáctese primero con Moen

Para obtener ayuda de instalación, piezas faltantes o de recambio

011 52 (800) 718-4345

Lunes a viernes de 8:00 a 20:00 hs.

(Costa Este)

Sáb. 8:00 a 18:30 hs. (Costa Este)

WWW.MOEN.COM.MX

Veillez d'abord contacter Moen

En cas de problèmes avec l'installation, ou pour obtenir toute pièce manquante ou de rechange

1-800-465-6130

Du lundi au vendredi :

de 7 h 30 à 19 h, HE

WWW.MOEN.CA

HELPFUL TOOLS

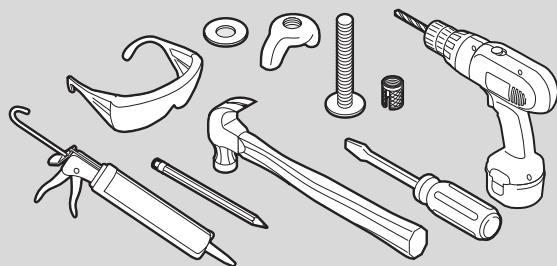
For safety and ease of product installation, Moen recommends the use of these helpful tools.

HERRAMIENTAS ÚTILES

Para la seguridad y facilidad de instalación del producto, Moen le recomienda usar estas útiles herramientas.

OUTILS UTILES

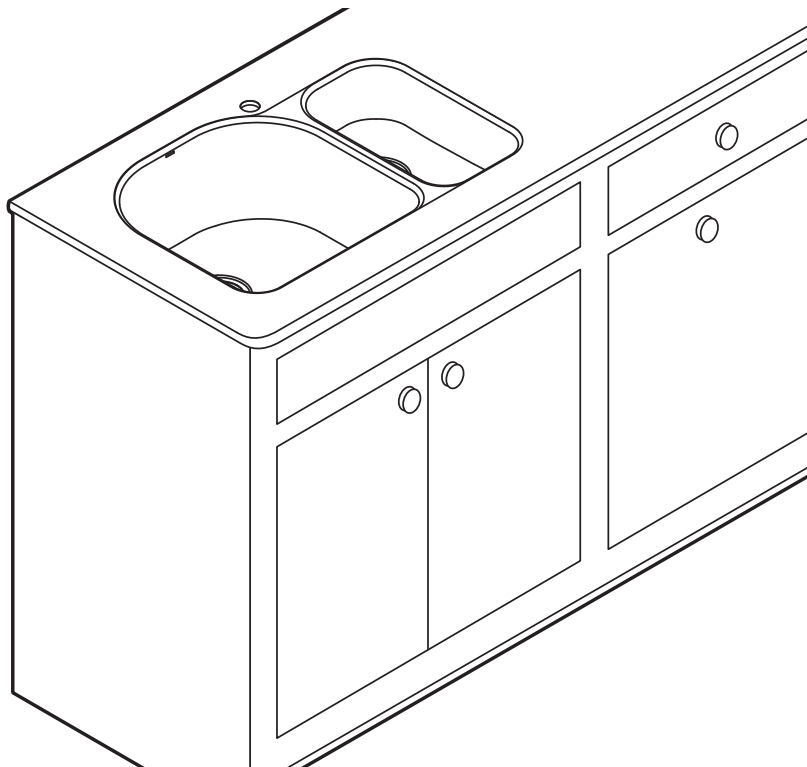
Pour la sécurité et la facilité d'installation du produit, Moen suggère l'utilisation de ces outils utiles.



Installation Guide

Guía de instalación

Guide d'installation

**STAINLESS STEEL UNDERMOUNT SINKS**

INCLUDES ALL MOEN UNDERMOUNT SINKS

FREGADEROS DE INSTALACIÓN INFERIOR EN ACERO INOXIDABLE

INCLUYE TODOS LOS FREGADEROS DE INSTALACIÓN INFERIOR DE MOEN


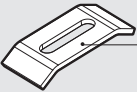


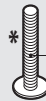
ÉVIERS DE CUISINE EN ACIER INOXYDABLE INSTALLÉS PAR EN DESSOUS

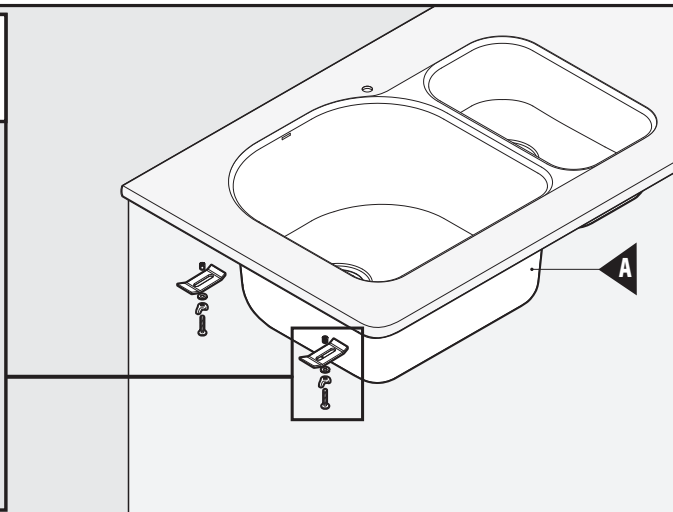
INCLUT TOUS LES ÉVIERS MOEN INSTALLÉS PAR EN DESSOUS

* Hardware not included and may vary by countertop material. Professional Series sinks include mounting hardware.

* No se incluyen los aditamentos de montaje, y éstos tal vez varíen según el material de la encimera. Los fregaderos de la Serie Profesional incluyen los aditamentos de montaje.

* Quincaillerie non incluse et peut varier selon le matériau du comptoir. Les évier de la série professionnelle incluent la quincaillerie de montage.

Mounting Hardware Ferretería de montaje Quincaillerie de montage	Single Bowl Tazón Simple Évier simple	Double Bowl Tazón Doble Évier double
*  B	x8	x10
 C	x8	x10
*  D	x8	x10
*  E	x8	x10
*  F	x8	x10

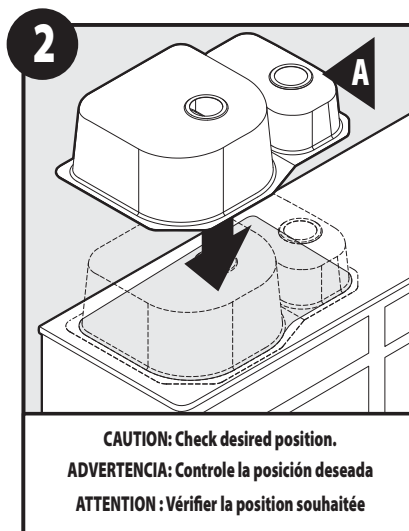




A fabricator can use the enclosed cardboard pattern to create the countertop hole.

El instalador puede utilizar la plantilla de cartón para crear el orificio en la superficie del mostrador.

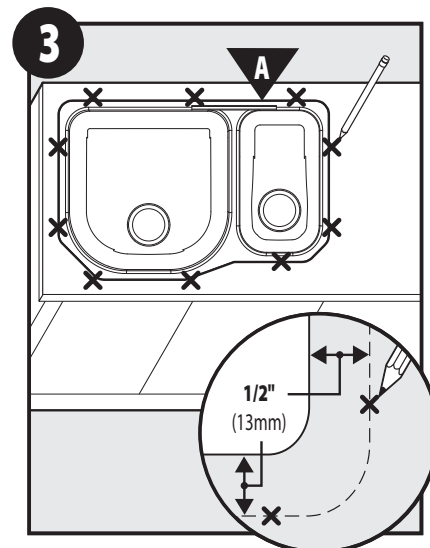
Un menuisier assembleur peut utiliser le gabarit en carton pour dessiner le trou du dessus du comptoir.



Turn counter upside down and align the bowl to countertop cutout.

Dé vuelta el mostrador hacia abajo y alinee el tazón de abertura del mostrador.

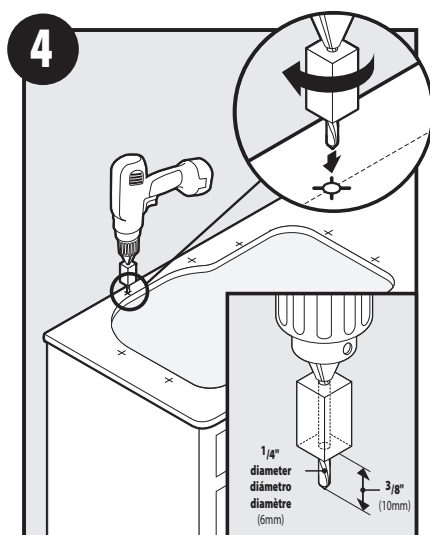
Retournez le compteur vers le bas et alignez le bol d'ouverture du comptoir.



Determine location for mounting brackets; space evenly around the underside. Mounting holes should be 1/2" out from the edge of the sink ledge.

Determine la ubicación de los soportes de montaje, el espacio de manera uniforme alrededor de la parte inferior. Los agujeros de montaje debe ser de 1/2" hacia fuera del borde de la cornisa fregadero.

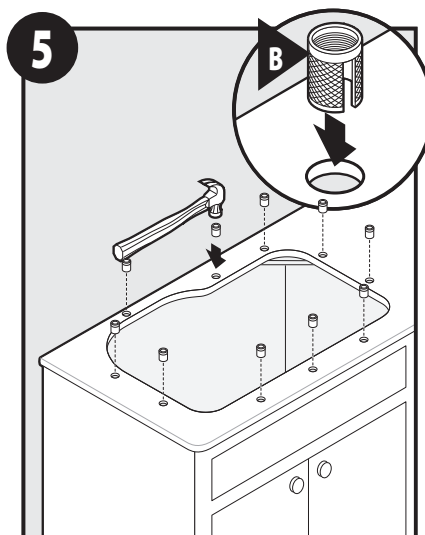
Déterminer l'emplacement des supports de montage, l'espace uniformément autour de la partie inférieure. Des trous de montage doit être 1/2 po à partir du bord du rebord de l'évier.



Remove sink from counter and drill mounting holes 1/4" round by 3/8" deep.

Extraiga el dissipador de mostrador y perforar los orificios de montaje 1/4" ronda por 3/8" de profundidad.

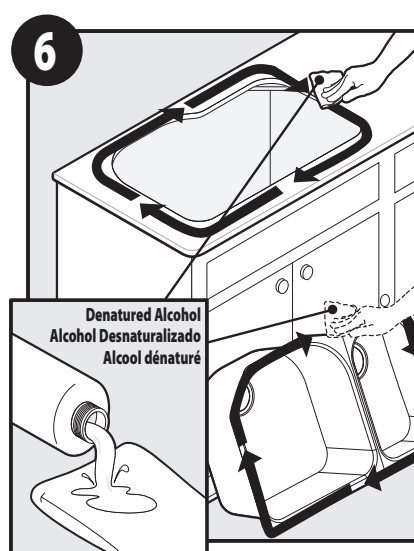
Retirez le dissipateur de comptoir et percer des trous de fixation 1/4 po rond de 3/8 po de profondeur.



Installation hardware not included. Consult your professional installer. Hardware can vary.

Hardware de instalación no incluidos. Consulte a su instalador profesional. Hardware puede variar.

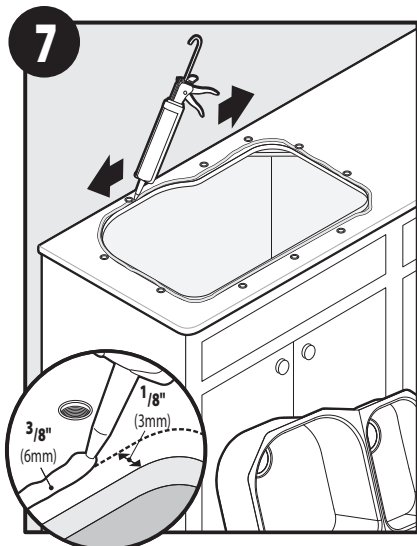
Matériel d'installation en sus. Consultez votre installateur professionnel. Le matériel peut varier.



Clean underside of counter and top rim of sink thoroughly.

Limpie la parte inferior del borde superior de la barra y fregadero.

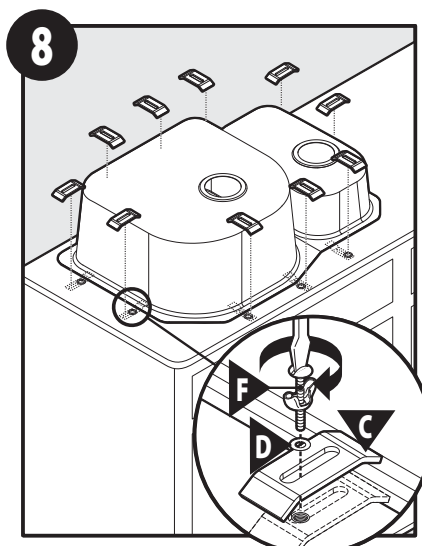
Nettoyer le dessous de la jante et le dessus de comptoir évier à fond.



Apply a bead of caulk 1/8"-1/4" away from edge of counter cutout and then align sink on counter. Caulk not included. Consult your professional installer. Sealants may vary.

Aplique una tira de masilla de 1/8"-1/4" de distancia desde el borde de recorte mostrador y luego alinee el fregadero en el mostrador. Sellador no incluidos. Consulte a su instalador profesional. Sellantes puede variar.

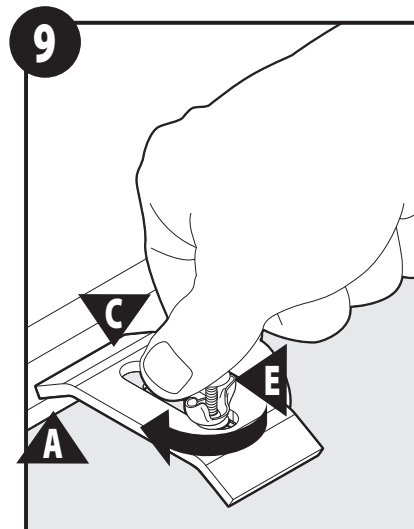
Applique un cordon de mastic 1/8 po -1/4 po loin du bord de la découpe dans le comptoir, puis aligner l'évier sur le comptoir. Mastic pas inclus. Consultez votre installateur professionnel. Produits d'étanchéité peut varier.



Attach mounting hardware (not included). Consult your professional installer. Hardware can vary. Position brackets so that clip edge overlaps sink ledge and thread screw into pre-drilled holes through clip.

Colocación de los accesorios de montaje (no incluido). Consulte a su instalador profesional. Hardware puede variar. Coloque los soportes para que se superpone clip de borde saliente y hundirse rosca en los agujeros pre-perforados a través clip.

Fixation des supports de montage (non inclus). Consultez votre installateur professionnel. Le matériel peut varier. Entre la position de bord de sorte que les chevauchements clip du dissipateur de rebord et pas de vis dans des trous pré-perçés par clip.



Tighten brackets evenly. Do not overtighten.

Apriete los soportes de manera uniforme. No apriete demasiado.

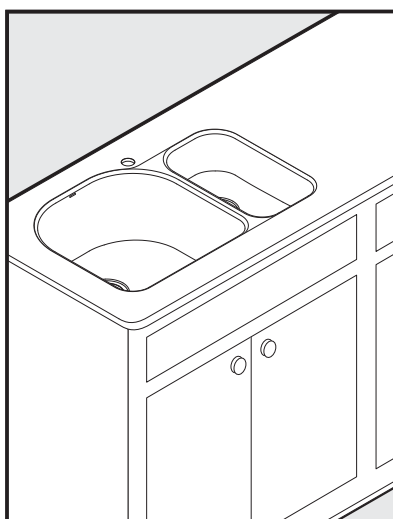
Serrer uniformément entre parenthèses. Ne serrez pas trop.



Complete counter installation and wipe away any excess caulk from sink rim.

Completar la instalación mostrador y limpie cualquier exceso de masilla de borde del fregadero.

Terminer l'installation de compteur et essuyer tout excès de mastic rebord de l'évier.



Connect faucet and drain fittings.

Conecte el grifo y desagüe accesorios.

Connectez robinet et le drain raccords.

ENGLISH

Stainless Steel Sink Cleaning Recommendations: If maintained properly, your Moen® stainless steel kitchen sink will not chip, peel, rust or discolor. The following chart illustrates our recommendations for maintaining the original appearance of your new Moen® stainless steel kitchen sink.

Situation	Cleaning Recommendation
Routine Cleaning:	Soap, ammonia, detergent and water. Rub with a sponge or cloth followed by a thorough rinsing, then dry.
Smears and fingerprints:	Use window or glass cleaner. Rub with a cloth.
Persistent spots and stains:	Stainless steel cleaner. Apply with a sponge or cloth. Rub back and forth in direction of grain lines. Rinse with clean water and dry. NOTE: Not for mirror finishes.
Hard water spots and scale:	Vinegar (full strength). Swab and soak for 5-10 minutes. Rub, then rinse with a neutralizer such as baking soda solution. Rinse with clean water and dry.
“Rusty” discoloration and atmospheric stains:	Use any of the cleaning agents listed above. Swab with a cloth and soak for 5 minutes. If necessary, rub with a nylon pad. Rinse with clean water and dry.
What not to use:	Do not use steel wool pads. This can cause rust or pitting of the sink surface.

In addition to the above cleaning recommendations, we suggest you try to avoid leaving rubber mats, wet sponges, cloths and cleaning pads to sit in the sink or liquid soap to dry on the surface. Food particles and deposits can cause discoloration. Many detergents contain chemicals that can dull the finish, cause pitting or staining. Avoid using bleach — even diluted this can cause corrosion if left for extended periods of time. If bleach comes in contact with your sink, rinse thoroughly. Hard water or water with high iron content may cause a brown, rust-like stain. Water with a high concentration of minerals or over-softened water may cause a white film. If either condition exists, dry the sink with a soft towel after each use.

ESPAÑOL

Recomendaciones para la limpieza del fregadero de acero inoxidable: Si se le proporciona el mantenimiento adecuado, su fregadero Moen® de acero inoxidable no se astilla, ni se pela ni tampoco se oxida o decolora. El siguiente cuadro ilustra nuestras recomendaciones para mantener la apariencia original de su nuevo fregadero Moen® de acero inoxidable.

Situación	Recomendación de limpieza
Limpieza habitual:	Jabón, amoníaco, detergente y agua. Frote con una esponja o paño, enjuague cuidadosamente y seque.
Manchas y huellas de dedos:	Utilice limpiador de ventanas o vidrios. Frote con un paño.
Manchas y marcas persistentes:	Limpiador para acero inoxidable. Aplique con una esponja o paño. Frote hacia atrás y hacia adelante en la dirección de las líneas de la textura. Enjuague con agua limpia y seque. NOTA: No es adecuado para acabados brillantes.
Manchas de agua dura e incrustaciones:	Vinagre (sin diluir). Aplique con un paño y remoje durante 5-10 minutos. Frote, y luego enjuague con un neutralizador tal como una solución de polvo de hornear. Enjuague con agua limpia y seque.
Decoloración “herrumbrosa” y manchas atmosféricas:	Utilice cualquiera de los agentes para limpieza mencionados anteriormente. Aplique con un paño y remoje durante 5 minutos. Si fuese necesario, frote con una almohadilla de nailon. Enjuague con agua limpia y seque.
Lo que no debe utilizar:	No utilice almohadillas de lana de acero. Esto puede ocasionar óxido o picar la superficie del fregadero.

Además de las recomendaciones de limpieza anteriores, sugerimos que trate de evitar dejar en el fregadero tapetes de caucho, esponjas mojadas, paños y almohadillas para limpieza o jabón líquido para que se sequen en la superficie. Las partículas y los depósitos de comida pueden ocasionar decoloración. Muchos detergentes contienen químicos que pueden opacar el acabado, ocasionar picaduras o manchas. Evite usar lejía – incluso diluida pues puede ocasionar corrosión si se deja por períodos extendidos de tiempo. Si la lejía entra en contacto con el fregadero, enjuague cuidadosamente. El agua dura o el agua con alto contenido de hierro puede ocasionar una mancha marrón similar al óxido. El agua con alta concentración de minerales o con demasiado suavizador de agua puede dejar una película blanca. Si una de estas dos condiciones está presente, seque el fregadero después de cada uso.

FRANÇAIS

Recommandations pour l'entretien de l'évier en acier inoxydable: S'il est bien entretenu, votre évier de cuisine en acier inoxydable Moen® risque pas de s'écailler, peler, rouiller ni se décolorer. Le tableau suivant indique nos recommandations pour conserver l'apparence originale de votre nouvel évier de cuisine en acier inoxydable Moen®.

Situation	Recommandation de nettoyage
Entretien périodique :	Savon, ammoniac, détergent et eau. Frotter avec une éponge ou un chiffon, suivi d'un bon rinçage, puis sécher.
Bavures et empreintes :	Utiliser un nettoyeur pour verre ou fenêtres. Frotter avec un chiffon.
Taches tenaces :	Nettoyant pour acier inoxydable. Appliquer avec une éponge ou un chiffon. Frotter librement dans le sens du grain. Bien rincer à l'eau claire et sécher. NOTE : Ne s'applique pas aux finis miroir.
Taches d'eau dure et de calamine :	Vinaigre (concentration maximale) Tamponner et laisser tremper de 5 à 10 minutes. Frotter, puis rincer avec un neutralisant comme une solution de bicarbonate de soude. Bien rincer à l'eau claire et sécher.
Décoloration par la rouille et taches atmosphériques :	Utiliser n'importe lequel des nettoyeurs indiqués ci-dessus. Tamponner avec un chiffon et laisser tremper pendant 5 minutes. Au besoin, frotter avec un tampon en nylon. Bien rincer à l'eau claire et sécher.
A ne pas utiliser :	Ne pas utiliser des tampons en laine d'acier. Ceci risque de rouiller et de piquer la surface de l'évier.

En plus des recommandations de nettoyage ci-dessus, nous suggérons d'éviter de laisser de tapis de fond d'évier en caoutchouc, des éponges mouillées, des chiffons et des tampons de nettoyage reposer dans l'évier ou du savon liquide sécher sur la surface. Des particules de nourriture et des dépôts peuvent causer de la décoloration. Plusieurs détergents contiennent des produits chimiques qui peuvent rendre le fini mat ou causer les taches ou des piqûres. Éviter d'utiliser de l'eau de javel – même diluée, ce produit peut causer de la corrosion s'il est laissé sur la surface pendant une longue période de temps. Si l'évier est éclaboussé d'eau de javel, le rincer à fond. Une eau dure ou à haute teneur en fer peut causer des taches brunes ressemblant à de la rouille. Une eau à haute teneur en minéraux ou trop douce peut laisser une pellicule blanche. Si ces problèmes surviennent, sécher l'évier avec un chiffon doux après chaque usage.

Moen Lifetime Limited Warranty

Moen® products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser for as long as the original consumer purchaser owns their home (the “Warranty Period” for homeowners), that this sink will be free from defects in materials and manufacturing workmanship.

This warranty is extensive in that it covers replacement of all defective parts. However, damage due to installation error, product abuse, product misuse, or use of cleaners not in compliance with included stainless steel sink cleaning recommendations instructions, whether performed by a contractor, service company, or yourself, are excluded from this warranty. Moen will not be responsible for labor charges and/or damage incurred in installation, repair or replacement, not for any indirect, incidental or consequential damages, losses, injury or costs of any nature relating to this faucet. Except as provided by law, this warranty is in lieu of and excludes all other warranties, conditions and guarantees, whether expressed or implied, statutory or otherwise, including without restriction those of merchantability or of fitness for use.

Some states, provinces and nations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state, province to province, nation to nation. Moen will advise you of the procedure to follow in making warranty claims. Simply write to Moen Incorporated using the address above. Explain the defect and include proof of purchase and your name, address, area code and telephone number.

Moen Incorporated
25300 Al Moen Drive
North Olmsted, Ohio 44070-8022
U.S.A.

Moen le otorga Garantía limitada de por vida

Se fabrican los productos de Moen con los estándares más altos de calidad y trabajo. Moen le garantiza al comprador consumidor original durante el tiempo que dicho comprador sea dueño de la casa (el “Periodo de Garantía” en el caso del propietario de la casa) que este lavabo no tendrá defectos de materiales y trabajo.

La cobertura de la presente garantía cubre la sustitución de todas las partes defectuosas. No obstante, se excluyen en esta garantía los daños causados por errores de instalación, abusos del producto o el uso de limpiadores que no cumplen con las instrucciones y recomendaciones de limpieza del lavabo de acero inoxidable, el que la ejecute un contratista, empresa de servicios o usted mismo. Moen no será responsable de los costos de la mano de obra y/o los daños incurridos durante la instalación, reparación o sustitución ni para cualquier daño, pérdida, lesión o costo de cualquier índole relacionado con este grifo que resulte por causas indirectas, fortuitas o resultantes. A excepción de lo dispuesto por ley, esta garantía reemplaza y excluye cualquier otra garantía y condición, sea explícita o implícita, establecida por ley o por otro medio, lo que incluye pero no se limita a la comerciabilidad o la idoneidad del producto para un objetivo específico.

Algunos estados, provincias o países no permiten la exclusión o limitación de los daños fortuitos o resultantes, así que tal vez las citadas limitaciones o exclusiones no se apliquen en el caso de usted. Esta garantía le otorga derechos legales específicos, y usted también podrá tener otros derechos que varíen de un estado a otro, de una provincia a otra, de un país a otro. Moen le hará saber el procedimiento a observarse en el caso de una reclamación por la garantía. Nada más envíe una carta al citado domicilio de Moen Incorporated con una explicación del defecto e incluya la prueba de compra y su nombre, domicilio y número de teléfono y prefijo local.

Para los centros de 19 cm a 38 cm, no haga vueltas con la manguera (N). En caso de hacerlo, eso quizá obstruya la manguera y restringa el flujo.

Moen de Mexico, S.A. de C.V.
Carretera Saltillo-Monterrey KM 14.7
Ramos Arizpe, Coahuila,
Mexico 25900

Garantie à vie limitée de Moen

Les produits Moen ont été fabriqués selon les normes de qualité et de main-d'œuvre les plus élevées. Moen garantit à l'acheteur initial de l'évier, aussi longtemps qu'il est propriétaire de la maison où a été installé l'évier (la « Période de garantie pour propriétaires », qu'il ne présentera aucun défaut de matériaux ni de fabrication.

Cette garantie est vaste, car elle couvre le remplacement de toutes pièces défectueuses. Cependant, les dommages causés par une erreur d'installation, un abus du produit, une mauvaise utilisation du produit ou l'utilisation de produits nettoyeurs non conformes aux directives de recommandation de nettoyage d'évier en acier inoxydable, qu'ils soient utilisés par un entrepreneur, une entreprise de service ou le consommateur, sont exclus de cette garantie. Moen n'est pas responsable des frais de main-d'œuvre ni de tous dommages survenus durant l'installation, la réparation ou le remplacement, ni des dommages indirects ou consécutifs, des pertes, des blessures ou des coûts connexes à ce robinet. Sauf lorsque prévu par la loi, cette garantie remplace et exclut toutes les autres garanties et conditions, qu'elles soient exprimées ou sous-entendues, obligatoires ou autres, y compris sans restriction, celle de commercialisation ou d'aptitude d'utilisation.

Certains pays, États et certaines provinces, ne permettent aucune exclusion, ni limitation suite aux dommages indirects ou consécutifs. Cette garantie accorde des droits juridiques et il est possible que d'autres droits soient applicables selon l'État, la province ou le pays. Moen avisera le consommateur de la procédure à suivre pour soumettre une réclamation. Il suffit d'écrire à Moen incorporée à l'adresse indiquée ci-dessus. Expliquer le défaut et inclure une preuve d'achat, inscrire son nom, adresse ainsi que l'indicatif régional et numéro de téléphone.

Moen Inc.
2816 Bristol Circle
Oakville, Ontario L6H 5S7
Canada

INS10182A - 10/15

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Moen Lifetime Limited Sink Warranty

Moen® products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser for as long as the original consumer purchaser owns their home (the Warranty Period for homeowners), that this sink will be free from defects in materials and manufacturing workmanship.

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As the #1 faucet brand in North America, Moen offers a diverse selection of thoughtfully designed kitchen and bath faucets, showerheads, accessories, bath safety products, garbage disposals and kitchen sinks for residential and commercial applications each delivering the best possible combination of meaningful innovation, useful features, and lasting value.

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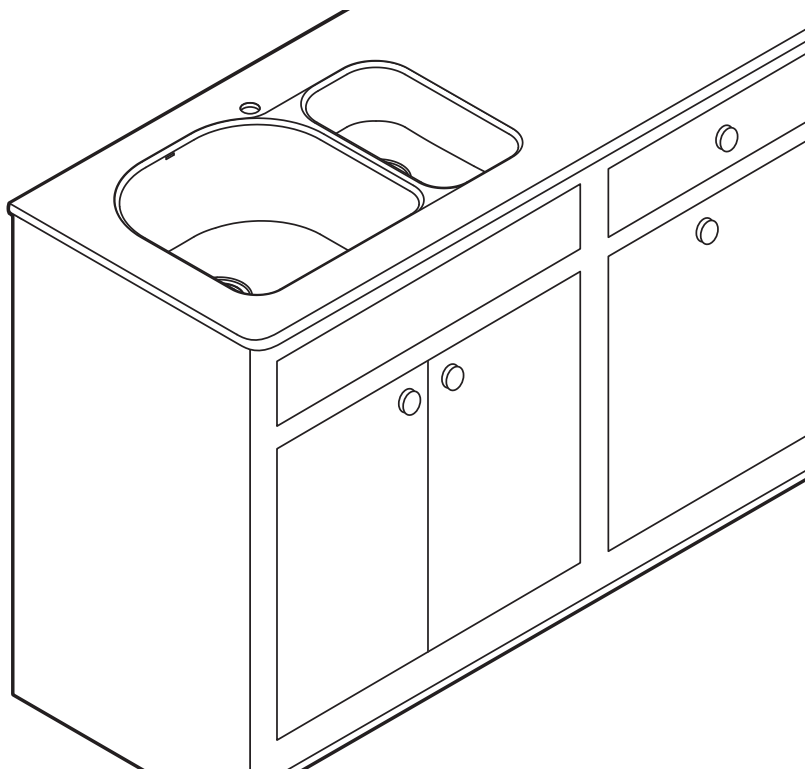


INS10182A

Installation Guide

Guía de instalación

Guide d'installation



STAINLESS STEEL UNDERMOUNT SINKS

INCLUDES ALL MOEN UNDERMOUNT SINKS

FREGADEROS DE INSTALACIÓN INFERIOR EN ACERO INOXIDABLE

INCLUYE TODOS LOS FREGADEROS DE INSTALACIÓN INFERIOR DE MOEN

ÉVIER DE CUISINE EN ACIER INOXYDABLE INSTALLÉS PAR EN DESSOUS

INCLUT TOUS LES ÉVIER MOEN INSTALLÉS PAR EN DESSOUS

Please contact Moen first

For Installation Help, Missing or Replacement Parts (USA)

1-800-BUY-MOEN (1-800-289-6636)

Mon - Fri 8:00 AM to 7:00 PM, Eastern

Sat. 9:00 AM to 3:00 PM Eastern

WWW.MOEN.COM

(Canada)

1-800-465-6130

Mon - Fri 7:30 AM to 7:00 PM, Eastern

www.moen.ca

Por favor, contáctese primero con Moen

Para obtener ayuda de instalación, piezas faltantes o de recambio

011 52 (800) 718-4345

Lunes a viernes de 8:00 a 20:00 hs.

(Costa Este)

Sáb. 8:00 a 18:30 hs. (Costa Este)

WWW.MOEN.COM.MX

Veillez d'abord contacter Moen

En cas de problèmes avec l'installation, ou pour obtenir toute pièce manquante ou de rechange

1-800-465-6130

Du lundi au vendredi :

de 7 h 30 à 19 h, HE

WWW.MOEN.CA

HELPFUL TOOLS

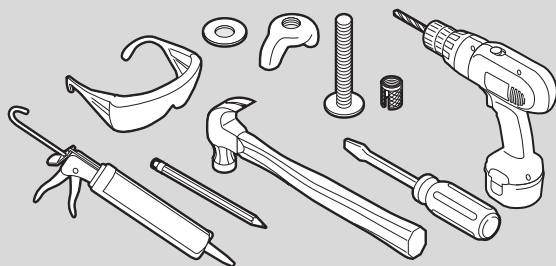
For safety and ease of product installation, Moen recommends the use of these helpful tools.

HERRAMIENTAS ÚTILES

Para la seguridad y facilidad de instalación del producto, Moen le recomienda usar estas útiles herramientas.

OUTILS UTILES






Pour la sécurité et la facilité d'installation du produit, Moen suggère l'utilisation de ces outils utiles.

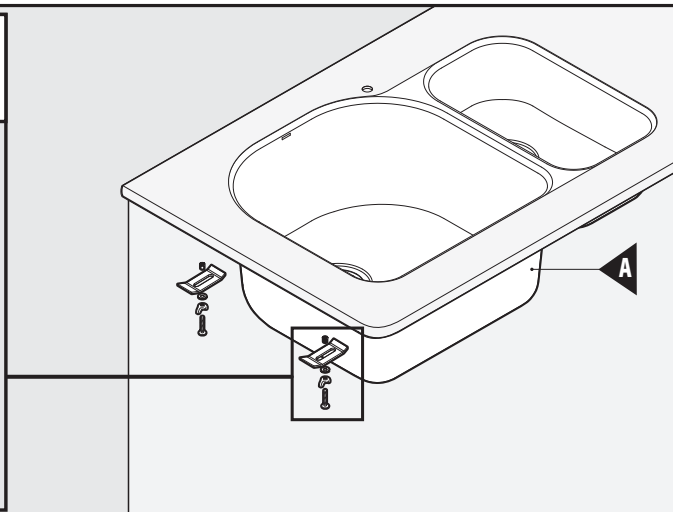


* Hardware not included and may vary by countertop material. Professional Series sinks include mounting hardware.

* No se incluyen los aditamentos de montaje, y éstos tal vez varíen según el material de la encimera. Los fregaderos de la Serie Profesional incluyen los aditamentos de montaje.

* Quincaillerie non incluse et peut varier selon le matériau du comptoir. Les éviers de la série professionnelle incluent la quincaillerie de montage.

Mounting Hardware Ferretería de montaje Quincaillerie de montage	Single Bowl Tazón Simple Évier simple	Double Bowl Tazón Doble Évier double
*  B	x8	x10
 C	x8	x10
*  D	x8	x10
*  E	x8	x10
*  F	x8	x10

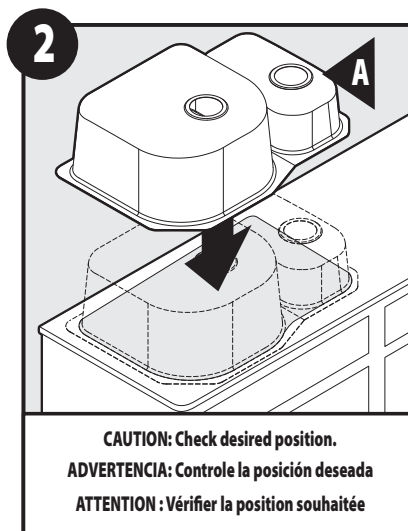




A fabricator can use the enclosed cardboard pattern to create the countertop hole.

El instalador puede utilizar la plantilla de cartón para crear el orificio en la superficie del mostrador.

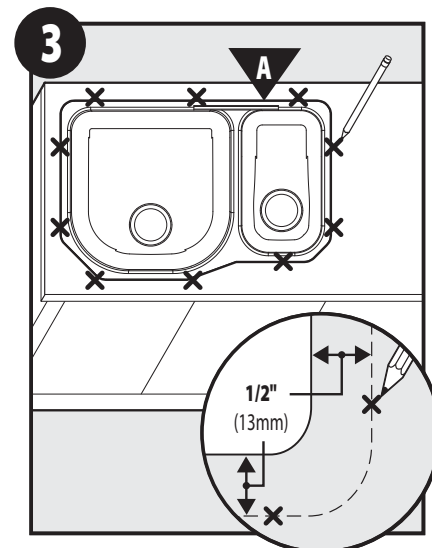
Un menuisier assembleur peut utiliser le gabarit en carton pour dessiner le trou du dessus du comptoir.



Turn counter upside down and align the bowl to countertop cutout.

Dé vuelta el mostrador hacia abajo y alinee el tazón de abertura del mostrador.

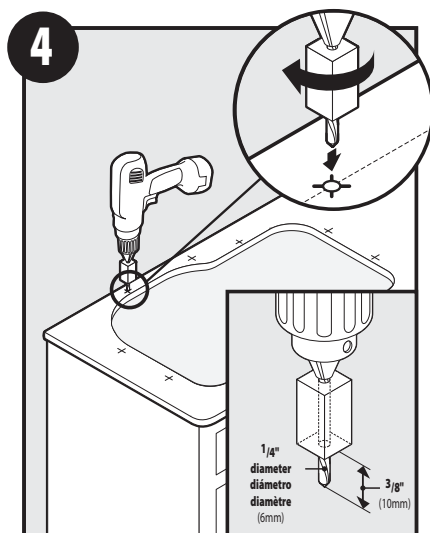
Retournez le compteur vers le bas et alignez le bol d'ouverture du comptoir.



Determine location for mounting brackets; space evenly around the underside. Mounting holes should be 1/2" out from the edge of the sink ledge.

Determine la ubicación de los soportes de montaje, el espacio de manera uniforme alrededor de la parte inferior. Los agujeros de montaje debe ser de 1/2" hacia fuera del borde de la cornisa fregadero.

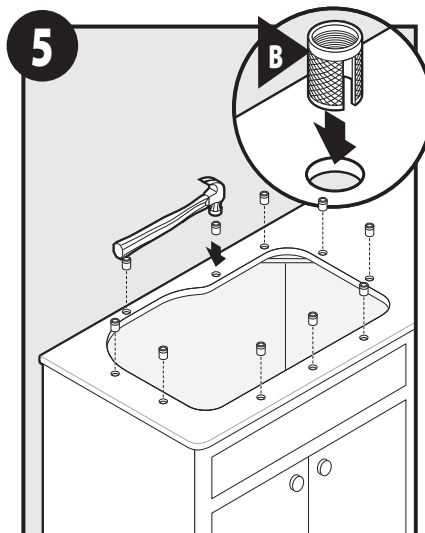
Déterminer l'emplacement des supports de montage, l'espace uniformément autour de la partie inférieure. Des trous de montage doit être 1/2 po à partir du bord du rebord de l'évier.



Remove sink from counter and drill mounting holes 1/4" round by 3/8" deep.

Extraiga el dissipador de mostrador y perforar los orificios de montaje 1/4" ronda por 3/8" de profundidad.

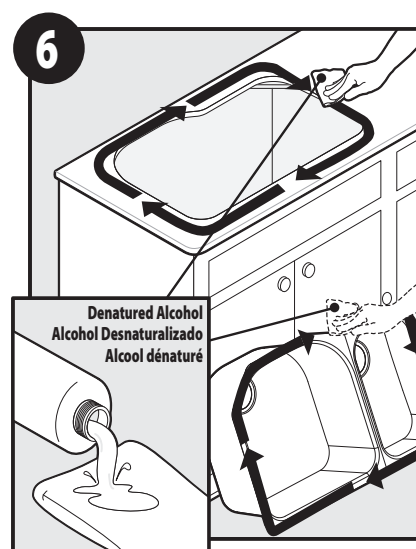
Retirez le dissipateur de comptoir et percer des trous de fixation 1/4 po rond de 3/8 po de profondeur.



Installation hardware not included. Consult your professional installer. Hardware can vary.

Hardware de instalación no incluidos. Consulte a su instalador profesional. Hardware puede variar.

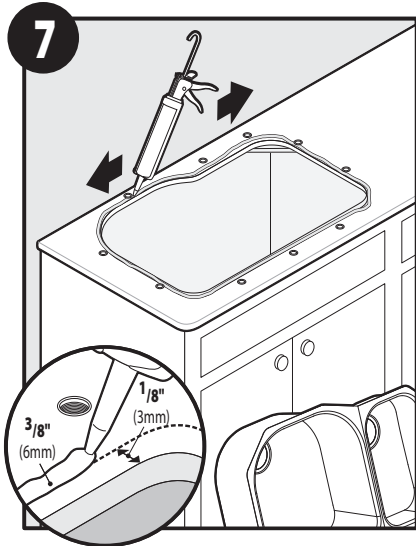
Matériel d'installation en sus. Consultez votre installateur professionnel. Le matériel peut varier.



Clean underside of counter and top rim of sink thoroughly.

Limpie la parte inferior del borde superior de la barra y fregadero.

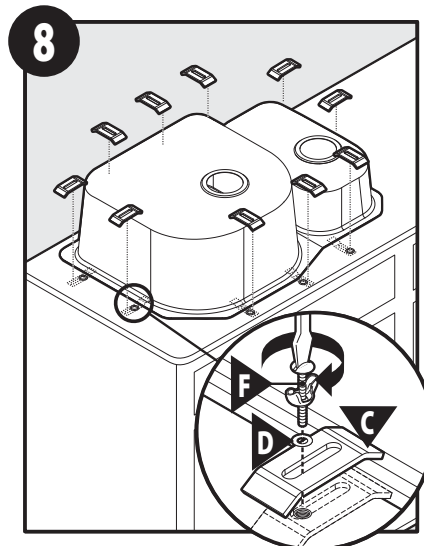
Nettoyer le dessous de la jante et le dessus de comptoir évier à fond.



Apply a bead of caulk 1/8"-1/4" away from edge of counter cutout and then align sink on counter. Caulk not included. Consult your professional installer. Sealants may vary.

Aplique una tira de masilla de 1/8"-1/4" de distancia desde el borde de recorte mostrador y luego alinee el fregadero en el mostrador. Sellador no incluidos. Consulte a su instalador profesional. Sellantes puede variar.

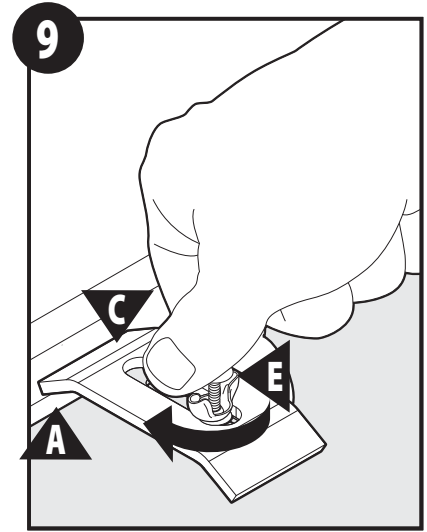
Applique un cordon de mastic 1/8 po -1/4 po loin du bord de la découpe dans le comptoir, puis aligner l'évier sur le comptoir. Mastic pas inclus. Consultez votre installateur professionnel. Produits d'étanchéité peut varier.



Attach mounting hardware (not included). Consult your professional installer. Hardware can vary. Position brackets so that clip edge overlaps sink ledge and thread screw into pre-drilled holes through clip.

Colocación de los accesorios de montaje (no incluido). Consulte a su instalador profesional. Hardware puede variar. Coloque los soportes para que se superpone clip de borde saliente y hundirse rosca en los agujeros pre-perforados a través clip.

Fixation des supports de montage (non inclus). Consultez votre installateur professionnel. Le matériel peut varier. Entre la position de bord de sorte que les chevauchements clip du dissipateur de rebord et pas de vis dans des trous pré-perçés par clip.



Tighten brackets evenly. Do not overtighten.

Apriete los soportes de manera uniforme. No apriete demasiado.

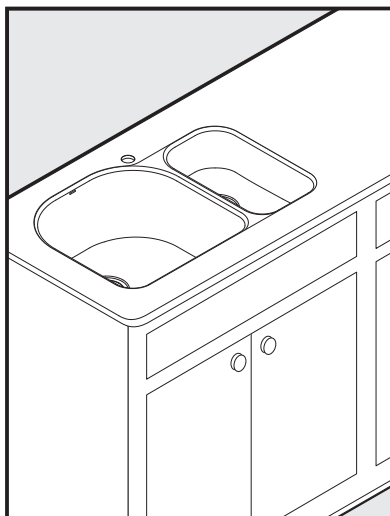
Serrer uniformément entre parenthèses. Ne serrez pas trop.



Complete counter installation and wipe away any excess caulk from sink rim.

Completar la instalación mostrador y limpie cualquier exceso de masilla de borde del fregadero.

Terminer l'installation de compteur et essuyer tout excès de mastic rebord de l'évier.



Connect faucet and drain fittings.

Conecte el grifo y desagüe accesorios.

Connectez robinet et le drain raccords.

MOEN - public kitchen sinks

ENGLISH

Stainless Steel Sink Cleaning Recommendations: If maintained properly, your Moen® stainless steel kitchen sink will not chip, peel, rust or discolor. The following chart illustrates our recommendations for maintaining the original appearance of your new Moen® stainless steel kitchen sink.

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"Rusty" discoloration and atmospheric stains:	Use any of the cleaning agents listed above. Swab with a cloth and soak for 5 minutes. If necessary, rub with a nylon pad. Rinse with clean water and dry.
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In addition to the above cleaning recommendations, we suggest you try to avoid leaving rubber mats, wet sponges, cloths and cleaning pads to sit in the sink or liquid soap to dry on the surface. Food particles and deposits can cause discoloration. Many detergents contain chemicals that can dull the finish, cause pitting or staining. Avoid using bleach — even diluted this can cause corrosion if left for extended periods of time. If bleach comes in contact with your sink, rinse thoroughly. Hard water or water with high iron content may cause a brown, rust-like stain. Water with a high concentration of minerals or over-softened water may cause a white film. If either condition exists, dry the sink with a soft towel after each use.

ESPAÑOL

Recomendaciones para la limpieza del fregadero de acero inoxidable: Si se le proporciona el mantenimiento adecuado, su fregadero Moen® de acero inoxidable no se astilla, ni se pela ni tampoco se oxida o decolora. El siguiente cuadro ilustra nuestras recomendaciones para mantener la apariencia original de su nuevo fregadero Moen® de acero inoxidable.

Situación	Recomendación de limpieza
Limpieza habitual:	Jabón, amoníaco, detergente y agua. Frote con una esponja o paño, enjuague cuidadosamente y seque.
Manchas y huellas de dedos:	Utilice limpiador de ventanas o vidrios. Frote con un paño.
Manchas y marcas persistentes:	Limpiador para acero inoxidable. Aplique con una esponja o paño. Frote hacia atrás y hacia adelante en la dirección de las líneas de la textura. Enjuague con agua limpia y seque. NOTA: No es adecuado para acabados brillantes.
Manchas de agua dura e incrustaciones:	Vinagre (sin diluir). Aplique con un paño y remoje durante 5-10 minutos. Frote, y luego enjuague con un neutralizador tal como una solución de polvo de hornear. Enjuague con agua limpia y seque.
Decoloración "herrumbrosa" y manchas atmosféricas:	Utilice cualquiera de los agentes para limpieza mencionados anteriormente. Aplique con un paño y remoje durante 5 minutos. Si fuese necesario, frote con una almohadilla de nailon. Enjuague con agua limpia y seque.
Lo que no debe utilizar:	No utilice almohadillas de lana de acero. Esto puede ocasionar óxido o picar la superficie del fregadero.

Además de las recomendaciones de limpieza anteriores, sugerimos que trate de evitar dejar en el fregadero tapetes de caucho, esponjas mojadas, paños y almohadillas para limpieza o jabón líquido para que se sequen en la superficie. Las partículas y los depósitos de comida pueden ocasionar decoloración. Muchos detergentes contienen químicos que pueden opacar el acabado, ocasionar picaduras o manchas. Evite usar lejía — incluso diluida pues puede ocasionar corrosión si se deja por períodos extendidos de tiempo. Si la lejía entra en contacto con el fregadero, enjuague cuidadosamente. El agua dura o el agua con alto contenido de hierro puede ocasionar una mancha marrón similar al óxido. El agua con alta concentración de minerales o con demasiado suavizador de agua puede dejar una película blanca. Si una de estas dos condiciones está presente, seque el fregadero después de cada uso.

FRANÇAIS

Recommandations pour l'entretien de l'évier en acier inoxydable: S'il est bien entretenu, votre évier de cuisine en acier inoxydable Moen® risque pas de s'écailler, peler, rouiller ni se décolorer. Le tableau suivant indique nos recommandations pour conserver l'apparence originale de votre nouvel évier de cuisine en acier inoxydable Moen®.

Situation	Recommandation de nettoyage
Entretien périodique :	Savon, ammoniac, détergent et eau. Frotter avec une éponge ou un chiffon, suivi d'un bon rinçage, puis sécher.
Bavures et empreintes :	Utiliser un nettoyeur pour verre ou fenêtres. Frotter avec un chiffon.
Taches tenaces :	Nettoyant pour acier inoxydable. Appliquer avec une éponge ou un chiffon. Frotter librement dans le sens du grain. Bien rincer à l'eau claire et sécher. NOTE : Ne s'applique pas aux finis miroir.
Taches d'eau dure et de calamine :	Vinaigre (concentration maximale) Tamponner et laisser tremper de 5 à 10 minutes. Frotter, puis rincer avec un neutralisant comme une solution de bicarbonate de soude. Bien rincer à l'eau claire et sécher.
Décoloration par la rouille et taches atmosphériques :	Utiliser n'importe lequel des nettoyeurs indiqués ci-dessus. Tamponner avec un chiffon et laisser tremper pendant 5 minutes. Au besoin, frotter avec un tampon en nylon. Bien rincer à l'eau claire et sécher.
A ne pas utiliser :	Ne pas utiliser des tampons en laine d'acier. Ceci risque de rouiller et de piquer la surface de l'évier.

En plus des recommandations de nettoyage ci-dessus, nous suggérons d'éviter de laisser de tapis de fond d'évier en caoutchouc, des éponges mouillées, des chiffons et des tampons de nettoyage reposer dans l'évier ou du savon liquide sécher sur la surface. Des particules de nourriture et des dépôts peuvent causer de la décoloration. Plusieurs détergents contiennent des produits chimiques qui peuvent rendre le fini mat ou causer les taches ou des piqûres. Éviter d'utiliser de l'eau de javel — même diluée, ce produit peut causer de la corrosion s'il est laissé sur la surface pendant une longue période de temps. Si l'évier est éclaboussé d'eau de javel, le rincer à fond. Une eau dure ou à haute teneur en fer peut causer des taches brunes ressemblant à de la rouille. Une eau à haute teneur en minéraux ou trop douce peut laisser une pellicule blanche. Si ces problèmes surviennent, sécher l'évier avec un chiffon doux après chaque usage.

Moen Lifetime Limited Warranty

Moen® products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser for as long as the original consumer purchaser owns their home (the "Warranty Period" for homeowners), that this sink will be free from defects in materials and manufacturing workmanship.

This warranty is extensive in that it covers replacement of all defective parts. However, damage due to installation error, product abuse, product misuse, or use of cleaners not in compliance with included stainless steel sink cleaning recommendations instructions, whether performed by a contractor, service company, or yourself, are excluded from this warranty. Moen will not be responsible for labor charges and/or damage incurred in installation, repair or replacement, not for any indirect, incidental or consequential damages, losses, injury or costs of any nature relating to this faucet. Except as provided by law, this warranty is in lieu of and excludes all other warranties, conditions and guarantees, whether expressed or implied, statutory or otherwise, including without restriction those of merchantability or of fitness for use.

Some states, provinces and nations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state, province to province, nation to nation. Moen will advise you of the procedure to follow in making warranty claims. Simply write to Moen Incorporated using the address above. Explain the defect and include proof of purchase and your name, address, area code and telephone number.

Moen Incorporated
25300 Al Moen Drive
North Olmsted, Ohio 44070-8022
U.S.A.

Moen le otorga Garantía limitada de por vida

Se fabrican los productos de Moen con los estándares más altos de calidad y trabajo. Moen le garantiza al comprador consumidor original durante el tiempo que dicho comprador sea dueño de la casa (el "Período de Garantía" en el caso del propietario de la casa) que este lavabo no tendrá defectos de materiales y trabajo.

La cobertura de la presente garantía cubre la sustitución de todas las partes defectuosas. No obstante, se excluyen en esta garantía los daños causados por errores de instalación, abusos del producto o el uso de limpiadores que no cumplen con las instrucciones y recomendaciones de limpieza del lavabo de acero inoxidable, el que la ejecute un contratista, empresa de servicios o usted mismo. Moen no será responsable de los costos de la mano de obra y/o los daños incurridos durante la instalación, reparación o sustitución ni para cualquier daño, pérdida, lesión o costo de cualquier índole relacionado con este grifo que resulte por causas indirectas, fortuitas o resultantes. A excepción de lo dispuesto por ley, esta garantía reemplaza y excluye cualquier otra garantía y condición, sea explícita o implícita, establecida por ley o por otro medio, lo que incluye pero no se limita a la comerciabilidad o la idoneidad del producto para un objetivo específico.

Algunos estados, provincias o países no permiten la exclusión o limitación de los daños fortuitos o resultantes, así que tal vez las citadas limitaciones o exclusiones no se apliquen en el caso de usted. Esta garantía le otorga derechos legales específicos, y usted también podrá tener otros derechos que varíen de un estado a otro, de una provincia a otra, de un país a otro. Moen le hará saber el procedimiento a observarse en el caso de una reclamación por la garantía. Nada más envíe una carta al citado domicilio de Moen Incorporated con una explicación del defecto e incluya la prueba de compra y su nombre, domicilio y número de teléfono y prefijo local.

Para los centros de 19 cm a 38 cm, no haga vueltas con la manguera (N). En caso de hacerlo, eso quizá obstruya la manguera y restringa el flujo.

Moen de Mexico, S.A. de C.V.
Carretera Saltillo-Monterrey KM 14.7
Ramos Arizpe, Coahuila,
Mexico 25900

Garantie à vie limitée de Moen

Les produits Moen ont été fabriqués selon les normes de qualité et de main-d'œuvre les plus élevées. Moen garantit à l'acheteur initial de l'évier, aussi longtemps qu'il est propriétaire de la maison où a été installé l'évier (la « Période de garantie pour propriétaires », qu'il ne présentera aucun défaut de matériaux ni de fabrication.

Cette garantie est vaste, car elle couvre le remplacement de toutes pièces défectueuses. Cependant, les dommages causés par une erreur d'installation, un abus du produit, une mauvaise utilisation du produit ou l'utilisation de produits nettoyeurs non conformes aux directives de recommandation de nettoyage d'évier en acier inoxydable, qu'ils soient utilisés par un entrepreneur, une entreprise de service ou le consommateur, sont exclus de cette garantie. Moen n'est pas responsable des frais de main-d'œuvre ni de tous dommages survenus durant l'installation, la réparation ou le remplacement, ni des dommages indirects ou consécutifs, des pertes, des blessures ou des coûts connexes à ce robinet. Sauf lorsque prévu par la loi, cette garantie remplace et exclut toutes les autres garanties et conditions, qu'elles soient exprimées ou sous-entendues, obligatoires ou autres, y compris sans restriction, celle de commercialisation ou d'aptitude d'utilisation.

Certains pays, États et certaines provinces, ne permettent aucune exclusion, ni limitation suite aux dommages indirects ou consécutifs. Cette garantie accorde des droits juridiques et il est possible que d'autres droits soient applicables selon l'État, la province ou le pays. Moen avisera le consommateur de la procédure à suivre pour soumettre une réclamation. Il suffit d'écrire à Moen incorporée à l'adresse indiquée ci-dessus. Expliquer le défaut et inclure une preuve d'achat, inscrire son nom, adresse ainsi que l'indicatif régional et numéro de téléphone.

Moen Inc.
2816 Bristol Circle
Oakville, Ontario L6H 5S7
Canada

IN510182A - 10/15

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Moen Lifetime Limited Sink Warranty

Moen® products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser for as long as the original consumer purchaser owns their home (the Warranty Period for homeowners), that this sink will be free from defects in materials and manufacturing workmanship.

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As the #1 faucet brand in North America, Moen offers a diverse selection of thoughtfully designed kitchen and bath faucets, showerheads, accessories, bath safety products, garbage disposals and kitchen sinks for residential and commercial applications each delivering the best possible combination of meaningful innovation, useful features, and lasting value.

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(1)

Warranty

OATEY LIMITED WARRANTY

Oatey Co. and its affiliates (collectively referred to as "Oatey") warrant that goods sold by it will be free from defects in material and workmanship for one (1) year following the date of sale (with the exception of certain wax ring products that have longer warranty periods, as explicitly stated on the packaging of the wax ring products). If any of the goods are found by Oatey to be defective, such goods will, at Oatey's option, be replaced or repaired at Oatey's cost. The parties hereto expressly agree that buyer's sole and exclusive remedy against Oatey shall be for the repair or replacement of defective goods as provided herein. (The sole purpose of the stipulated exclusive remedy shall be to provide buyer with free repair and replacement of defective goods in the manner provided herein. The exclusive remedy shall not be deemed to have failed of its essential purpose so long as Oatey is willing and able to repair or replace defective goods in the prescribed manner). THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE NOT EXPRESSLY SET FORTH HEREIN, AND OATEY MAKES NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND. No statement by Oatey or its agents, by words or action, other than as set forth in this language shall constitute a warranty. GOODS WHICH MAY BE SOLD BY OATEY BUT WHICH ARE NOT MANUFACTURED BY IT ARE NOT WARRANTED BY OATEY, BUT ARE SOLD ONLY WITH THE WARRANTIES, IF ANY, OF THE ORIGINAL MANUFACTURERS THEREOF. This warranty does not cover labor or other costs or expenses to remove or install any defective, repaired or replaced goods. Oatey's warranty does not apply to any goods which have been subjected to misuse, mishandling, misapplication, neglect (including but not limited to improper maintenance), accident, improper installation, modification (including but not limited to unauthorized parts or attachments), or adjustment or repair performed by anyone other than Oatey or one of Oatey's authorized agents.

Any claim by buyer with reference to the goods sold hereunder shall be deemed waived by the buyer unless submitted in writing to Oatey within the earlier of: (a) thirty (30) days following the date buyer discovered or by reasonable inspection should have discovered, any claimed breach of the foregoing warranty, or (b) thirteen (13) months following the date of sale (except in the case of certain wax ring products, with warranty periods longer than one year explicitly stated on the product's packaging, in such event a claim must be brought no later than a period of time which starts on the date of sale and lasts for one month past the warranty period). Any cause of action for breach of the foregoing warranty shall be brought within thirteen (13) months from the date the alleged breach was discovered or should have been discovered, whichever occurs first (except in the case of certain wax ring products, with warranty periods longer than one year explicitly stated on the product's packaging, in such event a cause of action must be brought no later than a period of time which starts on the date of sale and lasts for one month past the warranty period).

LIMITATION OF LIABILITY. OATEY'S LIABILITY (WHETHER UNDER THE THEORIES OF BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE, OR STRICT LIABILITY FOR ITS GOODS SHALL BE LIMITED TO REPAIRING OR REPLACING PARTS FOUND BY OATEY TO BE DEFECTIVE, OR AT OATEY'S OPTION, TO REFUNDING THE PURCHASE PRICE OF SUCH GOODS OR PARTS THEREOF. AT OATEY'S REQUEST, BUYER WILL SEND, AT BUYER'S SOLE EXPENSE, ANY ALLEGEDLY DEFECTIVE PARTS TO A LOCATION OF OATEY'S CHOOSING.

DISCLAIMER OF CONSEQUENTIAL DAMAGES. IN NO EVENT SHALL OATEY BE LIABLE FOR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT, INCLUDING WITHOUT LIMITATION TO BREACH OF ANY OBLIGATION IMPOSED ON OATEY HEREUNDER OR IN CONNECTION HEREWITH. CONSEQUENTIAL DAMAGES FOR PURPOSES HEREOF SHALL INCLUDE, WITHOUT LIMITATION LOSS OF USE, INCOME OR PROFIT OR LOSSES SUSTAINED AS THE RESULT OF INJURY (INCLUDING DEATH) TO ANY PERSON OR LOSS OF OR DAMAGE TO PROPERTY (INCLUDING WITHOUT LIMITATION PROPERTY HANDLED OR PROCESSED BY THE USE OF THE GOODS, OR DAMAGES OR LOSSES SUSTAINED AS THE RESULT OF WORK STOPPAGE. BUYER SHALL INDEMNIFY AGAINST ALL LIABILITY, COST OR EXPENSE WHICH MAY BE SUSTAINED BY OATEY ON ACCOUNT OF ANY SUCH LOSS, DAMAGE OR INJURY.



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CLEANING GUIDELINES



READ THOROUGHLY BEFORE CLEANING

DO . . .

1. Rinse off stainless steel frequently with fresh water to wash away accumulated chemicals such as chlorine and wipe dry with a clean cloth. Especially try to clean equipment immediately after use around chemicals (chlorine powder, seawater, etc.)
2. Clean frequently with a cleaner and water. Any cleaner that is safe for glass is usually safe for stainless steel. Sprayway Stainless Steel Cleaner can be purchased at most home improvement stores. Some customers have also had good results cleaning with WD-40. Both products add a protective layer.
3. Inspect equipment frequently, if you notice discoloration, tarnish, or water stains, increase the frequency of rinses and cleaning to reduce the possibility of any accumulated chemicals.
4. If you see any rust spots or staining, remove as soon as possible to prevent surface damage.

DO NOT . . .

1. Do not use steel wool, sandpaper, or mineral acids, bleaches or chlorine cleansers.
2. Do not add chlorine to your pool nearby your stainless steel equipment. Add it as far away as possible and rinse stainless steel products with clear water.
3. Do not store stainless steel equipment in a closed area underneath steel beams to avoid corrosive condensation from dripping onto the equipment and leaving brown spots.
4. Do not store stainless steel equipment where it will attract and retain moisture or airborne contaminants and do not store equipment in the same areas as chlorine.

CLEANING DIRECTIONS:

Wet a Scotch-Brite (non metal) cleaning pad with fresh water (do not use salt or chlorinated water) and apply cleaner. Using gentle pressure, rub stained areas in the same direction of the existing polishing grain until stains are removed. Rinse with clean water and thoroughly dry the stainless steel. A soft paste wax, such as automotive wax, can prevent corrosive elements from adhering to the surface and enhance the appearance of the shower.



OUTDOOR SHOWER COMPANY

"Outdoor Showers for Outdoor Living"



2016 - 2017 Product Catalog

1-866-746-9371

www.outdoorshowerco.com



OUTDOOR SHOWER COMPANY



Since its inception in 1999, Outdoor Shower Company has manufactured and distributed stainless steel shower units specifically for pools, beaches, vacation homes, multi-family complexes, resorts, gardens, playgrounds, pet washes, and campgrounds. These top-quality, durable showers can be modified for a specific architectural design or purchased ready to install for any residential or commercial setting.

As a family business, Outdoor Shower Company seeks to honor God by impacting the lives of our employees, customers, and global contacts. Our mission is to convey a passion for excellence while exceeding the expectations of customers in all areas of service.

1-866-SHOWER1 (746-9371)

Fax: 678-363-8391

General Requests: info@outdoorshowerco.com

Orders: sales@outdoorshowerco.com

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All Products Ship From Our Manufacturing Facility In Dallas, Georgia

10 Year Warranty On Stainless Steel

2 Year Warranty On All Other Parts & Accessories

Replacement Parts In Stock

100% Customer Satisfaction Guaranteed

AVAILABLE FEATURES:

Hose Bibb

Foot Shower

Drinking Fountain

Hot & Cold Valve

Hand Spray & Hose

ADA Compliant Valve *

1" to 24" Shower Head

Pull Chain Valve

***Whatever you do, work at it with all your heart,
as working for the Lord, not for human masters!
Colossians 3:23 (NIV)***

* ADA Compliant showers and accessories meet Americans with Disabilities Acts requirements and codes.

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- Wash Away Irritating Salt & Chlorine
- Hose Off Annoying Sand & Dirt
- Decrease Risks Of Germs & Bacteria
- Rinse Off Sticky Oils & Lotion
- Keep Patio & Pool Area Clean
- Clean Fishing Gear & Equipment
- Save Money On Costly Pool Chemicals
- Be Free From Sand-Clogged Drains
- Enjoy A Refreshing Outdoor Shower
- Bathe Pets Outdoors With Warm Water



ADA - Meets Americans with Disabilities Act Guidelines
CHV - Manual Turn Cross Handle Valve
PCV - Pull Chain Valve
DLX - Includes 6" Shower Head & Hand Spray
DF - Drinking Fountain
LSHS - Without Hand Spray

FS - Foot Shower
HB - Hose Bibb
HS - Hand Spray
PB - Push Button
SS - Stainless Steel
HC - Hot & Cold

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OUTDOOR SHOWER COMPANY



SINGLE SUPPLY SHOWER FEATURES

"Outdoor Showers for Outdoor Living"

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SINGLE SUPPLY SHOWER FEATURES

Standard Options



It is always the goal of Outdoor Shower Company to manufacture and distribute only top-quality showers and accessories. We are the only company in the United States and Canada that can modify and custom design shower units to adapt to a customers specifications. We offer standard options as well as upgrades and configurations shown throughout the catalog.

3" SHOWER HEAD
Chrome Plated Brass



6" SHOWER HEAD
Chrome Plated Brass



♿ ADA FOOT SHOWER
Metered Push Handle
1" Aerating Shower Head
Chrome Plated Brass *
with Stainless Steel Nipple



♿ ADA STRAIGHT VALVE
Metered Push Handle
Chrome Plated Brass



CROSS HANDLE
FOOT SHOWER
1" Aerating Shower Head
Chrome Plated Brass *
with Stainless Steel Nipple



CROSS HANDLE STRAIGHT VALVE
Chrome Plated Brass



HOSE BIBB
3/4" MHT
Vacuum Breaker
Chrome Plated Brass *



♿ ADA DRINKING FOUNTAIN
BUBBLER
Chrome Plated Brass



PUSH BUTTON DRINKING
FOUNTAIN BUBBLER
Chrome Plated Brass



PULL CHAIN VALVE
Chrome Plated Brass
Stainless Steel 18" Chain
Stainless Steel Round Handle



STAINLESS STEEL WALL
BRACKET



* Available in Stainless Steel
All accessories are 1/2" MIP

WALL MOUNT SINGLE SUPPLY SHOWERS

ADA Compliant Metered Push Valves

Available with Foot Shower or Hose Bibb

Stainless Steel Body
Stainless Steel Wall Bracket & Screws
1/2" Accessories & Water Supply Connection
Complete with Installation Hardware



WM-442-ADA



WM-442-ADA-SS



WM-442-ADA-FS



WM-442-ADA-HB

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
WM-442-ADA	Chrome Plated Brass Valve, 3" Shower Head	\$794	\$817
WM-442-ADA-SS	Stainless Steel Valve, 3" Stainless Steel Shower Head	\$1,095	\$1,128
WM-442-ADA-FS	Stainless Steel Valve, 3" Shower Head, Foot Shower	\$1,675	\$1,725
WM-442-ADA-HB	Stainless Steel Valve, 3" Shower Head, Hose Bibb	\$1,334	\$1,374

"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT SINGLE SUPPLY SHOWERS



Manual Turn Cross Handle Valves

Available with Foot Shower or Hose Bibb

Stainless Steel Body
Stainless Steel Wall Bracket & Screws
1/2" Accessories & Water Supply Connection
Complete with Installation Hardware



WM-442-CHV



WM-442-CHV-SS



WM-442-CHV-FS



WM-442-CHV-HB

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
WM-442-CHV	Chrome Plated Brass Valve, 3" Shower Head	\$616	\$635
WM-442-CHV-SS	Stainless Steel Valve, 3" Stainless Steel Shower Head	\$1,025	\$1,056
WM-442-CHV-FS	Stainless Steel Valve, 3" Shower Head, Foot Shower	\$1,479	\$1,523
WM-442-CHV-HB	Stainless Steel Valve, 3" Shower Head, Hose Bibb	\$1,259	\$1,296

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT SINGLE SUPPLY SHOWERS

Pull Chain Valves



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT SINGLE SUPPLY SHOWERS

Pull Chain Valves



Stainless Steel Arms
Chrome Plated Brass Valves
Stainless Steel Chain & Ring
Stainless Steel Wall Brackets & Screws
1/2" Water Supply Connection
Complete with Installation Hardware



WM-442-PCV



WMPC-150-12

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
WM-442-PCV	6" Chrome Plated Brass Shower Head	\$873	\$899
WMPC-150-12	6" Stainless Steel Shower Head	\$991	\$1,021

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT SINGLE SUPPLY SHOWERS - Pull Chain Valves

WALL MOUNT SINGLE SUPPLY SHOWERS



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT SINGLE SUPPLY SHOWERS



Manual Turn Valves

Stainless Steel Inside & Out

Stainless Steel Wall Bracket & Screws
1/2" Accessory & Water Supply Connection
Complete with Installation Hardware



CAP-111HBS-8



CAP-115AAS-8



CAP-041AS-8



CAP-119AGS-3

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
CAP-111HBS-8	Cross Handle Valve, 8" Shower Head	\$1,427	\$1,469
CAP-115AAS-8	Cross Handle Valve, 8" Disk Shower Head	\$1,397	\$1,439
CAP-041AS-8	Cross Handle Valve, 8" Disk Shower Head, Hand Spray	\$1,995	\$2,055
CAP-119AGS-3	Knob Handle, 3" Shower Head	\$724	\$746

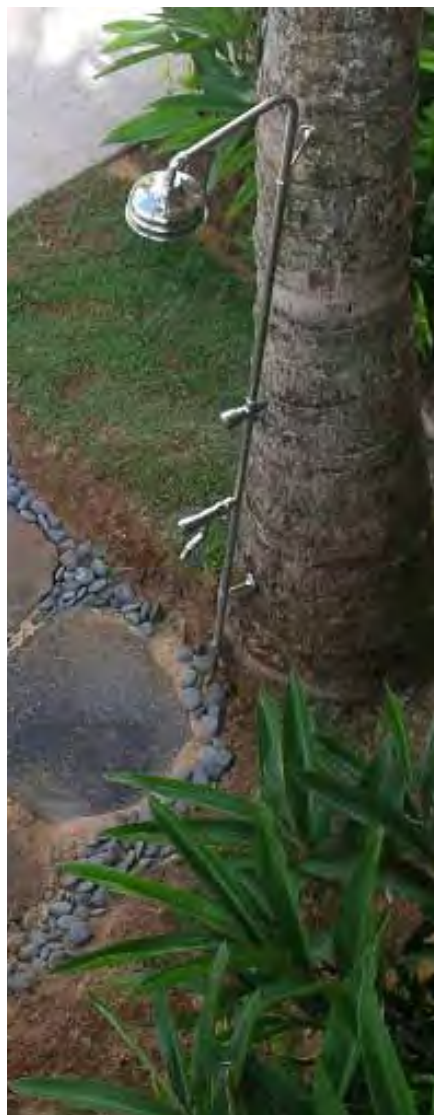
Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT SINGLE SUPPLY SHOWERS - Manual Turn Valves

WALL MOUNT SINGLE SUPPLY SHOWERS

ADA Compliant Metered Push Valves 
Available with Foot Shower and/or Hose Bibb



"Outdoor Showers for Outdoor Living"

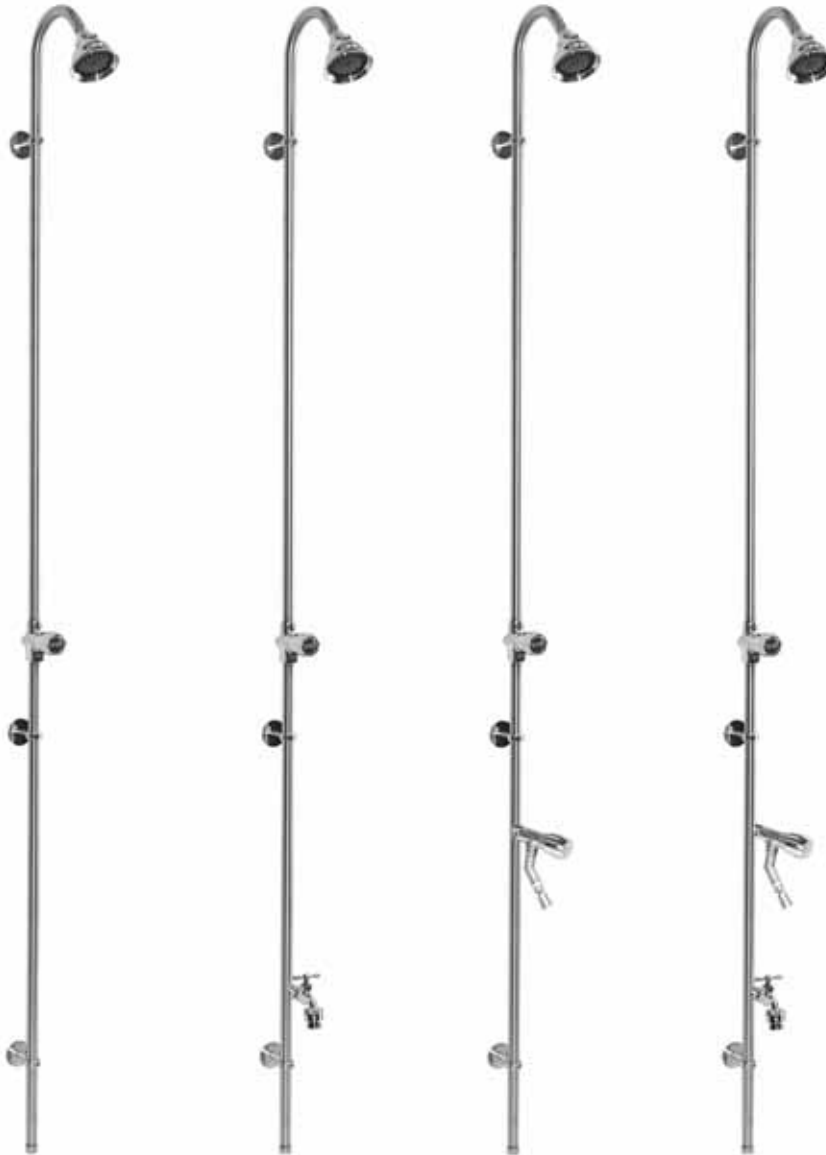
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WALL MOUNT SINGLE SUPPLY SHOWERS

ADA Compliant Metered Push Valves

Available with Foot Shower and/or Hose Bibb

Stainless Steel Body
 Chrome Plated Brass Valves & Accessories
 Stainless Steel Wall Brackets & Screws
 1/2" Accessories & Water Supply Connection
 12" Flexible Hose Included
 Complete with Installation Hardware



PM-250-ADA

PM-500-ADA

PM-600-ADA

PM-750-ADA

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PM-250-ADA	3" Shower Head	\$1,323	\$1,363
PM-500-ADA	3" Shower Head, Hose Bibb	\$1,403	\$1,445
PM-600-ADA	3" Shower Head, Foot Shower	\$1,765	\$1,818
PM-750-ADA	3" Shower Head, Hose Bibb, Foot Shower	\$1,844	\$1,899

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT SINGLE SUPPLY SHOWERS - ADA Metered Push Valves

WALL MOUNT SINGLE SUPPLY SHOWERS

Manual Turn Cross Handle Valves
Available with Foot Shower and/or Hose Bibb



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT SINGLE SUPPLY SHOWERS



Manual Turn Cross Handle Valves

Available with Foot Shower and/or Hose Bibb

Stainless Steel Body
Chrome Plated Brass Valves & Accessories
Stainless Steel Wall Brackets & Screws
1/2" Accessories & Water Supply Connection
12" Flexible Hose Included
Complete with Installation Hardware



PM-250-CHV



PM-500-CHV



PM-600-CHV



PM-750-CHV

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PM-250-CHV	3" Shower Head	\$1,275	\$1,313
PM-500-CHV	3" Shower Head, Hose Bibb	\$1,355	\$1,395
PM-600-CHV	3" Shower Head, Foot Shower	\$1,540	\$1,586
PM-750-CHV	3" Shower Head, Hose Bibb, Foot Shower	\$1,620	\$1,668

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT SINGLE SUPPLY SHOWERS - Cross Handle Valves

WALL MOUNT SINGLE SUPPLY SHOWERS

Pull Chain Valves

Available with Foot Shower and/or Hose Bibb



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT SINGLE SUPPLY SHOWERS



Pull Chain Valves

Available with Foot Shower and/or Hose Bibb

Stainless Steel Body
Chrome Plated Brass Valves & Accessories
Stainless Steel Chain & Ring
Stainless Steel Wall Brackets & Screws
1/2" Accessories & Water Supply Connection
12" Flexible Hose Included
Complete with Installation Hardware



PM-250-PCV



PM-500-PCV



PM-600-PCV-CHV



PM-750-PCV-CHV

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PM-250-PCV	6" Shower Head	\$1,468	\$1,512
PM-500-PCV	6" Shower Head, Hose Bibb	\$1,547	\$1,594
PM-600-PCV-CHV	6" Shower Head, Foot Shower	\$1,732	\$1,784
PM-750-PCV-CHV	6" Shower Head, Hose Bibb, Foot Shower	\$1,812	\$1,866

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT SINGLE SUPPLY SHOWERS - Pull Chain Valves

WALL MOUNT SINGLE SUPPLY SHOWERS

Pull Chain Valves

Available with Foot Shower and/or Hose Bibb



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT SINGLE SUPPLY SHOWERS



Pull Chain Valves

Available with Foot Shower and/or Hose Bibb

Stainless Steel Body
Chrome Plated Brass Valves & Accessories
Stainless Steel Chain & Ring
Stainless Steel Wall Brackets & Screws
1/2" Accessories & Water Supply Connection
12" Flexible Hose Included
Complete with Installation Hardware



PM-600-PCV-ADA



PM-750-PCV-ADA

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PM-600-PCV-ADA	6" Shower Head, Foot Shower	\$1,908	\$1,966
PM-750-PCV-ADA	6" Shower Head, Hose Bibb, Foot Shower	\$1,989	\$2,049

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT SINGLE SUPPLY SHOWERS - Pull Chain Valves

WALL MOUNT SINGLE SUPPLY FOOT SHOWERS & HOSE BIBBS

Cold or Mixed Water



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT SINGLE SUPPLY FOOT SHOWERS & HOSE BIBBS



Cold or Mixed Water

Stainless Steel or Chrome Plated Brass
1/2" Water Supply Connection
Complete with Installation Hardware



WMFS-442-ADA



WMFS-442-CHV



WMFS-442-ADA-SS



WMFS-442-CHV-SS



WMHB-158



WMHB-158-SS



CAP-HBWS-4122-316

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
FOOT SHOWERS			
WMFS-442-ADA	Chrome Plated Brass ADA Metered Push Valve	\$468	\$482
WMFS-442-CHV	Chrome Plated Brass Cross Handle Valve	\$292	\$300
WMFS-442-ADA-SS	Stainless Steel ADA Metered Push Valve	\$641	\$660
WMFS-442-CHV-SS	Stainless Steel Cross Handle Valve	\$555	\$572
HOSE BIBBS			
WMHB-158	Chrome Plated Brass, 3/4" Male Hose Thread, Vacuum Breaker	\$58	\$60
WMHB-158-SS	Stainless Steel, 3/4" Male Hose Thread, Vacuum Breaker	\$563	\$580
HOSE BIBB/FAUCET COMBINATION			
CAP-HBWS-4122-316	316 Marine Grade Stainless Steel, Aerating Faucet, 1/2" Hose Threads with 3/4" MHT Hose Adapter	\$448	\$461

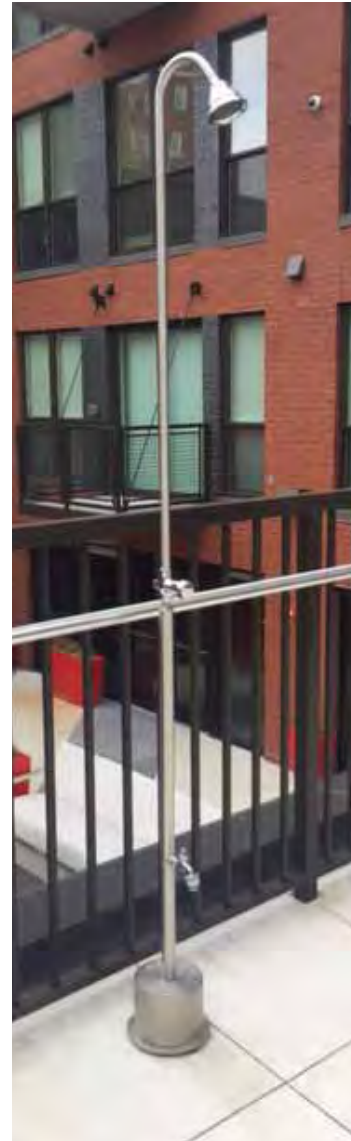
Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

FREE STANDING SINGLE SUPPLY SHOWERS

ADA Compliant Metered Push Valves 

Available with Foot Shower, Hose Bibb and/or Drinking Fountain



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

FREE STANDING SINGLE SUPPLY SHOWERS

ADA Compliant Metered Push Valves

Available with Foot Shower, Hose Bibb and/or Drinking Fountain

Stainless Steel Body
 Chrome Plated Brass Valves & Accessories
 1/2" Accessories & Water Supply Connection
 6" Diameter Stainless Steel Base
 Complete with Installation Hardware



PS-900-ADA PS-1000-ADA BS-1200-ADA BS-2000-ADA PSDF-1500-ADA

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PS-900-ADA	3" Shower Head	\$1,788	\$1,842
PS-1000-ADA	3" Shower Head, Hose Bibb	\$1,843	\$1,899
BS-1200-ADA	3" Shower Head, Foot Shower	\$2,205	\$2,271
BS-2000-ADA	3" Shower Head, Hose Bibb, Foot Shower	\$2,261	\$2,329
PSDF-1500-ADA	3" Shower Head, Hose Bibb, Drinking Fountain	\$2,321	\$2,390

Quality Outdoor Showers & Accessories

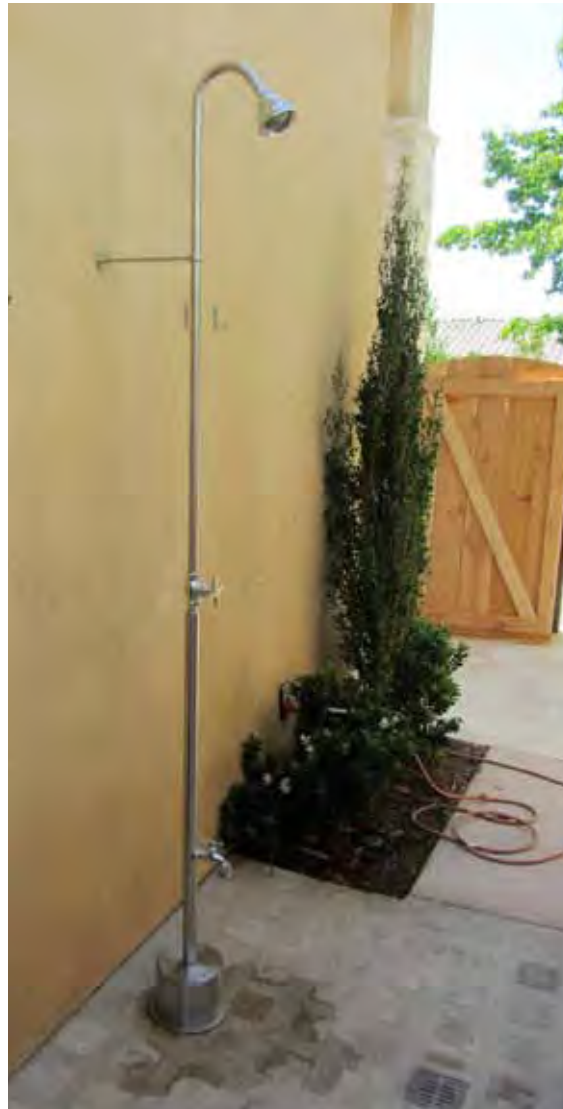
www.outdoorshowerco.com

FREE STANDING SINGLE SUPPLY SHOWERS - ADA Metered Push Vales

FREE STANDING SINGLE SUPPLY SHOWERS

Manual Turn Cross Handle Valves

Available with Foot Shower, Hose Bibb and/or Drinking Fountain



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

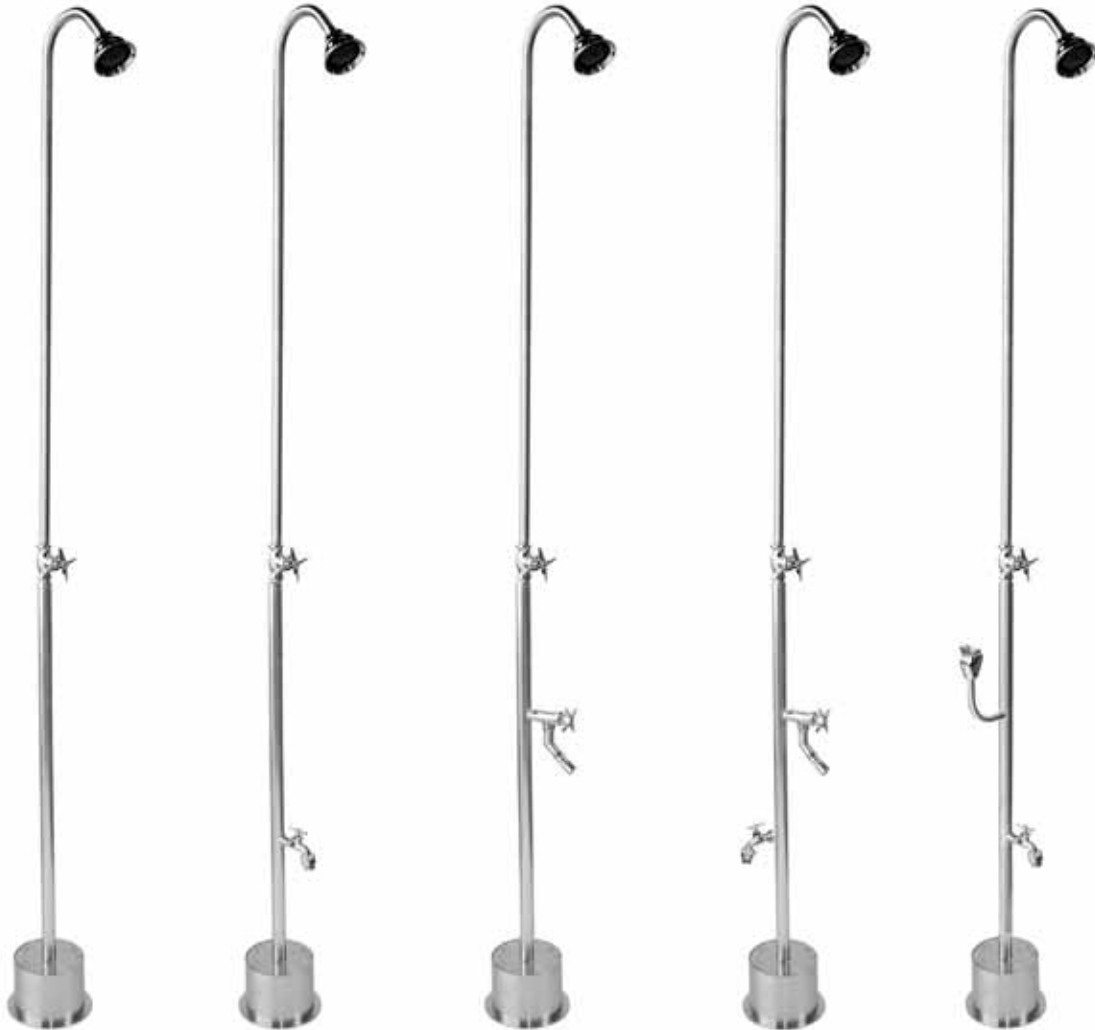
FREE STANDING SINGLE SUPPLY SHOWERS



Manual Turn Cross Handle Valves

Available with Foot Shower, Hose Bibb and/or Drinking Fountain

Stainless Steel Body
Chrome Plated Brass Valves & Accessories
1/2" Accessories & Water Supply Connection
6" Diameter Stainless Steel Base
Complete with Installation Hardware



PS-900-CHV

PS-1000-CHV

BS-1200-CHV

BS-2000-CHV

PSDF-1500-CHV

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PS-900-CHV	3" Shower Head	\$1,740	\$1,792
PS-1000-CHV	3" Shower Head, Hose Bibb	\$1,796	\$1,850
BS-1200-CHV	3" Shower Head, Foot Shower	\$1,981	\$2,040
BS-2000-CHV	3" Shower Head, Hose Bibb, Foot Shower	\$2,037	\$2,098
PSDF-1500-CHV	3" Shower Head, Hose Bibb, Drinking Fountain	\$2,015	\$2,075

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

FREE STANDING SINGLE SUPPLY SHOWERS - Cross Handle Valves

FREE STANDING SINGLE SUPPLY SHOWERS

Pull Chain Valves

Available with Foot Shower, Hose Bibb and/or Drinking Fountain

Stainless Steel Body
 Chrome Plated Brass Valves & Accessories
 1/2" Accessories & Water Supply Connection
 Stainless Steel Chain & Ring
 6" Diameter Stainless Steel Base
 Complete with Installation Hardware



PS-900-PCV



PS-1000-PCV



BS-1200-PCV-CHV



BS-2000-PCV-CHV



PSDF-1500-PCV-PB

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PS-900-PCV	6" Shower Head	\$1,907	\$1,965
PS-1000-PCV	6" Shower Head, Hose Bibb	\$1,964	\$2,022
BS-1200-PCV-CHV	6" Shower Head, Foot Shower	\$2,148	\$2,213
BS-2000-PCV-CHV	6" Shower Head, Hose Bibb, Foot Shower	\$2,204	\$2,270
PSDF-1500-PCV-PB	6" Shower Head, Drinking Fountain, Hose Bibb	\$2,182	\$2,247

"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

FREE STANDING SINGLE SUPPLY SHOWERS



Pull Chain Valves

ADA Compliant Metered Push Valve

Stainless Steel Body
Chrome Plated Brass Valves & Accessories
1/2" Accessories & Water Supply Connection
Stainless Steel Chain & Ring
6" Diameter Stainless Steel Base
Complete with Installation Hardware



BS-1200-PCV-ADA



BS-2000-PCV-ADA



PSDF-1500-PCV-ADA

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
BS-1200-PCV-ADA	6" Shower Head, Foot Shower	\$2,326	\$2,395
BS-2000-PCV-ADA	6" Shower Head, Foot Shower, Hose Bibb	\$2,381	\$2,452
PSDF-1500-PCV-ADA	6" Shower Head, Drinking Fountain, Hose Bibb	\$2,442	\$2,515

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

FREE STANDING SINGLE SUPPLY SHOWERS - Pull Chain Valves

FREE STANDING SINGLE SUPPLY SHOWERS

ADA Compliant Metered Push Valves

Two, Three, or Four Shower Heads

Stainless Steel Body & Valves
1/2" Accessories & Water Supply Connection
3" Diameter Body
10" Diameter Stainless Steel Base
Complete with Installation Hardware



PS-3200-2X-ADA



PS-3300-3X-ADA



PS-3400-4X-ADA

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PS-3200-2X-ADA	Two 3" Shower Heads, Foot Shower, Hose Bibb	\$4,341	\$4,471
PS-3300-3X-ADA	Three 3" Shower Heads, Foot Shower, Hose Bibb	\$5,321	\$5,480
PS-3400-4X-ADA	Four 3" Shower Heads, Foot Shower, Hose Bibb	\$6,294	\$6,483

"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

FREE STANDING SINGLE SUPPLY SHOWERS



Manual Turn Cross Handle Valves

Two, Three, or Four Shower Heads

Stainless Steel Body & Valves
1/2" Accessories & Water Supply Connection
3" Diameter Body
10" Diameter Stainless Steel Base
Complete with Installation Hardware



PS-3200-2X-CHV



PS-3300-3X-CHV



PS-3400-4X-CHV

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
PS-3200-2X-CHV	Two 3" Shower Heads, Foot Shower, Hose Bibb	\$3,480	\$3,585
PS-3300-3X-CHV	Three 3" Shower Heads, Foot Shower, Hose Bibb	\$4,161	\$4,286
PS-3400-4X-CHV	Four 3" Shower Heads, Foot Shower, Hose Bibb	\$4,854	\$5,000

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

FREE STANDING SINGLE SUPPLY SHOWERS - Cross Handle Valves

FREE STANDING SINGLE SUPPLY SHOWERS

Solid Stainless Steel Construction



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

FREE STANDING SINGLE SUPPLY SHOWERS

Solid Stainless Steel Construction



1/2" Water Supply Connection
Platform Not Available
Complete with Installation Hardware



CAP IMBER FOOZE



CAP-FS-ONKO

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
CAP IMBER FOOZE	316 Marine Grade Stainless Steel, One Touch On/Off Electronic Valve	\$5,670	\$5,840
CAP-FS-ONKO	Stainless Steel, Manual Turn Knob	\$2,445	\$2,518

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

FREE STANDING SINGLE SUPPLY SHOWERS - Stainless Steel

FREE STANDING FOOT SHOWERS, HOSE BIBBS

Available with Foot Shower and/or HoseBibb



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

FREE STANDING FOOT SHOWERS, HOSE BIBBS

Available with Foot Shower and/or HoseBibb



Stainless Steel & Chrome Plated Brass
 1/2" Accessories & Water Supply Connection
 6" Diameter Stainless Steel Base
 Standard Height 30"-36"
 Accessories & Dimensions can be modified to meet your individual needs
 Complete with Installation Hardware



FSFS-200-ADA



FSFSHB-300-ADA



FSFS-200-CHV



FSFSHB-300-CHV



FSHB-300-CHV

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
FSFS-200-ADA	ADA Metered Foot Shower	\$1,535	\$1,581
FSFSHB-300-ADA	ADA Metered Foot Shower, Hose Bibb	\$1,591	\$1,639
FSFS-200-CHV	Cross Handle Foot Shower	\$1,359	\$1,399
FSFSHB-300-CHV	Cross Handle Foot Shower, Hose Bibb	\$1,414	\$1,456
FSHB-300-CHV	Cross Handle Hose Bibb	\$1,173	\$1,208

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

FREE STANDING FOOT SHOWERS, HOSE BIBBS

FREE STANDING DRINKING FOUNTAINS

Available with Foot Shower and/or Hose Bibb 



Stainless Steel & Chrome Plated Brass
 1/2" Accessories & Water Supply Connections
 6" Diameter Stainless Steel Base
 Standard Height 28"-32"
 Accessories & Dimensions can be modified to meet your individual needs
 Complete with Installation Hardware



FSDf-700-ADA



FSFSDf-054-ADA



FSDfHB-ADA



FSFSDfHB-ADA

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
FSDf-700-ADA	ADA Metered Drinking Fountain	\$1,595	\$1,643
FSFSDf-054-ADA	ADA Metered Drinking Fountain, Foot Shower	\$2,013	\$2,074
FSDfHB-ADA	ADA Metered Drinking Fountain, Hose Bibb	\$1,650	\$1,700
FSFSDfHB-ADA	ADA Metered Drinking Fountain, Foot Shower, Hose Bibb	\$2,069	\$2,131

"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

FREE STANDING DRINKING FOUNTAINS

Available with Foot Shower and/or Hose Bibb



Stainless Steel & Chrome Plated Brass

1/2" Accessories & Water Supply Connections

6" Diameter Stainless Steel Base

Standard Height 28"-32"

Accessories & Dimensions can be modified to meet your individual needs

Complete with Installation Hardware



FSDf-700-PB



FSFSDf-054-CHV-PB



FSDfHB-PB



FSFSDfHB-CHV-PB

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
FSDf-700-PB	Push Button Drinking Fountain	\$1,336	\$1,376
FSFSDf-054-CHV-PB	Push Button Drinking Fountain, Cross Handle Foot Shower	\$1,577	\$1,624
FSDfHB-PB	Push Button Drinking Fountain, Hose Bibb	\$1,391	\$1,433

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT HOT & COLD ECONOMY SHOWERS

Chrome Plated Brass

Hot & Cold Water



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT HOT & COLD ECONOMY SHOWERS



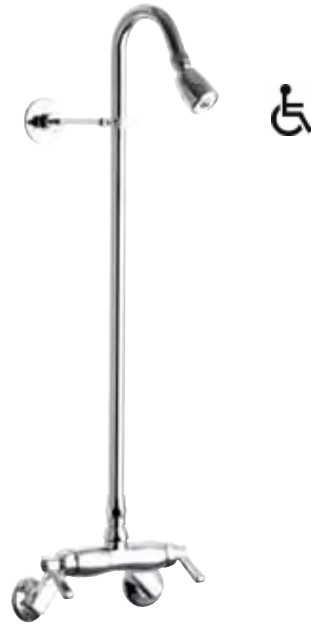
Chrome Plated Brass

Hot & Cold Water

1/2" Water Supply Line Connections
Shower Heads with Pivotal Ball Joints
Complete with Wall Bracket & Screws
Commercial Grade Chrome Plated Brass
Overall Length 30"



WMHC-752-CP



WMHC-756-CP

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
WMHC-752-CP	Cross Handle Valve, 6" Center Spread	\$780	\$803
WMHC-756-CP	ADA Compliant Lever Handle Valve, 4" - 8" Center Spread	\$775	\$798

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT HOT & COLD ECONOMY SHOWERS

WALL MOUNT HOT & COLD SHOWERS

ADA Compliant Lever Handle Valves 
Available with Foot Shower and/or Hand Spray



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT HOT & COLD SHOWERS

ADA Compliant Lever Handle Valves 
Available with Foot Shower and/or Hand Spray

1/2" Accessories & Water Supply Connections
Stainless Steel Wall Bracket & Screws
Complete with Installation Hardware



WMHC-445



WMHC-445-DLX



WMHC-445-SS



WMHC-445-DLX-FS-SS

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
WMHC-445	Chrome Plated Brass Valve, 3" Shower Head, 4" - 8" Center Spread	\$1,077	\$1,109
WMHC-445-FS	Chrome Plated Brass Valve, 3" Shower Head, 4" - 8" Center Spread, Foot Shower	\$1,714	\$1,765
WMHC-445-DLX	Chrome Plated Brass Valve, 6" Shower Head, 4" - 8" Center Spread, Hand Spray & Hose	\$2,056	\$2,118
WMHC-445-DLX-FS	Chrome Plated Brass Valve, 6" Shower Head, 4" - 8" Center Spread, Hand Spray & Hose, Foot Shower (not shown)	\$2,432	\$2,505
WMHC-445-SS	Stainless Steel Valve, 6" Shower Head, 8" Center Spread	\$1,840	\$1,895
WMHC-445-FS-SS	Stainless Steel Valve, 6" Shower Head, 8" Center Spread, Foot Shower (not shown)	\$2,718	\$2,800
WMHC-445-DLX-SS	Stainless Steel Valve, 6" Shower Head, 8" Center Spread, Hand Spray & Hose (not shown)	\$2,766	\$2,849
WMHC-445-DLX-FS-SS	Stainless Steel Valve, 6" Shower Head, 8" Center Spread, Foot Shower, Hand Spray	\$3,276	\$3,374

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT HOT & COLD SHOWERS

ADA Compliant Lever Handle Valves 

Available with Foot Shower, Hose Bibb, and/or Hand Spray



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT HOT & COLD SHOWERS

ADA Compliant Lever Handle Valves

Available with Foot Shower, Hose Bibb, and/or Hand Spray

Chrome Plated Brass Valve
Stainless Steel Wall Brackets & Screws
1/2" Accessories & Water Supply Connections
Water Supply at Flooring Surface
12" Flexible Hoses Included
3-3/8" Center Spread
Complete with Installation Hardware



WMHC-772



WMHC-772-HB



WMHC-772-DLX

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
WMHC-772	3" Shower Head	\$2,163	\$2,228
WMHC-772-HB	3" Shower Head, Hose Bibb	\$2,219	\$2,286
WMHC-772-DLX	6" Shower Head, Hand Spray	\$3,143	\$3,237

Call for foot shower options

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT HOT & COLD SHOWERS - ADA Lever Handles

WALL MOUNT HOT & COLD SHOWERS

Stainless Steel Inside & Out



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

WALL MOUNT HOT & COLD SHOWERS

Stainless Steel Inside & Out



Adjustable Hand Spray Heights
Hand Spray & 60" Hose
Wall Bracket & Screws
1/2" Accessories & Water Supply Connections
6" Center Spread
Available without Hand Spray
Complete with Installation Hardware



DVA-L2-WMHC

DVA-L1-WMHC-FS

CAP-113DDS-12

CAP-115ABS-8

CAP-118BAS-8

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
DVA-L2-WMHC	8" Shower Head, Lever Handle, Stainless Steel, Hand Spray	\$1,998	\$2,058
DVA-L1-WMHC-FS	8" Shower Head, Lever Handle, Stainless Steel, Hand Spray, Foot Shower	\$2,142	\$2,206
CAP-113DDS-12	12" Shower Head, Cross Handle Valve	\$3,071	\$3,164
CAP-115ABS-8	8" Disk Shower Head, Cross Handle Valve	\$2,758	\$2,841
CAP-118BAS-8	8" Square Shower Head, Lever Handle	\$2,587	\$2,665

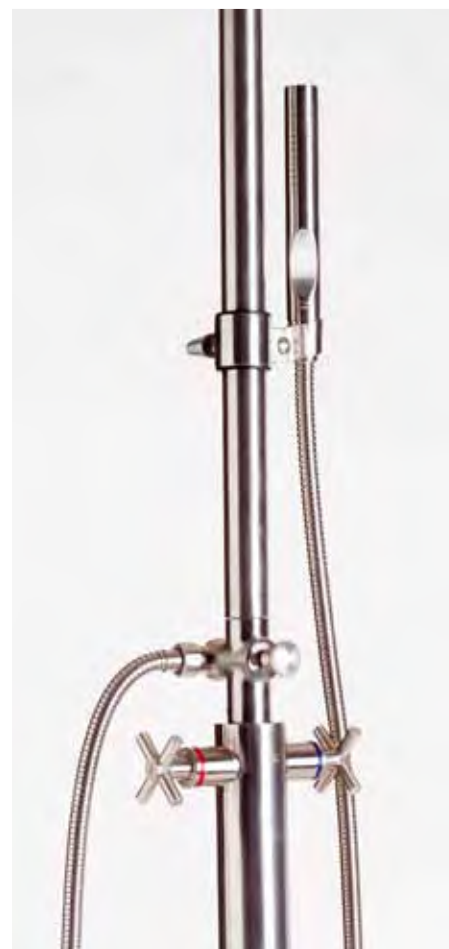
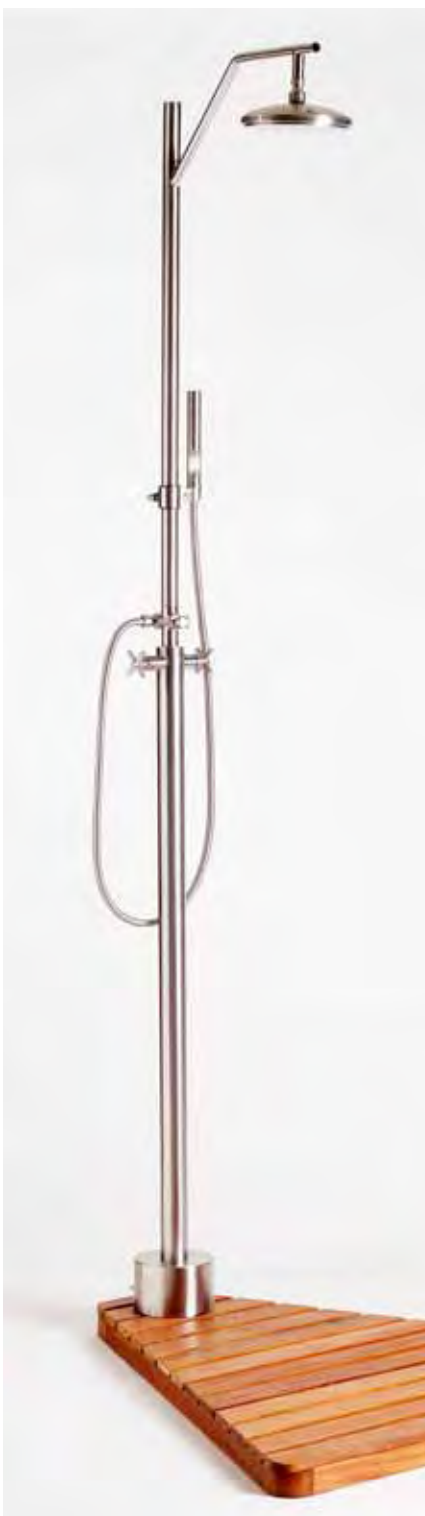
Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

WALL MOUNT HOT & COLD SHOWERS - Stainless Steel

FREE STANDING HOT & COLD SHOWERS

Manual Turn Cross Handle Valves
Stainless Steel Inside & Out



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

FREE STANDING HOT & COLD SHOWERS

Manual Turn Cross Handle Valves Stainless Steel Inside & Out

1/2" Accessory & Water Supply Connections
Complete with Installation Hardware



CAP-IMBER-FB-LSHS



CAP-IMBER-FB-HS

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
CAP-IMBER-FB-LSHS	8" Shower Head	\$3,574	\$3,681
CAP-IMBER-FB-HS	8" Shower Head, Hand Spray & Hose	\$4,267	\$4,395

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

FREE STANDING HOT & COLD SHOWERS - Cross Handle Valves

HOT & COLD FREE STANDING SHOWERS

ADA Compliant Lever Handle Valves

Available with Hose Bibb, Foot Shower, and/or Hand Spray



"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

HOT & COLD FREE STANDING SHOWERS

ADA Compliant Lever Handle Valves

Available with Hose Bibb, Foot Shower, and/or Hand Spray

Stainless Steel Body
Chrome Plated Brass Valves
1/2" Accessories & Water Supply Connections
6" Diameter Stainless Steel Base
Complete with Installation Hardware



HC-4000

HC-4000-DLX

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
HC-4000	3" Shower Head	\$1,907	\$1,964
HC-4000-FS	3" Shower Head, Foot Shower (not shown)	\$2,544	\$2,620
HC-4000-DLX	6" Shower Head, Squeeze Handle Hand Spray & 60" Hose	\$2,887	\$2,974

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

FREE STANDING HOT & COLD SHOWERS - ADA Lever Handle Valves

FREE STANDING HAND SPRAYS

Rinse From Head to Toe



Hand Spray & 60" Hose
 Stainless Steel Body & Base
 Chrome Plated Brass Valves
 1/2" Water Supply Connection



FSHS-0101-C



FSHS-50-HC

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
FSHS-0101-C	Cross Handle Valve, Single Supply	\$1,693	\$1,744
FSHS-50-HC	ADA Compliant Lever Handles, Hot & Cold Supply	\$2,424	\$2,497

“Outdoor Showers for Outdoor Living”

1-866-SHOWER1 (746-9371)

WALL MOUNT HAND SPRAYS

Rinse From Head to Toe



Hand Spray & 60" Hose
1/2" Water Supply Connections
Stainless Steel Bracket



WMHS-0101-CHV



WMHS-0101-HC



CAP-3121-HS

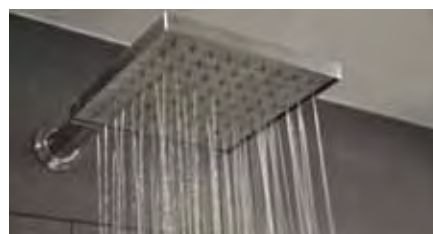
MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
WMHS-0101-CHV	Cross Handle Valve, Single Supply	\$730	\$752
WMHS-0101-HC	Lever Handle Valve, Hot & Cold Supply	\$1,200	\$1,236
CAP-3121-HS	Stainless Steel, Single Lever Handle, Hot & Cold Supply	\$1,349	\$1,390

Quality Outdoor Showers & Accessories

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DESIGN-A-Shower

Shower Head & Arm Sets



DESIGN-A-Shower

Shower Head & Arm Sets

1/2" Water Supply Connection
Swivel Ball Joints



GLCOS-BD90F-13-S
GLCOS-BD90F-13-M



GLSQA-BDQF-13-S
GLSQA-BDQF-13-M



CAP-111-350S-8



CAP-111CAS-8



CAP-115QCS-8



CAP-111KAS-8



CAP-112EAS-4

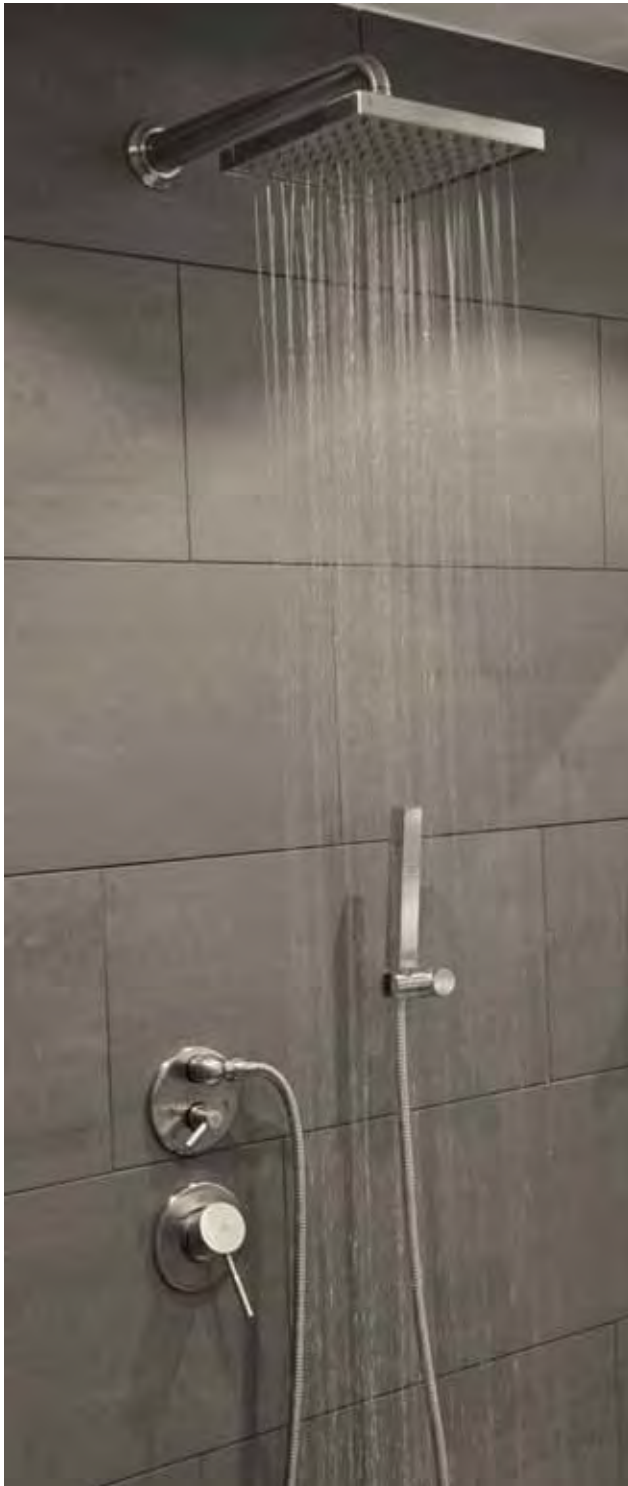
MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
GLCOS-BD90F-13-S GLCOS-BD90F-13-M	13" 316 Stainless Steel Shower Head, 14" Arm - Satin or Mirror	\$1,298	\$1,337
GLSQA-BDQF-13-S GLSQA-BDQF-13-M	13" Square Shower Head, 14" Arm - Satin or Mirror	\$1,332	\$1,372
CAP-111-350S-8	8" Shower Head, 13.5" Arm - Satin	\$1,045	\$1,076
CAP-111CAS-8	8" Shower Head, 19" Arm - Satin	\$1,162	\$1,197
CAP-115QCS-8	8" Shower Head, 18" Adjustable Arm - Satin	\$1,152	\$1,187
CAP-111KAS-8	8" Shower Head, 16" Arm - Satin	\$1,077	\$1,109
CAP-112EAS-4	4" Shower Head, 8" Arm - Satin	\$643	\$662

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

DESIGN-A-SHOWER

Stainless Steel Concealed Shower Options
Valves, Diverters & Hand Sprays



CAP-0820HC-118ZAS-8
5 Piece Shower Set
\$2,914 / \$3,001 (Effective 1/1/2017)



CAP-111ZAS-3131-8
3 Piece Shower Set
\$1,730 / \$1,782 (Effective 1/1/2017)

"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

DESIGN-A-Shower

Stainless Steel Concealed Shower Options Valves, Diverters & Hand Sprays

60" Stainless Steel Flexible Hose and Wall Bracket included with Hand Sprays



CAP-3131-A3



CAP-3131-71



CAP-3131-05



GL-2059-S
GL-2059-M



CAP-00006S-DIV



CAP-110AAS



CAP-114ADS



CAP-117ACS



CAP-00006S-BAR

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
CAP-3131-A3	Concealed Hot & Cold Valve - Satin	\$685	\$706
CAP-3131-71	Concealed Hot & Cold Valve - Satin	\$552	\$568
CAP-3131-05	Concealed Hot & Cold Pressure Balanced Valve - Satin	\$734	\$756
GL-2059-S GL-2059-M	Concealed Hot & Cold Valve - Satin or Mirror	\$568	\$585
CAP-00006S-DIV	Concealed Diverter - Satin	\$569	\$586
CAP-110AAS	7" Tubular Hand Spray, Hose, Bracket - Satin	\$456	\$470
CAP-114ADS	8" Hand Spray, 3" Face, Hose, Bracket - Satin	\$262	\$270
CAP-117ACS	7" Square Hand Spray, Hose, Bracket - Satin	\$451	\$465
CAP-00006S-BAR	Slide Bar - Satin	\$472	\$486

Quality Outdoor Showers & Accessories

www.outdoorshowerco.com

SHOWER HEADS



Chrome Plated Brass

1/2" Water Supply Connection
Swivel Ball Joints



SH-013



DEL-78



SHDA-6

MODEL #	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
SH-013	1" Shower Head	\$22	\$23
DEL-78	3" Shower Head	\$91	\$94
SHDA-6	6" Shower Head	\$222	\$229

"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

SHOWER HEADS

Stainless Steel



1/2" Water Supply Connection
Swivel Ball Joints



GL150-4-S
GL150-4-M



GL150-6-S
GL150-6-M



GL150-8-S
GL150-8-M



GL150-12-S
GL150-12-M



CAP-119-3



CAP-112-4



CAP-111ZAS-8



CAP-113ZAS-12

MODEL #	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
GL150-4-S GL150-4-M	4" "Raincan" Shower Head - Satin or Mirror	\$251	\$258
GL150-6-S GL150-6-M	6" "Raincan" Shower Head - Satin or Mirror	\$343	\$353
GL150-8-S GL150-8-M	8" "Raincan" Shower Head - Satin or Mirror	\$449	\$462
GL150-12-S GL150-12-M	12" "Raincan" Shower Head - Satin or Mirror	\$998	\$1,027
CAP-119-3	3" Shower Head - Satin	\$177	\$182
CAP-112-4	4" Shower Head - Satin	\$365	\$376
CAP-111ZAS-8	8" Shower Head - Satin	\$694	\$715
CAP-113ZAS-12	12" Shower Head - Satin	\$845	\$870

Quality Outdoor Showers & Accessories

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SHOWER HEADS - Stainless Steel

SHOWER HEADS

Stainless Steel



SHOWER HEADS

Stainless Steel



1/2" Water Supply Connection
Swivel Ball Joints



MODEL #	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
CAP-115ZAS-8	8" Disk Shower Head - Satin	\$690	\$711
GLCOS-8-S GLCOS-8-M	8" 316 Marine Grade Stainless Steel Disk Shower Head - Satin or Mirror	\$683	\$704
GLCOS-13-S GLCOS-13-M	13" 316 Marine Grade Stainless Steel Disk Shower Head - Satin or Mirror	\$1,018	\$1,049
GLCOL-19	19" Shower Head - Mirror	\$3,068	\$3,160
GLBTR-8-S GLBTR-8-M	8" Shower Head - Satin or Mirror	\$544	\$560
GLBRZ-9-M	9" Ultra Thin Shower Head - Mirror	\$632	\$651
CAP-118ZAS-8	8" Square Shower Head - Satin	\$858	\$884
GLSQA-8-S GLSQA-8-M	8" Square Shower Head - Satin or Mirror	\$850	\$876
GLSQA-13-S GLSQA-13-M	13" Square Shower Head - Satin or Mirror	\$1,062	\$1,094
AF-THIN-SQ	8", 12", 16", 20", or 24" Ultra Thin Square Shower Head - Satin or Mirror	CALL FOR PRICES	
AF-THIN-R	8", 12", 16", 20", or 24" Ultra Thin Round Shower Head - Satin or Mirror	CALL FOR PRICES	

SHOWER HEADS - Stainless Steel

Quality Outdoor Showers & Accessories

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SHOWER HEAD ARMS

Stainless Steel



SHOWER HEAD ARMS

Stainless Steel



1/2" Water Supply Connection



SHA-12
SHA-18
SHA-24



CAP-G0350S-13.5



CAP-J0350S-14



CAP-HAA11-19



GL-BDQF-14-S
GL-BDQF-14-M



GL-BD90F-14-S
GL-BD90F-14-M



GL-BDQV-8-S
GL-BDQV-8-M
GL-BDQV-14-S
GL-BDQV-14-M

MODEL NUMBER	DESCRIPTION	MSRP	EFFECTIVE JAN 1, 2017
SHA-12	12" Stainless Steel Arm - Satin	\$136	\$140
SHA-18	18" Stainless Steel Arm - Satin	\$144	\$148
SHA-24	24" Stainless Steel Arm - Satin	\$163	\$168
CAP-G0350S-13.5	13.5" Stainless Steel Tapered Arm - Satin	\$351	\$362
CAP-J0350S-14	14" Stainless Steel Straight Arm - Satin	\$353	\$364
CAP-HAA11-19	19" Stainless Steel Curved Arm - Satin	\$468	\$482
GL-BDQF-14-S GL-BDQF-14-M	14" Square Arm - Satin or Mirror	\$270	\$278
GL-BD90F-14-S GL-BD90F-14-M	14" Stainless Steel Arm - Satin or Mirror	\$270	\$278
GL-BDQV-8-S GL-BDQV-8-M	8" Square Ceiling Mount Shower Arm - Satin or Mirror	\$220	\$227
GL-BDQV-14-S GL-BDQV-14-M	14" Square Ceiling Mount Shower Arm - Satin or Mirror	\$236	\$243

Quality Outdoor Showers & Accessories

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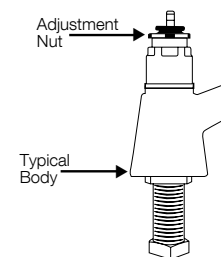
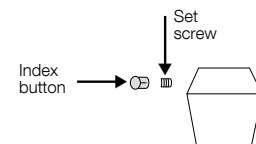
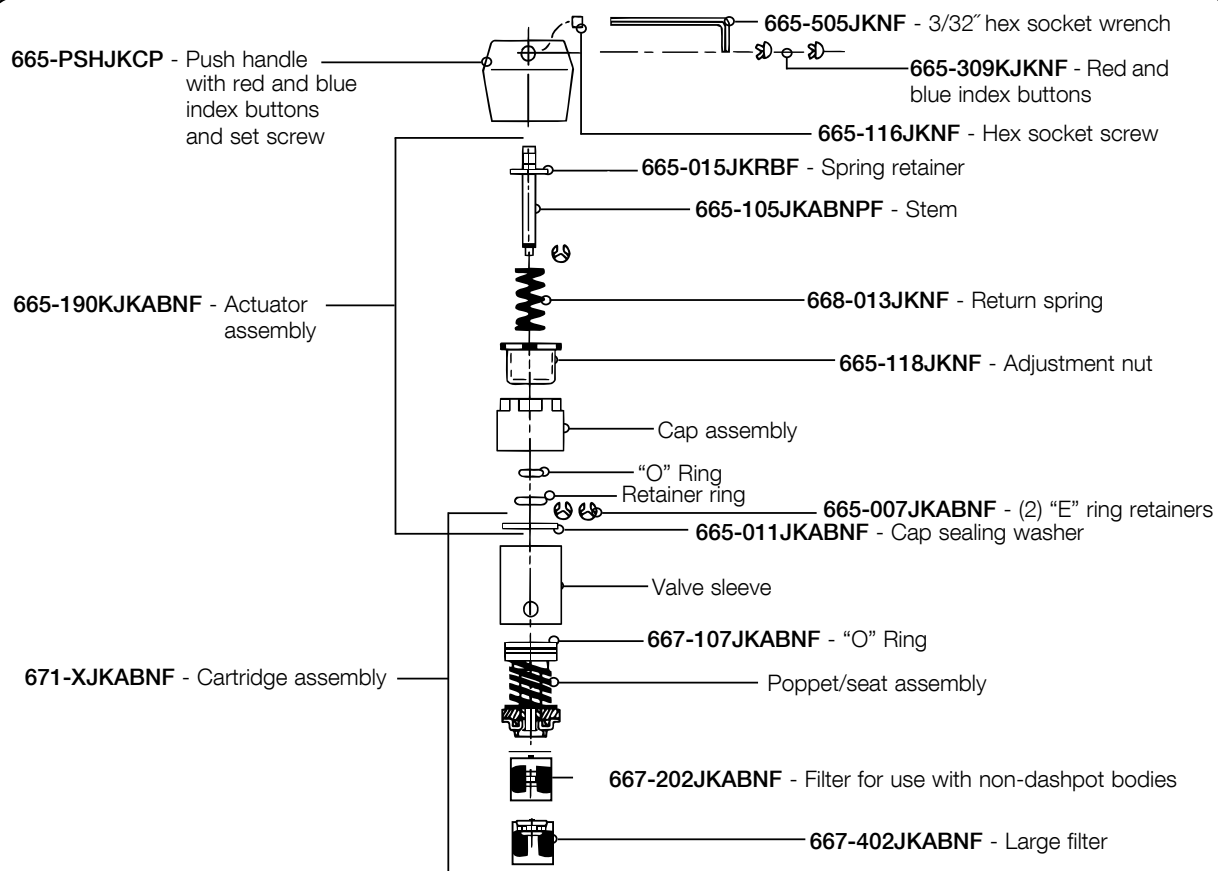
SHOWER HEAD ARMS - Stainless Steel



METERING VALVE PARTS & TIMING ADJUSTMENT

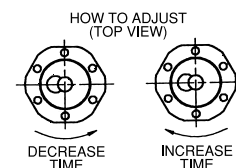


Contact Outdoor Shower Company for Replacement Parts or Questions



Timing Adjustment on an MVP Metering Cartridge

- 1 With handle in place, purge cartridge of air by pushing completely down 4-8 times rapidly, then check timing cycle.
- 2 Remove handle with a 3/32 allen wrench.
- 3 Use a standard pair of pliers (other tools may damage the adjustment nut) to change height of adjustment nut by 1/4 turn only. Turn adjustment nut clockwise to increase time.
- 4 Replace handle and time flow. NOTE: TIMING MUST BE CHECKED WITH HANDLE IN PLACE
- 5 If more adjustment is needed, follow steps 3 and 4 until timing is right.
- 6 Attach handle and tighten screw. Press index button into handle opening.



WARRANTY & MAINTENANCE

Product Information

Important Information - Please read prior to installation.



WARRANTY

Outdoor Shower Company guarantees Stainless Steel parts for a period of ten (10) years against fault in the material or construction, defect, or workmanship by the manufacturer. All other parts are covered for a period of two (2) years. These warranties begin on the date the product is delivered to a customer by freight carrier. The warranty does not include damage from freight carriers, faulty installations, failure to comply with cleaning and maintenance instructions, or freeze damage, and will become void if merchandise is damaged from misuse, improperly maintained or installed, or modified without the authorization from a licensed distributor. The warranties include replacement or repair of defective parts and an unconditional guarantee against manufacturing defects. The manufacturer will replace or repair at its own discretion any manufactured or supplied part found to be defective if the conditions are met. Any shipping fees associated with the return or replacement of merchandise covered by this warranty will be incurred by Outdoor Shower Company, LLC. **We reserve the right to determine if damage to a unit or any parts is the direct cause of not complying with manufacturer's guidelines or freeze damage.**

FREEZE DAMAGE IS NOT COVERED BY THE WARRANTY

It is very important to winterize outdoor showers. Just like other outside water faucets and hose bibbs, they are susceptible to freeze damage. A cut-off valve should be installed in the water line in freezing climates so that the unit can be drained and blown out with compressed air. The best option is to remove the entire shower unit and store it indoors. If this is not possible, it is advisable to remove the faucet handles and cartridges, shower heads, and all accessories, and store them during the winter months.

CAUTION

In warm climates use caution to prevent burns to skin from scalding water. Water is stored in the body of most shower units and water lines when it is not in use, and although the finish of the shower unit has minimal solar gain, water can reach more than 110° which can result in minor burns to delicate skin tissue. Outdoor Shower Company, LLC does not accept responsibility for bodily injury caused from improper use of its equipment or failure to use caution when operating the shower unit(s).

PRESSURE BALANCING VALVE

When required in order to meet state regulations and requirements, pressure balancing valves are available through a plumbing contractor or supply company and can be added to the water supply lines feeding into the shower valve. They are also available through Outdoor Shower Company when placing an order.

THERMOSTATIC MIXING VALVE

In order to provide WARM WATER for single supply shower units, a thermostatic mixing valve can be used. Hot & cold water will feed into the valve where the desired temperature can be set to produce a single supply of warm water to the shower unit.

DISCOLORATION OR STAINING

Stainless Steel does not "rust" as one thinks of regular steel rusting. If you see "discoloration" it is likely the product was contaminated from an outside source or chemical, or there is iron in the water supplied to the shower unit.

CLEANING

Never clean stainless steel with steel wool or abrasive cleaners. Do not use steel wool, sandpaper, mineral acids, bleaches, abrasive cleaners, or chlorine cleansers to clean stainless steel. In most cases, light staining can be removed with a stainless steel cleaner or non-metallic abrasive scouring pads such as a Scotch-Brite. WD-40 is an excellent and practical cleaner and polish for stainless steel. See next page for our cleaning guidelines.

Note: Even though Stainless Steel is one of the most durable products available for outdoor use, it must be cleaned and maintained regularly like any other outdoor fixture. As with a product such as a stainless steel sink, other metals can contaminate the surface and cause rust spots. Cleaning with a stainless steel cleaner will prevent build up and protect the surface.

"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

CLEANING GUIDELINES



READ THOROUGHLY BEFORE CLEANING

DO . . .

1. Rinse off stainless steel frequently with fresh water to wash away accumulated chemicals such as chlorine and wipe dry with a clean cloth. Especially try to clean equipment immediately after use around chemicals (chlorine powder, seawater, etc.)
2. Clean frequently with a cleaner and water. Any cleaner that is safe for glass is usually safe for stainless steel. Sprayway Stainless Steel Cleaner can be purchased at most home improvement stores. Some customers have also had good results cleaning with WD-40. Both products add a protective layer.
3. Inspect equipment frequently, if you notice discoloration, tarnish, or water stains, increase the frequency of rinses and cleaning to reduce the possibility of any accumulated chemicals.
4. If you see any rust spots or staining, remove as soon as possible to prevent surface damage.

DO NOT . . .

1. Do not use steel wool, sandpaper, or mineral acids, bleaches or chlorine cleansers.
2. Do not add chlorine to your pool nearby your stainless steel equipment. Add it as far away as possible and rinse stainless steel products with clear water.
3. Do not store stainless steel equipment in a closed area underneath steel beams to avoid corrosive condensation from dripping onto the equipment and leaving brown spots.
4. Do not store stainless steel equipment where it will attract and retain moisture or airborne contaminants and do not store equipment in the same areas as chlorine.

CLEANING DIRECTIONS:

Wet a Scotch-Brite (non metal) cleaning pad with fresh water (do not use salt or chlorinated water) and apply cleaner. Using gentle pressure, rub stained areas in the same direction of the existing polishing grain until stains are removed. Rinse with clean water and thoroughly dry the stainless steel. A soft paste wax, such as automotive wax, can prevent corrosive elements from adhering to the surface and enhance the appearance of the shower.





"Outdoor Showers for Outdoor Living"

1-866-SHOWER1 (746-9371)

OUTDOOR SHOWER COMPANY

Outdoor Showers & Accessories

Stay refreshed and invigorated with these durable stainless steel outdoor showers from Outdoor Shower Company. Whether you need a way to cool down from the heat, rinse off after a swim, or love showering outdoors, we have what you are looking for. From stylish stainless steel units that are ideal for homes and luxury resorts to durable pedestal-style showers for parks, playgrounds, public pools, and athletic clubs, you are sure to find something that meets your needs and matches your outdoor decor. These showers are built to last a lifetime!



OUTDOOR SHOWER COMPANY, LLC

274 Cadillac Pkwy, Suite 100

Dallas, GA 30157

1-866-shower1 (746-9371)

Local Area: 678-363-3939

Fax: 678-363-8391

General Requests: info@outdoorshowerco.com

Orders: sales@outdoorshowerco.com

www.outdoorshowerco.com

WARRANTY & MAINTENANCE

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It is very important to winterize outdoor showers. Just like other outside water faucets and hose bibbs, they are susceptible to freeze damage. A cut-off valve should be installed in the water line in freezing climates so that the unit can be drained and blown out with compressed air. The best option is to remove the entire shower unit and store it indoors. If this is not possible, it is advisable to remove the faucet handles and cartridges, shower heads, and all accessories, and store them during the winter months.

CAUTION

In warm climates use caution to prevent burns to skin from scalding water. Water is stored in the body of most shower units and water lines when it is not in use, and although the finish of the shower unit has minimal solar gain, water can reach more than 110° which can result in minor burns to delicate skin tissue. Outdoor Shower Company, LLC does not accept responsibility for bodily injury caused from improper use of its equipment or failure to use caution when operating the shower unit(s).

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"Outdoor Showers for Outdoor Living"

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Winterizing

Resources

[Warranty](#)

[Winterizing](#)

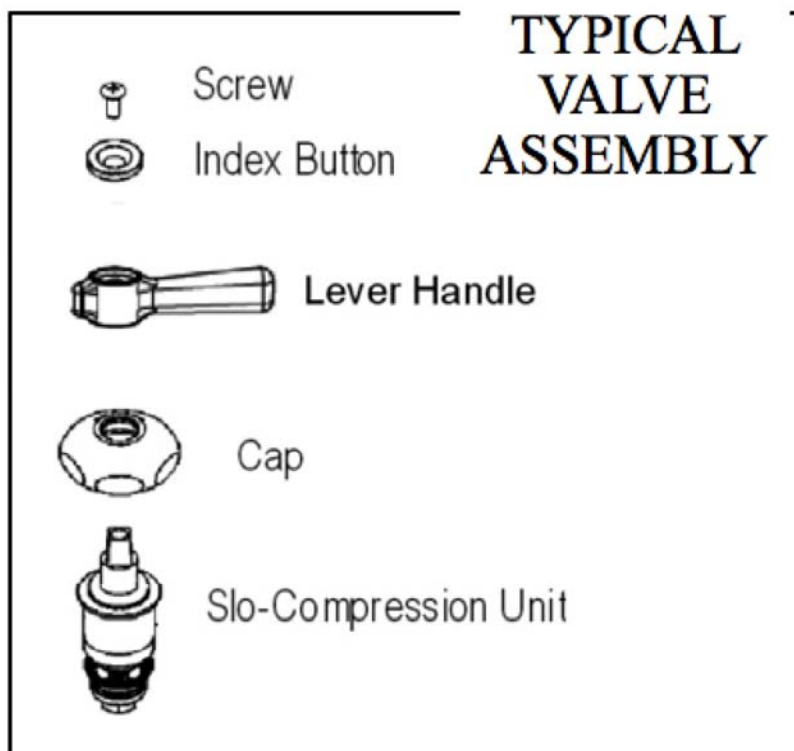
[Maintenance & Cleaning](#)

It is very important to winterize outdoor showers. Just like water faucets and hose bibbs, they are susceptible to freeze damage. The unit(s) must be drained in freezing conditions. In extremely cold temperatures it is advisable to remove faucet handles and cartridges, hand sprays, foot showers, drinking fountain bubblers, and hose bibbs, and store them during winter months.

TYPICAL VALVE ASSEMBLY ADVICE FROM A PROFESSIONAL PLUMBER...

1. Plumb your outdoor shower with a shut-off valve so that the entire system can be totally drained prior to winter weather.
2. Turn off water supply to the shower unit. For a stop and waste valve, shut off the water by turning the valve clockwise until it won't turn anymore. For a ball valve, turn the handle a quarter turn so it is perpendicular to the pipe. Remove drain caps and let water drain.

3. Turn on all valves and accessories to the shower letting them drain completely.
4. wrench and loosen them to let the water drain out.
5. Use compressed air to blow excess moisture out of the pipes and valves.
6. If an air compressor is not available remove the shower heads, valves and cartridges, hand sprays, foot showers, and hose bibbs and store them indoors for the winter. Cover the shower pipes to prevent water and debris from entering the exposed openings.
7. If you forget to winterize your unit before freezing temperatures occurs and your pipes do freeze, you can avoid busted valves if you act quickly. If the frozen pipe is a hot-water line, open the hot-water spigot. The moving water might thaw the pipe. If both hot and cold water lines are frozen, or if you are not sure, open both spigots. Keep opening and closing the spigots until the water flows freely. A hair dryer or other source of heat can be used if needed.



Outdoor Shower Company

274 Cadillac Parkway | Suite 100 | Dallas, Georgia 30157

Phone: 678-363-3939 | Toll free: 1-866-746-9371 | Fax: 678-363-8391

Website by **Marsna Design**

OUTDOOR SHOWER CO. - shower at pool deck

OUTDOOR SHOWER COMPANY

"Outdoor Showers for Outdoor Living"



2016 - 2017 Product Catalog

1-866-746-9371

www.outdoorshowerco.com



OUTDOOR SHOWER COMPANY

Outdoor Showers & Accessories

Stay refreshed and invigorated with these durable stainless steel outdoor showers from Outdoor Shower Company. Whether you need a way to cool down from the heat, rinse off after a swim, or love showering outdoors, we have what you are looking for. From stylish stainless steel units that are ideal for homes and luxury resorts to durable pedestal-style showers for parks, playgrounds, public pools, and athletic clubs, you are sure to find something that meets your needs and matches your outdoor decor. These showers are built to last a lifetime!



OUTDOOR SHOWER COMPANY, LLC

274 Cadillac Pkwy, Suite 100

Dallas, GA 30157

1-866-shower1 (746-9371)

Local Area: 678-363-3939

Fax: 678-363-8391

General Requests: info@outdoorshowerco.com

Orders: sales@outdoorshowerco.com

www.outdoorshowerco.com

CLEANING GUIDELINES



READ THOROUGHLY BEFORE CLEANING

DO . . .

1. Rinse off stainless steel frequently with fresh water to wash away accumulated chemicals such as chlorine and wipe dry with a clean cloth. Especially try to clean equipment immediately after use around chemicals (chlorine powder, seawater, etc.)
2. Clean frequently with a cleaner and water. Any cleaner that is safe for glass is usually safe for stainless steel. Sprayway Stainless Steel Cleaner can be purchased at most home improvement stores. Some customers have also had good results cleaning with WD-40. Both products add a protective layer.
3. Inspect equipment frequently, if you notice discoloration, tarnish, or water stains, increase the frequency of rinses and cleaning to reduce the possibility of any accumulated chemicals.
4. If you see any rust spots or staining, remove as soon as possible to prevent surface damage.

DO NOT . . .

1. Do not use steel wool, sandpaper, or mineral acids, bleaches or chlorine cleansers.
2. Do not add chlorine to your pool nearby your stainless steel equipment. Add it as far away as possible and rinse stainless steel products with clear water.
3. Do not store stainless steel equipment in a closed area underneath steel beams to avoid corrosive condensation from dripping onto the equipment and leaving brown spots.
4. Do not store stainless steel equipment where it will attract and retain moisture or airborne contaminants and do not store equipment in the same areas as chlorine.

CLEANING DIRECTIONS:

Wet a Scotch-Brite (non metal) cleaning pad with fresh water (do not use salt or chlorinated water) and apply cleaner. Using gentle pressure, rub stained areas in the same direction of the existing polishing grain until stains are removed. Rinse with clean water and thoroughly dry the stainless steel. A soft paste wax, such as automotive wax, can prevent corrosive elements from adhering to the surface and enhance the appearance of the shower.





Winterizing

Resources

[Warranty](#)

[Winterizing](#)

[Maintenance & Cleaning](#)

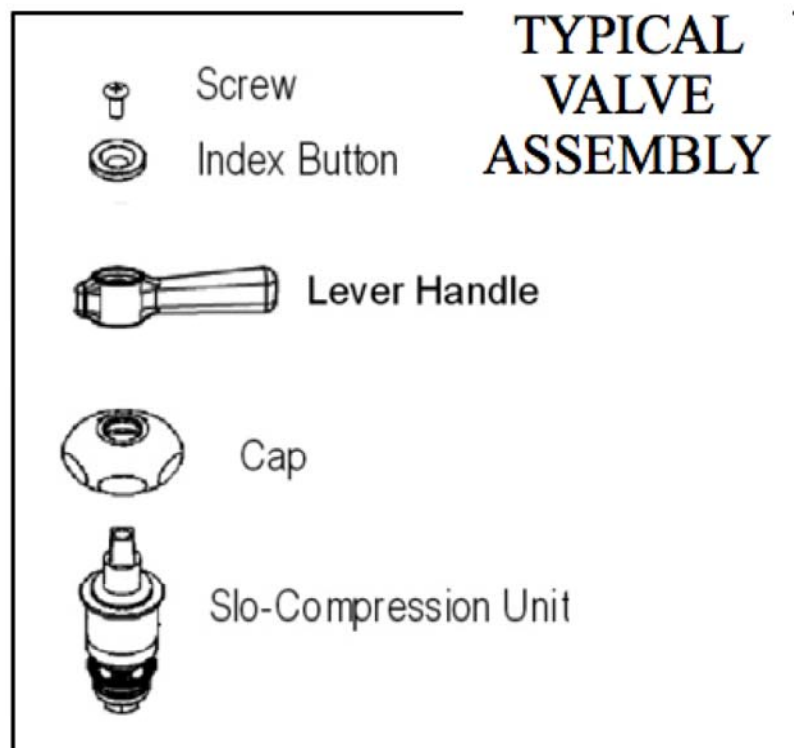
It is very important to winterize outdoor showers. Just like water faucets and hose bibbs, they are susceptible to freeze damage. The unit(s) must be drained in freezing conditions. In extremely cold temperatures it is advisable to remove faucet handles and cartridges, hand sprays, foot showers, drinking fountain bubblers, and hose bibbs, and store them during winter months.

TYPICAL VALVE ASSEMBLY ADVICE FROM A PROFESSIONAL PLUMBER...

1. Plumb your outdoor shower with a shut-off valve so that the entire system can be totally drained prior to winter weather.
2. Turn off water supply to the shower unit. For a stop and waste valve, shut off the water by turning the valve clockwise until it won't turn anymore. For a ball valve, turn the handle a quarter turn so it is perpendicular to the pipe. Remove drain caps and let water drain.

OUTDOOR SHOWER CO. - shower at pool deck

3. Turn on all valves and accessories to the shower letting them drain completely.
4. wrench and loosen them to let the water drain out.
5. Use compressed air to blow excess moisture out of the pipes and valves.
6. If an air compressor is not available remove the shower heads, valves and cartridges, hand sprays, foot showers, and hose bibbs and store them indoors for the winter. Cover the shower pipes to prevent water and debris from entering the exposed openings.
7. If you forget to winterize your unit before freezing temperatures occurs and your pipes do freeze, you can avoid busted valves if you act quickly. If the frozen pipe is a hot-water line, open the hot-water spigot. The moving water might thaw the pipe. If both hot and cold water lines are frozen, or if you are not sure, open both spigots. Keep opening and closing the spigots until the water flows freely. A hair dryer or other source of heat can be used if needed.





WARRANTY & MAINTENANCE

Product Information

Important Information - Please read prior to installation.

WARRANTY

Outdoor Shower Company guarantees Stainless Steel parts for a period of ten (10) years against fault in the material or construction, defect, or workmanship by the manufacturer. All other parts are covered for a period of two (2) years. These warranties begin on the date the product is delivered to a customer by freight carrier. The warranty does not include damage from freight carriers, faulty installations, failure to comply with cleaning and maintenance instructions, or freeze damage, and will become void if merchandise is damaged from misuse, improperly maintained or installed, or modified without the authorization from a licensed distributor. The warranties include replacement or repair of defective parts and an unconditional guarantee against manufacturing defects. The manufacturer will replace or repair at its own discretion any manufactured or supplied part found to be defective if the conditions are met. Any shipping fees associated with the return or replacement of merchandise covered by this warranty will be incurred by Outdoor Shower Company, LLC. **We reserve the right to determine if damage to a unit or any parts is the direct cause of not complying with manufacturer's guidelines or freeze damage.**

FREEZE DAMAGE IS NOT COVERED BY THE WARRANTY

It is very important to winterize outdoor showers. Just like other outside water faucets and hose bibbs, they are susceptible to freeze damage. A cut-off valve should be installed in the water line in freezing climates so that the unit can be drained and blown out with compressed air. The best option is to remove the entire shower unit and store it indoors. If this is not possible, it is advisable to remove the faucet handles and cartridges, shower heads, and all accessories, and store them during the winter months.

CAUTION

In warm climates use caution to prevent burns to skin from scalding water. Water is stored in the body of most shower units and water lines when it is not in use, and although the finish of the shower unit has minimal solar gain, water can reach more than 110° which can result in minor burns to delicate skin tissue. Outdoor Shower Company, LLC does not accept responsibility for bodily injury caused from improper use of its equipment or failure to use caution when operating the shower unit(s).

PRESSURE BALANCING VALVE

When required in order to meet state regulations and requirements, pressure balancing valves are available through a plumbing contractor or supply company and can be added to the water supply lines feeding into the shower valve. They are also available through Outdoor Shower Company when placing an order.

THERMOSTATIC MIXING VALVE

In order to provide WARM WATER for single supply shower units, a thermostatic mixing valve can be used. Hot & cold water will feed into the valve where the desired temperature can be set to produce a single supply of warm water to the shower unit.

DISCOLORATION OR STAINING

Stainless Steel does not "rust" as one thinks of regular steel rusting. If you see "discoloration" it is likely the product was contaminated from an outside source or chemical, or there is iron in the water supplied to the shower unit.

CLEANING

Never clean stainless steel with steel wool or abrasive cleaners. Do not use steel wool, sandpaper, mineral acids, bleaches, abrasive cleaners, or chlorine cleansers to clean stainless steel. In most cases, light staining can be removed with a stainless steel cleaner or non-metallic abrasive scouring pads such as a Scotch-Brite. WD-40 is an excellent and practical cleaner and polish for stainless steel. See next page for our cleaning guidelines.

Note: Even though Stainless Steel is one of the most durable products available for outdoor use, it must be cleaned and maintained regularly like any other outdoor fixture. As with a product such as a stainless steel sink, other metals can contaminate the surface and cause rust spots. Cleaning with a stainless steel cleaner will prevent build up and protect the surface.



Standard Warranty

WHAT IS COVERED?

Ferguson Enterprises, Inc. "Ferguson" or the "Company" warrants its products to be free from defects in material and workmanship under normal use and service FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF INSTALLATION.

WHAT IS NOT COVERED?

The warranty set forth in paragraph 1 does not cover installation or any other labor charges and does not apply to products which have been damaged as a result of any accident, abuse, improper installation or maintenance, or modification of original plumbing product. The warranty of such products is limited to the warranty extended to Ferguson by the product manufacturer. Finally, FERGUSON SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY FAILURE OR DAMAGE TO THIS PRODUCT OR ANY COMPONENT THEREOF CAUSED BY THE USE OF ABRASIVE CLEANERS.

HOW TO OBTAIN WARRANTY SERVICE

US Customers:

The purchaser should contact their local Ferguson location, installing contractor or builder from whom the product was purchased. To find your nearest Ferguson location please visit www.ferguson.com and enter in your address into the Find a Location field.

Canadian Customers:

The purchaser should contact their local Wolseley Canada location, installing contractor or builder from whom the product was purchased. To find your nearest Wolseley Canada location please visit www.wolseleyinc.ca, then click on Find a Location and enter in your address into the location field.

LIMITATIONS OF IMPLIED WARRANTY AND DISCLAIMER OF CONSEQUENTIAL OR INCIDENTAL DAMAGES

FERGUSON DISCLAIMS ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES AND DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AS SET FORTH ABOVE. IMPLIED WARRANTIES OF THE PRODUCTS AND PRODUCT COMPONENTS SET FORTH IN PARAGRAPH 1 ABOVE ARE LIMITED TO THE DURATIONS OF THE RESPECTIVE WARRANTY. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

PROFLO is a registered trademark of Ferguson Enterprises, Inc.



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Canadian Customers:

The purchaser should contact their local Wolseley Canada location, installing contractor or builder from whom the product was purchased. To find your nearest Wolseley Canada location please visit www.wolseleyinc.ca, then click on Find a Location and enter in your address into the location field.

LIMITATIONS OF IMPLIED WARRANTY AND DISCLAIMER OF CONSEQUENTIAL OR INCIDENTAL DAMAGES

FERGUSON DISCLAIMS ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES AND DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AS SET FORTH ABOVE. IMPLIED WARRANTIES OF THE PRODUCTS AND PRODUCT COMPONENTS SET FORTH IN PARAGRAPH 1 ABOVE ARE LIMITED TO THE DURATIONS OF THE RESPECTIVE WARRANTY. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

PROFLO is a registered trademark of Ferguson Enterprises, Inc.



Garantie Standard

ÉLÉMENTS COUVERTS PAR LA GARANTIE

Ferguson Enterprises, Inc. (« Ferguson » ou « l'entreprise ») garantit ses produits contre les défauts de matériaux et les vices de fabrication dans des conditions d'utilisation et d'entretien normales POUR UNE DURÉE D'UN (1) AN À PARTIR DE LA DATE D'INSTALLATION.

ÉLÉMENTS NON COUVERTS PAR LA GARANTIE

La garantie exposée au paragraphe 1 ne couvre pas les frais d'installation ou de main d'oeuvre et ne s'applique pas aux produits endommagés à la suite d'un accident, d'une utilisation abusive, d'une installation ou d'un entretien inapproprié ou d'une modification du produit de plomberie original. La garantie de ce produit se limite à la garantie offerte à Ferguson par le fabricant du produit. Enfin, FERGUSON NE PEUT ÊTRE TENU RESPONSABLE DES BRIS OU DES DOMMAGES DE CE PRODUIT OU DE TOUTES PIÈCES DE CE PRODUIT CAUSÉS PAR L'UTILISATION DE NETTOYANTS ABRASIFS.

COMMENT OBTENIR LE SERVICE AU TITRE DE LA GARANTIE

Clients des É.-U. :

L'acheteur/acheteuse devrait contacter le distributeur Ferguson, l'entrepreneur ou l'installateur le plus proche chez qui le produit a été acheté. Pour trouver le distributeur Ferguson le plus proche, veuillez visiter le www.ferguson.com et entrer votre adresse dans le champ Trouver Une Adresse.

Clients du Canada :

L'acheteur/acheteuse devrait contacter le distributeur Wolseley Canada, l'entrepreneur ou l'installateur le plus proche chez qui le produit a été acheté. Pour trouver votre distributeur Wolseley Canada le plus proche, veuillez visiter www.wolseleyinc.ca, puis cliquer sur Trouver Une Adresse et introduire votre adresse dans le champ d'adresse.

RESTRICTIONS DE LA GARANTIE IMPLICITE ET EXONÉRATION DE RESPONSABILITÉ QUANT AUX

DOMMAGES INDIRECTS OU ACCESSOIRES FERGUSON DÉCLINE TOUTE RESPONSABILITÉ POUR LES DOMMAGES INDIRECTS OU ACCESSOIRES ET ANNULE TOUTE GARANTIE EXPRESSE OU IMPLICITE, Y COMPRIS TOUTE GARANTIE DE QUALITÉ MARCHANDE OU D'ADAPTATION À UN USAGE PARTICULIER, TEL QU'ÉNONCÉ PRÉCÉDEMMENT. LES GARANTIES IMPLICITES POUR LE PRODUIT ET LES PIÈCES DU PRODUIT ÉNONCÉES PRÉCÉDEMMENT DANS LE PARAGRAPHE 1 SE LIMITENT À LA DURÉE DE VIE DE LA PRÉSENTE GARANTIE. Certains États ne permettent pas les clauses sur l'exclusion ou la restriction des dommages indirects ou accessoires ou des restrictions concernant la durée d'une garantie implicite. Par conséquent, les restrictions susmentionnées peuvent ne pas s'appliquer. Cette garantie vous confère certains droits reconnus par la loi et il est possible que vous ayez d'autres droits qui varient d'un État à l'autre.

PROFLO est une marque déposée de Ferguson Enterprises, Inc.



Garantía Estándar

¿QUÉ CUBRE LA GARANTÍA?

Ferguson Enterprises, Inc. ("Ferguson" o "la compañía") garantiza que sus productos están libres de defectos de materiales y mano de obra, en condiciones normales de uso y mantenimiento, DURANTE UN PERÍODO DE UN (1) AÑO A PARTIR DE LA FECHA DE LA INSTALACIÓN DEL PRODUCTO.

¿QUÉ EXCLUYE LA GARANTÍA?

La garantía estipulada en el párrafo 1 no cubre la instalación ni cualquier otro gasto de mano de obra y no es válida para productos que hayan resultado dañados debido a accidente, abuso, instalación o mantenimiento inadecuados o la modificación de los productos originales de plomería. La garantía de tales productos está limitada a la garantía que haya otorgado el fabricante del producto a Ferguson. Por último, FERGUSON NO SE HACE RESPONSABLE DE NINGUNA FALLA O DAÑO AL PRODUCTO O A CUALQUIERA DE LOS COMPONENTES DEBIDO AL USO DE LIMPIADORES ABRASIVOS.

CÓMO OBTENER SERVICIO DE GARANTÍA

Clientes de los Estados Unidos:

El comprador debe comunicarse con la tienda Ferguson de su localidad, el contratista de la instalación o la empresa constructora a la que se le compró el producto. Para buscar la tienda Ferguson más cercana visite www.ferguson.com e ingrese su dirección en el campo Find a Location.

Clientes de Canadá:

El comprador debe comunicarse con la tienda Wolseley Canada de su localidad, el contratista de la instalación o la empresa constructora a la que se le compró el producto. Para buscar la tienda Wolseley Canada más cercana visite www.wolseleyinc.ca y haga clic en Find a Location e ingrese su dirección en el campo location.

LÍMITACIONES DE LA GARANTÍA IMPLÍCITA Y EXENCIÓN DE RESPONSABILIDAD DE DAÑOS CONSECUCIALES O INCIDENTALES

FERGUSON ESTÁ EXENTA DE CUALQUIER RESPONSABILIDAD POR DAÑOS CONSECUCIALES O INCIDENTALES, ASÍ COMO DE CUALQUIER GARANTÍA EXPRESA O IMPLÍCITA, INCLUIDAS AQUELLAS RELACIONADAS CON LA COMERCIALIZACIÓN E IDONEIDAD DEL PRODUCTO PARA UN FIN DETERMINADO, COMO SE ESTIPULA EN LOS PÁRRAFOS PREVIOS. LAS GARANTÍAS IMPLÍCITAS DE LOS PRODUCTOS Y COMPONENTES DEL PRODUCTO ESTIPULADAS EN EL PÁRRAFO 1 ANTERIOR SE LIMITAN A LA DURACIÓN DE LA GARANTÍA CORRESPONDIENTE. Algunos estados no permiten la exclusión o limitación de daños incidentales o derivados, o bien de limitaciones sobre la duración de una garantía implícita. Por tanto, puede que las limitaciones previamente descritas no sean válidas en tal caso. Esta garantía otorga al comprador del producto derechos legales específicos y es posible que dicho comprador tenga otros derechos que varían de un estado a otro.

PROFLO es una marca comercial registrada de Ferguson Enterprises, Inc.



VITREOUS CHINA
ACCESSOIRES DE SALLE DE BAIN EN PORCELAINE
PORCELANA VIDRIADA Y ACCESORIO

Care & Cleaning
Entretien et nettoyage
Cuidado y limpieza

! CAUTION

PRODUCT IS FRAGILE. Handle with care to avoid breakage and possible injury.

! ATTENTION

PRODUIT FRAGILE. Manipuler avec précaution pour éviter de casser et de se blesser.

! PRECAUCIÓN

EL PRODUCTO ES FRÁGIL. Manéjese con cuidado para evitar su ruptura y posibles daños.

CARE & CLEANING

Please refer to these important instructions for maintaining and protecting your PROFLO vitreous china bathroom fixtures:

- Use all purpose liquid cleaners to wipe off surface
- Use toilet bowl cleaners or any disinfectant to brush off the inside bowl
- As with any product, test your cleaning solution in an inconspicuous area before applying to the entire surface
- After applying cleaning solution, immediately wipe surface clean and rinse completely with water. Dry with a soft cloth
- Never use abrasive cleaning tools or cleaners to clean or wipe the surface, such as Ajax, wire brushes, steel wool, and scouring pads.

Veuillez vous reporter à ces instructions importantes pour l'entretien et la protection de vos accessoires de salle de bain en porcelaine PROFLO:

- Utilisez des produits de nettoyage liquides tout usage pour essuyer la surface
- Servez-vous de produits de nettoyage pour toilettes ou de tout désinfectant pour nettoyer à la brosse l'intérieur de la cuvette.
- Comme pour tout autre produit, essayez votre solution de nettoyage à un endroit peu visible avant de l'appliquer sur toute la surface.
- Après avoir appliqué la solution de nettoyage, essuyez immédiatement la surface et rincez soigneusement à l'eau. Séchez avec un chiffon doux.
- N'utilisez jamais d'outils ou de produits de nettoyage abrasifs, tels que de l'Ajap, des brosses métalliques, de la laine d'acier ou des tampons à récurer, pour nettoyer ou essuyer la surface.

Consulte estas instrucciones importantes para mantener y proteger sus accesorios de porcelana vidriada PROFLO:

- Use limpiadores líquidos multipropósito para limpiar la superficie
- El interior del inodoro debe cepillarse con productos de limpieza para dicha aplicación o líquidos desinfectantes.
- Como debería hacerse con cualquier producto de limpieza, pruebe primero la solución limpiadora en un lugar reducido y oculto antes de aplicarla en toda la superficie.
- Inmediatamente después de aplicar la solución limpiadora, limpie la superficie tratada y enjuáguela con agua. Seque la superficie con un paño suave.
- No utilice herramientas ni soluciones abrasivas para limpiar las superficies, tal como cepillos de alambre, polvo Ajax, lana de acero o esponjas abrasivas © 2007

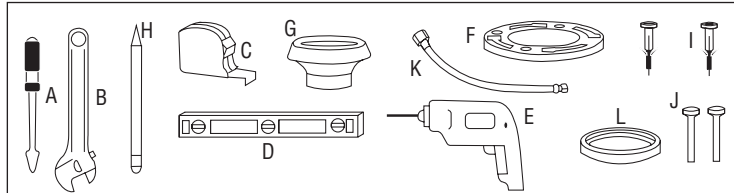
Installation Instructions



HET Toilet Bowl and Tank with 1.28 Gallons per Flush

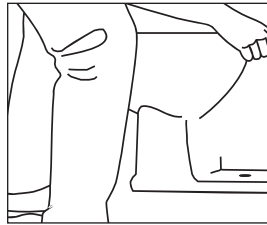
Tools Needed

- | | |
|-----------------|-------------------------|
| A. Screwdriver | G. Wax Seal |
| B. Wrench | H. Marker |
| C. Tape Measure | I. Plugs |
| D. Level | J. Screws |
| E. Drill | K. Flexible Supply Line |
| F. Flange | L. Gasket Adapter |

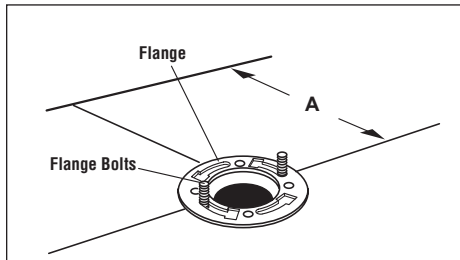


Remove Old Toilet

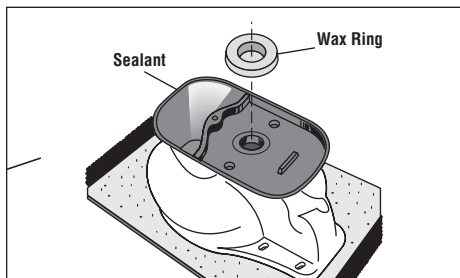
1. Shut off water supply line to toilet. Flush toilet and remove all water from the bowl and tank. Use a sponge to absorb the water.
2. Disconnect the water supply from the tank.
3. Remove tank from bowl, use screwdriver and adjustable wrench or socket wrench. Loosen toilet bowl flange nuts under caps.
4. Remove old bowl by carefully lifting it off the floor. Clean flange and plug drain with a rag to prevent sewer gas from escaping.



Install New Toilet

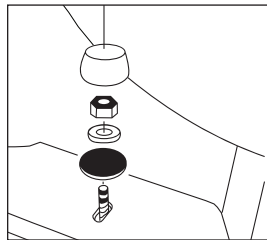


1. If new installation, install a toilet flange into waste line per flange instructions. Make sure you have the correct rough in toilet.
2. Remove the rag from the drain. Install the flange bolts into the flange.

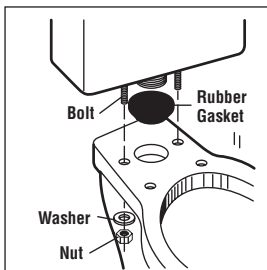


3. Turn the bowl upside down and place it on the flattened carton box to prevent damage.
4. Install a wax ring evenly around the bowl flange, (horn).

5. Gently lower the bowl onto the flange making sure the flange bolts protrude through the toilet bolt openings.
6. Apply pressure evenly and rock the bowl from side-to-side and front-to-back until it is firmly on the floor.



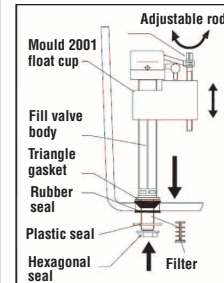
7. Install the washers, nuts, and caps on the flange bolts snug. Be careful not to over tighten because the china may break.



8. Install the tank-to-bowl-gasket, tank bolts with washer if it is not already installed, and place tank on bowl.

9. Snug and level the tank nuts using a socket wrench and holding the truss head screw firmly inside the tank with a screwdriver.
10. Connect the water supply to the ballcock. Only hand tighten the supply line. **DO NOT USE CHANNEL LOCKS.**
11. Turn on water, flush, and check for leaks. Adjust ballcock to proper water line height as noted on the flush valve tube.

Adjustments



Water level adjustment: Rotating adjustable rod will adjust the height of float cup and change water level.

DIFFICULTIES	REASON	SOLUTION
Water level is too high or too low	Fill valve adjusted incorrectly	Adjust water level
Fill valve can't fill	Shut-off valve not fully open	Open shut-off valve
	Filter clogged	Remove and clean filter
	Float cup is stuck by tank wall	Free fill valve from tank wall
Leaking	Hexagonal nut is loose	Tighten hexagonal nut



Installation Instructions

HET Toilet Bowl and Tank with 1.28 Gallons per Flush



Care & Maintenance

- **DO NOT** use abrasive powered or liquid cleaners which can damage the product surface.
- Over tightening of lock nut or coupling nut could result in breakage and flooding.
- **DO NOT** use cone washer with plastic supply line.
- **DO NOT** use pipe dope or other silicon based materials to tighten supply coupling nut.

⚠ CAUTION

Product is fragile. To avoid breakage and possible injury handle with care!

⚠ WARNING



DO NOT USE IN-TANK TOILET BOWL CLEANERS CONTAINING BLEACH OR CHLORINE!

1. Result in damage to tank components and may cause flooding and property damage.
2. Void PROFLO Fixtures Limited Warranty.

Problem Solving

PROBLEM	CAUSE	SOLUTION
Fill valve can't fill	1. Fill switch is closed. 2. Drain guard gets stuck. 3. Float cup is crushed by tank wall.	1. Turn on fill switch. 2. Clean drain guard. 3. Adjust direction of fill valve.
Leakage	1. Fit incorrectly. 2. Flush valve does not fit flush valve body. 3. Flush valve body gets stuck. 4. Incorrect operation.	1. Fit again according to correct installation procedure. 2. Fit again. 3. Unpick and wash float body. 4. Refill tube should be higher than water level.
Can't flush or flush little	Steel wire is twisted or pulled too much.	Adjust flush valve body.
Half flush water level is too high or too low	Adjust water level incorrectly.	Adjust water level.

Warranty

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HOW TO OBTAIN WARRANTY SERVICE

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by the consumer. In all cases, proof of purchase will be required. Call PROFLO customer service at 800-221-3379 for customer service, defective issues and technical inquiries.

LIMITATIONS OF IMPLIED WARRANTY AND DISCLAIMER OF CONSEQUENTIAL OR INCIDENTAL DAMAGES FERGUSON DISCLAIMS ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES AND DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AS SET FORTH ABOVE. IMPLIED WARRANTIES OF THE PRODUCTS AND PRODUCT COMPONENTS SET FORTH IN PARAGRAPH 1 ABOVE ARE LIMITED TO THE DURATIONS OF THE RESPECTIVE WARRANTY. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

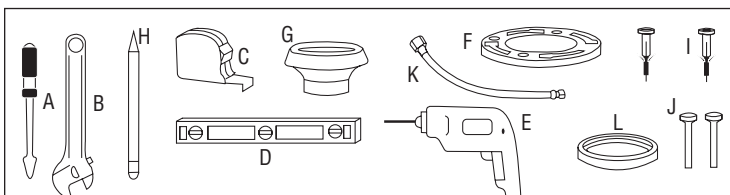


cuvette de toilette à haute efficacité et réservoir muni d'une 1.28 gallons par rougeur



Outils et matériels nécessaires

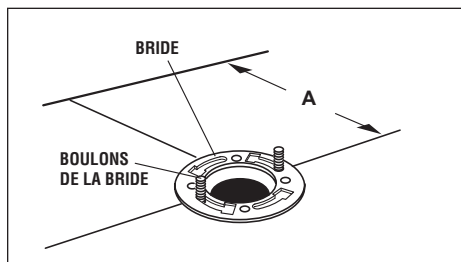
- | | |
|--------------------|-----------------------------------|
| A. Tournevis | G. Joint en cire |
| B. Clé | H. Marqueur |
| C. Ruban à mesurer | I. Bouchons |
| D. Niveau | J. Vis |
| E. Perceuse | K. Conduite d'alimentation souple |
| F. Bride | L. Adaptateur de joint |



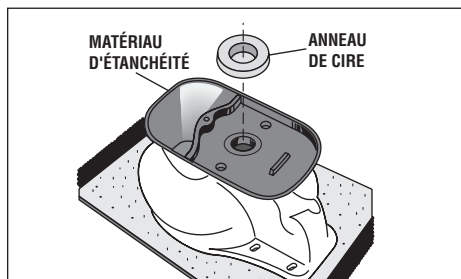
Démontage de l'ancienne toilette

1. Fermez l'alimentation en eau de la toilette. Tirez la chasse d'eau et retirez toute l'eau de la cuvette et du réservoir. Absorbez l'eau à l'aide d'une éponge.
2. Coupez l'alimentation en eau du réservoir.
3. Retirez le réservoir de la cuvette à l'aide d'un tournevis et d'une clé ajustable ou d'une clé à douilles. Dévissez les écrous de la bride de la cuvette situés en dessous des capuchons.
4. Retirez l'ancienne toilette en la soulevant délicatement de son emplacement au sol. Nettoyez la bride et bouchiez l'orifice d'évacuation à l'aide d'un chiffon pour éviter que les gaz d'égout ne s'échappent.

Installation de la nouvelle toilette

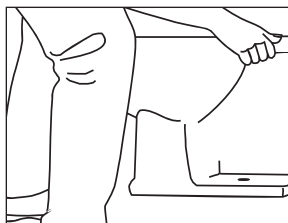


1. S'il s'agit d'une nouvelle installation, posez une bride à toilette à l'intérieur de la conduite d'évacuation en suivant les instructions fournies avec la bride. Assurez-vous d'avoir une toilette adéquate selon votre installation.
2. Retirez le chiffon de l'orifice d'évacuation. Posez les boulons de la bride à l'intérieur de la bride.

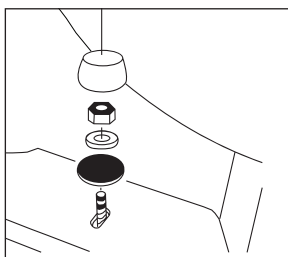


3. Placez la cuvette à l'envers et déposez-la sur la boîte de carton aplatie pour éviter de l'endommager.

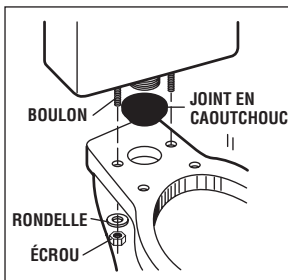
4. Appliquez un anneau de cire uniformément autour de la bride de la cuvette (tubulure de sortie).



5. Posez délicatement la cuvette sur la bride, en vous assurant que les boulons de la bride traversent les orifices à boulon de la toilette.
6. Exercez une pression uniformément et faites basculer la cuvette de gauche à droite et de l'avant à l'arrière jusqu'à ce qu'elle se fixe fermement au sol.



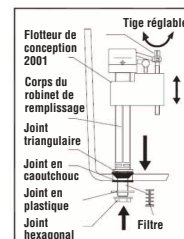
7. Posez les rondelles, les écrous et les capuchons sur les boulons à ergot de la bride. Évitez de trop serrer, car cela pourrait briser la porcelaine.



8. Faites le joint unissant le réservoir à la cuvette, posez les boulons et les rondelles du réservoir, si ce n'est pas déjà fait, et placez le réservoir sur la cuvette.

9. Ajustez et mettez à niveau les écrous du réservoir à l'aide d'une clé à douilles, tout en maintenant fermement la vis à tête bombée à l'intérieur du réservoir avec un tournevis.
10. Branchez l'alimentation en eau du tube de remplissage. Serrez la conduite d'alimentation à la main seulement. N'UTILISEZ PAS DE PINCES MULTIPRISES.
11. Ouvrez l'eau, tirez la chasse et vérifiez s'il y a des fuites. Réglez le tube de remplissage en fonction de la hauteur de la conduite d'alimentation en eau indiquée sur le tube du robinet de chasse.

Réglages



Réglage du niveau d'eau :
Tournez la tige réglable pour régler la hauteur du flotteur et modifier le niveau d'eau.

PROBLÈMES	RAISON	SOLUTION
Le niveau d'eau est trop élevé ou trop bas.	Le robinet de remplissage est mal réglé.	Réglez le niveau d'eau.
Le robinet de remplissage ne se remplit pas.	Le robinet d'arrêt n'est pas complètement ouvert.	Ouvrez le robinet d'arrêt.
	Le filtre est obstrué.	Retirez le filtre pour le nettoyer.
	Le flotteur est coincé contre la paroi du réservoir.	Dégagez le robinet de remplissage de la paroi du réservoir.
Fuite	L'écrou hexagonal est mal serré.	Serrez l'écrou hexagonal.



cuvette de toilette à haute efficacité et réservoir muni d'une 1.28 gallons par rouleur



Entretien

- N'utilisez pas de détergent abrasif en poudre ou en liquide qui risque d'endommager la surface du produit.
- Si les contre-écrous ou les écrous de raccordement sont trop serrés, cela risque d'endommager l'appareil et d'inonder la pièce.
- N'utilisez pas de rondelles avec la conduite d'alimentation en plastique.
- N'utilisez pas de pâte lubrifiante ou d'autre matériau à base de silicium pour serrer les écrous de raccordement de l'alimentation.

⚠ AVERTISSEMENT

Ce produit est fragile. Pour éviter de le briser et de vous blesser, veuillez le manipuler avec soin!

⚠ AVERTISSEMENT



N'UTILISEZ PAS DE DÉTERGENT À CUVETTE À BASE DE JAVELLISANT OU DE CHLORE À L'INTÉRIEUR DU RÉSERVOIR

1. Ce type de détergent risque d'endommager les pièces du réservoir, d'entraîner une inondation et d'endommager la propriété.
2. L'utilisation de ce type de détergent annule la garantie limitée du produit PROFLO.

Le problème résout

PROBLÈME	RAISON	SOLUTION
Le robinet de remplissage ne se remplit pas.	<ol style="list-style-type: none"> 1. L'interrupteur de remplissage est fermé. 2. Le dispositif de protection du collecteur est coincé. 3. Le flotteur est écrasé contre la paroi du réservoir. 	<ol style="list-style-type: none"> 1. Ouvrez l'interrupteur de remplissage. 2. Nettoyez le dispositif de protection du collecteur. 3. Réglez le sens du robinet de remplissage.
Fuite	<ol style="list-style-type: none"> 1. Assemblage incorrect. 2. La taille du siège de soupape ne correspond pas au corps du robinet de chasse d'eau. 3. Le corps du robinet de chasse d'eau est coincé. 4. Mauvais fonctionnement. 	<ol style="list-style-type: none"> 1. Recommencez l'assemblage en suivant correctement la procédure d'installation. 2. Recommencez l'assemblage. 3. Démontez le corps du robinet de chasse pour le nettoyer. 4. Le tube de remplissage doit être plus élevé que le niveau d'eau.
La chasse d'eau ne fonctionne pas ou fonctionne à moitié.	Le fil d'acier est tortillé ou trop tiré.	Réglez le corps du robinet de chasse.
Le niveau d'eau de la chasse partielle est trop élevé ou trop bas.	Le niveau d'eau n'est pas réglé correctement.	Réglez le niveau d'eau.

Garantie

ÉLÉMENTS COUVERTS PAR LA GARANTIE

Ferguson Enterprises, Inc. (« Ferguson » ou « l'entreprise ») garantit ses produits contre les défauts de matériaux et les vices de fabrication dans des conditions d'utilisation et d'entretien normales POUR UNE DURÉE D'UN (1) AN À PARTIR DE LA DATE D'INSTALLATION.

ÉLÉMENTS NON COUVERTS PAR LA GARANTIE

La garantie exposée au paragraphe 1 ne couvre pas les frais d'installation ou de main d'œuvre et ne s'applique pas aux produits endommagés à la suite d'un accident, d'une utilisation abusive, d'une installation ou d'un entretien inapproprié ou d'une modification du produit de plomberie original. La garantie de ce produit se limite à la garantie offerte à Ferguson par le fabricant du produit. Enfin, FERGUSON NE PEUT ÊTRE TENU RESPONSABLE DES BRIS OU DES DOMMAGES DE CE PRODUIT OU DE TOUTES PIÈCES DE CE PRODUIT CAUSÉS PAR L'UTILISATION DE NETTOYANTS ABRASIFS.

POUR OBTENIR LE SERVICE DE GARANTIE

L'acheteur doit communiquer avec la succursale Ferguson de sa région, l'entrepreneur qui a effectué l'installation ou le constructeur qui a vendu le produit, ou il peut faire parvenir une demande écrite à Ferguson Enterprises, Inc., 12500, Jefferson Avenue, Newport News, VA 23602, États-Unis, à l'attention de : Consumer Affairs. Tous les

frais d'expédition, liés au service de garantie, doivent être pris en charge par le consommateur. Dans toutes les situations, une preuve d'achat est requise. Communiquez avec le service à la clientèle de PROFLO au 1 800 221-3379 pour le service à la clientèle, les défauts de fabrication et les questions techniques.

RESTRICTIONS DE LA GARANTIE IMPLICITE ET EXONÉRATION DE RESPONSABILITÉ QUANT AUX DOMMAGES INDIRECTS OU ACCESSOIRES FERGUSON DÉCLINE TOUTE RESPONSABILITÉ POUR LES DOMMAGES INDIRECTS OU ACCESSOIRES ET ANNULE TOUTE GARANTIE EXPRESSE OU IMPLICITE, Y COMPRIS TOUTE GARANTIE DE QUALITÉ MARCHANDE OU D'ADAPTATION À UN USAGE PARTICULIER, TEL QU'ÉNONCÉ PRÉCÉDEMMENT. LES GARANTIES IMPLICITES POUR LE PRODUIT ET LES PIÈCES DU PRODUIT ÉNONCÉES PRÉCÉDEMMENT DANS LE PARAGRAPHE 1 SE LIMITENT À LA DURÉE DE VIE DE LA PRÉSENTE GARANTIE. Certains États ne permettent pas les clauses sur l'exclusion ou la restriction des dommages indirects ou accessoires ou des restrictions concernant la durée d'une garantie implicite. Par conséquent, les restrictions susmentionnées peuvent ne pas s'appliquer. Cette garantie vous confère certains droits reconnus par la loi et il est possible que vous ayez d'autres droits qui varient d'un État à l'autre.



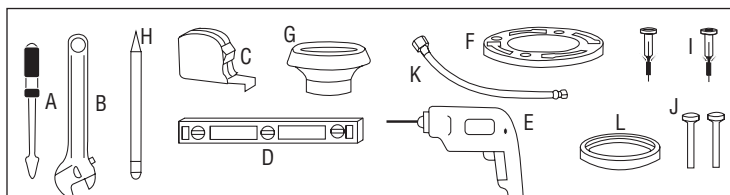
Instrucciones de instalación

taza de inodoro de alta eficiencia y cisterna con 1.28 galones por rubor



Herramientas y materiales necesarios

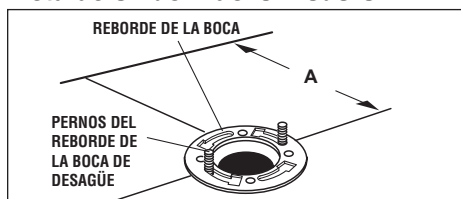
- | | |
|---|-----------------------------------|
| A. Destornillador | G. Sello de cera |
| B. Llave | H. Marcador |
| C. Cinta métrica | I. Conectores |
| D. Nivel | J. Tornillos |
| E. Taladro | K. Tubería flexible de suministro |
| F. Reborde circular del desagüe del inodoro | L. Adaptador de junta |



Desinstalación del inodoro viejo

1. Cierre la llave de suministro de agua al inodoro. Tire de la palanca de descarga (vaciado) del inodoro y elimine el resto del agua de la taza y de la cisterna. Use una esponja para absorber el agua.
2. Desconecte el suministro de agua de la cisterna.
3. Desinstale la cisterna de la taza, con un destornillador y una llave ajustable o una llave para tuercas. Afloje las tuercas de la boca de desagüe del inodoro, las cuales se encuentran bajo las tapas.
4. Desinstale la taza vieja levantándola con cuidado del piso. Limpie el área de la boca de desagüe y cubra dicho agujero con un trapo, para evitar la fuga de gases provenientes del agujero.

Instalación del nuevo inodoro



1. Si se trata de una nueva instalación, instale un reborde circular que se ajuste a la tubería de desagüe del inodoro siguiendo las instrucciones de dicho reborde. Asegúrese de que las dimensiones de la boca de desagüe del inodoro son las adecuadas.
2. Quite el trapo con que había cubierto la boca del desagüe. Inserte los pernos correspondientes en el reborde circular.

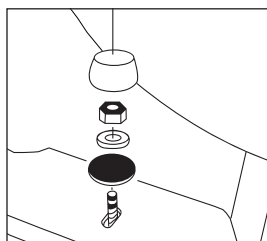


3. Voltee la taza hacia abajo y colóquela sobre el cartón extendido de la caja de empaque, para evitar daños.

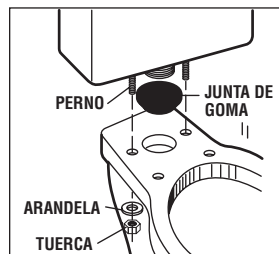
4. Instale un sello de cera de manera uniforme alrededor de la boca (cuerno) de desagüe de la taza.



5. Coloque lentamente la taza en la boca de desagüe, asegurándose de que los pernos de la boca de desagüe sobresalgan a través de los agujeros correspondientes de la taza del inodoro.
6. Presione de manera uniforme y sacuda la taza de un lado a otro y de adelante hacia atrás, hasta que quede firmemente acoplada al piso.

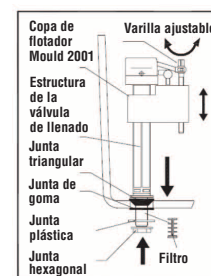


7. Instale las arandelas, tuercas y tapas en los pernos de la boca de desagüe. Tenga cuidado de no apretar demasiado, a fin de no dañar la superficie de porcelana.



8. Instale la junta hermética (entre cisterna y taza), los pernos de la cisterna con arandelas (en caso de no estar ya instalados) y coloque la cisterna en la taza.

9. Ajuste y nivele las tuercas de la cisterna con una llave de tuercas, manteniendo (con un destornillador) el tornillo de cabeza semirredonda dentro de la cisterna.
10. Conecte la tubería de suministro de agua a la válvula del flotador. Apriete dicha tubería solamente con la mano. NO USE PINZAS AJUSTABLES.
11. Abra el suministro de agua, descargue (vacíe) el inodoro y observe si hay fugas de agua. Ajuste la válvula del flotador a la altura correcta de la tubería de agua, según se indica en la tubería de la válvula de descarga.



Ajustes

Ajuste el nivel de agua: Si se gira la varilla ajustable se ajustará la altura de la copa del flotador y se cambiará el nivel de agua.

PROBLEMAS	CAUSA	SOLUCIÓN
El nivel del agua es demasiado alto o demasiado bajo.	Ajuste incorrecto de la válvula de llenado.	Ajuste el nivel de agua.
La válvula de llenado no llena.	La válvula de cierre (llave de paso) no está completamente abierta.	Abra más la válvula de cierre.
	El filtro está obstruido.	Quite el filtro y límpielo.
	La copa del flotador está obstruida por la pared de la cisterna.	Mueva la válvula de llenado para que no quede obstruida por la pared de la cisterna.
Fugas de agua.	La tuerca hexagonal está floja.	Apriete dicha tuerca hexagonal.



taza de inodoro de alta eficiencia y cisterna con 1.28 galones por rubor



Cuidado y Mantenimiento

- No use limpiadores abrasivos en polvo o líquidos, ya que pueden dañar la superficie del producto.
- Si se aprieta demasiado la tuerca de bloqueo o de acoplamiento, es posible que se rompa la superficie del producto, lo cual podría causar un desbordamiento de agua.
- No use una arandela cónica en el caso de tuberías de plástico.
- No use pegamento para tuberías ni ningún otro material a base de silicona para reforzar la tuerca de acoplamiento de suministro.

! PRECAUCIÓN

El producto es frágil. Para evitar que se rompa o evitar lesiones personales, manipule el producto con cuidado.

! ADVERTENCIA



NO USE EN LA CISTERNA DEL INODORO LIMPIADORES PARA LA TAZA QUE CONTENGAN BLANQUEADORES O CLORO

1. Esto podría dañar los componentes de la cisterna y causar un desbordamiento de agua y daños a la propiedad.
2. Esto podría anular la Garantía Limitada de los accesorios de productos PROFLO.

El problema que resuelve

PROBLEMA	CAUSA	SOLUCIÓN
La válvula de llenado no llena.	<ol style="list-style-type: none">1. El regulador de la válvula de llenado está cerrado.2. El tapón del desagüe se queda atascado.3. La copa del flotador está obstruida por la pared de la cisterna.	<ol style="list-style-type: none">1. Abra el regulador de la válvula de llenado.2. Limpie el tapón del desagüe3. Ajuste la orientación de la válvula de llenado.
Fugas de agua	<ol style="list-style-type: none">1. Los accesorios están acoplados incorrectamente.2. El asiento de la válvula de descarga no se ajusta a la forma de dicha válvula.3. La válvula de descarga se queda atascada.4. Funcionamiento incorrecto.	<ol style="list-style-type: none">1. Vuelva a ajustarla de acuerdo al procedimiento de instalación correcto.2. Vuelva a ajustarla.3. Desinstale y lave la estructura de la válvula de descarga.4. La tubería de llenado debe quedar por encima del nivel del agua.
No es posible descargar (vaciar) el inodoro o se descarga poco.	El alambre de acero está torcido o se ha estirado demasiado.	Ajuste la estructura de la válvula de descarga.
El nivel de descarga a la mitad es demasiado alto o demasiado bajo.	El nivel del agua está ajustado incorrectamente.	Ajuste el nivel de agua.

Garantía

¿QUÉ CUBRE LA GARANTÍA?

Ferguson Enterprises, Inc. ("Ferguson" o "la compañía") garantiza que sus productos están libres de defectos de materiales y mano de obra, en condiciones normales de uso y mantenimiento, DURANTE UN PERÍODO DE UN (1) AÑO A PARTIR DE LA FECHA DE LA INSTALACIÓN DEL PRODUCTO.

¿QUÉ EXCLUYE LA GARANTÍA?

La garantía estipulada en el párrafo 1 no cubre la instalación ni cualquier otro gasto de mano de obra y no es válida para productos que hayan resultado dañados debido a accidente, abuso, instalación o mantenimiento inadecuados o la modificación de los productos originales de plomería. La garantía de tales productos está limitada a la garantía que haya otorgado el fabricante del producto a Ferguson. Por último, FERGUSON NO SE HACE RESPONSABLE DE NINGUNA FALLA O DAÑO AL PRODUCTO O A CUALQUIERA DE LOS COMPONENTES DEBIDO AL USO DE LIMPIADORES ABRASIVOS.

CÓMO OBTENER EL SERVICIO TÉCNICO CUBIERTO POR LA GARANTÍA

El comprador debe ponerse en contacto con su proveedor local de Ferguson, el contratista de la instalación o el constructor encargado de la compra del producto, o bien de forma escrita a Ferguson Enterprises, Inc., 12500 Jefferson Avenue, Newport News, VA 23602, EE.UU. Attention: Consumer Affairs. Cualquiera

gasto de transporte/envío del producto asociado al servicio técnico cubierto por la garantía deberá ser pagado previamente por el consumidor. En cualquier caso de solicitud de servicio técnico se requiere una prueba de compra. El número de atención telefónica al cliente de PROFLO es 800-221-3379 (tanto para consultas sobre productos defectuosos, como de tipo técnico). LÍMITACIONES DE LA GARANTÍA IMPLÍCITA Y EXENCIÓN DE RESPONSABILIDAD DE DAÑOS CONSECUCIONALES O INCIDENTALES FERGUSON ESTÁ EXENTA DE CUALQUIER RESPONSABILIDAD POR DAÑOS CONSECUCIONALES O INCIDENTALES, ASÍ COMO DE CUALQUIER GARANTÍA EXPRESA O IMPLÍCITA, INCLUIDAS AQUELLAS RELACIONADAS CON LA COMERCIALIZACIÓN E IDONEIDAD DEL PRODUCTO PARA UN FIN DETERMINADO, COMO SE ESTIPULA EN LOS PÁRRAFOS PREVIOS. LAS GARANTÍAS IMPLÍCITAS DE LOS PRODUCTOS Y COMPONENTES DEL PRODUCTO ESTIPULADAS EN EL PÁRRAFO 1 ANTERIOR SE LIMITAN A LA DURACIÓN DE LA GARANTÍA CORRESPONDIENTE. Algunos estados no permiten la exclusión o limitación de daños incidentales o derivados, o bien de limitaciones sobre la duración de una garantía implícita. Por tanto, puede que las limitaciones previamente descritas no sean válidas en tal caso. Esta garantía otorga al comprador del producto derechos legales específicos y es posible que dicho comprador tenga otros derechos que varían de un estado a otro.



Parts Breakdown

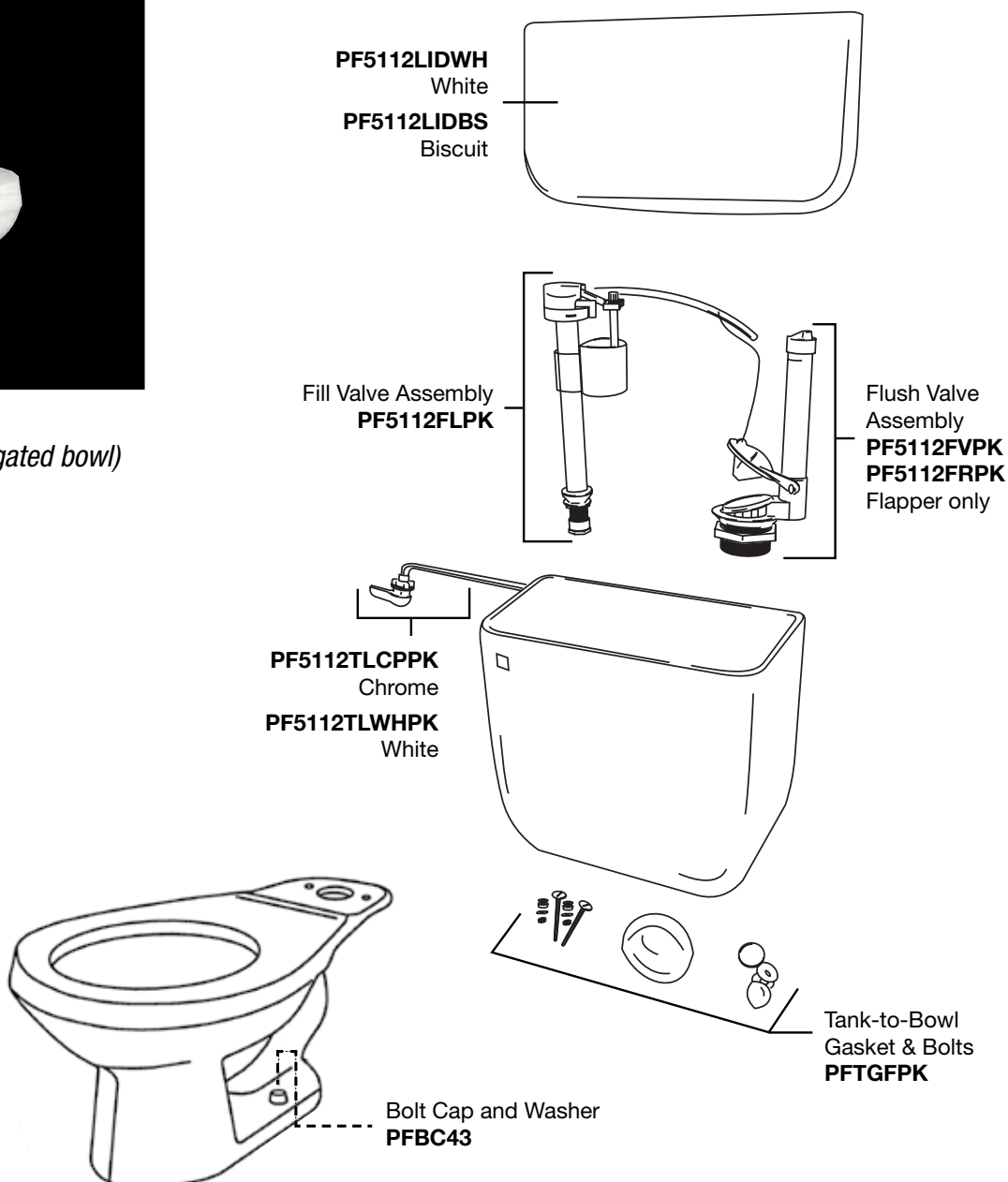
1.28gpf Closet Tank

PF5112HE Series



PF5112HEWH

(Shown with PF1401HEWH elongated bowl)



Warranty and Codes

Distributed Exclusively by Ferguson and Wolseley Canada

Limited Warranty

Vitreous China



1. WARRANTY: Subject to the limitations expressed herein, Seller warrants to the owner of the original installation that products manufactured by Seller ("Products") shall be free from defects in material and workmanship for the duration from the date of sale set forth in the following table ("Warranty Period"). This warranty is void for any damage caused by (a) improper storage, use or installation (b) accident, damage, abuse or misuse, (c) acts of God (d) chemical or mineral damage (e) abrasive cleaners or (f) failure to comply with the terms of this limited warranty.

Product	Warranty Period
Vitreous China	Lifetime
Parts & Fittings: Tank Trim including ball cock, flush valve, flapper, trip lever and plumbing fittings	1 year

2. REMEDIES: Seller shall repair, replace or refund, at its option and at no additional charge, any part that proves, upon inspection by Seller to be defective, upon receipt from Buyer during the Warranty Period. Seller makes NO ADDITIONAL ALLOWANCE FOR THE LABOR OR EXPENSE OF DE-INSTALLATION, RE-INSTALLATION OR TRANSPORTATION COST INCIDENTAL TO REPAIRING OR REPLACING THE DEFECTIVE PART OR DAMAGE RESULTING FROM SAME. SELLER HEREBY DISCLAIMS ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OR FITNESS FOR A PARTICULAR PURPOSE.

3. BUYER RESPONSIBILITIES: Every claim under this warranty shall be deemed waived unless Buyer submits to Seller a detailed description of the alleged defect and the manner in which Seller's workmanship is believed to be materially defective. Such description must be submitted in writing within sixty (60) days of the date Buyer knew or reasonably should have known of the alleged material defect and within the Warranty Period.

4. LIMITATION OF LIABILITY: The warranty provided above is strictly limited to its terms and is in lieu of all other warranties expressed, implied and statutory. Buyer specifically understands and agrees that Seller shall not be liable in tort to Buyer, whether based on negligence, strict liability, or any other theory of tort liability for any action or failure to act in respect to the manufacture, preparation for sale, sale, delivery or use of Seller's products. Buyer expressly agrees that his sole and exclusive remedy for breach of the warranty set forth above shall be the remedies set forth above. BUYER FURTHER SPECIFICALLY UNDERSTANDS AND AGREES THAT, EXCEPT AS PROVIDED NO REMEDY SHALL BE AVAILABLE TO BUYER, INCLUDING, BUT NOT LIMITED TO, CLAIMS FOR INCIDENTAL, PUNITIVE, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. UNDER NO CIRCUMSTANCES WILL SELLER BE LIABLE FOR LOSS OF ANTICIPATED PROFITS OR ANY OTHER LOSS CAUSED BY REASON OF NONOPERATION OR INCREASED EXPENSE OF OPERATION CAUSED BY SELLER'S PRODUCTS. BUYER HEREBY ACKNOWLEDGES AND AGREES THAT UNDER NO CIRCUMSTANCES, AND IN NO EVENT, SHALL SELLER'S LIABILITY, IF ANY, EXCEED THE NET SALES PRICE OF THE DEFECTIVE PRODUCT (S) PURCHASED DURING THE PREVIOUS CONTRACT YEAR.

5. RECOMMENDATIONS BY SELLER: Seller may assist Buyer in selection decisions by providing information regarding Products. However, Buyer acknowledges that Buyer ultimately chooses the product's suitability for its particular use. Any recommendation made by Seller concerning the use, design, application or operation of the products shall not be construed as representations or warranties, expressed or implied. Failure by Seller to make recommendations or give advice to Buyer shall not impose any liability upon Seller.

Note: Some states do not allow limitations on an implied warranty, incidental or consequential damages, so some of the limitations above may not apply. Buyer may have other rights which vary from state to state.

Garantie Limitée

Porcelaine Vitrifiée



1. GARANTIE : Sous réserve des limites présentées ci-après, le Vendeur garantit au propriétaire de la première installation que les produits fabriqués par le Vendeur (« les Produits ») seront dépourvus de tous défauts de matériau et de tous vices de fabrication pendant la période à compter de la date d'achat présentée dans le tableau suivant (« Période de la Garantie ») Cette garantie est valide pour tous dommages causés par (a) une conservation, utilisation ou une mauvaise installation (b) un accident, dommage, abus ou mauvais usage, (c) des catastrophes naturelles (d) des dommages chimiques ou minéraux (e) des nettoyeurs abrasifs ou (f) le non-respect des conditions de cette garantie limitée.

Produit	Période de la garantie
Porcelaine vitrifiée	À vie
Pièces et raccords : Organes internes du réservoir y compris robinet à flotteur, robinet de chasse, clapet de non-retour, levier de déclenchement et raccord de plomberies	1 an

2. VOIE DE RECOURS : Le Vendeur réparera, remplacera ou remboursera, au choix et sans frais supplémentaire, toute pièce qui s'avère, suite à l'inspection par le Vendeur, défectueuse, dès réception de l'avis émanant de l'Acheteur pendant la Période de la Garantie. Le Vendeur ne fait AUCUNE RISTOURNE ADDITIONNELLE POUR LA MAIN D'ŒUVRE NI POUR DES FRAIS DE DÉINSTALLATION, DE RÉINSTALLATION OU DE TRANSPORT CONSÉCUTIFS À LA RÉPARATION OU AU REMPLACEMENT DE PIÈCES DÉFECTUEUSES OU DES DOMMAGES EN DÉCOULANT. PAR LA PRÉSENTE, LE VENDEUR DÉCLINE TOUTES AUTRES GARANTIES EXPRESSES OU IMPLICITES, Y COMPRIS ET SANS LIMITE, TOUTES GARANTIES DE QUALITÉ MARCHANDE ET D'ADAPTATION POUR UN USAGE PARTICULIER.

3. RESPONSABILITÉS DE L'ACHETEUR : Toute réclamation en vertu de cette garantie sera considérée abandonnée à moins que l'Acheteur ne soumette au Vendeur une description détaillée du défaut supposé et en quoi la fabrication du Vendeur supposée présenter un vice. Une telle description doit être soumise par écrit dans les soixante (60) jours à compter de la date de constatation ou du moment supposé raisonnable de constatation par l'Acheteur du défaut matériel supposé et ce, dans les limites de la Période de Garantie.

4. LIMITATION DE RESPONSABILITÉ : La garantie ci-dessus fournie est strictement limitée à ses conditions et tient lieu de toutes autres garanties explicites, implicites et statutaires. L'Acheteur comprend précisément et convient que le Vendeur ne sera pas tenu responsable au préjudice de l'Acheteur, que ce soit pour motif de négligence, de stricte responsabilité ou de toute autre théorie de responsabilité civile pour quelque action ou incapacité à agir en ce qui concerne la fabrication, la préparation à la vente, la vente, la livraison ou l'utilisation des produits du Vendeur. Le Vendeur convient explicitement que ses seules voies de recours pour une rupture de la garantie ci-dessus présentée seront les voies de recours présentées ci-dessus. L'ACHETEUR COMPREND PRÉCISÉMENT ÉGALEMENT ET CONVIENT QUE, SAUF CLAUSE PARTICULIÈRE, AUCUNE VOIE DE RECOURS NE LUI SERA DISPONIBLE, Y COMPRIS MAIS NON LIMITÉE AUX RÉCLAMATIONS POUR DOMMAGES ACCIDENTELS, SPÉCIAUX OU CONSÉCUTIFS OU DOMMAGES-INTÉRÊTS EXEMPLAIRES DE QUELQUE NATURE QUE CE SOIT. EN AUCUNES CIRCONSTANCES LE VENDEUR NE SERA TENU POUR RESPONSABLE POUR UNE PERTE DE PROFITS ANTICIPÉS OU POUR TOUTE AUTRE PERTE CAUSÉE PAR L'ABSENCE DE FONCTIONNEMENT OU L'AUGMENTATION DES FRAIS DE FONCTIONNEMENT CAUSÉES PAR LES PRODUITS DU VENDEUR. PAR LA PRÉSENTE, L'ACHETEUR RECONNAÎT ET CONVIENT QU'EN AUCUNES CIRCONSTANCES, ET EN AUCUN CAS, LA RESPONSABILITÉ DU VENDEUR, LE CAS ÉCHÉANT, NE DÉPASSERA LE PRIX D'ACHAT NET DU PRODUIT DÉFECTUEUX ACHÉTÉ PENDANT L'ANNÉE CONTRACTUELLE PRÉCÉDENTE.

5. RECOMMANDATIONS DU VENDEUR : Le Vendeur peut prêter assistance à l'Acheteur dans ses décisions de sélection en lui fournissant des renseignements sur les produits. Cependant, l'Acheteur reconnaît qu'il fait en dernier ressort le choix de la capacité du produit à se conformer à un usage particulier. Toute recommandation faite par le Vendeur à propos de l'usage, de la conception, de l'application ou du fonctionnement des produits ne sera pas interprétée comme des représentations de garanties expresses ou implicites. L'incapacité pour le vendeur de faire des recommandations ou de donner des conseils à l'Acheteur n'imposera aucune responsabilité au vendeur.

Remarque : Certaines provinces ne permettent aucune limitation sur une garantie de dommages implicites, accidentels ou consécutifs; certaines des limitations ci-dessus peuvent donc ne pas s'appliquer. L'Acheteur pourrait avoir d'autres droits qui varient d'une province à l'autre.



1. GARANTÍA: De acuerdo con las limitaciones indicadas en la presente, el Vendedor garantiza al propietario de la instalación original que los productos fabricados por el Vendedor ("Productos") estarán libres de defectos de materiales y mano de obra durante el período que se inicia en la fecha de venta y que se establece en la siguiente tabla ("Período de garantía"). Esta garantía queda anulada por daños y perjuicios ocasionados por (a) almacenamiento, uso o instalación inapropiados, (b) accidente, daño, abuso o mal uso, (c) caso fortuito, (d) daño químico o mineral, (e) productos de limpieza abrasivos o (f) incumplimiento de los términos de esta garantía limitada.

Producto	Período de garantía
Loza vidriada	Vitalicia
Piezas y accesorios: Acabado del tanque, incluso llave de flotador, válvula de descarga, charnela, palanca de accionamiento y accesorios sanitarios	1 año

2. REPARACIONES: Al recibir el aviso del Comprador durante el Período de Garantía, el Vendedor reparará, reemplazará o reembolsará, a su elección y sin cargo adicional, toda pieza que, después de haber sido inspeccionada por el Vendedor, se observe defectuosa. El Vendedor NO REALIZA PRESTACIONES ADICIONALES POR LA MANO DE OBRA O LOS GASTOS DE INSTALACIÓN, REINSTALACIÓN O COSTOS DE TRANSPORTE RELACIONADOS CON LA REPARACIÓN O EL REEMPLAZO DE LA PIEZA DEFECTUOSA O LOS DAÑOS QUE RESULTAREN DE ÉSTA. POR EL PRESENTE, EL VENDEDOR RENUNCIA A TODA GARANTÍA, EXPRESA O IMPLÍCITA, INCLUIDAS, ENTRE OTRAS, LAS GARANTÍAS IMPLÍCITAS DE COMERCIABILIDAD Y ADECUACIÓN O ADECUACIÓN PARA UN FIN ESPECÍFICO.

3. RESPONSABILIDADES DEL COMPRADOR: El Vendedor renuncia a todo reclamo cubierto por esta garantía a menos que el Comprador entregue al Vendedor una descripción detallada del supuesto defecto y la forma en que se considera que la mano de obra del Vendedor es materialmente defectuosa. Dicha descripción deberá entregarse por escrito dentro de los sesenta (60) días a partir de la fecha en que el Comprador se enteró o debería haberse enterado razonablemente del supuesto defecto material y dentro del Período de garantía.

4. LIMITACIÓN DE LA RESPONSABILIDAD: Esta garantía se limita estrictamente a sus términos y reemplaza todas las demás garantías expresas, implícitas o establecidas por la ley. El Comprador comprende y acepta específicamente que el Vendedor no tendrá responsabilidad civil alguna ante el Comprador, ya sea que se origine por negligencia, responsabilidad objetiva o cualquier otra teoría de responsabilidad civil, por cualquier medida o incumplimiento relacionado con la fabricación, la preparación para la venta, la venta, la entrega o el uso de los productos del Vendedor. El Comprador acuerda expresamente que las reparaciones mencionadas anteriormente serán su única y exclusiva reparación del incumplimiento de esta garantía. ADEMÁS, EL COMPRADOR COMPRENDE Y ACEPTA ESPECÍFICAMENTE QUE, A EXCEPCIÓN DE LO MENCIONADO, NO SE PONDRÁ REPARACIÓN ALGUNA A DISPOSICIÓN DEL COMPRADOR, LO CUAL INCLUYE, ENTRE OTROS MOTIVOS, RECLAMOS POR DAÑOS INCIDENTALES, PUNITIVOS, ESPECIALES O INDIRECTOS DE NINGÚN TIPO. EN NINGÚN CASO EL VENDEDOR SERÁ RESPONSABLE POR LA PÉRDIDA DE GANANCIAS PREVISTAS O POR CUALQUIER OTRA PÉRDIDA PROVOCADA POR LA FALTA DE FUNCIONAMIENTO O POR UN GASTO DE FUNCIONAMIENTO MAYOR OCASIONADO POR LOS PRODUCTOS DEL VENDEDOR. POR EL PRESENTE, EL COMPRADOR RECONOCE Y ACEPTA QUE EN NINGÚN CASO Y BAJO NINGUNA CIRCUNSTANCIA, LA RESPONSABILIDAD DEL VENDEDOR, SI LA HUBIERA, SUPERARÁ EL PRECIO NETO DE VENTA DE LOS PRODUCTOS DEFECTUOSOS COMPRADOS DURANTE EL AÑO DEL CONTRATO PREVIO.

5. RECOMENDACIONES DEL VENDEDOR: El Vendedor puede ayudar al Comprador en las decisiones de elección al proporcionar información con respecto a los Productos. No obstante, el Comprador reconoce que en última instancia es el Comprador el que elige la adecuación del producto para su uso particular. Las recomendaciones que el Vendedor realiza con respecto al uso, el diseño, la aplicación o el funcionamiento de los productos no serán interpretadas como representaciones o garantías, expresas o implícitas. Si el Vendedor no recomienda ni asesora al Comprador, esto no representará una responsabilidad del Comprador.

Nota: Algunos estados no permiten limitaciones sobre una garantía implícita, daños o perjuicios incidentales o indirectos, por lo cual algunas de las limitaciones mencionadas anteriormente pueden no corresponder. Es posible que el Comprador tenga otros derechos, los cuales varían según el estado.



VITREOUS CHINA
ACCESSOIRES DE SALLE DE BAIN EN PORCELAINE
PORCELANA VIDRIADA Y ACCESORIO

Care & Cleaning
Entretien et nettoyage
Cuidado y limpieza

! CAUTION

PRODUCT IS FRAGILE. Handle with care to avoid breakage and possible injury.

! ATTENTION

PRODUIT FRAGILE. Manipuler avec précaution pour éviter de casser et de se blesser.

! PRECAUCIÓN

EL PRODUCTO ES FRÁGIL. Manéjese con cuidado para evitar su ruptura y posibles daños.

CARE & CLEANING

Please refer to these important instructions for maintaining and protecting your PROFLO vitreous china bathroom fixtures:

- Use all purpose liquid cleaners to wipe off surface
- Use toilet bowl cleaners or any disinfectant to brush off the inside bowl
- As with any product, test your cleaning solution in an inconspicuous area before applying to the entire surface
- After applying cleaning solution, immediately wipe surface clean and rinse completely with water. Dry with a soft cloth
- Never use abrasive cleaning tools or cleaners to clean or wipe the surface, such as Ajax, wire brushes, steel wool, and scouring pads.

Veuillez vous reporter à ces instructions importantes pour l'entretien et la protection de vos accessoires de salle de bain en porcelaine PROFLO:

- Utilisez des produits de nettoyage liquides tout usage pour essuyer la surface
- Servez-vous de produits de nettoyage pour toilettes ou de tout désinfectant pour nettoyer à la brosse l'intérieur de la cuvette.
- Comme pour tout autre produit, essayez votre solution de nettoyage à un endroit peu visible avant de l'appliquer sur toute la surface.
- Après avoir appliqué la solution de nettoyage, essuyez immédiatement la surface et rincez soigneusement à l'eau. Séchez avec un chiffon doux.
- N'utilisez jamais d'outils ou de produits de nettoyage abrasifs, tels que de l'Ajap, des brosses métalliques, de la laine d'acier ou des tampons à récurer, pour nettoyer ou essuyer la surface.

Consulte estas instrucciones importantes para mantener y proteger sus accesorios de porcelana vidriada PROFLO:

- Use limpiadores líquidos multipropósito para limpiar la superficie
- El interior del inodoro debe cepillarse con productos de limpieza para dicha aplicación o líquidos desinfectantes.
- Como debería hacerse con cualquier producto de limpieza, pruebe primero la solución limpiadora en un lugar reducido y oculto antes de aplicarla en toda la superficie.
- Inmediatamente después de aplicar la solución limpiadora, limpie la superficie tratada y enjuáguela con agua. Seque la superficie con un paño suave.
- No utilice herramientas ni soluciones abrasivas para limpiar las superficies, tal como cepillos de alambre, polvo Ajax, lana de acero o esponjas abrasivas © 2007

ENTRETIEN ET NETTOYAGE

CUIDADO Y LIMPIEZA

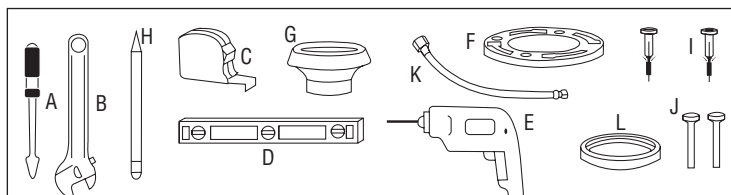
Installation Instructions

HET Toilet Bowl and Tank with 1.28 Gallons per Flush



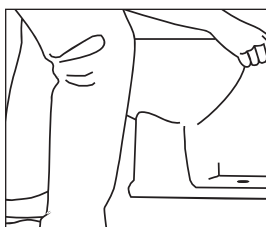
Tools Needed

- | | |
|-----------------|-------------------------|
| A. Screwdriver | G. Wax Seal |
| B. Wrench | H. Marker |
| C. Tape Measure | I. Plugs |
| D. Level | J. Screws |
| E. Drill | K. Flexible Supply Line |
| F. Flange | L. Gasket Adapter |

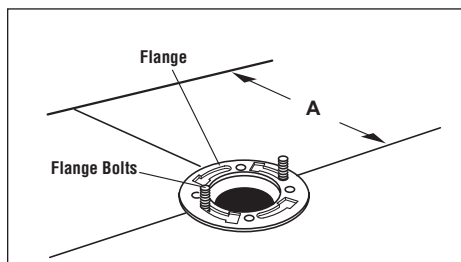


Remove Old Toilet

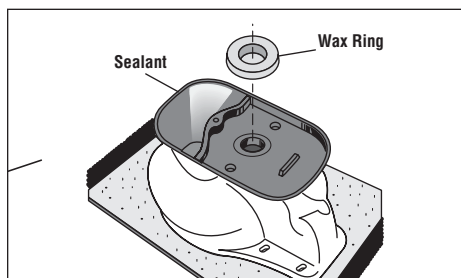
1. Shut off water supply line to toilet. Flush toilet and remove all water from the bowl and tank. Use a sponge to absorb the water.
2. Disconnect the water supply from the tank.
3. Remove tank from bowl, use screwdriver and adjustable wrench or socket wrench. Loosen toilet bowl flange nuts under caps.
4. Remove old bowl by carefully lifting it off the floor. Clean flange and plug drain with a rag to prevent sewer gas from escaping.



Install New Toilet

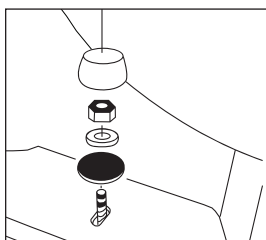


1. If new installation, install a toilet flange into waste line per flange instructions. Make sure you have the correct rough in toilet.
2. Remove the rag from the drain. Install the flange bolts into the flange.

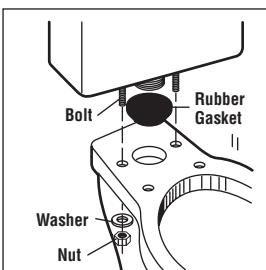


3. Turn the bowl upside down and place it on the flattened carton box to prevent damage.
4. Install a wax ring evenly around the bowl flange, (horn).

5. Gently lower the bowl onto the flange making sure the flange bolts protrude through the toilet bolt openings.
6. Apply pressure evenly and rock the bowl from side-to-side and front-to-back until it is firmly on the floor.



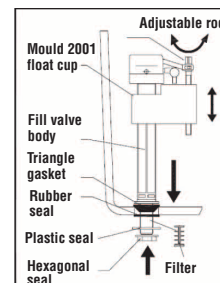
7. Install the washers, nuts, and caps on the flange bolts snug. Be careful not to over tighten because the china may break.



8. Install the tank-to-bowl-gasket, tank bolts with washer if it is not already installed, and place tank on bowl.

9. Snug and level the tank nuts using a socket wrench and holding the truss head screw firmly inside the tank with a screwdriver.
10. Connect the water supply to the ballcock. Only hand tighten the supply line. **DO NOT USE CHANNEL LOCKS.**
11. Turn on water, flush, and check for leaks. Adjust ballcock to proper water line height as noted on the flush valve tube.

Adjustments



Water level adjustment: Rotating adjustable rod will adjust the height of float cup and change water level.

DIFFICULTIES	REASON	SOLUTION
Water level is too high or too low	Fill valve adjusted incorrectly	Adjust water level
Fill valve can't fill	Shut-off valve not fully open	Open shut-off valve
	Filter clogged	Remove and clean filter
	Float cup is stuck by tank wall	Free fill valve from tank wall
Leaking	Hexagonal nut is loose	Tighten hexagonal nut



Installation Instructions

HET Toilet Bowl and Tank with 1.28 Gallons per Flush



Care & Maintenance

- **DO NOT** use abrasive powered or liquid cleaners which can damage the product surface.
- Over tightening of lock nut or coupling nut could result in breakage and flooding.
- **DO NOT** use cone washer with plastic supply line.
- **DO NOT** use pipe dope or other silicon based materials to tighten supply coupling nut.

CAUTION

Product is fragile. To avoid breakage and possible injury handle with care!

WARNING



DO NOT USE IN-TANK TOILET BOWL CLEANERS CONTAINING BLEACH OR CHLORINE!

1. Result in damage to tank components and may cause flooding and property damage.
2. Void PROFLO Fixtures Limited Warranty.

Problem Solving

PROBLEM	CAUSE	SOLUTION
Fill valve can't fill	<ol style="list-style-type: none"> 1. Fill switch is closed. 2. Drain guard gets stuck. 3. Float cup is crushed by tank wall. 	<ol style="list-style-type: none"> 1. Turn on fill switch. 2. Clean drain guard. 3. Adjust direction of fill valve.
Leakage	<ol style="list-style-type: none"> 1. Fit incorrectly. 2. Flush valve does not fit flush valve body. 3. Flush valve body gets stuck. 4. Incorrect operation. 	<ol style="list-style-type: none"> 1. Fit again according to correct installation procedure. 2. Fit again. 3. Unpick and wash float body. 4. Refill tube should be higher than water level.
Can't flush or flush little	Steel wire is twisted or pulled too much.	Adjust flush valve body.
Half flush water level is too high or too low	Adjust water level incorrectly.	Adjust water level.

Warranty

WHAT IS COVERED?

Ferguson Enterprises, Inc. "Ferguson" or the "Company" warrants its products to be free from defects in material and workmanship under normal use and service FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF INSTALLATION.

WHAT IS NOT COVERED?

The warranty set forth in paragraph 1 does not cover installation or any other labor charges and does not apply to products which have been damaged as a result of any accident, abuse, improper installation or maintenance, or modification of original plumbing product. The warranty of such products is limited to the warranty extended to Ferguson by the product manufacturer. Finally, FERGUSON SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY FAILURE OR DAMAGE TO THIS PRODUCT OR ANY COMPONENT THEREOF CAUSED BY THE USE OF ABRASIVE CLEANERS.

HOW TO OBTAIN WARRANTY SERVICE

The purchaser should contact their local Ferguson location, installing contractor or builder from whom the product was purchased or upon written request addressed to Ferguson Enterprises, Inc., 12500 Jefferson Avenue, Newport News, VA 23602, Attention Consumer Affairs. Any shipping charges, associated with warranty service, must be prepared

by the consumer. In all cases, proof of purchase will be required. Call PROFLO customer service at 800-221-3379 for customer service, defective issues and technical inquiries.

LIMITATIONS OF IMPLIED WARRANTY AND DISCLAIMER OF CONSEQUENTIAL OR INCIDENTAL DAMAGES FERGUSON DISCLAIMS ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES AND DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AS SET FORTH ABOVE. IMPLIED WARRANTIES OF THE PRODUCTS AND PRODUCT COMPONENTS SET FORTH IN PARAGRAPH 1 ABOVE ARE LIMITED TO THE DURATIONS OF THE RESPECTIVE WARRANTY. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.



Parts Breakdown

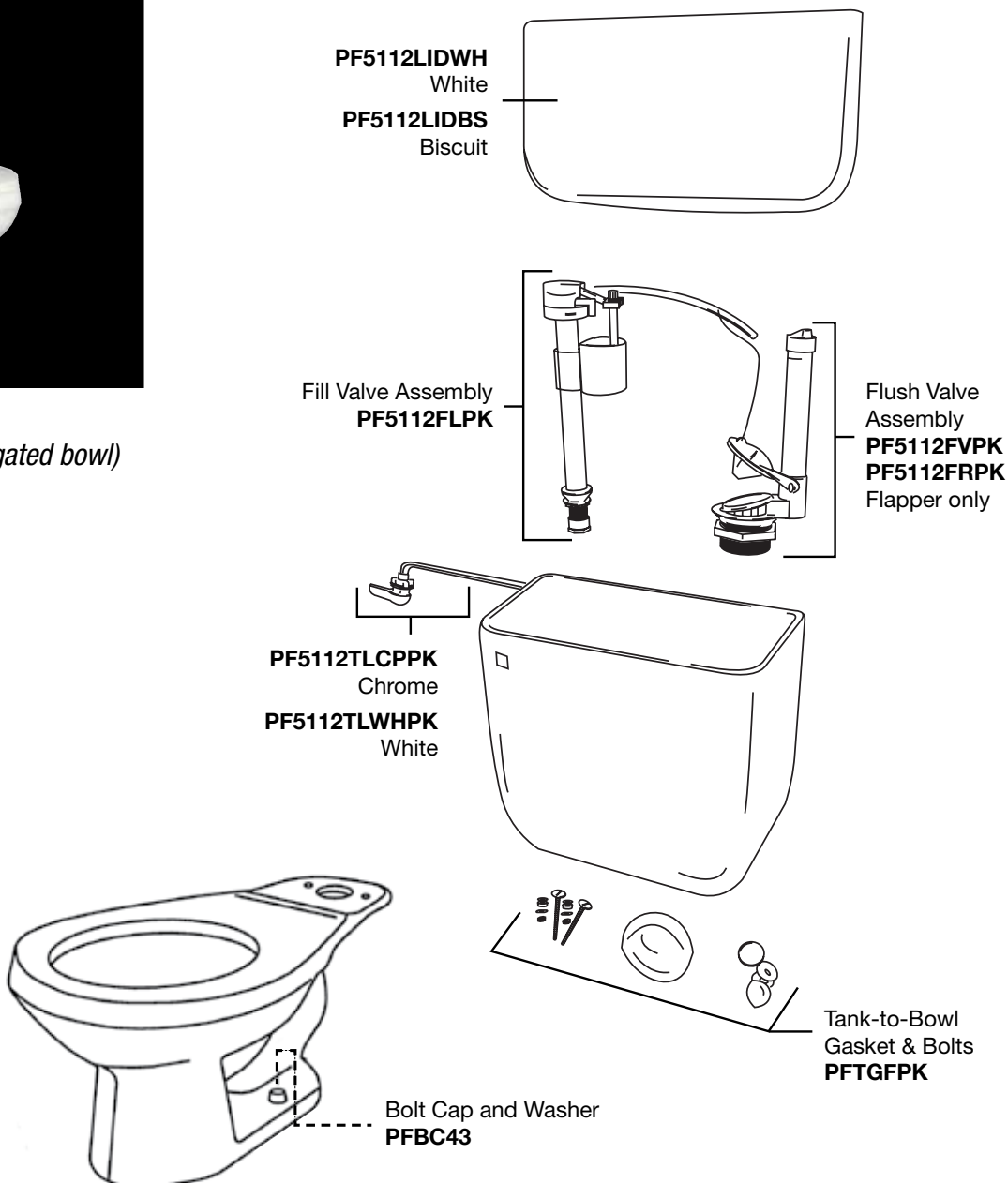
1.28gpf Closet Tank

PF5112HE Series



PF5112HEWH

(Shown with PF1401HEWH elongated bowl)



Warranty and Codes



Limited Warranty

Vitreous China

1. WARRANTY: Subject to the limitations expressed herein, Seller warrants to the owner of the original installation that products manufactured by Seller ("Products") shall be free from defects in material and workmanship for the duration from the date of sale set forth in the following table ("Warranty Period"). This warranty is void for any damage caused by (a) improper storage, use or installation (b) accident, damage, abuse or misuse, (c) acts of God (d) chemical or mineral damage (e) abrasive cleaners or (f) failure to comply with the terms of this limited warranty.

Product	Warranty Period
Vitreous China	Lifetime
Parts & Fittings: Tank Trim including ball cock, flush valve, flapper, trip lever and plumbing fittings	1 year

2. REMEDIES: Seller shall repair, replace or refund, at its option and at no additional charge, any part that proves, upon inspection by Seller to be defective, upon receipt from Buyer during the Warranty Period. Seller makes NO ADDITIONAL ALLOWANCE FOR THE LABOR OR EXPENSE OF DE-INSTALLATION, RE-INSTALLATION OR TRANSPORTATION COST INCIDENTAL TO REPAIRING OR REPLACING THE DEFECTIVE PART OR DAMAGE RESULTING FROM SAME. SELLER HEREBY DISCLAIMS ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OR FITNESS FOR A PARTICULAR PURPOSE.

3. BUYER RESPONSIBILITIES: Every claim under this warranty shall be deemed waived unless Buyer submits to Seller a detailed description of the alleged defect and the manner in which Seller's workmanship is believed to be materially defective. Such description must be submitted in writing within sixty (60) days of the date Buyer knew or reasonably should have known of the alleged material defect and within the Warranty Period.

4. LIMITATION OF LIABILITY: The warranty provided above is strictly limited to its terms and is in lieu of all other warranties expressed, implied and statutory. Buyer specifically understands and agrees that Seller shall not be liable in tort to Buyer, whether based on negligence, strict liability, or any other theory of tort liability for any action or failure to act in respect to the manufacture, preparation for sale, sale, delivery or use of Seller's products. Buyer expressly agrees that his sole and exclusive remedy for breach of the warranty set forth above shall be the remedies set forth above. BUYER FURTHER SPECIFICALLY UNDERSTANDS AND AGREES THAT, EXCEPT AS PROVIDED NO REMEDY SHALL BE AVAILABLE TO BUYER, INCLUDING, BUT NOT LIMITED TO, CLAIMS FOR INCIDENTAL, PUNITIVE, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. UNDER NO CIRCUMSTANCES WILL SELLER BE LIABLE FOR LOSS OF ANTICIPATED PROFITS OR ANY OTHER LOSS CAUSED BY REASON OF NONOPERATION OR INCREASED EXPENSE OF OPERATION CAUSED BY SELLER'S PRODUCTS. BUYER HEREBY ACKNOWLEDGES AND AGREES THAT UNDER NO CIRCUMSTANCES, AND IN NO EVENT, SHALL SELLER'S LIABILITY, IF ANY, EXCEED THE NET SALES PRICE OF THE DEFECTIVE PRODUCT (S) PURCHASED DURING THE PREVIOUS CONTRACT YEAR.

5. RECOMMENDATIONS BY SELLER: Seller may assist Buyer in selection decisions by providing information regarding Products. However, Buyer acknowledges that Buyer ultimately chooses the product's suitability for its particular use. Any recommendation made by Seller concerning the use, design, application or operation of the products shall not be construed as representations or warranties, expressed or implied. Failure by Seller to make recommendations or give advice to Buyer shall not impose any liability upon Seller.

Note: Some states do not allow limitations on an implied warranty, incidental or consequential damages, so some of the limitations above may not apply. Buyer may have other rights which vary from state to state.

Model 375, 375A (R), 375DA & 375ADA (R)

Reduced Pressure Principle Assembly (2 1/2", 3", 4" & 6")

Reduced Pressure Detector Assembly (2 1/2", 3", 4" & 6")

LEAD-FREE*

(Patent No. 8,997,772)

Model 475 & 475V

Reduced Pressure Principle Assembly (2 1/2" & 3")

*This product contains a weighted average lead content less than 0.25% for wetted surfaces.

□ Installation □ Testing □ Maintenance Instructions**INSTALLATION INSTRUCTIONS**

CAUTION: Installation of Backflow Preventers must be performed by qualified, licensed personnel. The installer should be sure the proper device has been selected for the particular installation. Faulty installation could result in an improperly functioning device.

ZURN WILKINS Model 375/475 Series Assemblies are for use on potable water lines where a health hazard exists in the event of a backflow situation.

Damage to the device could result wherever water hammer and/or water thermal expansion could create excessive line pressure. Where this could occur, shock arrestors, check valves and/or pressure relief valves should be installed downstream of the device.

If installation is in a pit or vault, the Backflow Preventer must never be submerged in water because this could cause a cross-connection. Make sure that the pit or vault always remains dry by providing ample drainage. (Consult local codes.)

1. Before installing a Model 375/475 Series Backflow Preventer, flush the line thoroughly to remove all debris, chips and other foreign matter. If required, a strainer should be placed upstream of the Backflow Preventer. **CAUTION:** Do not use a strainer in seldom used emergency waterlines such as fire lines.
2. Provide adequate space around the installed unit so that the test cocks will be accessible for testing and servicing.
3. Install valve at least 12 inches above surrounding flood level.
4. The Model 375 series has been tested and approved in the horizontal position. Contact factory before installing in other orientations.
5. Always consult local codes for installation methods, approvals and guidance.

OUTDOOR INSTALLATION

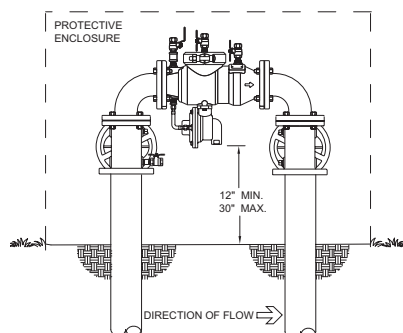
The Model 375/475 Series Backflow Preventer may be installed outdoors only if the device is protected against freezing conditions. Exposure to freezing conditions will result in improper function or damage to the device. The installation location must be kept above 32°F. All the basic installation instructions apply.

INDOOR INSTALLATION

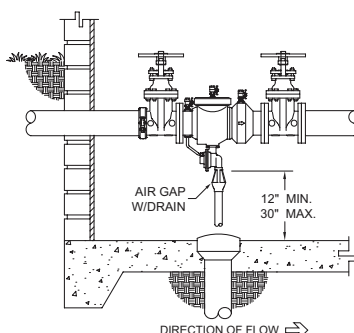
Indoor installation is preferred in areas that are subject to freezing conditions. All the basic installation instructions apply to such installations. **CAUTION: An adequately sized drain is required to prevent possible water damage due to relief valve discharge.**

PLACING THE DEVICE IN SERVICE

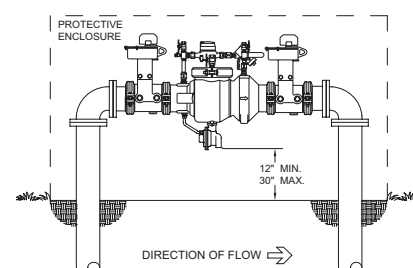
1. Start with both shut-off valves closed. Slowly open the inlet shut-off valve until the backflow preventer is completely pressurized. A brief discharge from the relief valve may occur while the device is pressurizing. The discharge should cease by the time the shut-off valve is fully open. If the discharge does not stop, refer to "MAINTENANCE INSTRUCTIONS" for repair procedures.
2. After the device has been pressurized, vent all trapped air by slightly opening each of the four test cocks.
3. Slowly open the downstream shut-off valve. The Model 375/475 Series Backflow Preventer is now in service.
4. If spitting or intermittent discharges from the relief valve are noted, it could be a result of pressure fluctuation and/or a water hammer condition in the system. If such conditions exist, install water pressure reducing valves or water hammer shock arrestors in compliance with industry standards as needed.
5. After the Model 375/475 Series has been properly installed, test the device (see "TEST PROCEDURES"). If the device fails the test, remove the first and second check valves and thoroughly flush the device. If the relief valve fails to operate properly, inspect the sensing passage for clogging (see "MAINTENANCE INSTRUCTIONS"). Clean rubber seals of all debris and place unit back in service.



OUTDOOR INSTALLATION
Model 475 (2 1/2" & 3")



INDOOR INSTALLATION
Model 375



OUTDOOR INSTALLATION
Model 375ADABGVIC

WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects and other reproductive harm

ADVERTENCIA: Este producto contiene una sustancia química que el Estado de California como causante de cáncer, defectos de nacimiento y otros daños reproductivos

Testing Procedures

MODEL 375/475 SERIES ASSEMBLY

Equipment Required: Differential pressure gauge test kit.

TEST NO. 1 - RELIEF VALVE OPENING POINT

REQUIREMENT:

The differential pressure relief valve must operate to maintain the zone between the two check valves at least 2 psi less than the supply pressure.

PROCEDURE:

1. Flush water through test cocks #1, #2 (open #2 slowly), #3 and #4 by opening and closing each test cock one at a time, to eliminate foreign material.
2. Install appropriate fittings to test cocks. Attach hose from the high side of the differential pressure gauge to the #2 test cock then attach hose from the low side of the gauge to the #3 test cock. Open test cock #3 slowly and then bleed all air from the hose and gauge by opening the low side bleed needle valve.
3. Maintain the low side bleed needle valve in the open position while test cock #2 is opened slowly. Open the high side bleed needle valve to bleed all air from the hose and gauge. Close the high side bleed needle valve, then close the low side bleed needle valve after the gauge reading has reached the upper end of the scale.
4. Close the #2 shut-off valve. If the gauge reading drops to the low end of the gauge scale and the differential pressure relief valve discharges continuously, then the #1 check valve is leaking. If this occurs, Tests #1, #2 and #3 cannot be completed (See USC Maintenance Guide). However, should the gauge reading remain above the differential pressure relief valve opening point, then observe the gauge reading. This is the apparent pressure drop across the #1 check valve.
5. Open the high side control needle valve approximately one turn, and then open the low side control needle valve no more than 1/4 turn to by-pass water from the #2 test cock to the #3 test cock. Observe the differential pressure reading as it slowly drops to the relief valve opening point. Record this opening point value when the first discharge of water is detected. Close the low side needle valve.

TEST NO. 2 - TIGHTNESS OF #2 CHECK VALVE

REQUIREMENT:

The #2 check valve shall be tight against backpressure.

PROCEDURE:

1. Maintain the #2 shut-off valve in the closed position (from Test #1). Vent all air through the vent hose by opening the vent needle valve. Close the vent needle valve only (The high side control needle valve is to remain open).
2. Attach the vent hose from the gauge to the #4 test cock, then open the #4 test cock. Bleed water from the zone by opening the low side bleed needle valve on the gauge in order to re-establish the normal reduced pressure within the zone. Once the gauge reading reaches a value above the #1 check valve pressure drop, close the low side bleed needle valve.
3. Open the vent needle valve. If the indicated differential pressure reading remains steady then the #2 check valve is reported as "closed tight." Go to Test #3. If the differential

pressure reading falls to the relief valve opening point, bleed water through the low side bleed needle valve until the gauge reading reaches a value above the #1 check valve pressure drop. If the gauge reading settles above the relief valve opening point, record the #2 check valve as "closed tight," and proceed to Test #3. If the differential pressure reading falls to the relief valve opening point again, then the #2 check valve is noted as "leaking," and Test #3 cannot be completed. If the differential pressure reading drops, but stabilizes above the relief valve opening point, the #2 check valve can still be reported as "closed tight."

Note: Due to disc compression, you may need to bleed off water through low side bleed needle valve several times before the gauge reading will settle above relief valve opening point.

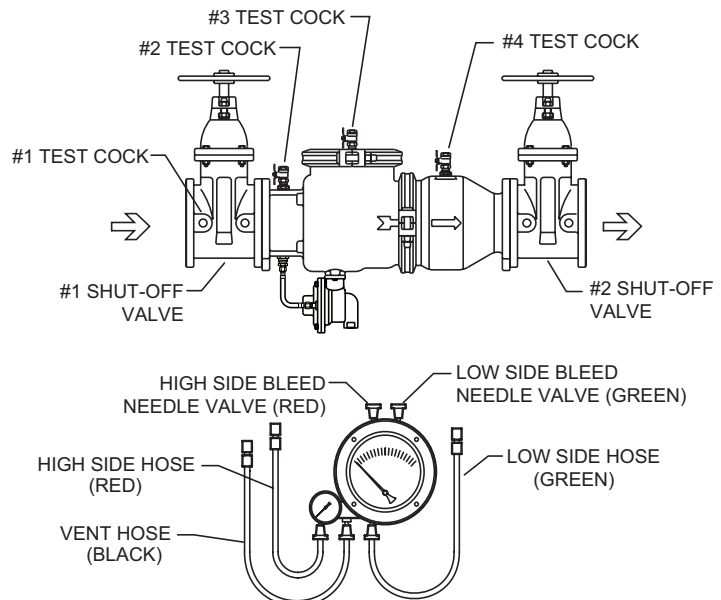
TEST NO. 3 - TIGHTNESS OF #1 CHECK VALVE

REQUIREMENT:

The static pressure drop across #1 check valve shall be greater than the relief valve opening point (test #1), and at least 5.0 psid.

PROCEDURE:

1. With the vent hose connected to test cock #4 as in step 3 of Test #2, bleed water from the zone through the low side bleed needle valve on the gauge until the reading exceeds the #1 check valve pressure drop. Close the low side bleed needle valve. After the gauge reading settles, the steady state differential pressure reading indicated (reading is not falling on the gauge) is the actual static (i.e., no flow) pressure drop across check valve #1 and is to be recorded as such.
2. Close all test cocks, slowly open shutoff valve #2 and remove equipment.



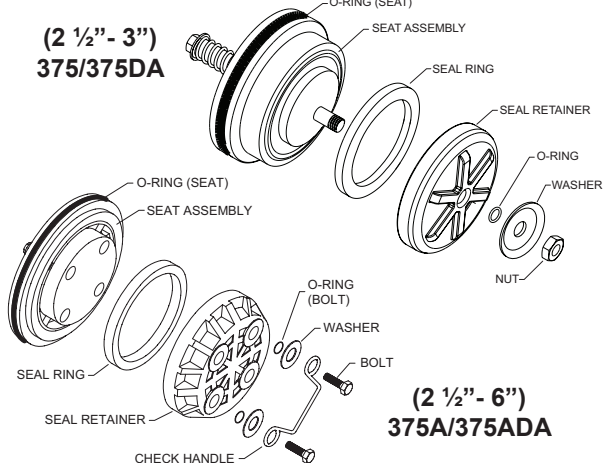
Capacity thru Schedule 40 Pipe				
Pipe size	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
2 1/2"	75	112	149	224
3"	115	173	230	346
4"	198	298	397	595
6"	450	675	900	1351
8"	780	1169	1559	2339
10"	1229	1843	2458	3687

SPECIFICATIONS

Maximum working water pressure: 175 PSI
 Maximum working water temperature: 140°F
 Hydrostatic test pressure: 350 PSI
 End connections: Flanged ANSI B16.1 Class 125
 Grooved AWWA C606

Maintenance Instructions

CHECK ASSEMBLY



All Model 375/475 Series Backflow Preventers must be inspected and maintained by licensed personnel at least once a year or more frequently as specified by local codes. Replacement of worn or damaged parts must only be made with genuine "ZURN WILKINS" parts.

GENERAL MAINTENANCE

1. Clean all parts thoroughly with water after disassembly.
2. Carefully inspect rubber seal rings and o-rings for damage.
3. Test unit after reassembly for proper operation (refer to "TESTING PROCEDURES").

SERVICING RELIEF VALVE

1. Remove relief valve cover bolts and cover. Gently pull on diaphragm to remove the cartridge assembly.
2. Inspect seal ring for cuts and embedded debris. Turn over or replace if required.
3. Disassemble cartridge by unscrewing relief valve retaining screw.
4. Inspect diaphragm and o-rings for damage. Replace required parts and apply a light coat of lubricant to plunger o-ring.
5. Carefully reassemble cartridge assembly. Tighten retainer screw to 13 -17 in/lbs.
6. Inspect relief valve seat for wear on seating surface. If damaged, replace seat and seat o-ring. Install spring over seat guides.
7. Insert cartridge assembly into relief valve body.
8. Replace relief valve cover and cover bolts.
9. Place the device in service and test per "TESTING PROCEDURES" on page 2.

NOTE: Disassembly of the seat assembly is not recommended. If the seat assembly needs repair, please contact factory.

RELIEF VALVE ASSEMBLY

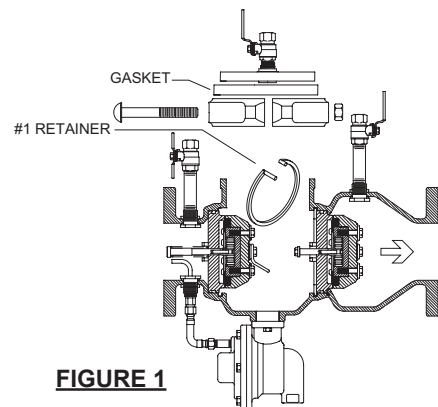
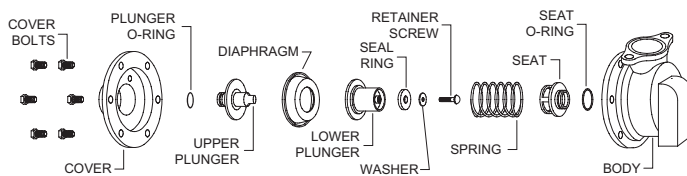


FIGURE 1

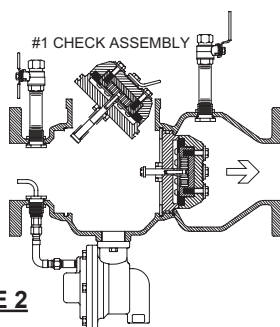


FIGURE 2

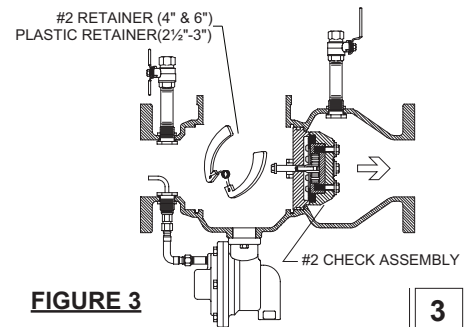


FIGURE 3

SERVICING CHECK VALVES

1. Close the outlet and then the inlet shut-off valves.
2. Open No. 2, 3 and 4 test cocks to release internal pressure. Leave them open during check removal and reinstallation.
3. Loosen and remove the two nuts, bolts and seal from the grooved coupling around the access cover.
4. If the valve has a wire retainer on the #1 check assembly, pinch together the exposed ends, pull toward the #2 check and remove from valve.
5. If the valve has a plastic retainer on the #1 check, grasp one of the exposed ends, push down and then pull toward the #2 check. The retainer should "spiral" out of the groove around the check.
6. (2-1/2 – 3" 375/375DA Models) Remove the #2 retainer and check in the same manner as the #1.
7. (4 – 6" 375A/375ADA Models) Remove the #2 check by locating one of the two spring-loaded plate retainers around the face of the check. Pinch the sides of the spring together and rotate the plates out of the body groove one at a time. Remove the 2nd retainer the same way.
8. **Always service the checks one at a time to avoid mixing parts.** Start by removing the hardware and o-rings from the back of the check assembly (See "Check Assembly" illustration). Separate the seal retainer from the assembly to expose the seal ring.
9. Inspect the seal ring for cuts or embedded debris. If the reverse side of the seal is unused, the seal ring can be inverted and used temporarily until a new seal is obtained. Inspect seat o-ring and replace if cut or damaged in any way.
10. Inspect valve cavity and seating areas. Flush with water to remove any debris.
11. (Reassembly, 2-1/2 – 3" 375/375DA Models) Lubricate the #2 check o-ring, install in the body and close the #4 test cock to hold it in place. Install the plastic retainer by inserting one end into the body groove and then sliding your hand around the face of the retainer, pushing it into the groove as you go. The retainer will "snap" into place when fully seated. Install #1 check and retainer in the same way.
12. (Reassembly, 4 – 6" 375A/375ADA Models) Lubricate the #2 check o-ring, install in the body and close the #4 test cock. Install the #2 check retainers into the body groove one plate at a time, squeezing the spring ends together to clear the stops on the face of the seat. Lubricate and install the #1 check, close the #2 test cock and install:
 - (A) wire retainer by pinching the ends together, placing the lower edge of the ring into the body groove below the check and rotating the top of the ring into the notch above the check.
 - (B) plastic retainer as described above in the 2-1/2 – 3" 375/375DA Models Reassembly section.
13. Lubricate the outside surface of the grooved coupling gasket. Reassemble access cover and grooved coupling, making sure the ends of the coupling touch each other. Close any remaining open test cocks and place valve back in service.

BACKFLOW PREVENTERS - domestic main

Troubleshooting

PROBLEM

1. SUDDEN OR RAPID SPITTING
2. LIGHT INTERMITTENT DRIP
3. CONTINUOUS DISCHARGE

POSSIBLE CAUSES

1. Drop in inlet pressure.
2. Sudden increase in downstream pressure due to waterhammer from quick closing shut-off valve installed downstream.
1. Slightly fouled #1 check.
2. Slightly fouled relief valve seat.
1. Fouled #1 check and/or #2 check.
2. Fouled relief valve seat.

CORRECTIVE ACTION

1. Install an in-line spring loaded check valve or pressure reducing valve upstream of Backflow Preventer.
2. Install an in-line spring loaded check valve or pressure reducing valve downstream of Backflow Preventer.
1. Clean #1 check and/or turn check valve seal ring over or replace.
2. Clean relief valve seat and/or turn relief valve seal ring over or replace.
1. Clean check valves and/or turn check valve seal ring over or replace.
2. Clean relief valve seat and/or turn relief valve seal ring over or replace.

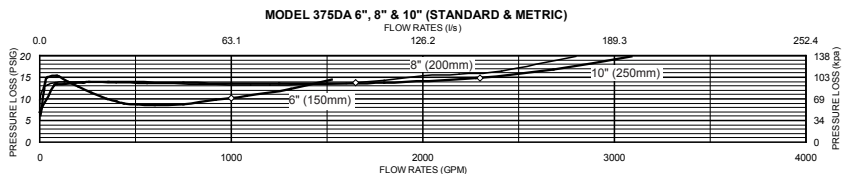
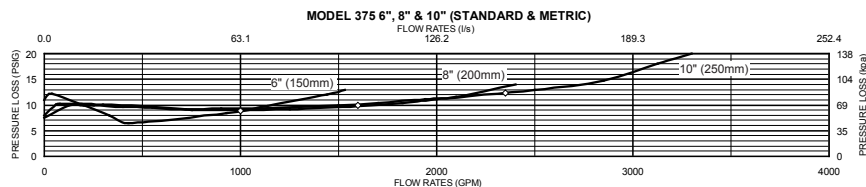
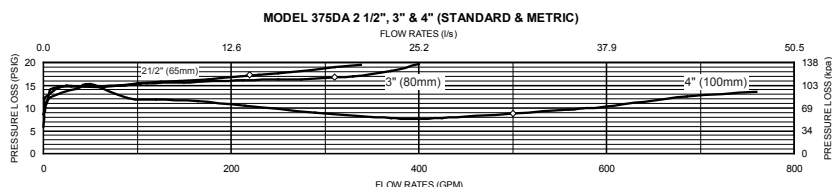
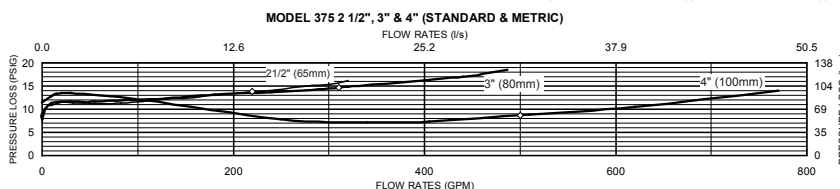
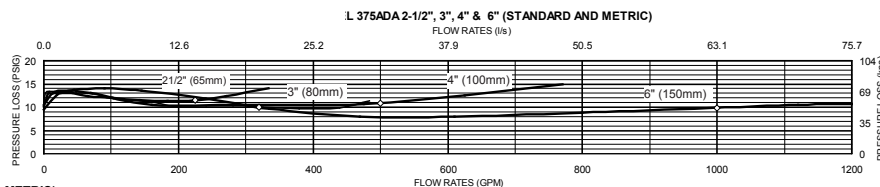
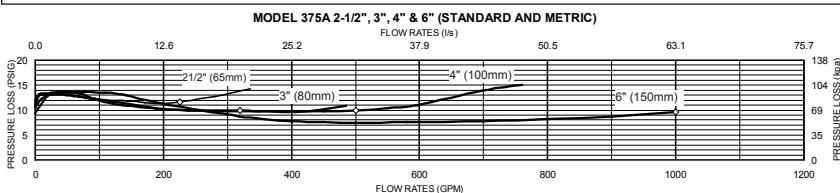
Repair Kits

SIZE	MODEL	MODEL 375 RELIEF RUBBER ONLY	MODEL 375 RELIEF COMPLETE	MODEL 375 CHECKS ONLY
2 1/2" - 3"	375/375DA	RK212-375R	RK212-375	RK212-350
4"	375/375DA	RK212-375R	RK212-375	RK4-350
6"	375/375DA	RK212-375R	RK212-375	RK6-350
2 1/2" - 4"	375A/375ADA	RK212-375R	RK212-375	RK4-350
6"	375A/375ADA	RK212-375R	RK212-375	RK6-350

Performance Characteristics

See spec sheet BF-475&V212-3 for flow curves

◇ Rated Flow (Established by approval agencies)



Proper performance is dependent upon licensed, qualified personnel performing regular, periodic testing according to ZURN WILKINS' specifications and prevailing governmental & industry standards and codes and upon following these installation instructions. Failure to do so releases ZURN WILKINS of any liability that it might otherwise have with respect to that device. Such failure could also result in an improperly functioning device.

MODEL 475

Reduced Pressure Principle – Backflow Preventers 4" to 10"



Item Number	Description	4"	6"	8"	10"
1	GATE VALVE, NRS (GXF)	4-48GXF	6-48GXF	8-48GXF	10-48GXF
	GATE VALVE, OS&Y (GXF)	4-48OSYGXF	6-48OSYGXF	8-48OSYGXF	10-48OSYGXF
	GATE VALVE, OS&Y (G&G)	4-48OSYG	6-48OSYG	8-48OSYG	10-48OSYG
	GATE VALVE, NRS (GXG)	4-48G	6-48G	8-48G	10-48G
	BUTTERFLY VALVE	4-49GVIC	6-49GVIC	8-49GVIC	10-49GVIC
2	#1 CHECK ASSEMBLY	3709-300	3710-300	3712-300	3712-300
3	#2 CHECK ASSEMBLY	3509-300B	3510-300B	3512-300B	3512-300B
4	RV ELBOW	4707-52XL-010F	4707-52XL-010F	4711-52XL-010F	4711-52XL-010F
5	O-RING, ELBOW	032N	032N	142N	142N
6	GROOVED COUPLING	4-23	6-23	8-23	10-23
7	BOLT	554-11A	554-11A	957-11	957-11
8	SEAT RETAINER ASSEMBLY #2	3509-140	3510-140	3511-14DSS	3511-14DSS
9	SEAT RETAINER #1	3509-14B	3510-14B	3511-9 (NUT)	3511-9 (NUT)
10	COVER	3509-3C	3510-3C	3511-3C	3511-3C
11	COVER RETAINER ASSEMBLY	6-23	8-23	12-23	12-23
12	BULKHEAD FITTING ASSEMBLY	BHF1CXL-100	BHF2BXL-100	BHF2BXL-100	BHF2BXL-100
13	BALL VALVE	12-850XL	34-850XL	34-850XL	34-850XL
14	BULKHEAD FITTING ASSEMBLY	BHF1BXL-100	BHF1BXL-100	BHF2CXL-100	BHF2CXL-100
15	NIPPLE, LONG	12X2-21B	34X3-21B	34X3-21B	34X3-21B
16	O-RING, SEAT ASSEMBLY	353N	364N	273N	273N
17	PLUG/CAP	558-7	34-3B	558-7	558-7
18	BOLT, POPPET RETAINER	558-11E	5510-11A	3511-11	3511-11
19	HANDLE, #1 POPPET ASSY	3509-6	3510-6	N/A	N/A
20	WASHER	3509-14C	3510-14C	3510-14C	3510-14C
21	O-RING	WK-109N	204N	204N	204N
22	POPPET RETAINER	3509-14	3510-14	3511-14	3511-14
23	SEAL RING	3509-12	3510-12	3511-12	3511-12
24	SEAT ASSEMBLY, #1 POPPET	3709-180	3710-180	3712-180	3712-180
25	SEAT ASSEMBLY, #2 POPPET	3509-180	3510-180	3512-180B	3512-180B
26	RELIEF VALVE ASSEMBLY	3707-CU-XL	3707-CU-XL	3711-CU-XL	3711-CU-XL
27	PITOT TUBE ASSEMBLY	57510-360	57510-360	57510-360	57510-360
28	SENSING TUBE	3710-36	3710-36	4710-36	4710-36
29	ELBOW	3707-38B	3707-38B	3707-38B	3707-38B
30	NIPPLE	14X1.5-21B	14X1.5-21B	14X1.5-21B	14X1.5-21B
31	BULKHEAD FITTING, GASKET	BHF1-13	BHF1-13	BHF1-13	BHF1-13
32	GASKET, COVER RETAINER	6-23-13	8-23-13	12-23-13	12-23-13
33	GASKET, GROOVED COUPLING	4-23-13	6-23-13	8-23-13	10-23-13
34	WASHER	N/A	N/A	3511-14E	3511-14E

Repair Kit

RK4-350			Size 4"			RK6-350			Size 6"			RK8-350			Size 8", 10"		
Part Number	Qty.	Description				Part Number	Qty.	Description				Part Number	Qty.	Description			
3509-12	2	SEAL RING				3510-12	2	SEAL RING				3511-12	2	SEAL RING			
353N	2	O-RING				364N	2	O-RING				273N	2	O-RING			
WK-109N	8	O-RING				204N	8	O-RING				204N	12	O-RING			
351N	2	Not used in 475															

Parts Drawing



MODEL 375, 375A, 375AST, 475 and 475V

Relief Valve – 2-1/2" to 10"



RELIEF VALVE COMPLETE

3707-CU-XL

3711-CU-XL

Item Number	Description	Qty.	2-1/2"-6"	Qty.	8" and 10"
1	BOLT, COVER	6	554-11A	8	957-11
2	O-RING	1	222N	1	227N
3	UPPER PLUNGER	1	3707-34	1	3711-34
4	DIAPHRAGM	1	3707-43	1	3711-43
5	LOWER PLUNGER	1	3707-34A	1	3711-34A
6	SEAL RING	1	3707-12	1	3711-12
7	SEAL RETAINER	1	3707-14	1	3711-14
8	SCREW	1	558-11E	1	558-11E
9	CU SPRING	1	3707-33A	1	3711A-33
10	CU SEAT	1	3707-18	1	3711-18
11	O-RING	1	032N	1	146N
12	WASHER	1	N/A	1	3707-14
13	STEM ASSY.	1	3707-50	1	3711-50
14	O-RING	1	032N	1	142N

Repair Kit, Rubber

RK212-375R
Size 2-1/2"-6"

RK8-375R
Size 8" and 10"

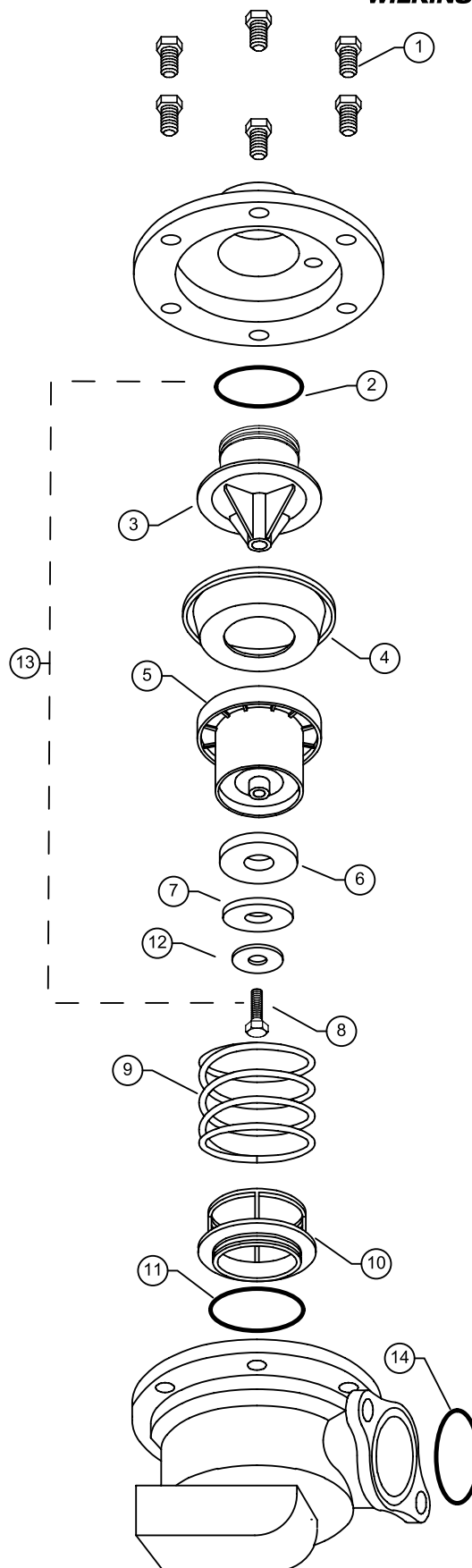
Item Number	Description	Qty.	Part Number	Part Number
6	SEAL RING	1	3707-12	3711-12
4	DIAPHRAGM	1	3707-43	3711-43
2	O-RING	1	222N	227N
11	O-RING	1	032N	146N
14	O-RING	1	032N	142N

Repair Kit, Complete

RK212-375
Size 2-1/2"-6"

RK8-375
Size 8" and 10"

Item Number	Description	Qty.	Part Number	Part Number
N/A	REPAIR KIT, RUBBER	1	RK212-375R	RK8-375R
9	SPRING	1	3707-33A	3711A-33





ONE ZURN TERMS AND CONDITIONS

Price and Terms of Payment

Terms are net, payable 30 days from date of invoice. All pricing in U.S. currency. The Buyer shall pay all sales, consumers, or other applicable taxes. A 1-1/2% monthly (18% annual) service charge will be added to the outstanding balance of all past due invoices.

Minimum invoice \$100.00. Zurn Industries, LLC ("Zurn") reserves the right to apply a minimum order charge in order to meet the \$100.00 minimum invoice requirement. All orders are subject to credit approval by the Zurn Credit Department prior to the acceptance of an order. Orders may be refused, delivery may be withheld, or shipment stopped in transit without any liability on Zurn's part at Zurn's sole discretion based upon Buyer's credit worthiness as determined by Zurn.

Freight

Zurn is pleased to provide an industry-leading \$3,500 combined freight rate. Please see below for specific policy details.

All sales are F.O.B. seller's location. Zurn will allow full freight allowance when any of the following conditions are met: 1) any combination of Specification Drainage, Light Commercial, Commercial Brass or Wilkins orders of \$3,500 or more; 2) Linear Drainage and Chemical Drainage orders of \$5,000 or more; 3) any Combination of Specification Drainage, Light Commercial, Commercial Brass, Wilkins, Linear Drainage and Chemical Drainage orders of \$5,000 or more; 4) Zurn One Systems orders of \$7,500 or more; 5) fixture only orders totaling \$10,000 or more. This full freight allowance applies when the shipment is within the continental United States and has a single destination of a buyer's standard address or job location. Routing of shipment shall be determined at the sole direction of Zurn. Shipping dates are estimates and time of delivery shall not be of the essence of this sale contract. Under no circumstances will the Seller have any responsibility on account of any delays in manufacture, transportation, or otherwise. Terms of Export Shipment on application.

NOTE: Any product dimension larger than 92" or any single item weighing more than 3,500 lbs., shall be defined as an oversized and/or overweight product and Zurn's standard FFA terms may not apply. Please contact our customer service department for guidance on potential additional shipping charges.

These charges and restrictions apply in addition to Zurn standard terms and conditions for sale unless otherwise agreed upon by the parties.

Limited Warranty

Zurn goods sold hereunder are warranted to be free from defects in material and factory workmanship for the period of time from the date of purchase: AquaVantage® Flush Valves, AquaFlush® Flush Valves, Commercial Fixtures, Faucets, Showers, and Tubular Brass three years; Chemical Drainage, Linear Drainage, Light Commercial, Specification Drainage, Zurn Wilkins, and Flush Valve and Tubular Brass decorative finishes one year, PHIX® Cartridge ten years, FOG-ceptor™ thirty years. Where permitted by law, THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED

BACKFLOW PREVENTERS - domestic main

TO THE ABOVE IDENTIFIED PERIOD OF TIME AND SHALL BE LIMITED SOLELY TO THE REPLACEMENT OF THE DEFECTIVE GOODS. A damaged/broken test cock or ball valve is not considered defective. Please contact Zurn Customer Care for assistance.

Zurn will replace goods at no cost that prove defective provided Zurn is notified in writing of such defect and the goods are returned prepaid at the specified Zurn location with evidence that they have been properly maintained and used in accordance with instructions. ZURN SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY, OR DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in the connection therewith. All weights stated in Zurn catalogs and lists are approximate and are not guaranteed.

Returned Goods

Standard cataloged material may be returned only with written permission of Zurn. Returned goods are subject to a 25% restocking charge of total saleable material returned, plus cost of reconditioning, if necessary, to make material sellable. Transportation charges are the responsibility of the Buyer. Credit allowance will be in the form of merchandise credit only – not cash credit. The value of the return must total at least \$100.00 to qualify for credit allowance. No credit will be allowed for parts unless originally ordered and invoiced as parts. No credit will be allowed for discontinued or made-to-order items. Items that have been specially made are not subject to return or cancellation except by special negotiation. Material must be returned within one year of invoice date for credit to be issued for Chemical Drainage, Linear Drainage, and Light Commercial. Material must be returned within two years of invoice date for credit to be issued for Commercial Fixtures, Flush Valve Products, Specification Drainage, Tubular Brass, and Zurn Wilkins. No credit is allowed for Linear Drainage products that have been cut and Specification Drainage product with auxiliary tapings. Flush Valve material over two years old will be subject to a 50% handling charge. Flush Valve material over five years old will not be accepted. Light Commercial and Specification Drainage galvanized material will be credited at value of Dura-Coated cast iron, and chrome plated at value of bronze. Zurn Wilkins damaged/broken test cocks or ball valves are not considered defective.

Illustrations of Typical Installations

The typical installations for various products found in each product section are intended to illustrate the products and potential options for the use of these products. Under no circumstances are they to be construed as recommended installation procedures. Consult local codes and project specifications for proper installation instructions.

Shortage/Damage Claims

Notification of material shortages or incorrect filling of orders must be made to Zurn within 10 days of receipt. No claims over three months old will be honored. Buyer agrees to make all complaints for damage in transit or "short count" directly to the carrier; before the contents are unloaded have the carrier agent's acknowledgement of such damage noted on the bill of lading and to present to the carrier its agent's acknowledgement of such damaged material with formal claim covering said damage.

General

Zurn reserves the right to make changes in design or equipment of any item or product without incurring any obligation on previously sold items, and to discontinue items at any time, without notice. Possession of this Catalog or other sales literature is not to be construed as an offer to sell. All orders are subject to acceptance by Zurn. Catalog printed in U.S.A.

Zurn flush valves are designed to comply with Army Corp of Engineers and Naval guide specifications, Military Specification MIL.V.29193 and Federal Specification WWP541.

Zurn flush valves comply with the following standards: ASME A112.18.1/CSA B125.1, A112.19.5, A112.19.2, A112.19.6, ASSE 1037 and 101 are listed by the following agencies: Canadian Standards, IAPMO/UPC/CUPC, and CSA 125.3. Zurn flush valves are manufactured from dezincification resistant alloys. For additional compliances, contact Zurn Industries, LLC, Commercial Brass Operation, or 1-800-997-3876.

Zurn is not responsible for typographical errors. The contents of this guide are subject to revision without notice.

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Installation, Maintenance, & Repair

Series 909 and LF909

Reduced Pressure Zone Assemblies

Sizes: 3/4" – 2" (20-50mm)

⚠ WARNING



**THINK
SAFETY
FIRST**

Read this Manual **BEFORE** using this equipment.
Failure to read and follow all safety and use information
can result in death, serious personal injury, property
damage, or damage to the equipment.
Keep this Manual for future reference.

Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If this information is not consistent with local building or plumbing codes, the local codes should be followed.

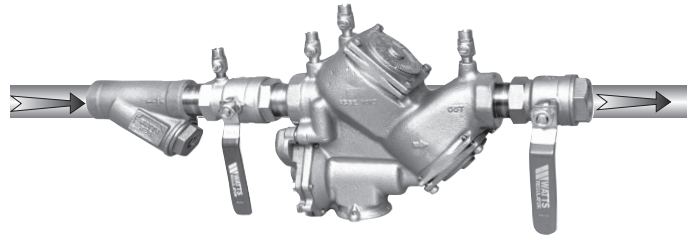
Need for Periodic Inspection/Maintenance: This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. Corrosive water conditions, and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal components helps assure maximum life and proper product function.

Testing

For field testing procedure, refer to Watts installation sheets IS-TK-DP/DL, IS-TK-9A, IS-TK-99E and IS-TK-99D found on www.watts.com.

For other repair kits and service parts, refer to our Backflow Prevention Products Repair Kits & Service Parts price list PL-RP-BPD found on www.watts.com.

For technical assistance, contact your local Watts representative.



No. 909QT-S 1 1/2" shown

NOTICE

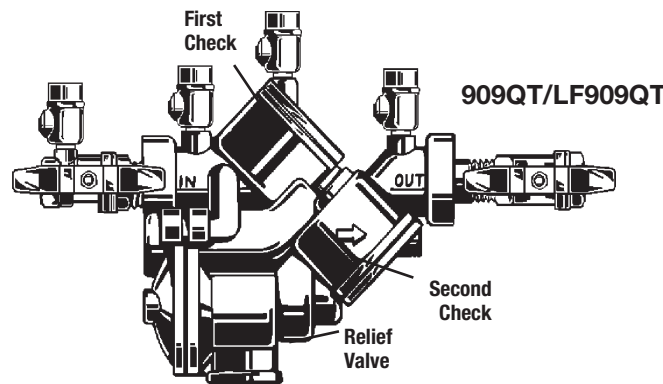
Inquire with governing authorities for local installation requirements

NOTICE

For Australia and New Zealand, line strainers should be installed between the upstream shutoff valve and the inlet of the backflow preventer.

Its important that this device be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. If installed on a fire sprinkler system, all mechanical checks, such as alarm checks and backflow preventers, should be flow tested and inspected internally in accordance with NFPA 13 and NFPA 25.

Basic Installation Instructions



Watts 3/4" – 2" (20-50mm) 909QT/LF909QT High Capacity Relief Series: Location and Installation Considerations

1. Backflow preventers must be installed in high-visibility locations in order to allow for immediate notice of telltale discharge or other malfunction. This location should also facilitate testing and servicing, and protect against freezing and vandalism.
2. Installing a backflow preventer in a pit or vault is not recommended as flooding of the pit will cause a crossconnection. Ensure that **all local codes and required safety provisions are met**. An air gap below the relief port must be maintained so as to avoid, flooding and submersion of the assembly, which may lead to a cross-connection.
3. A strainer should be installed ahead of the backflow preventer to protect all internal components from unnecessary fouling.
6. The 909 and LF909 Series backflow preventer is designed so that the critical level of the relief valve is positioned below the first check. This unique feature allows the valve to be **installed either vertically or horizontally**.
7. **Installation procedures must comply with all state and local codes.** *Please see page 3 for specific installation procedures.
8. Prior to installation, thoroughly flush all pipe lines to remove any foreign matter.
9. **Start up** at Initial Installations and After Servicing: The downstream shutoff should be closed. Slowly open upstream shutoff and allow the backflow preventer to fill slowly. Bleed air at each test cock. When backflow preventer is filled, slowly open the downstream shutoff and fill the water supply system. This is necessary to avoid dislodging O-rings or causing damage to internal components.
10. **Test:** The 909 and LF909 Series backflow preventer must be tested by a certified tester at the time of installation in order to ascertain that the assembly is in full working order and may be relied upon to protect the safe drinking water as per applicable standards.

⚠ CAUTION

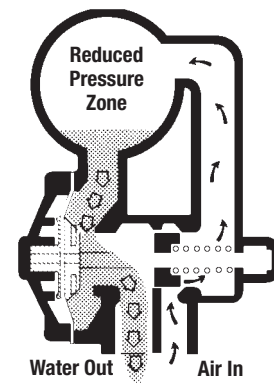
Do not install a strainer ahead of the backflow preventer on seldom-used, emergency water lines (i.e. fire sprinkler lines). The strainer mesh could potentially become clogged with debris present in the water and cause water blockage during an emergency.

4. Normal discharge and nuisance spitting are accommodated by the use of a Watts air gap fitting and a fabricated indirect waste line. Floor drains of the same size **MUST** be provided in case of excessive discharge.
5. When a 909 and LF909 Series backflow preventer is installed for dead-end service applications (i.e. boiler feed lines, cooling tower makeup or other equipment with periodic flow requirements), discharge from the relief vent may occur due to water supply pressure fluctuation during static no-flow conditions. A check valve may be required ahead of the backflow preventer. *Please see "Troubleshooting", page 7, **prior to installation**.

For repair kits and parts, refer to our Backflow Prevention Products Repair Kits & Service Parts price list PL-RP-BPD found on www.watts.com.

How It Operates

The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then drains the zone to atmosphere. Therefore, if both check valves foul, and simultaneous negative supply and positive backpressure develops, the relief valve uses the air-in/water-out principle to stop potential backflow.



BACKFLOW PREVENTERS - irrigation, pool, & trash chute

Installation Indoors

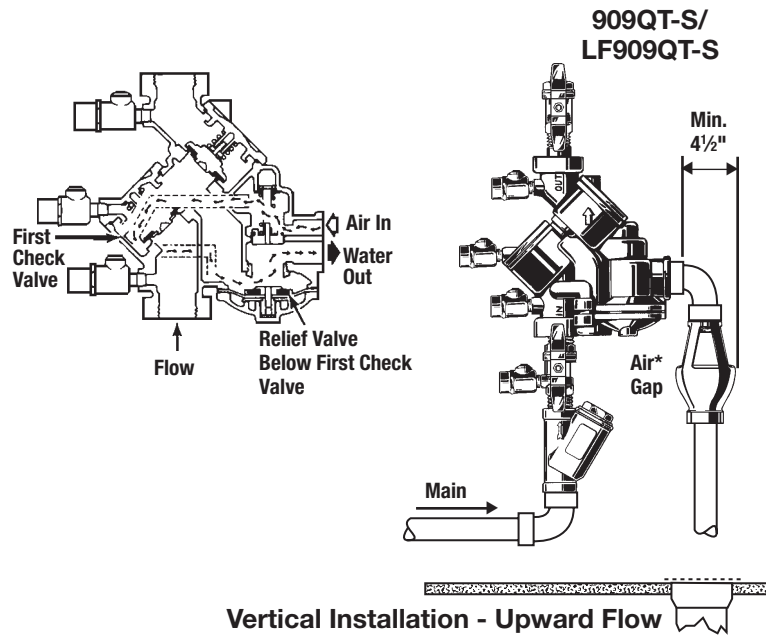
ASSE approved for vertical installation
3/4" – 2" flow up and down

For indoor installations, it is important that the valve be easily accessible to facilitate testing and servicing. Series 909 and LF909 may be installed either vertically or horizontally. If it is located in a line close to wall, be sure the test cocks are easily accessible. A drain line and air gap should be piped from the relief valve connection as shown, where evidence of discharge will be clearly visible and so that water damage will not occur. Therefore, never install in concealed locations.

NOTICE

Test cock must be located on the first or inlet shutoff valve.

***For Air Gap information contact your technical sales representative or refer to ES-AG/EL/TC.**



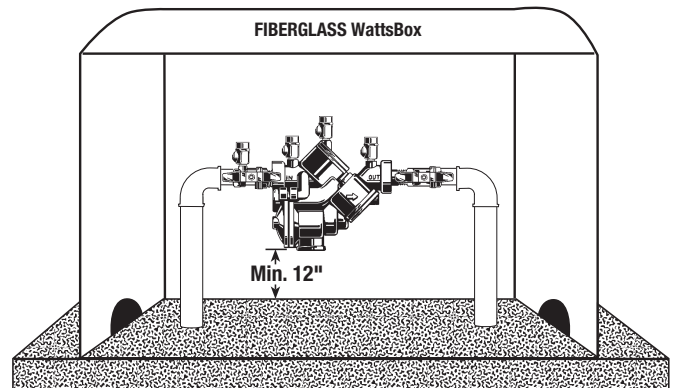
Installation - Outside Building Above Ground

In an area where freezing conditions do not occur, Series 909/LF909 can be installed outside of a building. The most satisfactory installation is above ground and should be installed in this manner whenever possible.

In an area where freezing conditions can occur, Series 909/LF909 should be installed above ground in an insulated enclosure.

Series 909/LF909 may be installed in a vertical or horizontal line and in an accessible location to facilitate testing and servicing. A discharge line should be piped from the air gap at the relief valve connection making sure there is adequate drainage. Never pipe the discharge line directly into a drainage ditch, sewer or sump. Series 909 and Series LF909 should never be installed where any part of the unit could become submerged in standing water. Consideration should be given to the installation of external support structure as applicable.

It is generally recommended that backflow preventers never be placed in pits unless absolutely necessary, and then only, when approved by local codes. In such cases, a modified pit installation is preferred.



Now available, WattsBox Insulated Enclosures,
for more information, send for ES-WB or ES-WB-T.

Installation - Parallel Consult Local Codes for Approval

Two or more smaller size valves can be piped in parallel (when approved) to serve a larger supply pipe main. This type of installation is employed where increased capacity is needed beyond that provided by a single valve and permits testing or servicing of an individual valve without shutting down the complete line.

The number of valves used in parallel should be determined by the engineer's judgement based on the operating conditions of a specific installation.

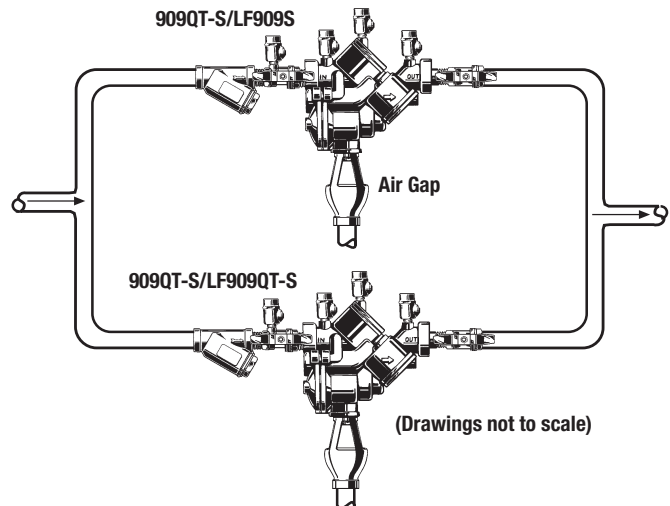


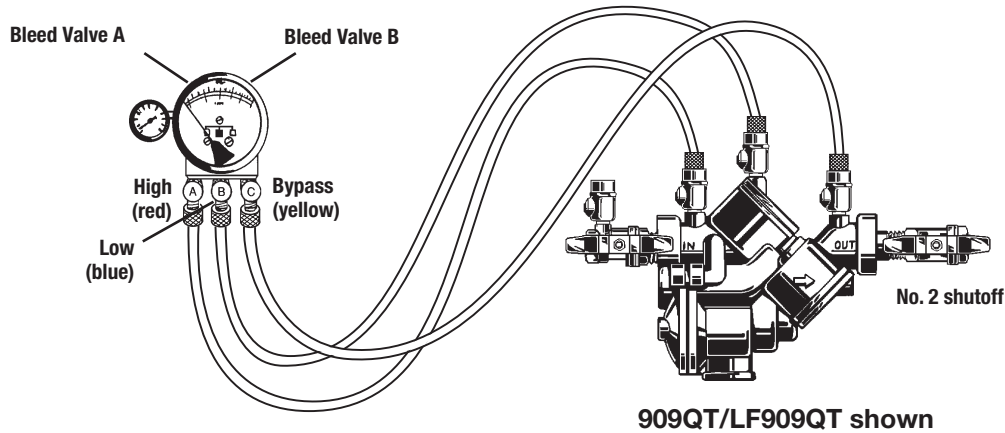
TABLE ONE - CAPACITY REQUIRED FOR SYSTEM

50 gpm	100 gpm	150 gpm	200 gpm	250 gpm	350 gpm
Two 3/4"	Two 1"	Two 1 1/4"	Two 1 1/2"	Two 1 1/2"	Two 2"
Devices	Devices	Devices	Devices	Devices	Devices

Table shows total capacity provided with dual valve installations of various sizes.

Test Procedure for Reduced Pressure Assembly

- A. All needle valves must be closed on test kit.
- B. Open test cock No. 4 and flush test cocks Nos. 1, 2 and 3 on reduced pressure assembly then close test cock No. 4.
- C. Attach hoses as shown. Bleed air from kit, close No. 2 shutoff.



Test No. 1 - Check Valve No.2

Purpose: To test check valve No. 2 for tightness against reverse flow.

Requirements: Valve must be tight against reverse flow under all pressure differentials.

- Step 1** Slowly open the needle valve "A" high side (red) and "C" bypass (yellow). Keep the "B" low (blue) closed.
- Step 2** Open test cock No. 4.
- Step 3** Indicated pressure differential will decrease slightly. If pressure differential continues to decrease (until the vent opens) the No. 2 check valve is reported as "leaking".

Test No. 2 - Shutoff Valve No. 2

Purpose: To test shutoff valve No. 2 for tightness.

- Step 1** After passing Test No. 1, continue to test No. 2 by closing test cock No. 2.
- Step 2** The indicated pressure differential will decrease slightly. If pressure differential continues to decrease (approaching "zero"), the No. 2 shutoff valve is reported to be "leaking".

NOTICE

A leaking No. 2 shutoff will give a false reading in tests No. 3 and 4.

Test No. 3 - To Test No. 1 Check Valve

Purpose: To test check valve No. 1 for tightness.

Requirements: Valve must be tight against reverse flow under all pressure differentials.

- Step 1** Close needle valve "A" high side (red) and open test cock No. 2
- Step 2** Close test cock No. 4. Disconnect bypass hose (yellow) at test cock No. 4.
- Step 3** Open needle valve "B" low (blue) and "C" bypass (yellow), bleeding to atmosphere, then closing needle valve "B" (blue) restores the system to a normal static condition.
- Step 4** Observe the pressure differential gauge. If there is a decrease in the indicated value, the No. 1 check valve is reported as "leaking".

Test No. 4 - Pressure Differential Relief Valve

Purpose: To test operation of pressure differential relief valve.

Requirements: The pressure differential relief valve must operate to maintain the "zone" between the two check valves at least 2psi less than the supply pressure.

- Step 1** Close needle valve "C" bypass (yellow).
- Step 2** Open needle valve "A" high side (red).
- Step 3** Open needle valve "B" low (blue) very slowly until the differential gauge needle starts to drop.
- Step 4** Hold the valve at this position and observe the gauge reading at the moment the first discharge is noted from the relief valve. Record this as the opening differential pressure of the relief valve.

NOTICE

It is important that the differential gauge needle drops slowly.

- Step 5** Close test cocks Nos. 2 and 3. Remove hose from test cocks Nos. 2 and 3.
- Step 6** Use bypass hose (yellow) to relieve pressure from test kit by opening needle valve "A", "B" and "C" and bleed valves "A" and "B".
- Step 7** Remove all test equipment and open No. 2 shutoff valve of the device.

CAUTION

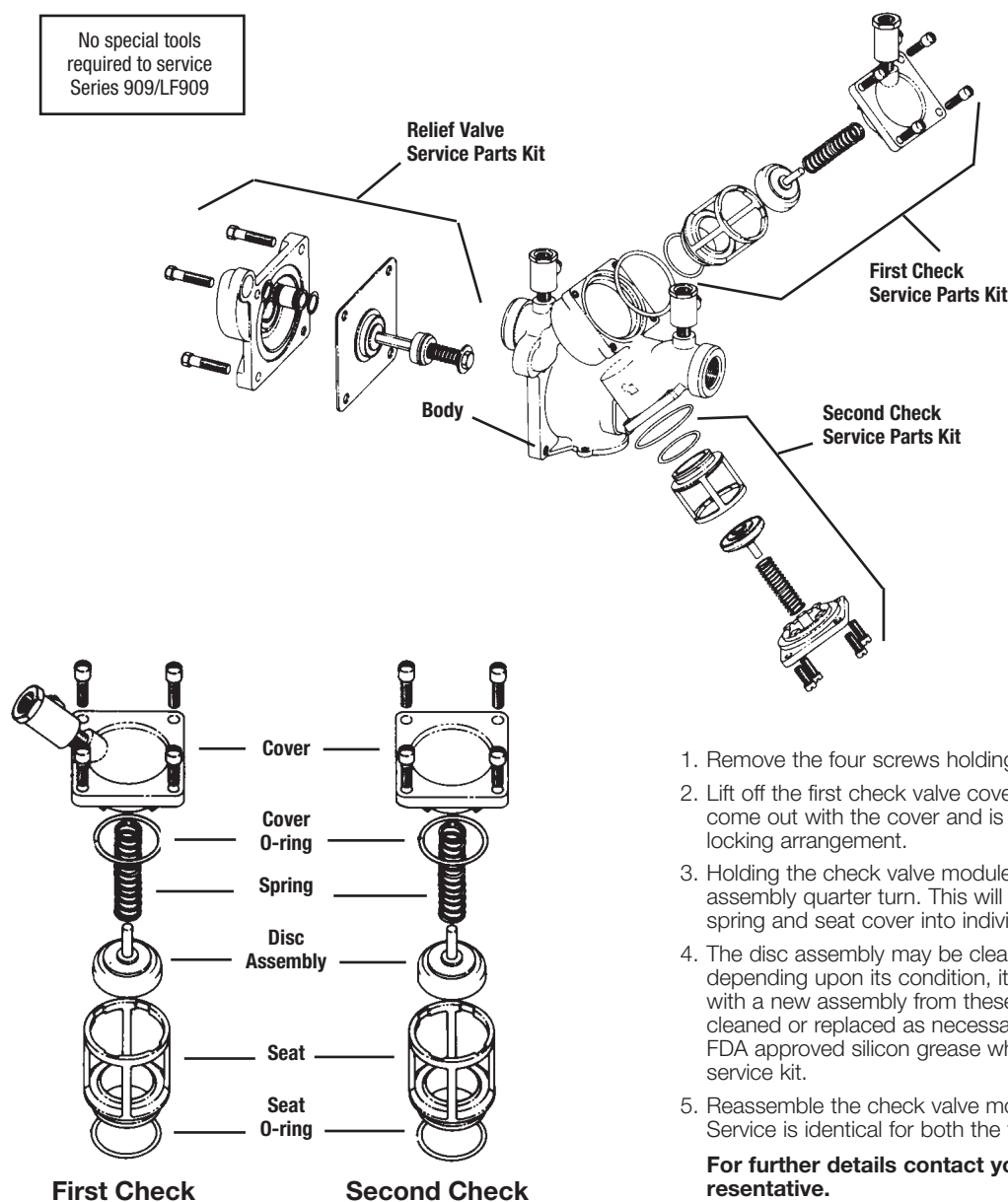
To prevent freezing, hold Test Kit vertically to drain differential gauge and hoses prior to placing in case.

For additional testing information, refer to IS-TK-DP/DL, IS-TK-9A, IS-TK-99E or IS-TK-99D.

BACKFLOW PREVENTERS - irrigation, pool, & trash chute

Servicing First and Second Check Valves $\frac{3}{4}$ " to 2" (20 to 50mm)

No special tools
required to service
Series 909/LF909



1. Remove the four screws holding the first check valve cover.
2. Lift off the first check valve cover. The check valve inside will come out with the cover and is attached with a bayonet type locking arrangement.
3. Holding the check valve module in both hands, rotate the assembly quarter turn. This will disengage the disc assembly, spring and seat cover into individual components.
4. The disc assembly may be cleaned and reassembled, or depending upon its condition, it may be discarded and replaced with a new assembly from the service kit. O-rings should be cleaned or replaced as necessary and lightly greased with the FDA approved silicon grease which is also furnished with the service kit.
5. Reassemble the check valve module in the reverse order. Service is identical for both the first and second check valves.

For further details contact your local technical sales representative.

NOTICE

The springs and covers of the first and second check valves are **not** interchangeable. The heavier spring loaded module should be in the first check and the lighter in the second check module.

For repair kits and parts, refer to our Backflow Prevention Products Repair Kits & Service Parts price list PL-RP-BPD found on www.watts.com.

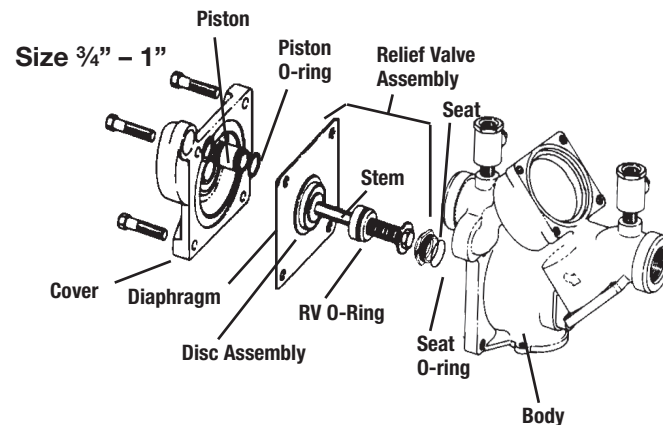
Servicing the Relief Valve $\frac{3}{4}$ " to 2"

1. Remove the four bolts that hold the relief valve cover in place.
2. Remove the cover. The stainless steel adapter, with O-ring attached will be free to be removed simultaneous with the removal of the cover. Pull out the relief valve assembly.

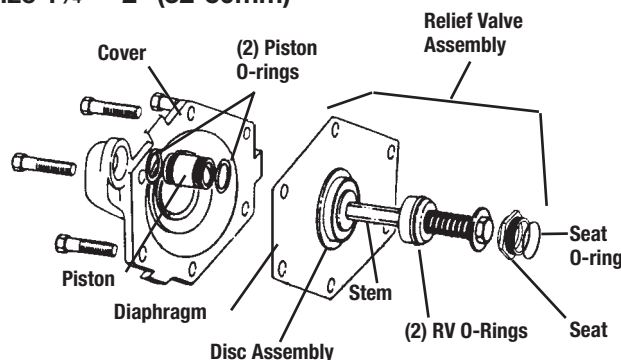
NOTICE

The spring tension in the relief valve assembly is contained in the design of the relief valve; therefore, the relief can be removed in a one-piece spool-type assembly.

3. The relief valve seat and disc may be cleaned without disassembly of the relief valve assembly. If it is determined that the relief valve diaphragm and/or disc should be replaced, the relief valve module can be readily disassembled without the use of special tools.



Size $\frac{1}{4}$ " – 2" (32-50mm)



For repair kits and parts, refer to our Backflow Prevention Products Repair Kits & Service Parts price list PL-RP-BPD found on www.watts.com.

For further details contact your local technical sales representative.

To Prevent Shaft Damage Assemble As Shown:

CAUTION

If cover will not press against body, assembly is crooked and tightening bolts will bend shaft. Do not force the cover into place as damage may result from misalignment.

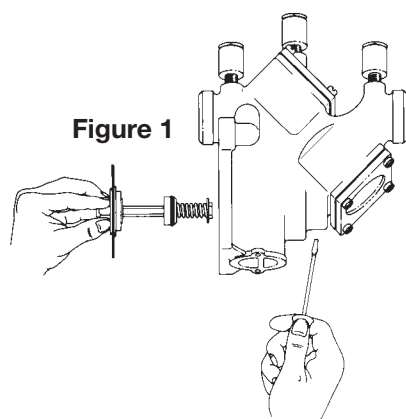


Figure 1:

To assemble the Relief Valve Assembly have a screwdriver ready.

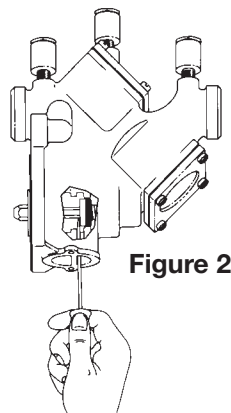


Figure 2:

Depress the Relief Valve Assembly, carefully guiding it against the two pound spring load. When properly aligned, the piston is in the cylinder bore. Insert the screwdriver as shown.

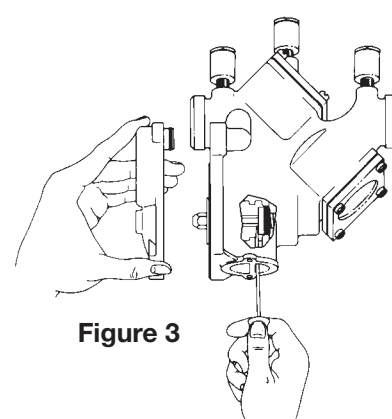


Figure 3:

The Relief Valve Assembly is held encapsulated by the screwdriver. You should now have both hands free to bolt down the cover. Insert and snug two bolts 180° apart to hold the cover. Finish inserting the remaining bolts and snug up evenly, alternating until secure. Remove the screwdriver.

Troubleshooting Guide — Backflow Preventers

Problem	Cause	Solution
A. Valve spits periodically from the vent	A.1 Fluctuating supply pressure.	A.1 Install a soft seated check valve immediately upstream of the device.
	A.2 Fluctuating downstream pressure	A.2 Install a soft seated check valve downstream of the device close as possible to the shutoff valve.
B. Valve drips continually from the vent	B.1 Fouled first check	B.1 Flush valve. If flushing does not resolve problem, disassemble valve and clean or replace the first check.
	B.2 Damage or fouled relief valve seat.	B.2 Clean or replace the relief valve seat.
	B.3 Relief valve piston O-ring not free to move due to pipe scale, dirt or build up of mineral deposits.	B.3 Clean, grease or replace the piston O-ring.
	B.4 Excessive back pressure, freezing, or water hammer has distorted the second check.	B.4 Eliminate source of excessive backpressure or water hammer in the system downstream of the device. Use Watts No. 15 to eliminate water hammer. Replace defective second check assembly. In case of freezing; thaw, disassemble and inspect internal components. Replace as necessary.
	B.5 Electrolysis or relief valve seat or first check seats.	B.5 Replace relief valve seat or inlet cover. Electrically ground the piping system and/or electrically isolate the device with plastic pipe immediately upstream and downstream of the device.
	B.6 Valve improperly reassembled.	B.6 If valve is disassembled during installation, caution must be exercised to install check springs in their proper location.
C. Valve exhibits high pressure drop.	C.1 Fouled strainer.	C.1 Clean strainer element or replace.
	C.2 Valve too small for flows encountered.	C.2 Install proper size device based upon flow requirements.
D. No water flows downstream of valve.	D. Valve installed backwards.	D. Install valve in accordance with flow direction arrow.
E. Valve does not test properly	E.1 Follow manufacturer's test procedure	E.1, E.2 Clean or replace gate valve with full port ball valves or resilient wedge shutoff valves.
	E.2 Leaky downstream gate valve.	
F. Valve quickly and repeatedly fouls following servicing.	F. Debris in pipe line is too fine to be trapped by strainer.	F. Install finer mesh strainer element in the strainer.
G. Winterization of backflow preventers.		G. Electric heat-tape wrap closely together around valve body. Build a small shelter around the valve with a large light bulb installed and left on at all times. If supply line is not used during the winter, removal of the complete body is the best. This would create an air gap to eliminate any possible backflow.

BACKFLOW PREVENTERS - irrigation, pool, & trash chute

For additional information, visit our web site at: www.watts.com

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
For more information: www.watts.com/prop65

Limited Warranty: Watts Regulator Co. (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**



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Model 375, 375A (R), 375DA & 375ADA (R)

Reduced Pressure Principle Assembly (2 1/2", 3", 4" & 6")

Reduced Pressure Detector Assembly (2 1/2", 3", 4" & 6")

LEAD-FREE*



Model 475 & 475V

Reduced Pressure Principle Assembly (2 1/2" & 3")

(Patent No. 8,997,772)

*This product contains a weighted average lead content less than 0.25% for wetted surfaces.

□ Installation □ Testing □ Maintenance Instructions

INSTALLATION INSTRUCTIONS

CAUTION: Installation of Backflow Preventers must be performed by qualified, licensed personnel. The installer should be sure the proper device has been selected for the particular installation. Faulty installation could result in an improperly functioning device.

ZURN WILKINS Model 375/475 Series Assemblies are for use on potable water lines where a health hazard exists in the event of a backflow situation.

Damage to the device could result wherever water hammer and/or water thermal expansion could create excessive line pressure. Where this could occur, shock arrestors, check valves and/or pressure relief valves should be installed downstream of the device.

If installation is in a pit or vault, the Backflow Preventer must never be submerged in water because this could cause a cross-connection. Make sure that the pit or vault always remains dry by providing ample drainage. (Consult local codes.)

1. Before installing a Model 375/475 Series Backflow Preventer, flush the line thoroughly to remove all debris, chips and other foreign matter. If required, a strainer should be placed upstream of the Backflow Preventer. **CAUTION:** Do not use a strainer in seldom used emergency waterlines such as fire lines.
2. Provide adequate space around the installed unit so that the test cocks will be accessible for testing and servicing.
3. Install valve at least 12 inches above surrounding flood level.
4. The Model 375 series has been tested and approved in the horizontal position. Contact factory before installing in other orientations.
5. Always consult local codes for installation methods, approvals and guidance.

OUTDOOR INSTALLATION

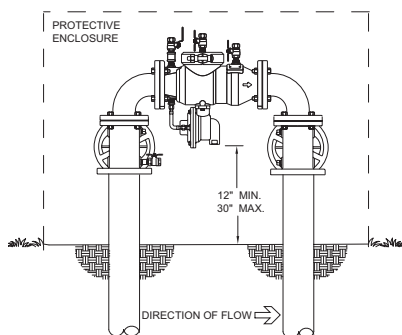
The Model 375/475 Series Backflow Preventer may be installed outdoors only if the device is protected against freezing conditions. Exposure to freezing conditions will result in improper function or damage to the device. The installation location must be kept above 32°F. All the basic installation instructions apply.

INDOOR INSTALLATION

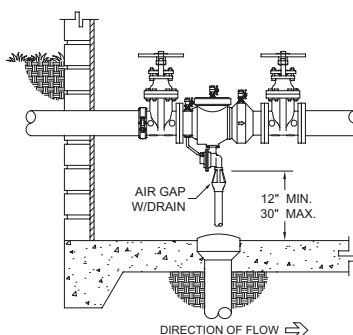
Indoor installation is preferred in areas that are subject to freezing conditions. All the basic installation instructions apply to such installations. **CAUTION: An adequately sized drain is required to prevent possible water damage due to relief valve discharge.**

PLACING THE DEVICE IN SERVICE

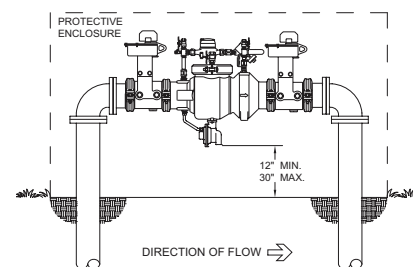
1. Start with both shut-off valves closed. Slowly open the inlet shut-off valve until the backflow preventer is completely pressurized. A brief discharge from the relief valve may occur while the device is pressurizing. The discharge should cease by the time the shut-off valve is fully open. If the discharge does not stop, refer to "MAINTENANCE INSTRUCTIONS" for repair procedures.
2. After the device has been pressurized, vent all trapped air by slightly opening each of the four test cocks.
3. Slowly open the downstream shut-off valve. The Model 375/475 Series Backflow Preventer is now in service.
4. If spitting or intermittent discharges from the relief valve are noted, it could be a result of pressure fluctuation and/or a water hammer condition in the system. If such conditions exist, install water pressure reducing valves or water hammer shock arrestors in compliance with industry standards as needed.
5. After the Model 375/475 Series has been properly installed, test the device (see "TEST PROCEDURES"). If the device fails the test, remove the first and second check valves and thoroughly flush the device. If the relief valve fails to operate properly, inspect the sensing passage for clogging (see "MAINTENANCE INSTRUCTIONS"). Clean rubber seals of all debris and place unit back in service.



OUTDOOR INSTALLATION
Model 475 (2 1/2" & 3")



INDOOR INSTALLATION
Model 375



OUTDOOR INSTALLATION
Model 375ADABGVIC

WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects and other reproductive harm

ADVERTENCIA: Este producto contiene una sustancia química que el Estado de California como causante de cáncer, defectos de nacimiento y otros daños reproductivos

Testing Procedures

MODEL 375/475 SERIES ASSEMBLY

Equipment Required: Differential pressure gauge test kit.

TEST NO. 1 - RELIEF VALVE OPENING POINT

REQUIREMENT:

The differential pressure relief valve must operate to maintain the zone between the two check valves at least 2 psi less than the supply pressure.

PROCEDURE:

1. Flush water through test cocks #1, #2 (open #2 slowly), #3 and #4 by opening and closing each test cock one at a time, to eliminate foreign material.
2. Install appropriate fittings to test cocks. Attach hose from the high side of the differential pressure gauge to the #2 test cock then attach hose from the low side of the gauge to the #3 test cock. Open test cock #3 slowly and then bleed all air from the hose and gauge by opening the low side bleed needle valve.
3. Maintain the low side bleed needle valve in the open position while test cock #2 is opened slowly. Open the high side bleed needle valve to bleed all air from the hose and gauge. Close the high side bleed needle valve, then close the low side bleed needle valve after the gauge reading has reached the upper end of the scale.
4. Close the #2 shut-off valve. If the gauge reading drops to the low end of the gauge scale and the differential pressure relief valve discharges continuously, then the #1 check valve is leaking. If this occurs, Tests #1, #2 and #3 cannot be completed (See USC Maintenance Guide). However, should the gauge reading remain above the differential pressure relief valve opening point, then observe the gauge reading. This is the apparent pressure drop across the #1 check valve.
5. Open the high side control needle valve approximately one turn, and then open the low side control needle valve no more than 1/4 turn to by-pass water from the #2 test cock to the #3 test cock. Observe the differential pressure reading as it slowly drops to the relief valve opening point. Record this opening point value when the first discharge of water is detected. Close the low side needle valve.

TEST NO. 2 - TIGHTNESS OF #2 CHECK VALVE

REQUIREMENT:

The #2 check valve shall be tight against backpressure.

PROCEDURE:

1. Maintain the #2 shut-off valve in the closed position (from Test #1). Vent all air through the vent hose by opening the vent needle valve. Close the vent needle valve only (The high side control needle valve is to remain open).
2. Attach the vent hose from the gauge to the #4 test cock, then open the #4 test cock. Bleed water from the zone by opening the low side bleed needle valve on the gauge in order to re-establish the normal reduced pressure within the zone. Once the gauge reading reaches a value above the #1 check valve pressure drop, close the low side bleed needle valve.
3. Open the vent needle valve. If the indicated differential pressure reading remains steady then the #2 check valve is reported as "closed tight." Go to Test #3. If the differential

pressure reading falls to the relief valve opening point, bleed water through the low side bleed needle valve until the gauge reading reaches a value above the #1 check valve pressure drop. If the gauge reading settles above the relief valve opening point, record the #2 check valve as "closed tight," and proceed to Test #3. If the differential pressure reading falls to the relief valve opening point again, then the #2 check valve is noted as "leaking," and Test #3 cannot be completed. If the differential pressure reading drops, but stabilizes above the relief valve opening point, the #2 check valve can still be reported as "closed tight."

Note: Due to disc compression, you may need to bleed off water through low side bleed needle valve several times before the gauge reading will settle above relief valve opening point.

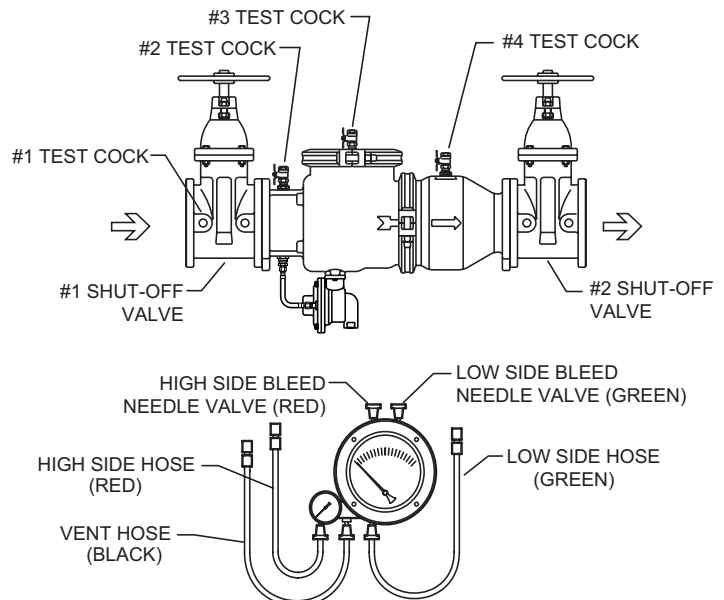
TEST NO. 3 - TIGHTNESS OF #1 CHECK VALVE

REQUIREMENT:

The static pressure drop across #1 check valve shall be greater than the relief valve opening point (test #1), and at least 5.0 psid.

PROCEDURE:

1. With the vent hose connected to test cock #4 as in step 3 of Test #2, bleed water from the zone through the low side bleed needle valve on the gauge until the reading exceeds the #1 check valve pressure drop. Close the low side bleed needle valve. After the gauge reading settles, the steady state differential pressure reading indicated (reading is not falling on the gauge) is the actual static (i.e., no flow) pressure drop across check valve #1 and is to be recorded as such.
2. Close all test cocks, slowly open shutoff valve #2 and remove equipment.



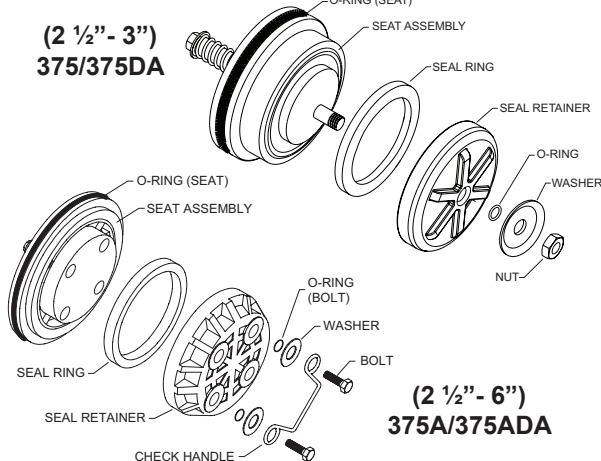
Capacity thru Schedule 40 Pipe				
Pipe size	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
2 1/2"	75	112	149	224
3"	115	173	230	346
4"	198	298	397	595
6"	450	675	900	1351
8"	780	1169	1559	2339
10"	1229	1843	2458	3687

SPECIFICATIONS

Maximum working water pressure: 175 PSI
 Maximum working water temperature: 140°F
 Hydrostatic test pressure: 350 PSI
 End connections: Flanged ANSI B16.1 Class 125
 Grooved AWWA C606

Maintenance Instructions

CHECK ASSEMBLY



All Model 375/475 Series Backflow Preventers must be inspected and maintained by licensed personnel at least once a year or more frequently as specified by local codes. Replacement of worn or damaged parts must only be made with genuine "ZURN WILKINS" parts.

GENERAL MAINTENANCE

1. Clean all parts thoroughly with water after disassembly.
2. Carefully inspect rubber seal rings and o-rings for damage.
3. Test unit after reassembly for proper operation (refer to "TESTING PROCEDURES").

SERVICING RELIEF VALVE

1. Remove relief valve cover bolts and cover. Gently pull on diaphragm to remove the cartridge assembly.
2. Inspect seal ring for cuts and embedded debris. Turn over or replace if required.
3. Disassemble cartridge by unscrewing relief valve retaining screw.
4. Inspect diaphragm and o-rings for damage. Replace required parts and apply a light coat of lubricant to plunger o-ring.
5. Carefully reassemble cartridge assembly. Tighten retainer screw to 13 -17 in/lbs.
6. Inspect relief valve seat for wear on seating surface. If damaged, replace seat and seat o-ring. Install spring over seat guides.
7. Insert cartridge assembly into relief valve body.
8. Replace relief valve cover and cover bolts.
9. Place the device in service and test per "TESTING PROCEDURES" on page 2.

NOTE: Disassembly of the seat assembly is not recommended. If the seat assembly needs repair, please contact factory.

RELIEF VALVE ASSEMBLY

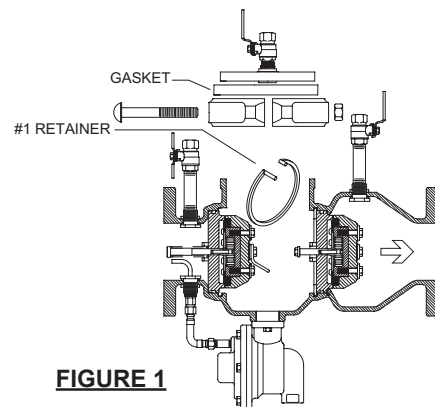
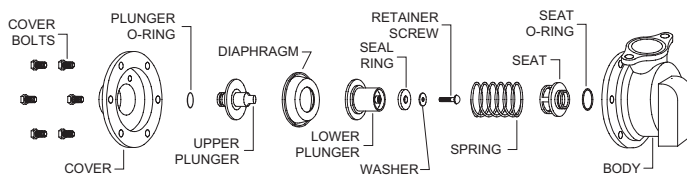


FIGURE 1

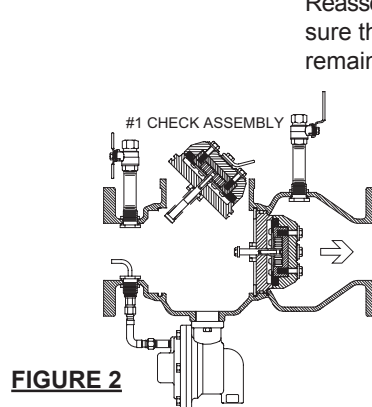


FIGURE 2

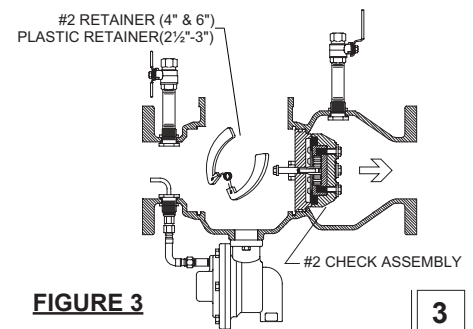


FIGURE 3

SERVICING CHECK VALVES

1. Close the outlet and then the inlet shut-off valves.
2. Open No. 2, 3 and 4 test cocks to release internal pressure. Leave them open during check removal and reinstallation.
3. Loosen and remove the two nuts, bolts and seal from the grooved coupling around the access cover.
4. If the valve has a wire retainer on the #1 check assembly, pinch together the exposed ends, pull toward the #2 check and remove from valve.
5. If the valve has a plastic retainer on the #1 check, grasp one of the exposed ends, push down and then pull toward the #2 check. The retainer should "spiral" out of the groove around the check.
6. (2-1/2 – 3" 375/375DA Models) Remove the #2 retainer and check in the same manner as the #1.
7. (4 – 6" 375A/375ADA Models) Remove the #2 check by locating one of the two spring-loaded plate retainers around the face of the check. Pinch the sides of the spring together and rotate the plates out of the body groove one at a time. Remove the 2nd retainer the same way.
8. **Always service the checks one at a time to avoid mixing parts.** Start by removing the hardware and o-rings from the back of the check assembly (See "Check Assembly" illustration). Separate the seal retainer from the assembly to expose the seal ring.
9. Inspect the seal ring for cuts or embedded debris. If the reverse side of the seal is unused, the seal ring can be inverted and used temporarily until a new seal is obtained. Inspect seat o-ring and replace if cut or damaged in any way.
10. Inspect valve cavity and seating areas. Flush with water to remove any debris.
11. (Reassembly, 2-1/2 – 3" 375/375DA Models) Lubricate the #2 check o-ring, install in the body and close the #4 test cock to hold it in place. Install the plastic retainer by inserting one end into the body groove and then sliding your hand around the face of the retainer, pushing it into the groove as you go. The retainer will "snap" into place when fully seated. Install #1 check and retainer in the same way.
12. (Reassembly, 4 – 6" 375A/375ADA Models) Lubricate the #2 check o-ring, install in the body and close the #4 test cock. Install the #2 check retainers into the body groove one plate at a time, squeezing the spring ends together to clear the stops on the face of the seat. Lubricate and install the #1 check, close the #2 test cock and install:
 - (A) wire retainer by pinching the ends together, placing the lower edge of the ring into the body groove below the check and rotating the top of the ring into the notch above the check.
 - (B) plastic retainer as described above in the 2-1/2 – 3" 375/375DA Models Reassembly section.
13. Lubricate the outside surface of the grooved coupling gasket. Reassemble access cover and grooved coupling, making sure the ends of the coupling touch each other. Close any remaining open test cocks and place valve back in service.

Troubleshooting

PROBLEM

1. SUDDEN OR RAPID SPITTING
2. LIGHT INTERMITTENT DRIP
3. CONTINUOUS DISCHARGE

POSSIBLE CAUSES

1. Drop in inlet pressure.
2. Sudden increase in downstream pressure due to waterhammer from quick closing shut-off valve installed downstream.
1. Slightly fouled #1 check.
2. Slightly fouled relief valve seat.
1. Fouled #1 check and/or #2 check.
2. Fouled relief valve seat.

CORRECTIVE ACTION

1. Install an in-line spring loaded check valve or pressure reducing valve upstream of Backflow Preventer.
2. Install an in-line spring loaded check valve or pressure reducing valve downstream of Backflow Preventer.
1. Clean #1 check and/or turn check valve seal ring over or replace.
2. Clean relief valve seat and/or turn relief valve seal ring over or replace.
1. Clean check valves and/or turn check valve seal ring over or replace.
2. Clean relief valve seat and/or turn relief valve seal ring over or replace.

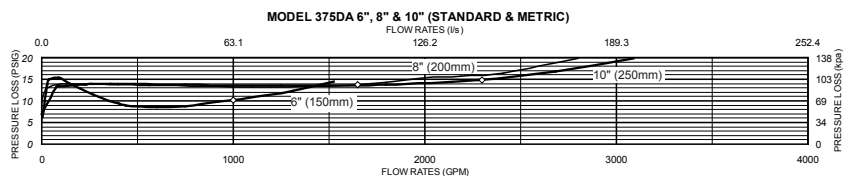
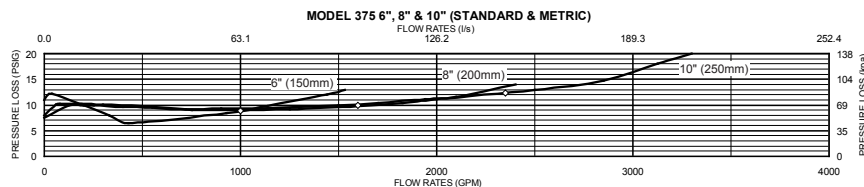
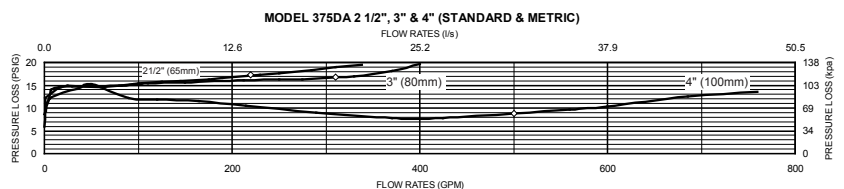
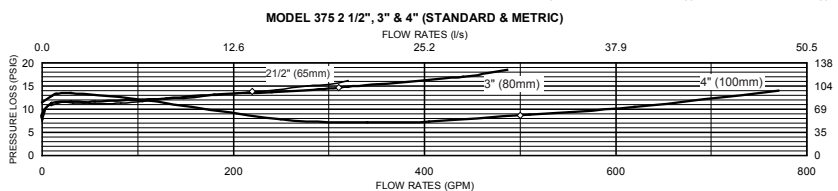
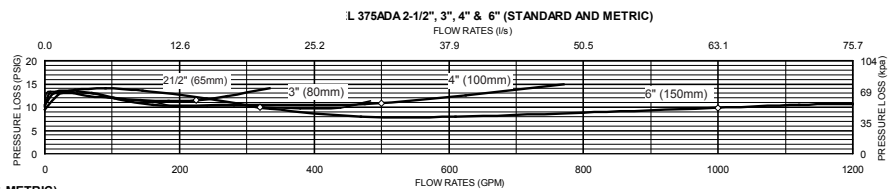
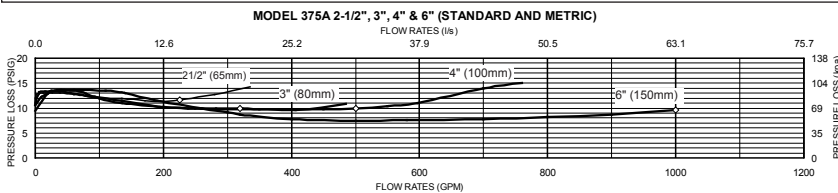
Repair Kits

SIZE	MODEL	MODEL 375 RELIEF RUBBER ONLY	MODEL 375 RELIEF COMPLETE	MODEL 375 CHECKS ONLY
2 1/2" - 3"	375/375DA	RK212-375R	RK212-375	RK212-350
4"	375/375DA	RK212-375R	RK212-375	RK4-350
6"	375/375DA	RK212-375R	RK212-375	RK6-350
2 1/2" - 4"	375A/375ADA	RK212-375R	RK212-375	RK4-350
6"	375A/375ADA	RK212-375R	RK212-375	RK6-350

Performance Characteristics

See spec sheet BF-475&V212-3 for flow curves

◇ Rated Flow (Established by approval agencies)



Proper performance is dependent upon licensed, qualified personnel performing regular, periodic testing according to ZURN WILKINS' specifications and prevailing governmental & industry standards and codes and upon following these installation instructions. Failure to do so releases ZURN WILKINS of any liability that it might otherwise have with respect to that device. Such failure could also result in an improperly functioning device.

MODEL 475

Reduced Pressure Principle – Backflow Preventers 4" to 10"



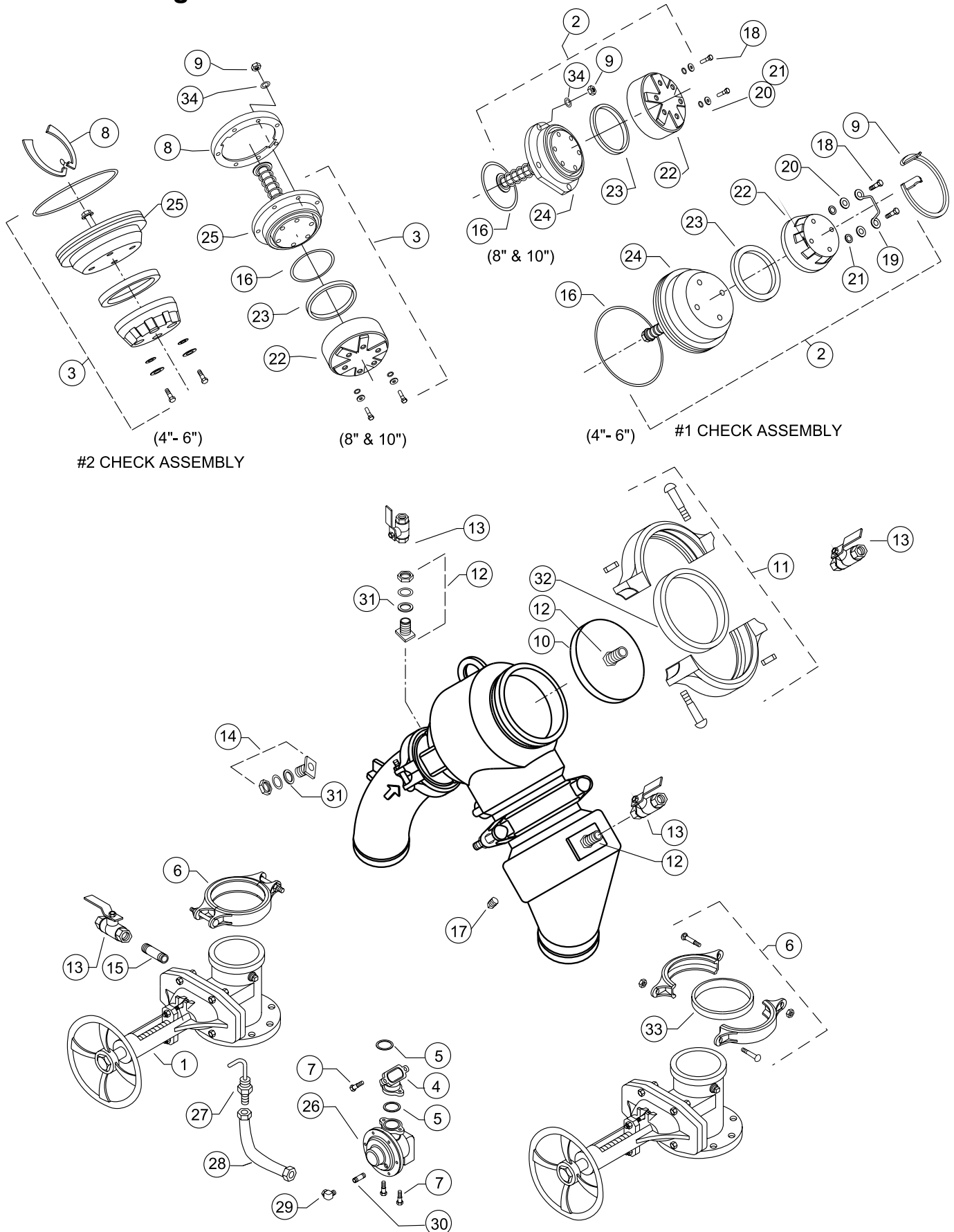
Item Number	Description	4"	6"	8"	10"
1	GATE VALVE, NRS (GXF)	4-48GXF	6-48GXF	8-48GXF	10-48GXF
	GATE VALVE, OS&Y (GXF)	4-48OSYGXF	6-48OSYGXF	8-48OSYGXF	10-48OSYGXF
	GATE VALVE, OS&Y (G&G)	4-48OSYG	6-48OSYG	8-48OSYG	10-48OSYG
	GATE VALVE, NRS (GXG)	4-48G	6-48G	8-48G	10-48G
	BUTTERFLY VALVE	4-49GVIC	6-49GVIC	8-49GVIC	10-49GVIC
2	#1 CHECK ASSEMBLY	3709-300	3710-300	3712-300	3712-300
3	#2 CHECK ASSEMBLY	3509-300B	3510-300B	3512-300B	3512-300B
4	RV ELBOW	4707-52XL-010F	4707-52XL-010F	4711-52XL-010F	4711-52XL-010F
5	O-RING, ELBOW	032N	032N	142N	142N
6	GROOVED COUPLING	4-23	6-23	8-23	10-23
7	BOLT	554-11A	554-11A	957-11	957-11
8	SEAT RETAINER ASSEMBLY #2	3509-140	3510-140	3511-14DSS	3511-14DSS
9	SEAT RETAINER #1	3509-14B	3510-14B	3511-9 (NUT)	3511-9 (NUT)
10	COVER	3509-3C	3510-3C	3511-3C	3511-3C
11	COVER RETAINER ASSEMBLY	6-23	8-23	12-23	12-23
12	BULKHEAD FITTING ASSEMBLY	BHF1CXL-100	BHF2BXL-100	BHF2BXL-100	BHF2BXL-100
13	BALL VALVE	12-850XL	34-850XL	34-850XL	34-850XL
14	BULKHEAD FITTING ASSEMBLY	BHF1BXL-100	BHF1BXL-100	BHF2CXL-100	BHF2CXL-100
15	NIPPLE, LONG	12X2-21B	34X3-21B	34X3-21B	34X3-21B
16	O-RING, SEAT ASSEMBLY	353N	364N	273N	273N
17	PLUG/CAP	558-7	34-3B	558-7	558-7
18	BOLT, POPPET RETAINER	558-11E	5510-11A	3511-11	3511-11
19	HANDLE, #1 POPPET ASSY	3509-6	3510-6	N/A	N/A
20	WASHER	3509-14C	3510-14C	3510-14C	3510-14C
21	O-RING	WK-109N	204N	204N	204N
22	POPPET RETAINER	3509-14	3510-14	3511-14	3511-14
23	SEAL RING	3509-12	3510-12	3511-12	3511-12
24	SEAT ASSEMBLY, #1 POPPET	3709-180	3710-180	3712-180	3712-180
25	SEAT ASSEMBLY, #2 POPPET	3509-180	3510-180	3512-180B	3512-180B
26	RELIEF VALVE ASSEMBLY	3707-CU-XL	3707-CU-XL	3711-CU-XL	3711-CU-XL
27	PITOT TUBE ASSEMBLY	57510-360	57510-360	57510-360	57510-360
28	SENSING TUBE	3710-36	3710-36	4710-36	4710-36
29	ELBOW	3707-38B	3707-38B	3707-38B	3707-38B
30	NIPPLE	14X1.5-21B	14X1.5-21B	14X1.5-21B	14X1.5-21B
31	BULKHEAD FITTING, GASKET	BHF1-13	BHF1-13	BHF1-13	BHF1-13
32	GASKET, COVER RETAINER	6-23-13	8-23-13	12-23-13	12-23-13
33	GASKET, GROOVED COUPLING	4-23-13	6-23-13	8-23-13	10-23-13
34	WASHER	N/A	N/A	3511-14E	3511-14E

Repair Kit

RK4-350			RK6-350			RK8-350		
Size 4"			Size 6"			Size 8", 10"		
Part Number	Qty.	Description	Part Number	Qty.	Description	Part Number	Qty.	Description
3509-12	2	SEAL RING	3510-12	2	SEAL RING	3511-12	2	SEAL RING
353N	2	O-RING	364N	2	O-RING	273N	2	O-RING
WK-109N	8	O-RING	204N	8	O-RING	204N	12	O-RING
351N	2	Not used in 475						

MODEL 475 – 4" to 10"

Parts Drawing



MODEL 375, 375A, 375AST, 475 and 475V

Relief Valve – 2-1/2" to 10"



RELIEF VALVE COMPLETE

3707-CU-XL

3711-CU-XL

Item Number	Description	Qty.	2-1/2"-6"	Qty.	8" and 10"
1	BOLT, COVER	6	554-11A	8	957-11
2	O-RING	1	222N	1	227N
3	UPPER PLUNGER	1	3707-34	1	3711-34
4	DIAPHRAGM	1	3707-43	1	3711-43
5	LOWER PLUNGER	1	3707-34A	1	3711-34A
6	SEAL RING	1	3707-12	1	3711-12
7	SEAL RETAINER	1	3707-14	1	3711-14
8	SCREW	1	558-11E	1	558-11E
9	CU SPRING	1	3707-33A	1	3711A-33
10	CU SEAT	1	3707-18	1	3711-18
11	O-RING	1	032N	1	146N
12	WASHER	1	N/A	1	3707-14
13	STEM ASSY.	1	3707-50	1	3711-50
14	O-RING	1	032N	1	142N

Repair Kit, Rubber

RK212-375R
Size 2-1/2"-6"

RK8-375R
Size 8" and 10"

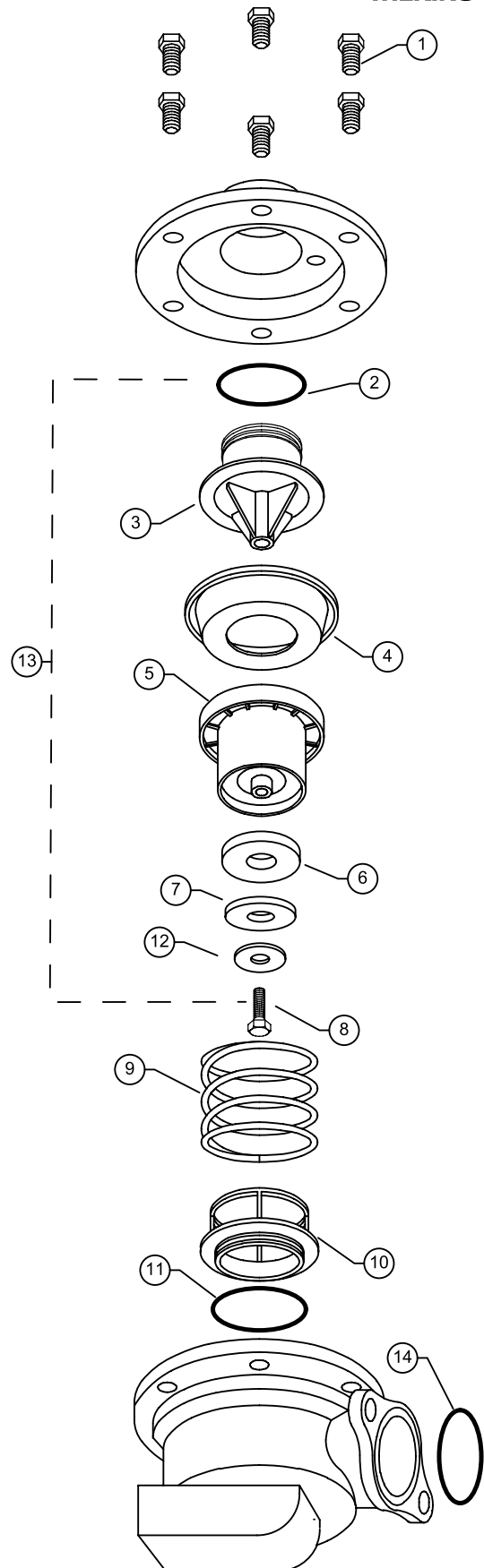
Item Number	Description	Qty.	Part Number	Part Number
6	SEAL RING	1	3707-12	3711-12
4	DIAPHRAGM	1	3707-43	3711-43
2	O-RING	1	222N	227N
11	O-RING	1	032N	146N
14	O-RING	1	032N	142N

Repair Kit, Complete

RK212-375
Size 2-1/2"-6"

RK8-375
Size 8" and 10"

Item Number	Description	Qty.	Part Number	Part Number
N/A	REPAIR KIT, RUBBER	1	RK212-375R	RK8-375R
9	SPRING	1	3707-33A	3711A-33





ONE ZURN TERMS AND CONDITIONS

Price and Terms of Payment

Terms are net, payable 30 days from date of invoice. All pricing in U.S. currency. The Buyer shall pay all sales, consumers, or other applicable taxes. A 1-1/2% monthly (18% annual) service charge will be added to the outstanding balance of all past due invoices.

Minimum invoice \$100.00. Zurn Industries, LLC ("Zurn") reserves the right to apply a minimum order charge in order to meet the \$100.00 minimum invoice requirement. All orders are subject to credit approval by the Zurn Credit Department prior to the acceptance of an order. Orders may be refused, delivery may be withheld, or shipment stopped in transit without any liability on Zurn's part at Zurn's sole discretion based upon Buyer's credit worthiness as determined by Zurn.

Freight

Zurn is pleased to provide an industry-leading \$3,500 combined freight rate. Please see below for specific policy details.

All sales are F.O.B. seller's location. Zurn will allow full freight allowance when any of the following conditions are met: 1) any combination of Specification Drainage, Light Commercial, Commercial Brass or Wilkins orders of \$3,500 or more; 2) Linear Drainage and Chemical Drainage orders of \$5,000 or more; 3) any Combination of Specification Drainage, Light Commercial, Commercial Brass, Wilkins, Linear Drainage and Chemical Drainage orders of \$5,000 or more; 4) Zurn One Systems orders of \$7,500 or more; 5) fixture only orders totaling \$10,000 or more. This full freight allowance applies when the shipment is within the continental United States and has a single destination of a buyer's standard address or job location. Routing of shipment shall be determined at the sole direction of Zurn. Shipping dates are estimates and time of delivery shall not be of the essence of this sale contract. Under no circumstances will the Seller have any responsibility on account of any delays in manufacture, transportation, or otherwise. Terms of Export Shipment on application.

NOTE: Any product dimension larger than 92" or any single item weighing more than 3,500 lbs., shall be defined as an oversized and/or overweight product and Zurn's standard FFA terms may not apply. Please contact our customer service department for guidance on potential additional shipping charges.

These charges and restrictions apply in addition to Zurn standard terms and conditions for sale unless otherwise agreed upon by the parties.

Limited Warranty

Zurn goods sold hereunder are warranted to be free from defects in material and factory workmanship for the period of time from the date of purchase: AquaVantage® Flush Valves, AquaFlush® Flush Valves, Commercial Fixtures, Faucets, Showers, and Tubular Brass three years; Chemical Drainage, Linear Drainage, Light Commercial, Specification Drainage, Zurn Wilkins, and Flush Valve and Tubular Brass decorative finishes one year, PHIX® Cartridge ten years, FOG-ceptor™ thirty years. Where permitted by law, THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED

TO THE ABOVE IDENTIFIED PERIOD OF TIME AND SHALL BE LIMITED SOLELY TO THE REPLACEMENT OF THE DEFECTIVE GOODS. A damaged/broken test cock or ball valve is not considered defective. Please contact Zurn Customer Care for assistance.

Zurn will replace goods at no cost that prove defective provided Zurn is notified in writing of such defect and the goods are returned prepaid at the specified Zurn location with evidence that they have been properly maintained and used in accordance with instructions. ZURN SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY, OR DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in the connection therewith. All weights stated in Zurn catalogs and lists are approximate and are not guaranteed.

Returned Goods

Standard cataloged material may be returned only with written permission of Zurn. Returned goods are subject to a 25% restocking charge of total saleable material returned, plus cost of reconditioning, if necessary, to make material sellable. Transportation charges are the responsibility of the Buyer. Credit allowance will be in the form of merchandise credit only – not cash credit. The value of the return must total at least \$100.00 to qualify for credit allowance. No credit will be allowed for parts unless originally ordered and invoiced as parts. No credit will be allowed for discontinued or made-to-order items. Items that have been specially made are not subject to return or cancellation except by special negotiation. Material must be returned within one year of invoice date for credit to be issued for Chemical Drainage, Linear Drainage, and Light Commercial. Material must be returned within two years of invoice date for credit to be issued for Commercial Fixtures, Flush Valve Products, Specification Drainage, Tubular Brass, and Zurn Wilkins. No credit is allowed for Linear Drainage products that have been cut and Specification Drainage product with auxiliary tappings. Flush Valve material over two years old will be subject to a 50% handling charge. Flush Valve material over five years old will not be accepted. Light Commercial and Specification Drainage galvanized material will be credited at value of Dura-Coated cast iron, and chrome plated at value of bronze. Zurn Wilkins damaged/broken test cocks or ball valves are not considered defective.

Illustrations of Typical Installations

The typical installations for various products found in each product section are intended to illustrate the products and potential options for the use of these products. Under no circumstances are they to be construed as recommended installation procedures. Consult local codes and project specifications for proper installation instructions.

Shortage/Damage Claims

Notification of material shortages or incorrect filling of orders must be made to Zurn within 10 days of receipt. No claims over three months old will be honored. Buyer agrees to make all complaints for damage in transit or "short count" directly to the carrier; before the contents are unloaded have the carrier agent's acknowledgement of such damage noted on the bill of lading and to present to the carrier its agent's acknowledgement of such damaged material with formal claim covering said damage.

General

Zurn reserves the right to make changes in design or equipment of any item or product without incurring any obligation on previously sold items, and to discontinue items at any time, without notice. Possession of this Catalog or other sales literature is not to be construed as an offer to sell. All orders are subject to acceptance by Zurn. Catalog printed in U.S.A.

Zurn flush valves are designed to comply with Army Corp of Engineers and Naval guide specifications, Military Specification MIL.V.29193 and Federal Specification WWP541.

Zurn flush valves comply with the following standards: ASME A112.18.1/CSA B125.1, A112.19.5, A112.19.2, A112.19.6, ASSE 1037 and 101 are listed by the following agencies: Canadian Standards, IAPMO/UPC/CUPC, and CSA 125.3. Zurn flush valves are manufactured from dezincification resistant alloys. For additional compliances, contact Zurn Industries, LLC, Commercial Brass Operation, or 1-800-997-3876.

Zurn is not responsible for typographical errors. The contents of this guide are subject to revision without notice.

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HEAT TRACE CABLES



Raychem

RESIDENTIAL & LIGHT COMMERCIAL SELF-REGULATING HEATING PRODUCTS APPLICATION AND DESIGN GUIDE

HEAT TRACE CABLES

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INTRODUCTION

Raychem residential and light commercial self-regulating heating products are the ideal solution for pipe freeze protection, roof and gutter de-icing and crankcase heating applications. These products include WinterGard, WinterGard Plus and WinterGard Wet cut-to-length heating cable systems, Gardian preassembled heating cables and FreezGard crankcase heaters. This application and design guide applies to these Raychem heating products only and is intended to assist in the selection of the appropriate heating cable, connection kits and accessories. Following the recommendations in this guide and those of your Pentair’s Thermal Building Solutions representative will result in the selection of a reliable and energy-efficient system.

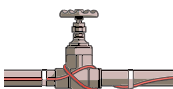
HEATING CABLES SELECTION GUIDE

Application	WinterGard	WinterGard Plus	WinterGard Wet	Gardian 120 V	Gardian 240 V	FreezGard
Freeze Protection						
Pipes in dry areas	•	•	•	•	•	
Pipes in wet areas			•	•	•	
Roof and Gutter De-icing			•	•		
Crankcase Heating						•

HEAT TRACE CABLES

PRODUCT LINE

120 Volt, 3 watt



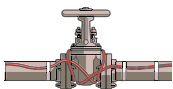
Cut-to-length for
small pipes

There's a heating cable just right
for the job:

**WinterGard heating cable,
3 watts/ft**

Catalog #	Description	Voltage	Reel Length (ft)
H311100	TruckPak*	120	100
H311250	Reel	120	250

120 Volt, 6 watt
240 Volt, 6 watt



Cut-to-length for
large pipes

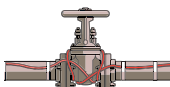
**WinterGard Plus heating cable,
6 watts/ft**

Catalog #	Description	Voltage	Reel Length (ft)
H611050	Box	120	50
H611100	TruckPak*	120	100
H611250	Reel	120	250
H621050	Box	240	50
H621100	TruckPak*	240	100
H621250	Reel	240	250

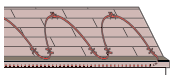
*TruckPak consists of a 100-foot cable reel,
two power connections, one splice/tee kit,
one roll of application tape, and 10 "Electric
Traced" labels.

HEAT TRACE CABLES

120 Volt, 6 watt
240 Volt, 6 watt

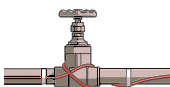


Large pipes

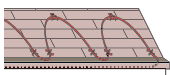


Cut-to-length for
wet locations, roof
de-icing, and
drain lines

120 Volt, 6 watt
240 Volt, 6 watt

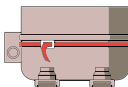


Preassembled
for pipes



Preassembled
for roofs (120 V only)

120 Volt
240 Volt



Compressor
crankcase
heating

WinterGard Wet heating cable,
6 watts/ft

Catalog #	Description	Voltage	Reel Length (ft)
H612050	Box	120	50
H612100	TruckPak*	120	100
H612250	Reel	120	250
H612500	Reel	120	500
H6121000	Reel	120	1000
H622050	Box	240	50
H622100	TruckPak*	240	100
H622250	Reel	240	250
H622500	Reel	240	500
H6221000	Reel	240	1000

Gardian heating cable, 6 watts/ft

Catalog #	Voltage	Preassembled Length (ft)
W51-6P	120	6
W51-12P	120	12
W51-18P	120	18
W51-24P	120	24
W51-50P	120	50
W51-75P	120	75
W51-100P	120	100
W52-6L	240	6
W52-12L	240	12
W52-18L	240	18
W52-24L	240	24

FreezGard crankcase heater

Catalog #	Voltage	Preassembled Length (ft)
CCH-1C	120	4
CCH-2C	240	4

*TruckPak consists of a 100-foot cable reel, two power connections, one splice/tee kit, one roll of application tape, and 10 "Electric Traced" labels.

Note: Use only in ordinary (nonhazardous) areas. Do not expose to any chemicals. In wet areas, use only WinterGard Wet or Gardian.



WARNING: Fire Hazard.

To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of Pentair's Thermal Building Solutions, agency certifications, and national electrical codes, ground-fault equipment protection must be used on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection.

Note: This application guide does not take the place of the installation instructions. Carefully follow the installation instructions included in the Raychem accessory kits. Pipes are shown without insulation for illustrative purposes only.

HEAT TRACE CABLES

ACCESSORIES

Catalog number	Description	Use
H900	Power Connection Kit (hardwired)	A hardwired power connection and end seal for one heating cable circuit. (Junction box not included.)
H903	Fiberglass Application Tape	To attach heating cable to the pipe. Includes 1 roll (66 ft) of tape and 10 warning labels.
H908	120-V Plug-in Power Connection Kit	A plug-in 120-V, 15-A power connection with built-in ground-fault equipment protection (GFEP) and end seal for one heating cable circuit.
H910	Splice and Tee Kit	Provides material for one splice or one tee and one end seal.
H912	Gel-filled End Seal	Two end seals for sealing the ends of heating cables.
H913	Roof Clips	Clips to attach WinterGard Wet or Gardian heating cable to the roof surface. Kit contains 10 clips for approximately 7 linear feet of roof edge.
H914	Roof Clips (Bulk Pack)	Clips to attach WinterGard Wet or Gardian heating cable to the roof surface. Bulk pack kit contains 50 clips for approximately 35 linear feet of roof edge.
H915	Downspout Hanger	Protects one WinterGard Wet or Gardian heating cable from damage caused by sharp edges in gutter and downspout applications. Also provides strain relief. Kit contains one downspout hanger bracket.

Important: Use only these Raychem accessories with Raychem heating cables.

Thermostats, Controllers and Sensors

AMC-F5	Fixed Set Point Thermostat	Ambient or line sensing thermostat with fixed non-adjustable set point of 40°F and 3' bulb and capillary sensor. 22 A at 125/250/480 V
SST-2	Fixed Set Point Thermostat with Built-in GFEP	Ambient or line sensing thermostat with non-adjustable set point of 40°F and 20' thermistor sensor. Includes ground-fault equipment protection (GFEP). 30 A at 100 - 240 V
AMC-1A	Adjustable Set Point Thermostat	Ambient thermostat with adjustable set point of 15°F to 140°F. 22 A at 125/250/480 V
EC-TS	Adjustable Set Point Thermostat	Ambient or line sensing thermostat with adjustable set point of 30°F to 110°F and 25' thermistor sensor. 30 A at 100 - 277 V
PD-Pro	Snow and Ice Controller	Automatic snow controller detects precipitation and low temperature. Interfaces with the CIT-1, GIT-1 and SIT-6E snow and ice sensors (sold separately). 30 A at 100 - 277 V
GF-Pro	Snow and Ice Controller with Built-in GFEP	Automatic snow controller detects precipitation and low temperature. Interfaces with the CIT-1, GIT-1 and SIT-6E snow and ice sensors (sold separately). Includes ground-fault equipment protection (GFEP). 30 A at 100 - 277 V
LCD-8	Snow Switch Controller	2-in-1 control with aerial sensor. Snow switch controller operates heaters at temperatures below 38°F (3.3°C) while moisture in any form is present. 16 A at 100 - 240 V
CIT-1	Snow Sensor	Overhead snow sensor that detects precipitation or blowing snow at ambient temperatures below 38°F (3.3°C). For use in conjunction with the PD-Pro or GF-Pro controllers.
GIT-1	Gutter Sensor	Gutter sensor that detects moisture at ambient temperatures below 38°F (3.3°C). For use in conjunction with the PD-Pro or GF-Pro controllers.

TECHNICAL INFORMATION

TECHNOLOGY

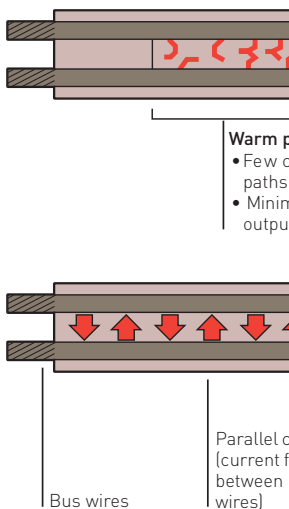
Raychem quality design means superior heating systems

SELF-REGULATION

The self-regulating design of Raychem heating cables eliminates worry about overheating or burn-outs from overlapping. The conductive polymer core automatically adjusts heat output at each point along the pipe.

PARALLEL CIRCUITRY

Unlike conventional heating cables, Raychem heating cables feature parallel circuitry. This means you can cut it to your desired length while maintaining the power output.



HEAT TRACE CABLES

PROVEN ADVANTAGES

Fast, easy to install.

Thanks to their self-regulating, parallel-circuit design, Raychem heating cables require no complex installation procedures. They can be straight-traced, spiraled, or overlapped. On the job, you can cut them to the exact length needed and splice or tee them, adapting each heating-cable circuit as the job requires.

Reliable performance.

Raychem heating cables provide years of reliable performance, so you're not bothered by breakdowns or callbacks. They will protect against freezing this winter and for many winters to come.

Designed flexibility.

Hardwire them or plug them in. With two options of power connection kits, the choice is yours. There's even a preassembled heating cable available in convenient lengths to handle small jobs fast.

Convenient and economical.

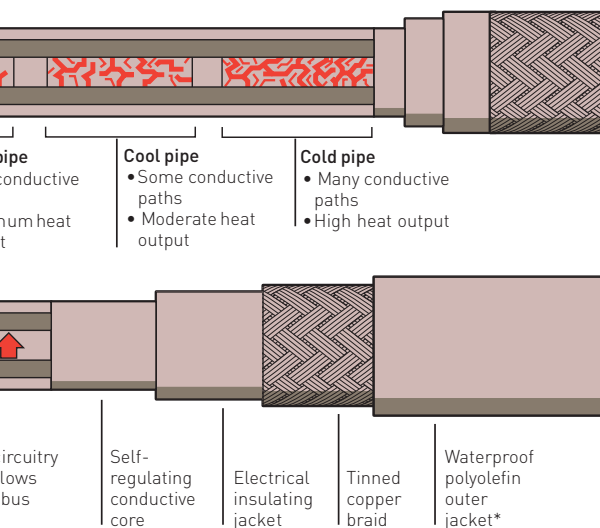
For larger jobs, you can simply cut the exact amount of heating cable you need right from the reel. No more wasted heating cable or extra trips to the supply house, because you always have the right size with you.

Safe on plastic pipes.

Raychem heating cables can be used on plastic as well as metal pipes. Their self-regulating heating core adjusts automatically, to protect against overheating or developing hot spots when overlapped or covered with insulation.

Energy-efficient.

Raychem heating cables' self-regulating core generates heat when and where it's needed. The core continuously adjusts its heat output to the environment at every point along the heating cable, thus reducing the overall energy cost for the season.



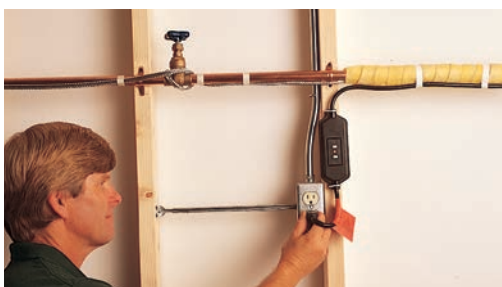
*WinterGard Wet and Gardian heating cables only

HEAT TRACE CABLES

PIPE FREEZE PROTECTION

WINTERGARD 120-V HEATING CABLE **Metal or plastic piping up to 2 inches in diameter in dry locations**

For design flexibility, use WinterGard cut-to-length heating cable. It's the economical solution for both metal and plastic pipes with circuit lengths up to 250 feet. See pages 12–17 for information to help you design your Raychem freeze protection system and pages 32 and 33 for product data.



WinterGard cable is the economical way to winterize cold-water, service, and wastewater lines.*



Use WinterGard cable to freeze-protect water-service systems. It's ideal for both residential and commercial buildings.

*Fully insulate for a complete installation.

HEAT TRACE CABLES

WINTERGARD PLUS HEATING CABLE IN DRY LOCATIONS

Large piping up to 6 inches in diameter

Designed for more demanding residential/commercial applications, WinterGard Plus 120-V and 240-V heating cables with a durable metal braid are the right choice for larger plastic and metal pipes with diameters up to 6 inches, circuit lengths up to 200 feet for 120 V and 400 feet for 240 V.



WinterGard Plus cables keep large diameter pipes freeze-free year-round.*

Long piping up to 6 inches in diameter

WinterGard Plus 6 watt, 240-V heating cables are especially designed to save installation time and money in applications requiring long circuit lengths (up to 400 feet).

*Fully insulate for a complete installation.

HEAT TRACE CABLES

WINTERGARD WET HEATING CABLE IN WET LOCATIONS

A waterproof outer jacket makes WinterGard Wet 6 watt, 120-V and 240-V heating cables the answer for freeze protection in wet locations such as drain lines. With the waterproof outer jacket, WinterGard Wet heating cables are ideal for providing freeze protection of metal or plastic pipes in wet environments or for de-icing drain lines.



For marine applications or where moisture is a consideration, WinterGard Wet heating cable is the answer.*



The metal braid and additional outer jacket make WinterGard Wet heating cable the best choice for applications such as water supply lines in outdoor locations.

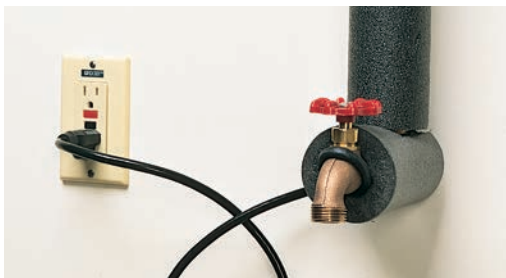
*Fully insulate for a complete installation.

HEAT TRACE CABLES

GARDIAN PREASSEMBLED HEATING CABLE

Pipe runs up to 100 feet, up to 2 1/2 inches in diameter

The perfect solution for small applications and short pipe lengths, Gardian 120-V cable is available in lengths of 6, 12, 18, 24, 50, 75, and 100 feet. Gardian 240-V cable is available in 6, 12, 18, and 24-foot pre-assembled lengths. Use the tables on pages 18 and 19 to select the right Gardian cable for your job.



With the 120-V Gardian preassembled heating cable, there's no assembly required. Just attach the cable to the pipe, insulate it, and plug it in.



Use Gardian cable for intake and drain lines, water meters, outside pipes, and taps. It's ideal for pipes in unheated attics, basements, and garages.*



The 240-V preassembled Gardian heating cable is easy and convenient for use in refrigeration applications. It prevents freeze-up problems on freezer doors and in drain pans and drain lines.

*Fully insulate for a complete installation.

HEAT TRACE CABLES

DESIGNING A CUT-TO-LENGTH PIPE FREEZE PROTECTION SYSTEM

HOW TO DESIGN YOUR WINTERGARD PIPE FREEZE PROTECTION SYSTEM

To design your WinterGard system, follow the step-by-step guidelines that follow, referring to the shaded tables where indicated.

Step 1: Collect the necessary information

Information needed	Example
Type of pipe (metal or plastic)	Metal pipe
Pipe size (0.5 – 6 in)	2.5 in
Lowest expected air temperature (0°F – 40°F)	–20°F
Insulation thickness (0.5 – 2 in)	0.5 in
Voltage (120 V or 208 – 240 V)	120 V
Location (wet or dry)	Wet

Ensure your application complies with the product data (Table 13) on pages 32 and 33.

**Table 1:
Heating Cable
Selection Table
(Metal Pipes)**

For metal pipes*			
Lowest air temperature	Insulation thickness	Pipe size (in inches)	
		0.50	0.75
0°F	0.5 in		
	1.0 in		
	1.5 in		
–20°F	0.5 in		
	1.0 in		
	1.5 in		
	2.0 in		
–40°F	0.5 in		
	1.0 in		
	1.5 in		
	2.0 in		

**Table 2:
Heating Cable
Selection Table
(Plastic Pipes)**

For plastic pipes*			
Lowest air temperature	Insulation thickness	Pipe size (in inches)	
		0.50	0.75
0°F	0.5 in		
	1.0 in		
	1.5 in		
–20°F	0.5 in		
	1.0 in		
	1.5 in		
	2.0 in		
–40°F	0.5 in	1.1	1.1
	1.0 in		
	1.5 in		
	2.0 in		

* Information is based on pipes with fiberglass insulation or equivalent and minimum maintain temperature of 40°F.

HEAT TRACE CABLES

Step 2: Determine heating cable type

	120 V	208 V – 240 V
Dry	H311, H611, H612	H621, H622
Wet	H612	H622

Step 3: Determine the heating cable wattage and spiraling ratio

Use Table 1 to select heating cables for insulated metal pipes. Use Table 2 to select heating cables for insulated plastic pipes. Read across the table to find your pipe diameter, then drop down to the line corresponding to the lowest air temperature for that application and the correct insulation thickness. The cell at that intersection has a particular shading and may have a number. The shading indicates which heating cable to use (key to the shading appears above table). A number represents the spiraling ratio (feet of heating cable per foot of pipe).

If no number appears in the cell, straight trace the pipe. If a number does appear in the cell, spiral trace the pipe.

If your spiraling ratio is 2.0, multiple-trace the pipe using two straight traces at the 4 o'clock and 8 o'clock positions.

If your spiraling ratio is 3.0, multiple-trace using three straight traces at the 11 o'clock or 1 o'clock position **and** at the 4 o'clock and 8 o'clock positions.

1.00	1.25	1.50	2.00	2.50	3.00	4.00	6.00
						1.3	1.8
			1.1	1.3	1.5	1.8	3.0
						1.1	1.5
							1.1
	1.1	1.2	1.4	1.7	2.0	3.0	
					1.1	1.4	1.9
							1.4
							1.1

1.00	1.25	1.50	2.00	2.50	3.00	4.00	6.00
			1.2	1.4	1.7	2.0	3.0
						1.2	1.6
							1.2
1.1	1.3	1.5	1.8	2.0	3.0		
			1.1	1.2	1.4	1.8	3.0
					1.1	1.3	1.7
							1.4
1.5	1.8	2.0	3.0	3.0			
	1.1	1.2	1.4	1.6	1.9	3.0	
			1.1	1.2	1.4	1.7	3.0
					1.1	1.3	1.8

Key to
Tables 1 and 2:



H311



H611, H621, H612, H622



Increase insulation thickness

HEAT TRACE CABLES

Step 4: Formula: Calculate the total heating cable length

To calculate the total amount of heating cable needed, you will need to add additional lengths of cable to account for various valves and fittings to the amount of cable already calculated in Step 3. Follow the formula below to calculate the total amount of heating cable needed.

Length = A + B + C + D + E + F	
A	Pipe length x spiral ratio*
B	4 ft x # gate/globe valves x length adjustment factor** x spiral ratio*
C	2 ft x # ball/butterfly valves/flanges/supports x length adjustment factor** x spiral ratio*
D	1 ft for each power connection
E	2 ft for each splice connection
F	3 ft for each tee connection
= Total heating cable length (ft)	

*From Step 3

**See Table 3 below

Table 3: Heating cable length adjustment

Pipe Size	Factor
1/2 in	0.04
1 in	0.08
2 in	0.17
3 in	0.25
4 in	0.33
5 in	0.42
6 in	0.50

Example: (taken from page 12)

Pipe length	50 ft
Spiral ratio	1.3 (from Table 1, pages 12 and 13)
Globe valves	3 (each 0.5 ft long)
Pipe supports	10 supports for 1-inch pipe
Power connections	1
Splice connections	1

WinterGard heating cable required

A	Pipe length x spiral ratio	= 50 ft x 1.3	= 65.0 ft
B	3 globe valves (0.5 ft. each)	= 4 ft x 3 x 0.5 x 1.3	= 7.8 ft
C	10 pipe supports	= 2 ft x 10 x 0.085 x 1.3	= 2.2 ft
D	1 power connection	= 1 ft x 1	= 1.0 ft
E	1 splice connection	= 2 ft x 1	= 2.0 ft
F	0 tee connection	= 0	= 0
Total heating cable length required			= 78.0 ft

HEAT TRACE CABLES

Step 5: Determine the number of heating cable circuits

For the maximum heating cable circuit length permitted for a given circuit breaker rating, refer to Table 4 below. Find the appropriate row according to the selected heating cable type and circuit breaker rating. Move across the row to the appropriate minimum start-up temperature. (Use 40°F start-up temperature unless 0°F is required when start-up is below the freezing point.)

If the total heating cable length is greater than the maximum circuit length, use shorter lengths and more circuits. Make sure that each circuit is less than the maximum circuit length shown in Table 4. Select the smallest circuit breaker appropriate for your circuit length.

Example:

You have:	WinterGard Wet heating cable: 120 V
	Start-up temperature: 40°F
	Circuit breaker rating: 15 amps
	Total heating cable length: 78.0 ft
You find:	150 ft maximum circuit length
You need:	1 heating cable circuit

Table 4: Maximum heater circuit length on pipe*

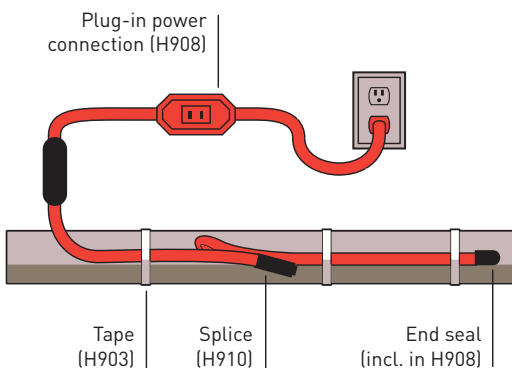
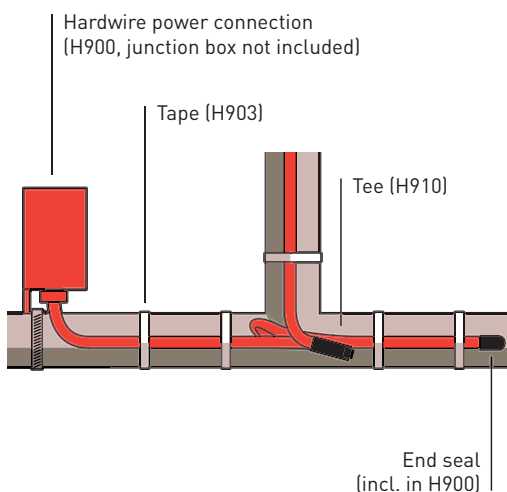
Heater type	Circuit breaker rating (A)	Maximum heater length (ft) per circuit at start-up temperature*	
		0°F	40°F
WinterGard 120 V H311	15	150	250
	20	200	250
	30	250	250
WinterGard Plus 120 V H611	15	125	150
	20	140	195
	30	200	200
WinterGard Plus 240 V H621	15	200	255
	20	250	340
	30	375	400
WinterGard Wet 120 V H612	15	125	150
	20	140	195
	30	200	200
WinterGard Wet 240 V H622	15	200	255
	20	250	340
	30	375	400

* Maximum circuit lengths are based on start-up load. Steady state amperes per foot is dependent upon heating cable temperature.

HEAT TRACE CABLES

Step 6: Select the accessories

The diagram below shows typical heating systems assembled with the proper Raychem accessories. Either the H900 or H908 power connection kit must be used. See Table 5 to select additional accessories that may be needed for your installation.



HEAT TRACE CABLES

Table 5: Accessories for Raychem heating cable for pipe applications

Catalog number	Description	Use
H900	Power Connection Kit (hardwired)	A hardwired power connection and end seal for one heating cable circuit. (Does not include junction box.)
H903	Fiberglass Application Tape	To attach heating cable to the pipe. Includes 1 roll (66 ft) of tape and 10 warning labels.
H908	120-V Plug-in Power Connection Kit	A plug-in 120-V, 15-A power connection with built-in ground-fault equipment protection (GFEP) and end seal for one heating cable circuit.
H910	Splice and Tee Kit	Provides material for one splice or one tee and one end seal.
H912	Gel-filled End Seal	Two end seals for sealing the ends of heating cables.

Thermostats

AMC-F5	Fixed Set Point Thermostat	Ambient or line sensing thermostat with fixed non-adjustable set point of 40°F and 3' bulb and capillary sensor. 22 A at 125/250/480 V
SST-2	Fixed Set Point Thermostat with Built-in GFEP	Ambient or line sensing thermostat with non-adjustable set point of 40°F and 20' thermistor sensor. Includes ground-fault equipment protection (GFEP). 30 A at 100 - 240 V
AMC-1A	Adjustable Set Point Thermostat	Ambient thermostat with adjustable set point of 15°F to 140°F. 22 A at 125/250/480 V
EC-TS	Adjustable Set Point Thermostat	Ambient or line sensing thermostat with adjustable set point of 30°F to 110°F and 25' thermistor sensor. 30 A at 100 - 277 V

Step 7: Install the system.

Refer to installation instructions in the H900 or H908 kit.



WARNING: Fire Hazard.

To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of Pentair's Thermal Building Solutions, agency certifications, and national electrical codes, ground-fault equipment protection must be used on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection.

HEAT TRACE CABLES

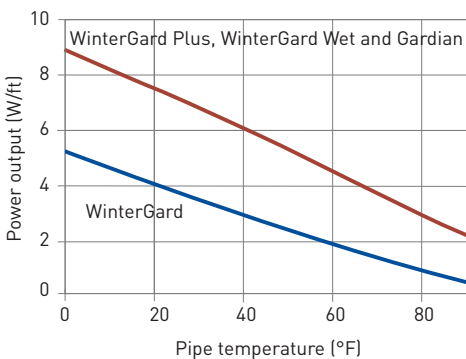
GENERAL INFORMATION

Table 13: Product Data

	WinterGard	WinterGard Plus	
		H611050	H621050
	H311100 H311250	H611100 H611250	H621100 H621250
Nominal service voltage	120	120	208 -
Minimum power output at 40°F on pipes (W/ft)	3	6	6
Nominal power output in drains, ice and snow	n/a	n/a	n/a
Maximum circuit length (ft) for pipes	250	200	400
Maximum circuit length (ft) for roof and gutter de-icing	n/a	n/a	n/a
Maximum circuit breaker size (A)	30	30	30
Weight per 100 ft (lb)	6	6	6
Maximum exposure temp. (°F)	150	150	150
Environment*	Dry area pipes	Dry area pipes	
Approvals			
UL System Listed	(2)	(2)	(2)
CSA Certified	(4)	(4)	(4)

* Use only in ordinary (nonhazardous) areas. Do not expose to any chemicals. In wet areas:

- (1) c-CSA-us Certified to US and Canadian Standards.
- (2) 718K Pipe Heating Cable.
- (3) 877Z Roof De-Icing and Snow Melting Equipment.
- (4) CSA.



Power Output vs Pipe Temperature on Metal Pipes

HEAT TRACE CABLES

	WinterGard Wet		Gardian	
			W51-6P	
			W51-12P	
			W51-18P	
			W51-24P	W52-6L
050	H612050	H622050	W51-50P	W52-12L
100	H612100	H622100	W51-75P	W52-18L
250	H612250	H622250	W51-100P	W52-24L
	H612500	H622500		
	H6121000	H6221000		
- 240	120	208 – 240	120	208 – 240
	6	6	6	6
	8	8	8	n/a
	200	400	n/a	n/a
	200	400	n/a	n/a
	30	30	30	30
	9	9	n/a	n/a
	150	150	150	150
	Dry and wet area pipes, drains and roof & gutter de-icing			Pipes only
	(2, 3)	(2, 3)		
	(4)	(4)	(1)	(1)

as, use only WinterGard Wet or Gardian.

HEAT TRACE CABLES



PENTAIR

WWW.PENTAIRTHERMAL.COM

NORTH AMERICA

Tel: +1.800.545.6258

Fax: +1.800.527.5703

Tel: +1.650.216.1526

Fax: +1.650.474.7711

thermal.info@pentair.com

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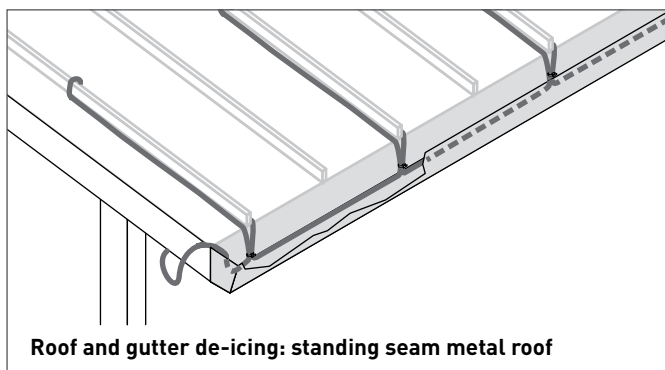
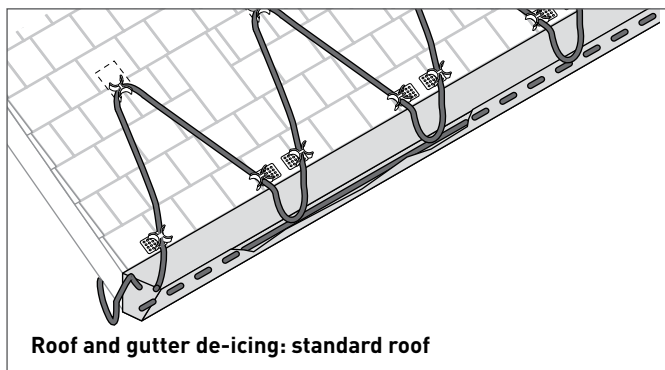
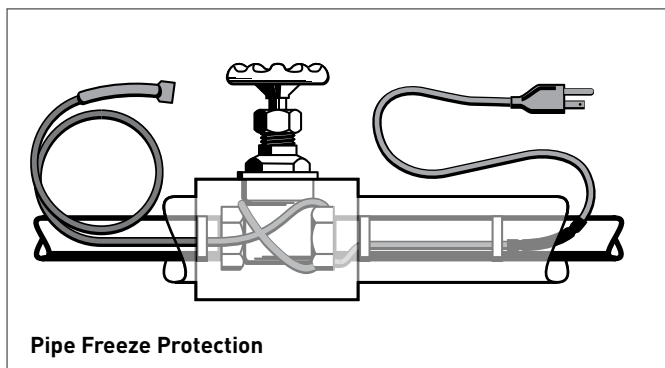
THERMAL BUILDING SOLUTIONS

EN-RaychemResidentialLightComm-DG-H53585 10/15



Raychem Guardian W51

120 V PREASSEMBLED ELECTRIC HEATING CABLES FOR PIPE FREEZE PROTECTION AND ROOF & GUTTER DE-ICING INSTALLATION INSTRUCTIONS



DESCRIPTION

Guardian W51 120 V preassembled self-regulating heating cables are designed for residential and commercial metal and plastic pipe freeze protection and roof & gutter de-icing applications. Guardian W51 heating cables are available in 6, 12, 24, 50, 75 and 100 foot lengths, and each comes assembled with a 30-inch power cord and plug.

KIT CONTENTS

- 1 Guardian W51 preassembled electric heating cable
- 2 Roof and gutter labels
- 2 Pipe labels

ADDITIONAL ITEMS REQUIRED BUT NOT SUPPLIED FOR PIPE APPLICATIONS

- Waterproof thermal insulation (e.g. preformed foam)
- Ground-fault protected outlet (GFCI)
- Raychem H903 Application Tape and Electric Traced Labels

ADDITIONAL ITEMS REQUIRED BUT NOT SUPPLIED FOR ROOF & GUTTER APPLICATIONS

- Raychem H913/H914 Roof Clips (10 clips for each 7 linear feet of roof edge)
- Raychem H915 Hanger Bracket (1 for each downspout, 2 if looping)
- UV Resistant cable ties
- Ground-fault protected outlet (GFCI)

APPROVALS



⚠ WARNING:

FIRE AND SHOCK HAZARD. This product is an electrical device that must be installed correctly to ensure proper operation and to prevent shock or fire. Read these important warnings and carefully follow all the installation instructions.

- To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of Pentair Thermal Management agency certifications, and national electrical codes, ground-

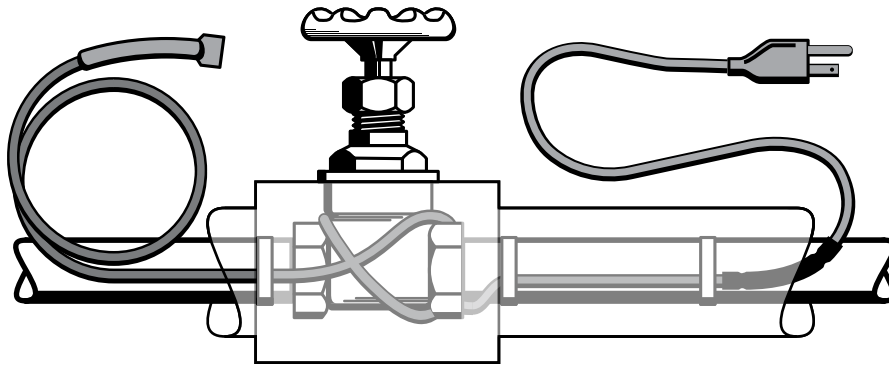
fault equipment protection must be used on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection.

- For pipe freeze protection applications, use only fire-resistant insulation materials such as preformed foam or fiberglass.
- Do not damage the heating cable and power cord or plug. Remove any damaged cables from service immediately.

- Do not use any wire or metal clamps to attach the cable to the pipe. Use tape (1/2 inch wide to 1 inch wide) or plastic cable ties.
- Do not install the heating cable underneath any roof covering for roof and gutter de-icing.
- Leave these installation instructions with the user for future reference.

HEAT TRACE CABLES

Pipe Freeze Protection



General requirements for pipe freeze protection:

- Gardian heating cables may be used on metal and plastic water pipes but not on flexible vinyl tubing (such as garden hoses).
- Gardian heating cables are not intended for use inside any pipes, for freeze protection of liquids other than water, or for use in classified hazardous locations.
- Install with a minimum of 1/2" fire-resistant, waterproof thermal insulation.
- Never use on any pipes that may exceed 150°F (65°C).
- Do not use an extension cord.

General instructions:

- Install only in accessible locations; do not install behind walls or where the cable would be hidden.
- Do not run the heating cable through walls, ceilings, or floors.
- Connect only to ground-fault protected outlets that have been installed in accordance with all prevailing national and local codes and standards and are protected from rain and other water.

Electrical codes

Articles 422 and 427 of the National Electrical Code (NEC), and Part 1, Section 62 of the Canadian Electrical Code (CEC), govern the installation of Gardian heating cable for pipe freeze protection and must be followed.

Important: For the Pentair Thermal Management warranty to be valid, you must comply with all the requirements outlined in these guidelines.

All thermal and design information provided here is based upon a "standard" installation with heating cable fastened to an insulated pipe. For any other application or method of installation, consult Pentair Thermal Management at (800) 545-6258

Determine which Gardian W51 heating cable you need for pipe freeze protection:

Use the tables to the right to select the correct heating cable. Add 1 foot to your pipe length for each valve or spigot on your pipe system. The charts assume the lowest outside temperature is 0°F (-18°C), with a minimum of 1/2" thick waterproof, fire-resistant thermal insulation (preformed foam). For protection to -20°F (-29°C), use 1" thick insulation.

Important: All thermal and design information provided here is based upon a "standard installation": heating cable fastened to a pipe and thermally insulated. For any other method of installation or application, consult Pentair Thermal Management at (800) 545-6258.

Table 1 Metal Pipes

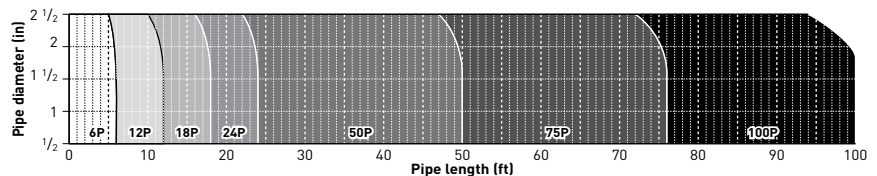
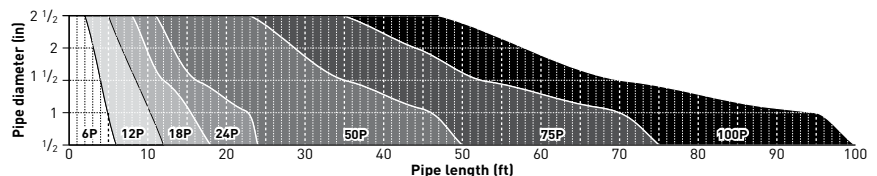


Table 2 Plastic Pipes



Add 1 foot to the pipe length for each valve or spigot on your pipe system. If cable selected is longer than the pipe, spiral it evenly along the entire pipe.

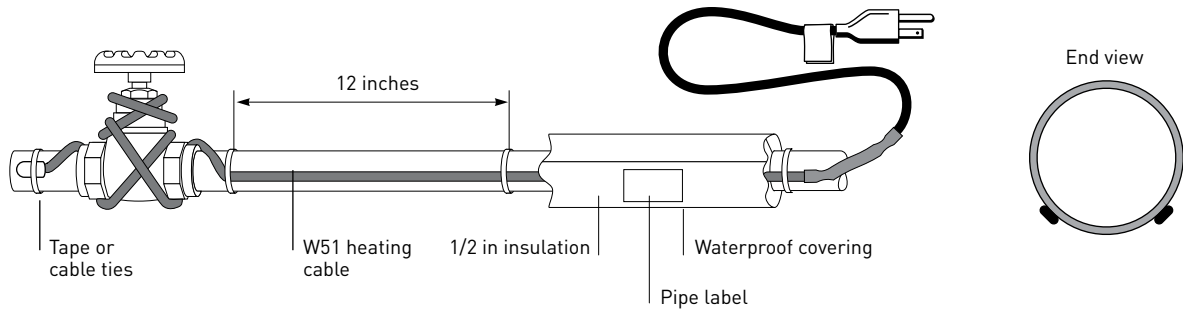


Figure 1. Straight-traced installation

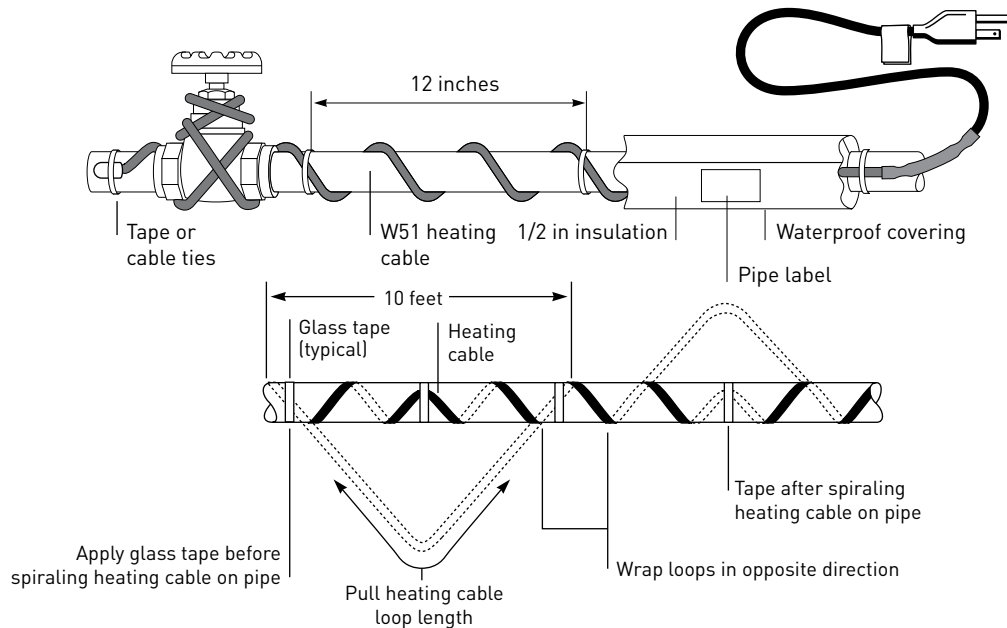


Figure 2. Spiral-traced installation

Heating cable installation

1. Prepare for installation.

- Store the heating cable in a clean, dry place.
- Complete piping pressure test.
- Prior to installing the cable, remove any sharp surfaces on the pipe that might damage the heating cable.
- Review the Gardian heating cable design and compare to materials received to verify that you have the proper Gardian heating cable.
- Walk the system and plan the routing of the Gardian heating cable on the pipe.

2. Position and attach heating cable to pipe.

- Be sure all piping to be traced is dry.
- Install heating cable, using straight tracing Figure 1, or spiraling Figure 2.
- For straight tracing, install the heating cable on a lower half of the pipe; for example, in the 4 o'clock or 8 o'clock position.
- Be sure to install the additional heating cable required for valves, flanges, etc. as shown in Figures 1 and 2.

- When the design calls for spiraling, begin by suspending a loop every 10 feet as shown in Figure 2. To determine the loop length, divide the Gardian length by your pipe length and multiply by 10. For example, if you are using a 50 ft Gardian on a 40 foot pipe, leave a 12-foot loop of heating cable at every 10-foot section of pipe. Grasp the loop in its center and wrap it around the pipe. Even out the distance between spirals by sliding the wraps along the pipe. Use glass tape to secure the center of the loop to the pipe.
- Fasten Gardian heating cable to the pipe at 1-foot intervals using H903 fiberglass application tape or nylon cable ties. Do not use vinyl electrical tape, duct tape, metal bands, or wire.
- If excess cable remains at the end of the pipe, double it back along the pipe.

3. Check the installation.

- Prior to installing thermal insulation, make sure the heating cable is free of mechanical damage (from cuts, clamps, etc.) and thermal damage (from solder, overheating, etc.).

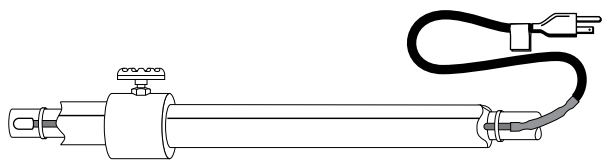


Figure 3. Insulation

4. Install thermal insulation.

- A reliable Gardian system depends on properly installed and dry, weatherproofed thermal insulation.
- Ensure that at least 1/2" of preformed foam or equivalent thermal insulation is used and that all piping, including valves, joints, and wall penetrations, has been fully insulated as shown in Figure 3.
- For protection to -20°F (-29°C), use 1" thick insulation.
- Install the insulation on the piping as soon as possible to minimize the potential for mechanical damage after installation.
- Be sure the Gardian W51 label is visible on the outside of the thermal insulation.

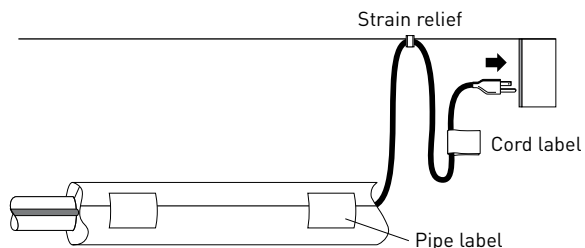


Figure 4. Strain relief

Note: Pipes must be fully insulated.

5. Finishing the installation.

- To prevent damage to the heating cable or cord, secure the power cord (cold lead) with a plastic cable tie, glass cloth tape, or duct tape as shown in Figure 4.
- Two labels indicating the presence of electric pipe heating cable are included with the heating cable. Attach the two "Electric Traced" labels on the outer surface of the pipe insulation at suitable intervals to indicate the presence of Gardian electric heating cable.

6. Starting the system.

- Pentair Thermal Management recommends that the system be tested per the "Cable testing and maintenance" section below.
- Plug the heating cable into a 120 V ground-fault protected outlet.
- Check the circuit breaker to verify power to the cable.
- Standing water in the pipe should feel warm within an hour.

Cable testing and maintenance

Using a 2500-Vdc megohmmeter, check the insulation resistance between both of the rectangular (power) prongs on the plug and the round (ground) prong after installing the heating cable. Minimum reading should be 1000 megohms.

Record the original values for each circuit, and compare subsequent readings taken during regular maintenance schedules to the original values.

If the readings fall below 1000 megohms, replace the Gardian W51 cable with a new unit. Do not attempt to repair the unit.

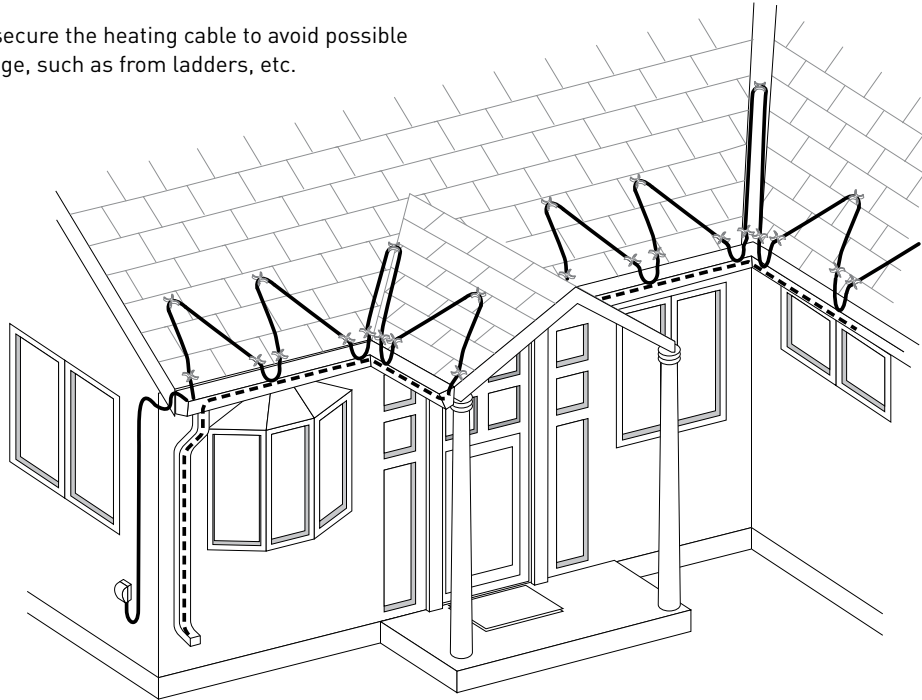


WARNING: Fire and Shock Hazard.

Damaged heating cable can cause electrical shock, arcing, and fire. Do not attempt to repair or energize damaged heating cable. Remove it at once and replace with a new length.

Roof & Gutter De-icing

Note: Route and secure the heating cable to avoid possible mechanical damage, such as from ladders, etc.



General requirements for roof & gutter de-icing:

- Gardian is designed to remove melt water, not accumulated snow.
- Gardian heating cable will not keep snow or ice from falling off the roof. Snow fences or snow guards should be used to eliminate snow movement. For the names of manufacturers of snow guards or snow fences, contact Pentair Thermal Management at (800) 545-6258.
- Gardian heating cables may be used on:
 - Roofs made from all types of standard roofing materials, including shake, shingle, rubber, tar, wood, metal, and plastic.
 - Gutters made from standard materials, including metal and plastic.
 - Downspouts made from standard materials, including metal and plastic.
- Do not use an extension cord.
- Do not install the heating cable underneath any roof covering for roof and gutter de-icing.
- Install only in accessible locations; do not install behind walls or where the cable would be hidden.
- Do not run the heating cable through walls, ceilings, or floors.
- Connect only to ground-fault protected outlets that have been installed in accordance with all prevailing national and local codes and standards and are protected from rain and other water.

Electrical codes

Article 426 of the National Electrical Code (NEC), and Part 1, Section 62 of the Canadian Electrical Code (CEC), govern the installation of Gardian heating cables for roof and gutter de-icing and must be followed.

Important: For the Pentair Thermal Management warranty to be valid, you must comply with all the requirements outlined in these guidelines.

All design information provided here is based on a "standard" shake or shingle roof application. For any other application or method of installation, consult Pentair Thermal Management at (800) 545-6258.

Heating cable selection for roof & gutter de-icing

1. Calculate the heating cable length.

Find the number of feet of heating cable needed per foot of roof edge in Table 3. Then, calculate the amount of total heating cable length you need using the following formula:

$$\text{Length} = A + B + C + D$$

A Roof edge: Roof edge (ft) x Feet of heating cable per foot of roof edge

B Roof extension: Roof edge (ft) x 0.5*

C Roof gutter: Total gutter length (ft)

D Downspout: Total downspout length (ft) + 1 (ft)

= Total heating cable length (ft)

* Roof extension: This length allows the heating cable to extend into the gutter to provide a continuous drain path, or where no gutters are present, extends beyond the roof edge to form a drip loop.

Example: (shingle roof)

Eave overhang: 1 ft / 12 in

Roof edge: 15 ft

Roof gutter: 15 ft

Downspout: 15 ft

Gardian heating cable required:

A Roof edge: 15 ft x 2.8 = 42.0 ft

B Roof extension: 15 ft x 0.5 = 7.5 ft

C Roof gutter: 15 ft = 15.0 ft

D Downspout: 15 ft + 1 ft = 16.0 ft

Total heating required: = 80.5 ft

Gardian required: W51-100P

Table 3. Typical spacing and layout measurements

Length of heating cable per foot of roof edge (feet)

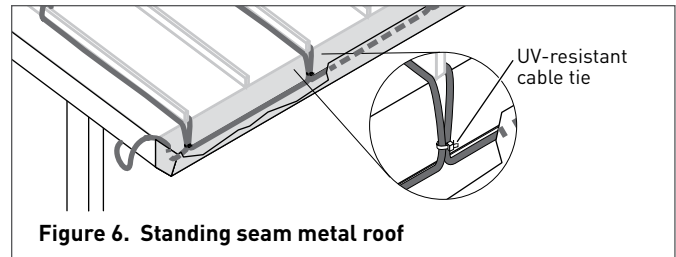
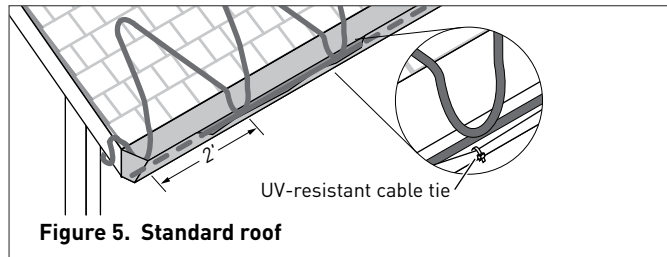
Standing seam metal roof:

Eave overhang (in)	Shingle roof	18 in seam	24 in seam
None	2	2.5	2
12	2.8	2.8	2.4
24	3.8	3.6	2.9
36	4.8	4.3	3.6

Note: Pentair Thermal Management recommends the use of gutters and downspouts to provide a continuous path for melted water.

- If downspout is in the middle of the run, loop the Gardian down and back up. Double the length of the downspout for determining the length of Gardian to install.
- For valleys, run the heating cable two thirds of the way up and down the valley.
- For gutters 5-6 inches wide use 2 runs of heating cable.
- For gutters wider than 6 inches contact Pentair Thermal Management, (800) 545-6258

Heating cable installation



1. Prepare for installation.

- Store the heating cable in a clean, dry place.
- Use only the following Pentair Thermal Management accessories to satisfy code and agency requirements:
 - H915 Hanger Bracket
 - H913/H914 Roof Clips
- Make certain gutters and downspouts are free of leaves and other debris.
- Carefully plan the routing of the heating cable for roof and gutter de-icing.

2. Position and attach the heating cable on roofs.

- Loop the heating cable on the overhang area of the roof. This is the part that extends past the building wall. Extend the bottom of each heating cable loop over the roof edge and, using a UV-resistant cable tie, connect the bottom of each loop to the cable running in the gutter to ensure a drainage channel off the roof and into the gutter and downspout. The cable running in the gutter should remain against the bottom of the gutter as shown in Figures 5 and 6.

Table 4. Tracing heights for different roof styles

Shake and Shingle Roof

Roof of overhang (in)	Tracing width (in)	Tracing heights (in)	Feet of Gardian per foot roof edge
None*	2	18	2
12	2	18	2.8
24	2	30	3.8
36	2	42	4.8

Standing Seam Metal Roof**

Eave overhang (in)	Standing Seam Spacing (in)	Tracing heights (in)	Feet of Gardian per foot of roof edge
None*	18	18	2.5
12	18	24	2.8
24	18	36	3.6
36	18	48	4.3
None*	24	18	2.0
12	24	24	2.4
24	24	36	2.9
36	24	48	3.6

* Gutter required

** No additional heating cable is required for gutters when tracing standing seam metal roofs

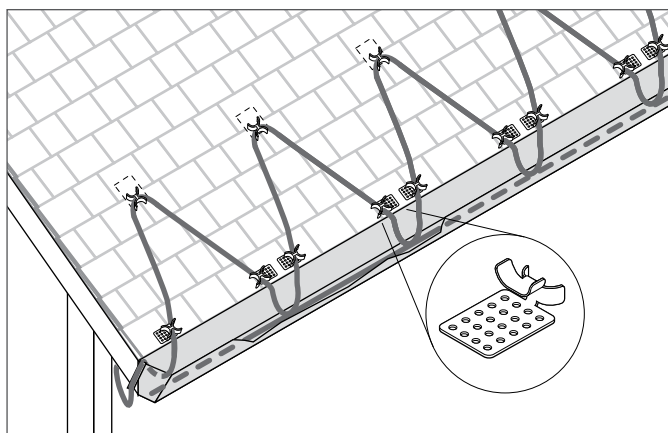


Figure 7. Standard roof clip attachment

- Extend the top of each heating cable loop beyond where the wall joins the roof.
- Trace two-thirds of the way up each valley with a double run of heating cable as shown in Figure 8.
- Use H913/H914 roof clips to route heating cable into and out of the gutter in such a way as to prevent abrasion to the cable. Protect all cable that protrudes past the lower opening of the downspout.
- One H913 kit contains ten roof clips for approximately 7 linear feet of roof edge. One H914 kit contains 50 roof clips for approximately 35 linear feet of roof edge.

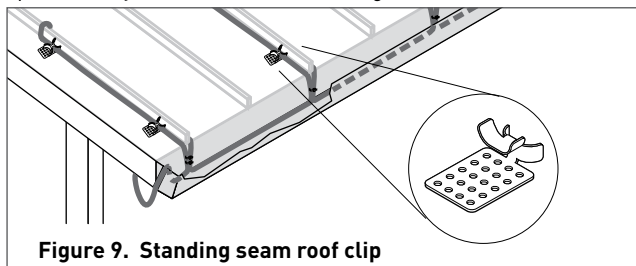


Figure 9. Standing seam roof clip

- Roof clips may be attached to a shake or shingle roof with nails or screws as shown in Figure 7. Roof clips may be attached to a metal roof using screw, nail or adhesive as shown in Figure 9. (See H56723 installation instruction for more details.) Reseal the nail or screw holes if necessary before installing heating cable in the clips.
- A barrier (snow fence) can be placed on the roof above the heating cable. This prevents damage to the cable and keeps the installation from coming loose due to ice slides. The heating cable can be attached to the barrier with UV-resistant cable ties, instead of using roof clips, if desired. Do not use wire or other materials because they may damage the heating cable.

In gutters and downspouts

- Run heating cable along gutters and into downspouts, ending below the freezing level. Permanent attachment of the cable to the gutter bottom is not necessary. Loop the heating cable in downspouts. Do not leave the end of the Gardian in air at the end of the downspout as shown in Figure 10.
- Use H915 Hanger Brackets at the gutter/downspout transition to protect the heating cable from fraying and from damage from sharp edges and to provide strain relief as shown in Figure 11. Refer to the H915 kit instructions for installation details.
- Route and secure cable to avoid possible mechanical damage, such as from ladders, etc.

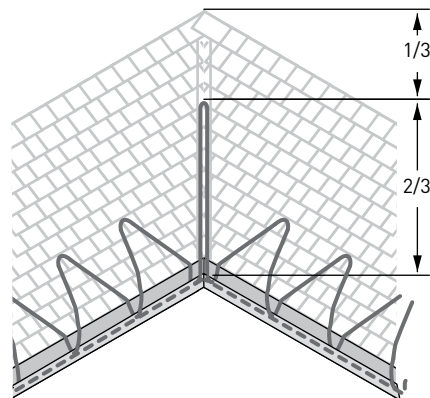


Figure 8. Valleys

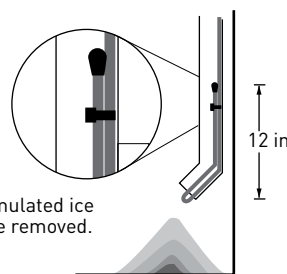


Figure 10. Heating cable in downspout

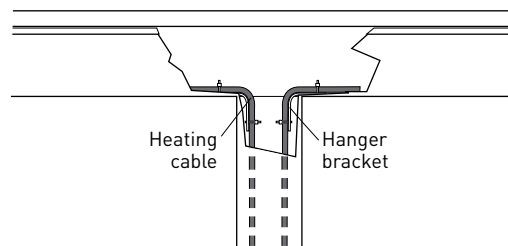


Figure 11. Hanger brackets

3. Mark the installation.

Two labels indicating the presence of electric de-icing and snow-melting equipment on the premises are included with the heating cable. One label must be posted at the electrical outlet cover. The other label must be posted at the fuse or circuit breaker panel. The labels must be clearly visible.

4. Check the installation.

- Prior to plugging in, check to be sure the heating cable is free of mechanical damage (cuts, clamps, etc.).
- Using a megohmmeter, test each circuit according to the instructions in the "Heating cable testing and maintenance" section on next page.

5. Starting the system.

- Pentair Thermal Management recommends that the system be tested per the "Cable testing and maintenance" section below.
- Plug the heating cable into a 120-V ground-fault protected outlet.
- Check the circuit breaker to verify power to the cable.

HEAT TRACE CABLES

Heating cable testing and maintenance

Make sure that gutter and downspouts are free of leaves and other debris prior to the winter season.

Using a 2500-Vdc megohmmeter (2500 Vdc minimum), unplug the Gardian and test the unit by checking the insulation resistance between the flat blade and the ground pin in the plug. Minimum reading should be 1000 megohms regardless of Gardian length. Record the original values for each circuit. Take additional readings during regularly scheduled maintenance and compare to the original value. If the readings fall below 1000 megohms, inspect heating cables and insulation for signs of damage.



WARNING: Fire and Shock Hazard.

Damaged heating cable can cause electrical shock, arcing, and fire. Do not attempt to repair or energize damaged heating cable. Remove it at once and replace with a new length.

Product specifications

	W51-6P	W51-12P	W51-18P	W51-24P	W51-50P	W51-75P	W51-100P
Cable length (feet)	6	12	18	24	50	75	100
Min. power output at 40°F (5°C) on pipe (watts)	36	72	108	144	300	450	600
Nominal power output in ice and snow (watts)	48	96	144	192	400	600	800

General specifications for all W51 products

Nominal cable width (in)	0.42
Nominal cable thickness (in)	0.22
Heating cable bus wire gauge (AWG)	16
Cold lead length (in)	30
Voltage rating (V)	110–120
Plug rating (amps)	15
Circuit breaker sizing minimum (amps)	15
Max. exposure temperature	150°F (65°C)
Electrical classification	Nonhazardous areas only
Exposure to chemicals	None



WWW.THERMAL.PENTAIR.COM

NORTH AMERICA

Tel: +1.800.545.6258
Fax: +1.800.527.5703
Tel: +1.650.216.1526
Fax: +1.650.474.7711
thermal.info@pentair.com

EUROPE, MIDDLE EAST, AFRICA

Tel: +32.16.213.511
Fax: +32.16.213.603
thermal.info@pentair.com

ASIA PACIFIC

Tel: +86.21.2412.1688
Fax: +86.21.5426.2917
cn.thermal.info@pentair.com

LATIN AMERICA

Tel: +55.11.2588.1400
Fax: +55.11.2588.1410
thermal.info@pentair.com

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**Raychem** PYROTENAX TRACETEK

LIMITED PRODUCT WARRANTY

Pentair Thermal Management warrants all goods listed below against faulty workmanship and use of defective materials when such goods are properly installed, operated, and maintained according to product documentation. All documentation regarding proper use and installation can be found on our web site at www.pentairthermal.com.

Brand	Type
Raychem	Heating cables, connection kits and accessories
Raychem	Thermostats, controllers, panels, contactors, sensors and accessories
Pyrotex	Fire-rated and performance wiring, components and accessories
Tracetek	Leak detection cables, sensors, controllers and accessories
Capacisense	Tip clearance probes and electronics
Interlock	Clamp-on pipe shoes

This warranty remains in force for a period of two (2) years from date of purchase.

This warranty is only valid for products purchased and installed within the United States, Canada, Central American, or South American countries on or after May 1, 2013. This warranty can be amended only by a written instrument signed by a duly authorized officer of Pentair Thermal Management. This warranty expressly excludes Pentair Thermal Management's PetroTrace and TracLoc product lines.

- **What Will We Do to Correct Problems?**

Pentair Thermal Management will examine and confirm that any alleged product issue covered by this Limited Warranty actually exists and occurred in the course of proper and normal use and was not caused by accident, misuse, neglect, alteration or improper installation, operation, maintenance, repair, or testing, or such other cause outside of the responsibility of Pentair Thermal Management under this Limited Warranty. Pentair Thermal Management will repair such goods or supply replacement goods or credit Buyer's account for goods covered by this Limited Product Warranty, whichever Pentair Thermal Management may elect at its sole discretion.

- **How Do You Get Service?**

The Buyer should promptly notify Pentair Thermal Management, or their Pentair Thermal Management Representative, either by written correspondence or by e-mail within thirty (30) days after discovery of an alleged warranty issue. Detailed warranty claim information will be requested at this time and must be supplied by the Buyer. The Buyer may then be asked to return the goods, postage paid, to the location given by Pentair Thermal Management.

- **What Does This Product Warranty Not Cover?**

Goods subjected to misuse, neglect, alteration or improper installation, operation, maintenance, repair, or testing (or such other act or omission, not attributable to Pentair Thermal Management) are not covered by this Limited Product Warranty. Pentair Thermal Management shall in no event be liable for the cost of removal or installation, for loss or damage to or loss of use of facilities or other property, loss of revenue, loss of use of revenue, loss of anticipated profits, or other damages or costs of any kind whatsoever, whether direct, indirect, incidental, or consequential, and in no event shall Pentair Thermal Management's liability exceed an amount equal to the sales price.

- **What Must You Do to Keep the Warranty in Effect?**

Properly install, operate and maintain your Pentair Thermal Management system as specified in the associated Pentair Thermal Management installation literature.

- **How Does State/Provincial Law Relate To This Warranty?**

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER REPRESENTATIONS, WARRANTIES, OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT, AND OF ANY OTHER OBLIGATION OR LIABILITY ON THE PART OF PENTAIR THERMAL MANAGEMENT, WHETHER BY STATUTE, CONTRACT, STRICT LIABILITY, TORT OR OTHERWISE.

If the goods are a consumer product in Buyer's jurisdiction, Buyer may have additional legal rights under the applicable national/state/provincial legislation governing the sale of consumer goods. As a result, the above exclusions and/or limitations on the warranty may or may not apply.



WWW.PENTAIRTHERMAL.COM

NORTH AMERICA

Tel: +1.800.545.6258
Fax: +1.800.527.5703
Tel: +1.650.216.1526
Fax: +1.650.474.7215
thermal.info@pentair.com

EUROPE, MIDDLE EAST, AFRICA

Tel: +32.16.213.511
Fax: +32.16.213.603
thermal.info@pentair.com

ASIA PACIFIC

Tel: +86.21.2412.1688
Fax: +86.21.5426.2937
cn.thermal.info@pentair.com

LATIN AMERICA

Tel: +1.713.868.4800
Fax: +1.713.868.2333
thermal.info@pentair.com

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Limited Warranty and Product Return Policy

Every Farm Innovators product is guaranteed for a specified period after the original date of consumer purchase, or date stamped on the unit, against defects due to material and the company's workmanship only. The sole obligation shall be to replace the defective unit with a replacement unit. Units should be checked for proper operation prior to returning as defective. Units must be returned pre-paid. No liability for loss of damage of any nature or kind, whether arising out of or from the use of the product, whether defective or not defective, is assumed by Farm Innovators, Incorporated.

Farm Innovators products may be honored any of the following ways:

1. The consumer can return the products to us for testing. A replacement will be issued if the product is found to be "defective". Otherwise, the originally returned unit will be sent back to the consumer with a detailed explanation. We always recommend that the consumer return it to the place of purchase first.
2. The Distributor may wish to accumulate their season of returns until the end of the season. At that time, we encourage them to return the product to us for testing. The distributor will always either (1) receive new units as replacements or (2) receive credit for the amount they paid for the units, most likely pre-season pricing.
3. The Dealer/Retailer may wish to accumulate their season of returns until the end of the season. At that time, we encourage the dealer/retailer to either (1) send the products back through the distributor for credit via their distributor sales associate or (2) return the products to us for testing. Whatever is easiest for them. The dealer/retailer will always receive new units as replacements for their retail shelf.

All claimed defective goods are to be sent back to Farm Innovator s, Inc. pre-paid. No liability for loss or damage of any nature or kind, whether arising out of or from the use of the product, whether or not defective, is assumed by Farm Innovators, Inc.

Return to: Farm Innovators, Inc. 2255 Walter Glaub Dr., Plymouth, IN 46563

HEAT TRACE THERMOSTATS - THERMOCUBE



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Warranty Information

Products are guaranteed for either one or three years after the original date of consumer purchase or date stamped on the unit against defects due to materials and the company's workmanship only.

The sole obligation shall be to replace the defective unit with a replacement unit.

- Units should be "Checked" for proper operation prior to returning as defective.
- Units must be returned prepaid.
- No liability for loss or damage of any nature or kind, whether arising out of or from the use of the products, whether or not defective, is assumed by Farm Innovators, Incorporated.

Return Policy

Click to view the Farm Innovators [return policy](#)

Mailing Address:

Farm Innovators, Inc.
2255 Walter Glaub Drive
Plymouth, IN 46563

Ph: 574-936-5096
Ph: 800-277-8401
Fax: 574-936-6602

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INSTALLATION INSTRUCTIONS



For more information contact...

WOODFORD MANUFACTURING COMPANY

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To view our complete product line visit: www.woodfordmfg.com or email: sales@woodfordmfg.com

A Division of WCM Industries, Inc.

Rev 06/10 Form No. II19.102

Model 16 & 19

Anti-Burst Freezeless Wall Faucet



Model 16
No anti-siphon protection.

Model 19
Anti-siphon protected.

FIGURE 1

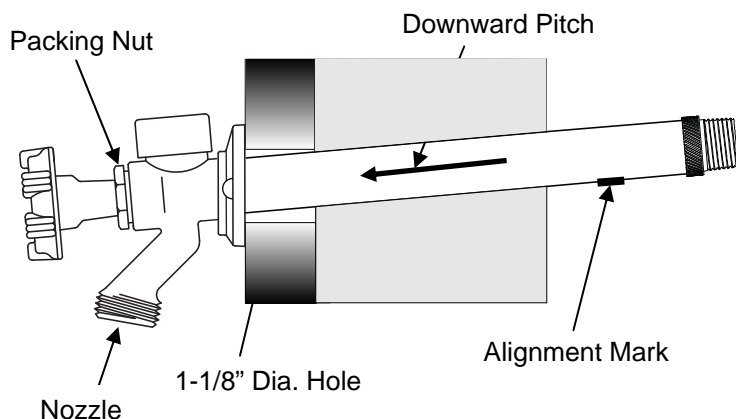
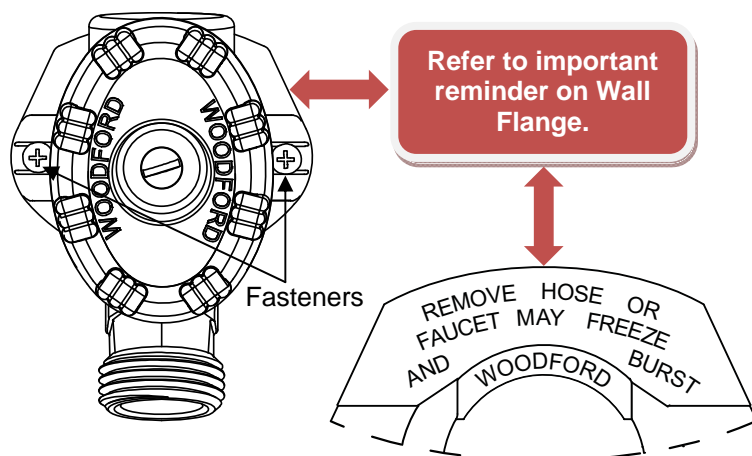


FIGURE 2



Wall faucets must be properly installed and operated to insure drainage. Improperly installed or operated wall faucets may freeze and burst in freezing weather.

INSTALLATION INSTRUCTIONS:

1. Before installation, flush supply line to remove any debris.
2. Drill a 1-1/8" diameter hole through the wall in the desired location and insert the faucet from the outside. **FIGURE 1**
3. Install with nozzle pointing down. **FIGURE 1**
4. From inside the building, the alignment mark on the tube can be used to correctly align the faucet when the mark is pointed down. **FIGURE 1**
5. The tube must have a slight downward pitch for proper drainage. **FIGURE 1**
6. For solder connection, open faucet to full open position before soldering. Excessive heat can damage valve seat rubber or stainless steel seat and factory solder joint.
7. Secure faucet to the wall using appropriate fasteners installed through the holes in the flange. Adjustable flange matches slope of siding. **FIGURE 2**

NOTE: The packing nut, located behind the handle, has been factory adjusted. If leakage should occur after installation or use, the packing nut can be tightened to stop the leak. **FIGURE 1**

TROUBLESHOOTING & MAINTENANCE



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Rev 07/12 Form No. TM19.102

Model 19 Freezeless Wall Faucet

How A Frost-Proof Faucet Works

Fig 1

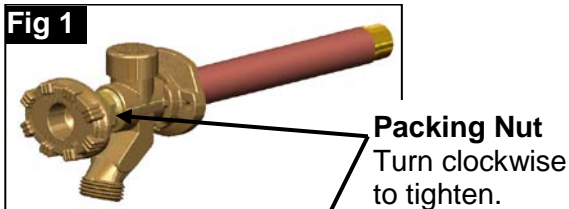


Fig 2

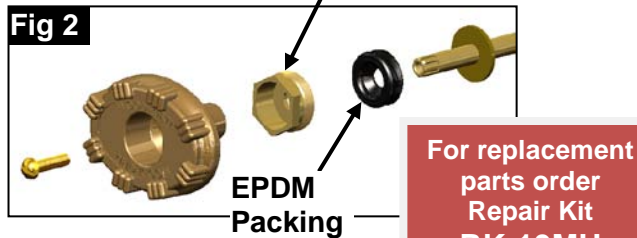


Fig 3

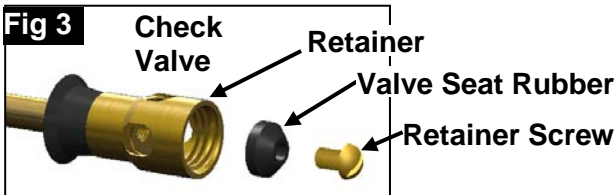


Fig 4

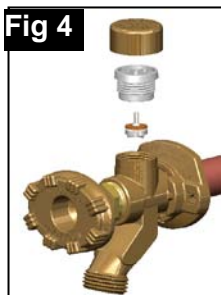


Fig 5

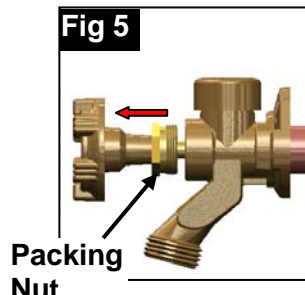
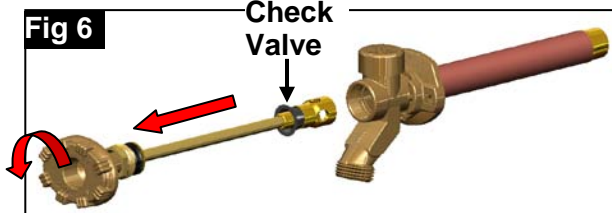


Fig 6



- **Packing leak: Faucet leaks from around the operating stem when it is on**

The hex **Packing Nut** (30059) will occasionally need to be tightened to stop a packing leak. **(Fig 1)** Without removing any parts, tighten the packing nut behind the handle until snug and the leak stops. Persistent leaks will require a new **EPDM Packing** (30560) **(Fig 2)**.

- **Faucet will not shut off: Water runs or drips out nozzle when the faucet is off**

The **Valve Seat Rubber** (30008) is worn or damaged and needs to be replaced or the **Retainer Screw** (30804) is loose. **(Fig 3)** Follow the instructions below on how to remove the **Operating Rod**. **(Fig 4 & 5)** If this does not fix the leak, the faucet may have a damaged seat and the faucet will need to be replaced.

- **Faucet leaks from the vacuum breaker, on top of the faucet, when the faucet is on.**

Vacuum breaker is fouled or damaged. **(Fig 4)** Pry off plastic cap and use pliers to remove the vacuum breaker body. Check for fouling or replace with vacuum breaker float kit (RK-19VB).

- **Valve Stem Assembly - Operating Rod Removal**

To remove the operating rod from the faucet, shut off the water supply, loosen the handle and back out the **Packing Nut** **(Fig 5)**. Use the handle to turn the rod counterclockwise until the rod becomes disengaged from the valve seat. Use a small screwdriver to pry the packing loose. Pull the rod assembly out of the faucet. **(Fig 6)** The rod may have a check valve that will add resistance to removal. Use a swift pull to disengage it.

TERMS AND CONDITIONS OF SALE

Selling Policy - Possession of our price list or jobber discounts is not an offer to sell. All orders are subject to acceptance by the home office in Colorado Springs, Colorado.

Minimum Invoice - No invoice will be rendered for less than \$25.00 list.

Cash Discount - 3% 15 days from date of invoice or 2% 10th Prox., Net EOM

Freight Allowance - All goods sold F.O.B shipping point. For shipments in the continental United States and Canada, **full freight will be allowed on orders of \$2,000.00 or more list.** No freight allowance on smaller shipments. We reserve the right to ship the most economical way.

Foreign Shipments - (including **Alaska and Hawaii**) will be allowed full freight, according to the conditions listed above, to the embarkation point in the continental United States only.

Claims, Shortages and Damage - All claims for shortages or goods damaged in transit must be made within **10 days after receipt of merchandise.** (All claims should be made to Woodford Manufacturing Co. by the consignee.)

Prices, Designs and Quotation - Prices, designs and dimensions of products are subject to change without notice. Quotations, unless otherwise stated, are for immediate acceptance and prices quoted are based on the sellers standard tolerances of materials. We reserve the right to invoice all merchandise at prices in effect at the time of shipment.

Cancellations - Orders covering special merchandise are not subject to cancellation without our written permission. Purchaser subject to expense incurred by cancellation of special orders.

Limited Warranty - All goods are sold with a limited warranty for one year against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within one year of purchase from Woodford.

Implied warranties - Implied warranties are limited to one year from date of purchase from Woodford.

Taxes and Government Regulations - Sales or manufactures tax imposed under any existing or future statutes shall be added to the price of merchandise effective at the time shipment is made.

Ordering Procedure - Purchase order must include the following: Model number, inlet size & type, handle type, wall thickness or depth of bury and type of finish required where applicable.

Returned Goods - Standard catalog material may be returned. All returns of resalable new and unused product is subject to a 25% restocking charge, plus the cost of reconditioning, not to exceed an additional 25% (50% total). Credit for used or freight damaged material to be determined by factory upon receipt of material.

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1. Any non-defective return under \$25.00 net or product over 18 months old.
2. Special lengths on any product.
3. Obsolete merchandise and product not listed in current price guide.
4. Competitor's product or product abused by installation.
5. Items not reviewed and RGA form signed by local Woodford representative before being sent back for factory approval.

All items claimed defective must be returned prepaid to address shown on back cover:

Model 19 Limited 5 Year Warranty



*All **Model 19** Wall faucets are sold with a limited warranty for five (5) years against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within five (5) years of purchase from Woodford. In addition, Woodford will pay up to \$5,000.00*

*toward the cost to repair damages incurred as a result of a defective **Model 19** Wall Faucet that was properly installed. This limited warranty does not cover defects caused by: modification, alteration or repair of the product by anyone other than Woodford; physical abuse to, or misuse of, the product or operation thereof in a manner contrary to accompanying instructions.*

Commercial Limited 5 Year Warranty



*All **Commercial** Wall hydrants and Roof hydrants shown in this brochure are sold with a limited warranty for five years against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within five years of purchase from Woodford.*

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Rev 08/12 Form No. IIB65.102

Model B65 & B67 Box Type - Automatic Draining Wall Hydrant



Model B65 with Single Check Vacuum Breaker



Model B67 with Double Check Backflow Preventer

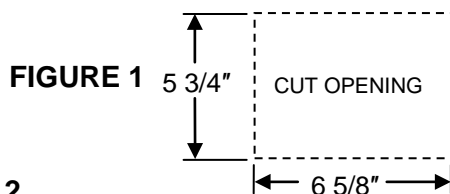


FIGURE 1

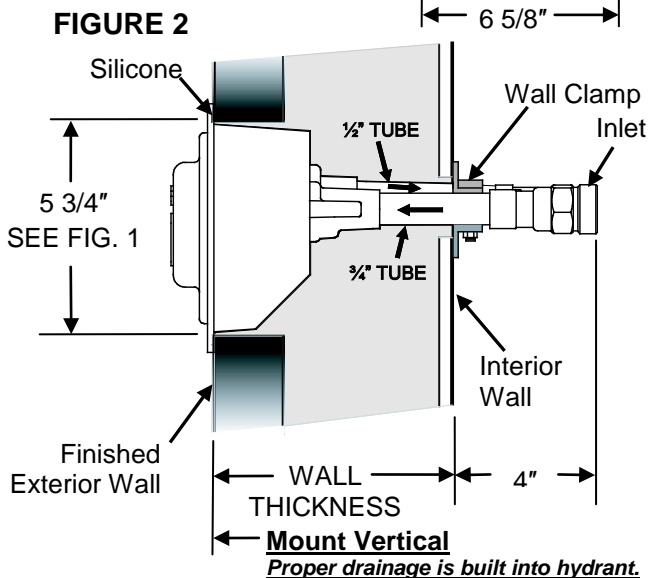
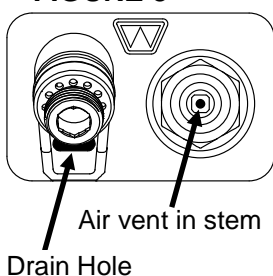


FIGURE 2

FIGURE 3



EXAMPLE: B65 or B67
installed in a block wall.

The hydrant must be properly installed and operated to insure drainage. Improperly installed or operated hydrants may freeze and burst in freezing weather.

INSTALLATION INSTRUCTIONS:

1. Before installation, flush supply line to remove any debris.
2. Cut a 5 3/4" X 6 5/8" opening through the wall in the desired location. FIGURE 1
3. Apply silicone or equivalent behind the box flange to seal and help support hydrant. FIGURE 2
4. Insert the box and faucet assembly from the outside. FIGURE 2
5. The top box flange must be installed in the horizontal position and level. *Do not install in vertical position.* FIGURE 2
- Note: Proper drainage is built into hydrant: (1/2" tube must slope slightly down toward inlet.) (3/4" tube must be level.)
6. The hydrant Inlet must be located in a warm area of the building interior. FIGURE 2
7. Install adjustable Wall Clamp over water tubes and slide snug to interior wall. FIGURE 2
8. The operating stem air vent **must not** be plugged to ensure proper draining. FIGURE 3

Note: For solder connection, open hydrant to full open position before soldering. Excessive heat can damage valve seat rubber.

OPERATING INSTRUCTIONS:

Use Tee Key to lock/unlock door and operate hydrant. To **OPEN**, turn stem counter-clockwise. To **CLOSE** and **DRAIN**, turn stem clockwise until seated and water drains out the drain hole.

TECH-NOTE



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07/12 Rev 2

RB65 & RB67

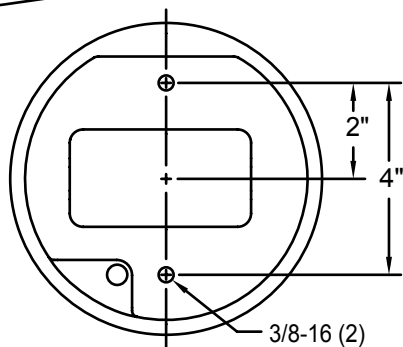
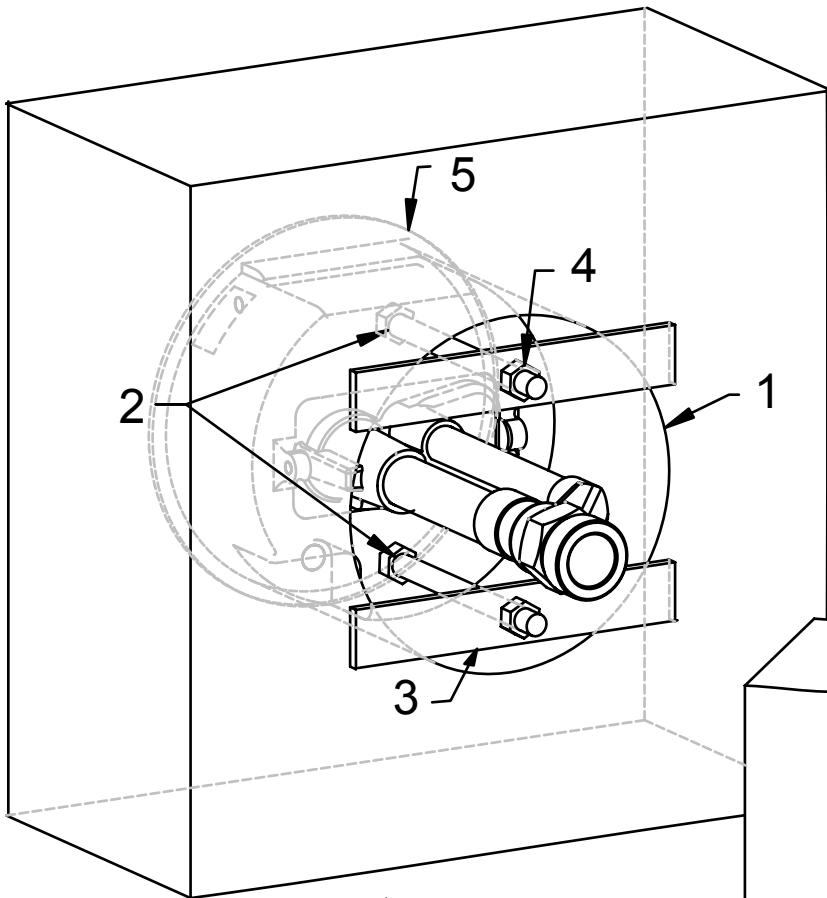
Round box

Installation Instructions

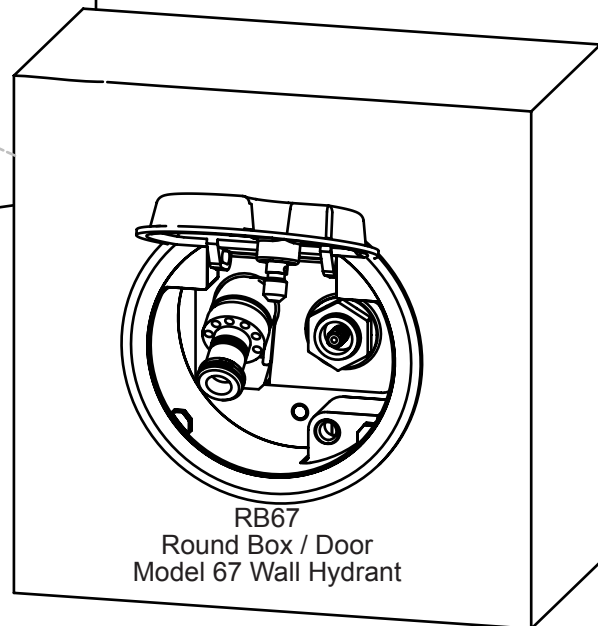
Round Box Patent No. US D470,915 S

Suggested installation through concrete wall:

1. Using a 6" core drill, locate and core drill a 6" diameter hole through wall.
2. Cut two lengths of 3/8-16 threaded rod long enough to protrude 1" through the back of the hole when box is installed. Spin one 3/8 back-up nut onto each rod to lock rods in place against box. Screw rods into provided tapped holes located in back of round box then tighten back-up nuts.
3. Make two back-up plates from available metal bar or angle to span 6" hole.
4. Set round box assembly in hole. Install back-up plates and draw-up loosely with 3/8 nuts.
5. Position and plumb unit in hole. Tighten back-up plate nuts to complete installation.



Mounting Hole Detail



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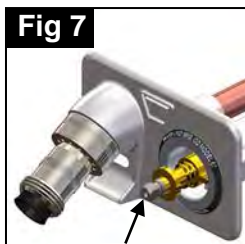
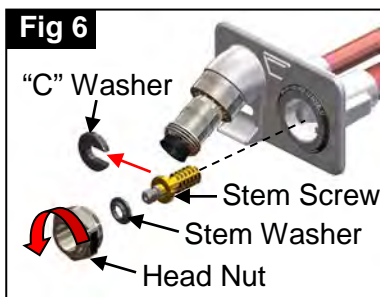
Rev 06/15 Form No. TM65.103

Model 65 & 67

Freezeless Wall Hydrant

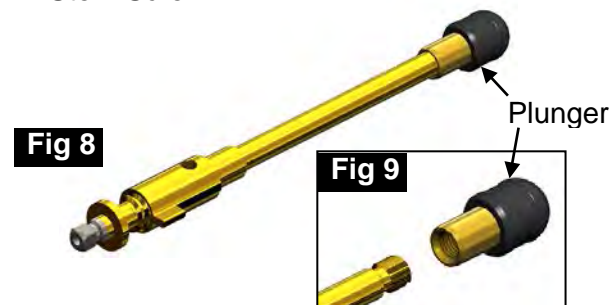


Drain Hole Air Vent



Stem Screw

For replacement
parts order
Repair Kit
RK-65



- **Water leaks from drain hole (Fig 1) and/or air vent in Stem Screw when the hydrant is on.**
Plunger (50250) is damaged and needs to be replaced.
See **Operating Rod Removal**
 - **Hydrant will not shut off. Water leaks out nozzle (Fig 2) and/or drain hole when hydrant is off.**
If a new installation debris or other obstruction may be prohibiting the plunger from seating properly. Remove rod assembly, inspect plunger for damage and flush the casing before reassembling. See **Operating Rod Removal**
 - **Hydrant does not drain when it is shut off.**
Drain hole cavity in casting and/or air vent hole in Stem Screw (**Fig 3**) may be blocked with insect nest or other debris. Use a stiff wire to clear any obstructions.
 - **Hydrant does not flow water when it is on.**
The Vacuum Breaker may be obstructed or damaged. Remove the Vacuum Breaker (**Fig 4**) and check to see if the hydrant flows water with the Vacuum Breaker removed. Inspect the Vacuum Breaker for obstruction or damage. If the hydrant still does not flow water with the Vacuum Breaker removed, remove the Operating Rod Assembly and turn on the water supply to flush the casing.
See **Operating Rod Removal**
- Operating Rod Removal:**
1. Shut off water supply.
 2. Turn the Stem Screw counterclockwise to the full open position. (**Fig 5**)
 3. Remove the Head Nut and Stem Screw. (**Fig 6**)
 4. Remove the "C" Washer from the stem screw. (**Fig 6**)
 5. Thread the stem screw back in the operating rod one or two turns. (**Fig 7**) Use a screwdriver or small pry bar to pry under the ledge of the stem screw, against the face of the hydrant, to pull the rod out of the hydrant. A damaged plunger may require a significant force to pull the rod free. (**Fig 8**)
 6. Once the rod is out of the hydrant, inspect and/or replace the plunger, which is threaded on the rod. (**Fig 8 & 9**) If the plunger rubber has come off the insert and is stuck inside the hydrant, a special plunger removal tool is available on loan from Woodford.

TERMS AND CONDITIONS OF SALE

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*toward the cost to repair damages incurred as a result of a defective **Model 19** Wall Faucet that was properly installed. This limited warranty does not cover defects caused by: modification, alteration or repair of the product by anyone other than Woodford; physical abuse to, or misuse of, the product or operation thereof in a manner contrary to accompanying instructions.*

Commercial Limited 5 Year Warranty



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For Individual Spec Sheets, Installation and Troubleshooting Instructions
Go to **woodformdmg.com** or Call Customer Service 1-800-621-6032

INSTALLATION INSTRUCTIONS



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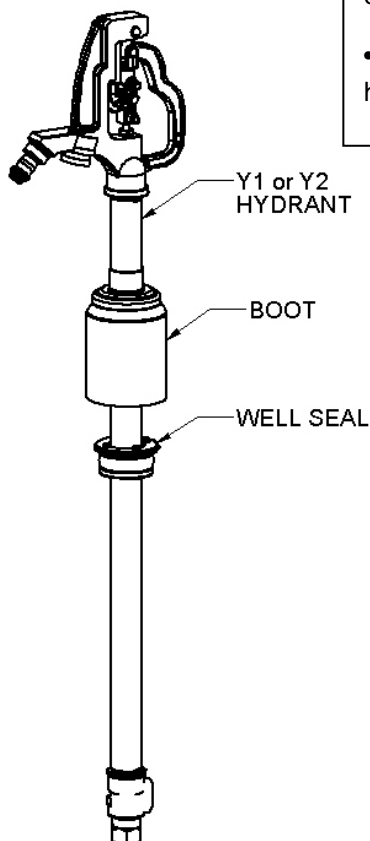
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RHY1 or RHY2

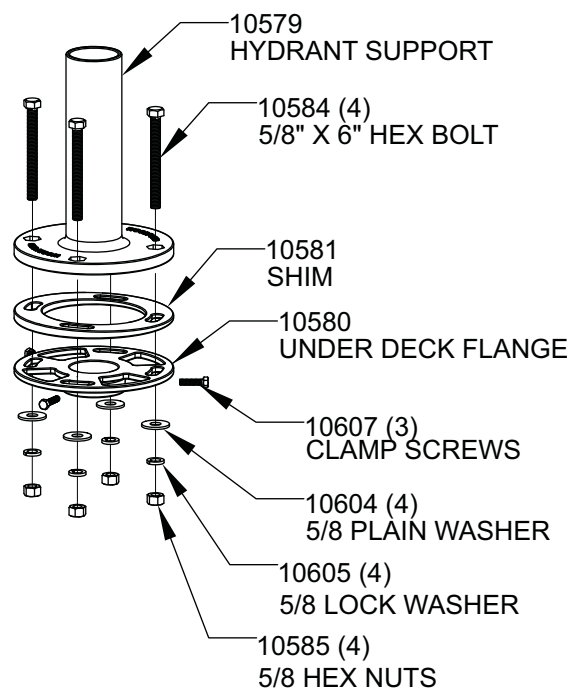
Roof Hydrant

Rev 06/10 Form No. IIRH.102



- The complete RHY1-MS or RHY2-MS Hydrant with Mounting System will be received in 2 separate cartons. See carton contents below.

- Both cartons are required to complete the Roof hydrant installation.



**RHY1-MS or
RHY2-MS (Shown)
Complete Roof Hydrant
Mounting System
includes both cartons 1
and 2.**

**CARTON 1
RHY1 or
RHY2 (Shown)
CONTENTS**

- Y1 or Y2 Hydrant
- Well Seal
- Boot

**CARTON 2
RH-MS
CONTENTS**

- Hydrant Support – cast iron
- 2" Shim – cast iron
- Under Deck Flange – cast iron
- Mounting Bolts, Nuts & Washers

INSTALLATION INSTRUCTIONS



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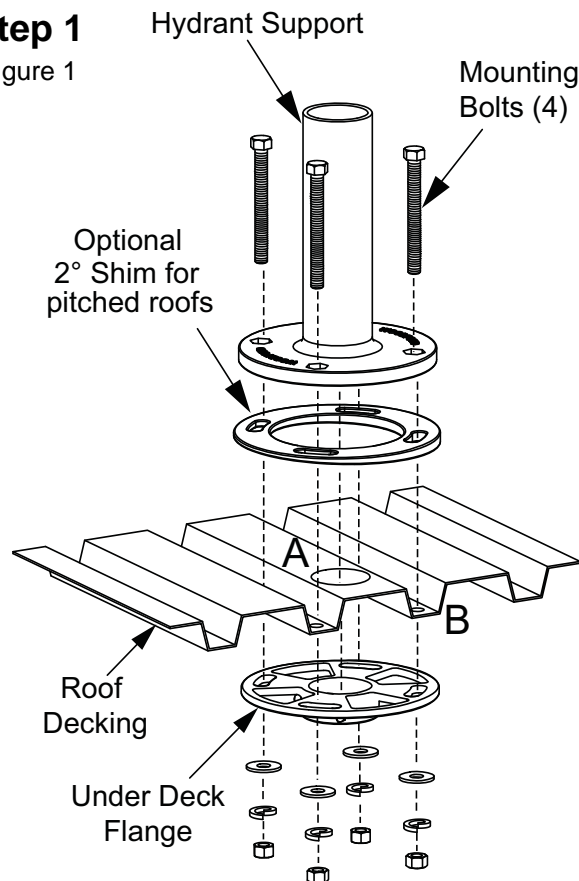
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RHMS Mounting System

Rev 06/10 Form No. IIRH.102

Step 1

Figure 1

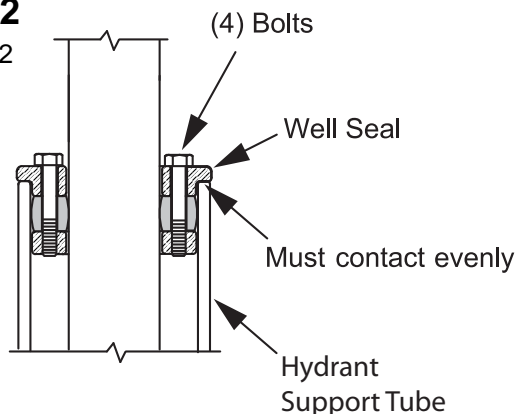


STEP 1 Figure 1

1. Set Hydrant Support in desired location on roof decking.
2. Transfer (5) hole locations using Hydrant Support flange as a template.
3. Set aside Hydrant Support and cut (1) 3" hole for the hydrant (A) and drill (4) 11/16" bolt holes (B) through roof decking.
4. Reposition Hydrant Support over holes in decking.
5. Drop (4) 5/8" X 6" Mounting Bolts through Hydrant Support flange. Heads should bottom in hex pockets.
6. From underneath roof decking, install Under Deck Flange. Position slots in Flange over the (4) bolts and secure with plain washers, lock washers and nuts.

Step 2

Figure 2



STEP 2 Figure 2

7. Loosen, but do not remove, the (4) bolts on the Well Seal.
8. Install the hydrant through the top of the Hydrant Support.
9. Position the hydrant to desired height.
10. Slide the Well Seal down and seat into the Hydrant Support tube.
Make sure that the top of the Well Seal contacts the top of the tube evenly all around.
11. Tighten the four bolts evenly until hydrant pipe is clamped securely.
 - a. NOTE: Installer may desire to not tighten the well seal until supply and drain connections are attached.

INSTALLATION INSTRUCTIONS



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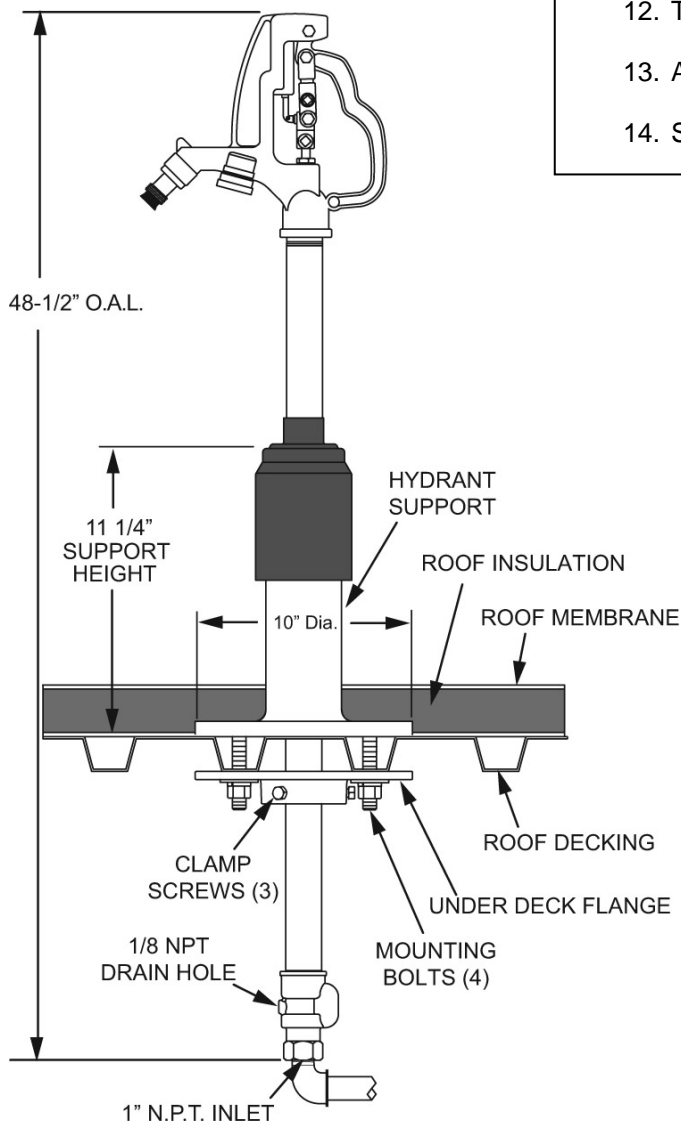
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RHY1-MS or RHY2-MS

Rev 06/10 Form No. IIRH.102

Roof Hydrant & Mounting System Rough-In



12. Tighten (3) Under-Deck Flange Clamp Screws.
13. Attach supply and drain lines.
14. Slide protective Boot down over Well Seal.

For more information contact...

WOODFORD MANUFACTURING COMPANY

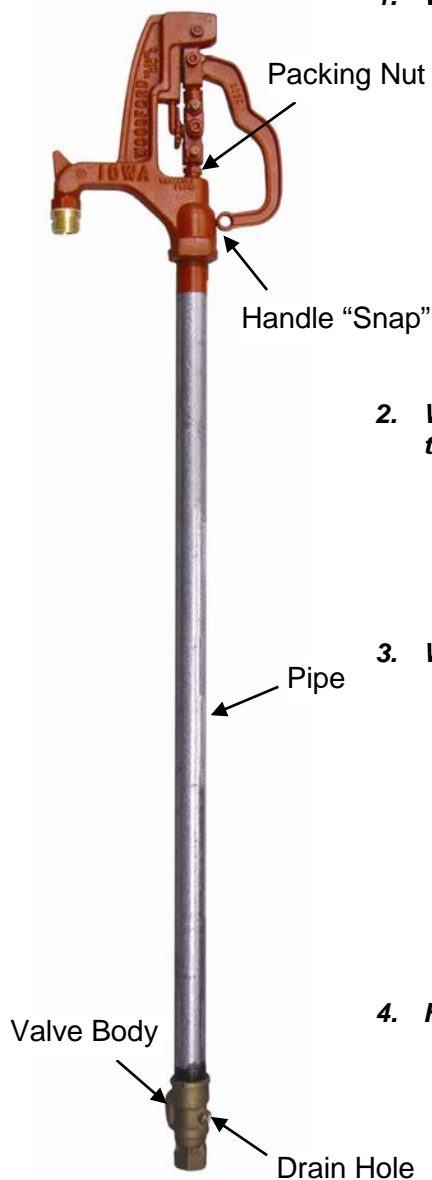
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Y34 & Y1 Yard Hydrant

Rev 06/15 Form No. TMYH-1.104



1. Water leaks from the nozzle when the hydrant is off.

- Check the closing force of the handle. If the handle does not “snap” closed at the end of the closing stroke, see [Linkage Adjustment](#) instructions.
- If the hydrant leaks just after installation, the valve seat may be fouled with debris, such as small rocks. The operating pipe assembly will have to be removed and the hydrant casing flushed. See [Operating Pipe Assembly Removal](#) instructions.
- To inspect and/or replace the plunger if it is worn or damaged, see [Operating Pipe Assembly Removal](#) instructions.

2. Water leaks around the brass stem below the handle linkage when the hydrant is on.

- The Packing Nut will occasionally need to be tightened to stop a packing leak. Tighten the Packing Nut until snug and the leak stops. Persistent leaks will require a new Packing #10101. See [Packing Replacement](#) instructions.

3. Water leaks from below ground level when the hydrant is on.

- A small leak may be the result of a leak at the drain hole. Replace the plunger if it is old and worn. See [Operating Pipe Assembly Removal](#) instructions.
- A large leak may be the result of a hole in the pipe casing caused by electrolysis corrosion. Some soil conditions can cause premature failure of the pipe casing near the valve body. Brass pipe is recommended for these conditions. *Contact the factory for details.*

4. Hydrant will not drain when shut off.

- Make sure there are no attachments on the nozzle, such as a hose or vacuum breaker.
- Improper linkage adjustment (not enough tension) may prevent the hydrant from draining properly. See [Linkage Adjustment](#) instructions.
- A poor drain field around the valve body or a blocked drain hole will prevent drainage. See [Yard Hydrant Installation Instructions](#).

For more information contact...

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Y34, Y1 or Y2 Yard Hydrant Plunger Replacement

Rev 06/15 Form No.TMYH-1.104

If rocks or other debris are believed to have settled in the Valve Body, causing the Plunger not to seat properly, follow these instructions for inspecting or replacing the Plunger:

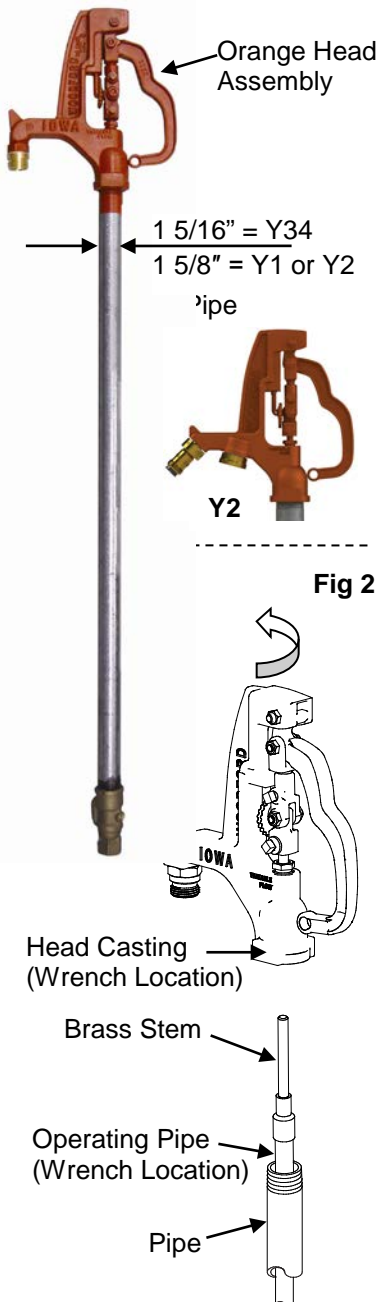


Fig 2

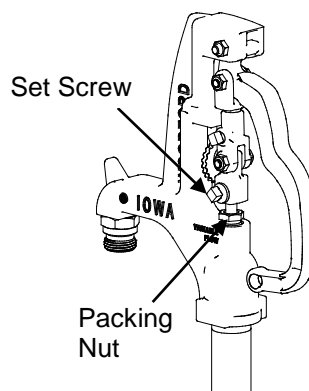


Fig 1

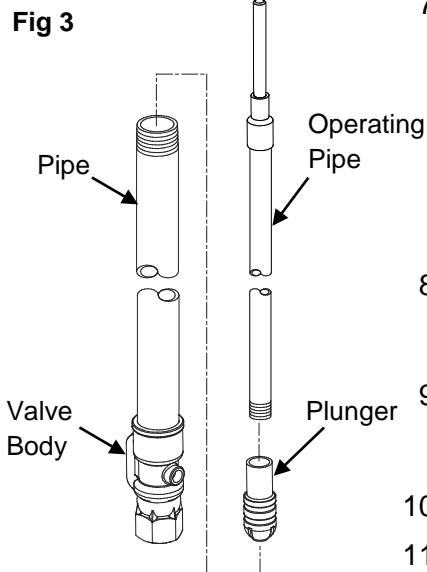


Fig 3

1. Shut off water supply to hydrant.
2. Loosen the linkage Set Screw. Fig 1
3. Loosen, do not remove, the Packing Nut. Fig 1
4. Remove head casting using two pipe wrenches, one on head casting and the other on the pipe. Fig 2
5. Remove operating pipe by gripping pipe with vice grips and prying upward. **DO NOT attach vice grips to brass stem. Damage to stem may cause leakage around packing nut.** Fig 2
6. **Turn on water and allow to flow and flush the casing.**
7. Examine plunger for damage and replace if necessary. Fig 4
 - 7a Remove plunger from operating pipe with either pipe wrenches or vise grips.
 - 7b Install new Plunger.
8. Apply a small amount of Silicone grease to plunger to aid the reinsertion into hydrant. (Do not use petroleum based grease).
9. Insert operating rod assembly in hydrant using a mallet or block of wood. Tap rod assembly until plunger is seated in the valve body.
10. Reinstall head assembly.
11. Adjust linkage so handle will snap closed at very end of closing. See ["Linkage Adjustment"](#)

HOSE BIBBS - roof hydrants

TERMS AND CONDITIONS OF SALE

Selling Policy - Possession of our price list or jobber discounts is not an offer to sell. All orders are subject to acceptance by the home office in Colorado Springs, Colorado.

Minimum Invoice - No invoice will be rendered for less than \$25.00 list.

Cash Discount - 3% 15 days from date of invoice or 2% 10th Prox., Net EOM

Freight Allowance - All goods sold F.O.B shipping point. For shipments in the continental United States and Canada, **full freight will be allowed on orders of \$2,000.00 or more list.** No freight allowance on smaller shipments. We reserve the right to ship the most economical way.

Foreign Shipments - (including **Alaska and Hawaii**) will be allowed full freight, according to the conditions listed above, to the embarkation point in the continental United States only.

Claims, Shortages and Damage - All claims for shortages or goods damaged in transit must be made within **10 days after receipt of merchandise.** (All claims should be made to Woodford Manufacturing Co. by the consignee.)

Prices, Designs and Quotation - Prices, designs and dimensions of products are subject to change without notice. Quotations, unless otherwise stated, are for immediate acceptance and prices quoted are based on the sellers standard tolerances of materials. We reserve the right to invoice all merchandise at prices in effect at the time of shipment.

Cancellations - Orders covering special merchandise are not subject to cancellation without our written permission. Purchaser subject to expense incurred by cancellation of special orders.

Limited Warranty - All goods are sold with a limited warranty for one year against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within one year of purchase from Woodford.

Implied warranties - Implied warranties are limited to one year from date of purchase from Woodford.

Taxes and Government Regulations - Sales or manufactures tax imposed under any existing or future statutes shall be added to the price of merchandise effective at the time shipment is made.

Ordering Procedure - Purchase order must include the following: Model number, inlet size & type, handle type, wall thickness or depth of bury and type of finish required where applicable.

Returned Goods - Standard catalog material may be returned. All returns of resalable new and unused product is subject to a 25% restocking charge, plus the cost of reconditioning, not to exceed an additional 25% (50% total). Credit for used or freight damaged material to be determined by factory upon receipt of material.

We will not accept returns for:

1. Any non-defective return under \$25.00 net or product over 18 months old.
2. Special lengths on any product.
3. Obsolete merchandise and product not listed in current price guide.
4. Competitor's product or product abused by installation.
5. Items not reviewed and RGA form signed by local Woodford representative before being sent back for factory approval.

All items claimed defective must be returned prepaid to address shown on back cover:

Model 19 Limited 5 Year Warranty



*All **Model 19** Wall faucets are sold with a limited warranty for five (5) years against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within five (5) years of purchase from Woodford. In addition, Woodford will pay up to \$5,000.00*

*toward the cost to repair damages incurred as a result of a defective **Model 19** Wall Faucet that was properly installed. This limited warranty does not cover defects caused by: modification, alteration or repair of the product by anyone other than Woodford; physical abuse to, or misuse of, the product or operation thereof in a manner contrary to accompanying instructions.*

Commercial Limited 5 Year Warranty



*All **Commercial Wall hydrants and Roof hydrants** shown in this brochure are sold with a limited warranty for five years against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within five years of purchase from Woodford.*

Patented and Patents Pending: See woodfordmfg.com for details
For Individual Spec Sheets, Installation and Troubleshooting Instructions
Go to **woodfordmfg.com** or Call Customer Service 1-800-621-6032

FEATURES


- ▲ Pre-engineered standard system, fits most common duplex and triplex applications
- ▲ VFD Controls for each pump to minimize energy usage and maximize pump life
- ▲ Programmable setpoints
- ▲ Simple system design uses multiple transducers to allow for variable suction pressure and no flow shut down
- ▲ Energy savings
- ▲ 24 volt control system
- ▲ 15, 25 or 65 kAIC breakers available
- ▲ All 304 SS frame, manifolds and pumps
- ▲ NEMA 1 through 12 compliant
- ▲ NSF 61 and 372
- ▲ UL listed 508A and 67YF


INTRODUCTION

Delta P Carver offers a broad range of standard booster packages; custom engineered packages, as well as retro-fitted control panels for existing systems. Delta P Carver was the pioneer in development for the Quiet Pak, using submersible pumps for low noise applications in hotels and condominiums. You can count on Delta P Carver to create lasting value from solid, straightforward and proven designs that provide many years of reliable service. See our full line of Delta Pak at our website www.deltapcarver.com

SUBMITTAL FOR:

Project:	Contractor:
Engineer:	Representative:

OCT 2015

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Part Number: _____

Serial Numbers: _____



This manual shall always be kept close to the unit's location of operation or directly on the controller.



These operating instructions contain fundamental information and precautionary notes. Please read the manual thoroughly prior to installation of unit, electrical connection and commissioning. It is imperative to comply with all other operating instructions referring to components of individual units.

NOTE: The information contained in this manual is intended to assist operating personnel by providing information on the characteristics of the purchase equipment. It does not relieve the user of the responsibility to adhere to local codes and ordinances and the use of accepted practices in the installation, operation and maintenance of this equipment.

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

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I. GENERAL DESCRIPTION AND SAFETY PRECAUTIONS.

A. PURPOSE OF MANUAL.

This manual describes the operation of the Delta P Carver booster system.

The control panel consists of an Operator Interface Panel (OIP), a disconnect switch, motor branch circuit protection including Manual Motor Protectors (MMP's), a 24VDC power supply, and terminal blocks for customer connection if required.

B. SAFETY PRECAUTIONS. The manual is designed to provide adequate instructions for the safe and efficient installation, operation, or maintenance of the booster system. Failure or neglect to properly install, operate, or maintain the booster system may result in personal injury, property damage, or unnecessary damage to the booster system.

C. SUMMARY OF SAFETY MARKING.

The safety instructions contained in this manual whose non-observance might cause hazards to persons are specially marked with the symbol:



General hazard sign to ISO 7000 - 0434.

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used, the safety alert symbol means: ATTENTION, BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN A SAFETY HAZARD.

The word "DANGER" is used to introduce safety instructions whose non-observance could result in serious personal injury, death and/or property damage.

The word "WARNING" is used to introduce safety instructions whose non-observance may lead to property damage and serious personal injury.

The word "CAUTION" is used to introduce safety instructions whose non-observance may lead to damage to the machine and its functions.

Instructions attached directly to the machine, e.g.

- Arrow indicating the direction of rotation
- Markings for fluid connections must always be complied with and be kept in a perfectly legible condition at all times.

Observe all note, caution, warning or danger tags attached to the equipment or included in this manual.



CAUTION

IMPORTANT SAFETY NOTICE

Installation, use and operating of pumping equipment are affected by various federal, state and local laws and the regulations concerning OSHA. Compliance with such laws relating to the proper installation and safe operation of the pumping equipment is the responsibility of the equipment owner and all necessary steps should be taken by the owner to assure compliance with such laws before operating the equipment.

D. SAFETY INSTRUCTION DECAL. The Delta P Carver booster system should have a safety instruction decal located on the front of the enclosure near the disconnect switch. If the decal is missing or illegible contact your Delta P Carver representative for a replacement.

E. HAZARDOUS VOLTAGE. Only qualified electricians should perform electrical service of any kind on the control panel or booster system. Visually inspect the control panel for loose or stranded wires and for damaged components or wires prior to performing electrical service. Never troubleshoot or perform service on a live control panel. Do not turn the disconnect switch on while the enclosure door is open. Live voltage is still connected to the incoming side of the disconnect switch even when the disconnect switch is off. Turn off and lockout the incoming power prior to troubleshooting or performing service on this control panel.



DANGER

High Voltage! Do not work on live control panels. Turn off, lockout and tag "Out of Service" the incoming power prior to performing service on the booster system. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.

F. PUMP/MOTOR SAFETY. All electrical installation or service on the motors should be performed by a qualified electrician. Ground fault protection should be sized properly. Refer to local electrical codes for sizing and selection. Refer to the motor manual for the motors for specific installation information. Even when the



pumps are stopped, they should be considered alive as long as its controller is energized. Keep hands away from the pumps until the power is disconnected from the pump controller.

G. MOTOR CONTROL EQUIPMENT SAFETY.



DANGER

The heating of water and other fluids causes volumetric expansion. The associated forces may cause failure of system components and the release of high temperature fluids. This will be prevented by the installed temperature relief valves and compression tanks. **FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS PERSONAL INJURY, DEATH AND/OR PROPERTY DAMAGE.**

Do not install and operate a booster system package in a closed system unless the system is constructed with properly sized safety and control devices. Such devices include the use of properly sized and located pressure relief valves, compression tanks, pressure controls, temperature controls and flow controls as appropriate. If the system does not include these devices consult the responsible engineer or architect before making the booster system package operational.

II. INSPECTION AND STORAGE.

A. INSPECTION. Upon receipt of the shipment, unpack and inspect the booster system and individual parts to insure none are missing or damaged. Carefully inspect all boxes and packing material for loose parts before discarding them. Immediately report any missing parts or damage incurred during shipment to the factory and to the Transportation Company and file your "damage and/or lost in shipment" claim with the carrier.

B. STORAGE. For long periods of storage, the pumping package should be covered to prevent corrosion and contamination from dirt. It should be stored in a clean, dry location between -20° to 60° Celsius (-4° to 140° Fahrenheit). The relative humidity should not exceed 95%. The unit should be checked periodically to ensure that no condensation has formed. After storage, check that it is dry before applying power.

NOTE

Improper storage could damage equipment and would result in non-warranty covered restoration of non-warranty covered product failures.

Consider booster system package to be in storage when:

1. It has been delivered to the job site and is waiting to be installed.
2. It has been installed but operation is delayed pending completion of construction.

III. HANDLING AND INSTALLATION.

A. HANDLING.



DANGER

Heavy load, may drop if not lifted properly. Do not load cables, chains or hoists beyond their rated limits. Use a hoist with adequate lifting capacity. **FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS PERSONAL INJURY, DEATH AND/OR PROPERTY DAMAGE.**

Care should be taken to prevent damage due to dropping or jolting when moving any panel or pumping package. The booster system package should be unloaded and handled by qualified personnel. A booster package that includes this panel may be top heavy due to the position of the motors. Lift the unit with slings placed under the unit base rails. Be sure not to load the lifting mechanism beyond the unit while lifting to prevent overturning.

B. LOCATION. Observe local electrical codes concerning control panel spacing. The booster system should be located in an area that will permit periodic inspection, maintenance, and service. Head room and access should be provided and all units should be installed in a dry location with adequate drainage.

1. Allow a minimum of 42 inches of service clearance in front of the electrical control panel.
2. Allow for a minimum of 18 inches clearance from the rear of the system for pump service.



C. INSTALLATION. Place the system in position where it will be installed, and square it up with the building walls.

1. Provide a reasonably level floor surface for mounting the structural support frame, shim as required.
2. Mark the floor where the mounting holes are to be drilled. Move the system out of the way and drill holes and insert Stainless Steel drop-in anchors. Screw in the rubber in-shear vibration isolators to the anchors.
3. Install the male threaded end of the rubber isolator into the drop in masonry anchor. Coat the threads of the isolator with antiseize compound for easy removal later.
4. Place the system back on top of the isolators
5. Level with the stainless steel washers under the support frame. Secure the system to the rubber isolators with 3/8 inch stainless steel bolts and stainless steel washers to secure the booster support frame to the isolators.

D. PIPING.



CAUTION

All piping connections must be made with the pipe in a freely supported state. Do not apply vertical or side pressure to align the piping with the pump package.

Be sure to eliminate any pipe strain on the pumping package. Support all pipes independently by use of pipe hangers near the unit. Ordinary wire or band hangers are not adequate to maintain alignment. It is very important to provide a strong, rigid support for the suction and discharge lines. A saddle hanger is recommended. Do not attempt to force the suction or discharge lines into position. Refer to the assembly drawing for customers piping connections.

Inspect all piping connections. Joints may also become loose during transit due to vibration and shock. All joints should be checked for tightness. Flanged joints should be checked for proper torque of all flange bolts prior to filling the system with fluid.

Eccentric increasers may be used in the suction lines when increasing the pipe size, with the straight sides of the increaser on top to eliminate air pockets.

For critical installations, equipment for absorbing expansion and vibration should be installed in the inlet and outlet connections of the unit.

On an open system with a suction lift, use a foot valve of equal or greater area than the pump suction piping. Prevent clogging by using a strainer at the suction inlet next to the foot valve. The strainer should have an area 3 times that of the suction pipe. Provisions must be made to prime the pump suction piping on start up. Do not start the pump unless all suction piping is full of water.

A thermal relief valve is installed on the pump casing or discharge header to prevent potentially dangerous thermal buildup in the booster system. This valve acts as a safety device and it should never be removed or tampered with. It is factory set to open and discharge when the water temperature in the discharge header exceeds 52° Celsius (135° Fahrenheit). The opening of this valve should be piped to a floor drain.



CAUTION

Serious damage to the booster system may result if the main supply line from the water inlet source is not flushed properly. **Failure to do this may void the warranty should damage occur.**

1. Thoroughly flush out the main supply line from the water inlet source to remove any foreign objects or debris. Use full inlet size for 15 minutes.



CAUTION

All piping connections must be made with the pipe in a freely supported state. Do not apply vertical or side pressure to align the piping with the pump package.

2. Connect the buildings suction supply piping to the system suction header connection using the proper connection fittings. Use flexible piping connectors directly onto the pump header connections, both suction and discharge. Should grooved end connectors be used, a flexible connector is not required.



NOTE

The fittings should be rated for the maximum shut-off head, plus the maximum municipal supply pressure anticipated to prevent piping system failure. Reference the pump curve data for the maximum pump shut-off head.

3. Connect system discharge to the building water supply distribution system using the proper connecting fittings.
4. Before starting, all pumps and motors should be checked for lubrication.

E. TEMPERATURE AND VENTILATION. The operating temperature range for this unit is 0° to 40° Celsius (32° to 104° Fahrenheit). The relative humidity should be kept between 10% and 95% non-condensing. The unit should not be operated outside these extremes.

F. INCOMING POWER AND GROUND WIRING.



DANGER

Conduit grounds are not adequate. A separate ground wire must be attached to the ground lug provided in the enclosure to avoid potential safety hazards. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS PERSONAL INJURY, DEATH AND/OR PROPERTY DAMAGE.

Prevent electrical shocks. Disconnect the incoming power supply to the control panel before beginning installation. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.

A qualified electrician should bring incoming power and ground wiring to the disconnect switch. If holes are drilled in the control panel, be sure to not contaminate electrical components with metal fillings. A ground terminal is provided in the enclosure for an incoming ground wire connection. Wire types and sizes must be selected according to the National Electrical Code and all local codes and restrictions. Refer to the input current and voltage as listed on the nameplate on the enclosure door when sizing the power wires. Only copper (Cu) wire rated for 75° Celsius minimum (167° Fahrenheit minimum) may be used for the power connections. The voltage tolerance is $\pm 10\%$ and phase to phase voltage must not have an imbalance greater than ± 3 VAC.

1. Verify the proper supply voltage and load center circuit breaker ampacity to the unit with the information in the Submittal data information sheet or electrical drawing.
2. Check voltage phase to phase and phase to ground.

NOTE

Power supply required for all variable frequency drive applications. If a delta connection is provided, an isolation transformer must be provided by others.

3. Bring the power supply in to the single point electrical connection located inside the system enclosure, at the main door interlocked, service disconnect switch.
4. Preferably making electrical connection through the bottom of the enclosure, on the same side as the electrical disconnect switch. Avoid making the connection on the top of the enclosure. If a top connection is necessary, use a "seal-tite" type connector.



CAUTION

Do not power up unit until factory start-up technician arrives. **Anomalies occurring from improper power supply may void the warranty should damage occur.**

IV. INPUT/OUTPUT

A. ANALOG INPUTS. The Delta P Carver Booster System is equipped with analog input channels. The analog inputs must provide a 4-20mA or 0-10V signal. Typically, analog inputs will be powered by the 24V power supply within the panel.

Shielded 22 American Wire Gage (AWG) cable should be installed for all analog input wiring. The shield must be terminated in the Delta P Carver Booster System Controller. Do not connect the shield so that no electrical connection is made at the other end of the cable. A twisted pair of #22 AWG conductors can be used in place of shielded cable.



B. DIGITAL INPUTS. The Delta P Carver Booster System Controller is equipped with 24VDC digital input channels. This signal voltage must be obtained from the 24VDC power supply mounted to the control panel. It is not recommended that other power sources be used without factory approval. All digital inputs are assigned

based on Table 1. Additional sensors not provided by Delta P Carver may be added as indicated in Table 3. See the typical wiring diagram provided in the Drawing Section.

#22 AWG cable should be installed for all field wiring to digital inputs.

Table 1. Digital Inputs Functionalities

DI#	Description	DI#	Description
DI 0	Low Suction or Low Tank Level Switch	DI 3	Pump 2 Over Temperature Alarm (provided by manufacturer depending on model)
DI 1	2 nd High System Switch (provided by manufacturer)	DI 4	Pump 3 Over Temperature Alarm (provided by manufacturer depending on model)
DI 2	Pump 1 Over Temperature Alarm (provided by manufacturer depending on model)	DI 5	NO switch when energized turns system off.

V. MAINTENANCE.

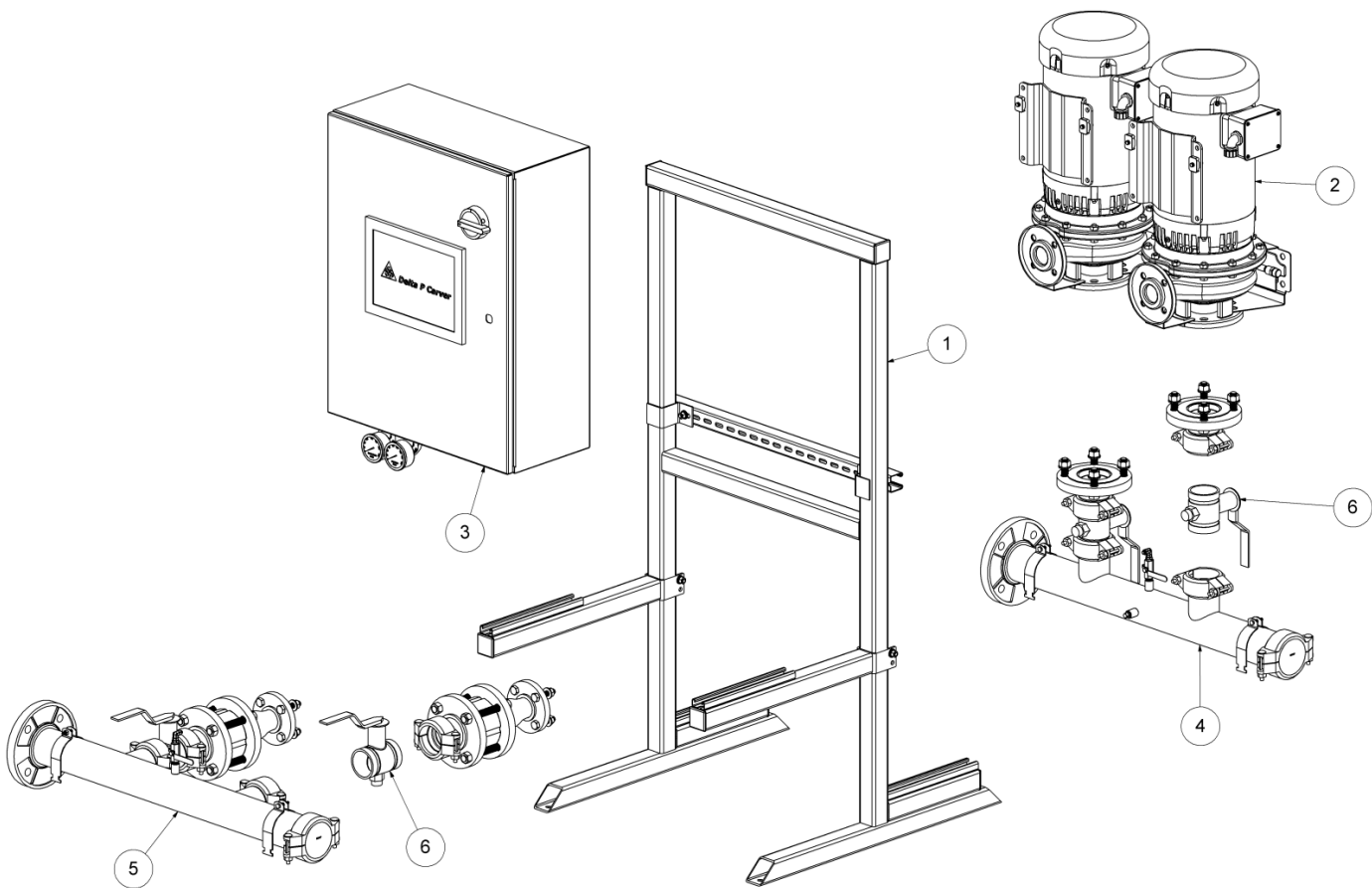
Generally the booster system does not need continuous supervision. Occasional visual checks are recommended. Data should be recorded for each pump to keep track of maintenance which has been performed and to note operational problems. General exploded views of the Delta P ES, Figure 1 and Delta P VM, Figure 2 are included for reference.

A. BATTERY. The system memory, including all user data is buffered by an internal battery while the unit is off. When the controller begins to detect low voltage on the battery, it will display an alarm to give the user adequate time to replace it.

B. FIELD REPAIR. Typical field repairs include replacing sensors, transducers, power supply, Variable Frequency

Drive (VFD), mechanical seal, and assuring connections are correct and secure. Repair parts are not typically required but a spare set of transducers and mechanical seals are recommended.

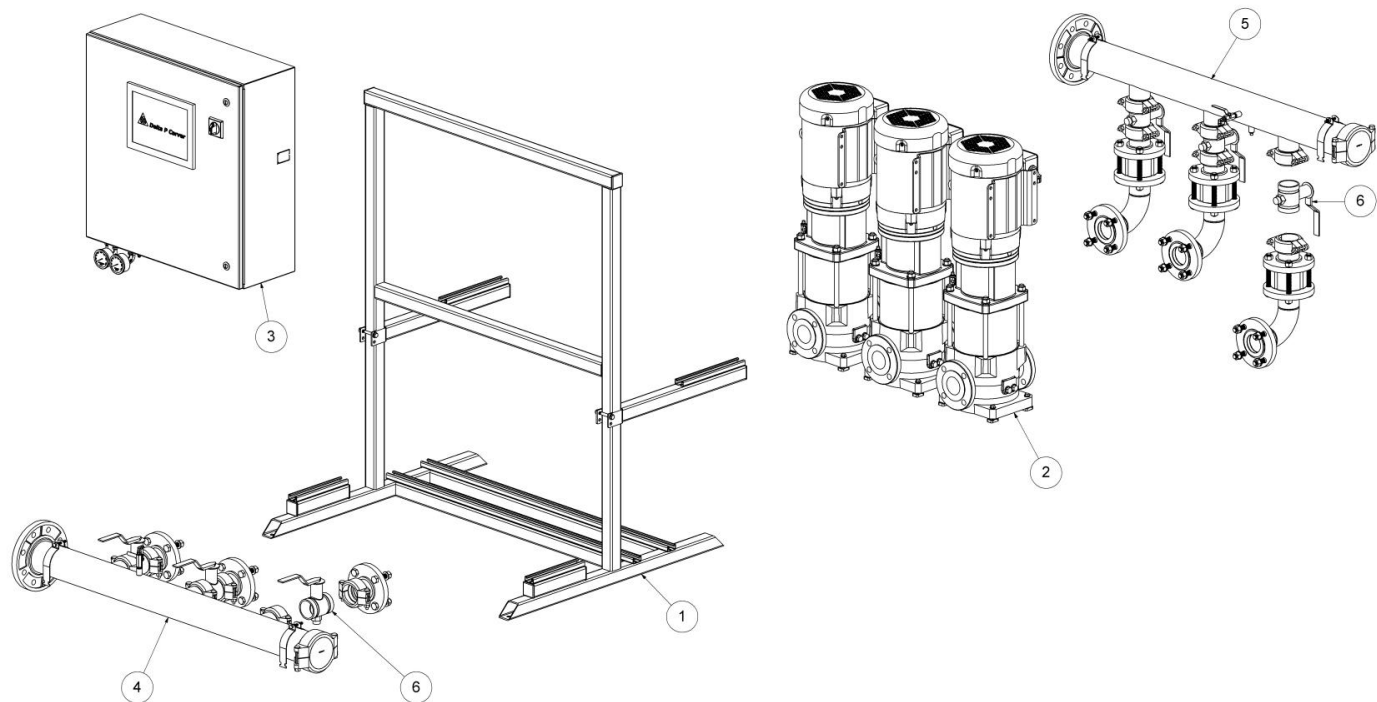
C. TROUBLESHOOTING. If you have followed the installation and starting procedures outlined in this manual, the booster system should provide reliable service and long life. However, if operating problems do occur; significant time and expense can be saved if you refer to Table 2 to eliminate the most common causes of those problems. The following information should be used as a guide in determining the cause of the most common problems you may encounter. Should you be unable to correct a specific problem by using this troubleshooting table, contact your Delta P Carver representative for assistance.



ITEM NO.	DESCRIPTION
1	Frame Assembly
2	Pump Assembly
3	Control Pak

ITEM NO.	DESCRIPTION
4	Manifold Assembly Suction (600 PSI)
5	Manifold Assembly Discharge (600 PSI)
6	Stainless Steel Internal Butterfly Isolation Valve (150/300 PSI)

Figure 1. Delta Pak ES Exploded View



ITEM NO.	DESCRIPTION
1	Frame Assembly
2	Pump Assembly
3	Control Pak

ITEM NO.	DESCRIPTION
4	Manifold Assembly Suction (600 PSI)
5	Manifold Assembly Discharge (600 PSI)
6	Stainless Steel Internal Butterfly Isolation Valve (150/300 PSI)

Figure 2. Delta Pak VM Exploded View

Table 2. Troubleshooting

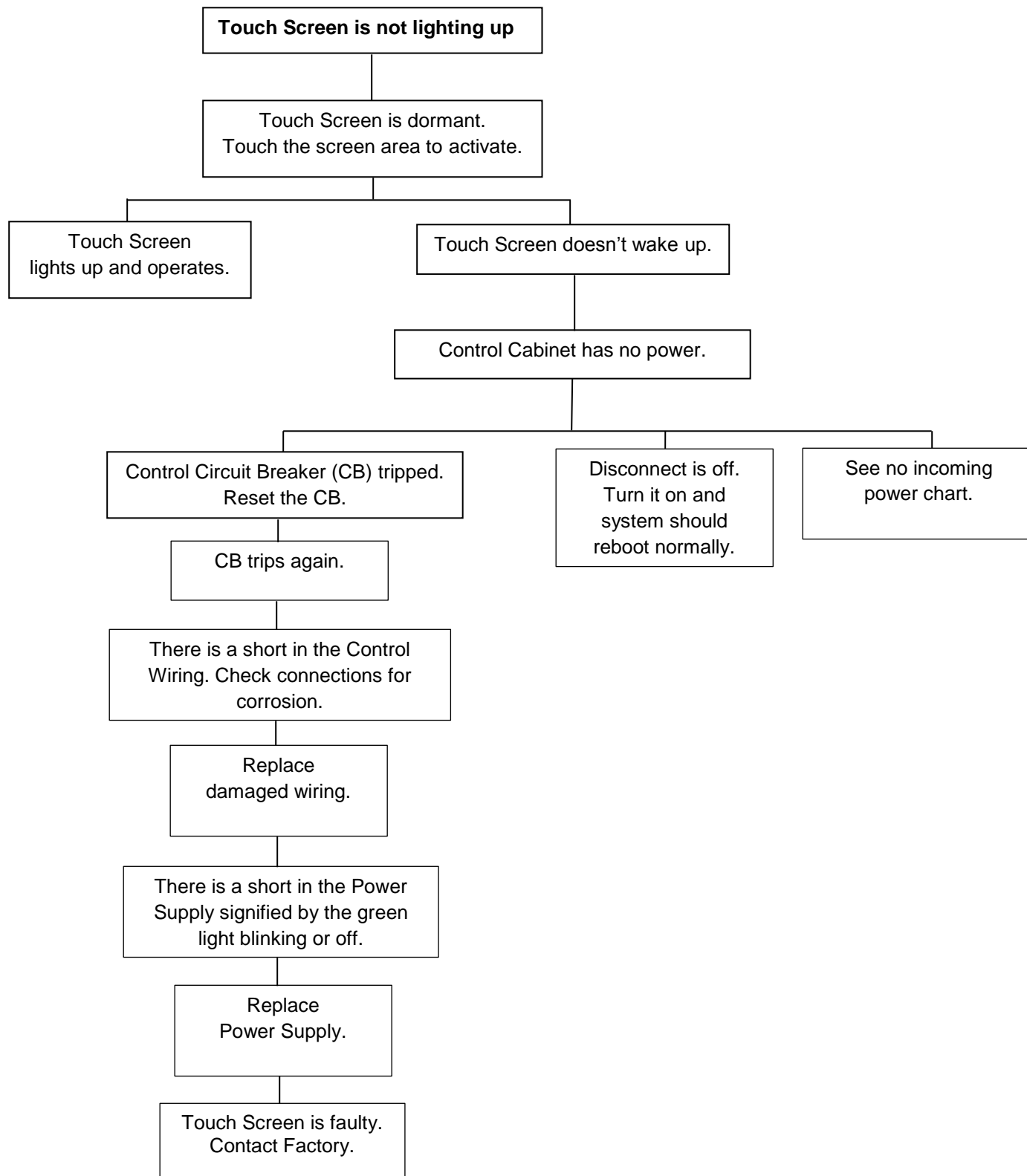


Table 2. Troubleshooting - Continued

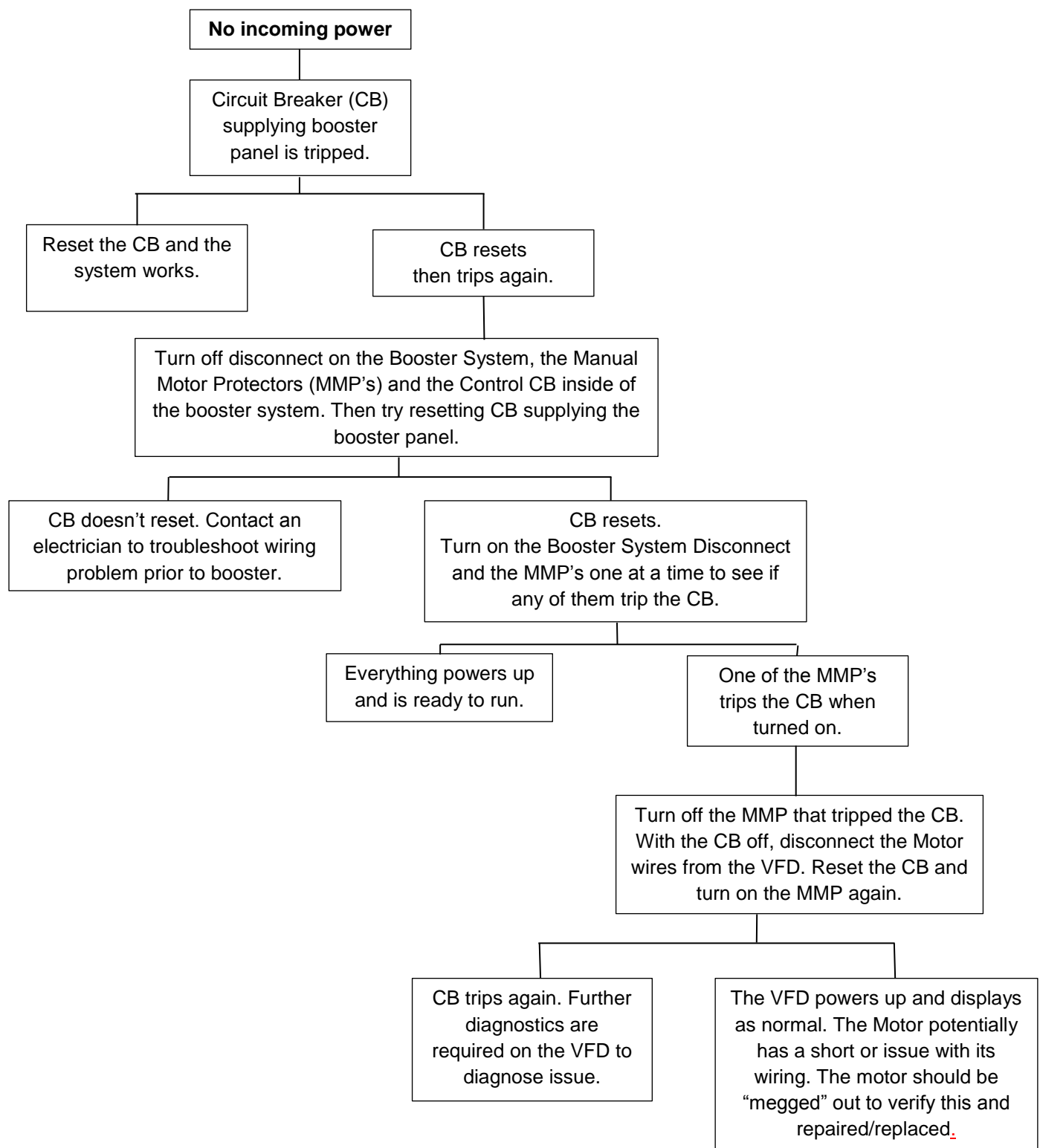


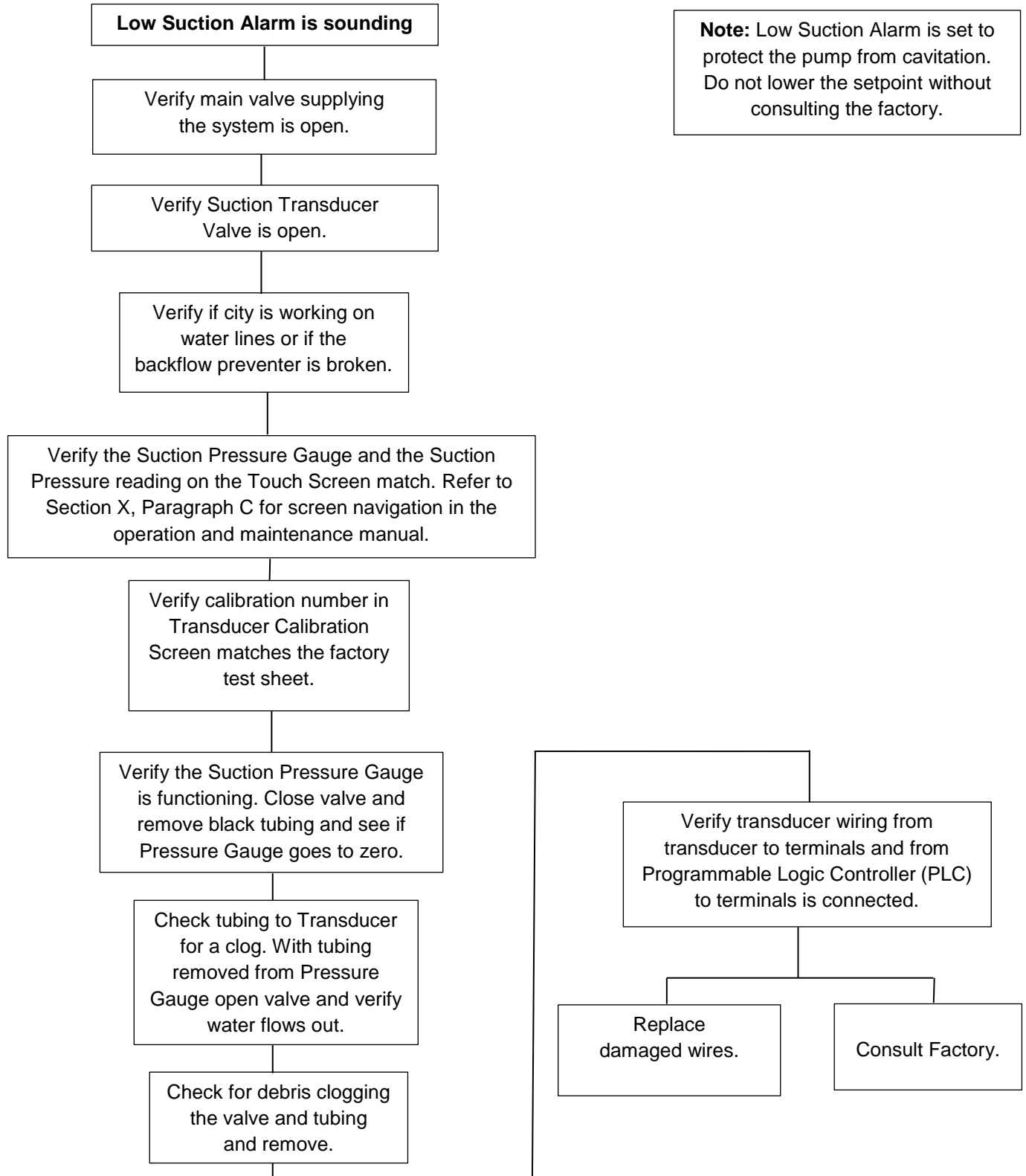
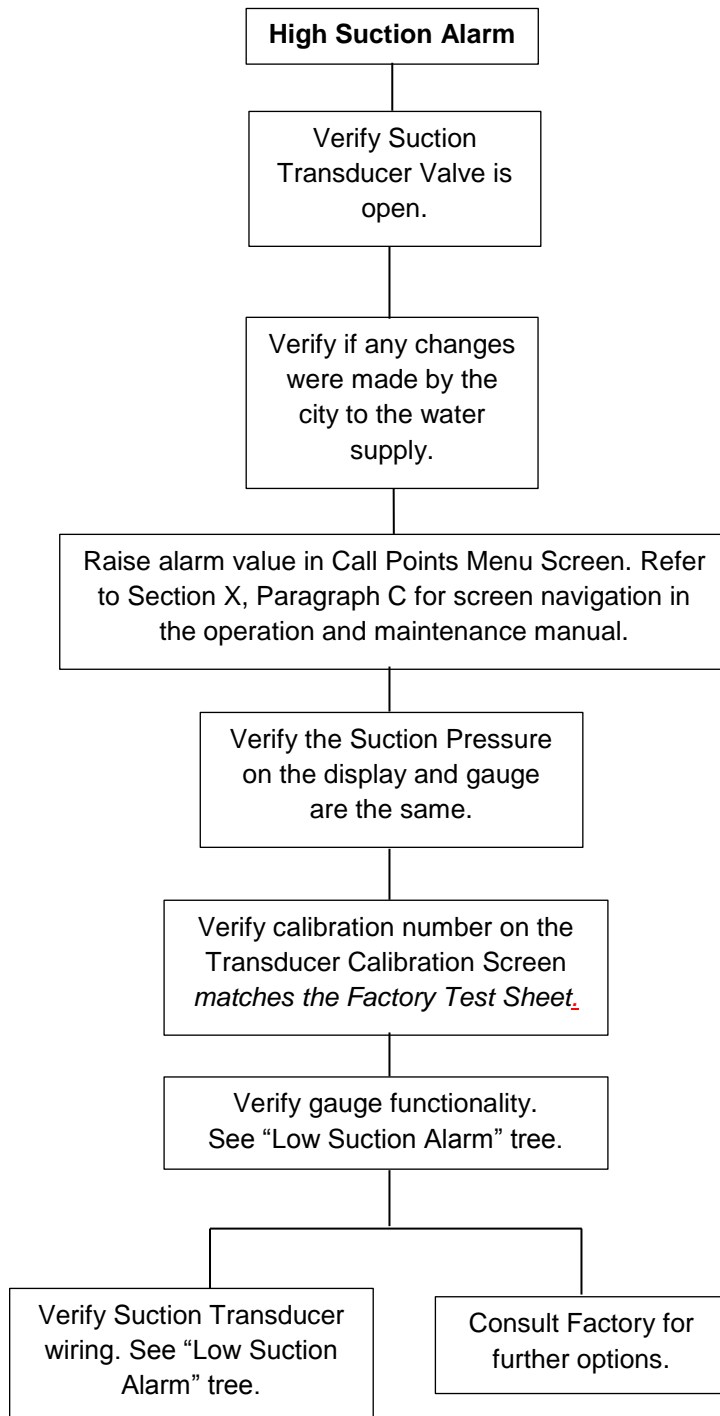
Table 2. Troubleshooting - Continued


Table 2. Troubleshooting - Continued



Note: Do not change the setpoint if the system is a Quiet Pak without consulting the factory.

Table 2. Troubleshooting - Continued

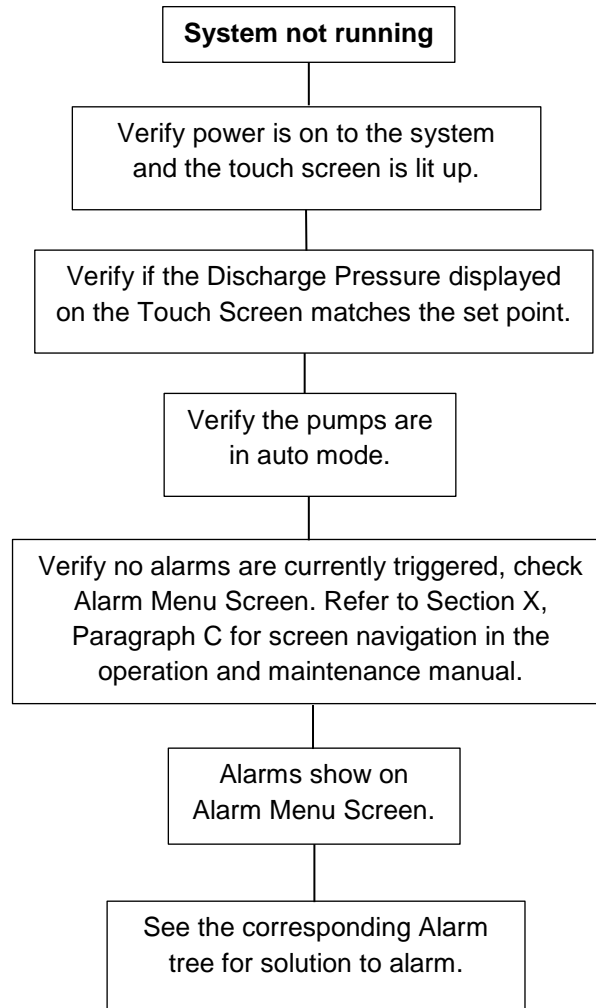


Table 2. Troubleshooting - Continued

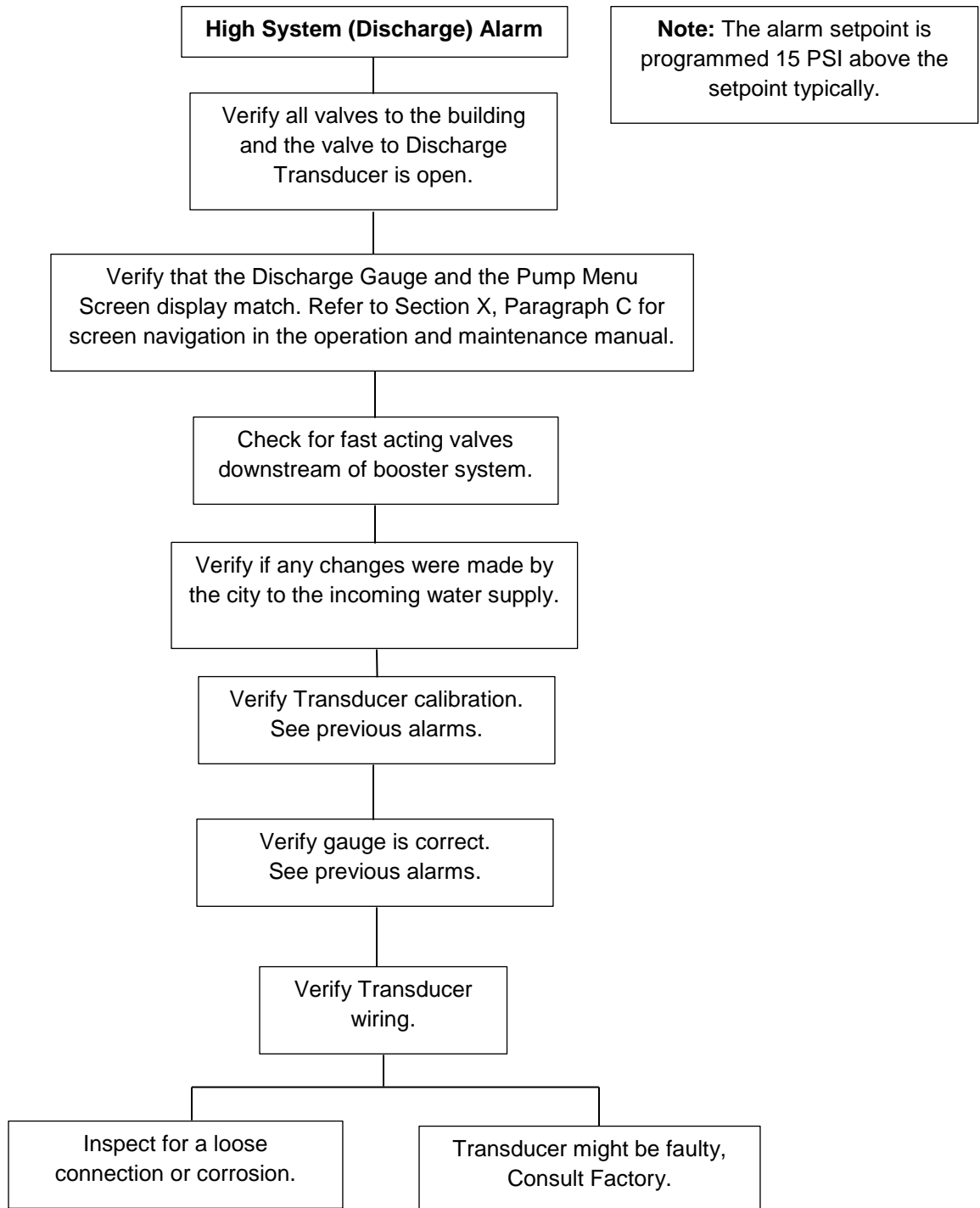


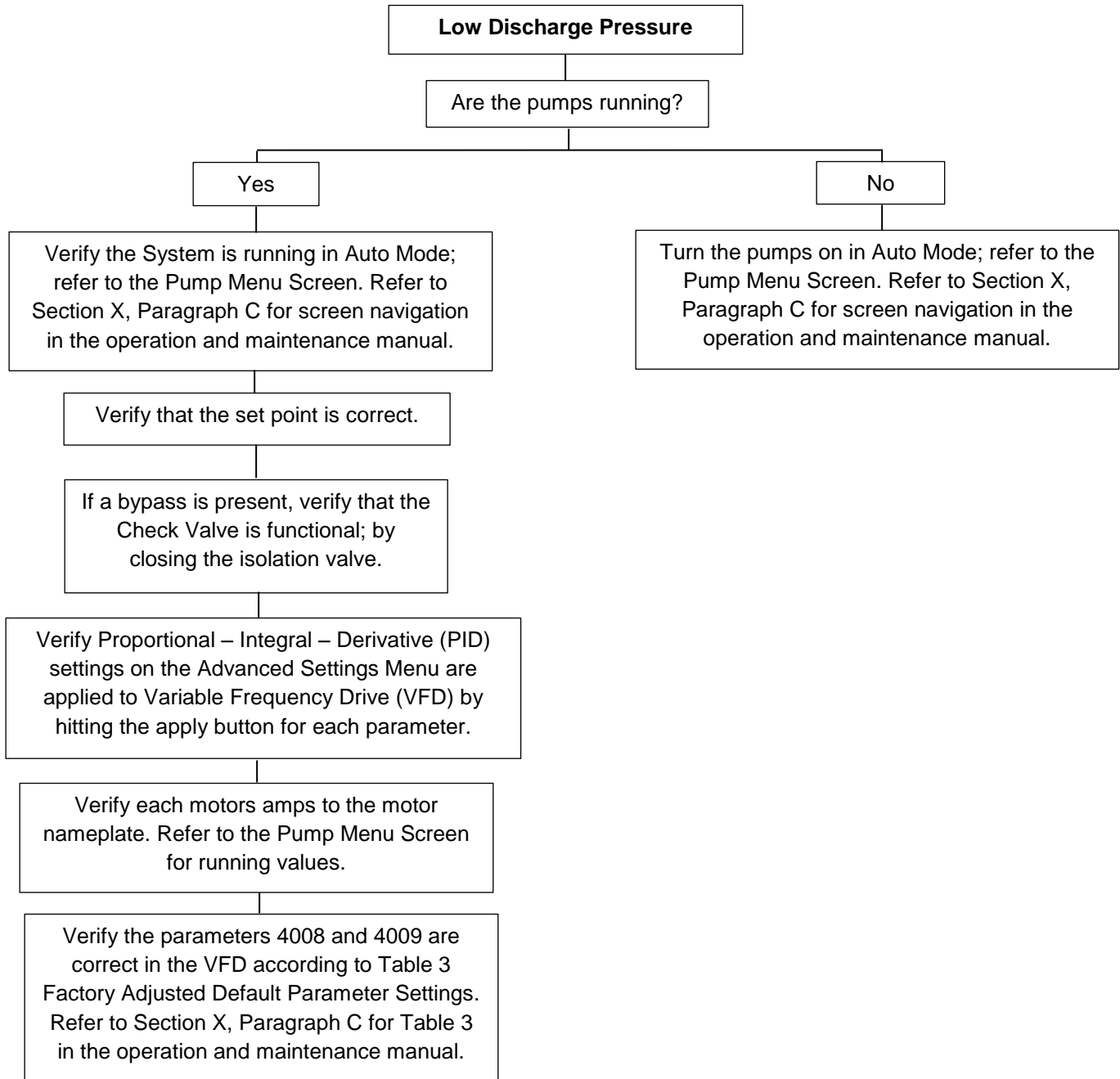
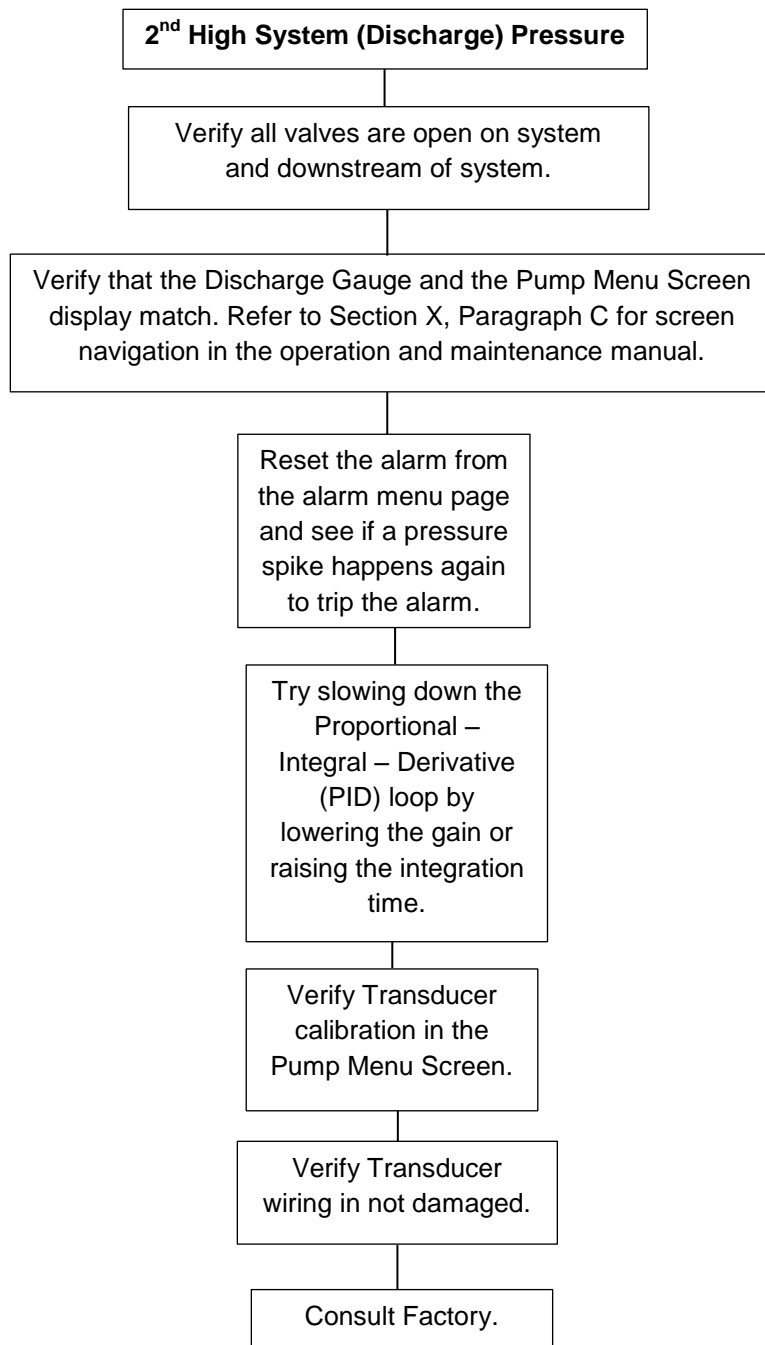
Table 2. Troubleshooting - Continued


Table 2. Troubleshooting - Continued



Note: This alarm is typically set 30psi over the setpoint.

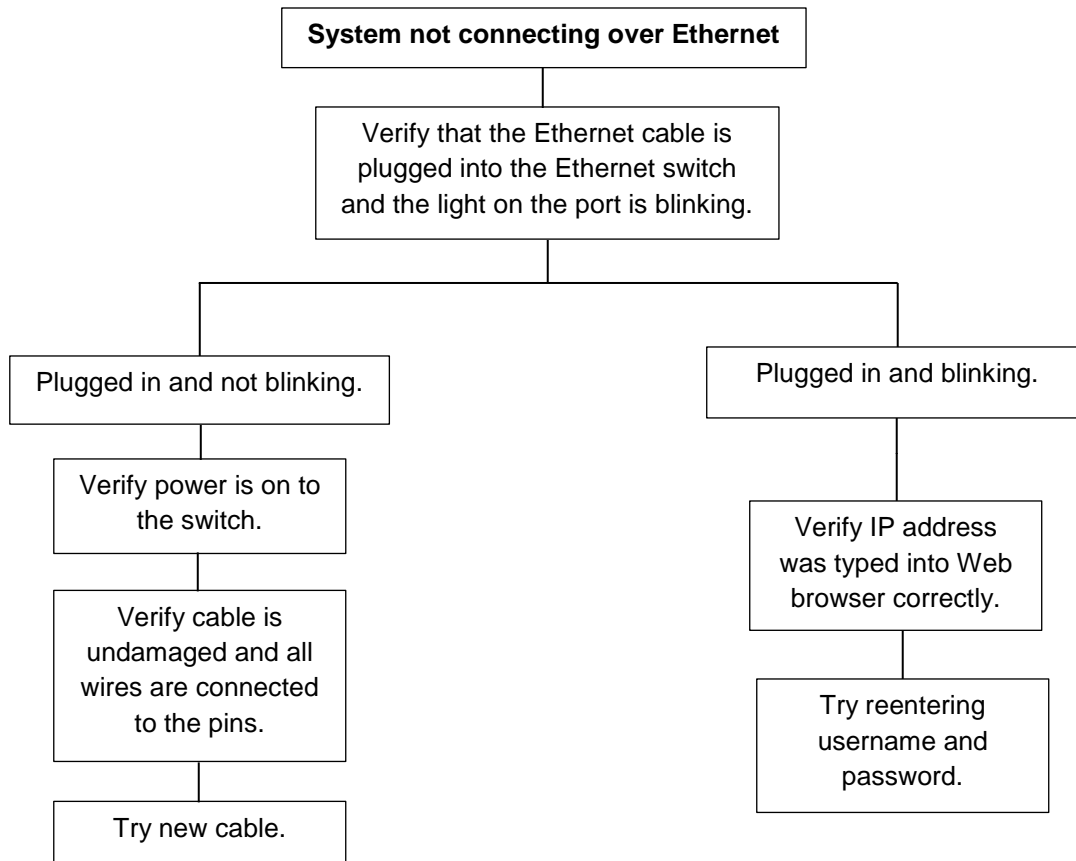
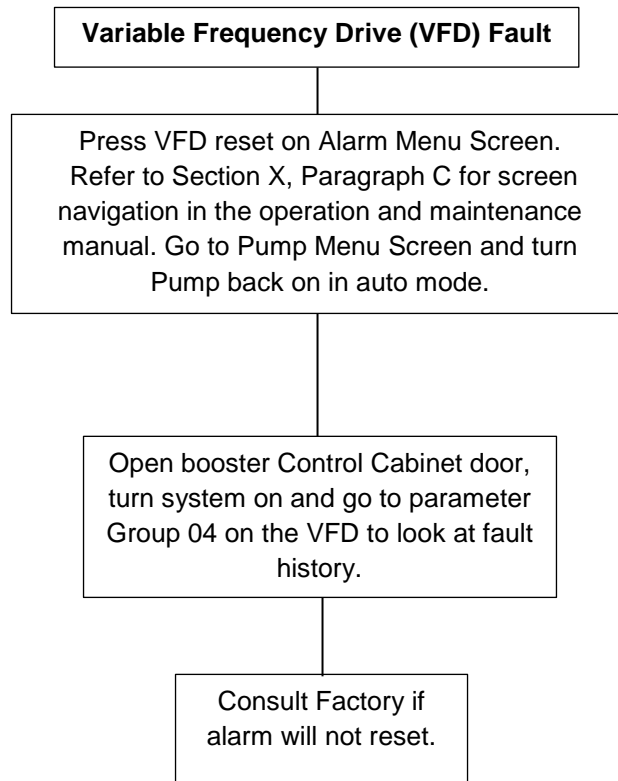
Table 2. Troubleshooting – Continued

Table 2. Troubleshooting – Continued



VI. ELECTRICAL WIRING AND CONTROL SETTINGS - FINAL CHECK LIST.



DANGER

Prevent electrical shocks. Inspect all electrical connections prior to powering the unit. Wiring connections must be made by a qualified electrician in accordance with all applicable codes, ordinances, and good practices. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.

- ___ 1. Does the feeder line voltage correspond to the unit voltage? Check the unit nameplate.
- ___ 2. Are the feeder wires correctly sized for the load?
- ___ 3. Are the breakers sized correctly and the correct style? The breakers should be the size and style per the wiring diagram provided with the booster system to maintain UL508A certification for cabinet.
- ___ 4. Is the unit properly grounded?



DANGER

Conduit grounds are not adequate. A separate ground wire must be attached to the ground lug provided in the enclosure to avoid potential safety hazards. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS PERSONAL INJURY, DEATH AND/OR PROPERTY DAMAGE.

- ___ 5. Have all the power terminals in the control panel been checked for tightness? This is imperative since stranded wires tend to become loose after initial installation.



DANGER

High Voltage! Do not work on live control panels. Turn off, lockout and tag "Out of Service" the incoming power prior to performing service on the booster system. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.

- ___ 6. Are all analog and digital inputs or outputs connected per the wiring diagram?

VII. SYSTEM PIPING AND UNIT INSTALLATION – FINAL CHECK LIST.

- ___ 1. Is the unit base properly leveled and secure?
- ___ 2. Are all lubrication points properly lubricated?
- ___ 3. Is the outer side of the thermal relief valve connected to the drain with tubing?
- ___ 4. Are the shut-off valves to the transmitters open?
- ___ 5. Are the shut-off valves on the pump suction and discharge open?
- ___ 6. Is the bypass valve, if used, closed? This valve may be left open if check valve is installed in series with it.
- ___ 7. Is the piping properly supported so as to prevent strains on the unit?



CAUTION

Seal damage may occur. Do not run pumps dry. Fill and vent the pump volute prior to operation. **FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DAMAGE TO THE PUMP AND VOID THE WARRANTY.**

- ___ 8. Is the system, including the pumps, purged of debris and air?
- ___ 9. Is the pump rotation correct?

VIII. PRE-START CHECKLIST



CAUTION

IMPORTANT SAFETY NOTICE

Installation, use and operating of pumping equipment are guided by various federal, state and local laws and the regulations concerning OSHA. Compliance with such laws relating to the proper installation and safe operation of the pumping equipment is the responsibility of the equipment owner. All necessary steps should be taken by the owner to assure compliance with such laws before operating the equipment.

- ___ 1. Refer to Sections I and IX for a complete list of safety precautions.
- ___ 2. Verify piping is connected correctly and that there are no leaks or pipe strain on the unit.



CAUTION

Prime Pumps before starting. Dry running may result in pump damage and **void the warranty.**

- ___ 3. Verify that all pump isolation valves are open. Remove vent plug from the top of Vertical Multistage pump casings. Ensure all air is purged from the unit. Install plug in casing after water comes from the casing vent.
- ___ 4. Verify that the tubing is connected to the gauges and transducers and has been purged of air. The discharge tubing can be disconnected to purge air and fill the system with water.



WARNING

Prevent electrical shocks. Inspect all electrical connections prior to powering the unit. When the pumps and motors are stopped, they should be considered live as long as its controller is energized.

- ___ 5. Visually verify the incoming electrical power is the correct voltage for the drives.
- ___ 6. Visually verify that all of the electrician's wires are secure and not loose.
- ___ 7. Verify the supplied Prestart Check List (included in your control panel) was filled out by the contractor.

IX. STARTUP CHECKLIST.

A. ELECTRICAL SAFETY:



DANGER

Prevent electrical shocks. Electrical connections must be made by a qualified electrician in accordance with all applicable codes, ordinances, and good practices. **FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.**

B. THERMAL SAFETY:



DANGER

Extreme Temperature Hazard. If pump, motor, or piping are operating at extremely high or low temperatures, guarding or insulation is required. **FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS PERSONAL INJURY, DEATH AND/OR PROPERTY DAMAGE.**

C. MECHANICAL SAFETY:



DANGER

Unexpected Startup Hazard. Disconnect and lockout power before servicing. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.

Excessive Pressure and Temperature Hazard. Do not operate pump(s) at or near zero flow (closed discharge valve). Explosion could result. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.



DANGER

Rotating Components Hazard. Do not operate the pump without all guards in place. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.

Excessive System Pressure Hazard. The maximum working pressure of the pump is listed on the nameplate. Do not exceed this pressure. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.

Excessive Pressure Hazard Volumetric Expansion. The heating of water and other fluids causes volumetric expansion. The associated forces may cause failure of system components and release of high temperature fluids. This will be prevented by installing properly sized and located compression tanks and pressure relief valves. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN DEATH OR PROPERTY DAMAGE.

D. STARTUP CHECKLIST:

- ___ 1. Complete Section XII and read these instructions completely before beginning.
- ___ 2. Confirm job site voltage. Do not apply power or close the disconnect until the following items are completed.



WARNING

Prevent electrical shocks. Inspect all electrical connections prior to powering the unit. When the pumps and motors are stopped, they should be considered live as long as its controller is energized.

- ___ 3. Check all power wiring connections and secure as required.
- ___ 4. Inspect and/or install any customer remote termination required.
- ___ 5. Make note of the design data supplied on the DPC data label (inside of the control panel door).
- ___ 6. Use a volt meter to measure phase to phase voltage on the entering power terminals at the disconnect.
- ___ 7. Compare available voltage to the nameplate.
- ___ 8. Install bladder storage tank, if provided.
 - ___ a. Precharge the bladder storage tank before filling with water. The air precharged should be between system setpoint (system discharge pressure) and call pressure.
 - ___ b. If the storage tank has already been installed and not precharged, disconnect system piping from the tank and equalized to atmospheric pressure, if an isolation valve and drain are provided, use them.
 - ___ c. Apply air pressure to bladder through the AIC charging valve and pressurize to field conditions.
- ___ 9. Reconnect to the system piping.
- ___ 10. Check for available suction water.



CAUTION

Prime Pumps before starting. Dry running may result in pump damage and **void the warranty**.

- ___ 11. Open all supply and discharge valves.
- ___ 12. Close bypass valve if installed in the piping by others.
- ___ 13. Open ball valves feeding the tubing.
- ___ 14. Ensure that the plastic tubing is not touching any metal surface. Protect tubing with insulation to prevent abrasion where it may be touching metal.

- ___ 15. Use the system pressure gauges and/or gauge tubing on the manifolds to prove available water for suction. Open a faucet to create a demand for water on the system pressure piping.

CAUTION

Booster System will start to fill building 45 seconds after applying power unless the stop countdown button on the touchscreen is pressed. Failure to stop the countdown may result in water hammer damage.

- ___ 16. Power up the system.
___ 17. Stop count down.

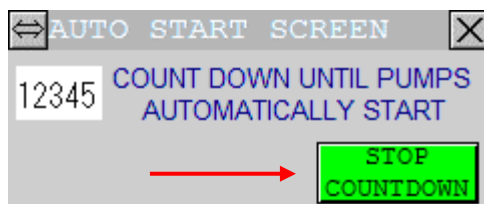


Figure 3. Auto Start Screen

- ___ 18. Place Pump 1 in hand mode at 30 hz.
___ 19. Press the start button for Pump 1.
___ 20. Open fixtures on top floor to release air as the building fills.
___ 21. Fill the building slowly gradually as to not induce water hammers.
___ 22. Observe system for any leaks, if any leaks are present on the booster system piping, or equipment call the factory for instructions.
___ 23. When building has stabilized and water is coming out of the top fixtures, turn off the pump, place it back in Auto mode and turn all the pumps back on.

X. OPERATION.

A. PUMP OPERATION. The pumps can be controlled manually or automatically, see the following:

1. **Manual Pump Operation.** To manually control the booster system. The hand button is pressed and a frequency is entered. While operating in this mode the VFD ignores analog inputs and alarms.
2. **Automatic Pump Operation.** To automatically control the booster system. The auto button is pressed and the desired setpoint entered from the factory is followed. The VFD uses the analog inputs to enter a PID mode to maintain a desired setpoint.

B. STATUS SCREENS. The status screens are the main level screens that don't require a password to access. They are accessed by pressing the button "pump menu", selecting a pump and then pressing the pump info button.

1. Output Frequency.
2. Output Current.
3. Output Volts.
4. Output KW.
5. Current internal VFD Temperature
6. VFD Run Hours

C. SCREEN NAVIGATION. The following figures explain the screens and help with screen navigation. See Table 3 for factory adjusted default parameter settings.

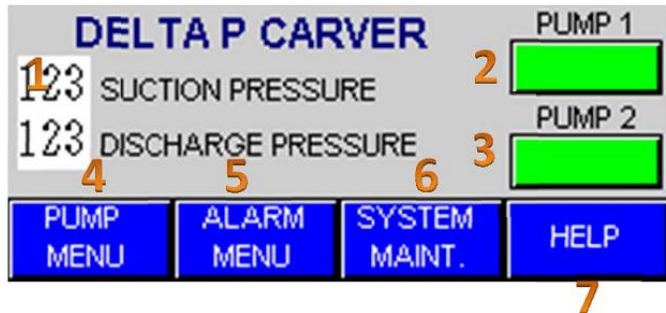


Figure 4. Main Menu/Home Screen

1. **Pressure Read Out.** Displays the current suction and discharge pressure measured by the pressure transducers.
2. **Pump 1 Status Indicator.** Displays the status of pump 1 (Running, Standby, Stopped or Faulted), Figure 6.
3. **Pump 2 Status Indicator.** Displays the status of pump 2 (Running, Standby, Stopped or Faulted), Figure 7.
4. **Pump Menu.** Displays the "Pump Menu Screen", Figure 5.
5. **Alarm Menu.** Displays "Alarm Menu", Figure 11.
6. **Setting Menu.** Displays "Password Screen", Figure 15, to gain access to PLC and VFD settings.
7. **Help Menu.** Displays contact information, Figure 26.

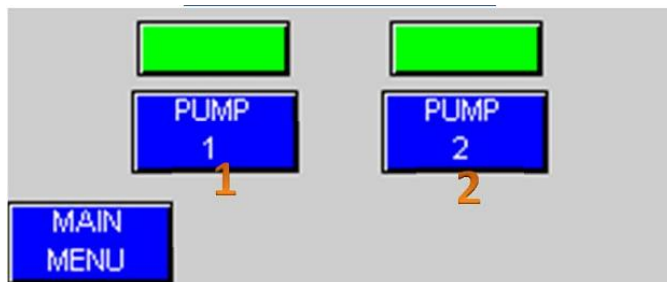


Figure 5. Pump Menu Screen

1. **Pump 1 Menu.** Jumps to "Pump 1 Menu", Figure 6.
2. **Pump2 Menu.** Jumps to "Pump 2 Menu", Figure 7.

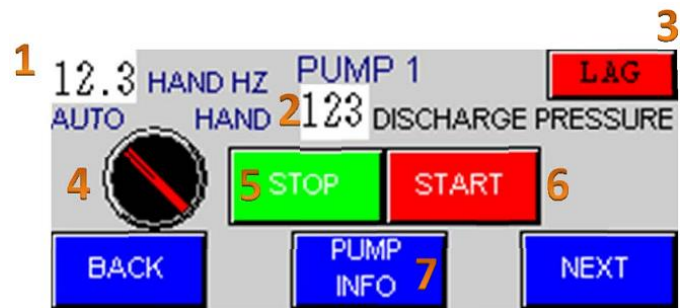


Figure 6. Pump 1 Menu Screen

1. **Hand Hz Setting.** The frequency at which the VFD will run when in "Hand Mode". To change simply touch the number, a keypad will pop up. Enter the desired frequency between 0-60.0Hz and press enter.
2. **Discharge Pressure Read Out.** Displays the current discharge pressure read by the pressure transducer.
3. **Pump Status.** Displays the operating state of the pump, whether the drive is currently in lead or lag mode.
4. **Hand or Auto Selector Switch.** Selects the operating mode for the pump.
 - a. **Auto Mode.** The VFD uses the pressure transducer and PID of the VFD to maintain a constant set pressure.
 - b. **Hand Mode.** The VFD runs at a constant speed set by the "Hand Hz" display in the top left corner of the screen.
5. **Pump Stop Button.** Stop the pump.
6. **Pump Start Button.** Starts the pump.
7. **Pump Info.** Display the current running data of the pump, Figure 8.

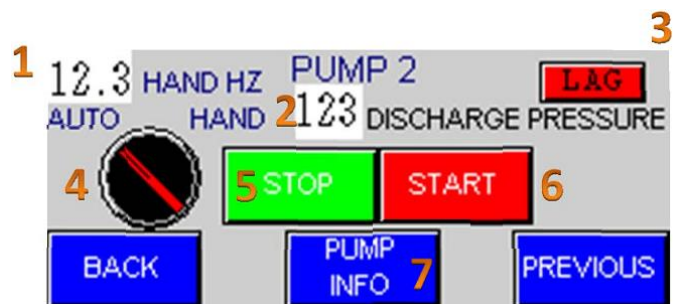


Figure 7. Pump 2 Menu Screen

1. See Figure 6, Pump 1 Menu, for descriptions.

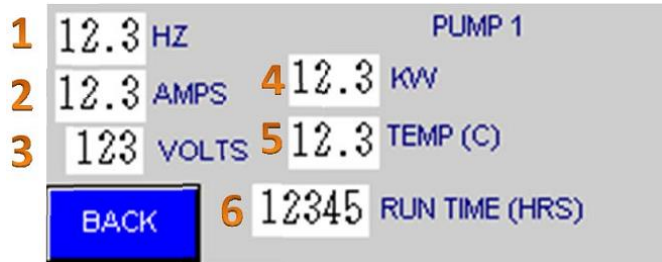


Figure 8. Pump 1 Current Operating Values Screen

1. **Pump 1 Current Hz.** Displays the current operating frequency of Pump 1.
2. **Pump 1 Current Amp Draw.** Displays the current amp draw of Pump 1.
3. **Pump 1 Current Voltage Usage.** Displays the current voltage supplied to Pump 1.
4. **Pump 1 Current Kilowatt Usage.** Displays the current kilowatt draw of Pump 1.
5. **Pump 1 VFD Current Temperature.** Displays the current internal temperature of VFD 1.
6. **Pump 1 VFD Current Run Hours.** Displays the cumulative run hours of Pump 1.

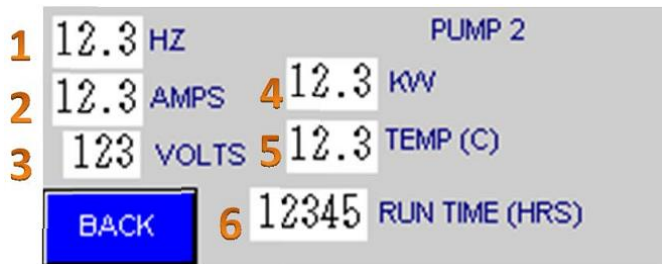


Figure 9. Pump 2 Current Operating Values Screen

1. See Figure 8, Pump 1 Current Operating Values, for descriptions.

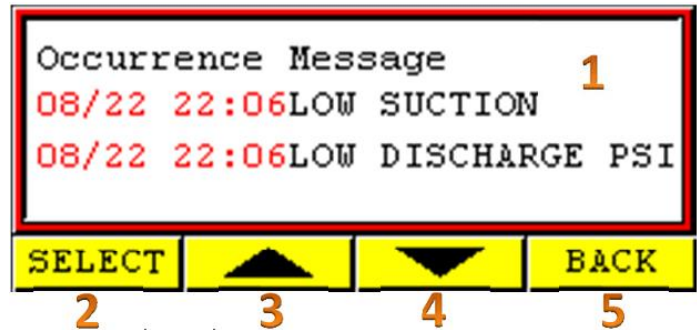


Figure 10. Alarm Log Screen

1. **Alarm Log.** Displays the most recent alarms. The most current is at the top of the list. The date, time, and alarm are displayed.
2. **Select Button.** Enters the alarm log box and highlights the most recent alarm.
3. **Scroll Up.** Once entered into the alarm log, allows the user to scroll the list of alarms.
4. **Scroll Down.** Once entered into the alarm log, allows the user to scroll the list of alarms.
5. **Back.** Returns to the "Alarm Menu", Figure 11.

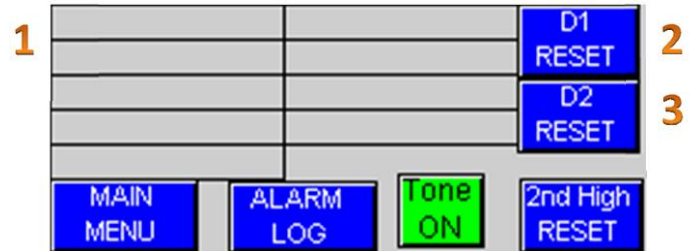


Figure 11. Alarm Menu Screen

1. **Displays Current Alarm Situations.** Displays current active alarm.
2. **Pump 1 VFD Reset.** Resets VFD 1, if faulted.
3. **Pump 2 VFD Reset.** Resets VFD 2, if faulted.



Figure 12. General Setting Screen

1. **Transducer Calibration Menu.** Displays the transducer calibration screen, Figure 13.
2. **Pressure Setpoint Menu.** Displays the setpoint menu screen, Figure 14.
3. **Pump Max Run Timer Menu.** Displays the max run time adjustment screen, Figure 18.

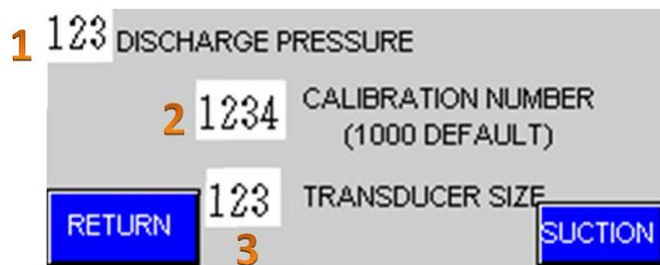


Figure 13. Transducer Calibration Screen

1. **Discharge Pressure Read Out.** Displays the current discharge pressure measured by the pressure transducer.
2. **Screen/Gauge Calibration Number.** Number typically 1000 that scales the transducer reading display by the PLC. Adjust the number up or down until it matches the gauge display at the bottom left of the cabinet.
3. **Discharge Pressure Transducer Size.** Scales the input of the pressure transducer to the range of the transducer.



Figure 14. Setpoint Menu Screen

1. **Booster Pump System Pressure Setpoint.** Displays the current setpoint that the VFD's are maintaining when in auto mode.
 - a. To change, touch the number, a keypad will pop up, enter the new desired setpoint and press enter. This writes the new setpoint to the PLC but not the drives. To make the drives follow the new setpoint apply setpoint button must be pressed.
 - b. Changing the setpoint automatically changes the call value, reset, high system and low suction values.
2. **Apply New Setpoint Button.** Applies the changed setpoint to the drives so that the new setpoint will be maintained.
3. **Pressure to Call Pump System On.** Displays call value.
4. **Pressure to Reset the Call Request.** Displays the call reset value.
5. **High Pressure Alarm Setpoint.** Displays the high system value that will trigger the alarm.
6. **Low Suction Alarm Setpoint.** Displays the low suction value that will trigger the low suction alarm.



Figure 15. Password Enter Screen

1. **Setting Menu Password Screen.** Touch the white box to bring up the keypad, type the 4 digit code and press enter to gain access to the various settings menus.

**CAUTION**

Changing settings beyond this point could damage your booster system and should only be done by a trained representative of Delta P Carver or by direction of a Delta P Carver representative.



Figure 16. Advanced Settings Screen

1. **Sleep Settings Menu.** Displays the automated sleep setting options, Figure 22.
2. **Pressure Setting Menu.** Displays the pressure settings shown in the call point menu, Figure 17.
3. **Timers Menu.** Displays the various adjustable timer adjustments, Figures 19 and 20.

NOTE

PID adjustment should only be made by factory trained and certified personnel.

4. **PID Loop Adjustment Menu.** Displays the PID loop menu screen.
5. **Lag Pump Menu.** Displays the lag call and off menu screen, Figure 21.

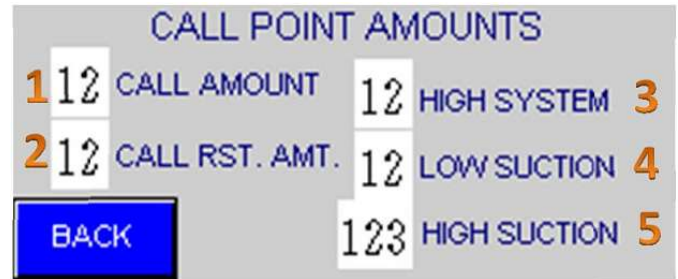


Figure 17. Call Points Menu Screen

1. **Pressure Drop to Call Pump Station On.** Pressure subtracted from the setpoint at which lead VFD will turn on or wakeup.
2. **Pressure Difference to Reset Pump Call.** The pressure subtracted from the setpoint at which the pump call is reset. This means that if the shutoff pressure isn't reached and the maximum run time expires, the pump will shut down until the pressure falls below the call amount.
3. **Pressure Rise before High System Alarm.** Pressure added to the setpoint that will signal a high pressure alarm.
4. **Pressure Drop before Low Suction Alarm.** Pressure at which low suction alarm will be triggered.
5. **High Suction Alarm.** Pressure at which high suction alarm will be triggered.

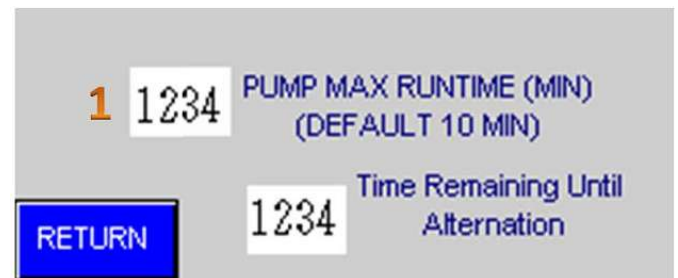


Figure 18. Max Run Time Adjustment Screen

1. Lead pump maximum run time before alternation.

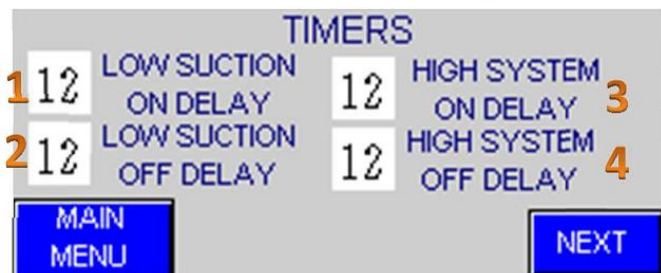


Figure 19. Timer Adjustments Screen

1. **Delay Timer before Low Suction Alarm.** The time that the pressure must be below the low suction value before the low suction alarm will trip.
2. **Delay Timer before Low Suction Alarm Reset.** The time the pressure must be above the low suction amount before the low suction alarm will automatically reset.
3. **Delay Timer before High System Alarm.** The time the pressure must be above the high system amount before the high system alarm will trip.
4. **Delay Timer before High System Alarm Reset.** The time the pressure must be below the high system amount before the high system alarm will automatically reset.

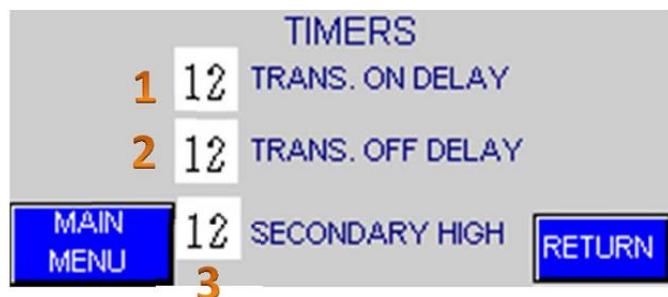


Figure 20. Timer Adjustments Screen Continued

1. **Delay Timer before Transducer Fail Alarm.** The timer that the transducer must read zero before the transducer alarm is tripped.
2. **Delay Timer before Transducer Fail Alarm Reset.** The timer that the transducer must be giving a signal before the tripped alarm clears.
3. **Delay Timer before High System Cut Out Faults the Drives.** The time that the secondary high mechanical switch must be tripped before the alarm shows tripped on the touch screen. The switch is 30 PSI above the setpoint from the factory and requires a manual rest from the system operator.

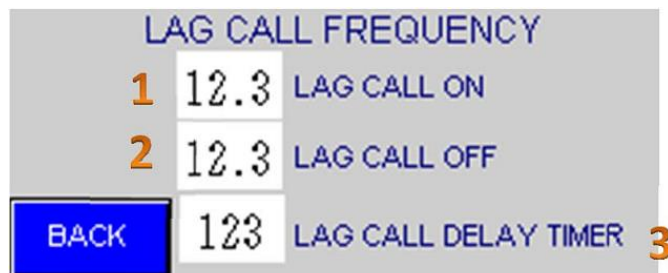


Figure 21. Lag Pump Call Settings Screen

1. **Delay Frequency before Lag Pump Starts.** Frequency of lead pump at which lag pump stages on.
2. **Delay Frequency before Lag Pump Shuts Off.** Frequency of lead pump at which lag pump stages off.
3. **Delay Timer before Lag Pump Starts.** Time that must elapse before lag pump stages on.

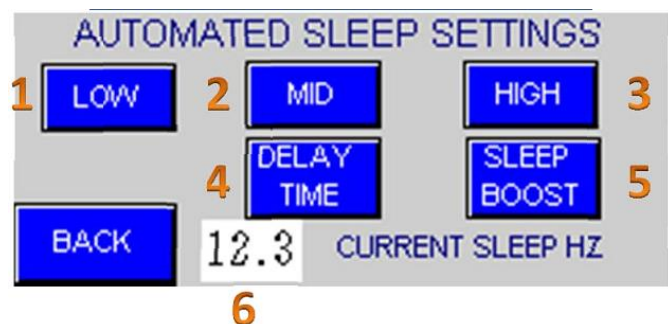


Figure 22. Pump Sleep Adjustments Screen

1. **Low point Menu for Automatic Sleep Adjustment.** Low sleep level adjustment, Figure 23.
2. **Middle Point Menu for Automatic Sleep Adjustment.** Middle sleep level adjustment similar to Figure 23.
3. **High Point Menu for Automatic Sleep Adjustment.** High sleep level adjustment similar to Figure 23.
4. **Sleep Delay Time Menu.** Menu to determine length of time before pump sleeps, Figure 24.
5. **Sleep Boost Settings.** Sleep boost settings menu, Figure 25.
6. Display the current sleep frequency.

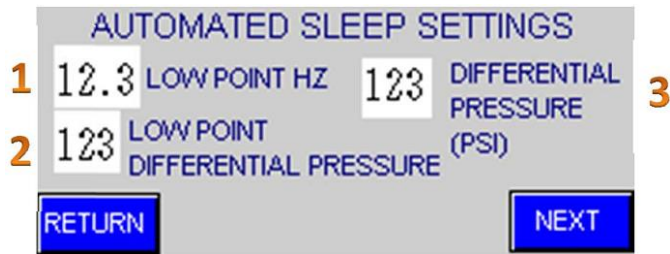


Figure 23. Low Point Automated Sleep Settings Screen

1. **Low Point Frequency.** Frequency at which differential pressure was recorded for automatic sleep.
2. **Differential Pressure at Low Point Frequency.** Differential pressure that was recorded at low point frequency while pump was deadheaded.
3. Current differential pressure between discharge and suction gauge.



Figure 24. Sleep Delay Timer Screen

1. **Time Display.** Length of time the pump has to run below the sleep frequency before it will shut down. Helps prevent short cycling of the pump. Typically set at the factory for 30 seconds.
2. **Apply Settings Button.** Writes the delay time to the drives.



Figure 25. Tank Boost Settings Screen

1. **Sleep Boost Level.** Percentage of setpoint that the drive adds to the setpoint just before going to sleep to charge the bladder tank.
2. **Boost Time.** Duration of run time at booster pressure before going to sleep.



Figure 26. Help Screen

1. Delta P Carver factory phone number.

Table 3. Factory Adjusted Default Parameter Settings

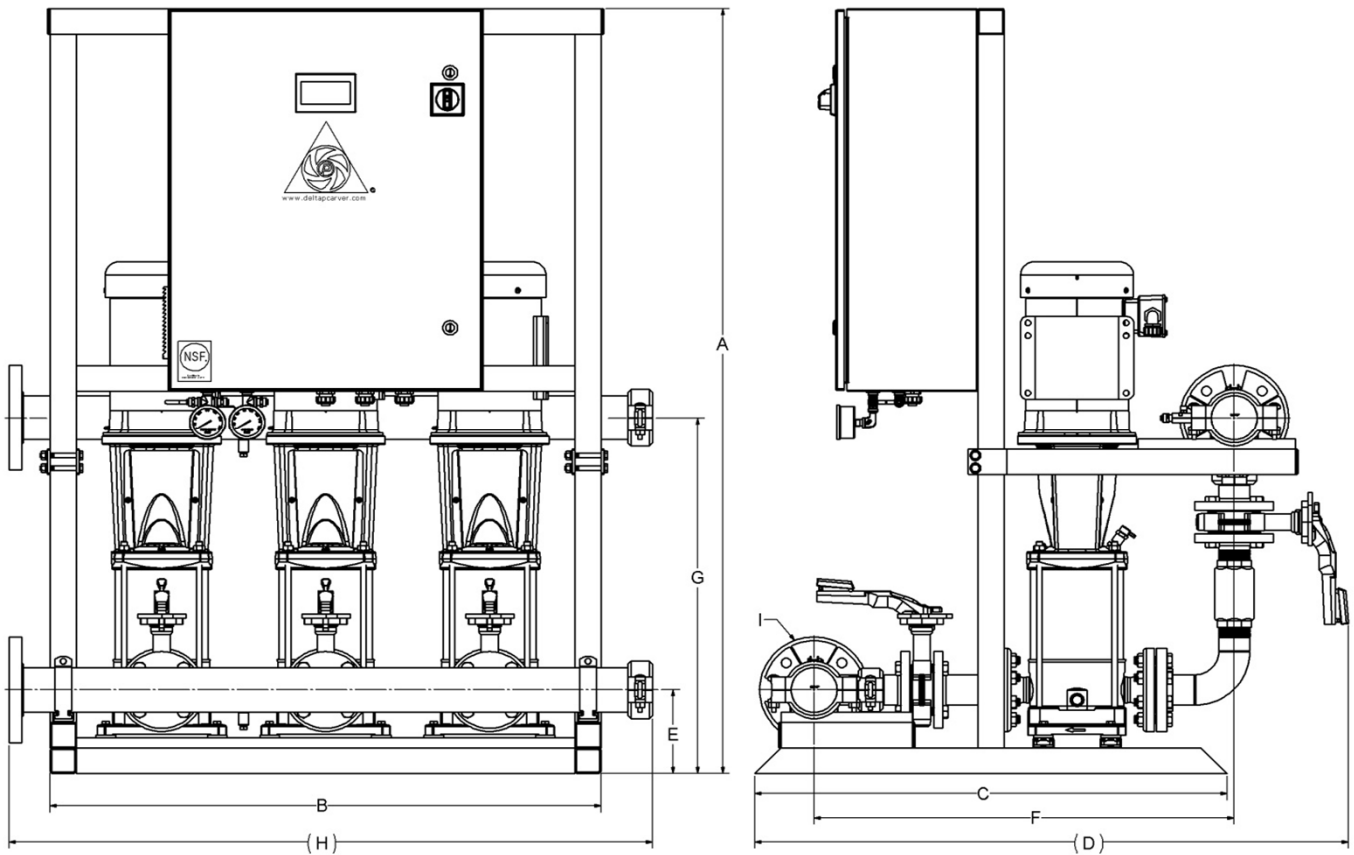
Parameter	Parameter Description	Drive Setting	Parameter	Parameter Description	Drive Setting
1001	EXT1 COMMANDS	COMM	4006	UNITS	PSI (25)
1002	EXT2 COMMANDS	COMM	4007	UNIT SCALE	0
1102	EXT1/EXT2 SELECT	MODE DEPENDENT	4009	100% VALUE	TRANSDUCER SIZE
1103	REF 1 SELECT	COMM	4010	SETPOINT SEL	INTERNAL
1304	MINIMUM A12	0	4011	INTERNAL SETPOINT	SYSTEM DEPENDENT
1401	RELAY OUTPUT 1	FAULT	4022	SLEEP SELECTION	INTERNAL
1601	RUN ENABLE	COMM	4023	PID SLEEP LEVEL	SYSTEM DEPENDENT
1604	FAULT RESET	COMM	4024	PID SLEEP DELAY	30
1608	START ENABLE	NOT SELECTED	4025	WAKE-UP DEV	5
1611	PARAMETER VIEW	LONG VIEW	4028	PID OUT MIN	0
2003	MAX CURRENT	MTR DEPENDENT	4029	PID OUT MAX	110
2007	MIN FREQUENCY	25-30Hz	4030	SLEEP BOOST TIME	SYSTEM DEPENDENT
2008	MAX FREQUENCY	MTR DEPENDENT	4031	SLEEP BOSS STEP	SYSTEM DEPENDENT
3019	COMM FAULT TIME	3	5302	EFB STATION ID	DRIVE DEPENDENT 1-3
3101	NR OF TRIALS	3	5303	EFB BAUD RATE	57.6K
3104	AR OVERCURRENT	ENABLE	5304	EFB PAITY	8 NONE 1
3105	AR OVERVOLTAGE	ENABLE	5305	EFB CTRL PROFILE	ABB DRV LIM
3106	AR UNDERVOLTAGE	ENABLE	9802	COMM PROT SEL	STD MODBUS
3408	SIGNAL 2 PARAM	PID 1 SETPOINT (128)	9902	APPLIC MACRO	PID CONTROL
3415	SIGNAL 2 PARAM	PID 1 FBK (130)	9906	MOTOR NOM CURR	MOTOR DEPENDENT
4001	GAIN	2	9908	MOTOR NOM SPEED	MOTOR DEPENDENT
4002	INTEGRATION TIME	1			

(#) Parameter selection value

Change highlighted parameter first if needed changed because it sets all others back to factory default.

DOMESTIC BOOSTER PUMP

DeltaPak Multistage Triplex Standard Dimensions



Pump Size	PUMP DIMENSIONS								
	A	B	C	D	E	F	G	H	I
EVMSU10-1									
EVMSU10-2									
EVMSU10-3									
EVMSU10-4									
EVMSU10-5									
EVMSU10-6									
EVMSU10-7									
EVMSU10-8	60	42	36	45	6 1/2	32	28 1/4	49	3
EVMSU10-9									
EVMSU10-10									
EVMSU10-11									
EVMSU10-12									
EVMSU10-14									
EVMSU10-15									
EVMSU10-16									
EVMSU15-1									
EVMSU15-2									
EVMSU15-3									
EVMSU15-4									
EVMSU15-5									
EVMSU15-6	60	42	36	45	6 1/2	32	28 1/4	49	3
EVMSU15-7									
EVMSU15-8									
EVMSU15-9									
EVMSU15-10									
EVMSU15-11									
EVMSU15-12									
EVMSU20-1									
EVMSU20-2									
EVMSU20-3									
EVMSU20-4									
EVMSU20-5	60	42	36	45	6 1/2	32	28 1/4	49	3
EVMSU20-6									
EVMSU20-7									
EVMSU20-8									
EVMSU20-9									
EVMSU20-10									



DeltaP Carver
We Put the PSI in Water Systems

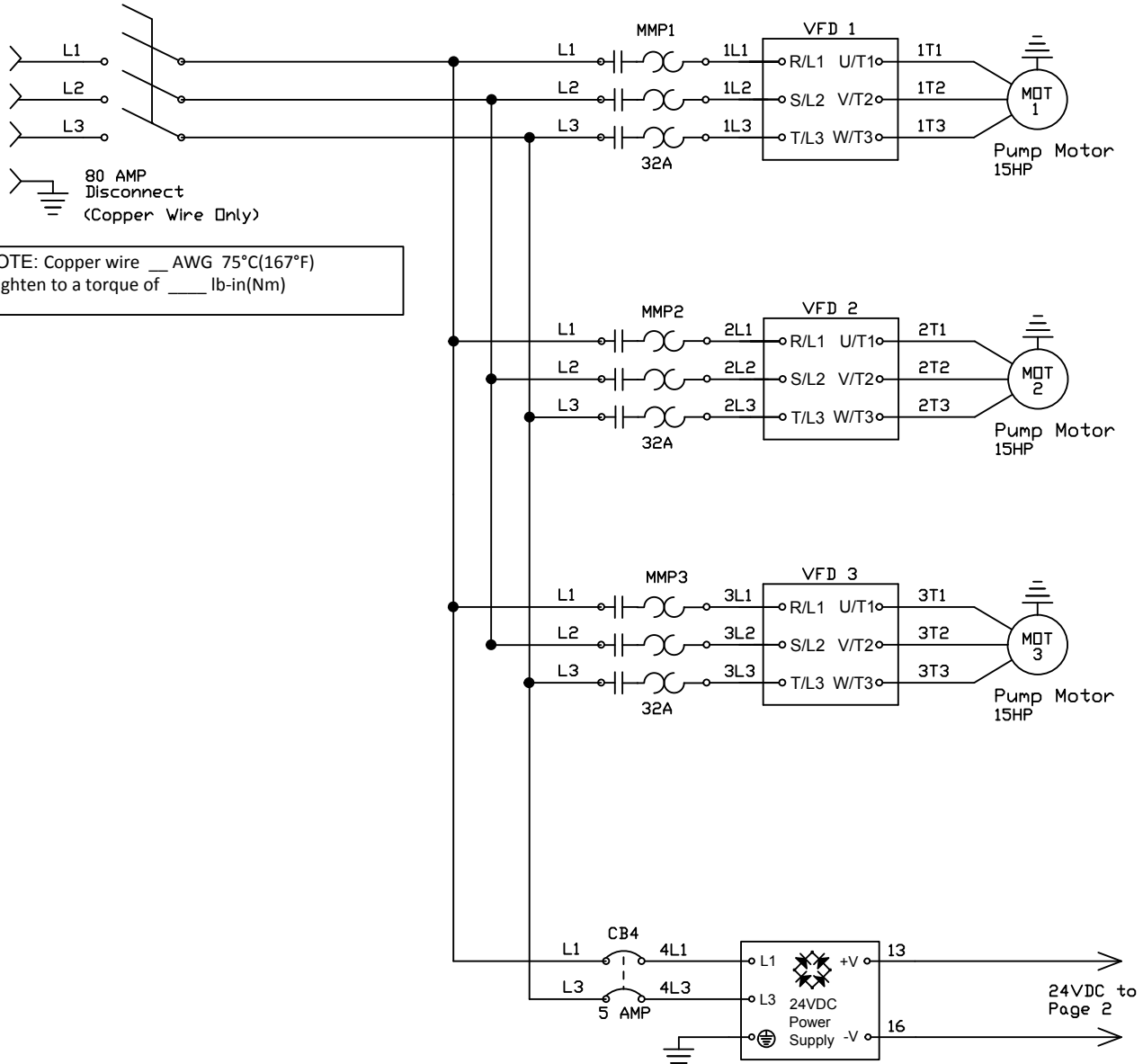
DIMENSIONS ARE APPROXIMATE
DIMENSIONS ARE NOT FOR CONSTRUCTION

DP-EVMSU10-15-20-MS-3
Rev: 0 11-14-2016

DOMESTIC BOOSTER PUMP

NOTE: Customer to supply and install branch circuit overcurrent protection with an inverse time circuit breaker for:

460 VOLT **80 AMP MAX**
3 PHASE
60 HERTZ



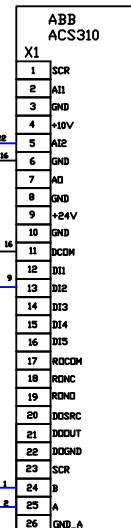
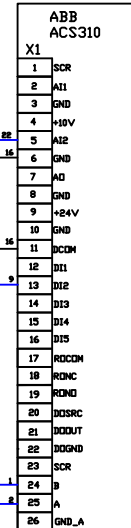
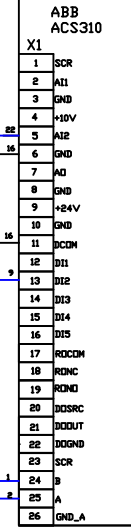
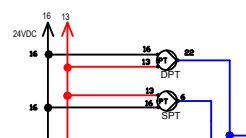
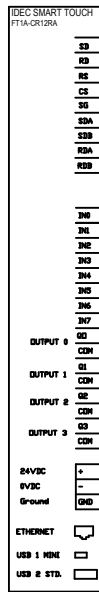
Delta P Carver, Inc.
14 Sunshine Blvd.
Ormond Beach
Florida 32174
Ph: 1-386-236-0950
Fax: 1-386-236-0955

DELTA P CARVER, INC.

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DATE: 01/02/2017	SHEET NO: 1 OF 2
DRAWN BY: MRM	JOB NO: TBD
DWG NO: E12-DA3A-080-032-001	
JOB NAME: 15HP 460V TRIPLEX (STANDARD)	

DOMESTIC BOOSTER PUMP



- WIRE COLOR LEGEND
- 1 - BROWN
 - 2 - BLUE
 - 6 - YELLOW
 - 9 - ORANGE
 - 22 - WHITE
 - 13 - RED
 - 16 - BLACK
 - ⊕ - GREEN

- LEGEND
- CS- CUSTOMER SUPPLIED WIRE FOR TERMINATION
 - SPT- SUCTION PRESSURE TRANSDUCER
 - DPT - DISCHARGE PRESSURE TRANSDUCER
 - TD - DISCHARGE TEMPERATURE PROBE
 - FM - FLOAT METER
 - +24v DC
 - NEUTRAL
 - GROUND
 - SIGNAL
 - JUMPERS WIRES
 - ETHERNET WIRE
 - RUN COMMAND

WARRANTY

- 1. DELIVERY TITLE AND RISK:** Unless otherwise specified in Manufacturer's order acknowledgement: (a) the Products shall be deemed to be delivered to the Customer when delivered to the carrier at Manufacturer's facilities; and (b) the Customer shall assume all risk of loss with respect to such Products from and after the time of such delivery including, without limitation, all risk of loss while the Products are in transit. The Customer is deemed to have accepted the Products unless written notice of rejection is given within seven days of discovery of any defect or reason for rejection, and the Customer waives any right to revoke acceptance thereafter. Such loss is not covered under warranty.
- 2. FORCE MAJEURE:** If Manufacturer's performance of its obligations under the order is delayed or made impossible or commercially impracticable due to any cause beyond Manufacturer's reasonable control (including, without limitation, acts of God, labor disputes, compliance with government regulations, equipment failure, shortages or difficulties in transportation, inability to obtain necessary labor or raw materials, or defects or delays in the performance of Manufacturer's suppliers or subcontractors), Manufacturer shall have such additional time within which to fulfill the order as may be reasonably necessary under the circumstances. Furthermore, if Manufacturer is unable to produce sufficient Products to meet all demands of its customers, Manufacturer shall have the right to allocate production among its customers and plants in any manner which Manufacturer may, in its sole discretion, deem equitable.
- 3. PAYMENT:** Unless otherwise expressly provided on the Manufacturer's order acknowledgement, the Customer shall make payment of the purchase price for the Products in full to Manufacturer within 30 days from the date of Manufacturer's invoice for the Products. Failure to make timely payment will relieve Manufacturer of any Warranty responsibilities.
- 4. WARRANTY AND DISCLAIMER:** Subject to all of the provisions set forth in this paragraph, Manufacturer warrants that their Products will be free from defects in materials and workmanship for a period of 36 months from the date of startup or 42 months after date of shipment from Manufacturer, whichever occurs first. If any payment is not made by Customer when due, Manufacturer warrants that it has good title to the Products and the Products are otherwise sold "as is" with all faults. **The express warranties set forth in this paragraph are exclusive and in lieu of all other warranties, conditions and terms as to quality or fitness of the Products, written, oral or implied, statutory or otherwise, including, without limitation, any warranties or conditions of merchantability or fitness for a particular purpose, and all such other warranties, conditions and terms are hereby disclaimed and excluded by Manufacturer.** The express warranties contained in this paragraph do not apply to any Products: (a) that have not been properly installed, operated or maintained in conformity with specifications furnished by Manufacturer or with any instructions for the installation, operation and maintenance of the Products; (b) which have been misused or modified, altered, repaired or replaced without the prior express written consent of Manufacturer; or (c) which are damaged by dry operation, explosion, erosion or corrosion. The term of any express warranty set forth herein shall not be extended because of the replacement or repair of defective Products hereunder.
- 5. EXCLUSIVE REMEDIES:** If any Products furnished under the Agreement are defective or otherwise fail to conform to the Agreement, Manufacturer shall, at its option, either: (a) repair, replace such defective or non-conforming Products FOB Manufacturer's facilities, or any other facility designated by Manufacturer; or (b) repay or credit the purchase price paid for such Product to the Customer. The Customer shall not return any such non-conforming or defective Products to Manufacturer or incur any shipping or other charges in respect of such Products without Manufacturer's prior written consent. Repair, replacement of or repayment or credit for such non-conforming or defective Products shall be the Customer's exclusive remedy for and shall constitute satisfaction of any and all liabilities of Manufacturer with respect to any non-conformance of or defect whatsoever in the Products (including any liability for direct, indirect, special, incidental or consequential damages), whether in warranty, contract, tort, negligence, strict liability or otherwise.

**WARRANTY - Continued**

6. **LIMITATION OF LIABILITY:** In no event shall Manufacturer be liable for any special, direct, indirect, incidental or consequential damages (including, without limitation, personal injury, property damage, loss of profits or loss of anticipated business, cost of substitute products, downtime costs, delays, or claims of customers of the Representative or other third parties for such or other damages) whether based in warranty, contract, tort, negligence, strict liability or otherwise. In no event shall Manufacturer's liability exceed the purchase price allocable to the Products giving rise to the Purchaser's claim.
7. **LIMITATION OF ACTIONS:** No suit or claim based on any cause of action, regardless of form, arising out of, or in any way connected with the Agreement or the Products furnished to the Customer, may be brought by the Customer or any party claiming through the Purchaser more than one year after the date that such cause of action accrued.
8. **ACCEPTANCE OF ORDERS:** Salespersons or other representatives of Manufacturer are only authorized to solicit orders from prospective buyers and have no authority to accept orders on behalf of Manufacturer. Orders may only be accepted by an authorized representative at Manufacturer's facilities.
9. **TECHNICAL ADVICE:** Unless otherwise expressly provided in an agreement signed by both Manufacturer and Purchaser, any technical advice offered or given by Manufacturer in connection with the installation, maintenance or use of any Products will be as an accommodation to Customer and without charge without any warranties, express or implied; Manufacturer shall have no responsibilities or liabilities whatsoever for the content or use of such advice.



Delta P Carver

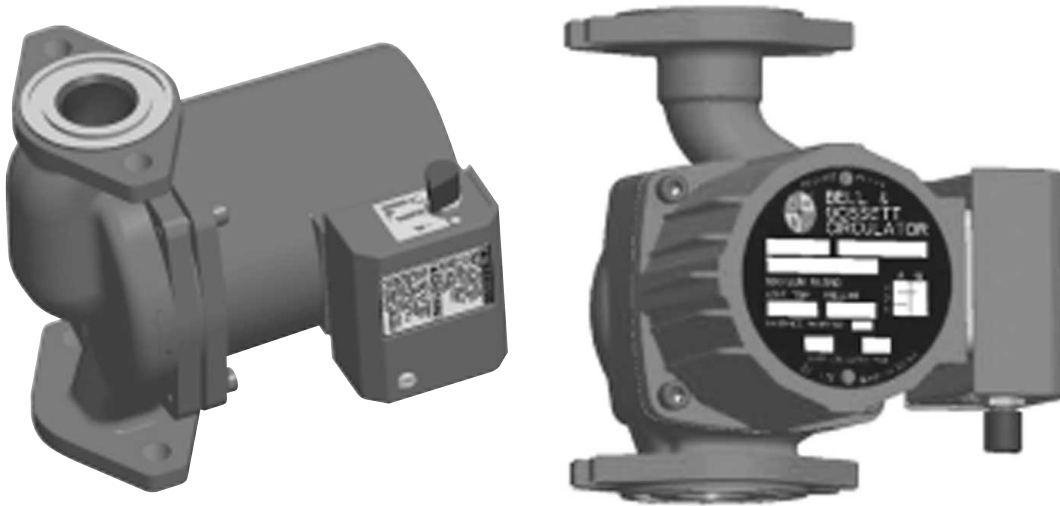
Creating Value.

14 Sunshine Blvd, Ormond Beach, FL. 32174

Phone: 386-236-0950 **Fax:** 386-236-0955

Website: DeltaPCarver.com

Email: sales@deltapcarver.com



NRF™-25,36,45/ NBF™-25,36, and 45 Circulator



Bell & Gossett
a xylem brand

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Introduction and Safety

Introduction

Purpose of this manual

The purpose of this manual is to provide necessary information for:

- Installation
- Operation
- Maintenance



CAUTION:

Read this manual carefully before installing and using the product. Improper use of the product can cause personal injury and damage to property, and may void the warranty.

NOTICE:

Save this manual for future reference, and keep it readily available at the location of the unit.

Requesting other information

Special versions can be supplied with supplementary instruction leaflets. See the sales contract for any modifications or special version characteristics. For instructions, situations, or events that are not considered in this manual or in the sales documents, please contact the nearest Xylem representative.

Always specify the exact product type and identification code when requesting technical information or spare parts.

Safety



WARNING:

- The operator must be aware of safety precautions to prevent physical injury.
 - Any pressure-containing device can explode, rupture, or discharge its contents if it is over-pressurized. Take all necessary measures to avoid over-pressurization.
 - Operating, installing, or maintaining the unit in any way that is not covered in this manual could cause death, serious personal injury, or damage to the equipment. This includes any modification to the equipment or use of parts not provided by Xylem. If there is a question regarding the intended use of the equipment, please contact a Xylem representative before proceeding.
 - Do not change the service application without the approval of an authorized Xylem representative.
-



CAUTION:

You must observe the instructions contained in this manual. Failure to do so could result in physical injury, damage, or delays.




Safety terminology and symbols

About safety messages

It is extremely important that you read, understand, and follow the safety messages and regulations carefully before handling the product. They are published to help prevent these hazards:

- Personal accidents and health problems
- Damage to the product
- Product malfunction

Hazard levels

Hazard level	Indication
 DANGER:	A hazardous situation which, if not avoided, will result in death or serious injury
 WARNING:	A hazardous situation which, if not avoided, could result in death or serious injury
 CAUTION:	A hazardous situation which, if not avoided, could result in minor or moderate injury
NOTICE:	<ul style="list-style-type: none"> • A potential situation which, if not avoided, could result in undesirable conditions • A practice not related to personal injury

Hazard categories

Hazard categories can either fall under hazard levels or let specific symbols replace the ordinary hazard level symbols.

Electrical hazards are indicated by the following specific symbol:



Electrical Hazard:

These are examples of other categories that can occur. They fall under the ordinary hazard levels and may use complementing symbols:

- Crush hazard
- Cutting hazard
- Arc flash hazard

User safety

General safety rules

These safety rules apply:

- Always keep the work area clean.
- Pay attention to the risks presented by gas and vapors in the work area.
- Avoid all electrical dangers. Pay attention to the risks of electric shock or arc flash hazards.
- Always bear in mind the risk of drowning, electrical accidents, and burn injuries.

Safety equipment

Use safety equipment according to the company regulations. Use this safety equipment within the work area:

- Hard hat
- Safety goggles, preferably with side shields
- Protective shoes

- Protective gloves
- Gas mask
- Hearing protection
- First-aid kit
- Safety devices

NOTICE:

Never operate a unit unless safety devices are installed. Also see specific information about safety devices in other chapters of this manual.

Electrical connections

Electrical connections must be made by certified electricians in compliance with all international, national, state, and local regulations. For more information about requirements, see sections dealing specifically with electrical connections.

Precautions before work

Observe these safety precautions before you work with the product or are in connection with the product:

- Provide a suitable barrier around the work area, for example, a guard rail.
- Make sure that all safety guards are in place and secure.
- Make sure that you have a clear path of retreat.
- Make sure that the product cannot roll or fall over and injure people or damage property.
- Make sure that the lifting equipment is in good condition.
- Use a lifting harness, a safety line, and a breathing device as required.
- Allow all system and pump components to cool before you handle them.
- Make sure that the product has been thoroughly cleaned.
- Disconnect and lock out power before you service the pump.
- Check the explosion risk before you weld or use electric hand tools.

Wash the skin and eyes

Follow these procedures for chemicals or hazardous fluids that have come into contact with your eyes or your skin:

Condition	Action
Chemicals or hazardous fluids in eyes	<ol style="list-style-type: none">1. Hold your eyelids apart forcibly with your fingers.2. Rinse the eyes with eyewash or running water for at least 15 minutes.3. Seek medical attention.
Chemicals or hazardous fluids on skin	<ol style="list-style-type: none">1. Remove contaminated clothing.2. Wash the skin with soap and water for at least 1 minute.3. Seek medical attention, if necessary.

Environmental safety**The work area**

Always keep the station clean.

Waste and emissions regulations

Observe these safety regulations regarding waste and emissions:

- Appropriately dispose of all waste.
- Handle and dispose of the processed liquid in compliance with applicable environmental regulations.
- Clean up all spills in accordance with safety and environmental procedures.
- Report all environmental emissions to the appropriate authorities.

**WARNING:**

Radiation Hazard. Do NOT send the product to Xylem if it has been exposed to any nuclear radiation.

Electrical installation

For electrical installation recycling requirements, consult your local electric utility.

Recycling guidelines

Always follow local laws and regulations regarding recycling.

Product warranty**Coverage**

Xylem undertakes to remedy defects in products from Xylem under these conditions:

- The faults are due to defects in design, materials, or workmanship.
- The faults are reported to an local sales and service representative within the warranty period.
- The product is used only under the conditions described in this manual.
- The monitoring equipment incorporated in the product is correctly connected and in use.
- All service and repair work is done by Xylem authorized personnel.
- Genuine Xylem parts are used.
- Only Ex-approved spare parts and accessories authorized by an EX-approved Xylem representative are used in Ex-approved products.

Limitations

The warranty does not cover defects caused by these situations:

- Deficient maintenance
- Improper installation
- Modifications or changes to the product and installation made without consulting an Xylem authorized representative
- Incorrectly executed repair work
- Normal wear and tear

Xylem assumes no liability for these situations:

- Bodily injuries
- Material damages
- Economic losses

Warranty claim

Xylem products are high-quality products with expected reliable operation and long life. However, should the need arise for a warranty claim, then contact your local sales and service representative.

Transportation and Storage

Inspect the delivery

Inspect the package

1. Inspect the package for damaged or missing items upon delivery.
2. Note any damaged or missing items on the receipt and freight bill.
3. File a claim with the shipping company if anything is out of order.
If the product has been picked up at a distributor, make a claim directly to the distributor.

Inspect the unit

1. Remove packing materials from the product.
Dispose of all packing materials in accordance with local regulations.
2. Inspect the product to determine if any parts have been damaged or are missing.
3. If applicable, unfasten the product by removing any screws, bolts, or straps.
For your personal safety, be careful when you handle nails and straps.
4. Contact the local sales representative if there is any issue.

Pump storage requirements

Storage requirements depend on the amount of time that you store the unit. The normal packaging is designed only to protect the unit during shipping.

Length of time in storage	Storage requirements
Upon receipt/short-term (less than six months)	<ul style="list-style-type: none">• Store in a covered and dry location.
Long-term (more than six months)	<ul style="list-style-type: none">• Store in a covered and dry location.• Store the unit free from heat, dirt, and vibrations.

Product Description

General description

The NRF/NBF circulator pump has these features:

- System liquid lubricated bearings
- Non-overloading permanent split capacitor motor with thermal or impedance protection
- Quiet operation
- Nonsubmersible

Pump application



WARNING:

California Proposition 65 warning! This product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

You can use this pump for these types of applications:

- Water circulating applications in hydronic and solar systems.
- Indoor use only

Do not use in swimming pools and marine areas.

Xylem recommends that you use bronze or stainless steel booster pumps for pumping potable water. For other applications, contact your local sales and service representative.

Operational specifications

These pumps are designed to pump liquids compatible with their iron or bronze body constructions.

Operational Limits

Parameter	Value
Maximum operating pressure	150 PSI (10 bars)
Maximum operating temperature	225°F (107°C)

Electrical Rating

115V, 60Hz, 1Ø; 230V, 60Hz, 1Ø (single phase power)

Installation

Pump location guidelines

Guideline	Explanation/comment
Make sure that the space around the pump is sufficient.	This facilitates ventilation, inspection, maintenance, and service. Xylem recommends that the service valves on the suction and discharge of all circulators are installed so they can be serviced or replaced without draining the system.

Pump orientation

You can install this pump to discharge up, down, left, or right. However, make sure that you install the pump according to these pump orientation guidelines:

- Only install the pump with the motor shaft horizontal.
- The arrow on the pump body must point in the direction of the flow.
- You must position the conduit box on the top or to the side of the motor housing. If you need to change the position of the conduit box, change it before you start the installation. If the pump is already installed, see [Remove the pump from an existing system](#) (page 15) before proceeding.

Change the conduit position



CAUTION:

Burn or projectile hazard. Make sure the power is turned off before placing anything inside the discharge opening to move the impeller.

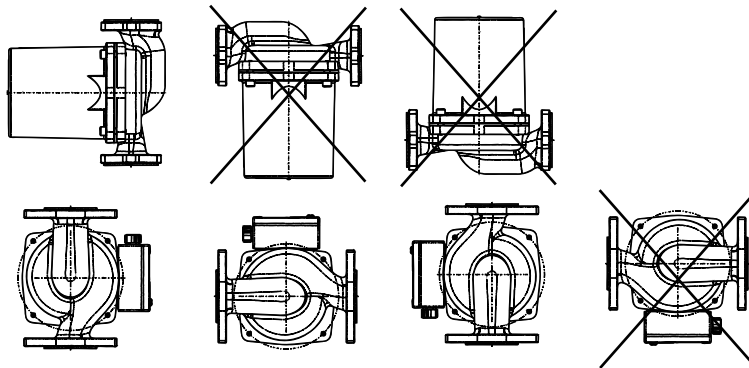


Figure 1: Conduit box position

1. While supporting the motor assembly, use a 3/16 wrench in order to remove the four 1/4-20 Allen screws.
2. Remove the motor assembly from the pump body and rotate it to the desired position.
3. Replace the Allen screws and tighten them evenly in a diagonal method to 60 in-lbs.
4. Check to see that the impeller turns freely. Insert your finger in the discharge port of the pump body until you can feel the impeller and rotate it with your fingertip.
The arrow on the pump body points in the direction of the discharge. If the impeller does not turn easily, repeat the disassembly/ reassembly process.

Install suction and discharge flange connectors on the pipe ends

**WARNING:**

- Burn hazard. Make sure that each flange gasket remains seated in the flange groove during and after installation.
- Burn hazard. Do NOT re-use old gaskets. When disassembling a gasketed joint, always use a new gasket upon reassembly.

1. Use pipe hangers near the pump in order to support the suction and discharge piping.
This minimizes pipe strain on the pump.
2. Install the flange gaskets between the pump body flanges and the suction and discharge pipe flanges.
Use a 7/16 in. x 1-1/2 in. capscrew and a matching nut in order to connect the pump to the flanges. The use of PTFE tape sealer or a high quality thread sealant is recommended.

**CAUTION:**

Burn hazard. The use of PTFE impregnated pipe and PTFE tape on pipe threads provides lubricity which can lead to overtightening and breaks. Do not overtighten.

3. Line up the vertical and horizontal piping so that the bolt holes in the pump flanges match the bolt-holes in the pipe flanges.

NOTICE:

Do not attempt to spring the suction or discharge lines in position. This may result in unwanted stress in the pump body, flange connections and piping.

The code for Pressure Piping (ANSI B31.1) lists many types of supports available for various applications.

4. Evenly torque the suction and discharge flange bolts to 115 in-lbs (12 Nm).

**WARNING:**

Burn hazard. Make sure that the flange bolts or ring nuts have been properly tightened and that the solder connections do not leak.

Connect the wiring

**WARNING:**

Disconnect and lock out electrical power before installing or servicing the unit.

**Electrical Hazard:**

Make sure that all connections are secure and the conduit box cover is closed before you connect the electrical power.

**CAUTION:**

Make sure that all wiring is rated to withstand at least 194°F (90°C).

1. Remove the screws that secure the conduit box cover.
2. Lift off the cover.
3. Attach the appropriately sized connector to the hole in the side of the conduit box.
4. Wire the motor to a single phase power source that matches the electrical rating on the pump nameplate. Use a minimum of 14 AWG copper electrical wire in order to accomplish this.

Refer to your local code for wiring restrictions. Use the size of electrical wire as dictated by local code.

5. Connect the earth (ground) wire to the inside of the conduit box with one of the green screws provided inside the box.

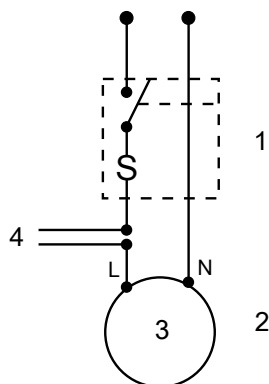


Electrical Hazard:

Make sure that the equipment is properly grounded. Use a grounded metal conduit, or ground the pump back to the service using a correctly sized copper conductor. Connect the ground wire to the green grounding screw in the wiring compartment.

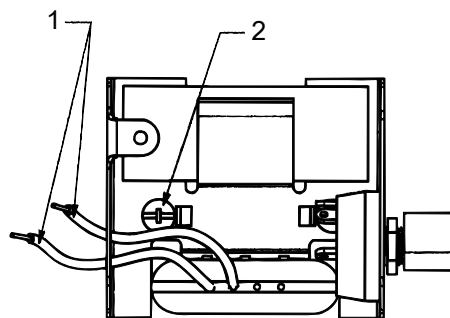
The circulators are thermally protected by impedance or on-winding thermal protectors and do not require external overload protection.

Wiring diagram



1. Fusible disconnect or circuit breaker by others
2. Pump motor thermally protected
3. Pump motor
4. To remote control, if required

Figure 2: Typical wiring installation schematic (1Ø power source)



1. Line lead
2. Green ground screw

Figure 3: Conduit box wiring detail

Install a check valve

The NRF/NBF-25 pump discharge nozzle is machined to accept check valve P/N P86596.

1. Insert the O-ring end of the check valve into the discharge port of the pump body.
2. Hand press the check valve body into place until it snaps into position.

NOTICE:

CAUTION: PROPERTY DAMAGE HAZARD. It is not advisable to install circulators in an attic or upper floor over finished living space. If the circulator must be installed over head, or over expensive equipment, provide adequate drainage in the event of leakage. Failure to follow these instructions could result in property damage.

Commissioning, Startup, Operation, and Shutdown

Pump operation precautions



WARNING:

- Do NOT exceed the maximum working pressure of the pump. This information is listed on the nameplate of the pump.
 - The heating of water and other fluids causes volumetric expansion. The associated forces can cause the failure of system components and the release of high-temperature fluids. In order to prevent this, install properly sized and located compression tanks and pressure-relief valves. Failure to follow these instructions can result in serious personal injury or death, or property damage.
 - Make sure that all components are properly guarded or insulated when operating at extremely high or low temperatures.
 - Electrical connections must be made by certified electricians in compliance with all international, national, state, and local rules.
-



Electrical Hazard:

Do NOT install this pump in swimming pools or marine areas. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

Prepare the system

1. Clean and drain closed heating and cooling systems.
2. Refill the system with clean water.
The system fluid pH must be maintained between 7 and 9.

Start the pump



WARNING:

Pressurize the pump body slowly while you check for leaks at all gasketed joints and solder connections.

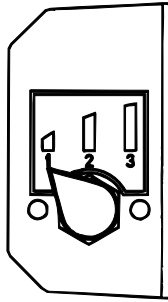
Do not start pump until you fill and vent the system.

1. Vent air from the system by means of an air vent located at a high point in the system. The system must be completely vented prior to pump operation.
2. Make sure the pump is filled with clean water.
Do not run the pump dry. Pump operation without water circulation can result in pump and motor damage.

Select the speed

The pump can be run at different speeds to suit the required operating conditions.

Select the speed by adjusting the three-position switch on the side of the terminal box.



1. Minimum speed
2. Medium speed
3. Maximum speed

Performance characteristic curve

Select the speed that best matches the design performance for the system or loop for which you are installing the pump.

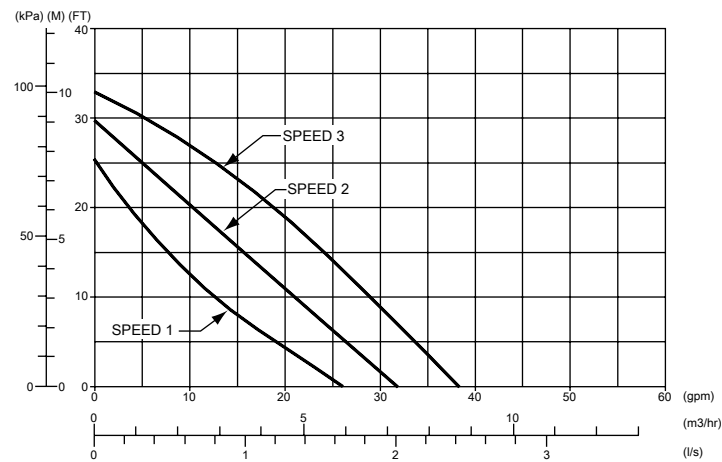


Figure 4: Centrifugal pump series NRF-36

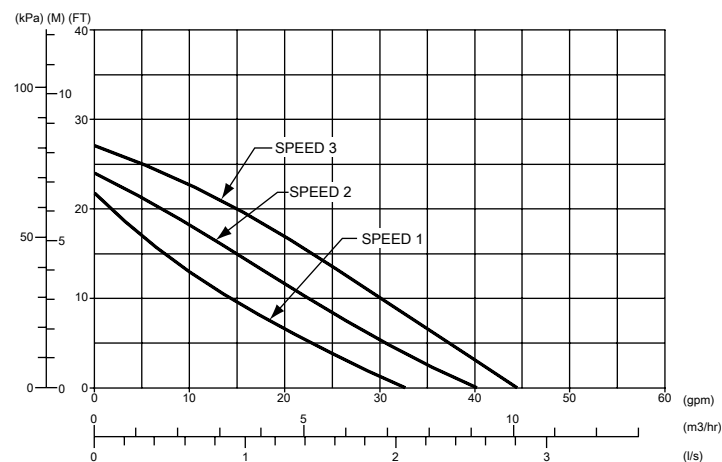


Figure 5: Centrifugal pump series NRF-45

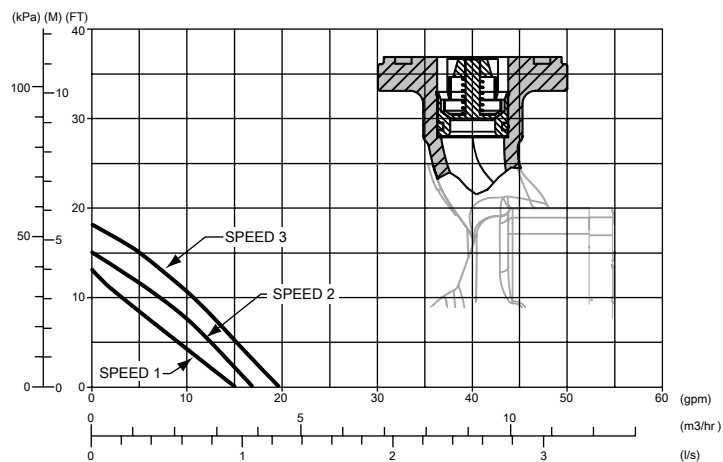


Figure 6: Centrifugal pump series NRF-25 with check valve

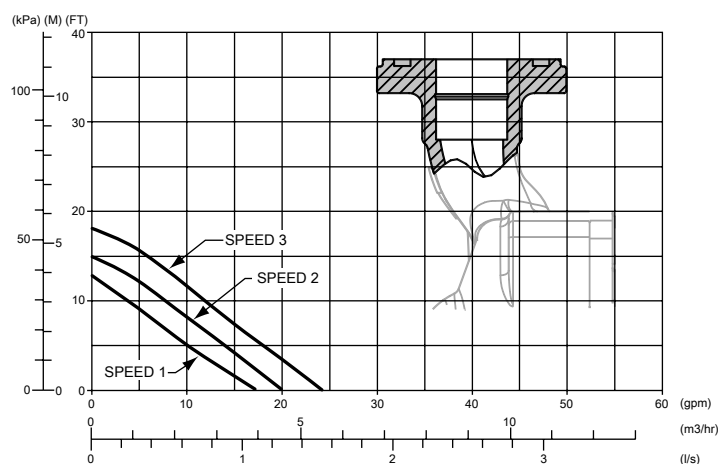


Figure 7: Centrifugal pump series NRF-25 without check valve

Maintenance

Periodic inspection

- It is recommended that periodic inspections be made to check for potential problems with the pump.
- If any leaks or evidence of leakage is present, repair or replace the unit.

Remove the pump from an existing system



WARNING:

- Make sure that the pump is isolated from the system and that pressure is relieved before you disassemble the pump, remove plugs, open vent or drain valves, or disconnect the piping.
- Always disconnect and lock out power to the driver before you perform any installation or maintenance tasks. Failure to disconnect and lock out driver power will result in serious physical injury.
- Burn hazard. Do NOT re-use old gaskets. When disassembling a gasketed joint, always use a new gasket upon reassembly.

-
1. Close the valves on the suction and discharge sides of the pump.
If no valves are installed, you might need to drain the system.
 2. Drain the system:



WARNING:

Allow all system and pump components to cool before you handle them to prevent physical injury.

-
- a) Allow the water to cool to at least 100°F (38°C).
 - b) Take precautions against water damage, and then open the drain valve.
 - c) Leave the drain valve open until servicing is complete.



Electrical Hazard:

Make sure the electrical power is not present at the motor leads before continuing.

-
3. Loosen the screws on the conduit box and remove the cover.
 4. Disconnect the electrical supply lines to the pump.
 5. Relieve pressure in the pump body.



WARNING:

Pressurized device. Relieve any contained pressure in the pump body by loosening the flange bolts and shifting the pump assembly slightly to allow the pressurized water to escape.

-
6. Remove the flange nuts and bolts or loosen the union ring nuts. Then remove the pump from the piping

Troubleshooting

Pumping system troubleshooting

Symptom	Cause	Remedy
There is no circulation	Air-bound system	Vent the system
	The impeller or piping is clogged.	Locate and remove the obstruction.
	The system valve is closed.	Open
	The electrical circuit for the pump is broken.	Check all related low and line voltage circuits.
There is inadequate circulation.	Air-bound system	Vent the system.
	The impeller or piping is clogged.	Locate and remove the obstruction.
	The impeller is damaged.	Replace pump.
	The pump is too small.	Replace the pump if single speed. If three speed switch to higher setting.
	Partially air-bound pump	Vent the pump casing.
	Improper motor speed	Check the wiring and the voltage.
There is pump or system noise.	Entrained air	Vent the system.
	Pump cavitation	Lower the pump or raise pressure or relocate (see note below).
	Excessive water velocity	Install balancing cocks or parallel piping.
	Pipe vibration	Provide adequate pipe support.
There is premature failure of pump components.	Improper pump (size/type)	Replace
	Improper pump location	Relocate
	Excessive water treatment	Check the manufacturer's instructions.
	Pump operating close to or beyond the end point of curve.	Balance the system.
	Excessive piping load	Provide proper pipe support
There are seal failures within a 1-year period or less in a closed system.	Excessive dirt, sand and oxides	Clean the system.
	Excessive or improper water treatment	Check for proper water treatment recommendations from pump manufacturer.
	Pump Cavitation: 1. Improper selection 2. Compression tank location	1. Check pump operation on its curve – overloading 2. High head pump must have compression tank on suction side of pump.
	Excessive temperatures	Check the type of seal and maximum operating temperature from the manufacturer.
	Pumps run without fluid	Pumps must be primed before operation.
There is seal pitting, oxygen corrosion, magnetic iron oxide.	Caused by wear and excessive amounts of free oxygen.	Check if system has a constant leak.
	Fresh water feeding carries oxygen into the system.	

NOTICE:

Cavitation is identified by low rumbling or sharp rattling noises. This situation is created by the lack of available net positive suction head (NPSH). The pressure at some point in the pump falls below the vapor pressure of the water causing flashing and the formation of bubbles, which are carried into the volute where the higher pressure causes them to implode. This can eventually destroy the pump.

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots
- 2) A leading global water technology company

We're 12,000 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to xyleminc.com



Xylem Inc.
8200 N. Austin Avenue
Morton Grove, IL 60053
Tel: 1-847-966-3700
Fax: 1-847-965-8379
www.bellgossett.com

Visit our Web site for the latest version of this document and more information

The original instruction is in English. All non-English instructions are translations of the original instruction.

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Installation Manual

7034000L

LE and LEH Series Sewage Pumps

***Do not throw away or lose this manual.**

Models

LE40-Series	4/10 HP
LE50-Series	1/2 HP
LE70-Series	3/4 HP
LE100-Series	1 HP
LEH100-Series	1 HP
LEH150-Series	1.5 HP
LEH200-Series	2 HP



Contents

- 1.) General Information
- 2.) The Basin
- 3.) Installation
- 4.) Electrical Service and Operation
- 5.) Maintenance and Troubleshooting
- 6.) Warranty

IMPORTANT:

Prior to installation, record Model, Serial Number, and Code Number from pump nameplate for future reference.

MODEL _____

SERIAL _____

CODE _____

INSTALLATION
DATE _____



7000 Apple Tree Avenue
Bergen, NY 14416
Phone: (800) 543-2550
Fax: (585) 494-1839
www.libertypumps.com



1. General Information

Before Installation, read the following instructions carefully. Each Liberty pump is individually factory tested to assure proper performance. By closely following these instructions, potential operating problems should be eliminated, providing years of trouble-free service.

WARNING

- **Risk of electric shock.** Always disconnect the pump from the power source before handling or making adjustments.
- The electrical connections and wiring for a pump installation should only be made by qualified personnel.
- This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle.
- Always wear rubber boots when water is on the floor and you must unplug the pump.
- DO NOT bypass grounding wires or remove ground prong from attachment plugs.
- DO NOT use an extension cord.
- This pump requires a separate, properly fused and grounded branch circuit. Make sure the power source is properly sized for the voltage and amperage requirements of the pump, as noted on the nameplate.
- The electrical outlet shall be within the length limitations of the pump power cord, and at least 4 feet above floor level to minimize possible hazards from flood conditions.
- The installation must be in accordance with the National Electric Code, Uniform Plumbing Code, International Plumbing Code, as well as all applicable local codes and ordinances.
- Sump and sewage pumps often handle materials which could cause illness or disease. Wear adequate protective clothing when working on a used pump or piping.
- Never enter a pump basin after it has been used. Sewage and effluent can emit several gases which are poisonous.
- Keep clear of suction and discharge openings. To prevent injury, never insert fingers into pump while it is plugged in.
- DO NOT use this product for flammable or corrosive liquid.
- DO NOT use this product in applications where human contact with the pumped fluid is common (such as swimming pools, fountains, etc.)
- NEVER dispose of materials such as paint thinner or other chemicals down drains, as they can chemically attack and damage pump components, potentially causing product malfunction or failure.

CAUTION

- **DO NOT use pumps in water over 140°F (60°C).**
- DO NOT use pumps in mud, sand, cement, oil or chemicals.
- DO NOT modify the pump in any way.
- DO NOT lift or carry pump by power cord.
- DO NOT remove any tags from pump or cords.
- If pump is installed during construction before power is available, it must be protected from the environment to prevent water from entering through the cord plug end, etc.

WARNING

Disconnect old pump from power source before handling.

Separate the discharge pipe at either the check valve or at the union. If neither a check valve nor a union is part of the existing discharge pipe, cut the pipe with a hacksaw and remove the pump (A union or check valve will need to be installed at this cut).

ELEVATOR SUMP PUMP (north elevator)

MODEL SPECIFICATIONS								
Model	HP	Volts	Phase	Full Load Amps	Solids Handling	FNPT Discharge	Automatic or Manual*	Shut-off Head
LE41A(V)	4/10	115	1	12	2"	2"	Automatic	19'
LE41M	4/10	115	1	12	2"	2"	Manual	19'
LE51A(V)	1/2	115	1	12	2"	2"	Automatic	25'
LE51M	1/2	115	1	12	2"	2"	Manual	25'
LE52A	1/2	208-230	1	6.8	2"	2"	Automatic	25'
LE52M	1/2	208-230	1	6.8	2"	2"	Manual	25'
LE71A	3/4	115	1	12	2"	2" or 3"	Automatic	28'
LE71M	3/4	115	1	12	2"	2" or 3"	Manual	28'
LE72A	3/4	208-230	1	6	2"	2" or 3"	Automatic	28'
LE72M	3/4	208-230	1	6	2"	2" or 3"	Manual	28'
LE73M	3/4	208-230	3	4.1	2"	2" or 3"	Manual	28'
LE74M	3/4	440-480	3	2.1	2"	2" or 3"	Manual	28'
LE102A	1	208-230	1	8	2"	2" or 3"	Automatic	36'
LE102M	1	208-230	1	8	2"	2" or 3"	Manual	36'
LE103M	1	208-230	3	5.3	2"	2" or 3"	Manual	36'
LE104M	1	440-480	3	2.5	2"	2" or 3"	Manual	36'
LE105M	1	575	3	1.9	2"	2" or 3"	Manual	36'
NOTE: LEH100-Series High-Head pumps require a minimum application of 15' head.								
LEH102A	1	230	1	12	2"	2" or 3"	Automatic	53'
LEH102M	1	230	1	12	2"	2" or 3"	Manual	53'
LEH103M	1	208-230	3	9	2"	2" or 3"	Manual	53'
LEH104M	1	440-480	3	4.5	2"	2" or 3"	Manual	53'
LEH105M	1	575	3	3.3	2"	2" or 3"	Manual	53'
NOTE: LEH150 & LEH200 Series High-Head pumps require a minimum application of 20' head.								
LEH152A	1.5	208-230	1	15	2"	2" or 3"	Automatic	70'
LEH152M	1.5	208-230	1	15	2"	2" or 3"	Manual	70'
LEH153M	1.5	208-230	3	10.6	2"	2" or 3"	Manual	70'
LEH154M	1.5	440-480	3	5.3	2"	2" or 3"	Manual	70'
LEH155M	1.5	575	3	4.9	2"	2" or 3"	Manual	70'
LEH202M	2	230	1	18	2"	2" or 3"	Manual	83'
LEH203M	2	208-230	3	13.2	2"	2" or 3"	Manual	83'
LEH204M	2	440-480	3	6.6	2"	2" or 3"	Manual	83'
LEH205M	2	575	3	5.5	2"	2" or 3"	Manual	83'

* **Note:** Manual models ("M" suffix) and 3 phase models, as designated above, require a separate approved pump control device or panel for automatic operation. Operation of these models will be according to the control selected. Make sure the electrical specifications of the control selected properly match the electrical specifications of the pump. 3 phase models require overload elements selected or adjusted in accordance with the control or panel instructions.

Automatic pumps have a float switch preassembled. The optional (V) denotes that the pump is available with a vertical float.

WARNING:

Always use a replacement power cord assembly of the same length and type as originally installed on the Liberty product. Using a cord of improper gauge or length may lead to exceeding the electrical rating of the cord and could result in death, injury, fire or other significant failure.

2. The Basin

If the basin is already installed, proceed to Installation of the Pump.

The basin required for both effluent and sewage applications must be sealed and vented to meet health and plumbing code requirements. These pumps are not to be installed in locations classified as hazardous in accordance with the National Electric Code, ANSI/NFPA 70. The diameter should be a minimum of 18" and the depth a minimum of 24". (These are minimum requirements. A larger basin may be required in both effluent and sewage applications depending on local codes and the number of fixture units entering the system. Check with the local authorities or contact Liberty Pumps if you are unsure of the proper basin size.) Installation should be at a sufficient depth to ensure that all plumbing is below the frost line. If this is not feasible, remove the check valve and size the basin and/or adjust pump differential to accommodate the additional backflow volume.

- A. **Excavation:** Excavate the hole as small as possible, with a minimum recommended 8" diametrical clearance around the tank. Never place the basin directly in contact with rocks or other sharp objects. Place only fine, 1/8" to 3/4" pea gravel or 1/8" to 1/2" washed, crushed stone as bedding between the basin and the hole walls. Do not use sand or native soil as backfill. Properly compact underneath the basin to provide a solid, level base that can support the weight of the filled basin.
- B. **Inlet Connection & Initial Backfill:** Only fine, 1/8" to 3/4" pea gravel or 1/8" to 1/2" washed, crushed stone should be used around the bottom of the basin to hold it in place. Do not use sand or native soil as backfill. Make the inlet connection as required for your basin.

Liberty P370 & P380-Series: The Liberty P370- & P380 Series basins have a 4" inlet molded to the side of the tank. This inlet is sized to accept a 4" no-hub type coupling. Connect the gravity drainage line from the fixtures to this hub.

Other Basins: Other Liberty basins provide a 4" caulking hub or pipe grommet inlet. Hubs utilize caulking material or rubber donuts; grommets are a simple slip-fit. Connect the gravity drainage line from the fixtures to this opening. (Other inlet sizes available – consult factory.)

- C. **Final Backfill:** Large rocks, clods, and foreign objects should be kept out of the backfill material. Only fine, 1/4" to 3/4" pea gravel, or 1/8" to 1/2" washed, crushed stone is recommended. Do not use sand or native soil as backfill. Mound the backfill slightly and allow for natural settling. Provide access to the basin cover for maintenance and service.

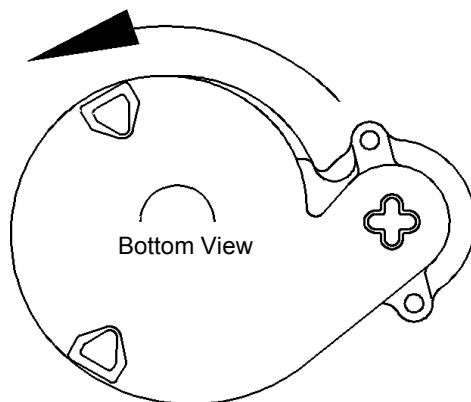


Do not exert heavy pressure or run heavy equipment on the backfill material as this could cause the tank to collapse.

3. Installation of the Pump



For 3-Phase pumps, check for proper rotation before installing pump into basin (see Fig. 1).



Check three phase pumps for proper rotation prior to installing pump(s) in basin. To change rotation, reverse any two of the three power leads to the pump. Code the wires for reconnection after installation.

Fig. 1 – Proper impeller rotation, three phase models

ELEVATOR SUMP PUMP (north elevator)

Liberty pre-assembled sewage systems come with the pump(s) already pre-mounted in the basin. The discharge pipe(s) already exit through the cover, ready to be connected to the remaining discharge line. If you have purchased a pre-assembled system, disregard steps A and B below.

A. Simplex (One Pump) Systems (see Fig. 2):

Set the pump in place making sure the float has adequate clearance to the side wall of the basin. If an optional control device or float is used, follow the directions for mounting that accompany the optional control. Minimum pump turn off level should not be set below 6". Connect the discharge pipe to the pump's threaded discharge. **IMPORTANT: Do not reduce the discharge pipe size below that which is provided on the pump.** Sewage pumps should not be smaller than 2". In some applications, it may be necessary to increase the pipe size to reduce friction losses. Contact Liberty Pumps or other qualified person if you have questions regarding proper pipe sizes and flow rates. Mount the basin cover provided, making sure it is properly sealed. (This is a recommended

installation. Variations may apply.)

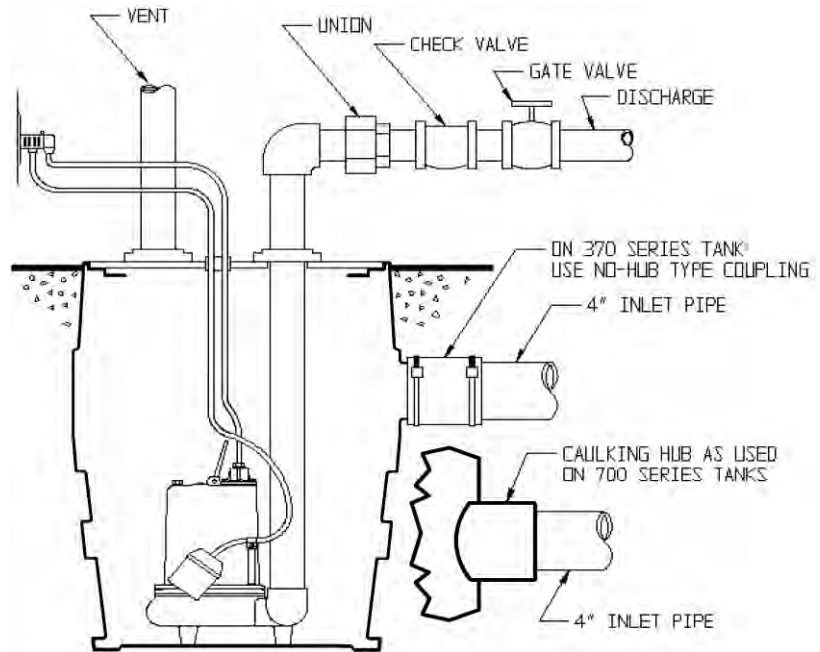


Fig. 2 – Typical Installation Simplex System

This is a recommended installation only. Variations may apply.

B. Duplex (Two Pump) Systems (see Fig. 3): Set both pumps in place in the bottom of the basin. The duplex control used will include 3 or 4 floats that will either be tethered to one of the discharge pipes or to an independent rod hung from the cover. Follow the instructions provided with your duplex control device. Minimum pump turn off level should not be set below 6". Make sure all floats move freely. Connect an individual discharge pipe to each pump. **IMPORTANT: Do not reduce the discharge pipe size below that which is provided on the pump.** Sewage pumps should not be reduced below 2". In some applications, it may be necessary to increase the pipe size to reduce friction losses. Contact Liberty Pumps or other qualified person if you have any questions regarding proper pipe sizes and flow rates. To eliminate fluid recycling in duplex installations, it is necessary to have a check valve on each discharge line prior to tying the two discharges into one common line. Depending on the height of your basin, the check valves may either be installed inside or outside the

basin. Mount the basin covers, making sure they are properly sealed.

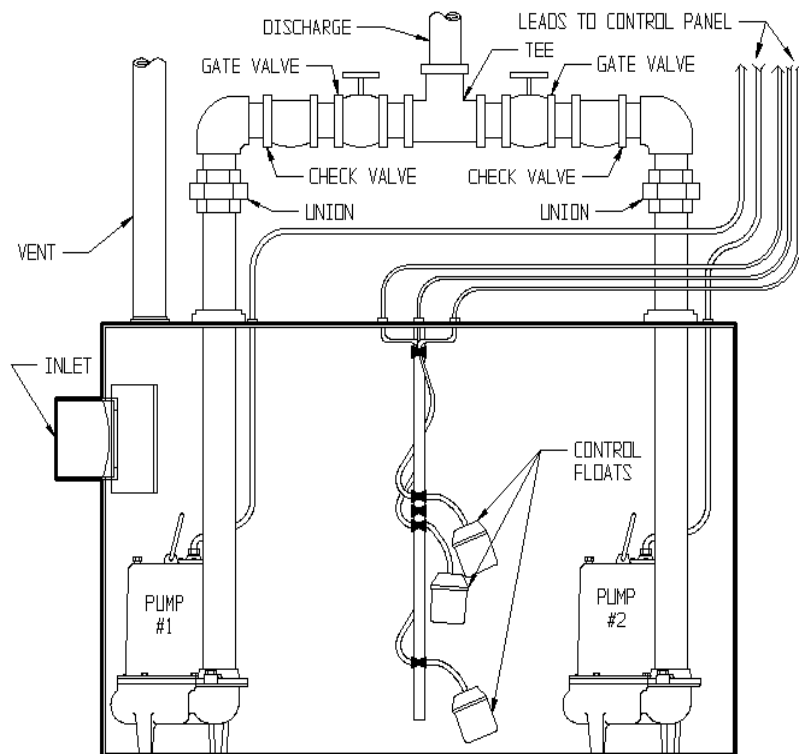


Fig. 3 – Typical Installation Duplex System

This is a recommended installation only. Variations may apply.

ELEVATOR SUMP PUMP (north elevator)

- C. **Installation of Remaining Discharge (Simplex):** After the pump has been mounted and the cover sealed, install the remaining discharge line. A union should be installed just above the cover to facilitate pump removal if necessary. A check valve is recommended after the union to prevent the backflow of liquid after each pumping cycle. A gate valve should follow the check valve to allow periodic cleaning of the check valve or removal of the pump. The remainder of the discharge line should be as short as possible with a minimum number of turns, to minimize friction head loss. Do not restrict the discharge to below 2" in sewage applications. Larger pipe sizes may be required to eliminate friction head loss over long runs. Contact Liberty Pumps or other qualified person if there are questions regarding proper pipe size and flow rates. **Vent:** A connection is provided on top of the cover which must be piped to the existing building vent, or extended outside on its own standpipe. The vent size should be in accordance with applicable codes, but not less than the discharge size. **Some LE and LEH-Series pumps come equipped with an air bleed hole to help prevent air lock. A small spray of water from this hole is normal while pump is running.**
- D. **Installation of Remaining Discharge (Duplex):** Unions or flexible connectors should be installed just above the cover on each discharge to facilitate removal of the pump if necessary. Free-flow swing check valves should be installed on each discharge after the union and prior to the gate valve to prevent the back flow of liquid or gas. A check valve on each discharge line, prior to tying into one common line, is necessary to prevent the recycling of fluid from one pump to the other. A gate valve is recommended after the check valve to allow for periodic cleaning of the check valve or removal of the pump. The remainder of the discharge line should be as short as possible with a minimum number of turns to minimize friction head loss. Do not reduce the discharge to below 2" in sewage applications. Larger pipe sizes may be required to minimize friction head loss of longer runs. Contact Liberty Pumps or other qualified person if there are questions regarding proper pipe size or flow rates.

Vent: A connection is provided on top of the unit for connection of the vent pipe. This pipe should be tied into the existing building vent stack, or extended outside on its own standpipe. The vent size should be in accordance with local codes, but not less than the discharge size. **Some LE and LEH-Series pumps come equipped with an air bleed hole to help prevent air lock. A small spray of water from this hole is normal while pump is running.**

4. Electrical Service & Operation

WARNING

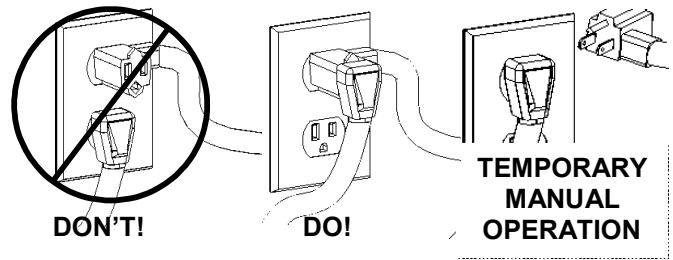
- **Risk of electric shock.** Always disconnect the pump from the power source before handling or making adjustments.
- The electrical connections and wiring for a pump installation should only be made by qualified personnel.
- This pump is supplied with a grounding conductor or a grounding type attachment plug. To reduce the risk of electric shock, be certain that the grounding conductor is connected only to a properly grounded control panel or, if equipped with a grounding type plug that it is connected to a properly grounded, grounding type receptacle.
- DO NOT bypass grounding wires or remove ground prongs from attachment plugs.
- DO NOT remove cord and strain relief and DO NOT connect conduit to pump.
- DO NOT use an extension cord.
- This pump requires separate, properly fused and grounded branch circuit. Make sure the power source is properly sized for the voltage and amperage requirements of the motor, as noted on the pump nameplate.
- The electrical outlet or panel shall be within the length limitations of the pump power cord, and at least 4 feet above floor level to minimize possible hazards from flood conditions.
- The installation must be in accordance with the National Electric Code and all applicable local codes and ordinances.

CAUTION

When the risk of property damage from high water levels exists, an independent high water alarm or back up pump system should be installed.

ELEVATOR SUMP PUMP (north elevator)

Fig. 4 Piggyback plug installation.



All LE-Series "A" models (automatic pumps) come factory-equipped with a float switch mounted to the pump. These models come with two cords - one to the float switch and the other to the pump motor. The switch cord has a series (piggyback) plug enabling the pump (motor) cord to be plugged into the back of it (see Fig. 4). The purpose of this design is to allow manual operation of the pump.

Prior to pump installation ensure that the mounting bracket bolt is tight.

For automatic operation using Liberty's supplied switch, the two cords should be interconnected and plugged into a separately fused, grounded outlet of proper amp capacity for your selected pump model. (See Section 1, General Information, or the pump nameplate for electrical specifications of your model.) Both cords are equipped with 3-prong plugs and must be plugged into a properly grounded 3-wire receptacle. **DO NOT REMOVE THE GROUND PRONGS.**

For manual operation, or in the event of switch failure, the pump cord can be separated and plugged into the electrical outlet, directly bypassing the switch. 208-230V single phase pumps should only be operated without the float switch by using the circuit breaker or panel disconnect. Do not let the pump run dry for extended periods.

The turn-on level of LE-Series "A" models is approximately 12" to 16" above the bottom of the basin. The turn-off level is approximately 6" above the bottom of the basin. Other pumping differentials may be obtained by tethering the switch cord to the discharge pipe.

NOTE: With wide angle floats, a minimum cord length of 3.5" from the tether point to the top surface of the float is required for proper switch operation. If using a differential other than the factory setting, be sure when the pump shuts off at least 6" of fluid is left in the basin so the impeller remains submerged.

NOTE: If the factory-mounted float is removed from the pump for relocation to the discharge pipe, be sure to replace and properly tighten the mounting bracket bolt in the pump as it is also used to secure the volute.

LE-Series pump models with an "M" designation are manual models with no switch. They are intended to be run using an approved liquid level control or approved motor control with correct rating that matches motor input in full load amperes. 3-phase models require the use of an approved motor control that matches motor input in full load amperes with overload element(s) selected or adjusted in accordance with control instructions.

Automatic operation with optional control devices: If the pump(s) are to be operated by either a simplex or duplex control panel, or other optional control device, follow the installation instructions provided with your specific control and make the power connections per those instructions. If necessary, certain models may be run without a separate control. 208-230V single-phase pumps should only be operated without the float switch by using the circuit breaker or panel disconnect. Do not let the pump run dry for extended periods.

LE-Series "A" and "M" models: If the pump is to be wired directly into a control device or junction box, and it is necessary to remove the plugs, have a certified electrician do the wiring in accordance with the National Electric Code and applicable local codes. See Fig. 5 for direct wire installation of single phase, automatic pumps.

⚠ WARNING

In 208-230V installations, one side on the line going to the pump is always "hot", whether the float switch is on or off. To avoid hazards, install a double pole disconnect near the pump installation.

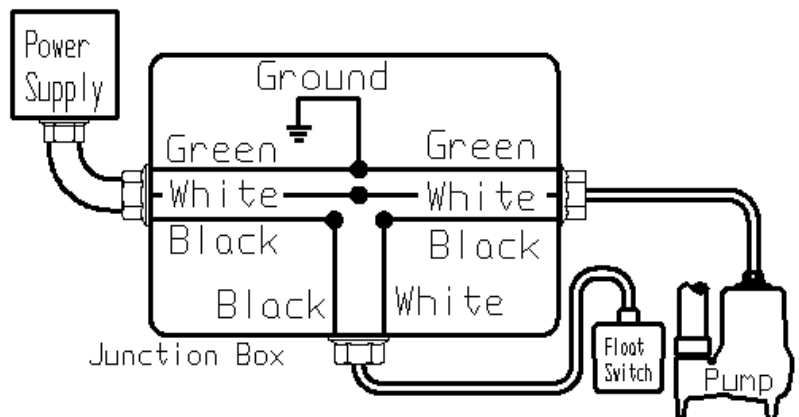


Fig. 5 – Direct Wiring of 115V or 208-230V, Single Phase, Automatic Pumps

ELEVATOR SUMP PUMP (north elevator)

5. Maintenance and Troubleshooting



WARNING Risk of electric shock. Always disconnect the pump from the power source before handling or making adjustments.

Problem	Cause	Correction
Pump will not run.	<ul style="list-style-type: none"> Blown fuse or other interruption of power; improper voltage. 	<ul style="list-style-type: none"> Check that the unit is securely plugged in. Have an electrician check all wiring for proper connections and adequate voltage and capacity.
	<ul style="list-style-type: none"> Switch is unable to move to the "turn on" position due to interference with the side of basin or other obstruction 	<ul style="list-style-type: none"> Position the pump or switch so that it has adequate clearance for free operation.
	<ul style="list-style-type: none"> Insufficient liquid level. 	<ul style="list-style-type: none"> Make sure the liquid level is allowed to rise enough to activate switch(s).
	<ul style="list-style-type: none"> Defective switch. 	<ul style="list-style-type: none"> Remove and replace switch.
Pump will not turn off.	<ul style="list-style-type: none"> Switch(s) unable to move to the "turn off" position due to interference with the side of basin or other obstacle. 	<ul style="list-style-type: none"> Position the pump or switch so that it has adequate clearance for free operation.
	<ul style="list-style-type: none"> Defective switch. 	<ul style="list-style-type: none"> Remove and replace switch.
Pump runs or hums, but does not pump.	<ul style="list-style-type: none"> Discharge is blocked or restricted. 	<ul style="list-style-type: none"> Check the discharge line for foreign material, including ice if the discharge line passes through or into cold areas.
	<ul style="list-style-type: none"> Check valve is stuck closed or installed backwards. 	<ul style="list-style-type: none"> Remove check valve(s) and examine for freedom of operation and proper installation.
	<ul style="list-style-type: none"> Gate or ball valve is closed. 	<ul style="list-style-type: none"> Open gate or ball valve.
	<ul style="list-style-type: none"> Total lift is beyond pump's capability. 	<ul style="list-style-type: none"> Try to route piping to a lower level. If not possible, a larger pump may be required. Consult the factory.
	<ul style="list-style-type: none"> Pump impeller is jammed or volute casing is plugged. 	<ul style="list-style-type: none"> *Remove the pump from the basin. Detach the pump base and clean the area around the impeller. Reassemble and reinstall.
Pump runs periodically when fixtures are not in use.	<ul style="list-style-type: none"> Check valve was not installed, is stuck open or is leaking. 	<ul style="list-style-type: none"> Remove check valve(s) and examine for freedom of operation and proper installation.
	<ul style="list-style-type: none"> Fixtures are leaking. 	<ul style="list-style-type: none"> Repair fixtures as required to eliminate leakage.
Pump operates noisily.	<ul style="list-style-type: none"> Foreign objects in the impeller cavity. 	<ul style="list-style-type: none"> *Remove the pump from the basin. Detach the pump base and clean the area around the impeller. Reassemble and reinstall.
	<ul style="list-style-type: none"> Broken impeller. 	<ul style="list-style-type: none"> Consult the factory for information regarding replacement of impeller.
	<ul style="list-style-type: none"> Worn bearings. 	<ul style="list-style-type: none"> Return pump to the factory or authorized repair station for repair.
	<ul style="list-style-type: none"> Piping attachments to building are too rigid. 	<ul style="list-style-type: none"> Replace a portion of the discharge line with rubber hose or connector.

6. 3 Year Limited Warranty

***NOTE:** Liberty Pumps, Inc. assumes no responsibility for damage or injury due to disassembly in the field. Disassembly, other than at Liberty Pumps or its authorized service centers, automatically voids warranty.

Liberty Pumps, Inc. warrants that pumps of its manufacture are free from all factory defects in material and workmanship for a period of 3 years from the date of purchase. The date of purchase shall be determined by a dated sales receipt noting the model and serial number of the pump. The dated sales receipt must accompany the returned pump if the date of return is more than 3 years from the "CODE" (date of manufacture) number noted on the pump nameplate.

The manufacturer's obligation under this Warranty shall be limited to the repair or replacement of any parts found by the manufacturer to be defective, provided the part or assembly is returned freight prepaid to the manufacturer or its authorized service center, and provided that none of the following warranty-voiding characteristics are evident.

The manufacturer shall not be liable under this Warranty if the product has not been properly installed; if it has been disassembled, modified, abused or tampered with; if the electrical cord has been cut, damaged or spliced; if the pump discharge has been reduced in size; if the pump has been used in water temperatures above the advertised rating, or water containing sand, lime, cement, gravel or other abrasives; if the product has been used to pump chemicals or hydrocarbons; if a non-submersible motor has been subjected to excessive moisture; or if the label bearing the serial, model and code number has been removed. Liberty Pumps, Inc. shall not be liable for any loss, damage or expenses resulting from installation or use of its products, or for consequential damages, including costs of removal, reinstallation or transportation.

There is no other express warranty. All implied warranties, including those of merchantability and fitness for a particular purpose, are limited to three years from the date of purchase.

This Warranty contains the exclusive remedy of the purchaser, and, where permitted, liability for consequential or incidental damages under any and all warranties are excluded.



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Installation Manual

7035000M

Heavy Duty Submersible Effluent/Dewatering Pumps

***Do not throw away or lose this manual.**

Models

250-Series	1/3 HP
280-Series	1/2 HP
290-Series	3/4 HP
FL30-Series	1/3 HP
FL50-Series	1/2 HP
FL60-Series	6/10 HP
FL70-Series	3/4 HP
FL100-Series	1 HP
FL150-Series	1-1/2 HP
FL200-Series	2 HP



Contents

- General Information
- Dewatering/Sump Applications
- Effluent Applications
- Electrical Service and Operation
- Maintenance and Troubleshooting
- Warranty



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IMPORTANT:

Prior to installation, record Model, Serial Number, and Code Number from pump nameplate for future reference.

MODEL _____

SERIAL _____

CODE _____

INSTALLATION

DATE _____

1. General Information

Before Installation, read the following instructions carefully. Each Liberty pump is individually factory tested to assure proper performance. By closely following these instructions, potential operating problems should be eliminated, providing years of trouble-free service.

WARNING

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- The electrical connections and wiring for a pump installation should only be made by qualified personnel.
- This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded receptacle.
- Always wear rubber boots when water is on the floor and you must unplug the pump.
- DO NOT bypass grounding wires or remove ground prong from attachment plugs.
- DO NOT use an extension cord.
- Always use a replacement power cord assembly of the same length and type as originally installed on the Liberty product. Using a cord of improper gauge or length may lead to exceeding the electrical rating of the cord and could result in death, injury, fire or other significant failure.
- This pump requires a separate, properly fused and grounded branch circuit. Make sure the power source is properly sized for the voltage and amperage requirements of the pump, as noted on the nameplate.
- The electrical outlet shall be within the length limitations of the pump power cord, and at least 4 feet above floor level to minimize possible hazards from flood conditions.
- The installation must be in accordance with the National Electric Code, Uniform Plumbing Code, International Plumbing Code, as well as all applicable local codes and ordinances.
- Sump and sewage pumps often handle materials which could cause illness or disease. Wear adequate protective clothing when working on a used pump or piping.
- Never enter a pump basin after it has been used. Sewage and effluent can emit several gases which are poisonous.
- Keep clear of suction and discharge openings. To prevent injury, never insert fingers into pump while it is plugged in.
- DO NOT use this product for flammable or corrosive liquid.
- DO NOT use this product in applications where human contact with the pumped fluid is common (such as swimming pools, fountains, etc.)
- NEVER dispose of materials such as paint thinner or other chemicals down drains, as they can chemically attack and damage pump components, potentially causing product malfunction or failure.

CAUTION

- **DO NOT use pumps in water over 140°F (60°C).**
- DO NOT use pumps in mud, sand, cement, oil or chemicals.
- DO NOT modify the pump in any way.
- DO NOT lift or carry pump by power cord.
- DO NOT remove any tags from pump or cords.
- If pump is installed during construction before power is available, it must be protected from the environment to prevent water from entering through the cord plug end, etc.

Tools Required:

- Pipe wrench
- Regular screw driver
- Hacksaw (For replacement or removal of existing rigid piping.)

Removal of old pump

WARNING Disconnect old pump from power source before handling.

Separate the discharge pipe at either the check valve or at the union. If neither a check valve nor a union is part of the existing discharge pipe, cut the pipe with a hacksaw and remove the pump (A union or check valve will need to be installed at this cut).

ELEVATOR SUMP PUMP (south elevator)

MODEL SPECIFICATIONS								
Model	HP	Volts	Full Load Amps	Solids Handling	Automatic or Manual	Shut-off Head	Factory Switch Setting	
							Turn-on	Turn-off
250*	1/3	115	5.2	1/2"	Manual*	22 ft.	*	*
251	1/3	115	5.2	1/2"	Automatic	22 ft.	11"	4-1/2"
253	1/3	115	5.2	1/2"	Automatic	22 ft.	11"	4-1/2"
257	1/3	115	5.2	1/2"	Automatic	22 ft.	7"	3-1/2"
250HV*	1/3	230	2.6	1/2"	Manual*	22 ft.	*	*
251HV	1/3	230	2.6	1/2"	Automatic	22 ft.	11"	4-1/2"
257HV	1/3	230	2.6	1/2"	Automatic	22 ft.	7"	3-1/2"
280*	1/2	115	8.0	3/4"	Manual*	37 ft.	*	*
281	1/2	115	8.0	3/4"	Automatic	37 ft.	13"	7"
283	1/2	115	8.0	3/4"	Automatic	37 ft.	13"	7"
287	1/2	115	8.0	3/4"	Automatic	37 ft.	9-1/2"	4"
280HV*	1/2	208-230	4.0	3/4"	Manual*	37 ft.	*	*
281HV	1/2	208-230	4.0	3/4"	Automatic	37 ft.	13"	7"
283HV	1/2	208-230	4.0	3/4"	Automatic	37 ft.	13"	7"
287HV	1/2	208-230	4.0	3/4"	Automatic	37 ft.	9-1/2"	4"
290*	3/4	115	10.4	3/4"	Manual*	48 ft.	*	*
291	3/4	115	10.4	3/4"	Automatic	48 ft.	13"	7"
293	3/4	115	10.4	3/4"	Automatic	48 ft.	13"	7"
297	3/4	115	10.4	3/4"	Automatic	48 ft.	9-1/2"	4"
290HV*	3/4	208-230	5.3	3/4"	Manual*	48 ft.	*	*
291HV	3/4	208-230	5.3	3/4"	Automatic	48 ft.	13"	7"
293HV	3/4	208-230	5.3	3/4"	Automatic	48 ft.	13"	7"
297HV	3/4	208-230	5.3	3/4"	Automatic	48 ft.	9-1/2"	4"
FL31M*	1/3	115	10.5	3/4"	Manual*	19 ft.	*	*
FL31A	1/3	115	10.5	3/4"	Automatic	19 ft.	12"	5"
FL32M*	1/3	208-230	5.5	3/4"	Manual*	19 ft.	*	*
FL32A	1/3	208-230	5.5	3/4"	Automatic	19 ft.	12"	5"
FL51M*	1/2	115	12	3/4"	Manual*	55 ft.	*	*
FL51A	1/2	115	12	3/4"	Automatic	55 ft.	13"	6"
FL52M*	1/2	208-230	6.5	3/4"	Manual*	55 ft.	*	*
FL52A	1/2	208-230	6.5	3/4"	Automatic	55 ft.	13"	6"
FL62M*	6/10	208-230	8.2	3/4"	Manual*	65 ft.	*	*
FL62A	6/10	208-230	8.2	3/4"	Automatic	65 ft.	13"	6"
FL63M*	6/10	208-230 3PH	5.6	3/4"	Manual*	65 ft.	*	*
FL64M*	6/10	440-480 3PH	2.8	3/4"	Manual*	65 ft.	*	*
FL72M*	3/4	208-230	10.5	3/4"	Manual*	77 ft.	*	*
FL72A	3/4	208-230	10.5	3/4"	Automatic	77 ft.	13"	6"
FL73M*	3/4	208-230 3PH	7.5	3/4"	Manual*	77 ft.	*	*
FL74M*	3/4	440-480 3PH	3.5	3/4"	Manual*	77 ft.	*	*
FL102M*	1	208-230	12	3/4"	Manual*	90 ft.	*	*
FL102A	1	208-230	12	3/4"	Automatic	90 ft.	15"	8"
FL103M*	1	208-230 3PH	9	3/4"	Manual*	90 ft.	*	*
FL104M*	1	440-480 3PH	4.5	3/4"	Manual*	90 ft.	*	*
FL105M*	1	575 3PH	3.3	3/4"	Manual*	90 ft.	*	*
FL152M*	1-1/2	208-230	15	3/4"	Manual*	110 ft.	*	*
FL152A	1-1/2	208-230	15	3/4"	Automatic	110 ft.	15"	8"
FL153M*	1-1/2	208-230 3PH	10.6	3/4"	Manual*	110 ft.	*	*
FL154M*	1-1/2	440-480 3PH	5.3	3/4"	Manual*	110 ft.	*	*
FL155M*	1-1/2	575 3PH	4.9	3/4"	Manual*	110 ft.	*	*
FL202M*	2	208-230	15	3/4"	Manual*	130 ft.	*	*
FL202A	2	208-230	15	3/4"	Automatic	130 ft.	15"	8"
FL203M*	2	208-230 3PH	10.6	3/4"	Manual*	130 ft.	*	*
FL204M*	2	440-480 3PH	5.3	3/4"	Manual*	130 ft.	*	*
FL205M*	2	575 3PH	4.9	3/4"	Manual*	130 ft.	*	*

* **Note:** Manual models ("M" suffix) and 3 phase models, as designated above, require a separate approved pump control device or panel for automatic operation. Operation of these models will be according to the control selected. Make sure the electrical specifications of the control selected properly match the electrical specifications of the pump. 3 phase models require overload elements selected or adjusted in accordance with the control or panel instructions.

WARNING:

Always use a replacement power cord assembly of the same length and type as originally installed on the Liberty product. Using a cord of improper gauge or length may lead to exceeding the electrical rating of the cord and could result in death, injury, fire or other significant failure.

2. Dewatering / Sump Applications

1. For ordinary ground water pumping applications, a sump pit of not less than 14" in diameter is recommended. Vertical float (VMF) models (257, 287 and 297) may be used in a minimum 10" diameter sump; however, a larger diameter pit is preferred as it allows for a longer pump cycle and reduced switch cycling. The minimum depth of the pit should be 18".
2. If the pit is not already enclosed on the bottom, provide a hard level bottom of bricks or concrete. DO NOT place the pump directly on earth, gravel or debris since this can cause excessive wear of the impeller and possible jamming. **"The Brick"** (sold by Liberty Pumps as part # 4445000) is a pre-molded stable platform designed to fit your submersible pump. It raises the pump 2.5" off the bottom of the pit, reducing the potential for jamming from rocks and debris. Contact your local distributor to order. Remove all debris from the bottom of the sump pit before installation of the pump. A sump pit cover is suggested for safety and to prevent foreign objects from entering the pit.
3. Set the pump in the pit making sure the switch has adequate clearance and will not hang-up on the pit wall. The float must be **free to move throughout its travel** and not contacting the pump body, piping, or other objects. A 1-1/2" threaded discharge is provided for connection of the discharge pipe. Do not reduce the discharge size to below 1-1/2". Schedule 40 PVC pipe is recommended; however, flexible discharge hose kits may be used for temporary installations.
4. Connect the pipe or the discharge hose to the discharge of the pump. **HAND TIGHTEN ONLY.** Over tightening may cause the pump housing to crack. Install a union or other means of separating the discharge line just above the floor to facilitate removal of the pump if necessary. A check valve is recommended just above or in place of the union to prevent the backflow of water after each pump cycle. (All Liberty effluent/dewatering pumps come equipped with an air bleed hole in the base of the pump to help prevent airlock. A small spray of water from this hole is normal while pump is running.)
5. Connect additional piping as needed to direct the discharge to the desired location. Discharge should be kept as short as possible with a minimum number of turns. Check all connections for security.
6. Install a union or other means of separating the discharge pipe just above the floor to facilitate removal of the pump if necessary. **A check valve is recommended just above, or in place of, the union to prevent the backflow of water after each pump cycle.**
7. If a check valve is used, **a 1/8" anti-airlock hole should be drilled in the discharge pipe just above the pump's discharge outlet to prevent pump "airlock" (see Fig. 1)**

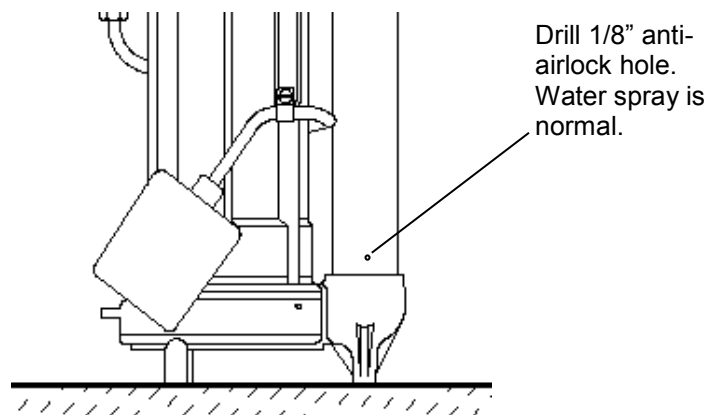


Fig. 1 – Anti-airlock hole position

8. For added protection, consider the addition of a back-up pump such as **Liberty's SJ10 SumpJet**, as well as an alarm such as **Liberty's ALM-2** in applications where loss of pump function could result in property damage. If an alarm is used, it must be connected to a separate electrical circuit.

3. Effluent Applications

Vertical Magnetic Float (VMF) models (257, 287 and 297) are not recommended for effluent applications due to their short On/Off cycle. Wide angle float models are better suited for effluent applications and are easily adjustable for different On/Off levels.

The basin required for effluent applications must be sealed and vented to meet health and plumbing code requirements. Proper basin size and basin materials for effluent applications vary depending on the type of effluent system and local codes. Check with your local codes official prior to purchasing and installing the basin. Follow the manufacturer's recommended guidelines for installation of your specific basin. A minimum diameter of 18" and depth of 24" is required for proper pump operation, but larger basins are preferred for longer pump cycles and increased switch life. Installation should be at a sufficient depth to ensure that all plumbing is below the frost line. If this is not feasible, delete the check valve and size the basin and/or adjust the pump differential to accommodate the additional backflow.

⚠ WARNING

These pumps are not to be installed in locations classified as hazardous in accordance with the National Electric Code, ANSI/NFPA 70, or where prohibited by local codes.

- A. **Simplex (One Pump) Systems (see Fig. 2):** Set the pump in place making sure the float has adequate clearance to the side wall of the basin. The float must be free to move throughout its travel and not contacting the pump body, piping, or other objects. If an optional control device or float is used, follow the directions for mounting that accompany the optional control. Connect the discharge pipe to the pump's threaded discharge. **IMPORTANT: DO NOT REDUCE THE DISCHARGE PIPE SIZE BELOW THAT WHICH IS PROVIDED ON THE PUMP.** Contact Liberty Pumps or other qualified person if you have questions regarding proper pipe sizes and flow rates. Mount the basin cover making sure it is properly sealed.

Installation of Discharge: After the pump has been mounted, install the discharge line. A union should be installed to facilitate pump removal if necessary. A free-flow swing check valve is recommended after the union to prevent the backflow of liquid after each pumping cycle. A gate valve should follow the check valve to allow periodic cleaning of the check valve or removal of the pump. The remainder of the discharge line should be as short as possible with a minimum number of turns, to minimize friction head loss. Contact Liberty Pumps or other qualified person if you have questions regarding proper pipe sizes and flow rates.

(All Liberty effluent/dewatering pumps come equipped with an air bleed hole in the base of the pump to help prevent airlock. A small spray of water from this hole is normal while pump is running.)

- B. **Duplex (Two Pump) Systems (see Fig. 3):** Set both pumps in place in the bottom of the basin. The duplex control used will include 3 or 4 floats that will either be tethered to one of the discharge pipes or to an independent rod or bracket. Follow the

instructions provided with your duplex control device. Each float must be free to move throughout its travel and not

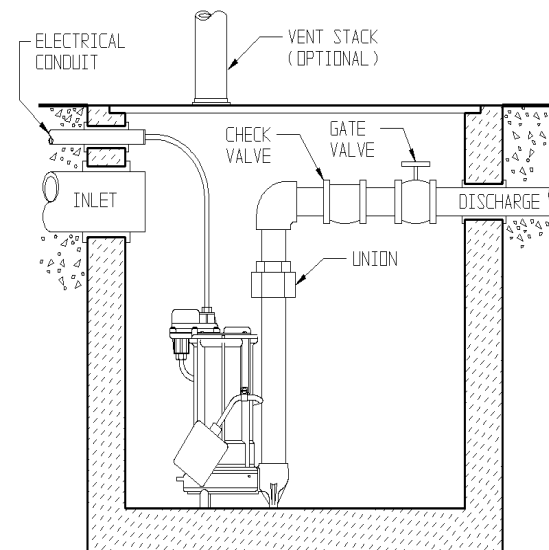


Fig. 2 – Typical Installation Simplex System
This is a recommended installation only.
Variations may apply.

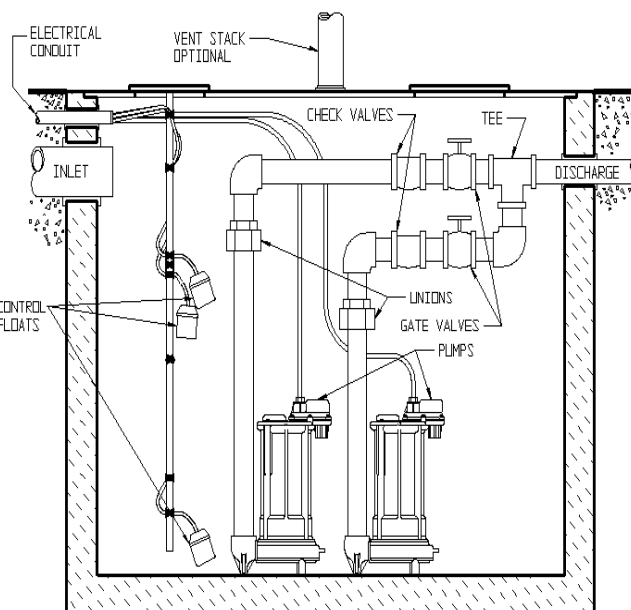


Fig. 3 – Typical Installation Duplex System
This is a recommended installation only.
Variations may apply.

ELEVATOR SUMP PUMP (south elevator)

contacting the pump body, piping, or other objects. Connect an individual discharge pipe to each pump. **IMPORTANT: DO NOT REDUCE THE DISCHARGE PIPE SIZE BELOW THAT WHICH IS PROVIDED ON THE PUMP.** Contact Liberty Pumps or other qualified person if you have any questions regarding proper pipe sizes and flow rates. To eliminate fluid recycling in duplex installations, it is necessary to have a check valve on each discharge line prior to tying the two discharges into one common line. Depending on the height of your basin, the check valves may either be installed inside the basin or outside the basin. Mount the basin cover(s) making sure they are properly sealed.

Installation of Remaining Discharge: Unions or flexible connectors should be installed to facilitate removal of the pump if necessary. Free-flow swing check valves should be installed on each discharge after the union and prior to the gate valve to prevent the back flow of liquid or gas. A check valve on each discharge line, prior to tying into one common line, is necessary to prevent the recycling of fluid from one pump to the other. A gate valve is recommended after the check valve to allow for periodic cleaning of the check valve or removal of the pump. The remainder of the discharge line should be as short as possible with a minimum number of turns to minimize friction head loss. Contact Liberty Pumps or other qualified person if there are questions regarding proper pipe size or flow rates. (All Liberty effluent/dewatering pumps come equipped with an air bleed hole in the base of the pump to help prevent airlock. A small spray of water from this hole is normal while pump is running.)

4. Electrical Service and Operation

⚠ WARNING

- **Risk of electric shock.** Always disconnect the pump from the power source before handling or making adjustments.
- The electrical connections and wiring for a pump installation should only be made by qualified personnel.
- This pump is supplied with a grounding conductor or a grounding type attachment plug. To reduce the risk of electric shock, be certain that the grounding conductor is connected only to a properly grounded control panel or, if equipped with a grounding type plug that it is connected to a properly grounded, grounding type receptacle.
- DO NOT bypass grounding wires or remove ground prongs from attachment plugs.
- DO NOT use an extension cord.
- This pump requires separate, properly fused and grounded branch circuit. Make sure the power source is properly sized for the voltage and amperage requirements of the motor, as noted on the pump nameplate.
- The electrical outlet or panel shall be within the length limitations of the pump power cord, and at least 4 feet above floor level to minimize possible hazards from flood conditions.
- The installation must be in accordance with the National Electric Code and all applicable local codes and ordinances.

⚠ CAUTION

When the risk of property damage from high water levels exists, an independent high water alarm or back up pump system should be installed.

All FL-Series automatic models (designated with the letter "A") and Models 253, 283 and 293, come factory-equipped with a float switch mounted to the pump. These models come with two cords - one to the float switch and the other to the pump motor. The switch cord has a series (piggyback) plug enabling the pump (motor) cord to be plugged into the back of it. The purpose of this design is to allow manual operation of the pump.

For manual operation, or in the event of switch failure, the pump cord can be separated and plugged into the electrical outlet, directly bypassing the switch (**see Fig. 4**).

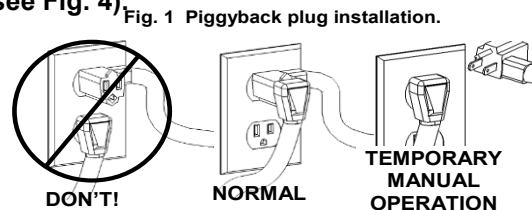


Fig. 4 – Temporary manual operation

ELEVATOR SUMP PUMP (south elevator)

For automatic operation using Liberty's supplied switch, the two cords should be interconnected and plugged into a separately fused grounded outlet of proper amp capacity for your selected pump model. (See Section 1, General Information or the pump nameplate for electrical specifications of your model.) Both cords are equipped with 3-prong plugs and must be plugged into a properly grounded 3-wire receptacle. **DO NOT REMOVE THE GROUND PRONGS.**

⚠ WARNING

208-230V single phase pumps shall only be operated without the float switch by using the circuit breaker or panel disconnect.

⚠ CAUTION

Do not let the pump run dry.

The turn-on/turn-off levels vary depending on model. (See model specifications chart on page 3 for the "factory" preset level of your specific model.) Other pumping differentials may be obtained by tethering the switch cord to the discharge pipe. **NOTE:** A minimum cord length of 3-1/2" from the tether point to the top surface of the float is required for proper switch operation. If using a differential other than the factory setting, be sure that when the pump shuts off, at least 3-1/2" of fluid is left in the basin so the impeller remains submerged. **(Models 251, 257, 281, 287, 291, and 297 have factory-preset switches that are not adjustable.)**

Manual pumps with no switch are intended to be run using an approved liquid level control or approved motor control with correct rating that matches motor input in full load amperes. Regardless of the control type, be sure that when the pump shuts off, at least 3-1/2" of fluid is left in the basin so the impeller remains submerged.

NOTE: For automatic operation with optional control devices: If the pump(s) are to be operated by either a simplex or duplex control panel or other optional control device, follow the installation instructions provided with the control and make the power connections per those instructions. If necessary, certain models may be run without a separate control.

⚠ WARNING

208-230V single phase pumps shall only be operated without the float switch by using the circuit breaker or panel disconnect.

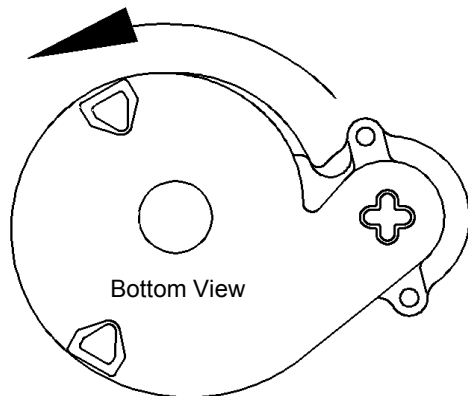
⚠ CAUTION

Do not let the pump run dry.

3 Phase Pump Models (FL63, FL64, FL73, FL74, FL103, FL104, FL105, FL153, FL154, FL155, FL203, FL204, FL205)

⚠ CAUTION

For 3-Phase pumps, check for proper rotation before installing pump into basin (**see Fig. 5**).

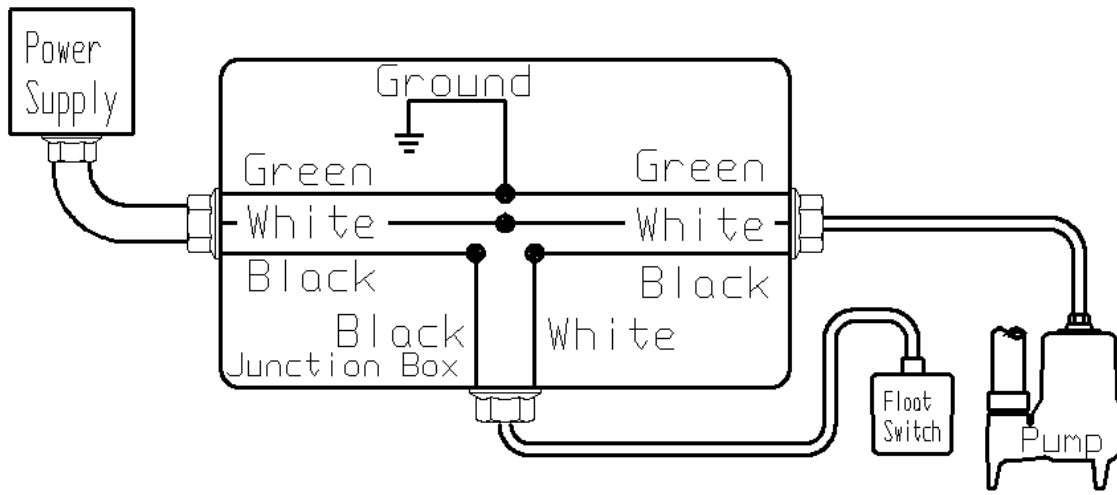


Check three phase pumps for proper rotation prior to installing pump(s) in basin. To change rotation, reverse any two of the three power leads to the pump. Code the wires for reconnection after installation.

Fig. 5 – Proper impeller rotation, three phase models

ELEVATOR SUMP PUMP (south elevator)

If a single phase pump is to be wired directly into a control device or junction box, and it is necessary to remove the plugs, have a certified electrician do the wiring in accordance with the National Electric Code and applicable local codes. See **Fig. 6** for direct wire installation of single phase, automatic pumps.



⚠ WARNING

For 208-
double

Fig. 6 – Direct Wiring of 120V or 208-230V Single Phase, Automatic Pumps

installation. One side of the line going to the pump is always “hot”, whether the float switch is in the “On” or the “Off” position. Use of a double pole disconnect will allow both hot legs to be de-energized.

230V installations: Install a pole disconnect near the pump

5. Maintenance

⚠ WARNING

Risk of electric shock. Always disconnect the pump from the power source before handling or making adjustments.

⚠ WARNING

Always disconnect the pump from power source before handling. This guide is designed to help identify reasons for potential operating problems. It is not a service guide. **Dismantling of pump voids warranty.** Servicing of pump other than simple cleaning of pump inlet or impeller should be referred to the factory or its authorized service centers.

- 1. Submersible Models:** Submersible pump models have sealed permanently lubricated bearings and require no additional lubrication.
- 2. Pump should be checked frequently for debris and/or build up which may interfere with pump or float switch operation.** The float must be able to move freely through its complete travel without any restrictions. Pour enough water into the sump to activate the pump periodically (at least every 3 months) when not normally in use to verify proper function.

NOTE: The manufacturer assumes no responsibility for damage or injury due to disassembly in the field.

6. Troubleshooting

Problem	Cause	Correction
Pump will not run.	<ul style="list-style-type: none"> Blown fuse or other interruption of power; improper voltage. 	<ul style="list-style-type: none"> Check that the unit is securely plugged in. Have an electrician check all wiring for proper connections and adequate voltage and capacity.
	<ul style="list-style-type: none"> Switch is unable to move to the "turn on" position due to interference with the side of basin or other obstruction 	<ul style="list-style-type: none"> Position the pump or switch so that it has adequate clearance for free operation.
	<ul style="list-style-type: none"> Insufficient liquid level. 	<ul style="list-style-type: none"> Make sure the liquid level is allowed to rise enough to activate switch(s).
	<ul style="list-style-type: none"> Defective switch. 	<ul style="list-style-type: none"> Remove and replace switch.
Pump will not turn off.	<ul style="list-style-type: none"> Switch(s) unable to move to the "turn off" position due to interference with the side of basin or other obstacle. 	<ul style="list-style-type: none"> Position the pump or switch so that it has adequate clearance for free operation.
	<ul style="list-style-type: none"> Defective switch. 	<ul style="list-style-type: none"> Remove and replace switch.
Pump runs or hums, but does not pump.	<ul style="list-style-type: none"> Discharge is blocked or restricted. 	<ul style="list-style-type: none"> Check the discharge line for foreign material, including ice if the discharge line passes through or into cold areas.
	<ul style="list-style-type: none"> Check valve is stuck closed or installed backwards. 	<ul style="list-style-type: none"> Remove check valve(s) and examine for freedom of operation and proper installation.
	<ul style="list-style-type: none"> Gate or ball valve is closed. 	<ul style="list-style-type: none"> Open gate or ball valve.
	<ul style="list-style-type: none"> Total lift is beyond pump's capability. 	<ul style="list-style-type: none"> Try to route piping to a lower level. If not possible, a larger pump may be required. Consult the factory.
	<ul style="list-style-type: none"> Pump impeller is jammed or volute casing is plugged. 	<ul style="list-style-type: none"> *Remove the pump from the basin. Detach the pump base and clean the area around the impeller. Reassemble and reinstall.
Pump runs periodically when fixtures are not in use.	<ul style="list-style-type: none"> Check valve was not installed, is stuck open or is leaking. 	<ul style="list-style-type: none"> Remove check valve(s) and examine for freedom of operation and proper installation.
	<ul style="list-style-type: none"> Fixtures are leaking. 	<ul style="list-style-type: none"> Repair fixtures as required to eliminate leakage.
Pump operates noisily.	<ul style="list-style-type: none"> Foreign objects in the impeller cavity. 	<ul style="list-style-type: none"> *Remove the pump from the basin. Detach the pump base and clean the area around the impeller. Reassemble and reinstall.
	<ul style="list-style-type: none"> Broken impeller. 	<ul style="list-style-type: none"> Consult the factory for information regarding replacement of impeller.
	<ul style="list-style-type: none"> Worn bearings. 	<ul style="list-style-type: none"> Return pump to the factory or authorized repair station for repair.
	<ul style="list-style-type: none"> Piping attachments to building are too rigid. 	<ul style="list-style-type: none"> Replace a portion of the discharge line with rubber hose or connector.

7. 3 Year Limited Warranty

***NOTE:** Liberty Pumps, Inc. assumes no responsibility for damage or injury due to disassembly in the field. Disassembly, other than at Liberty Pumps or its authorized service centers, automatically voids warranty.

Liberty Pumps, Inc. warrants that pumps of its manufacture are free from all factory defects in material and workmanship for a period of 3 years from the date of purchase. The date of purchase shall be determined by a dated sales receipt noting the model and serial number of the pump. The dated sales receipt must accompany the returned pump if the date of return is more than 3 years from the "CODE" (date of manufacture) number noted on the pump nameplate.

The manufacturer's obligation under this Warranty shall be limited to the repair or replacement of any parts found by the manufacturer to be defective, provided the part or assembly is returned freight prepaid to the manufacturer or its authorized service center, and provided that none of the following warranty-voiding characteristics are evident.

The manufacturer shall not be liable under this Warranty if the product has not been properly installed; if it has been disassembled, modified, abused or tampered with; if the electrical cord has been cut, damaged or spliced; if the pump discharge has been reduced in size; if the pump has been used in water temperatures above the advertised rating, or water containing sand, lime, cement, gravel or other abrasives; if the product has been used to pump chemicals or hydrocarbons; if a non-submersible motor has been subjected to excessive moisture; or if the label bearing the serial, model and code number has been removed. Liberty Pumps, Inc. shall not be liable for any loss, damage or expenses resulting from installation or use of its products, or for consequential damages, including costs of removal, reinstallation or transportation.

There is no other express warranty. All implied warranties, including those of merchantability and fitness for a particular purpose, are limited to three years from the date of purchase.

This Warranty contains the exclusive remedy of the purchaser, and, where permitted, liability for consequential or incidental damages under any and all warranties are excluded.



7000 Apple Tree Avenue
Bergen, NY 14416
Phone: (800) 543-2550
Fax: (585) 494-1839
www.libertypumps.com

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TECHNICAL: 503-328-6705



PRODUCTS

SUBMITTALS

SMARTBIM LIBRARY

INSTALLATION

LIST PRICE SCHEDULE

LOCATE REPRESENTATIVE



PPP Warranty



PPP Warranty

Precision Plumbing Products of Portland, Oregon (USA) warrants our manufactured products to be free from defects and workmanship under normal use and service. The sole and exclusive remedy for our manufactured products that do not conform to this limited and express warranty and our sole obligation under this limited and express warranty is to replace the defective part or product during the three year period after original installation.

This warranty excludes any parts or products that are modified or improperly installed or installed where PH levels, chemical conditions or electrolysis prematurely degrade the product. We specifically disclaim any warranties or responsibility for defects due to quality, material, dimensional tolerances or quality control of any fitting or other third party supplied parts or components. EXCLUSIONS OF ALL OTHER WARRANTIES INCLUDING IMPLIED WARRANTIES: All other warranties, including the implied warranties of MERCHANTABILITY and fitness for a particular purpose, are EXCLUDED from this transaction and shall not apply to goods sold by us.

The above warranties are in lieu of all other warranties and representations, express or implied, and all other obligations or liabilities on our part. We shall not be liable for consequential damages, loss of profit, interruption of business or any other special, incidental, or punitive damages suffered or sustained by Customer. Any part or products being returned under this warranty must have prior authorization by us. Any part or product received by us without a return of goods authorization will be returned to the shipper.

All returned merchandise must be prepaid by shipper. Our personnel, including salespeople, as well as independent distributors and sales agents may have made oral statements about our products. Those statements are not warranties by us and should not be relied on by the buyer/customer/user. If you use this product you are agreeing to this warranty contract between us. This writing constitutes the final expression of the parties and is the complete and exclusive statement of that contract for warranties.



ISO Certification



ISO Green Certification

Installation Instructions and Use & Care Guide

Residential Electric Water Heater

DO NOT RETURN THIS UNIT TO THE STORE



Read this manual and the labels on the water heater before you install, operate, or service it. If you have difficulty following the directions, or aren't sure you can safely and properly do any of this work yourself:

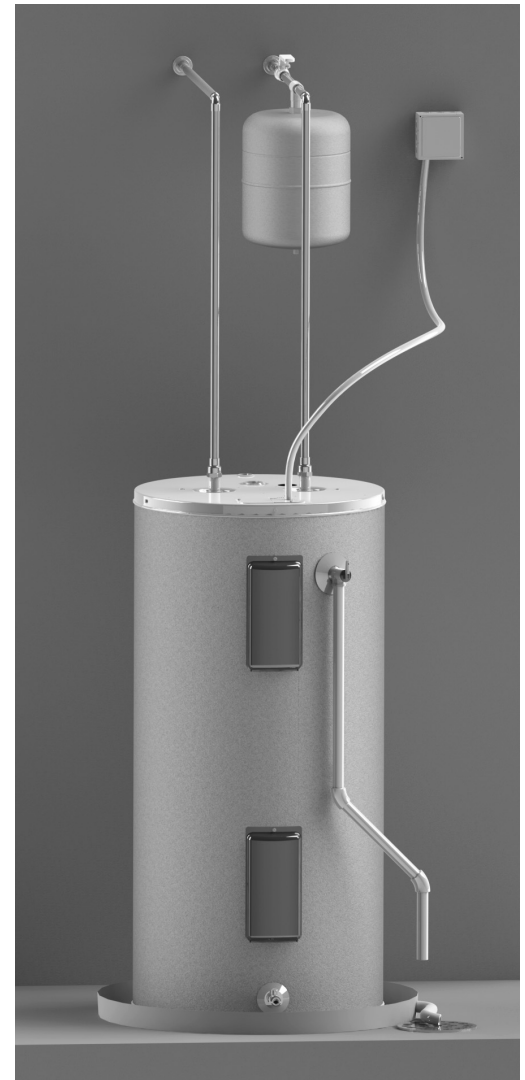
- Call our Technical Assistance Hotline at **1-800-527-1953**. We can help you with installation, operations, troubleshooting, or maintenance. Before you call, write down the model and serial number from the water heater's data plate.

Incorrect installation, operation, or service can damage the water heater, your house and other property, and present risks including fire, scalding, electric shock, and explosion, causing serious injury or death.



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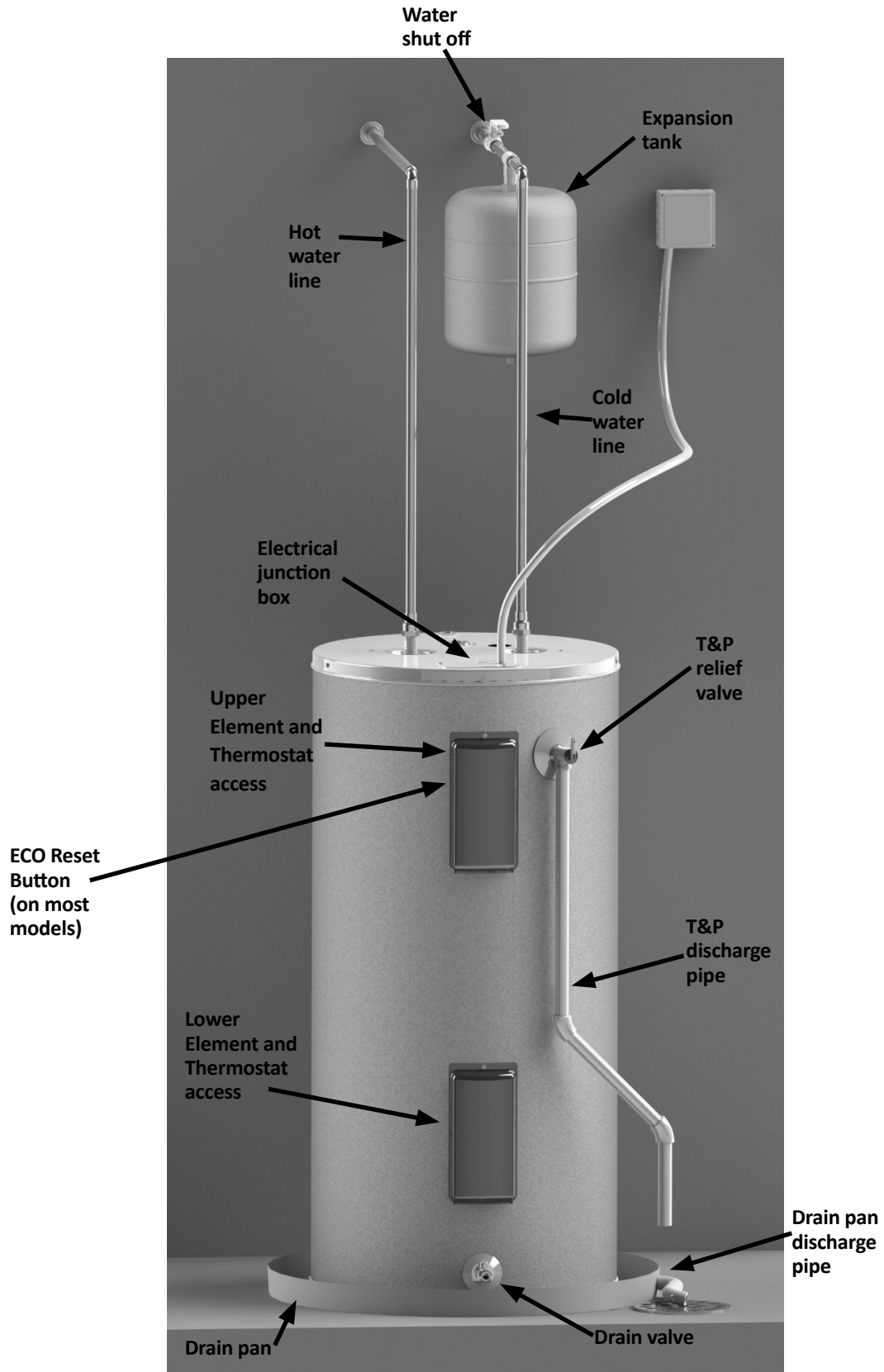
Keep this manual in the pocket on heater for future reference whenever maintenance, adjustment or service is required.

Retain your original receipt as proof of purchase.

January 2015
100263105

WATER HEATERS - TANK TYPE

COMPLETED INSTALLATION (TYPICAL)



IMPORTANT SAFETY INFORMATION

Read and follow all safety messages and instructions in this manual.

This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible property damage, serious injury or death. Do not remove any permanent instructions, labels, or the data plate from either the outside of the water heater or on the inside of the access panels. Keep this manual near the water heater.

DANGER	DANGER indicates hazardous situation that, if not avoided, will result in death or serious injury.
WARNING	WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.
CAUTION	CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	NOTICE indicates practices not related to physical injury.

The California Safe Drinking Water and Toxic Enforcement Act requires the Governor of California to publish a list of substances known to the State of California to cause cancer, birth defects, or other reproductive harm, and requires businesses to warn of potential exposure to such substances.

⚠️WARNING! This product contains one or more chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

This appliance can cause low-level exposure to some of the substances included in the act.

Important information to keep

Fill out this section and keep this manual in the pocket of the water heater for reference.

Date Purchased:

Model number:

Serial number:

Maintenance performed:*	Date:
-------------------------	-------

*Drain and flush tank and remove and inspect anode rod after first six months of operation and at least annually thereafter. Operate the Temperature and Pressure Relief Valve (T&P) annually and inspect T&P valve every 2-4 years (see the label on the T&P valve for maintenance schedule). See the Maintenance section for more information about maintaining this water heater.

IMPORTANT SAFETY INFORMATION

To reduce the risk of property damage, serious injury or death, read and follow the precautions below, all labels on the water heater, and the safety messages and instructions throughout this manual.

RISKS DURING INSTALLATION AND MAINTENANCE



Electric Shock Risk

Contact with the electrical parts in the junction box and behind the access doors can result in severe injury or death from electrical shock:

- Disconnect power by opening the circuit breaker or removing the fuses before installing or servicing.
- Use a non-contact circuit tester to confirm that power is off before working on or near any electrical parts.
- Replace the junction box cover and access doors after servicing.

Lifting Risk

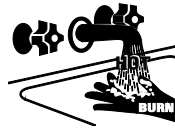


⚠ WARNING! The water heater is heavy. Follow these precautions to

reduce the risk of property damage, injuries from lifting or impact injuries from dropping the water heater.

- Use at least two people to lift the water heater.
- Be sure you both have a good grip before lifting.
- Use an appliance dolly or hand truck to move the water heater.

RISKS DURING OPERATION



Scalding Risk

This water heater can make water hot enough to cause severe burns instantly, resulting in severe injury or death.

- Feel water before bathing or showering.
- To reduce the risk of scalding, install Thermostatic Mixing Valves (temperature limiting valves) at each point-of-use. These valves automatically mix hot and cold water to limit the temperature at the tap. Mixing valves are available from your local plumbing supplier. Follow manufacturer's instructions for installation and adjustment of the valves.
- The thermostat(s) on this water heater have been factory set to approximately 120°F to reduce the risk of scalding. Higher temperatures increase the risk of scalding, but even at 120°F, hot water can scald. If you choose a higher temperature, Thermostatic Mixing Valves located at each point-of-use are particularly important to help avoid scalding.

Temperature	Time to Produce a Serious Burn
120°F (49°C)	More than 5 minutes
125°F (52°C)	1½ to 2 minutes
130°F (54°C)	About 30 seconds
135°F (57°C)	About 10 seconds
140°F (60°C)	Less than 5 seconds
145°F (63°C)	Less than 3 seconds
150°F (66°C)	About 1½ seconds
155°F (68°C)	About 1 second

For information about changing the factory thermostat setting(s), refer to the "Adjusting Temperature" section in this manual ("Step 10" on page 15).

Even if you set the water heater thermostat(s) to a low setting, higher temperatures may occur in certain circumstances:

- In some cases, repeated small draws of water can cause the hot and cold water in the tank to "stack" in layers. If this happens, the water can be as much as thirty degrees hotter than the thermostat setting. This temperature variation is the result of your usage pattern and is not a malfunction.
- Water temperature will be hotter if someone adjusted the thermostat(s) to a higher setting.
- Problems with the thermostat(s), or other malfunctions may result in higher than expected water temperatures.
- If the water heater is in a hot environment, the water in the tank can become as hot as the surrounding air, regardless of the thermostat setting.
- If the water supplied to the water heater is pre-heated (for example, by a solar system) the temperature in the tank may be higher than the water heater's thermostat setting.

To reduce the risk of unusually hot water reaching the fixtures in the house, install Thermostatic Mixing Valves at each point-of-use.

If anyone in your home is at particular risk of scalding (for example, the elderly, children, or people with disabilities) or if there is a local code or state law requiring a certain water temperature at the hot water tap, then these

precautions are particularly important.

According to a national standard American Society of Sanitary Engineering (ASSE 1070) and most local plumbing codes, the water heater's thermostat should not be used as the sole means to regulate water temperature and avoid scalds.

Properly adjusted Thermostatic Mixing Valves installed at each point-of-use allow you to set the tank temperature to a higher setting without increasing risk of scalds. A higher temperature setting allows the tank to provide much more hot water and can help provide proper water temperatures for appliances such as dishwashers and washing machines. Higher tank temperatures (140°F) also kill bacteria that cause a condition known as "smelly water" and can reduce the levels of bacteria that cause water-borne diseases.

Water Contamination Risk

Do not use chemicals that could contaminate the potable water supply. Do not use piping that has been treated with chromates, boiler seal, or other chemicals.



Fire Risk

To reduce the risk of a fire that could destroy your home and seriously

injure or kill people:

- Do not store things that can burn easily such as paper or clothes next to the water heater.
- Be sure the junction box cover and the access door covers are in place. These covers keep debris from entering and potentially being ignited, and help keep any internal fires from spreading.
- Keep the water heater from becoming

wet. Immediately shut the water heater off and have it inspected by a qualified person if you find that the wiring, thermostat(s) or surrounding insulation have been exposed to water in any way (e.g., leaks from plumbing, leaks from the water heater itself can damage property and could cause a fire risk). If the water heater is subjected to flood conditions or the thermostat(s) have been submerged in water, the entire water heater must be replaced.

- Make electrical connections properly, according to the instructions on page 14. Use 10 gauge solid copper wire. Use a UL listed or CSA approved strain relief. Connect ground wire to green ground screw.



Explosion Risk

High temperatures and pressures in the water heater tank can cause an

explosion resulting in property damage, serious injury or death. A new Temperature and Pressure (T&P) Relief Valve is included with your water heater to reduce risk of explosion by discharging hot water. Additional temperature and pressure protective equipment may be required by local codes.

A nationally recognized testing laboratory maintains periodic inspection of the valve production process and certifies that it meets the requirements for Relief Valves for Hot Water Supply Systems, ANSI Z21.22. The T&P Relief Valve's relief pressure must not exceed the working pressure rating of the water heater as stated on the rating plate.

Maintain the T&P Relief Valve properly. Follow the maintenance instructions provided by the manufacturer of the T&P Relief Valve (label attached to T&P Relief Valve) and the procedure that starts on page 24.

An explosion could occur if the T&P Relief Valve or discharge pipe is blocked. Do not cap or plug the T&P Relief Valve or discharge pipe.

Fire and Explosion Risk if Hot Water is Not Used for Two Weeks or More

⚠ CAUTION! Hydrogen gas builds up in a hot water system when it is not used for a long period (two weeks or more). Hydrogen gas is extremely flammable. If the hot water system has not been used for two weeks or more, open a hot water faucet for several minutes at the kitchen sink before using any electrical appliances connected to the hot water system. Do not smoke or have an open flame or other ignition source near the faucet while it is open.

GETTING STARTED

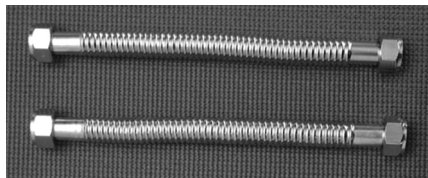


Figure 1 - Flexible connectors use compression fittings and do not require soldering.



Figure 2 - Use a non-contact circuit tester to insure that the power is off before you work on a circuit.



Figure 3 - Install a Pressure Reducing Valve set to 50 to 60 PSI.

1

Review all of the instructions before you begin work.

Improper installation can damage the water heater, your home and other property, and can present risks of serious injury or death.

2

Check with your local and state authorities for any local or state codes that apply to your area. In the absence of local and state codes, follow National Fire Protection Association (NFPA-70) and the current editions of the National Electric Code (NEC) and the International Plumbing Code (IPC). The instructions in this manual comply with national codes, but the installer is responsible for complying with local codes.

Massachusetts code requires this water heater to be installed in accordance with Massachusetts 248-CMR 2.00 and 248-CMR 5.00: State Plumbing Code. Other local and state authorities may have similar requirements or other codes applicable to the installation of this water heater.

3

Before you start, be sure you have, and know how to use, the following tools and supplies:

- Plumbing tools and supplies appropriate for the type of water pipes in your home
- Threaded connectors (Figure 1) for the cold and hot water pipes
- For homes plumbed with plastic pipe, use threaded connectors suitable for the specific type of plastic pipe used: CPVC and PEX (cross-linked polyethylene). Do not use PVC pipe.
 - For homes with copper pipes, you may purchase connector

kits with compression fittings that don't require soldering (Figure 1). Compression fittings are easier to install than soldering copper pipes.

- Teflon® tape or pipe joint compound approved for potable water
- Tools to make the electrical connections (for example, screwdrivers, wire strippers)
- Non-Contact circuit tester to check for power (Figure 2)
- Water Pressure Gauge (Figure 4)

Recommended Accessories:

- Suitable drain pan (Figure 6 on page 8)
- Automatic leak detection and shut-off device
- Pressure Reducing Valve (Figure 3 on page 6)
- Thermal Expansion Tank (Figure 5 on page 7)
- Point-of-use Thermostatic Mixing Valves (Figure 7 on page 8)

INSTALLATION

Follow these steps for proper installation:

Step 1:

✓ Verify that your home is equipped and up-to-date for proper operation

Installing a new water heater is the perfect time to examine your home's plumbing system and make sure the system is up to current code standards. There have likely been plumbing code changes since the old water heater was installed. We recommend installing the following accessories and any other needed changes to bring your home up to the latest code requirements.

Use the checklist below and inspect your home. Install any devices you need to comply with codes and assure that your new water heater performs at its best. Check with your local plumbing official for more information.

✓ Water pressure

We recommend checking your home's water pressure with a pressure gauge (Figure 4.) Most codes allow a maximum incoming water pressure of 80 psi. We recommend a working pressure no higher than 50-60 psi.

HOW: Purchase an inexpensive water pressure gauge available at your local plumbing supplier. Connect the Water Pressure Gauge to an outside faucet and measure the maximum water pressure experienced throughout the day (highest water pressures often occur at night).

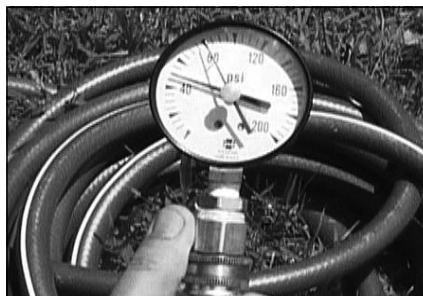


Figure 4 - Use a Water Pressure Gauge to make sure your home's water pressure is not too high.

To limit your home's water pressure: Locate your home's Pressure Reducing Valve (PRV) on the main incoming (cold) water supply line and adjust the water pressure control to between 50 and 60 psi. If your home does not have a Pressure Reducing Valve, install a PRV on the home's main water supply line and set it to between 50 and 60 psi. Pressure Reducing Valves are available at your local plumbing supplier.

BACKGROUND: Over the years, many utilities have increased water supply pressures so they can serve more homes. In some homes today, pressures exceed 100 psi. High water pressures can damage water heaters, causing premature leaks. If you have replaced toilet valves, had a water heater leak, or had to repair appliances connected to the plumbing system, pay particular attention to your home's water pressure. When purchasing a PRV, make sure the PRV has a built-in bypass.

✓ Water pressure increase caused by thermal expansion

Verify that you have a properly sized Thermal Expansion Tank (Figure 5). We recommend installing an expansion tank if your home does not have one. Codes require a properly pressurized, properly sized Thermal Expansion Tank in almost all homes. (See photo on inside front cover.)



Figure 5 - A Thermal Expansion Tank helps protect the home's plumbing system from pressure spikes.

HOW: Connect the Thermal Expansion Tank (available at your local plumbing supplier) to the cold water supply line near the water heater. The expansion tank contains a bladder and an air charge. To work properly, the Thermal Expansion Tank must be sized according to the water heater's tank capacity and pressurized to match the home's incoming water pressure. Refer to the installation instructions provided with the Thermal Expansion Tank for installation details.

INSTALLATION

BACKGROUND: Water expands when heated, and the increased volume of water must have a place to go, or thermal expansion will cause large increases in water pressure (despite the use of a Pressure Reducing Valve on the home's main water supply line). The Safe Drinking Water Act of 1974 requires the use of backflow preventers and check valves to restrict water from your home reentering the public water system. Backflow preventers are often installed in water meters and may not be readily visible. As a result, most all plumbing systems today are now "closed," and almost all homes now need a Thermal Expansion Tank.

A Thermal Expansion Tank is a practical and inexpensive way to help avoid damage to the water heater, washing machine, dishwasher, ice maker and even toilet valves. If your toilet occasionally runs for no apparent reason (usually briefly at night), that may be due to thermal expansion increasing the water pressure temporarily.

Water pipe and tank leaks

Leaks from plumbing pipes or from the water heater itself can damage property and could cause a fire risk.

- Install an automatic leak detection and shutoff device (available at your local plumbing supplier). These devices can detect water leaks and can shut off the water heater's water supply if a leak occurs.



Figure 6 - A suitable drain pan piped to an adequate drain can help protect flooring from leaks and drips.

- Install a suitable drain pan (available at your local plumbing supplier) under the water heater (Figure 6) to catch condensation or leaks in the piping connections or tank. Most codes require, and we recommend, installing the water heater in a drain pan that is piped to an adequate drain. The drain pan must be at least two inches wider than the diameter of the water heater. Install the drain pan so the water level would be limited to a maximum depth of 1-3/4".



Water temperature regulation

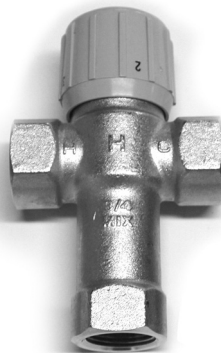


Figure 7 - Thermostatic Mixing Valves installed at each point-of-use can help prevent scalds.

Install Thermostatic Mixing Valves (Figure 7) to regulate the temperature of the water supplied to each point-of-use (for example, kitchen sink, bathroom sink, bath, shower). Con-

sult the valve manufacturer's instructions or a qualified person.

⚠ WARNING! Even if the water heater thermostat is set to a relatively low temperature, hot water can scald. Install Thermostatic Mixing Valves at each point-of-use to reduce the risk of scalding (page 4).

BACKGROUND: A Thermostatic Mixing Valve, installed at each point-of-use, mixes hot water from the water heater with cold water to more precisely regulate the temperature of hot water supplied to fixtures. If you aren't sure if your plumbing system is equipped with properly installed and adjusted Thermostatic Mixing Valves at each point where hot water is used, contact a qualified person for more information.

Step 2:

Verify that the location is appropriate

Before installing your water heater, ensure that:

- 1** The water heater will be:
 - Installed indoors close to the center of the plumbing system.
 - In a suitable drain pan piped to an adequate floor drain or external to the building (Figure 6 on page 8).
 - In an area that will not freeze
 - In an area that is suitable for installing the water heater vertically
- 2** The location has adequate space (clearances) for periodic servicing.
- 3** The floor can support the weight of a full water heater.
- 4** Your area is not prone to earthquakes. If it is, use special straps as required by local building codes.

NOTICE: The state of California requires bracing, anchoring, or strapping the water heater to avoid its moving during an earthquake. Contact local utilities for code requirements in your area, visit <http://www.dsa.dgs.ca.gov>, or call 1-916-445-8100 and request instructions. Other locations may have similar requirements. Check with your local and state authorities.

5

The location is not prone to physical damage by vehicles, flooding, or other risks.

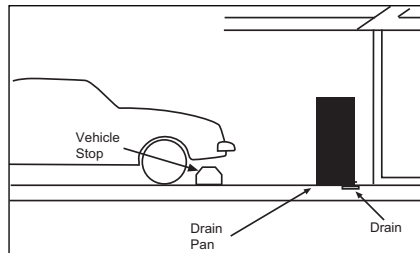


Figure 8 - In a garage, install a vehicle stop to avoid water heater damage.

6

Avoid locations such as attics, upper floors, or where a leak might damage the structure or furnishings. Due to the normal corrosive action of water, the tank will eventually leak. To minimize property damage from leaks, inspect and maintain your water heater in accordance with this manual's instructions. Install a suitable drain pan under the water heater piped to an adequate drain. Inspect the drain pan, pipes, and surrounding area regularly and fix any leaks found. Drain pans are available at your local plumbing supplier. Leaks are frequently in the plumbing system itself and not the water heater.

Step 3:

Removing the old water heater

1

Read each installation step and decide if you have the necessary skills to install the water heater. Only proceed if you can safely perform the work. If you are not comfortable, have a qualified person perform the installation.

2

Locate the water heater's circuit breaker and turn it OFF (or remove the circuit's fuses).

3

On the old water heater, remove the electrical junction box access panel.

Using a non-contact circuit tester, check the wiring to make certain the power is OFF.

⚠ WARNING! Working on an energized circuit can result in severe injury or death from electrical shock.

4

Disconnect the electrical wires.

5

Open a hot water faucet and let the hot water run until it is cool (This may take 10 minutes or longer).



Figure 9 - Let the hot water run until it is cool.

⚠ WARNING! Be sure the water runs cool before draining the tank to reduce the risk of scalding.

6

Connect a garden hose to the drain valve and place the other end of the hose in a drain, outside, or a bucket. (Note that sediment in the bottom of the tank may clog the valve and prevent it from draining. If you can't get the tank to drain, contact a qualified person.)

INSTALLATION

7 Turn the cold water supply valve OFF.

8 Open the drain valve on the water heater.



Figure 10 - Draining the old water heater.

9 Also open a hot water faucet to help the water in the tank drain faster.

10 When the tank is empty, disconnect the Temperature & Pressure (T&P) Relief Valve discharge pipe. You may be able to reuse the discharge pipe, but do not reuse the old T&P Relief Valve. A new T&P Relief Valve comes installed on your water heater (or on some models, is in the carton with the water heater).

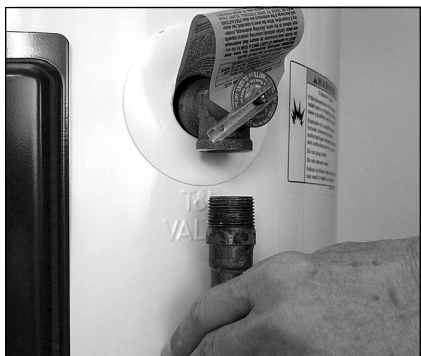


Figure 11 - Removing the T&P Relief Valve discharge pipe.

11 Disconnect the water pipes. Many water pipes are connected by a threaded union which can be disconnected with wrenches. If you must cut the water pipes, cut the pipes close to the water heater's inlet and outlet connections, leaving the water pipes as long as possible. If necessary, you can make them shorter later when you install the new water heater.

12 Remove the old water heater.

▲ WARNING! Use two or more people to remove or install water heater. Failure to do so can result in back or other injury.

Step 4:

Installing the new water heater

1 Completely read all instructions before beginning. If you are not sure if you can complete the installation, **DO NOT RETURN THIS UNIT TO THE STORE.** Seek assistance from any of the following sources:

- Schedule an appointment with a qualified person to install your water heater.
- Call our Technical Assistance Hotline at **1-800-527-1953**

2 Install a suitable drain pan that is piped to an adequate drain.

3 Set the water heater in place taking care not to damage the drain pan.

NOTICE: Most codes require setting the water heater in a suitable drain pan piped to an adequate drain. The drain pan helps avoid property damage which may occur from condensation or leaks in the piping connections or tank. The drain pan must be at least two inches wider than the diameter of the water heater. Install the drain pan so the water level is limited to a maximum depth of 1-3/4".

4 Verify that the water heater is properly set in place. Check that:

- The T&P Relief Valve will not be in contact with any electrical parts.
- There is adequate space to install the T&P Relief Valve discharge pipe and that it can be piped to a separate drain (and not into the drain pan).
- There is adequate access and space around the water heater for future maintenance.

DO NOT CONNECT ELECTRICAL WIRING UNTIL YOU ARE INSTRUCTED TO DO SO.

NOTICE: Connecting electrical power to the tank before it is completely full of water (water must run FULL STREAM from a hot water tap for a full three minutes) will cause the upper heating element to burn out.

Step 5:

Connect the Temperature and Pressure (T&P) Relief Valve/Pipe

Most T&P Relief Valves are pre-installed at the factory. In some cases, they are shipped in the carton and must be installed in the opening marked and provided for this purpose and according to local codes.

⚠ WARNING! To avoid serious injury or death from explosion, install a T&P Relief Valve according to the following instructions:

1 If your water heater does not have a factory installed T&P Relief Valve, install the new T&P Relief Valve that came with your water heater. Do not reuse an old T&P Relief Valve. Install a T&P Relief Valve discharge pipe according to local codes and the following guidelines:

- The discharge pipe should be at least 3/4" inside diameter and sloped for proper drainage. Install it to allow complete drainage of both the T&P Relief Valve and the discharge pipe.
- The discharge pipe must withstand 250°F (121°C) without distortion. Use

only copper or CPVC pipe. Do not use any other type of pipe, such as PVC, iron, flexible plastic pipe, or any type of hose.



Figure 12 - The T&P Relief Valve discharge pipe must be installed properly and piped to an adequate drain.

- Terminate the discharge pipe a maximum of six inches above a floor drain or outside the building. Do not drain the discharge pipe into the drain pan; instead pipe it separately to an adequate drain. In cold climates, terminate the discharge pipe inside the building to an adequate drain. Outside drains could freeze and obstruct the drain line. Protect the drain from freezing.

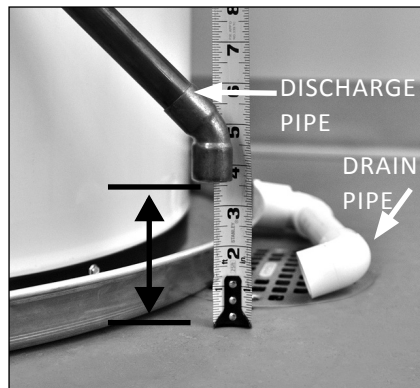


Figure 13 - The end of the T&P Relief Valve discharge pipe must stop no more than six inches above a floor drain or terminate outside the building.

- Do not place any valve or other restriction between the tank and T&P

Relief Valve. Do not cap, block, plug, or insert any valve between the T&P Relief Valve and the end of the discharge pipe. Do not insert or install any reducer in the discharge pipe.

INSTALLATION

Step 6:

Install shutoff and tempering valves

1 If one is not already installed, install a manual shutoff valve in the cold water line that supplies the water heater. Install the shutoff valve near the water heater so that it is readily accessible. Only use valves that are compatible with potable water. Use only full-flow ball or gate valves. Other types of valves may cause excessive restriction to the water flow.

2 Install a Thermostatic Mixing Valve at each point-of-use (for example, kitchen sink, bathroom sink, bath, shower). Consult the valve manufacturer's instructions or a qualified person.



Figure 14 - Install Thermostatic Mixing Valves at each point where hot water will be used.

⚠ WARNING! Even if the water heater's thermostat(s) are set to a relatively low temperature, hot water can scald. Install Thermostatic Mixing Valves at each point-of-use to reduce the risk of scalding. (page 4.)

3 For water heaters that are fed by a solar water heating

system (or any other pre-heating system), always install a Thermostatic Mixing Valve or other temperature limiting device in the inlet water supply line to limit water supply inlet temperature to 120°F. Solar water heating systems can supply water with temperatures exceeding 170°F and may result in water heater malfunction.

⚠ WARNING! Hot water provided by solar heating systems can cause severe burns instantly, resulting in severe injury or death (page 4).

Step 7:

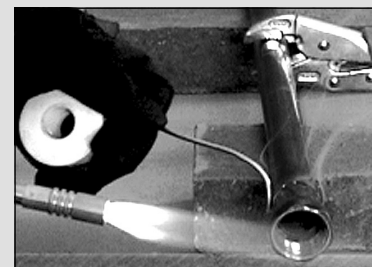
1 Connect the water supply

Determine the type of water pipes in your home. Most homes use copper water pipes, but some use CPVC or cross-linked polyethylene (PEX). Use fittings appropriate for the type of pipe in your home. Do not use iron or PVC pipe – they are not suitable for potable water.

2 Connect the cold water supply using 3/4 inch National Pipe Thread "NPT" to the cold water inlet nipple. For ease of removing the water heater for service or replacement, connect the water pipes with a coupling called a union. We recommend using a dielectric-type union (available at your local plumbing supplier). Dielectric unions can help prevent corrosion caused by tiny electric currents common in copper water pipes and can help extend the life of the water heater.

IF YOU HAVE COPPER PIPES:

If your home has copper water pipes, you can solder the water pipe connections or use compression fittings which don't require soldering. Compression fittings are easier to install than soldering pipe. Check with local plumbing officials to determine what types of pipe materials are suitable for your location. Do not use lead-based solder.



NOTICE: Do not solder pipes while they are attached to the water heater. The water heater's inlet and outlet connections contain non-metallic parts which could be damaged. The proper way to connect the water heater to copper water pipes is as follows:

- Solder a short length of pipe (about a foot or so) to a threaded adapter using only 95/5 tin-antimony or equivalent solder. Attach the threaded adapters to the water heater's connections (using Teflon® tape or pipe joint compound). Connect the home's water pipes by soldering, keeping the connections at the water heater cool with wet rags.

NOTICE: Most water heater models contain energy saving heat traps in the inlet and outlet connections. Do not remove the heat traps.

3 Connect the hot water supply using 3/4 inch NPT to the hot water outlet. Follow the same connection guidelines as for the cold water supply.

4 Install insulation (or heat tape) on the water pipes especially if the indoor installation area is subject to freezing temperatures. Insulating the hot water pipes can increase energy efficiency.

5 Double check to make sure the hot and cold water pipes are connected to the correct hot and cold water fittings on the water heater.

6 If needed, install (or adjust) the home's Pressure Reducing Valve to 50-60 psi and install a Thermal Expansion Tank.



Figure 15 - A Pressure Reducing Valve is required if your home's water pressure is above 80 psi.



Figure 16 - The Thermal Expansion Tank should be pressurized with air, to match the home's incoming water pressure.

Step 8:

Verify connections and completely fill tank

To remove air from the tank and allow the tank to fill completely with water, follow these steps:

1 Remove the aerator at the nearest hot water faucet. This allows any debris in the tank or plumbing system to be washed out.

2 Turn the cold water supply back on.

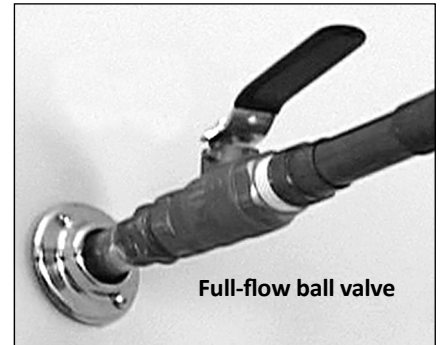


Figure 17 - Fully open the cold water supply valve.

3 Open a hot water faucet and allow the water to run until it flows with a full stream.

4 Let the water run full stream for three full minutes.

5 Close the hot water faucet and replace the aerator.

6 Check inlet and outlet connections and water pipes for leaks. Dry all pipes so that any drips or leaks will be apparent. Repair any leaks. Almost all leaks occur at connections and are not a tank leak.

INSTALLATION



NOTICE: The tank must be completely empty of air and full of water before connecting electrical power to avoid “Dry Firing.” Dry Firing may result in the upper element burning out. This is a common installation mistake. After you make the water connections, but before you connect the electrical power, open a hot water faucet and let the water run full until all the air is removed. Let the “hot” water run full for three minutes or longer before connecting any electrical wires. A Dry Fired upper heating element is an installation error and is not covered under warranty.

If Dry Firing occurs, replace the upper heating element according to the instructions on page 22.

Step 9:

Make electrical connections

▲ WARNING! Working on an energized circuit can result in severe injury or death from electrical shock.

NOTICE: Do not turn electrical power on unless you are sure all of the air is out of the tank and the tank is completely full of water. If power is applied before the tank is completely full of water, the upper element will burn out (Dry Fire).

- 1 Be sure the electrical power to the water heater is turned OFF at the circuit breaker panel (or remove the circuit’s fuses).
- 2 Using a non-contact circuit tester, check the wiring to make certain the power is OFF.
- 3 Check the water heater’s data plate and ensure that the home’s voltage, wiring size (ampacity) and circuit breaker rating and type are correct for this water heater. Refer to the wiring diagram located on the water heater for the correct electrical connections. Ensure that wire sizes, type, and connections comply with all applicable local codes. In the absence of local codes, follow NFPA-70 and the current edition of the National Electric Code (NEC).
- 4 Remove the cover on the electrical junction box on the top of the water heater.



Figure 18 - The water heater’s electrical requirements can be determined from the data plate.

- 5 Install wiring in an approved conduit (if required by local codes). Use a UL listed or CSA approved strain relief to secure the electrical wiring to the water heater.
- 6 Connect the ground wire to the green ground screw. Connect the home’s two power wires to the water heater’s two power wires. Use suitable wire nuts or other approved means to make the power connections.



Figure 19 - Connecting the electrical wires.

7

Replace the junction box cover and secure with the screws provided.

▲ WARNING! Be sure cover is secured to reduce the risk of fire and electric shock.

Step 10:

Adjusting the Temperature

With the installation steps completed, you may adjust the water heater's temperature setting if desired.

1

Set the thermostat(s) to desired temperature. The thermostat(s) on this water

heater have been factory set to approximately 120°F to reduce the risk of scald injury. You may wish to set a higher temperature to provide hot water for automatic dishwashers or laundry machines, to provide more hot water capacity, and to reduce bacterial growth. Higher tank temperatures (140° F) kill bacteria that cause a condition known as "smelly water" and can reduce the levels of bacteria that cause water-borne diseases.

▲ WARNING! Higher temperatures increase the risk of scalding, but even at 120°F, hot water can scald (page 4).

If you increase the water heater's temperature setting, install Thermostatic Mixing Valve(s) at each point-of-use to reduce the risk of scalding.



Figure 20 - Adjust Thermostat Mixing Valves at each point-of-use 120°F or lower.

To adjust the water heater's thermostat:

- Be sure the electrical power to the water heater is turned OFF at the circuit breaker panel (or remove the circuit's fuses).

▲ WARNING! Working near an energized circuit can result in severe injury or death from electrical shock. Check wires with a circuit tester to make sure power is off.

- Remove the upper and lower access panels and fold away the insulation.
- Turn the water temperature dial clockwise (>>) to increase the temperature, or counter clockwise (<<) to decrease the temperature. Adjust both thermostats to the same temperature setting. To avoid a shortage of usable hot water, do not adjust the upper thermostat to a temperature setting that is higher than the lower thermostat's temperature setting.

NOTE: Most models have two thermostats, but some models may only have one. If your water heater has only one thermostat, it is located behind the lower access panel.

- Fold the insulation back in place and replace the access panels.

▲ WARNING! Be sure panels are secured to reduce the risk of fire and electric shock.

2

Turn the electric power back on.

3

Wait for the water to heat up. It may take several hours for a tank of cold water to heat up.

If you have no hot water after two hours, refer to "TROUBLESHOOTING" Section on page 17.

▲ WARNING! If you have increased the temperature setting and the Thermostatic Mixing Valves are not set properly (or not installed) you could scald yourself while checking the temperature.

4

Check water temperature at several points of use in your home (for example, bathtub faucet, shower, or lavatory sink) and adjust the Thermostatic Mixing Valves as needed. If you aren't sure how to adjust the Thermostatic Mixing Valve settings, or aren't sure if you have Thermostatic Mixing Valves, contact a qualified person.

Step 11:

The water heater is now ready for normal operation. To keep your water heater working safely and efficiently and extend its life, perform maintenance according to the schedule on page 21.

To save energy, lower the temperature setting on the thermostat(s) if you plan to be gone for an extended time. Follow the instructions in Step 10 for adjusting the thermostat to a lower temperature setting before you leave and to properly raise the temperature setting when you return.

⚠ CAUTION! Hydrogen gas builds up in a hot water system when it is not used for a long period (two weeks or more). Hydrogen gas is extremely flammable. If the hot water system has not been used for two weeks or more, open a hot water faucet for several minutes at the kitchen sink before using any electrical appliances connected to the hot water system. Do not smoke or have an open flame or other ignition source near the faucet while it is open.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Call our Technical Assistance Hotline at **1-800-527-1953**.
We can help you with installation, operation, troubleshooting, or maintenance.
Before you call, write down the model and serial number from the
water heater's data plate.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE(S) See explanations on the following pages.	CORRECTIVE ACTION
NO HOT WATER (page 18)	No power to water heater Burned out upper heating element (Dry Fired) Energy Cut Off Switch tripped Faulty Thermostatic Mixing Valve Non-Functioning upper thermostat Leak in plumbing system	Check for blown fuses or tripped circuit breaker. Check for power. Replace upper heating element. See page 19, step 5. Check hot water at other faucets. Check/replace upper thermostat. (See page 23) Check hot water side of home's plumbing system for leaks.
INSUFFICIENT HOT WATER (page 19)	Thermostats set too low Non-Functioning lower heating element Water heater's capacity too small (or usage too high) Thermostatic Mixing Valve faulty/set too low Non-Functioning lower thermostat Hot and cold pipe connections reversed Leak in plumbing system Melted dip tube	Set thermostats to desired temperature. See page 15 Replace lower heating element. (See page 22) Install adequately sized water heater (or reduce usage). Check hot water at other faucets. Replace lower thermostat. (See page 23) Correct piping. Check hot water side of home's plumbing system for leaks. Check/replace dip tube.
SLOW HOT WATER RECOVERY (page 19)	Low supply voltage Malfunctioning lower heating element	Check power (voltage). Check lower element and replace if burned out. (See page 22)
TEMPERATURE TOO HIGH (page 20)	Non-functioning thermostat Grounded/shorted heating element Thermostatic Mixing Valve faulty/set too high	Replace thermostat. (See page 23) Replace heating element. (See page 22) Check hot water at other faucets.
LOW WATER PRESSURE (page 20)	Partially closed supply valve.	See Low Water Pressure section on page 20.
DRIPS FROM T&P RELIEF VALVE (page 20)	Excessive water pressure Thermal expansion Debris under valve seat	Use Pressure Reducing Valve set to 50-60 psi. Install a Thermal Expansion Tank. See page 20.
WATER ODOR (page 20)	Bacteria in the water	See Water Odor section on page 20.

TROUBLESHOOTING

⚠ WARNING! Working near an energized circuit can result in severe injury or death from electrical shock.

⚠ WARNING! When you are finished, be sure all covers are secured to reduce the risk of fire and electric shock.

No Hot Water

The most likely reasons for an electric water heater to produce NO hot water are:

- No electric power—a common problem with new installations
- Burned out upper element (Dry Fired) — a common problem with new installations
- Tripped Energy Cut Off (red button on upper thermostat)
- The water heater's inlet and outlet connections are reversed (usually only in new installations)
- Broken upper thermostat (or wiring)
- A leak in the hot water side of the plumbing system that exceeds the water heater's heating capacity and makes it appear that the water heater is producing little to no hot water

Follow these steps to diagnose and correct common electrical problems:

1 Check the electric power to the water heater. No hot water is often caused by a problem with the home's electrical wiring or circuit breakers. You'll need a non-contact circuit tester. Follow these guidelines:

- Locate the water heater's circuit breaker and turn it off (or remove the circuit's fuses).
- Locate the electrical junction box on top of the water heater and remove the cover.

- Identify the two power wires. The power wires are usually black/black or black/red—the green or copper wire is the ground wire.



Figure 21 - Use a non-contact circuit tester to check for electrical power.

- Turn the circuit breaker back on (or install the fuses) and check the power on both incoming power wires using a non-contact circuit tester.
- Turn the power off and replace the cover on the electrical junction box.

If the water heater is not getting power, contact a qualified person to have your home's wiring or circuit breakers checked.

2 Check the upper heating element. If the water heater is getting electrical power, check to see if the upper heating element has burned out. If the upper element is burned out, you'll have no hot water. To check the upper element, you'll need a multimeter capable of reading resistance.

- Turn the power OFF at the circuit breaker or remove fuses.
- Remove the upper access panel.
- Remove the insulation to access the upper thermostat and heating element.

3 Check the top two screws of the upper thermostat using a non-contact circuit tester and confirm that power is off (screw terminals 1 and 3 in photo on next page).

- With the electrical power off, remove the two power wires from the upper heating element.

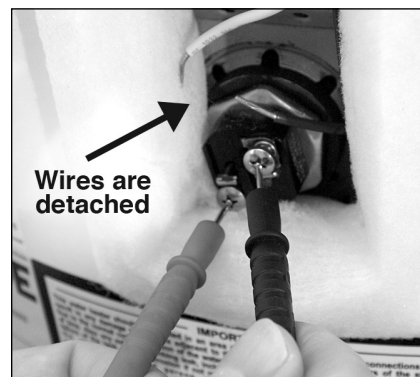


Figure 22 - Use a multimeter to check the resistance of the upper heating element.

4 Check the resistance of the upper heating element using a multimeter. Measure the resistance between the two screw terminals on the upper heating element. A good element will have a resistance ranging between 5 and 25 Ohms. If the resistance is:

Outside this range. Replace the element (see the Routine Maintenance section on page 21). On a new water heater, a burned out upper heating element is almost always caused by turning the power on before the tank was completely full of water (Dry Fire). (See Step 8 in the Installation section.)

Within this range. Reattach the power wires, making sure the wires are in good condition and the connections are clean and tight. Next, check the following:

5

Check/Reset Energy Cut Off (ECO) Button.

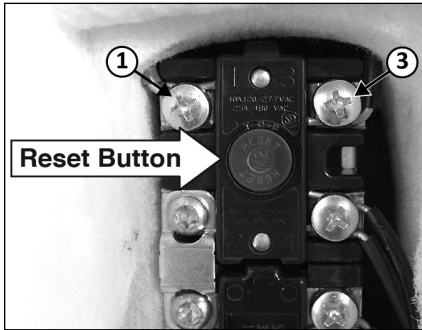


Figure 23 - Energy Cut Off (ECO) button

The Energy Cut Off (ECO) shuts off power to the water heater's elements if the temperature of the water in the tank gets too hot. If the ECO has tripped, you'll have no hot water. A tripped ECO can usually be reset, but you should have a qualified person investigate the cause of the overheating and repair the problem. Do not turn the power back on until the cause of the overheating has been identified and repaired.

To check the Energy Cut Off (ECO)

- Turn off the power to the water heater.

⚠ WARNING! Working near an energized circuit can result in severe injury or death from electrical shock. Check power wires in the electrical junction box with a non-contact circuit tester to make sure power is off.

- Press the red ECO reset button (see photo above).
- The ECO was tripped if you hear a click when it is reset. In most cases, a tripped ECO indicates that the tank overheated due to a problem with one of the elements or thermostats—have a qualified person check the upper and lower elements and thermostats and replace if necessary.
- The ECO was not tripped if you didn't hear a click. In that case, the upper thermostat should be checked by a qualified person.
- Replace the insulation and the upper access panel.

- Turn off the power to the water heater.

WARNING! Be sure all covers are secured to reduce the risk of fire and electric shock.

Insufficient Hot Water or Slow Hot Water Recovery

⚠ WARNING! Because of the increased risk from scalding, if you set the water heater's thermostat(s) higher than 120°F, Thermostatic Mixing Valves at each point-of-use are particularly important (page 4).

If the hot water is simply not warm enough, there are several possible causes:

- Faulty Thermostatic Mixing Valve in a faucet or shower control (check other faucets in the house for hot water)
- One (or both) of the thermostats set too low
- Water heater's capacity too small (or usage too high)
- Reversed plumbing connections or melted dip tube (usually found soon after new installation)
- Plumbing leak
- Bad lower heating element (or lower thermostat)
- Low supply voltage

Thermostatic Mixing Valves. If the hot water is simply not warm enough, make sure the faucet you are checking doesn't have a defective Thermostatic Mixing Valve. Many shower controls now have built-in mixing valves. If these devices fail, they can reduce the amount of hot water the shower or faucet delivers even though there is plenty of hot water in the tank. Always check the water temperature at several faucets to make sure the problem is not in a faucet or shower control.

Thermostats set too low. If the water temperature at several faucets is too cool, adjust the thermostat(s) accord-

ing to the instructions in Step 10 of the Installation section of this manual.

Undersized water heater. If your water heater runs out of hot water too quickly, it may be too small for your needs. If the water heater is old, consider replacing it with a larger model. If the water heater is in good condition, you may be able to meet your family's hot water needs with the existing water heater by installing Thermostatic Mixing Valves at each point-of-use and then turning the thermostat(s) to a higher setting. See "Step 10" on page 15.

You can also reduce your home's hot water needs by washing clothes in cold water, installing flow restrictors on shower heads, repairing leaky faucets, and taking other conservation steps.

Reversed connections or melted dip tube. Check the hot and cold connections and make sure your home's hot water pipe is connected to the hot water outlet on the water heater. Usually, reversed connections are found soon after the installation of a new unit. If copper pipes were soldered while they were attached to the water heater, the dip tube may have melted. The dip tube is a long plastic tube inside the tank attached to the cold water inlet. If the dip tube has melted, it can be replaced by removing the cold water inlet connection, removing the old dip tube and installing a new one.

Plumbing leak. Even a small leak in the hot water side of the home's plumbing system can make it appear that the water heater is producing little to no hot water. Locate and repair the leak.

Lower heating element not working. If the lower heating element (or, more rarely, the lower thermostat) is not working, you will have some hot water but not as much as before. Because the lower element does most of the work, the lower element usually wears out before the upper element. Replace the lower element and/or thermostat if necessary (see page 22).

TROUBLESHOOTING

Temperature Too High

If the water temperature is too hot:

- Install or adjust the Thermostatic Mixing Valves for each point-of-use (see manufacturer's instructions), or
- Adjust the thermostat(s) on the water heater (see Step 10 in the installation section of this manual).

A nonfunctioning thermostat or a shorted heating element can cause extremely hot water. If the Temperature and Pressure Relief Valve (T&P Valve) releases large amounts of very hot water, it is likely due to a shorted heating element, or more rarely a nonfunctioning thermostat, or the thermostat does not fit snugly against the tank. Very high water temperatures can also cause the Energy Cut Off (ECO) to trip (see page 19). Turn power off until this problem is fixed.

Low Water Pressure

Check both the cold and hot water at a sink to determine if the lower pressure is only on the hot water side. If both hot and cold faucets have low pressure, call your local water utility. If the low pressure is only on the hot water side, the primary causes of this are:

- Melted heat traps or dip tube. Soldering copper pipes while they are connected to the water heater can melt the heat traps inside the hot and cold water connections or the dip tube (cold water side). Melted heat traps or a melted dip tube can restrict the flow of hot water. If that's the case, replace the heat traps or dip tube.
- Partially closed supply valve. Open the water heater's supply valve fully.

Drips from T&P Relief Valve Discharge Pipe

A small amount of water dripping from the Temperature and Pressure (T&P) Relief Valve usually means the home's water pressure is too high or you need a properly sized and pressurized Thermal Expansion Tank. Refer to Step 1 in the Installation section of this manual for more information. A large amount of hot water coming from the T&P discharge pipe may be due to the tank overheating.

⚠ WARNING! Do not cap or plug the T&P relief valve or discharge pipe, and do not operate the water heater without a functioning T&P Relief Valve - this could cause an explosion.

Water pressure too high. High water pressure can cause the T&P Relief Valve to drip. Install a Pressure Reducing Valve (PRV) on the main cold water supply line. Adjust the PRV to between 50 and 60 psi.

Thermal Expansion Tank. Install a Thermal Expansion Tank. If a Thermal Expansion Tank is already installed and the T&P Relief Valve discharge pipe drips, the Thermal Expansion Tank may be pressurized to the wrong pressure or the internal bladder may be defective. Refer to the instructions that came with the Thermal Expansion Tank for more information.

Debris. In rare cases, debris can stick inside the T&P Relief Valve preventing the valve from seating fully. In that case, the T&P Relief Valve discharge pipe will drip. You may be able to clear debris from the T&P Relief Valve by manually operating the valve, allowing small quantities of water to flush out the debris. See the label on the T&P Relief Valve for instructions.

If the water pressure is between 50 and 60 psi, a Thermal Expansion Tank is installed and properly pressurized, and the valve has been cleared of any debris, and it still drips, the valve may be broken—have a qualified person replace the T&P relief valve.

Water Odor

Harmless bacteria normally present in tap water can multiply in water heaters and give off a "rotten egg" smell. Although eliminating the bacteria that causes "smelly water" with a Chlorination system is the only sure treatment, in some cases, the standard anode rod that came with your water heater can be replaced with a special zinc anode rod which may help reduce or eliminate the odor. Contact a qualified person.

NOTE: To protect the tank, an anode rod must be installed in the water heater at all times or the warranty is void.

In cases where the "rotten egg" smell is pronounced, you can raise the tank temperature to 140°F in order to reduce bacteria growth in the tank.

⚠ WARNING! Because higher temperatures increase the risk of scalding, if you set the thermostat(s) higher than 120°F, Thermostatic Mixing Valves at each point-of-use are particularly important (page 4).

MAINTENANCE

Routine Maintenance

Routine maintenance will help your water heater last longer and work better. If you can't perform these routine maintenance tasks yourself, contact a qualified person.

Water Heater Maintenance

After the first six months, drain and flush the water heater and inspect the anode rod. Depending on the hardness of your water, repeat this process at least annually, or more frequently if needed. From time to time, you may need to replace a heating element or a thermostat. All three maintenance tasks are described below.

Draining and Flushing the Water Heater

Tap water contains minerals that can form lime deposits on heating elements or sediment in the bottom of the tank. The amount of lime deposits or sediment depends on the hardness of your tap water. The rate at which sediment builds up depends on water quality and hardness in your area, the temperature settings, and other variables. We recommend draining and flushing the water heater after the first six months of operation to determine the amount of sediment build up. Draining sediment extends the life of the tank, heating elements, and drain valves.

- In areas with very hard water, remove and check the heating elements whenever you drain the tank. If you have heavy lime deposits on heating elements, you will need to replace them more often.
- Sediment may form large masses that can prevent the tank from draining. Have a qualified person use a de-liming agent suitable for potable water to remove the sediment buildup.
- In most cases, it is easier and cheaper to replace lime-encrusted ele-

ments than trying to remove heavy lime deposits.

To drain and flush the tank:

- 1 Locate the water heater's circuit breaker and turn it OFF (or remove the circuit's fuses).



Figure 24 - Circuit Breaker

- 2 Open a hot water faucet and let the hot water run until it is cool.



Figure 25 - Water Faucet

▲ WARNING! Be sure the water runs cool before draining the tank to reduce the risk of scalding.

- 3 Connect a garden hose to the drain valve and place the other end of the hose in a drain, outside, or in buckets.
- 4 Turn the cold water supply valve OFF.
- 5 Open the drain valve on the water heater.



Figure 26 - Drain Valve

- 6 Open a hot water faucet to help the water in the tank drain faster.

NOTICE: DO NOT turn electrical power back on unless the tank is completely full of water.

- 7 Remove and inspect the anode rod (see Repair Parts Illustration on back cover for location of the anode rod). Replace the anode rod if it is depleted. Turn power off. Run hot water until it's cool. Turn cold water supply valve off. Open a hot water faucet to depressurize tank. Locate and remove the black plastic cover marked "Anode" Use a "key hole" saw or similar tool to remove the foam insulation covering the anode rod. Once the anode rod is exposed, use a 1 1/16" socket wrench with an extension to remove it. Inspect the anode rod and replace if depleted. Apply Teflon® tape or pipe joint compound and reinstall the anode rod tightly. It is not necessary to replace the foam removed to access the anode. Turn cold water supply valve on. When hot water runs full, close hot water faucet. Check for leaks and repair if necessary. Turn power on.



Figure 27 - Anode Rods from new (top) to partially depleted (middle) to fully depleted stage (bottom)

Anode Rod. The anode rod is a sacrificial metal rod that helps reduce corrosion and premature failure (leaks) in the tank. The anode rod is a consumable item. Inspect the anode rod after the first six months of operation when you drain and flush the tank. Replace the anode rod if it is substantially worn out or depleted. Thereafter, inspect the anode rod annually or more frequently if needed. If you use a water softener, your anode rod will deplete faster than normal. Inspect the

MAINTENANCE

anode rod more frequently, replacing the anode rod as needed. Obtain new anode rods from your local plumbing supplier or have a qualified person replace it. (Anode rods are a consumable item and are not covered under warranty).

- 8 If the sediment was present when the tank was drained, flush the tank by opening the cold water supply valve and letting the water run until no more sediment drains from the tank. Close the drain valve when you are done.

NOTICE: Do not turn power back on until the tank is completely full of water. For complete instructions on filling the tank, follow Step 8 in the Installation section.

- 9 Refill the tank by opening the cold water supply valve. Make sure a hot water faucet is open and the drain valve is closed. Allow the hot water to run full for at least three minutes to make sure the tank has all the air removed and is completely full of water. Failure to perform this step can cause the upper heating element to burn out. Once you are certain the tank is completely full of water, close the hot water faucet.

- 10 Restore power to the water heater. It may take two hours for the tank to heat up.

Replacing the Heating Element

⚠ WARNING! Working on an energized circuit can result in severe injury or death from electrical shock. Turn power off. Check wires with a non-contact circuit tester to make sure power is off. When you are finished, be sure all covers are secured to reduce the risk of fire and electric shock.

If you are not comfortable replacing a heating element or thermostat yourself, have this work done by a qualified

person. To replace the heating element, you'll need the following tools and supplies:



Figure 28 - Non-Contact Circuit Tester

- Always turn power OFF and check the power wires with a non-contact circuit tester before working on the water heater.



Figure 29 - Heating Element (with gasket)

- Check your water heater's data plate for the correct wattage and voltage. Heating elements are available your local plumber supplier.



Figure 30 - Element Wrench

- Some regular sockets (1 1/2 inch) may work, but regular sockets are often beveled and may slip. Inexpensive element wrenches are available at your local plumber supplier.
- Garden hose to drain the tank
- Hand dishwashing soap to lubricate the gasket
- A clean cloth to clean the threaded opening
- A flat blade and a Phillips screw-driver

Steps for Replacing the Heating Element:

- 1 Turn the power OFF at the circuit breaker or remove fuses.



Figure 31 - Circuit Breaker

- 2 Open the electrical junction box on top of the water heater. Using a non-contact circuit tester, check the power wires to make certain the power is OFF.



Figure 32 - Non-Contact Circuit Tester

- 3 Open a hot water faucet and let the hot water run until it is cool.



Figure 33 - Water Faucet

⚠ WARNING! Be sure the water runs cool before draining the tank to reduce the risk of scalding.

- 4 Connect a garden hose to the drain valve and place the other end of the hose in a drain or outside (or use buckets). Turn OFF the cold water valve that supplies the water heater. Open the drain valve on the water heater. Opening a hot water

faucet will help the tank drain faster.

- 5 Remove the upper or lower access panel on the water heater, and then fold back the insulation and remove the plastic element/thermostat cover.



Figure 34 - Access Panel

- 6 With the tank drained and power off, remove the power wires from the element you intend to replace.
- 7 Remove the bad element using an element wrench.
- 8 Make sure the new element is the correct replacement by referring to the water heater's data plate for voltage and wattage information.
- 9 Clean the threads in the tank opening with a rag. Insert the new element equipped with a rubber gasket. **NOTE:** Use a drop of hand dishwashing liquid to lubricate the gasket to help avoid damaging the gasket as it is being tightened. Tighten with an element wrench.

NOTICE: Do not turn power back on until the tank is completely full of water. For complete instructions on filling the tank, follow Step 8 in the Installation section.

- 10 Refill the tank by opening the cold water supply valve. Make sure a hot water faucet is open and the drain valve is closed. Allow the hot water to run full for at least three minutes to make sure the tank has all

the air removed and is completely full of water. Failure to perform this step can cause the upper heating element to burn out. Once you are certain the tank is completely full of water, close the hot water faucet.



Figure 35 - Drain Valve

- 11 Check the newly installed element for leaks. If a leak is present, tighten the element until the leak stops. If you cannot stop the leak, drain the tank and remove the element. Inspect the gasket for damage. If the gasket is damaged, replace the gasket and re-install the element.
- 12 Once the element is successfully installed and there are no leaks, replace the power wires, thermostat cover, insulation, and access panel. Make sure all wire connections are tight. Replace the cover on the electrical junction box.
- 13 Restore power to the water heater. It may take two hours for the tank to heat up.

Replacing the Thermostat

⚠ WARNING! Working on an energized circuit can result in severe injury or death from electrical shock. Turn power off. Check wires with a non-contact circuit tester to make sure power is off. When you are finished, be sure all covers are secured to reduce the risk of fire and electric shock.

To replace the thermostat, you'll need the following tools and supplies:

- A non-contact circuit tester. Always

turn power OFF and check with a non-contact circuit tester before working on the water heater.

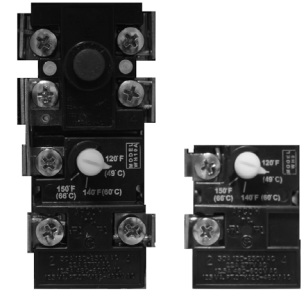


Figure 36 - Upper and Lower Thermostats

- A replacement thermostat (available at your local plumbing supplier). Note that the upper and lower thermostats are different (above). Some models only have one thermostat.
- A business card to check the gap between the thermostat and the tank
- Tape and a permanent marker to mark the wires
- A flat blade and a Phillips screwdriver

Steps for Replacing the Thermostat:

- 1 Turn the power OFF at the circuit breaker or remove fuses.

NOTICE: It is not necessary to drain the tank to replace a thermostat.

- 2 Open the electrical junction box on top of the water heater. Using a non-contact circuit tester, check the power wires to make certain the power is OFF.



Figure 37 - Non-Contact Circuit Tester

MAINTENANCE

- 3** Remove the upper or lower access panel on the water heater and carefully fold back the insulation and plastic element/thermostat cover.
- 4** Make sure the replacement thermostat matches the original thermostat.
- 5** Mark the wires with tape so you'll know how to put them back on.
- 6** Disconnect the wires from the bad thermostat and remove the thermostat from the metal mounting clip.
- 7** Install the new thermostat in the metal mounting clip.
- 8** Make sure the new thermostat fits snugly against the tank. You should NOT be able to slip a business card between the thermostat and the tank. If you can, bend the thermostat mounting clip until the thermostat fits tightly against the tank.
- 9** Attach the wires following the wiring diagram on the water heater's label. Make sure all wire connections are tight.
- 10** Replace the plastic element/thermostat cover, insulation, and access panel.
- 11** Replace the cover on the electrical junction box.
- 12** Restore power to the water heater. It may take two hours for the tank to heat up.

T&P Relief Valve Maintenance

Read and follow the operating and annual maintenance instructions provided by the manufacturer of the T&P Relief Valve (yellow label attached to T&P Relief Valve). Minerals in the water can form deposits that cause the valve to stick or create blocked passages, making the T&P Relief Valve inoperative. Follow these guidelines:

- At least annually, operate the T&P Relief Valve manually to ensure the waterways are clear and the valve mechanism moves freely (above). Before operating the valve manually, check that it will discharge in a place for secure disposal. If water does not flow freely from the end of the discharge pipe, turn OFF the power to the water heater. Call a qualified person to determine the cause.

⚠ WARNING! Hot water will be released. Before operating the T&P relief valve manually, check that it will discharge in a safe place. If water does not flow freely from the end of the discharge pipe, turn the power to the water heater OFF. Call a qualified person to determine the cause.



Figure 38 - T&P Relief Valve

- At least every five years, have a qualified person inspect the T&P Relief Valve and discharge pipe. Damage caused by corrosive water conditions, mineral deposits, or

other problems can only be determined when a qualified person removes and inspects the valve and its components.

- Note that a dripping T&P Relief Valve is usually caused by the home's water pressure being too high or the lack of a Thermal Expansion Tank. If your T&P Relief Valve drips, see page 20.

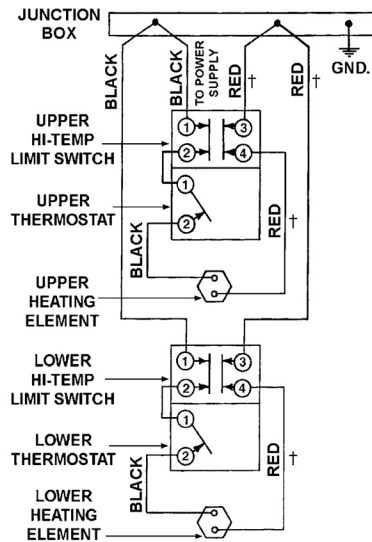
DIAGRAMS

Thermostat Wiring Diagram

P-4

120/208/240/277/415/480 VOLT
SIMULTANEOUS OPERATION
3 PHASE UNBALANCED
SIMULTANEOUS

BOTH CIRCUITS PROTECTED BY HI-LIMIT SWITCH. FOR 3 PHASE SYSTEMS, SEPARATE BLACK WIRES AND PROVIDE 3 PHASE POWER SOURCE, NOTE: 120V AND 277V WIRED FOR SINGLE PHASE ONLY.



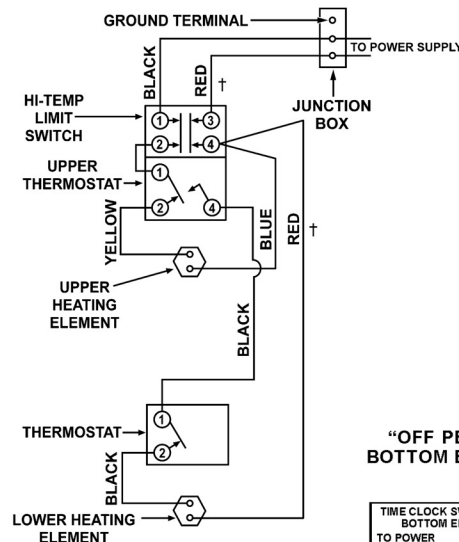
*NOTE: SOME LOWER HI-TEMP. LIMIT SWITCHES MAY HAVE 4 TERMINALS. USE ONLY THE 2 TERMINALS ON LEFT.

† 120V AND 277 WILL HAVE WHITE WIRE IN PLACE OF RED.

MAXIMUM ALLOWABLE SIMULTANEOUS OPERATION
5000/5000 WATTS AT 208 VOLTS 5500/5500 WATTS AT 240 VOLTS. ANY WATTAGE USAGE HIGHER THAN LISTED ABOVE EXCEEDS ALLOWABLE AMP DRAW AND WILL CAUSE DAMAGE TO THE WATER HEATER.

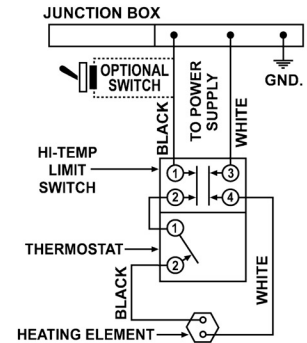
A-6

TWO WIRE CIRCUIT FOR NON-SIMULTANEOUS OPERATION, HAS SINGLE HIGH LIMIT CONTROL



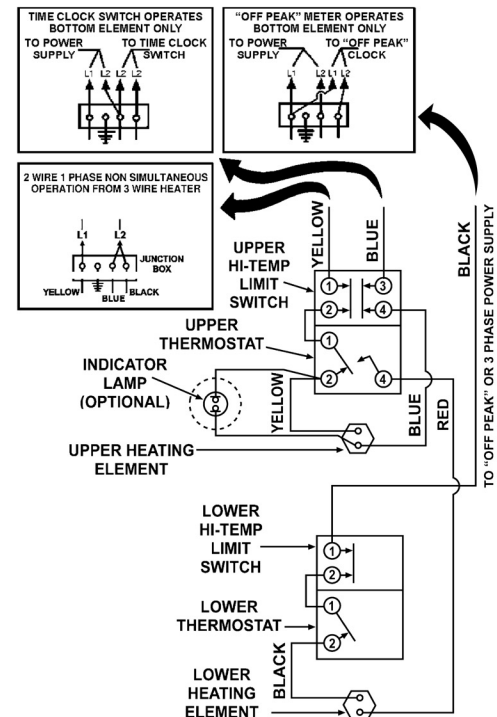
C-2

STANDARD SINGLE ELEMENT
120 VOLT & 277 VOLT



A-9

"OFF PEAK" NON-SIMULTANEOUS OPERATION
BOTTOM ELEMENT ON SEPARATE TIME CLOCK OR
"OFF PEAK" METER

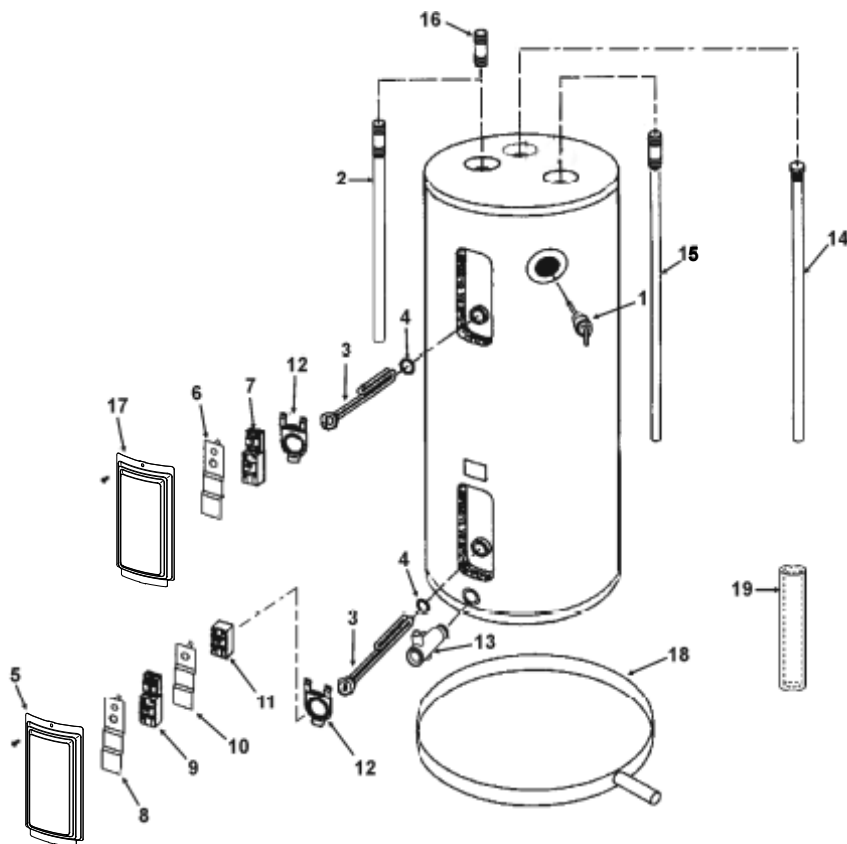


REPAIR PARTS

Key No.	Part Description
1	TEMPERATURE-PRESSURE RELIEF VALVE
2	SECONDARY ANODE ROD/NIPPLE w/HEAT TRAP*
3	ELEMENT w/GASKET
4	ELEMENT GASKET
5	LOWER OUTER DOOR
6	TERMINAL COVER (DOUBLE ELEMENT)
7	UPPER THERMOSTAT w/HI LIMIT (DOUBLE ELEMENT)
8	TERMINAL COVER
9	LOWER THERMOSTAT w/HI LIMIT (SINGLE ELEMENT)
10	TERMINAL COVER
11	LOWER THERMOSTAT (DOUBLE ELEMENT)
12	THERMOSTAT BRACKET (EA.)
13	DRAIN VALVE
14	PRIMARY ANODE
15	HEAT TRAP/DIP TUBE COMBO
16	NIPPLE w/HEAT TRAPS*
17	UPPER OUTER DOOR
18	BASE PAN w/SIDE DRAIN
19	PIPE INSULATION
* If Applicable	
** Not Illustrated	

Repair parts may be ordered through your plumber, local distributor, your local plumbing supplier, or by calling 1-800-527-1953. When ordering repair parts always give the following information:

1. Model and serial number.
2. Item number and part description.



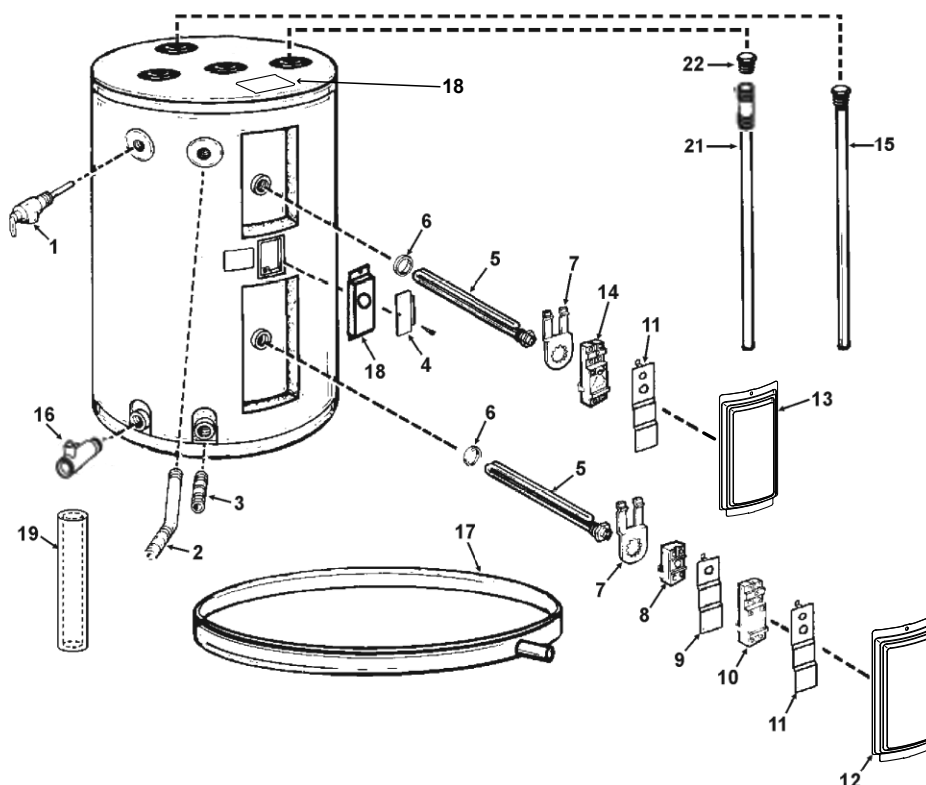
REPAIR PARTS

Key No.	Part Description
1	TEMPERATURE-PRESSURE RELIEF VALVE
2	OUTLET NIPPLE ASSEMBLY (SIDE CONNECT)
3	INLET NIPPLE (SIDE CONNECT)
4	ELEMENT GASKET
5	UPPER AND LOWER ELEMENT
6	ELEMENT GASKET
7	THERMOSTAT BRACKET (EA.)
8	LOWER THERMOSTAT
9	TERMINAL COVER
10	LOWER THERMOSTAT w/HI LIMIT
11	TERMINAL COVER
12	LOWER OUTER DOOR
13	UPPER OUTER DOOR
14	UPPER THERMOSTAT w/HI LIMIT
15	ANODE ROD
16	DRAIN VALVE
17	BASE PAN w/SIDE DRAIN
18	JUNCTION BOX
19	PIPE INSULATION
20	T&P INSULATION
21	DIP TUBE
22	PLUG

* If Applicable
 ** Not Illustrated

Repair parts may be ordered through your plumber, local distributor, your local plumbing supplier, or by calling 1-800-527-1953. When ordering repair parts always give the following information:

1. Model and serial number.
2. Item number and part description.

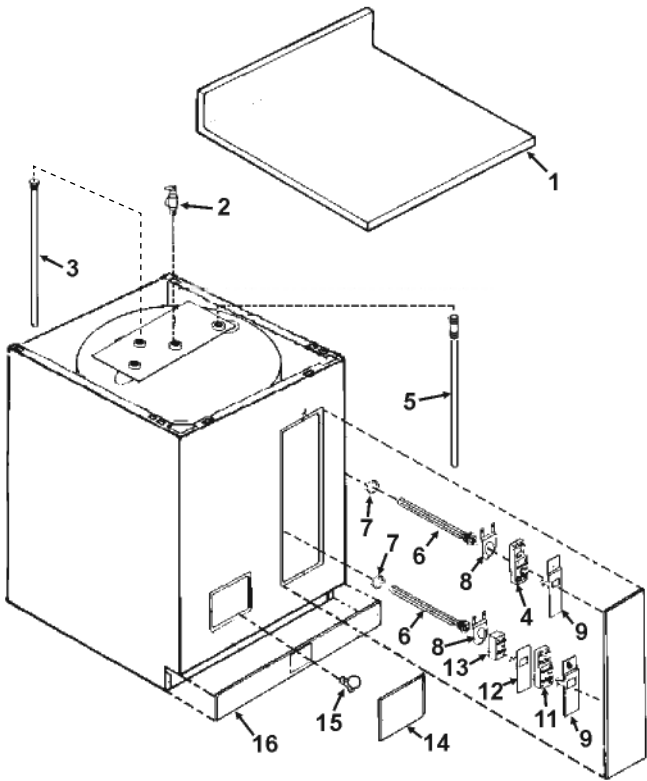


REPAIR PARTS

Key No.	Part Description
1	PORCELAIN TOP
2	TEMPERATURE-PRESSURE REFLIEF VALVE
3	PRIMARY ANODE ROD
4	UPPER THERMOSTAT w/HI LIMIT
5	DIP TUBE
6	ELEMENT w/GASKET
7	ELEMENT GASKET
8	THERMOSTAT BRACKET (EA.)
9	TERMINAL COVER
10	OUTER DOOR (EA.)
11	LOWER THERMOSTAT w/HI LIMIT
12	TERMINAL COVER
13	LOWER THERMOSTAT
14	DRAIN ACCESS DOOR
15	DRAIN VALVE
16	TOE PANEL
* If Applicable	
** Not Illustrated	

Repair parts may be ordered through your plumber, local distributor, your local plumbing supplier, or by calling 1-800-527-1953. When ordering repair parts always give the following information:

1. Model and serial number.
2. Item number and part description.




WATER HEATERS - TANK TYPE

LIMITED WARRANTY

RESIDENTIAL TYPE WATER HEATER FOR INSTALLATION IN A SINGLE FAMILY DWELLING

When referencing the water heater for service or warranty, please refer to the model number printed on the data plate. Use the table below to determine the warranty term.

MODEL NUMBER EXAMPLE: ENS 40

 Warranty Code

MODEL NUMBER EXAMPLE: XCR 50
 Warranty Code

Warranty Code:	E, F or G	P or X	H	PX
Tank Warranty Term:	6 Years	10 Years	8 Years	10 Years
Parts Warranty Term:	6 Years	6 Years	8 Years	10 Years

A. WHO IS COVERED

A. O. SMITH AND ITS SUPPLIERS, (herein collectively referred to as "Manufacturer") warrants only to the original consumer purchaser (hereinafter "Owner") of the water heater so long as he or she continuously occupies the single family dwelling in which this water heater is initially installed for the period specified below. This warranty is not transferable. The warranty is restricted to the water heater used in a single-family residence in the United States of America. This warranty is reduced to one year if the water heater is used in a commercial, or industrial application, or if the water heater is used to supply more than one dwelling unit.

B. WHEN IT IS COVERED

The water heater is warranted only when it is installed, operated and maintained in accordance with the printed instructions accompanying the water heater. A water heater should be installed in such a manner that, if the tank or any connection thereto should leak, the resulting flow of water will not cause damage to the area in which it is installed. A water heater's temperature and pressure relief valve must be piped to the nearest drain to avoid damage in the event the valve is actuated. For detailed instructions read the manual accompanying the water heater and review drawings in the manual.

C. WHAT THE MANUFACTURER WILL DO AND THE PERIOD OF COVERAGE

1. The Inner Tank – If the inner tank leaks within the warranty period listed on the data plate label after the original installation, Manufacturer will furnish a new water heater of Manufacturer's then prevailing comparable model. If industry standards, product improvements or product obsolescence prohibit Manufacturer from furnishing an identical model replacement water heater under this warranty, the Owner will be furnished with a new water heater of comparable capacity and functionality; however, the Owner will be charged for the additional value of the item(s) which Manufacturer has incorporated in the replacement water heater. A prior authorization number must be obtained from the Manufacturer before replacing the water heater. This warranty is limited to one replacement water heater at the original installation site.
2. Component Part – If any component part other than the inner tank proves to Manufacturer's satisfaction to be defective in material or workmanship within the warranty period listed on the data plate label, the Manufacturer will furnish the Owner with a replacement for the defective part(s). This warranty is limited to one replacement component part for each original part. Anode rods are consumable maintenance parts and are excluded from warranty coverage.
3. Return of Defective Water Heater and Component Parts – Manufacturer reserves the right to examine the alleged defect in the water heater or component part(s), and it will be the Owner's obligation (See paragraph D.5) to return the water heater and/or component part(s) to the Manufacturer.
 - a. When returning a water heater it must include all component parts and the data plate label.
 - b. When returning component part(s), they must be individually tagged and identified with the water heater's product number model number, serial number, date of purchase and date of installation.

D. WHAT THIS WARRANTY DOES NOT COVER

1. THE LIMITED WARRANTY STATED HEREIN IS IN LIEU OF ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED (WHETHER WRITTEN OR ORAL), INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
2. MANUFACTURER SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL OR CONTINGENT DAMAGES OR EXPENSES, ARISING, DIRECTLY OR INDIRECTLY, FROM ANY DEFECT IN THE WATER HEATER OR THE USE OF THE WATER HEATER.
3. Manufacturer shall not be liable for any water damage arising, directly or indirectly, from any defect in the water heater or component part(s) or from its use.
4. Manufacturer shall not be liable under this warranty and this warranty shall be void and have no effect if the following events occur:
 - a. The water heater or any of its component parts have been subject to misuse, alteration, neglect or accident; or
 - b. The water heater has not been installed in accordance with the applicable local plumbing and/or building code(s) and/or regulations or in their absence, with the latest issue of the National Fuel Gas Code Z223.1, and/or National Electric Code; or
 - c. The water heater is not installed, operated and maintained in accordance with the printed Manufacturer's instructions, including if the water heater has any additional aftermarket equipment introduced into the sealed system not approved by the manufacturer; or
 - d. The water heater or any of its component parts are damaged or fails from operation with an empty or partially empty tank (such as, but not limited to elements burned out in a dry tank); or
 - e. The water heater or any part has been under water; or
 - f. The water heater is exposed to highly corrosive atmospheric conditions; or
 - g. The water heater is not continuously supplied with potable water; or
 - h. The water heater replacement is requested for reasons of noise, taste, odor, discoloration and/or rust; or
 - i. The water heater is not operated within the factory calibrated temperature limits; or
 - j. The water heater is supplied or operated with desalinated (deionized) water; or
 - k. The water heater is removed from its original installation location; or
 - l. The water heater is installed outdoors (this water heater is intended only for indoor installation); or

(Continued on back)

WATER HEATERS - TANK TYPE

- m. The water heater is converted, or is attempted to be converted, from one voltage or wattage to another, if an electric water heater, or from one type gas to another, if a gas water heater; or
 - n. The water heater has not been fired at the factory rated input and fuel for which it was factory built; or
 - o. The water heater or any of its component parts fail due to sediment build-up; or
 - p. The water heater does not have installed a temperature and pressure relief valve, certified to ANSI Z21.22 and approved by the American Society of Mechanical Engineers; or
 - q. The water heater or any of its component parts fail because of fire, floods, lightning, or any other act of God; or
 - r. The water heater is installed in a closed system without adequate provision for thermal expansion.
5. Except when specifically prohibited by the applicable state law, the Owner, and not the Manufacturer, shall be liable for and shall pay for all charges for labor or other expenses incurred in the removal, repair or replacement of the water heater or any component part(s) claimed to be defective or any expense incurred to remedy any defect in the product. Such charges may include, but are not necessarily limited to:
- a. All freight, shipping, handling and delivery costs of forwarding a new water heater or replacement part(s) to the owner.
 - b. All costs necessary or incidental in removing the defective water heater or component part(s) and installing a new water heater or component part(s).
 - c. Any material required to complete, and/or permits required for, installation of a new water heater or replacement part(s), and
 - d. All costs necessary or incidental in returning the defective water heater or component part(s) to a location designated by the manufacturer.
6. The terms of this Limited Warranty cannot be modified by any person, whether or not he/she claims to represent or act on behalf of the Manufacturer.

E. HOW STATE LAW MAY RELATE TO THIS WARRANTY

Some States do not allow limitations on how long an implied warranty lasts so the above limitation may not apply to you. Similarly, some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Further, this warranty gives you specific legal rights and you may also have other rights, which may vary from State to State.

F. HOW THE ORIGINAL OWNER CAN MAKE A WARRANTY CLAIM

- 1. The Owner should submit the warranty claim directly to Manufacturer's Service Department, at the address or phone number listed below, and Manufacturer will arrange for the handling of the claim and if valid, will give the Owner an authorization number which must appear on any document presented for warranty exchange.
- 2. Whenever any inquiry or request is made, be sure to include the water heater's product number, model number, serial number, date of purchase, date of installation, and location of installation.

FOR TECHNICAL ASSISTANCE, SERVICE OR WARRANTY INFORMATION

PHONE TOLL FREE: 1-800-527-1953

WEBSITE: WWW.HOTWATER.COM

MONDAY THROUGH FRIDAY

8:00 AM to 10:00 PM EASTERN TIME

SATURDAY AND SUNDAY

9:00 AM - 6:00 PM EASTERN TIME

OR

Write to:

A. O. SMITH

500 Tennessee Waltz Parkway,

Ashland City, TN 37015



INSTALLATION GUIDE AND OWNER'S MANUAL

“SINGLE POINT”, “FLOW CONTROLLED” and “THERMOSTATIC” ELECTRIC INSTANTANEOUS WATER HEATERS



WARNING *BEFORE ATTEMPTING ANY INSTALLATION, MODIFICATION OR SERVICE OF THIS HEATER, MAKE SURE THE ELECTRICAL POWER IS DISCONNECTED.*

Read and understand these instructions thoroughly before attempting the installation or service of this water heater. Failure to follow these instructions can result in serious injury, death and/or property damage. The warranty of this water heater will depend upon the proper installation according to these instructions. Some heaters come supplied with separate faucet aerators. If supplied, the aerator must be installed in the faucet for optimum performance. This heater must be used to heat water only and be in a location where it is not subject to freezing temperatures. The manufacturer is not liable for any damages resulting from improper installation or misuse.

This installation must conform to the latest requirements of the National Electrical Code and all applicable state and local codes. This information is available through your local authorities. You must understand these requirements before beginning this installation.

This unit is not required by UL 499 to have a Temperature and Pressure relief valve (T&P). You should check with local codes to find out if one is required. If it is, it must be installed in the outlet hot water pipe between the heater and the isolation valve.

IMPORTANT SAFETY INSTRUCTIONS

When using this electrical equipment, basic safety precautions should always be followed, including the following:

READ AND FOLLOW ALL INSTRUCTIONS

A green terminal (or a wire connector marked “G”, “GR”, “Ground”, or “GROUNDING”) is provided within the control box. To reduce the risk of electric shock, connect this terminal or connector to the grounding terminal of the electric service or supply panel with a continuous copper wire in accordance with your local electrical code.

WATER HEATERS - TANKLESS



CAUTION

(Canadian Installations Only) Connect only to a circuit protected by a Class A ground fault circuit interrupter. Attention: Brancher uniquement à un circuit protégé par un disjoncteur de fuite de terre de Classe A.

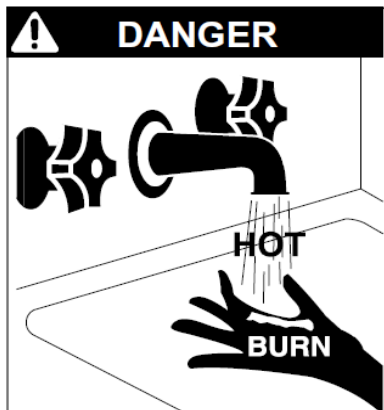


CAUTION

(Canadian Installations Only) Do not install in a bath enclosure or shower stall or connect to a salt-regenerated water softener or a water supply of salt water. Attention: Ne pas installer dans une baignoire ou une cabine de douche et ne pas brancher à un adoucisseur d'eau régénéré avec du sel ou à un approvisionnement en eau salée.

(Canadian Installations Only) Use copper conductors only. Use bonding conductor in accordance with the Canadian Electrical Code Part I. Utilisez des conducteurs en cuivre uniquement. Utilisez des conducteurs de mise à la masse conformément au Code Canadien de L'Électricité, Partie I.

SAVE THESE INSTRUCTIONS

	<p>Hot water can be dangerous, especially for infants or children, the elderly, or infirm. There is hot water scald potential if the thermostat is set too high.</p> <p>Water temperatures over 125° F (51° C) can cause severe burns or scalding resulting in death.</p> <p>Hot water can cause first degree burns with exposure for as little as:</p> <ul style="list-style-type: none">3 seconds at 140° F (60° C)20 seconds at 130° F (54° C)8 minutes at 120° F (48° C) <p>Test the temperature of the water before placing a child in the bath or shower.</p> <p>Do not leave a child or an infirm person in the bath unsupervised.</p>
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GENERAL

The Eemax “**Single Point**” or “SP”, “**Flow Controlled**” or “EX” and “**Thermostatic**” or “EX-T” heaters will provide optimum performance and energy savings when located under the sink and as close as possible to the point of hot water use. For best performance the heater should be **BELOW** the point of use. Failure to do so may void the warranty. Contact your Eemax representative for further information.

“**Single Point**” heaters and “**Flow Controlled**” heaters are to be plumbed to a cold water source **ONLY** and heat it with a temperature rise at flow rates as shown on the table on page 10.

“**Thermostatic**” heaters are the only heaters of the three outlined in this manual which have thermostatic control. “**Thermostatic**” heaters accept cold or preheated water and heat it to temperatures suitable for normal domestic usage up to a maximum of 140 degrees F. With the “S” option, they can be used as a temperature booster for sanitation applications sometimes required for dishwashers in commercial kitchens. Units built with the “ML” option are factory-set to a maximum temperature of 110°F (range 80° F - 110° F) and are recommended for hand washing applications. The “ML” option is an excellent choice for supplying hot water to sensor-type or metering faucets.

WATER HEATERS - TANKLESS



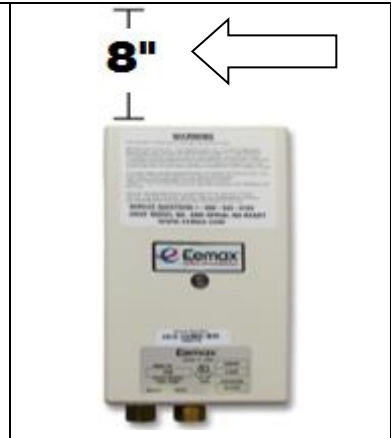
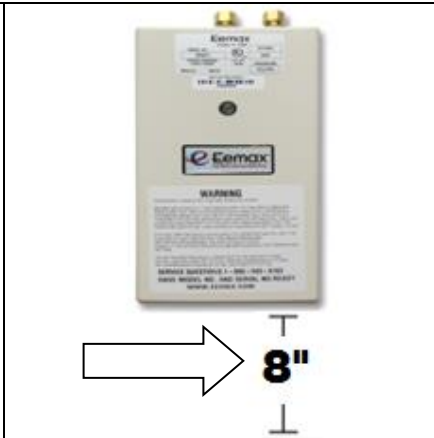
This heater must be installed in a location where it is not subject to freezing temperatures.

1) MOUNTING THE UNIT TO THE WALL

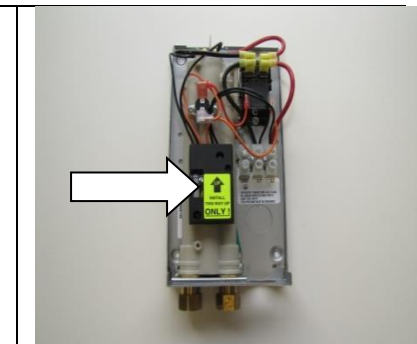
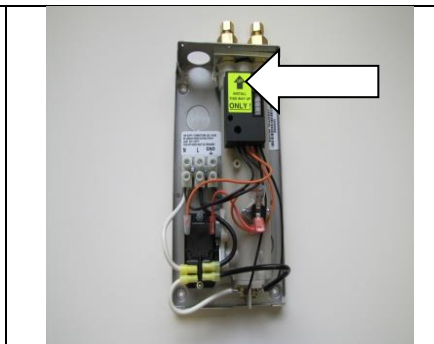
1) The heater should be mounted “under the sink” as close to the point of use as possible. “Single Point” will have the brass fittings on the top pointing “up”. “Flow Controlled” and “Thermostatic” will have the fittings on the bottom pointing “down”.



2) The fittings must be pointed in the vertical direction and be at least 16 inches below the level of the hot water faucet. Make sure to leave a minimum of 8 inches service clearance at the end **OPPOSITE** the fittings.



3) Remove the cover and fasten to the wall using the four mounting holes at each corner of the back plate. Make sure the “UP” arrow on the circuit board is facing “UP”. Replace the cover.



2) PLUMBING HOOK-UP

The heater is supplied with brass compression fittings that are compatible with either copper or plastic pipe. “Single Point” has 3/8” fittings. Both “Flow Controlled” and “Thermostatic” units have ½” fittings. Make sure these fittings are used for this installation. Contact your Eemax representative for further information.

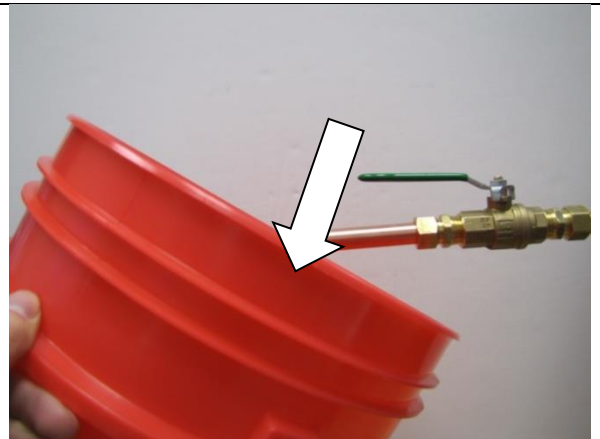
⚠ CAUTION

NEVER SUBSTITUTE THREADED PIPE FITTINGS USING PIPE DOPE OR TEFLON TAPE AND NEVER SOLDER ANY PIPE CONNECTIONS WHILE ATTACHED TO THIS HEATER BECAUSE DAMAGE TO THE HEATER WILL RESULT. DOING THIS WILL VOID THE WARRANTY.

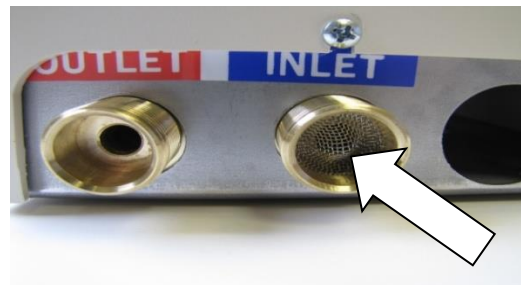
Eemax strongly recommends that the heater be supplied directly from the main cold water line when possible. This helps to avoid a potential water flow interruption to the heater which could lead to a failure of the heating element.

For optimum performance, we recommend the use of isolation valves (full flow ball type) on the inlet and outlet pipes.

1) The heater’s cold water INLET is on the “RIGHT” and the hot water OUTLET is on the “LEFT”. Install full flow ball valves to the inlet and outlet pipes and run water through the inlet pipe into a bucket to purge it of any debris. Close the inlet ball valve.

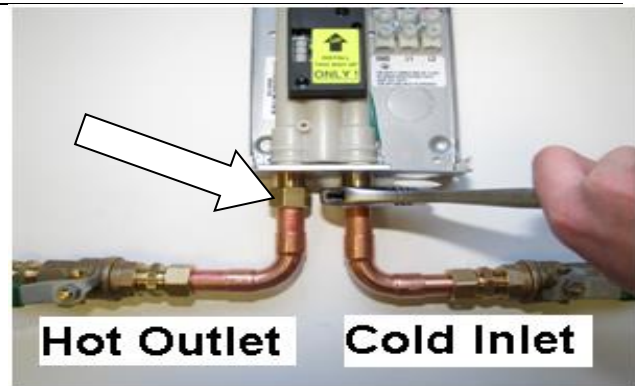


2) Make sure the inlet filter screen is present in the inlet fitting and the inlet and outlet pipes are correctly aligned with the heater connections to minimize stress on the heater.



WATER HEATERS - TANKLESS

3) Remove the cover. Connect the pre-assembled inlet and outlet pipes to the heater and fully open the inlet and outlet ball valves. Check for water leaks. If a leak is at a compression fitting, slowly tighten the compression nut until it stops. Replace the cover.



4) Open the hot water faucet and run the water a minute or two until the flow is continuous and free of air pockets. Close the faucet and install the aerator (if supplied). * Failure to install aerator (if supplied) will result in lower-than-expected heater performance.



*ML Thermostatic models are designed to deliver a flow of 0.5 GPM to each lavatory. Please install the supplied aerators to ensure maximum heating performance.



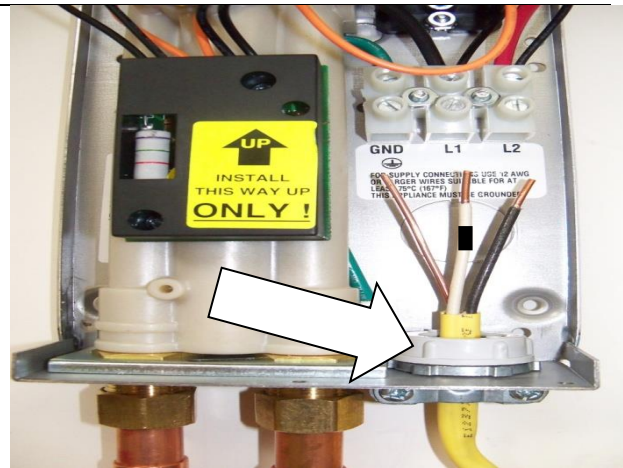
3) ELECTRICAL HOOK-UP

⚠ WARNING

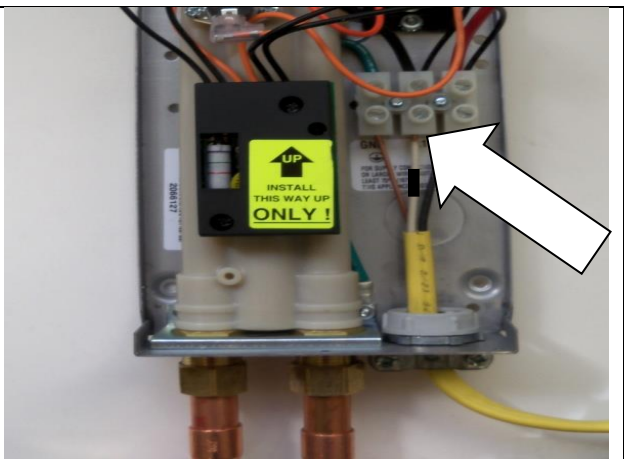
BEFORE BEGINNING ANY WORK ON THIS INSTALLATION, BE SURE THAT THE ELECTRICAL BREAKER IS “OFF” AND THAT ALL MOUNTING AND PLUMBING WORK HAS BEEN COMPLETED PER THESE INSTRUCTIONS.

This heater must have its own independent circuit using insulated, UL listed, 2 wire cable (2 wire plus ground) of the appropriate size suitable for up to 75 degree C and protected by the correctly rated circuit breaker. Refer to the chart on page 7.

1) Power cable entry to the heater should be made through one of the “knock-out” holes located on the back plate or top/bottom ends of the unit. Use the appropriate strain relief fitting.



2) The power leads are to be secured to the L1 and L2 or L and N connectors on the terminal block or relay. The ground lead is to be secured to the GND connector on the block or the green ground wire with the wire nut.



⚠ WARNING

FAILURE TO GROUND THE SYSTEM MAY RESULT IN SERIOUS INJURY, DEATH AND/OR PROPERTY DAMAGE.

WATER HEATERS - TANKLESS

3) Leave the breaker in the "OFF" position. Proceed to the next section:

COMMISSIONING THE HEATER



ELECTRICAL SPECIFICATIONS:

"SINGLE POINT" MODEL	"FLOW CONTROLLED" MODEL	"THERMOSTATIC" MODEL	VOLTS	kW	AMPS	WIRE SIZE AWG
SP2412	n/a	n/a	120	2.4	20.0	10
n/a	EX2412	EX2412T	120	2.4	20.0	12
SP3012	EX3012	EX3012T	120	3.0	25.0	10
SP3512	EX3512	EX3512T	120	3.5	29.2	10
SP3208	EX3208	EX3208T	208	3.0	14.4	14
SP4208	EX4208	EX4208T	208	4.1	19.7	12
SP8208	EX8208	EX8208T	208	8.3	40.0	8
SP35	EX35	EX35T	240*	3.5	14.6	14
SP48	EX48	EX48T	240*	4.8	20.0	10
SP55	EX55	EX55T	240*	5.5	22.9	10
SP65	EX65	EX65T	240*	6.5	27.0	10
SP75	EX75	EX75T	240*	7.5	32.0	8
SP95	EX95	EX95T	240*	9.5	40.0	8
n/a	n/a	EX012240T	240*	11.5	48.0	6
SP3277	EX3277	EX3277T	277	3.0	10.8	14
SP4277	EX4277	EX4277T	277	4.1	14.8	14
SP60	EX60	EX60T	277	6.0	22.0	10
SP80	EX80	EX80T	277	8.0	29.0	8
SP90	EX90	EX90T	277	9.0	33.0	8
SP100	EX100	EX100T	277	10.0	36.0	8

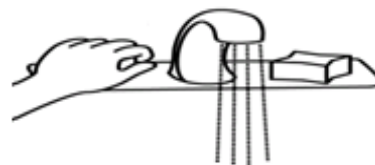
* 240V units can be used on 208V with 25% reduced temperature output.

4) COMMISSIONING THE HEATER

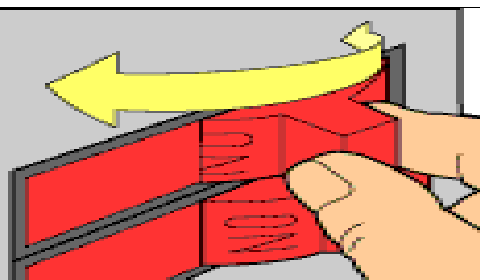
⚠ CAUTION

BEFORE SWITCHING THE ELECTRICAL BREAKER “ON”, MAKE SURE THE INLET AND OUTLET BALL VALVES ARE FULLY OPEN AND WATER IS FLOWING THROUGH THE HOT WATER FAUCET FOR A MINUTE OR TWO UNTIL THE FLOW IS CONTINUOUS AND FREE FROM AIR POCKETS. DO NOT SWITCH THE BREAKER “ON” IF THERE IS A POSSIBILITY THE WATER IN THE HEATER IS FROZEN.

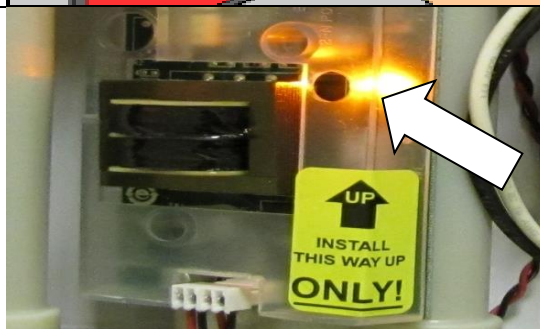
1) Make sure water is flowing through the faucet.



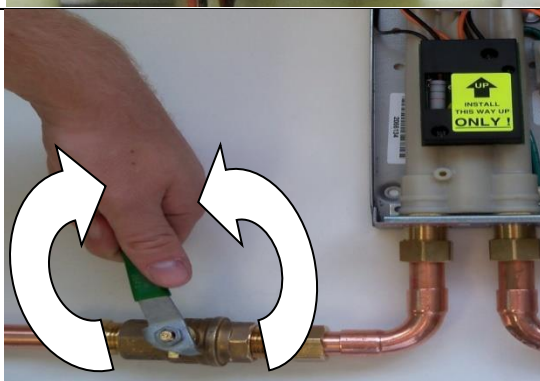
2) Switch “ON” the electric power supply at the breaker.



3) The power indicator light on the circuit board should come “ON” after a delay of a few seconds.



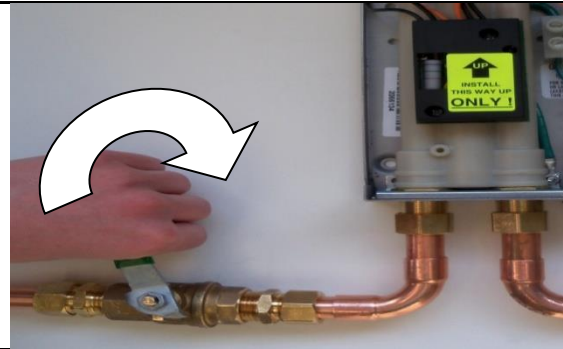
4) Check the performance of the flow switch by opening and closing the OUTLET BALL VALVE a few times. Keep the INLET BALL VALVE fully “OPEN”. The power indicator light should be “ON” ONLY when water is flowing through the heater. Return the outlet valve to the fully “OPEN” position.



WATER HEATERS - TANKLESS

5) SETTING THE TEMPERATURE

At this point, the water temperature may not be very hot. Using the OUTLET BALL VALVE, slowly reduce water flow until the desired temperature is achieved. Always keep the INLET BALL VALVE fully "OPEN". NEVER RESTRICT THE WATER FLOW USING THE INLET VALVE. The temperature is proportional to the flow through the heater; the lower the flow, the higher the temperature and vice versa.



If water flow is TOO HOT follow the instructions below according to what model Eemax heater you have:
"Single Point/Flow Controlled" or "Thermostatic".

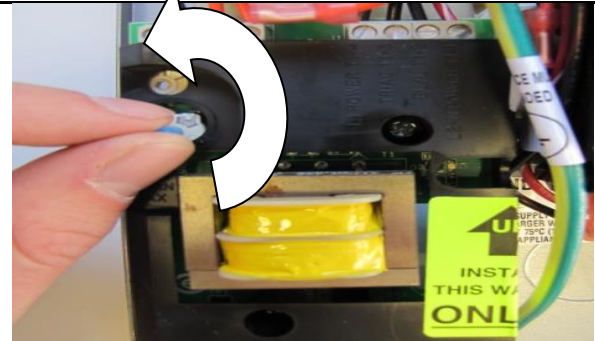
"Single Point" and "Flow Controlled" heaters have a circuit board that looks like this:



These heaters have no controls on the circuit board to turn the temperature of the water DOWN.

Volume of water through these heaters is the way maximum temperature is controlled. If the outlet valve is adjusted to less than wide-open, open it up to maximum flow. You may have to change the faucet aerator to a larger size (0.5 GPM to 1 GPM, for example) to reduce temperature.

"Thermostatic" heaters have a circuit board that looks like this:



The thin blue temperature adjustment shaft in the upper left corner controls the maximum temperature of the water. If the water is too hot: turn the temperature adjustment shaft counter-clockwise about 1/8 of a turn and wait 15-20 seconds. If the temperature remains too hot, repeat this step until the desired temperature is achieved.

Congratulations !

Your Eemax tankless electric water heater is fully installed and ready for use!

WATER HEATERS - TANKLESS

TEMPERATURE RISE AT SPECIFIED FLOW RATE, DEGREES F:

"SINGLE POINT" "FLOW CONTROLLED" "THERMOSTATIC"

MODEL	MODEL	MODEL	0.5 GPM **	1.0 GPM	1.5 GPM	2.0 GPM	2.5 GPM
SP2412	EX2412	EX2412T	33	16	11	8	6
SP3012	EX3012	EX3012T	41	20	14	10	8
SP3512	EX3512	EX3512T	48	24	16	12	9
SP3208	EX3208	EX3208T	41	20	14	10	8
SP4208	EX4208	EX4208T	56	28	19	14	11
SP8208	EX8208	EX8208T	*	57	38	28	14
SP35	EX35	EX35T	48	24	16	12	9
SP48	EX48	EX48T	65	32	21	16	13
SP55	EX55	EX55T	75	38	25	19	15
SP65	EX65	EX65T	*	44	30	22	18
SP75	EX75	EX75T	*	51	34	26	20
SP95	EX95	EX95T	*	65	43	32	26
n/a	n/a	EX012240T	*	73	52	39	31
SP3277	EX3277	EX3277T	41	21	14	10	8
SP4277	EX4277	EX4277T	56	28	19	14	11
SP60	EX60	EX60T	*	41	27	20	15
SP80	EX80	EX80T	*	55	36	27	22
SP90	EX90	EX90T	*	61	41	31	26
SP100	EX100	EX100T	*	68	46	34	27

* Not enough water flow to activate the heater.

** "THERMOSTATIC" T ML (3.5kW – 11.5kW) have 0.3 GPM

WATER HEATERS - TANKLESS

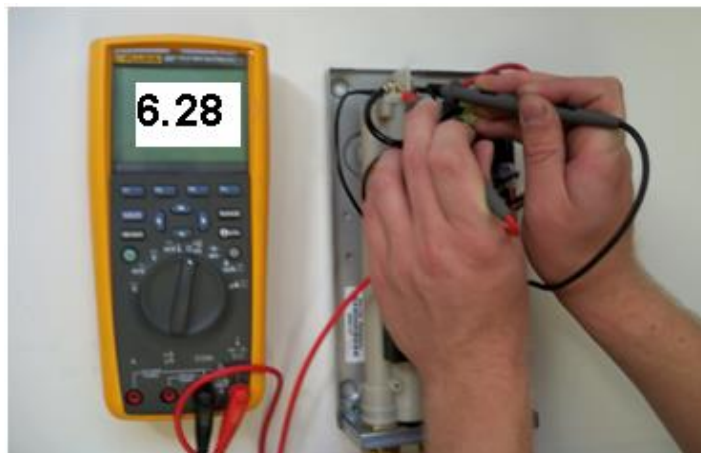
BASIC TROUBLESHOOTING

SYMPTOM: NO HEAT AND THE POWER INDICATOR LIGHT ON THE CIRCUITBOARD IS “OFF”.

- 1) Verify the heater is mounted to the wall correctly. “Single Point” has the brass fittings pointed “UP”. “Flow Controlled” and “Thermostatic” have the fittings pointed “DOWN”.
- 2) Verify it is plumbed correctly. The cold water INLET is on the “RIGHT” and the hot water OUTLET is on the “LEFT”.
- 3) No electrical power to the heater. Switch the breaker “ON”.
- 4) Incorrect power supply. Make sure the heater is connected to the voltage specified on the rating label on the front cover.
- 5) Not enough water flow through the heater to turn the heating element “ON”. Check the inlet and outlet ball valves to make sure they are open. Also check the inlet filter screen inside the inlet fitting to make sure it is not plugged (see page 4). Clean or replace the aerator at the faucet.
- 6) Still NO HEAT? Contact Eemax. Call **203-267-7890** or **800-543-6163**.

SYMPTOM: NO HEAT, LOW OR INCONSISTENT TEMPERATURE WITH INDICATOR LIGHT “ON”.

- 1) Water flow is too high. Reduce the water flow by slowly closing the OUTLET ball valve.
- 2) Incorrect power supply. Make sure the heater is connected to the voltage supply specified on the rating label on the front cover.
- 3) Electrical heating element is burned out. Turn off electrical power by switching the breaker “OFF”. Use an ohmmeter to test the resistance across the two threaded terminals at the end of the element. The resistance varies, depending on the model of the heater, but should be less than 30 ohms. If it is much greater or fluctuating, contact Eemax for a replacement element cartridge.



If you need any assistance from our Technical Service Department, make sure you can identify this water heater by having the model no: _____ and serial number: _____.

Call **203-267-7890** or toll free: **800-543-6163**.

PERIODIC MAINTENANCE

This heater is designed for many years of care free use. In order to maintain consistent water flow, it may be necessary to periodically clean the faucet aerator or the filter screen located in the brass inlet fitting at the heater.

PART NUMBERS FOR FITTINGS, AERATORS AND AERATOR ADAPTORS

COMPRESSION FITTINGS:

3/8" NUT	EX68B
3/8" SLEEVE	EX68C
5/8" NUT for 1/2" pipe	EX17
5/8" SLEEVE for 1/2" pipe	EX16

AERATORS:

0.5 GPM	EX0061-0.5AER
1.0 GPM	EX0061-1.0AER

AERATOR ADAPTORS:

MALE 13/16"-27 X MALE 55/64"-27	EX61-339
FEMALE 3/4"-27 X MALE 55/64"-27	EX61-341
FEMALE 13/16"-24 X MALE 55/64"-27	EX61-349
MALE 15/16"-27 X MALE 55/64"-27	EX61-336
MALE 11/16"-27 X MALE 55/64"-27	EX60-344
MALE M24X1/FEMALE M22X1 X MALE 55/64"-27	EX61-387

If you need any assistance from our Technical Service Department, make sure you can identify this water heater by having the model no: _____ and serial number: _____.

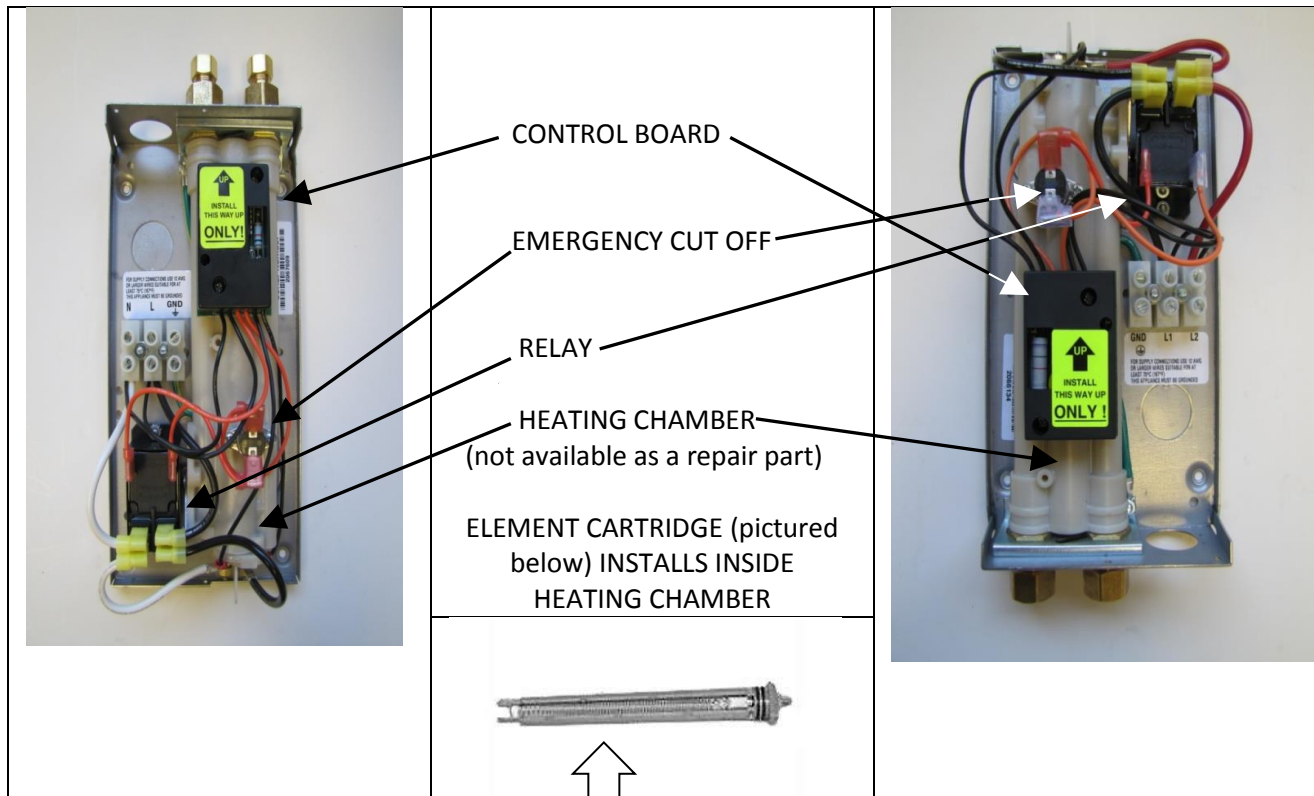
Call **203-267-7890** or toll free: **800-543-6163**.

Eemax Inc., 400 Captain Neville Drive, Waterbury, CT 06705

Tel: 800-543-6163, 203-267-7890, Fax: 203-267-7975, email: info@eemaxinc.com

WATER HEATERS - TANKLESS

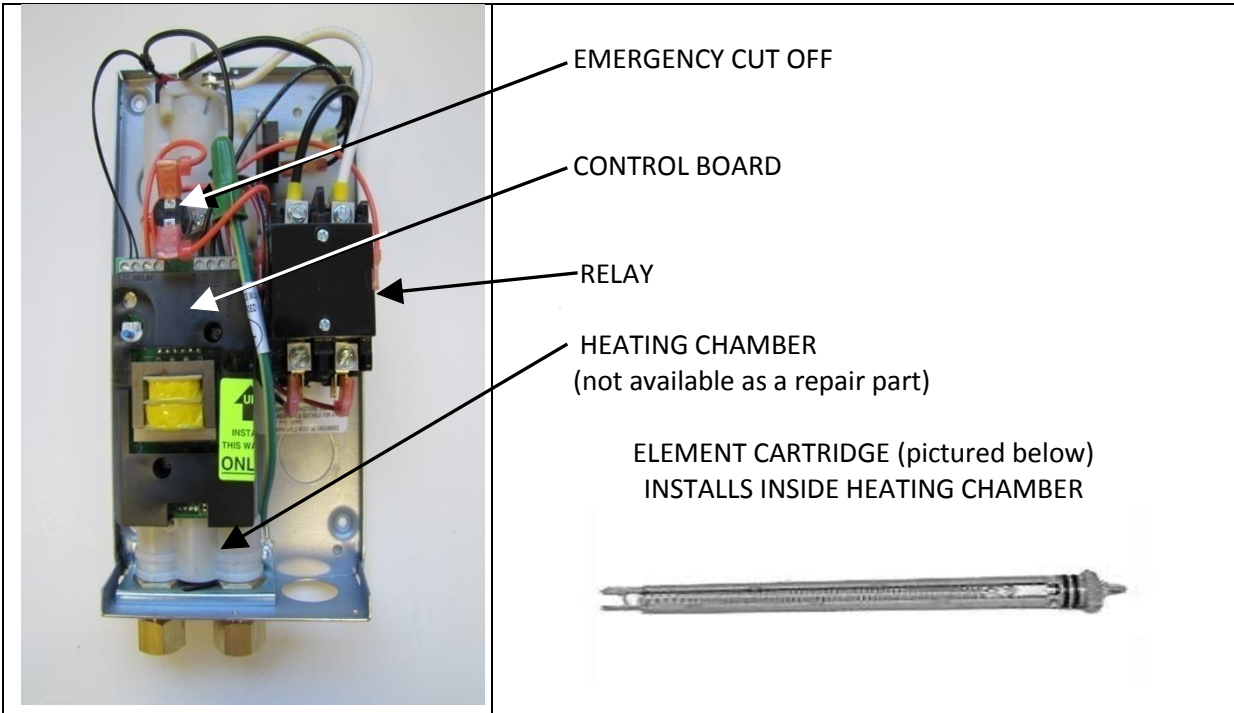
REPAIR PARTS FOR “SINGLE POINT” AND “FLOW CONTROLLED” UNITS



“SINGLE POINT” MODEL	“FLOW CONTROLLED” MODEL	ELEMENT CARTRIDGE	CONTROL BOARD	RELAY	EMERGENCY CUT OFF
SP2412	EX2412	EX610	EX0183DL-30	EX250B	EX278A
SP3012	EX3012	EX480	EX0183DL-30	EX250B	EX278A
SP3512	EX3512	EX410	EX0183DL-30	EX250B	EX278A
SP3208	EX3208	EX1440	EX0183DL-30	EX254B	EX278A
SP4208	EX4208	EX1050	EX0183DL-30	EX254B	EX278A
SP8208	EX8208	EX520	EX0183DL-40	EX255B	EX278A
SP35	EX35	EX1650	EX0183DL-30	EX254	EX278A
SP48	EX48	EX1200	EX0183DL-30	EX254	EX278A
SP55	EX55	EX1050	EX0183DL-30	EX254	EX278A
SP65	EX65	EX890	EX0183DL-30	EX254	EX278A
SP75	EX75	EX770	EX0183DL-40	EX255B	EX278A
SP95	EX95	EX630	EX0183DL-40	EX255B	EX278A
SP3277	EX3277	EX260	EX0183DL-30	EX251B	EX278A
SP4277	EX4277	EX1870	EX0183DL-30	EX251B	EX278A
SP60	EX60	EX1280	EX0183DL-30	EX251B	EX278A
SP80	EX80	EX960	EX0183DL-30	EX251B	EX278A
SP90	EX90	EX850	EX0183DL-40	EX253B	EX278A
SP100	EX100	EX760	EX0183DL-40	EX253B	EX278A

WATER HEATERS - TANKLESS

REPAIR PARTS FOR “THERMOSTATIC” UNITS



MODEL	ELEMENT CARTRIDGE *	CONTROL BOARD **	RELAY	EMERGENCY CUT OFF ***
EX2412T	EX610	EX284-120	EX259B	EX278A
EX3012T	EX480	EX284-120	EX259B	EX278A
EX3512T	EX410	EX284-120	EX259B	EX278A
EX3208T	EX1440	EX284AB-240	EX255B	EX278A
EX4208T	EX1050	EX284AB-240	EX255B	EX278A
EX8208T	EX520	EX284AB-240	EX255B	EX278A
EX35T	EX1650	EX284AB-240	EX255B	EX278A
EX48T	EX1200	EX284AB-240	EX255B	EX278A
EX55T	EX1050	EX284AB-240	EX255B	EX278A
EX65T	EX890	EX284AB-240	EX255B	EX278A
EX75T	EX770	EX284AB-240	EX255B	EX278A
EX95T	EX630	EX284AB-240	EX255B	EX278A
EX012240T	EX500 PRT	EX284AB-240	EX1050-1	EX278A
EX3277T	EX260	EX284AB-277	EX253B	EX278A
EX4277T	EX1870	EX284AB-277	EX253B	EX278A
EX60T	EX1280	EX284AB-277	EX253B	EX278A
EX80T	EX960	EX284AB-277	EX253B	EX278A
EX90T	EX850	EX284AB-277	EX253B	EX278A
EX100T	EX760	EX284AB-277	EX253B	EX278A

* If heater has suffix “DI” order element with suffix “SS”

** If heater has the suffix “ML” order circuit board with suffix “ML”

*** If heater has suffix “EE” or “FS” temp below 90°f, use p/n EX278E

*** If heater has suffix “S” or “FS” temp above 140°f, use p/n EX278D



DECLARATION OF CONFORMITY

Manufacturer's Name: **Eemax, Inc.**

Manufacturer's Address: **400 Captain Neville Drive, Waterbury, CT 06705 USA**

Product Description: **Electric Tankless Water Heaters**

Product Model Designation: **SP, EX, EM, EC**

Application of Council Directive: **2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to Electrical Equipment designed for use within certain voltage limits and**

Council Directive 2004/108/EC relating to electromagnetic compatibility and repealing Directive 89/336/EEC.

Electrical and electronic equipment (EEE) is presumed to comply with Directive 2011/65/EU, RoHS II and Directive on Packaging and Packaging Waste, 2004/12/EC.

Referenced Safety Standards

IEC 60335-2-35:2006
Used in conjunction with IEC60335-1:2001
(incl. Corrigendum 1:2004 and 2:2006)

Referenced EMC Standards

CISPR 14-1 (Ed. 5): 2005 (EN 55014-1 2006)
CISPR 14-2 (Ed. 1): 1997 +A1/A2: 2008
(EN 55014-2: 1997 +A1/A2: 2008)
IEC 61000-3-2 (Ed. 3): 2005 +A1/A2: 2008
(EN 61000-3-2: 2006+ A1:2009)
IEC 61000-3-3 (Ed. 2): 2008
(EN 61000-3-3: 2008)
IEC 62233 (Ed.1):2005 (EN 62233: 2008)

I, the undersigned, hereby declare that the models specified above conform to the above Directive(s) and Standard(s).

Signature: 

Printed name: Robert Horton

Title: Compliance Manager

Eemax Inc., 400 Captain Neville Drive, Waterbury, CT 06705

Tel: 800-543-6163, 203-267-7890, Fax: 203-267-7975, email: info@eemaxinc.com

WATER HEATERS - TANKLESS

Eemax CE Product Plan

New Model No.	Former Model Number	Phase	Modules	Volts	Watts
SP002120CE	SP2412	1	1	120	2.4kW
SP003120CE	SP3012	1	1	120	3.0kW
SP004120CE	SP3512	1	1	120	3.5kW
SP004240CE	SP35	1	1	240	3.5kW
SP005240CE	SP48	1	1	240	4.8kW
SP006240CE	SP55	1	1	240	5.5kW
SP007240CE	SP65	1	1	240	6.5kW
SP008240CE	SP75	1	1	240	7.5kW
SP010240CE	SP95	1	1	240	9.5kW
SP003220CE	SP282*	1	1	220	2.8kW
SP004220CE	SP332*	1	1	220	3.3kW
SP006220CE	SP552*	1	1	220	5.5kW
SP007220CE	SP662*	1	1	220	6.6kW
SP009220CE	SP882*	1	1	220	8.8kW
EX004240CE	EX35	1	1	240	3.5kW
EX005240CE	EX48	1	1	240	4.8kW
EX006240CE	EX55	1	1	240	5.5kW
EX007240CE	EX65	1	1	240	6.5kW
EX008240CE	EX75	1	1	240	7.5kW
EX010240CE	EX95	1	1	240	9.5kW
EX003220CE	EX282*	1	1	220	2.8kW
EX004220CE	EX332*	1	1	220	3.3kW
EX006220CE	EX552*	1	1	220	5.5kW
EX007220CE	EX662*	1	1	220	6.6kW
EX009220CE	EX882*	1	1	220	8.8kW
EM1015	Same*	1	1	230	1.50kW
EM1024	Same*	1	1	230	2.30kW
EM1637	Same*	1	1	230	3.68kW
EM1637SP	Same*	1	1	230	3.68kW
EM2046	Same*	1	1	230	4.60kW
EM2557	Same*	1	1	230	5.75kW
EM2557SP	Same*	1	1	230	5.75kW
EM3273	Same*	1	1	230	7.36kW
EM4092	Same*	1	1	230	9.20kW

New Model No.	Former Model Number	Phase	Modules	kW @ 240v	kW @ 220v
EC004240CE	EX332T	1	1	3.9	3.3
EC006240CE	EX55T	1	1	5.5	4.6
EC007240CE	EX65T	1	1	6.5	5.5
EC008240CE	EX75T	1	1	7.5	6.3
EC010240CE	EX95T	1	1	9.5	8.0
EC012240CE	EX012240T	1	1	11.5	9.7

For repair parts, see pages 13 and 14.
*Contact Eemax directly.

PRESSURE
175 kPa min
1034 kPa max

Limited Warranty

Eemax Electric Tankless Water Heaters

Subject to the terms and conditions set forth in this limited warranty, each Eemax Tankless Water Heater is warranted to the original owner ("Owner") against (i) mechanical or electrical failure of any component solely due to defects in materials or Manufacturer's workmanship for a period of one year from the date of original purchase and (ii) leaks solely due to defects in materials or Manufacturer's workmanship for the later of (x) five years from the date of original purchase or (y) the date of Owner's occupancy of a new dwelling in which the Eemax Tankless Water Heater is installed. However, if Owner cannot document the original date of purchase with the original sales receipt, then the limited warranty period begins on the date the Eemax Tankless Water Heater was manufactured. As Owner's sole and exclusive remedy, Manufacturer shall, at Manufacturer's sole election, either repair or replace the Eemax Tankless Water Heater or the defective portion of such product. Manufacturer is not liable for any costs incurred by Owner, including, without limitation, the cost of any labor. Manufacturer's maximum liability is limited to the value of the water heater. This limited warranty shall be governed by the laws of the United States.

THIS LIMITED WARRANTY SHALL BE THE EXCLUSIVE WARRANTY MADE BY MANUFACTURER AND IS MADE IN LIEU OF ALL OTHER WARRANTIES, STATUTORY, EXPRESSED OR IMPLIED (WHETHER WRITTEN OR ORAL), INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. MANUFACTURER EXPRESSLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. OWNER'S SOLE AND EXCLUSIVE REMEDY IS PRODUCT REPAIR OR REPLACED, AS PROVIDED IN THIS LIMITED WARRANTY, AND ALL OTHER CLAIMS FOR DAMAGES ARE EXCLUDED.

THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO OWNER OR ANY PERSON FOR BREACH OF ANY COVENANT, DUTY OR OBLIGATION ON THE PART OF MANUFACTURER. MANUFACTURER IS NOT LIABLE TO OWNER OR ANY THIRD PARTY FOR ANY LOSS, PERSONAL INJURY OR PROPERTY DAMAGE, DIRECTLY OR INDIRECTLY, ARISING FROM THE EEMAX TANKLESS WATER HEATER. UNDER NO CIRCUMSTANCES IS MANUFACTURER LIABLE TO OWNER OR ANY THIRD PARTY FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL, CONTINGENT, OR PUNITIVE DAMAGES OF ANY DESCRIPTION, WHETHER ANY SUCH CLAIM BE BASED UPON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORT, OR OTHERWISE.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO OWNER. IN SUCH CASES, THE WARRANTY SHALL BE LIMITED TO ONE YEAR FROM THE ORIGINAL DATE OF PURCHASE OR DATE OF MANUFACTURE, AS PROVIDED IN THIS LIMITED WARRANTY, OR THE SHORTEST PERIOD ALLOWED

WATER HEATERS - TANKLESS

BY LAW. THIS WARRANTY GIVES OWNER SPECIFIC LEGAL RIGHTS AND OWNER MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

Exclusions of Coverage from this Limited Warranty:

1. Manufacturer is not liable for any water damage or other damages arising, directly or indirectly, from any defect in the Eemax Tankless Water Heater component part(s) or from its use.
2. Manufacturer is not liable under this limited warranty or otherwise if:
 - a. The water heater or any of its component parts have been subject to misuse, alteration, neglect or accident; or
 - b. The water heater has not been installed in accordance with the applicable local plumbing and/or building code(s) and/or regulation(s); or
 - c. The water heater has not been installed or maintained in accordance with Manufacturer's printed instructions, or installed with improper orientation, improper fastening, improper use of pipe dope/plumbers putty or with the use of any non Manufacturer approved sealant; or
 - d. The water heater has not been continuously supplied with potable water or the water's inlet temperature is above Manufacturer's recommended maximum temperature; or
 - e. The water heater experiences any water pressure or flow interruptions, normal inlet water pressure is outside of the published specification for the heater; is exposed to any condition that causes the heater to turn on before the air is purged from the heater also know as dry fire; or
 - f. The water heater has been exposed to conditions resulting from floods, earthquakes, winds, fire, freezing, lightning, or circumstances beyond the Manufacturer's control; or
 - g. The water heater has been removed from its original installation location; or
 - h. The water heater has been used for other than the intended purpose.
3. Owner, and not Manufacturer or its agent/representative, is liable for and shall pay for all field charges for labor or other expenses incurred in the removal and/or repair of the water heater or any expense incurred by Owner in order to repair the water heater.

Subject to the terms and conditions set forth in this limited warranty, if the Eemax Tankless Water Heater fails or leaks because of defects in materials or Manufacturer's workmanship during the applicable warranty period set forth above, Owner should contact Manufacturer for a Returned Merchandise Authorization (RMA). No returns will be accepted by Manufacturer without an RMA number and Manufacturer assumes no responsibility for a water heater returned without an RMA number. Water heaters should be wrapped and packaged securely to avoid shipping damage. All shipments of parts from the Manufacturer to the Owner to replace defective components shall be made via normal ground transportation. If expedited shipment is required, it will be provided at Owner's additional cost.



Submetering

Multifamily Utility Cost Recovery

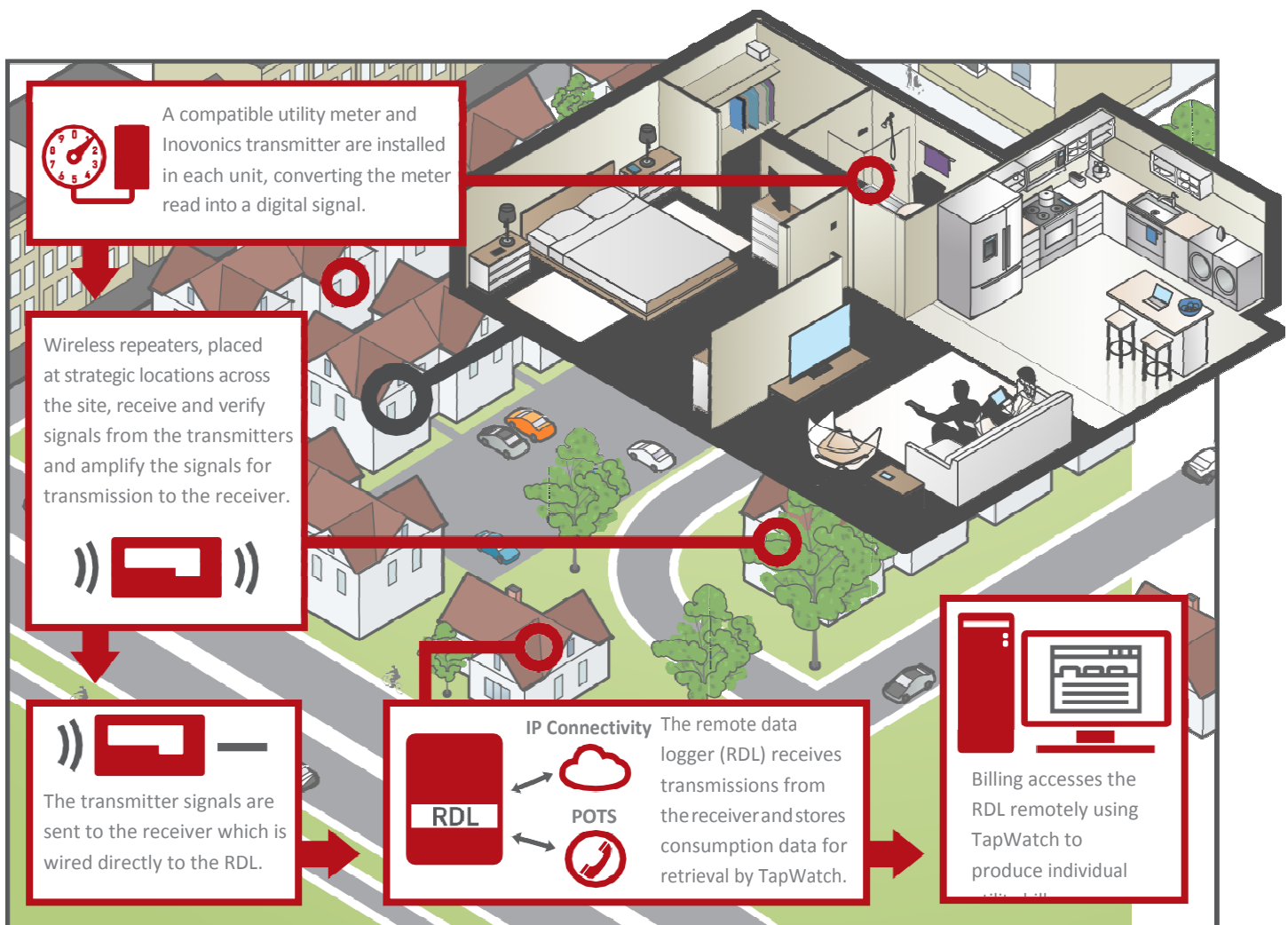
Submetering is an accurate and fair method of recovering utility costs at multifamily properties. It is a proven, cost effective and easy to implement system to recover water, electric and gas expenses. Properties benefit from reduced utility cost variance, improved net operating income and increased property value.





206

How TapWatch® Works



WATER SUBMETERS



Property Owner Benefits

Billing, Service and Installer Flexibility

TapWatch is the most widely used system for multifamily utility cost recovery which offers a host of benefits for property owners including:

- Broad portfolio of billing and service providers
- National installer/maintenance network

Billing Provider Benefits

System Reliability

Less system maintenance and fewer service calls due to a wireless network with a proven track record of 28+ years operating in thousands of properties.

TapWatch is dependable, easy to use and Inovonics offers customers industry-leading training and support.

Installer Benefits

Simple

The backbone of the Inovonics wireless network is its plug and play repeaters. No configuration or extra system setup is needed.

Easy to Install

Both hardware and software setup are quick and easy.

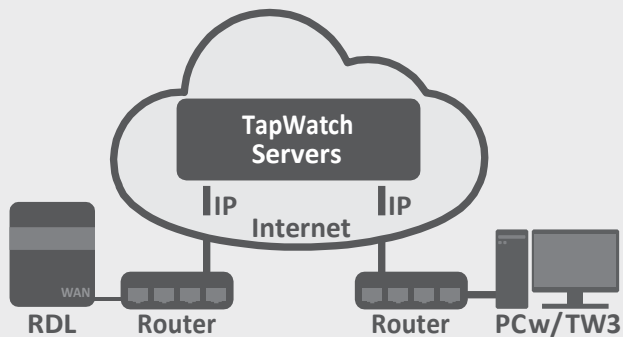
Improved Resident Satisfaction and Increased Conservation

With Ratio Utility Billing Systems, or RUBS, utility costs are allocated based on each unit's square footage and the number of occupants. TapWatch determines utility costs based on each unit's actual usage. Consequently, residents are financially motivated to use our precious resources more wisely and property owners have a cost effective solution to manage their utility costs, while improving their property value.

Submetering System Components

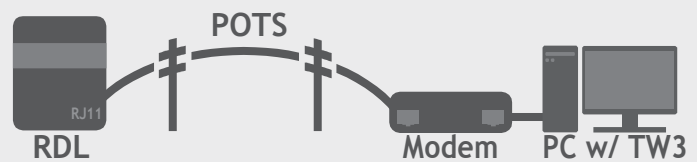
IP Connectivity (Recommended)

The Remote Data Logger (RDL), can communicate directly to a PC with TapWatch software through a simple IP connection using the WAN port. This allows property owners to use their existing IP networks without any additional connectivity costs.



POTS Connectivity

Connecting over a POTS line requires a dedicated or shared phone connection, usually at an additional monthly cost. Billing dials into the RDL to retrieve meter read data through the TapWatch software.



The **EN1501** provides a means for tracking and transmitting consumption information. As the meter measures the amount of water, gas, or electricity used, the resulting pulses are counted and transmitted to the remote data logger.

The **EN1501-XL** includes all of the functionality of the standard pulse meter transmitter, and adds a high capacity battery that is good for up to 20 years of operation.

The **EN1501EXT** pulse meter transmitter for integration is a board-only transmitter with external header pins. It is designed for integration into a customer-designed meter or product.

* Special use conditions apply

The high power repeater amplifies transmissions from any transmitter. Multiple repeaters can be used to provide campus wide coverage.

High Power Repeater with Transformer
EN5040-T

Without Transformer
EN5040

Weatherproof Enclosure
ACC650

The **EN4000** receives messages from the pulse meter transmitters and transfers them to the remote data logger.

The **RDL8500** accepts and stores utility consumption data from up to 2000 transmitters for 90 days. The data can be accessed through either an IP connection, POTS line or direct connection using TapWatch software.

TapWatch is the software link between billing and the RDL. Billing connects to the RDL through TapWatch to retrieve utility readings along with site information and system notices.



"Service Excellence"
in

Submetering & Utility Billing

(404) 382-5313

About Inovonics

Inovonics is the leading provider of wireless submetering systems, deploying its products on a scalable supervised wireless network designed specifically for multifamily properties. Inovonics' commercial wireless network provides multifamily owners and managers with a technologically advanced wireless infrastructure to implement an effective submetering solution.

To learn more about submetering and Inovonics' unique wireless products for the multifamily industry please contact us at 800.782.2709, sales@inovonics.com or visit our website: www.inovonics.com.





Preface

Notice

Copyright 2015 Inovonics

Inovonics intends this manual for use by Inovonics customers only. All comments concerning the contents of this manual should be directed to the Inovonics marketing department. No part of this work covered by copyright may be reproduced in any form either graphically, electronically or mechanically; including photocopying, recording, taping, or storing in an information retrieval system without prior written permission from Inovonics.

Revision

6.8.15 05855H

Trademarks

Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

TapWatch is a registered trademark of Inovonics. All other brand names and product names used in this manual are trademarks, registered trademarks, or trade names of their respective holders.

Technical Services Contact Information

For Inovonics technical services:

- E-mail: support@inovonics.com
- Phone: (800) 782-2709; (303) 939-9336

Document Conventions

The following notices are used throughout this document:

Note: Emphasizes points, provides supplementary information, or indicates minor problems in an expected outcome.

Caution: Indicates possible damage to equipment or loss of data, as well as potential problems in an expected outcome.

Warning: Indicates the possibility of minor injury to oneself or others.

Danger: Indicates the possibility of serious or fatal injury to oneself or others.

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Chapter 1

TapWatch Overview

1.1 TapWatch Introduction

TapWatch is a submetering system that reads and collects utility meter reading data. Already installed in millions of apartments nationwide, TapWatch helps multifamily property owners increase their net operating income by having residents pay individually for utilities they use.

Wireless technology allows for quick and easy installation of the TapWatch system, with minimal disruption to residents. Drilling holes through walls, running wire to each building, and digging trenches for cabling is not necessary.

Inovonics created and introduced TapWatch in 1998. Based on 900MHz spread spectrum wireless technology, this submetering system was created specifically for the multifamily housing market. The power of 900MHz technology allows hundreds of transmitters to send information to one receiver. Using repeaters, a mesh network can be created to cover large or multi-building properties.

1.1.1 How TapWatch Works

1. A pulse output meter installed in each apartment is connected to an Inovonics pulse meter transmitter (PMT).
2. The PMT converts the meter reading into a digital signal and transmits it.
3. Repeaters placed at strategic locations throughout the site receive signals from the transmitters, verify them, and amplify them for transmission to the receiver.
4. The data logger decodes transmissions from the receiver and stores the data for retrieval by TapWatch 3 software.

5. Authorized billing companies access the data logger remotely.

1.1.2 Pulse Meter Transmitter

The pulse meter transmitter (PMT) is a one-way end device that uses a meter's standard pulse or reed-switched output. As meter counts consumption, resulting pulses or switch closures are counted by the PMT. The PMT then transmits the data via the commercial mesh network.

The PMT:

- Accepts data from the water meter
- Transmits the data to the repeater or receiver
- Is self-monitoring
- Is primary battery powered, with an easily replaceable battery

1.1.3 Repeater

The repeater is an optional component of an Inovonics system that expands the coverage area of the mesh network. Repeaters can be easily included in the initial installation, or added as the system grows.

The repeater:

- Receives messages and retransmits them at high power
- Optimizes communication paths to effectively manage RF traffic
- Retransmits messages to other repeaters, extending site coverage

1.1.4 RF Gateway

There are several kinds of RF gateway used in Inovonics systems, depending on the application. TapWatch uses an EN4000 serial receiver to decode EchoStream signals from EchoStream end devices and repeaters, and/or an FA403 receiver to decode Frequency Agile (FA) signals from FA end devices and repeaters. The data is then outputted to the data logger.

The EN4000 and FA403:

- Listen for transmitted signals from end devices and repeaters
- Output data in a defined data stream to the data logger

1.1.5 Data Logger

The RDL8500 data logger can store meter readings from up to 2000 meters for 90 periods. At any time, the billing company can contact the data logger and download the readings along with site information and any system exceptions.

The data logger:

- Receives meter data from the receiver
- Stores meter data until needed
- Transmits data to a personal computer using TapWatch 3 software

1.2 TapWatch 3 Software

TapWatch 3 software collects, manages, and interprets the data received from the data logger. The software also allows the user to monitor the status of each PMT and repeater in your TapWatch submetering system.

1.2.1 TapWatch Startup

Start the TapWatch 3 software by either double-clicking the TapWatch 3 desktop icon, or selecting TapWatch 3 from the Inovonics TapWatch 3 folder in Programs.

1.2.2 About Window

The About window appears while TapWatch 3 loads, displaying the following information:

Build # The version of TapWatch software loaded on the computer.

1.2.3 Standard Software Features

The TapWatch 3 software has the following features:

- Pressing Alt + an underlined letter on a button will activate the button
- Tab can be used to move from field to field
- Shift + Tab moves between fields in reverse order
- Cursor can be positioned with a mouse click
- Ctrl + C and Ctrl + V shortcuts copy and paste highlighted items

- Data in fields can be sorted and filtered

1.2.3.1 Sorting and Filtering Data

Screens that include columns of information can be sorted and filtered.

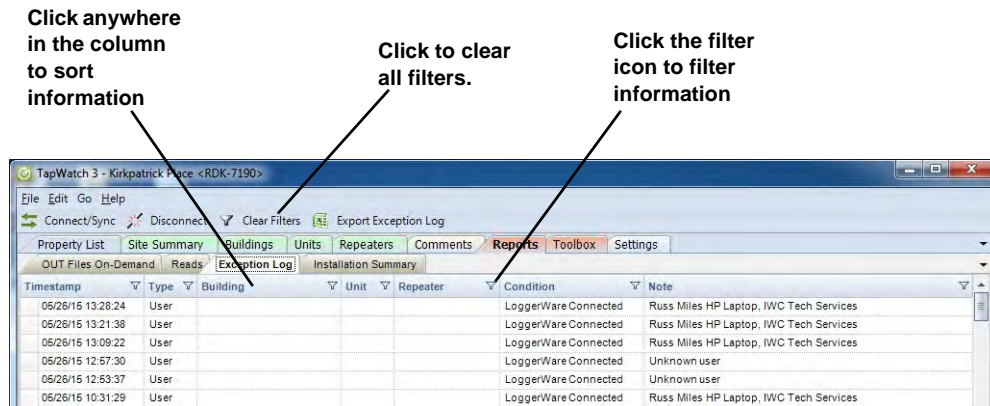


Figure 1-1 Sort and Filter Columns

To sort data:

1. Click anywhere in the column to sort the information in ascending order.
2. Click again to sort the information in descending order.

To filter information:

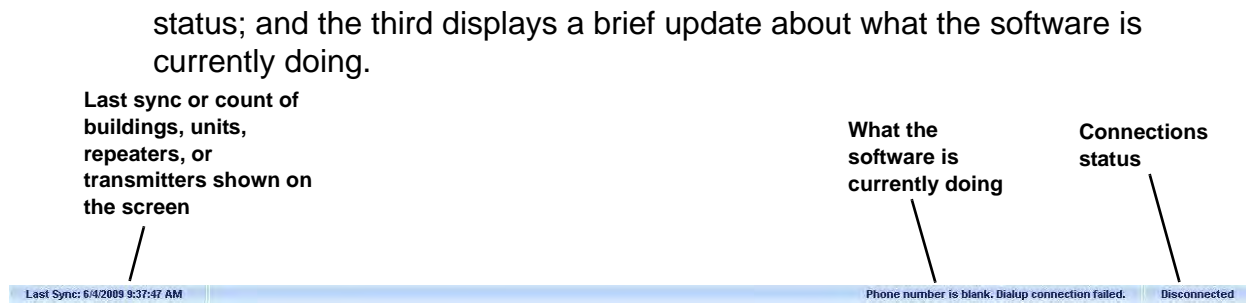
1. Click on the filter icon.
2. Choose the filter condition.
3. Only fields which meet the selected criteria will appear. To turn the filter off, click on the filter icon and select (All), or click the Clear Filters button.

To export a screen as a spreadsheet:

1. Navigate to File > Export.
2. Click on the file you wish to export.
3. To use the default backup location, click Save; to backup elsewhere, navigate a new location.

1.2.4 The Status Bar

The status bar at the bottom of all TapWatch 3 screens is separated into three sections: the first shows the time and date of the last synchronization or a count of the items currently being viewed; the second shows connection



Chapter 2

TapWatch Software Installation

2.1 Minimum System Requirements

Performance levels may decrease if the minimum requirements are not maintained.

- PC with 1.2 gigahertz processor
- Windows 7[®] or Windows 8.1[®]
- 1 GB RAM
- 4 GB of available hard disk space

Note: Additional space may be needed depending on the number of sites, the amount of meter readings retrieved, etc.

- Ethernet port
- Available RS232 serial port and DB-9 connector or a USB serial port with an RS232 serial adapter (for receiver direct connectivity)
- 56k modem (for remote access to modem sites)
- Internet connectivity for installs and future updates and IP connectivity
- Video resolution of 1024x768

2.2 Recommended System Requirements

Following are the recommended performance levels to ensure optimal performance of the TapWatch 3 software. Assuming all other minimum requirements have been met:

- PC with 2 gigahertz processor
- 2 GB RAM
- 14 GB of available hard disk space

2.3 Software Installation Setup

If you are installing a new software release in an existing system, you will want to perform a database backup and check your database maintenance settings before proceeding.

2.3.1 Perform a Database Backup

To make sure no critical data is lost during the installation process, Inovonics strongly recommends you perform a database backup before installing a new software release. To perform a database backup:

1. Navigate to the \C:\ProgramData\Inovonics\TapWatch3 folder.
2. Copy the contents of the folder.

Note: It is essential that all files are copied, including hidden files. To view hidden files using Windows 8.1, open the Control Panel, navigate to Appearance and Personalization > Folder Options > View. Under Advanced settings, click Show hidden files, folders, and drives, and then click OK.

3. Paste the files in a safe location.

2.3.2 Check Database Maintenance Settings

The TapWatch 3 database has a 4 gigabyte size limit. When TapWatch 3 starts, it checks the current size of the database and issues warnings if your database approaches the maximum size.

Note: For more information about database maintenance, including purging and compacting the database, see section 3.11, “Database Maintenance” on page 22.

To keep the database within its size limit and to improve performance, Inovonics strongly recommends you ensure that the database is being automatically purged of old data during scheduler runs. To check database purge settings:

1. Navigate to Property List > Settings.
2. Ensure the Auto purge data after sync checkbox is checked per section 4.7.5.6, “Auto purge data after sync” on page 64.
3. Ensure that a reasonable number of days for which you want to retain data when it is purged is entered per section 4.7.5.7, “Days (prior to today) to retain reads and exceptions (0 to retain all)” on page 65.

2.4 Software Installation

To install TapWatch 3:

4. Double click the TapWatch3-Setup.exe.
5. If you get a warning that the publisher could not be verified, click Run.
6. If you get a notice that an unidentified application wants to access your computer, click Allow.
7. If you are prompted to reboot your computer during installation, the installer should restart after the reboot. If the install does not run again, it will automatically pick up where it left off.

Note: Each time you start TapWatch 3 it will check to see if there is a software update available. If there is, you will be prompted to update your software.

2.5 Setting Up the TapWatch 3 Software with Your Network

During installation of the TapWatch 3 software, you will need to set up the TapWatch 3 software with your network to ensure only authorized users can access your network.

The first time you run TapWatch 3 software, the following window will display:



Figure 2-1 Request and Import a Key Window

1. Click on Request a Key. The key request information dialog box displays.



Figure 2-2 Key Request Information Dialog Box

2. Enter your name in the Your Full Name field.
3. Optionally, enter any notes in the Notes field for the network administrator who will be creating the key from the key request file.
4. Click Save.
5. The Save As dialog box appears. Navigate to the location where you want to save the key request file and click Save.
6. Email the key request file to your RBC's TapWatch administrator. The TapWatch administrator will synchronize the key with your system and return it to you.
7. Restart the TapWatch 3 software. When the Request and Import a Key window displays, select Import a Key.
8. Navigate to the location of the key file in the Import a Key window and click on Import.

Note: See “Roles & Access” on page 79 for more information.

2.6 Connecting to RDL8500 or RF Gateway

Connecting to a traditional TapWatch submetering network using the RDL8500 remote data logger and an RF gateway is covered in the *RDL8500 Remote Data Logger Installation Instructions* included with the RDL8500. However, a computer running TapWatch 3 software can also be directly connected to either an RDL8500 or an RF gateway for purposes of maintenance or troubleshooting.

2.6.1 Directly Connecting to an RDL8500

The computer running TapWatch 3 software can be directly connected to an RDL8500 using the RDL8500 Ethernet port, shown below.

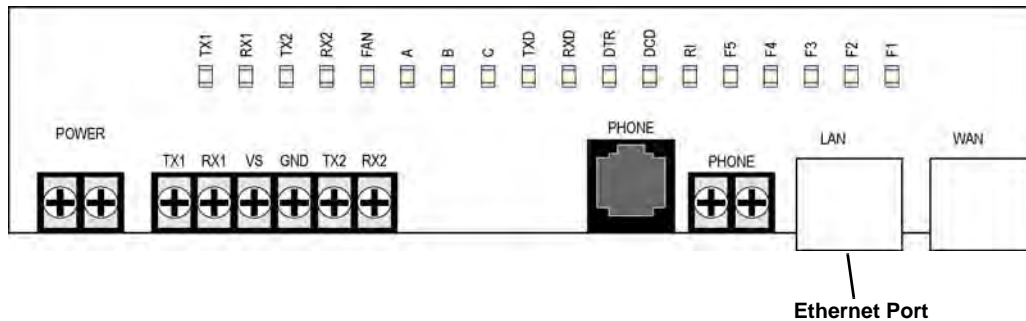


Figure 2-3 RDL8500 Ethernet Port

2.6.2 Directly Connecting to an RF gateway

The computer running TapWatch 3 software can be directly connected to an RF gateway using the Inovonics serial and power cable:

- <http://www.inovonics.com/ACC643.aspx>

Chapter 3

Property List

3.1 Overview

The Property List screen shows all of the properties contained on your PC. From this screen, you can backup, restore, add, open, or delete a site.

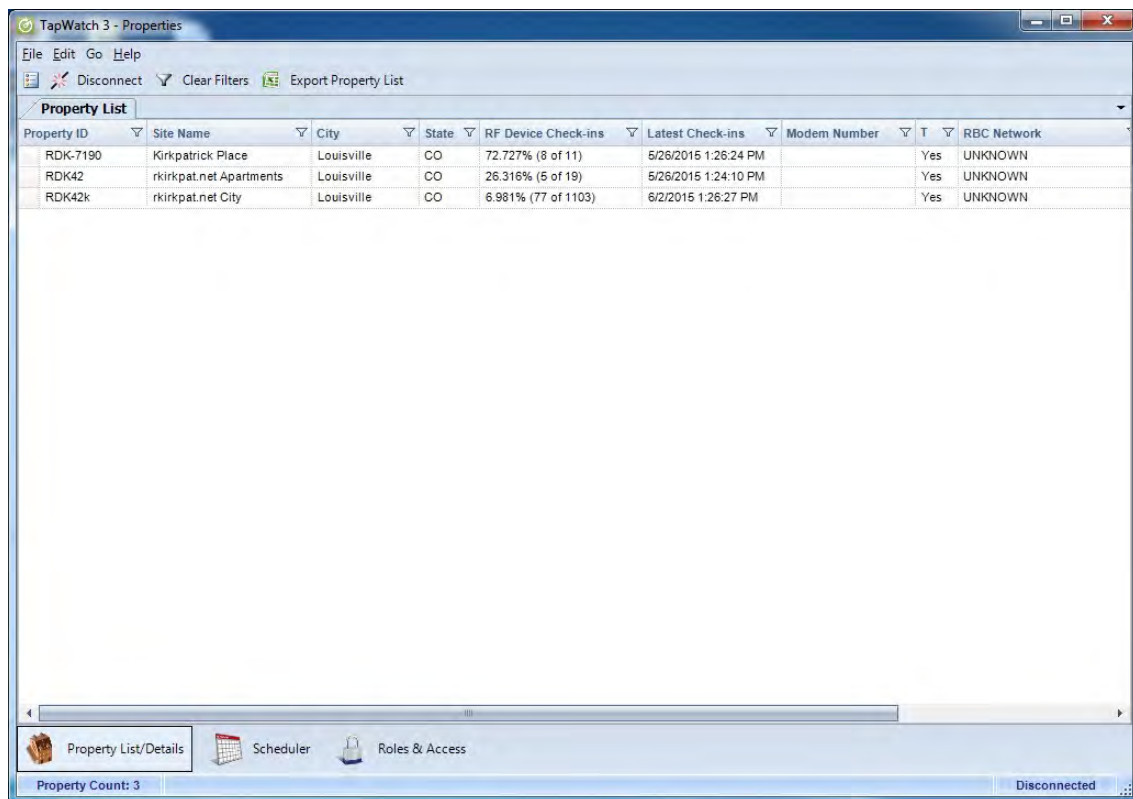


Figure 3-1 Property List Screen

3.2 Add a New Property

To add a new property:

1. Navigate to File > New > Property; or, right click anywhere on the list of properties and select New > Property.
2. Enter a unique identifier of up to 12 alphanumeric characters in the required Property ID field.
3. Enter a brief description of up to 25 alphanumeric characters in the required Site Name field.
4. Enter any relevant property information.
5. Click Save to save the new site; or, if you want to cancel the procedure, click Cancel to delete all information and return to the Property List screen.

3.3 Import a TapWatch 3 Property

Use this option if a data logger already has site information loaded and you want to retrieve the information to your computer.

1. Navigate to File > Import > TapWatch 3 Property.
2. Choose a connection type.



Figure 3-2 Choose Connection Type

- If connecting directly to the data logger, select Direct.
- If you select Modem, enter the modem number of the data logger and click Connect.

- If you select TapWatch.com you will be prompted for your Username and Password. If you do not have a Username and Password, they are available from Inovonics technical services. Enter these and click Submit. Select a property and click Import.
- If multiple properties are imported from Tapwatch.com at once, you can see which properties were just successfully imported by sorting on the Created column.

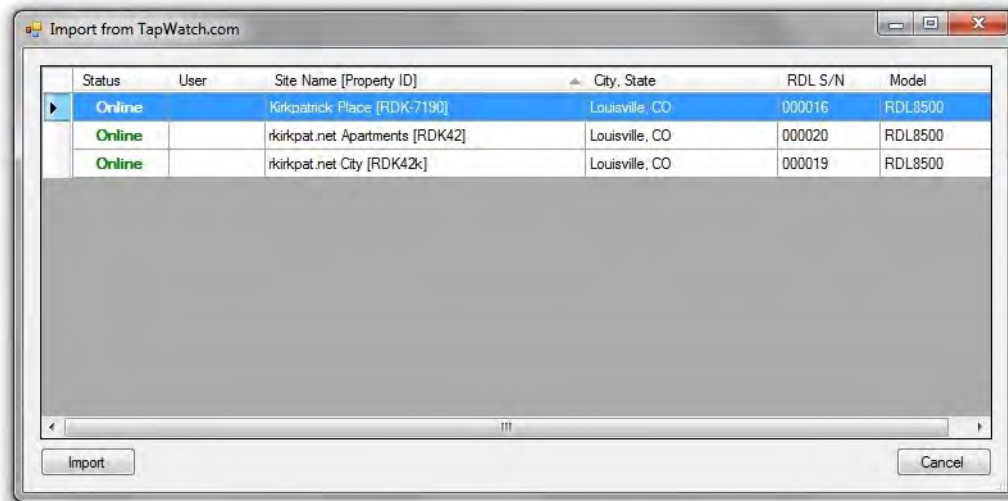


Figure 3-3 Select a Property

Note: If setting up a new RDL with IP connectivity, you will need to have it assigned to your RBC by Inovonics technical services before it will be available.

3.4 Convert a TapWatch 2 Property to TapWatch 3

Information formatted for TapWatch 2 can be transferred to TapWatch 3. To do this, both TapWatch 2, with the site information you wish to transfer, and TapWatch 3, must be loaded on the same computer.

To import a TapWatch 2 property:

3. Navigate to File > Import > From TapWatch 2 Database; the TapWatch 2 Data Import screen displays.

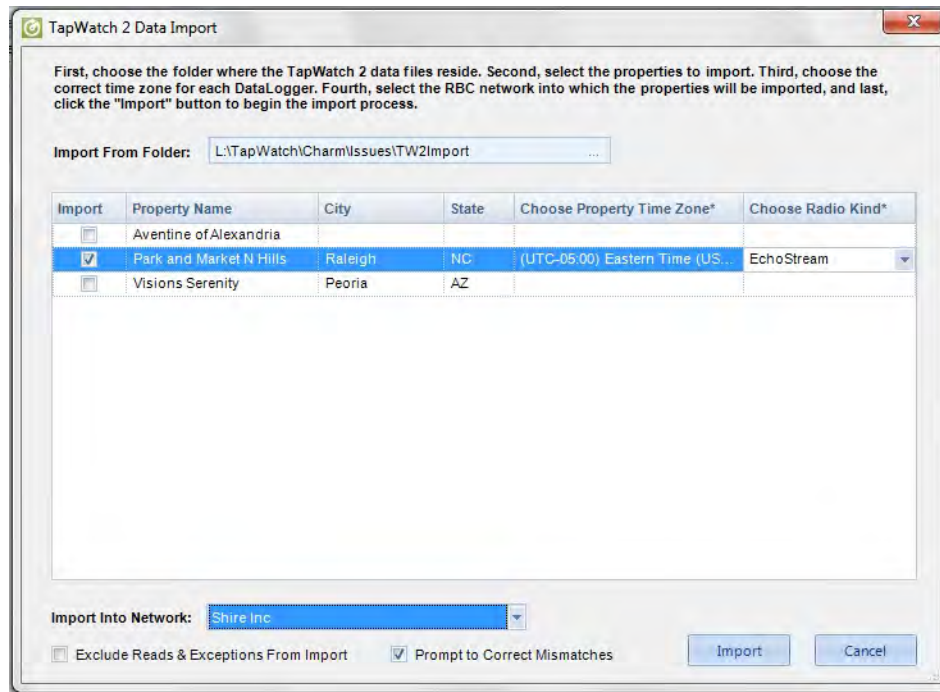


Figure 3-4 TapWatch 2 Data Import

4. Use the Import From Folder window to browse to the folder that contains the data file you wish to import.
5. Click on the property you wish to import.
6. Select your time zone from the Choose Property Time Zone drop-down menu.
7. Select the radio type used in your system, EchoStream or FA, from the Choose Radio Kind drop-down menu.
8. Select your network from the Import Into Network drop-down menu.
9. As desired, select Exclude Reads & Exceptions From Import.
10. As desired, select Prompt to Correct Mismatches.

- Prompt to Correct Mismatches is selected to correct perceived mismatches between EchoStream and FA devices. If the system finds an FA device being imported into an EchoStream system, or vice-versa, the following window will display:

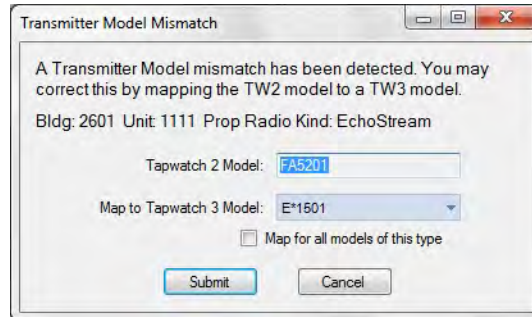


Figure 3-5 Transmitter Model Mismatch

- The transmitter detected as a mismatch will display in the TapWatch 2 Model field. Use the Map to TapWatch 3 Model drop-down menu to choose the transmitter you want to map it as instead.
- If you select Map for all models of this type, TapWatch 3 will map all mismatched transmitters of the type shown to the model selected without displaying the Transmitter Model Mismatch window.

3.5 Restore a Property

If you have a property backup file (*.sdf), you can restore the site information. To restore a property:

1. Navigate to File > Import > Restore from Backup.
2. The Restore window displays the default restore location. If your backup file is located elsewhere, navigate to it.
3. Highlight the backup file and click Open.

3.6 Export Property List

The property list can be exported as a spreadsheet. To export the property list:

1. Highlight a site and navigate to File > Export > Export Property List; or, right click anywhere on the list of properties and select Export Property List.

2. To use the default location, click Save; to save the file elsewhere, navigate to a new location.

3.7 Back Up a Property

It is strongly recommended that all properties be backed up regularly. Sites that lose data will have to be completely reprogrammed. This will require reaccessing every apartment, and resetting every transmitter.

1. Highlight the site and navigate to File > Export > Backup Selected Property; or right click on the property you want to back up, and select Backup Selected Property.
2. To use the default backup location, click Save; to back up elsewhere, navigate to a new location.
3. When the confirmation message displays, press OK.

3.8 Open a Property

This option opens a property for editing. To open a property, double click on the site you want to open.

3.9 Delete a Property

When a property is deleted, all buildings, repeaters, meters, and comments related to the property will also be deleted. Make sure to perform a backup before deleting a property.

To delete a property.

1. Highlight a property and navigate to Edit > Delete Property; or, right click on a property and select Delete.
2. When the confirmation message displays, either click Yes, to delete, or No, to cancel the deletion.

3.10 RF Network Health

The RF network health for each property can be viewed on the Property List in the RF Device Check-ins and Latest Check-ins columns. Both may be sorted to view which properties may require additional investigation or improvements within the RF network. Particular attention should be given to those properties where the RF Device Check-in percentage is low. If it is low, be sure to check the Latest Check-ins timestamp to ensure you have synchronized recently.

Manually synchronizing with a Property will always retrieve the latest RF Device Check-ins. For this to occur automatically using the scheduler, ensure the Sync RF Device Check-ins option is selected on the Scheduler Settings screen. For more information, see section 5.6, “Settings” on page 77.

3.11 Database Maintenance

TapWatch 3 comes with an embedded Microsoft SQL CE database to store its data. This database has a small footprint and does not require a separate IT installation or maintenance. However, it does have a 4 gigabyte size limit.

When TapWatch 3 starts, it checks the current size of the database and issues warnings if your database approaches the maximum size.

Note: If you need a larger database please contact Inovonics Technical Services.

To keep the database within its size limit and to improve performance, TapWatch has both automatic and manual database maintenance features.

These features fall into two main categories:

- Purging old data.

Note: To setup automatic database purging, see section 4.7.5.6, “Auto purge data after sync” on page 64.

- Compacting the database.

To access Database Maintenance:

1. Navigate to File > Advanced > Database Maintenance.

2. The Database Maintenance screen will display, with the size of your current database. From the Database Maintenance screen, the following two procedures are available:
 - Compact database.
 - Repair database.
-

Note: Since a database compaction cannot be run when TapWatch 3 is actively accessing the database, all other TapWatch 3 operations, including the Scheduler, are disabled while the Database Maintenance screen is being displayed.

3.11.1 Purge Database Manually

Property reads, the property exception log, and the scheduler event history can be purged, keeping the database smaller and faster. To purge the database:

1. Click the Purge Now button.

3.11.2 Compact Database

Compacting the database helps keep the database smaller and faster. SQL CE databases do not always release space when data is deleted. As a result, the database can grow, resulting in poor performance and possibly even reaching the maximum SQL CE database size limit of four gigabytes. Compacting recovers unused space in the database and makes the database smaller.

Compacting a large database can take up to 30 minutes for a very large database.

To compact your database:

1. On the Database Maintenance screen, select Compact Database.
-

Note: Compact Database will be selected by default when you open the page.

2. Click Run.
-

3. A dialog box warning that compacting large databases can take up to 30 minutes displays. Click OK to proceed; click Cancel to cancel the operation.
4. If you proceed, the Database Maintenance screen will display the compaction progress until it is complete.

Except for during certain critical parts, compacting can be canceled by clicking the Cancel button. However, if the operation is canceled it will leave a background task running until it completes. After cancellation you can perform TapWatch 3 functions, but you will not be able to start a new database compaction or repair, and Scheduler will not start a run.

3.11.3 Repair Database

The Repair Database operation is used in the unlikely event that the SQL CE database becomes corrupted. Repair usually just runs one phase: Phase 1 RecoverAllOrFail. If Phase 1 fails, two further phases are run to recover as much data as possible.

To repair your database:

1. On the Database Maintenance screen, select Repair Database.
2. Click Run.
3. The Database Maintenance screen will display the repair progress until it is complete.

Except for during certain critical parts, database repair can be canceled by clicking the Cancel button. However, if the operation is canceled it will leave a background task running until it completes. After cancellation you can perform TapWatch 3 functions, but you will not be able to start a new database compaction or repair, and Scheduler will not start a run until the background task has completed running.

3.12 View Maintenance Log

Both manual and automatic database maintenance operations write log messages to the database maintenance log file. To view the maintenance log:

1. Navigate to File > Advanced > View Maintenance Log.

The maintenance log displays in your simple text editor. The log file is not updated while you are viewing it; you will need to re-view the log to see any new messages. By default, the log file is limited to approximately the last 2,000 log messages.

Chapter 4

Site Information

4.1 Site Summary

The site summary screen allows the user to view and edit property information, including buildings, meters, repeaters, and comments.

TapWatch 3 - Kirkpatrick Place <RDK-7190>

File Edit Go Help

Connect/Sync Disconnect

Property List **Site Summary** Buildings Units Repeaters Comments Reports Toolbox Settings

Property ID: RDK-7190 *

RBC Network: 5490f86d-13ba-4156-bb59-b06184f0251f *

Site Name: Kirkpatrick Place *

Street: 397 S. Taylor #16

City: Louisville State: CO

Zip: 80027 Country: US

Tech Contact: Ryan Kirkpatrick

Phone: 3032097190

Email: ryank@inovonics.com

Mgmt Company: rkirkpat.net Properties

Mgmt Contact: Ryan D Kirkpatrick

Mgmt Phone: 5551112224

Mgmt Fax: 5551112223

Mgmt Email: tw@rkirkpat.net

Site Totals

- # Buildings: 3
- # Apt Units: 8
- # Meters: 8
- # Repeaters: 1
- # Water Meters: 0
- # Gas Meters: 0
- # Electric Meters: 0
- # Other Meters: 8

Meter Models: Other

Repeater Models: E*5040

PMT Models: E*1501, E*1501-XL

Gateway Model: E*4000

TxID Format: 2

Firmware Rev: RDL v2.0.10.10; Platform v2.0.10.2; LW v2.0.10.4

RDL Serial #: 000016

RDL Mfg Date: 03/19/09 00:00:00

Local Modified: 4/22/2015 5:13:29 PM (UTC-07:00) Mountain Time (US & Canada)

Last Published: 4/22/2015 5:13:29 PM (UTC-07:00) Mountain Time (US & Canada)

Save Cancel

Property List/Details Scheduler Roles & Access

Disconnected

Figure 4-1 Site Summary Screen

4.1.1 Site Information

All of the fields here are editable. Click Save to save any edits; click Cancel to clear edits.

Property ID: The property ID was entered when you added the site.

Caution: The property ID is used to name files containing site information. Changing an existing property ID can affect assorted files. All impacted files will need to be renamed with the new property ID.

Site Name: The site name is typically a descriptive name for the site.

Street: The site's street address.

City: The site's city.

State: The site's state.

Zip: The site's zip code.

Country: The site's country.

Tech Contact: The name of the technical contact for the site.

Phone: The technical contact phone number.

Email: The technical contact email address.

Mgmt Company: The management company for the site.

Mgmt Contact: The management contact.

Mgmt Phone: The management phone number.

Mgmt Fax: The management fax number.

Mgmt Email: The technical contact email address.

RBC Network: The RBC network to which the site belongs.

4.1.2 Site Totals

These fields are not editable, but instead display hardware information entered on other screens. The total number of buildings, units, repeaters, and meters are displayed. The model of the gateway, repeater, PMT, and meter are also displayed. Basic information about the data logger can also be found here, including firmware revision, serial number, and manufacture date.

4.1.3 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.
- If the site is a TapWatch.com site, and is to be published to a blank RDL, then you will be prompted to select which available blank RDL to publish to. Select the blank RDL by serial number and click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.2 Buildings

This screen shows the building name, the number of units, and any notes associated with each building.

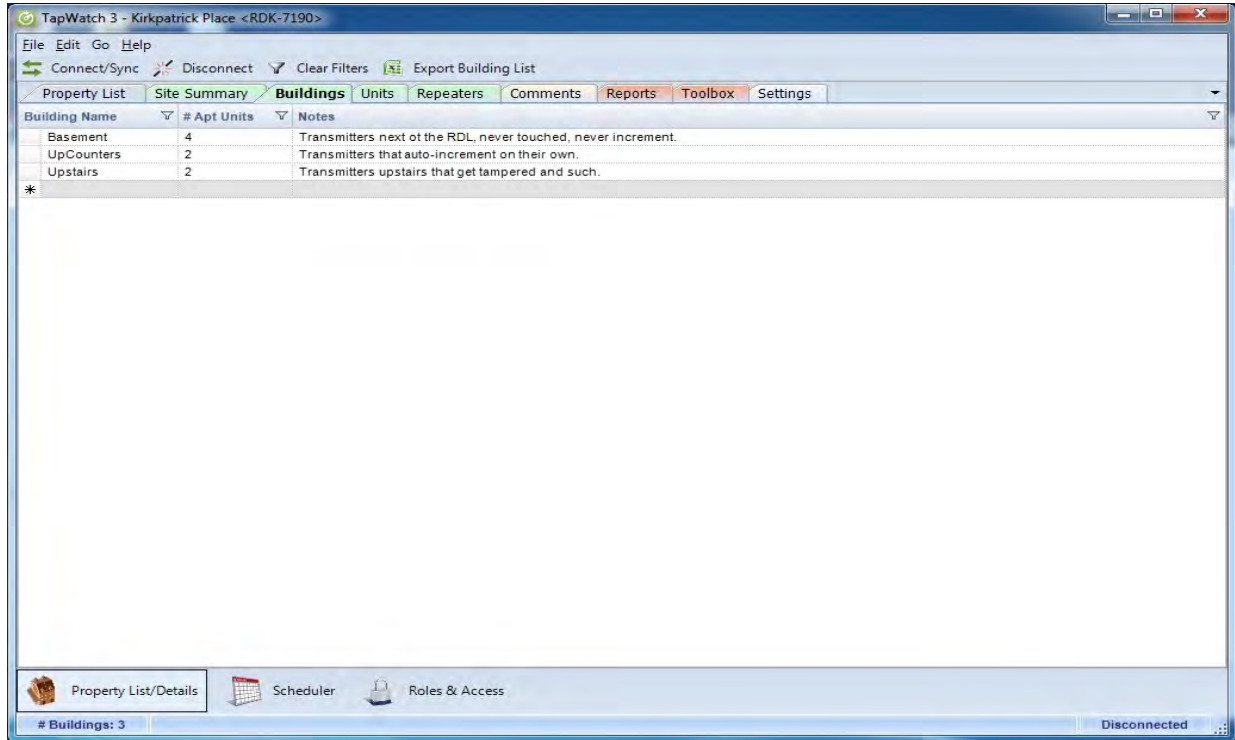


Figure 4-2 Buildings Screen

4.2.1 Add New Building

To add a new building:

1. Navigate to File > New > Building; or, click on the asterisk below the last building listed.
2. Fill in the necessary fields.
3. When complete, press the Enter button on the keyboard.

4.2.2 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.2.3 Export Buildings List

The property list can be exported as a spreadsheet. To export the property list:

1. Highlight a site and navigate to File > Export > Export Property List; or, right click anywhere on the list of properties and select Export Property List.
2. To use the default location, click Save; to save the file elsewhere, navigate a new location.

4.2.4 Building Name

Click on the name of a building to enter or edit the building name of up to 25 alphanumeric characters and/or spaces.

4.2.5 # Apt. Units

Displays the number of units in this building, as entered on the Units screen. Clicking on this field will take you to the Units screen.

4.2.6 Notes

Click to enter notes of up to 200 characters.

4.3 Units

This screen shows transmitter and meter information for each unit.

Building*	Unit*	TXID	IMC*	Meter Model*	TX Model	CF*	Util Type*	Meter ID	Notes
Basement	301	2686986802	0.00000	Other	E*1501	1.00000	Other	2632242	Nothing special.
Basement	302	2686986805	0.00000	Other	E*1501	1.00000	Other	2632245	Nothing special.
Basement	303	2686986801	0.00000	Other	E*1501	1.00000	Other	2632241	Nothing special.
Basement	304	2686264289	0.00000	Other	E*1501-XL	1.00000	Other	1909729	Nothing special.
UpCounters	201	2692788839	0.00000	Other	E*1501	1.00000	Other	2142823	Auto-up counting.
UpCounters	202	2692781129	0.00000	Other	E*1501	1.00000	Other	2331721	Auto-up counting.
Upstairs	101	2687003591	76.00000	Other	E*1501	1.00000	Other	2649031	Broken case, always tampered.
Upstairs	102	2686960485	0.00000	Other	E*1501	1.00000	Other	2606925	Has button to increment counts.

Figure 4-3 Units Screen

4.3.1 Add New Unit

To add a new unit:

1. Navigate to File > New > Unit; or, click on the asterisk below the last unit listed.
2. Fill in the necessary fields.
3. When complete, press the Enter button on the keyboard.

4.3.2 Enable RF for Registration and Com Port Sniffer

To enable the RF gateway for end device registration and the Com Port Sniffer:

1. Navigate to File > Connect > Enable RF; or, click on the Enable RF button.

Note: If you try to enable RF to a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Select.

2. Once a message displays in the status bar that your RF gateway is remotely connected, RF messages will begin to appear.

4.3.3 Export Unit List

The unit list can be exported as a spreadsheet. To export the unit list:

1. Highlight a unit and navigate to File > Export > Export Unit List; or, right click anywhere on the list of properties and select Export Unit List.
2. To use the default location, click Save; to save the file elsewhere, navigate a new location.

4.3.4 Import Units

The import units feature allows you to import units into an existing TapWatch 3 property by importing an Excel (.xls or .xlsx) spreadsheet. To import units:

1. Click the Import Units button.
2. Navigate to the spreadsheet you want to import.

The Excel file content to be imported should be identical to that created when a Unit list is exported using the Export Unit List feature, with addition of a Serial Number field:

- Building
- Unit
- TXID
- Serial Number

- IMC
- Meter Model
- TX Model
- CF
- Util Type
- Meter ID
- Notes

If the Building and/or Unit fields are empty, then the row(s) will be ignored. Any column name starting with a # character will likewise be ignored.

If you are designating a known transmitter, then the TXID and/or Serial Number fields must be populated. If the TXID and Serial Number are both empty, the columns will be ignored.

If both the TXID and Serial Number fields are populated, the cell values must be equivalent. (For example, a TXID value of 2684478016 would be equivalent to a serial number of 123456.)

If the unit list already contains an entry for a TXID or Serial Number in the spreadsheet you are importing, that row will be ignored.

Please refer to the following table for details:

Table 4-1 Import Unit Spreadsheet Fields

Column Name	Data Type	Required	Default Cell Value if Empty
Building	Alphanumeric	Yes*	N/A
Unit	Alphanumeric	Yes*	N/A
TXID	Numeric	No**	
Serial Number	Numeric	No**	
IMC	Numeric	No	0
Meter Model	Alphanumeric	No	Other
TX Model	Alphanumeric	No	Other
CF	Numeric	No	1
Util Type	Alphanumeric	No	Other
Meter ID	Alphanumeric	No	
Notes	Alphanumeric	No	
Starts with the '#' character	Any	Column is ignored	N/A
Any other column name	Any	Error is displayed	N/A

** If Building and Unit are blank, the row is ignored and skipped.*

*** If the TXID and/or Serial Number already exists in the property, the row is ignored and skipped.*

4.3.5 Building

Displays the building name to which the unit is assigned.

4.3.6 Unit

Click to enter or edit the unit number.

4.3.7 TXID

The TXID field displays the factory coded unique identification number of registered Inovonics transmitters. This field is also used for registration.

To register an Inovonics transmitter:

1. Click the enable RF button to connect to the Inovonics RF gateway.

2. Click on the appropriate TXID field. The system enters registration mode, and a message appears on the bottom of the screen informing you that it is waiting for a reset message from the Inovonics transmitter.
3. Press the reset button on the Inovonics transmitter. The TXID field will populate with the transmitter's unique identification number.

Note: You will receive a notification if the transmitter's unique identification number has already been registered.

4.3.8 IMC

Click to enter or edit the initial meter count of the unit's meter.

4.3.9 Meter Model

Click to choose the model of the meter in the unit from a dropdown menu.

4.3.10 TX Model

Click to choose the model of the Inovonics transmitter from a dropdown menu.

4.3.11 CF

Click to enter or edit the count factor for this transmitter.

4.3.12 Util Type

Click to choose the utility type from a dropdown menu.

4.3.13 Meter ID

Click to enter or edit the unique identification number for the meter.

4.3.14 Notes

Click to enter notes of up to 200 characters.

4.4 Repeaters

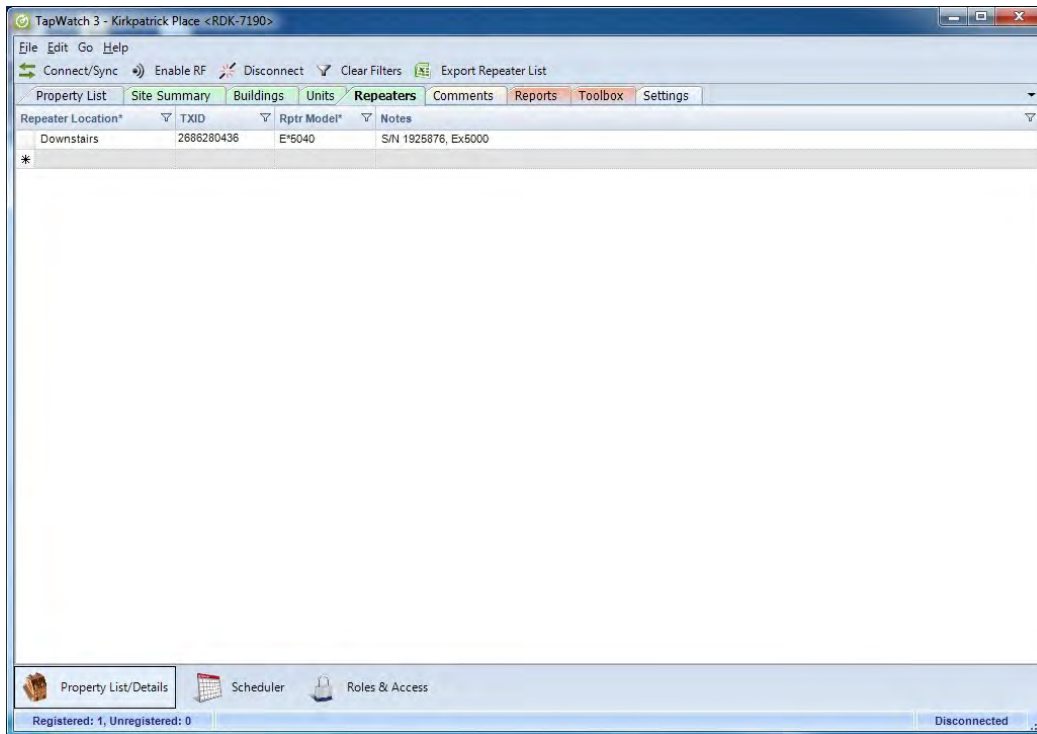


Figure 4-4 Repeaters Screen

This screen shows information for repeaters on the selected property, including repeater location, unique identification number, and notes.

4.4.1 Add New Repeater

1. Navigate to File > New > Repeater; or click on the asterisk below the last repeater listed.
2. Fill in the necessary fields.
3. When complete, press the Enter button on the keyboard.

4.4.2 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.4.3 Enable RF for Registration and Com Port Sniffer

To enable the RF gateway for end device registration and the Com Port Sniffer:

1. Navigate to File > Connect > Enable RF; or, click on the Enable RF button.

Note: If you try to enable RF to a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Select.

2. Once a message displays in the status bar that your RF gateway is remotely connected, RF messages will begin to appear.

4.4.4 Repeater Location

Click to enter or edit the building in which the repeater is located. Though this is optional, entering the location of the repeater is essential in the event of field service.

4.4.5 TXID

The TXID field displays the factory coded unique identification number of registered Inovonics transmitters. This field is also used for registration.

To register an Inovonics transmitter:

1. Click the enable RF button to connect to the Inovonics RF gateway.
2. Click on the appropriate TXID field. The system enters registration mode, and a message appears on the bottom of the screen informing you that it is waiting for a reset message from the Inovonics transmitter.
3. Press the reset button on the Inovonics transmitter. The TXID field will populate with the transmitter's unique identification number.

Note: You will receive a notification if the transmitter's unique identification number has already been registered.

4.4.6 Notes

Click to enter or edit notes for the repeater. It is recommended that the location of the repeater be noted for future maintenance.

4.5 Comments

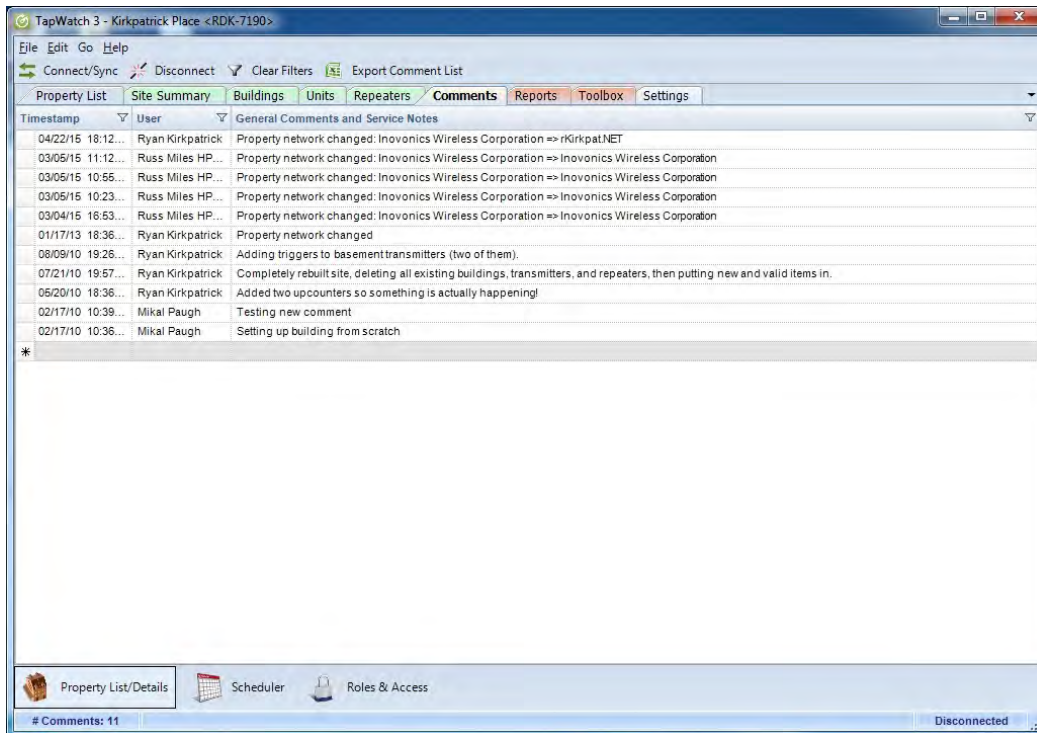


Figure 4-5 Comments Screen

This screen shows user entered comments.

4.5.1 Add New Comment

1. Navigate to File > New > Comment to add a new comment; or click on the asterisk below the last comment listed.
2. Fill in the necessary fields.
3. When complete, press the Enter button on the keyboard.

4.5.2 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.5.3 Export Comments List

The comments list can be exported as a spreadsheet. To export the comments list:

1. Navigate to File > Export > Export Comments List to export a file containing all comments for the selected property; or, right click anywhere on the list of properties and select Export Comments List.
2. To use the default location, click Save; to save the file elsewhere, navigate to a new location.

4.5.4 Timestamp

Displays the date and time the comment was entered.

4.5.5 User

Displays the user who entered the comment.

4.5.6 General Comments and Service Notes

Displays the comments. It is recommended that the location of the data logger be noted for future maintenance.

4.6 Reports

The reports screens allow you to view and export relevant system reports. There are three reports screens: .OUT files on-demand, reads, and exception log.

4.6.1 .OUT Files On-Demand

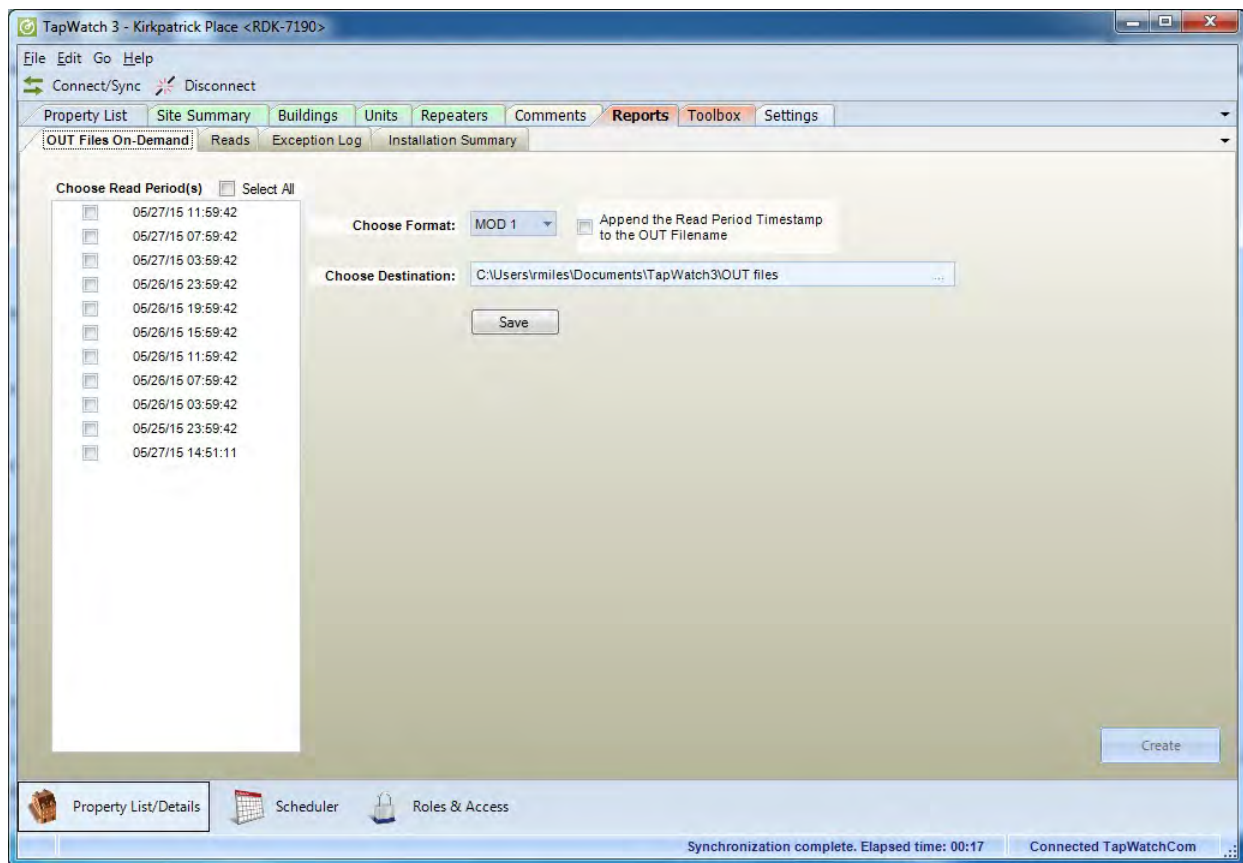


Figure 4-6 .OUT Files On-Demand Screen

This screen is used to create .OUT files as needed. .OUT files are used by the RBC to collect the information necessary to create a bill. .OUT files can be created as XML and CSV files, or as one of five fixed column text file formats.

The following tables can be used to locate information as needed.

Field The type of information.

Start Column At what character this information begins.

Length The number of characters required to convey this information.

Description Description of the information contained in this field.

4.6.1.1 MOD 1

Field	Start Column	Width	Description
Building Name	1	25	Building name
Apartment Unit #	27	5	Apartment or unit within building
Property ID	33	6	Site name or billing identifier
Transmitter ID	40	10	Factory-assigned serial number; universally unique
Meter Count	51	6	Reading on meter in respective unit
Utility Type	58	1	W: Water; other meter types have not been implemented
Meter Connection	60	1	H: Hot; C: Cold; A: All
Date of Last Read	62	8	Date when last meter read was recorded
Time of Last Read	71	5	Time when last meter read was recorded
Meter ID	77	12	User-assigned to help identify the meter location
Exception Code	90	4	E: exception that cleared on same day; I: inactive; B: low battery; T: test mode; R: reset; P: registered but never checked in
	95	1	End of line indicator

4.6.1.2 MOD 2

Field	Start Column	Width	Description
Transmitter ID	6	10	Factory-assigned serial number, universally unique
Meter Count	19	6	Reading on meter in respective unit
Utility Type	26	1	W: Water; other meter types have not implemented
Meter Connection	28	1	H: Hot; C: Cold; A: All
Exception	31	1	E: notes that an exception has occurred on the same day
Date of Last Read	33	8	Date when last meter read was recorded
Time of Last Read	42	5	Time when last meter read was recorded
Meter ID	48	12	User-assigned to help identify the meter location

4.6.1.3 MOD 3

Field	Start Column	Width	Description
Transmitter ID	7	10	Factory-assigned serial number, universally unique
Meter Count	20	6	Reading on meter in respective unit
Utility Type	27	1	W: Water; other meter types have not been implemented
Meter Connection	29	1	H: Hot; C: Cold; A: All
Exception	32	1	E: notes that an exception has occurred on the same day
Date of Last Read	34	8	Date when last meter read was recorded
Time of Last Read	43	5	Time when last meter read was recorded
Meter ID	49	12	User-assigned to help identify the meter location
Exception Code	62	3	I: inactive; B: low battery; T: test mode; R: reset; P: registered but never checked in

4.6.1.4 MOD 4

Field	Start Column	Width	Description
Meter ID	7	12	User-assigned to help identify the meter location
Meter Count	20	6	Reading on meter in respective unit
Utility Type	27	1	W: Water; other meter types have not been implemented
Meter Connection	29	1	H: Hot; C: Cold; A: All
Exception	32	1	E: notes that an exception has occurred on the same day
Date of Last Read	34	8	Date when last meter read was recorded
Time of Last Read	43	5	Time when last meter read was recorded

4.6.1.5 MOD 5

Field	Start Column	Width	Description
Building Name	1	25	Building name
Apartment Unit #	27	5	Apartment or unit within building
Property ID	33	7	Site name or billing identifier
Transmitter ID	40	10	Factory-assigned serial number; universally unique
Meter Count	51	10	Reading on meter in respective unit
Utility Type	62	1	W: Water; other meter types have not been implemented
Meter Connection	64	1	H: Hot; C: Cold; A: All
Date of Last Read	68	8	Date when last meter read was recorded
Time of Last Read	77	5	Time when last meter read was recorded
Meter ID	83	12	User-assigned to help identify the meter location
Exception Code	96	4	E: exception that cleared on same day; I: inactive; B: low battery; T: test mode; R: reset; P: registered but never checked in

4.6.1.6 XML 1

The XML 1 format contains the following fields:

Field	Parent	Data Type	Description
Date	OutFile	Date/Time	When the outfile was generated
Property	OutFile	Record	Contains reads for one property
Code	Property	String	Site short name or billing identifier
Name	Property	String	Name of the property
Period	Property	Array	Contains the reads of a period
Read	Period	Record	Contains the details of a read
Building	Read	String	Name of the building via associated transmitter
Unit	Read	String	Name of the unit via associated transmitter
MeterConnection	Read	String	One of: Hot, Cold, All, Other
MeterUtilityType	Read	String	One of: Water, Electric, Gas, Runtime, Other
MeterSerialNumber	Read	String	The serial number of the meter
TransmitterModel	Read	String	The model number of the RF transmitter
TransmitterSerialNumber	Read	String	The serial number of transmitter
TransmitterCount	Read	Integer	The pulse count reported by the transmitter
InitialMeterCount	Read	Integer	The meter reading when transmitter last reset
HadExceptionDuringPeriod	Read	Boolean	If there was an exception today on this transmitter.
IsBatteryLow	Read	Boolean	If the transmitter reported a low battery condition
IsInactive	Read	Boolean	If the transmitter failed to report in
IsReset	Read	Boolean	If the transmitter reported a reset condition
IsTamper	Read	Boolean	If the transmitter reported a case tamper condition
PeriodEnd	Read	Date/Time	When this period ended

Received	Read	Date/Time	When the transmitter was last heard from
----------	------	-----------	--

The following is an example of the XML 1 format:

```
<?xml version="1.0" encoding="UTF-8"?>
<OutFileXmlExport>
  <Date>2014-09-30T06:08:59.1906621-08:00</Date>
  <Property>
    <Code>156111</Code>
    <Name>155 20th AVENUE APTS</Name>
    <Buildings>
      <Building>
        <Name>Building 9</Name>
        <Units>
          <Unit>
            <Name>307</Name>
            <Meters>
              <Meter>
                <SerialNumber>307</SerialNumber>
                <UtilityType>
                  <Name>Water - All</Name>
                </UtilityType>
                <Transmitter>
                  <SerialNumber>2685451602</SerialNumber>
                  <Reads>
                    <Read>
                      <HadExceptionDuringPeriod>>false</HadExceptionDuringPeriod>
                      <IsBatteryLow>>false</IsBatteryLow>
                      <IsInactive>>false</IsInactive>
                      <IsReset>>false</IsReset>
                      <IsTamper>>false</IsTamper>
                      <Period>2014-03-17T23:59:42-08:00</Period>
                      <Read>301231</Read>
                      <InitialMeterCount>4</InitialMeterCount>
                      <Received>2014-03-17T23:15:53-08:00</Received>
                    </Read>
                  </Reads>
                </Transmitter>
              </Meter>
            </Meters>
          </Unit>
        </Units>
      </Building>
```

```

    </Buildings>
  </Property>
</OutFileXmlExport>XML 2

```

4.6.1.7 XML 2

The XML 2 format contains the following fields:

Field	Parent	Data Type	Description
Date	OutFile	Date/Time	When the outfile was generated
Property	OutFile	Record	Contains reads for one property
Code	Property	String	Site short name or billing identifier
Name	Property	String	Name of the property
Period	Property	Array	Contains the reads of a period
Read	Period	Record	Contains the details of a read
Building	Read	String	Name of the building via associated transmitter
Unit	Read	String	Name of the unit via associated transmitter
MeterConnection	Read	String	One of: Hot, Cold, All, Other
MeterUtilityType	Read	String	One of: Water, Electric, Gas, Runtime, Other
MeterSerialNumber	Read	String	The serial number of the meter
TransmitterModel	Read	String	The model number of the RF transmitter
TransmitterSerialNumber	Read	String	The serial number of transmitter
TransmitterCount	Read	Integer	The pulse count reported by the transmitter
InitialMeterCount	Read	Integer	The meter reading when transmitter last reset
HadExceptionDuringPeriod	Read	Boolean	If there was an exception today on this transmitter.
IsBatteryLow	Read	Boolean	If the transmitter reported a low battery condition
IsInactive	Read	Boolean	If the transmitter failed to report in
IsReset	Read	Boolean	If the transmitter reported a reset condition

IsTamper	Read	Boolean	If the transmitter reported a case tamper condition
PeriodEnd	Read	Date/Time	When this period ended
Received	Read	Date/Time	When the transmitter was last heard from

The following is an example of the XML 2 format:

```
<?xml version="1.0" encoding="utf-8"?>
<OutFile xmlns="http://reads.tapwatch.com/xml/1.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Date xmlns="">2015-05-19T07:34:54.5626561-07:00</Date>
  <Property>
    <Code xmlns="">65011</Code>
    <Name xmlns="">1000 South Ulster Street </Name>
    <Period>
      <Read>
        <Building xmlns="">Building 4</Building>
        <Unit xmlns="">429</Unit>
        <MeterConnection xmlns="">All</MeterConnection>
        <MeterUtilityType xmlns="">Water</MeterUtilityType>
        <MeterSerialNumber xmlns="" />
        <TransmitterModel xmlns="">E*1501</TransmitterModel>
        <TransmitterSerialNumber xmlns="">2692311296</
TransmitterSerialNumber>
        <TransmitterCount xmlns="">1146</TransmitterCount>
        <InitialMeterCount xmlns="">3</InitialMeterCount>
        <HadExceptionDuringPeriod xmlns="">false</HadExceptionDuringPeriod>
        <IsBatteryLow xmlns="">false</IsBatteryLow>
        <IsInactive xmlns="">false</IsInactive>
        <IsReset xmlns="">false</IsReset>
        <IsTamper xmlns="">false</IsTamper>
        <PeriodEnd xmlns="">2015-03-11T23:59:42-07:00</PeriodEnd>
        <Received xmlns="">2015-03-11T23:29:47-07:00</Received>
      </Read>
    </Period>
  </Property>
</OutFile>
```

4.6.1.8 CSV 1

The CSV format is a comma separated values version of the XML 2 format, with the same data fields. The first line contains a list of the field/column names as follows:

Field	Description
Date	When the outfile was generated
Property Code	Site short name or billing identifier
Property Name	Name of the property
Building	Name of the building
Unit	Name of the unit
Meter Serial Number	The serial number of the meter
Meter Connection	One of: Hot, Cold, All, Other
Meter Utility Type	One of: Water, Electric, Gas, Runtime, Other
Transmitter Model Number	The model number of the RF transmitter
Transmitter Serial Number	The serial number of transmitter
Had Exception During Period	If there was an exception today on this transmitter
Is Battery Low	If the transmitter reported a low battery condition
Is Inactive	If the transmitter failed to report in
Is Reset	If the transmitter reported a reset condition
Is Tamper	If the transmitter reported a case tamper condition
Period End	When this period ended
Transmitter Count	The pulse count reported by the transmitter
Initial Meter Count	The meter reading when transmitter last reset
Received	When the transmitter was last heard from

The following is an example of the CSV 1 format:

```
08/06/2011 10:07:05,WestWood1,West Wood Apts,West,303,204353,Hot,
Water,E*1501,2684922450,False,False,True,False,False,False,
08/05/2011 23:59:57,150,1042,08/01/2011 07:00:04
```

4.6.1.9 None

There may be cases when the scheduler is required to retrieve reads and exceptions without generating OUT files. If None is selected, no OUT files will be generated; only reads and exceptions are retrieved.

4.6.1.10 Choose Read Period(s):

Displays the reads from which you can create an .OUT file. To create an .OUT file, check an available read, and click the Create button. To select all periods, check the Select All checkbox.

4.6.1.11 Choose Format:

Allows you to choose the format in which the .OUT file will be created.

4.6.1.12 Append the Read Period Timestamp to the OUT Filename

Check this to add the timestamp to the name of the .OUT file.

4.6.1.13 Choose Destination:

Allows you to choose the destination to which the .OUT file will be exported.

4.6.1.14 Save

Click to save changes to this form.

4.6.1.15 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.

- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.6.2 Reads

Period	Building	Unit	Util Type	Meter Model	Meter ID	TX Model	TxID	Received	Count Factor
05/26/15 13.2...	Basement	301	Other	Other	2632242	E*1501	2686986802	05/26/15 12:4...	1
05/26/15 13.2...	Basement	302	Other	Other	2632245	E*1501	2686986805	05/26/15 13:0...	1
05/26/15 13.2...	Basement	303	Other	Other	2632241	E*1501	2686986801	05/26/15 13:2...	1
05/26/15 13.2...	Basement	304	Other	Other	1909729	E*1501-XL	2686264289	05/26/15 13:2...	1
05/26/15 13.2...	UpCounters	201	Other	Other	2142823	E*1501	2692788839	12/31/79 17:0...	1
05/26/15 13.2...	UpCounters	202	Other	Other	2331721	E*1501	2692781129	12/31/79 17:0...	1
05/26/15 13.2...	Upstairs	101	Other	Other	2649031	E*1501	2687003591	05/26/15 13:2...	1
05/26/15 13.2...	Upstairs	102	Other	Other	2605925	E*1501	2686960485	05/26/15 13:0...	1
05/26/15 11.5...	Basement	301	Other	Other	2632242	E*1501	2686986802	05/26/15 11:4...	1
05/26/15 11.5...	Basement	302	Other	Other	2632245	E*1501	2686986805	05/26/15 11:0...	1
05/26/15 11.5...	Basement	303	Other	Other	2632241	E*1501	2686986801	05/26/15 11:5...	1
05/26/15 11.5...	Basement	304	Other	Other	1909729	E*1501-XL	2686264289	05/26/15 11:5...	1
05/26/15 11.5...	UpCounters	201	Other	Other	2142823	E*1501	2692788839	12/31/79 17:0...	1
05/26/15 11.5...	UpCounters	202	Other	Other	2331721	E*1501	2692781129	12/31/79 17:0...	1
05/26/15 11.5...	Upstairs	101	Other	Other	2649031	E*1501	2687003591	05/26/15 11:2...	1
05/26/15 11.5...	Upstairs	102	Other	Other	2605925	E*1501	2686960485	05/26/15 11:0...	1
05/26/15 07.5...	Basement	301	Other	Other	2632242	E*1501	2686986802	05/26/15 07:4...	1
05/26/15 07.5...	Basement	302	Other	Other	2632245	E*1501	2686986805	05/26/15 07:0...	1
05/26/15 07.5...	Basement	303	Other	Other	2632241	E*1501	2686986801	05/26/15 07:5...	1
05/26/15 07.5...	Basement	304	Other	Other	1909729	E*1501-XL	2686264289	05/26/15 07:5...	1
05/26/15 07.5...	UpCounters	201	Other	Other	2142823	E*1501	2692788839	12/31/79 17:0...	1
05/26/15 07.5...	UpCounters	202	Other	Other	2331721	E*1501	2692781129	12/31/79 17:0...	1
05/26/15 07.5...	Upstairs	101	Other	Other	2649031	E*1501	2687003591	05/26/15 07:2...	1
05/26/15 07.5...	Upstairs	102	Other	Other	2605925	E*1501	2686960485	05/26/15 07:0...	1
05/26/15 03.5...	Basement	301	Other	Other	2632242	E*1501	2686986802	05/26/15 03:4...	1
05/26/15 03.5...	Basement	302	Other	Other	2632245	E*1501	2686986805	05/26/15 03:0...	1

Figure 4-7 Reads Screen

This screen displays read information.

4.6.2.1 Period

Displays the date/time of the start of the next period. (May vary with daylight savings time.)

4.6.2.2 Building

Displays the building in which the transmitter providing the read is located.

4.6.2.3 Unit

Displays the unit in which the transmitter providing the read is located.

4.6.2.4 Util Type

Displays the type of utility for which the transmitter is providing the read.

4.6.2.5 Meter Model

Displays the model of the meter.

4.6.2.6 Meter ID

Displays the unique identification number of the meter.

4.6.2.7 TX Model

Displays the Inovonics part number of the transmitter.

4.6.2.8 TxID

Displays the unique identification number of the transmitter providing the read.

4.6.2.9 Received

Displays the date and time when the read was received.

4.6.2.10 Count Factor

Displays the number of units which each meter pulse represents.

4.6.2.11 IMC

Displays the initial meter count when the meter was installed or last serviced.

4.6.2.12 Count

Displays the count of meter pulses at the time of the read.

4.6.2.13 Total Flow

Displays the total flow of the meter at the time of the read.

4.6.2.14 Status

Displays the status of the transmitter.

- OK - indicates the transmitter is operating as it should be.
- B - indicates a low battery.
- I - indicates the transmitter is inactive.
- T - indicates the transmitter has been tampered with.
- R - indicates the transmitter has been reset.

4.6.2.15 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.6.2.16 Export Reads

Navigate to File > Export > Export Reads to export a file containing all read information for the selected property.

4.6.3 Exception Log

Timestamp	Type	Building	Unit	Repeater	Condition	Note
05/26/15 13:28:24	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/26/15 13:21:38	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/26/15 13:09:22	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/26/15 12:57:30	User				LoggerWare Connected	Unknown user
05/26/15 12:53:37	User				LoggerWare Connected	Unknown user
05/26/15 10:31:29	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/26/15 10:25:27	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/26/15 10:25:20	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/26/15 10:11:32	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/22/15 22:39:15	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/22/15 14:22:42	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/22/15 14:22:36	User				LoggerWare Connected	Russ Miles HP Laptop, IWC Tech Services
05/22/15 14:11:58	User				LoggerWare Connected	Russ Miles Minol, RBC Administrator
05/22/15 14:08:46	User				LoggerWare Connected	Russ Miles Minol, RBC Administrator
05/22/15 14:00:58	User				LoggerWare Connected	Russ Miles Minol, RBC Administrator
05/22/15 13:53:42	User				LoggerWare Connected	Russ Miles Minol, RBC Administrator
05/22/15 01:11:29	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/22/15 01:11:29	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/22/15 01:11:29	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/22/15 01:11:28	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/22/15 01:11:28	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/22/15 01:10:15	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/22/15 01:08:28	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/21/15 23:00:02	User				LoggerWare Connected	Mike McCarty, IWC Tech Services
05/21/15 17:11:27	User	Upstairs	101		Transmitter Tamper	TxID:2687003591
05/21/15 17:11:27	User	Upstairs	101		Transmitter Tamper	TxID:2687003591

Figure 4-8 Exception Log Screen

The exception log screen displays exceptions to normal operation by transmitters.

4.6.3.1 Timestamp

Displays the date and time of the exception.

4.6.3.2 Building

Displays the building that contains the transmitter with an exception.

4.6.3.3 Unit

Displays the unit that contains the transmitter with an exception.

4.6.3.4 Repeater

If it was a repeater that had the exception, the repeater information is displayed here.

4.6.3.5 Condition

Displays a description of the exception.

4.6.3.6 ID

Displays the identification number of the transmitter or repeater that had the exception.

4.6.3.7 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.6.3.8 Export Exception Log

Navigate to File > Export > Exception Log to export a file containing all exception information for the selected property.

4.6.4 Installation Summary

The installation summary tab creates a .pdf report of installation information.

4.7 Toolbox

The toolbox screens provide troubleshooting and maintenance tools for your EchoStream TapWatch system. There are two toolbox screens: the Com Port Sniffer screen and the Check-In Monitor screen.

4.7.1 Com Port Sniffer

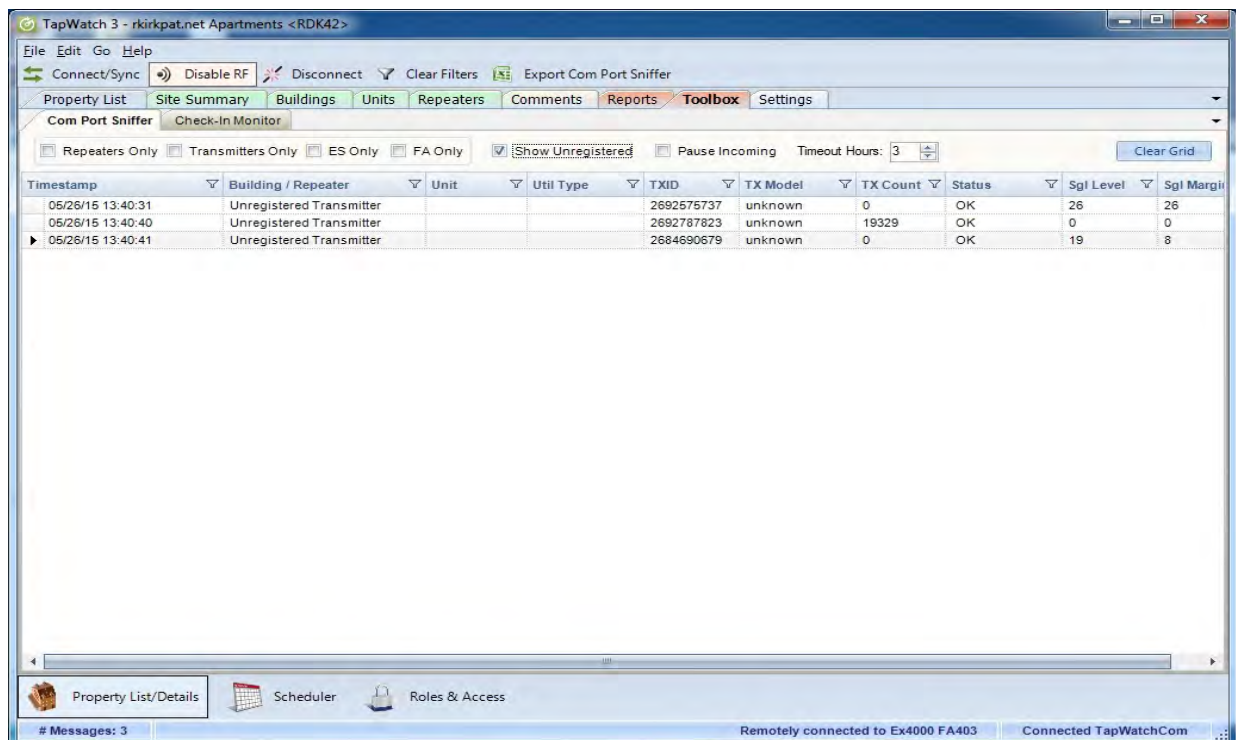


Figure 4-9 Com Port Sniffer Screen

The Com Port Sniffer screen displays RF messages from registered transmitters and repeaters as they are received by the receiver when Enable

RF is active. It is most commonly used during field troubleshooting to test the RF backbone of the EchoStream Commercial Mesh Network.

4.7.1.1 Repeaters Only

Select this to show only repeater messages as they are received by the RF gateway.

4.7.1.2 Transmitters Only

Select this to show only transmitter messages as they are received by the RF gateway.

4.7.1.3 Show Unregistered

Select this to include messages from unregistered devices.

4.7.1.4 Pause Incoming

Select this to pause the display of incoming messages received by the RF gateway.

4.7.1.5 Timestamp

Displays the date and time when the message was received by the RF gateway.

4.7.1.6 Building/Repeater

Displays the building/repeater for the registered device.

4.7.1.7 Unit

Displays the unit for the registered device.

4.7.1.8 Util Type

Displays the type of utility for which the registered device is providing the read.

4.7.1.9 Utility Type

Displays the utility type of the registered device.

4.7.1.10 TXID

Displays the identification number of the repeater or transmitter that sent the message.

4.7.1.11 TX Count

Displays the total number of the transmitter's pulse counts.

4.7.1.12 Status

Displays the status of the transmitter that sent the message.

- OK - indicates the transmitter is operating as it should be.
- A - indicates the repeater is not receiving AC power.
- B - indicates the transmitter has a low battery.
- F - indicates the transmitter is in rapid transmit mode.
- I - indicates the transmitter is inactive.
- M - indicates that the model of the transmitter does not match how it was registered into the software. The model registered into the software is displayed next to the M status.
- N - Indicates loss of power to repeater.
- T - indicates the transmitter has been tampered with.
- R - indicates the transmitter has been reset.
- Z - indicates the last check-in message from a transmitter before going into sleep mode.

4.7.1.13 Sgl Level

Displays the signal level of the message as measured by the RF gateway. The signal level indicates the signal's relative strength. The higher the value, the stronger the signal strength.

4.7.1.14 Sgl Margin

Displays the signal margin of the message as measured by the RF gateway. The signal margin is the measurement of the decibel level of the message, minus the decibel level of any interfering signals. Inovonics recommends that equipment be placed within a facility such that all end devices produce signal margin readings of at least 10 decibels.

4.7.1.15 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to

make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.7.1.16 Export Reads

Navigate to File > Export > Export Com Port Sniffer to export a file containing all Com Port Sniffer information for the selected property.

4.7.1.17 Enable RF for Registration and Com Port Sniffer

To enable the RF gateway for end device registration and the Com Port Sniffer:

1. Navigate to File > Connect > Enable RF; or, click on the Enable RF button.

Note: If you try to enable RF to a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Select.

2. Once a message displays in the status bar that your RF gateway is remotely connected, RF messages will begin to appear.

4.7.2 Check-In Monitor

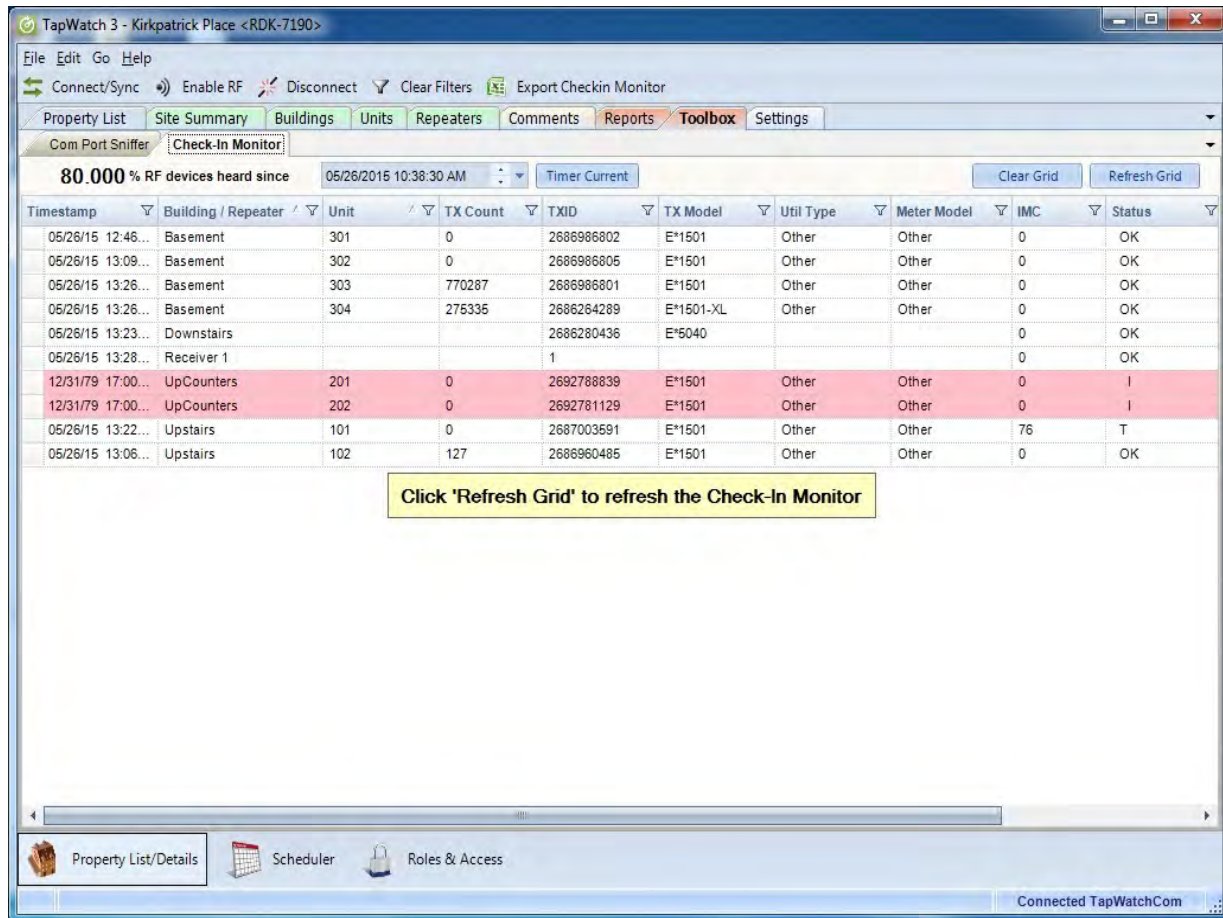


Figure 4-10 Check-In Monitor Screen

The check-in monitor displays whether or not the RDL8500 data logger has heard from a meter or repeater since the time posted at the top of the screen. The intended use is during installation of a system to monitor if each repeater and meter registered into the system has transmitted a message and been heard by the RDL8500/receiver.

4.7.2.1 Timestamp

Displays the date and time when the last check in message was received.

4.7.2.2 Building/Repeater

Displays the building/repeater for the registered device.

4.7.2.3 Unit

Displays the unit for the registered device.

4.7.2.4 TX Count

Displays the total number of the transmitter's pulse counts.

4.7.2.5 TXID

Displays the unique identification number of the repeater or transmitter that sent the message.

4.7.2.6 TX Model

Click to choose the model of the Inovonics transmitter from a dropdown menu.

4.7.2.7 Util Type

Displays the type of utility for which the transmitter is providing the read.

4.7.2.8 Meter Model

Click to choose the model of the meter in the unit from a dropdown menu.

4.7.2.9 IMC

Displays the initial meter count when the meter was installed or last serviced.

4.7.2.10 Status

Displays the status of the transmitter that sent the message.

- OK - indicates the transmitter is operating as it should be.
- B - indicates a low battery.
- I - indicates the transmitter is inactive.
- T - indicates the transmitter has been tampered with.
- R - indicates the transmitter has been reset.

4.7.2.11 Sgl Level

Displays the signal level of the message as measured by the RDL8500.

4.7.2.12 Sgl Margin

Displays the signal margin of the message as measured by the RDL8500.

4.7.2.13 Synchronize Data with the Data Logger

Data synchronized includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

4.7.2.14 Export Reads

Navigate to File > Export > Check-In Monitor to export a file containing all check-in monitor information for the selected property.

4.7.3 Settings

Figure 4-11 Settings Screen

The settings screen is used to maintain communication settings.

4.7.4 Data Logger Contact Info

4.7.4.1 TapWatch.com Site

Select radio button for Yes or No to choose whether this is a TapWatch.com site.

4.7.4.2 Logger Modem #:

Enter or edit the modem number for your data logger.

4.7.4.3 Dialing prefix:

Enter or edit any numbers to be dialed before the modem number.

4.7.4.4 Dialing suffix:

Enter or edit any numbers to be dialed after the modem number.

Note: By default, the RDL8500 will answer on the first incoming ring. This can be updated on the RDL.

4.7.4.5 Dial area code:

Check the box if the area code is to be dialed with the modem number.

4.7.4.6 Logger IP Address:

Enter or edit the IP address for your data logger.

4.7.5 Advanced Options

4.7.5.1 Reads Period

How often reads are stored, in hours.

4.7.5.2 Site Type (FA Only)

If the site includes an FA network, choose whether the site is conventional or enhanced.

4.7.5.3 Supervision Window:

The supervision window is the period of time during which all wireless devices are expected to check in to the receiver. This provides a functional test of the mesh network. When devices fail to check in, the data logger generates a fault or trouble signal. Inovonics recommends a 24-hour supervision window.

4.7.5.4 Number of Gateways

Use the dropdown menu to select the number of gateways being used at this site.

4.7.5.5 Read Periods to Sync

Select the number of days for which data will be collected when reads are synchronized.

4.7.5.6 Auto purge data after sync

Property reads, the property exception log, and the scheduler event history can be set to purge automatically, keeping the database smaller and faster. If this checkbox is checked, the scheduler will purge the database automatically.

Note: For more information about database purging and maintenance, see section 3.11, “Database Maintenance”.

4.7.5.7 Days (prior to today) to retain reads and exceptions (0 to retain all)

Enter the number of days for which you want to retain data. Anything older than the number of days you select will be purged automatically by the scheduler if the database is set to purge automatically. If zero is entered, no data will be purged.

4.7.5.8 Purge Now

Click to purge data up to the number selected of days selected (0 to retain all).

4.7.5.9 Data Logger Time Zone:

Choose the time zone for your data logger.

4.7.5.10 Set Data Logger Time

Enter date and time for the location of the data logger.

4.7.5.11 Display using Daylight Saving Time rules

Check this box to apply daylight saving time rules to the site. In some sites, this can cause confusion when checked.

4.7.5.12 RF Connection Method

Use the pull down menu to choose whether you want to connect to the RF gateway through the RDL or through a COM port, or by using the software to probe for the RF gateway.

4.7.5.13 RDL Connection Method

Use the pull down menu to select whether to connect to the RDL directly, via IP address, or using a local modem.

4.7.6 Synchronize Data with the Data Logger

Synchronized data includes meter reads, site configuration, and exceptions. Newer data always overwrites older data, so be sure you are not overwriting changes made on the other end of the synchronization. The easiest way to

make sure of this is to perform a synchronization before making any changes, ensuring that you start with the newest data in your software and data logger.

- If you are performing a synchronization where there are site configuration updates in either TapWatch 3 or the data logger, TapWatch 3 will recommend whether to click Publish or Retrieve. In most cases, the recommended action is the correct one.
- If you are performing a synchronization where there are site configuration updates in both TapWatch 3 and the data logger, TapWatch 3 will ask you which updates to keep. Forced Retrieve will keep the updates from the data logger; Forced Publish will keep the updates from TapWatch 3. In most cases it is recommended to click Forced Retrieve.
- If you try to synchronize data with a site that is not registered to TapWatch.com but which has been selected as a TapWatch.com site on the Settings screen, a window with a list of blank data loggers will display. Highlight the appropriate data logger and click Publish.
- If you are publishing to a blank data logger, you will be prompted that TapWatch 3 detects a site configuration change. The recommended action is to click Publish.

To synchronize data with the data logger:

1. Navigate to File > Connect > Sync; or, click on the Connect/Sync button.
2. Synchronization progress will display in the status bar.

Chapter 5

Scheduler

5.1 Overview

The scheduler screens are used for the automatic importing of meter reads, exceptions, and site configuration changes to the TapWatch 3 software from the data logger. The database is also purged of old data during scheduler runs.

There are five scheduler screens: calendar, to do list, event history, groups, and settings. The scheduler screens are not available to users with field technician access.

5.2 Calendar

The calendar screen is used to view meter reads as scheduled by group events. To use the calendar, you must first create a group containing at least one property. This is done on the groups screen.

If there are more than four groups on a single date, an arrow will appear below the listed groups. Click the arrow to display all groups scheduled for that day.

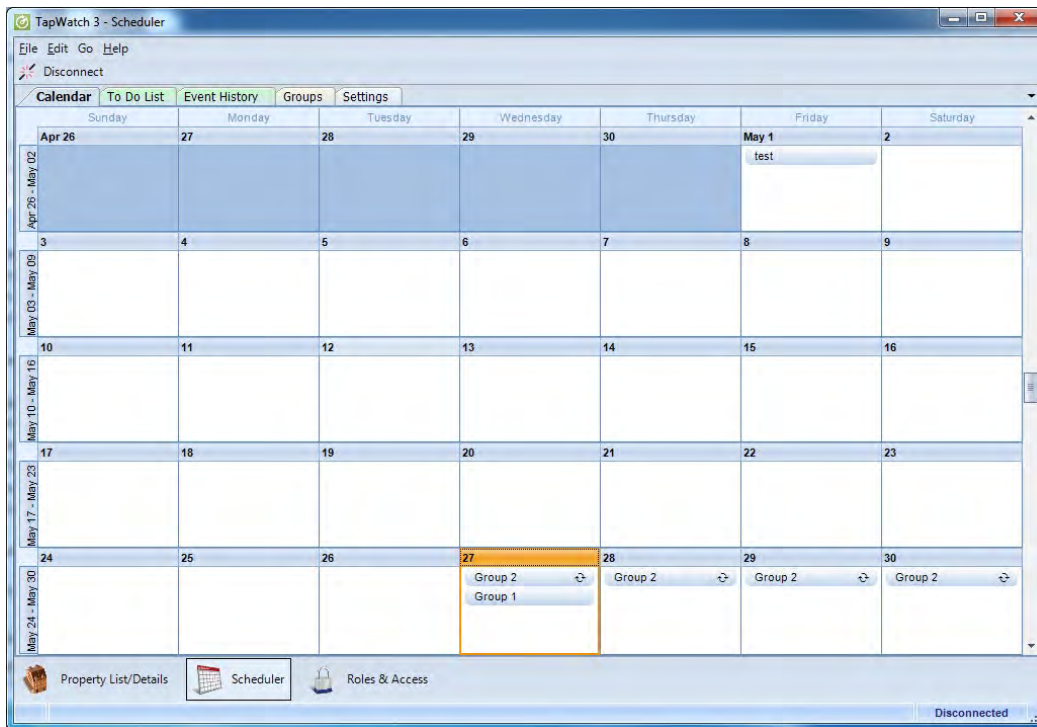


Figure 5-1 Calendar Screen

5.2.1 Add a New Event

To schedule the TapWatch 3 software to synchronize site configuration, reads, and exceptions with the data loggers at a group of properties.

To add a new event:

1. Navigate to File > New > Event; or, rightclick on any date on the calendar and select New > Event.
2. Select a start time.
3. Select the group.
4. If you want the synchronization to occur at a recurring interval, click Recurrence and set the interval.

5. Click Save and Close.

5.2.2 Delete an Event

Scheduled synchronizations can be deleted on the calendar screen. To delete a synchronization:

1. Right click on any event on the calendar and select Delete Event; or, navigate to Group > Delete Event.
2. Click Yes to confirm deletion.

5.3 To Do List

The To Do List screen displays all upcoming events scheduled by a group. By default they are listed in order of their calendar date, but the events can be moved to the top of the queue by using the run event next command.

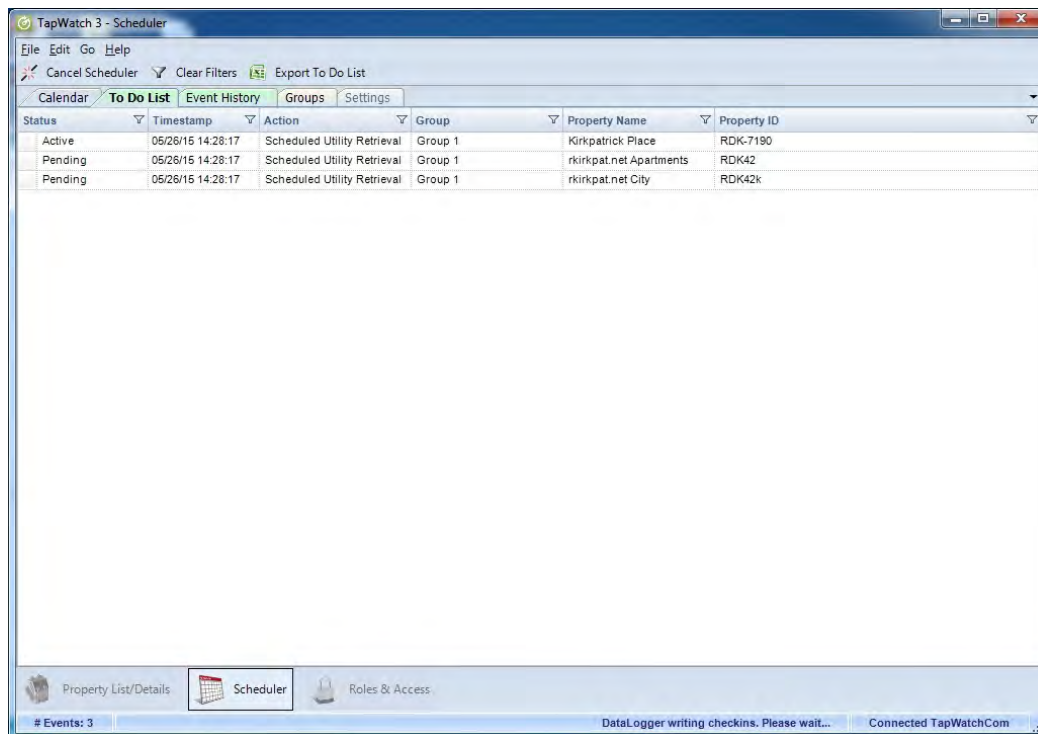


Figure 5-2 To Do List Screen

5.3.1 Export To Do List

The To Do List can be exported as a spreadsheet. To export the To Do List:

1. Navigate to File > Export > To Do List.
2. To use the default backup location, click Save; to back up elsewhere, navigate to a new location.

5.3.2 Run Event(s) Next

The Run Event(s) Next command is used to force the selected event to the top of the queue:

1. Navigate to File > Run Event(s) Next.
2. The selected event will be moved to the top of the queue.

5.3.3 Status

Displays whether the event is active or pending.

5.3.4 Timestamp

Displays the time when the meter read upload will start.

5.3.5 Action

Displays the type of action.

5.3.6 Group

Displays the group to which the property belongs.

5.3.7 Property Name

Displays the name of the property.

5.3.8 Property ID

Displays the ID of the property.

5.3.9 Cancel Scheduler

There are times you may wish to cancel a scheduler run once it has begun. To cancel scheduler during a run:

1. Click the Cancel Scheduler button in the upper-left portion of the screen.

Note: If connection to a datalogger has been established, the data synchronization process will run to completion before canceling all other scheduler To Do List items. This does not affect future scheduled calendar events.

Note: Canceling a scheduler run will not affect future events on the scheduler calendar.

5.4 Event History

The event history screen displays the results of events that were on the to do list.

Status	Message	Timestamp	Action	Group	Property Name	Property ID
Outfiles Created	90 OUT file(s) created;	05/26/15 14:28:40	Scheduled Utility Retrieval	Group 1	rkirkpat.net Apartments	RDK42
Outfiles Created	90 OUT file(s) created;	05/26/15 14:28:18	Scheduled Utility Retrieval	Group 1	Kirkpatrick Place	RDK-7190
Outfiles Created	90 OUT file(s) created;	05/26/15 14:22:15	Scheduled Utility Retrieval	Group 1	rkirkpat.net City	RDK42k
Outfiles Created	90 OUT file(s) created;	05/26/15 14:21:55	Scheduled Utility Retrieval	Group 1	rkirkpat.net Apartments	RDK42
Outfiles Created	90 OUT file(s) created;	05/26/15 14:21:31	Scheduled Utility Retrieval	Group 1	Kirkpatrick Place	RDK-7190
Outfiles Created	90 OUT file(s) created;	05/26/15 14:10:23	Scheduled Utility Retrieval	Group 1	rkirkpat.net City	RDK42k
Outfiles Created	90 OUT file(s) created;	05/26/15 14:09:51	Scheduled Utility Retrieval	Group 1	rkirkpat.net Apartments	RDK42
Outfiles Created	90 OUT file(s) created;	05/26/15 14:09:15	Scheduled Utility Retrieval	Group 1	Kirkpatrick Place	RDK-7190

Figure 5-3 Event History Screen

5.4.1 Export Event History

The event history can be exported as a spreadsheet. To export the event history:

1. Navigate to File > Export > Event History.
2. To use the default backup location, click Save; to back up elsewhere, navigate to a new location.

5.4.2 Status

Displays whether the event is completed or failed.

5.4.3 Timestamp

Displays the time when the meter read upload will start.

5.4.4 Action

Displays the type of action.

5.4.5 Group

Displays the group to which the property belongs.

5.4.6 Property Name

Displays the name of the property.

5.4.7 Property ID

Displays the ID of the property.

5.5 Groups

There are two groups screens: group view and property view.

5.5.1 Group View

The group view screen is used to create and edit group information. All properties associated with a specific group are displayed.

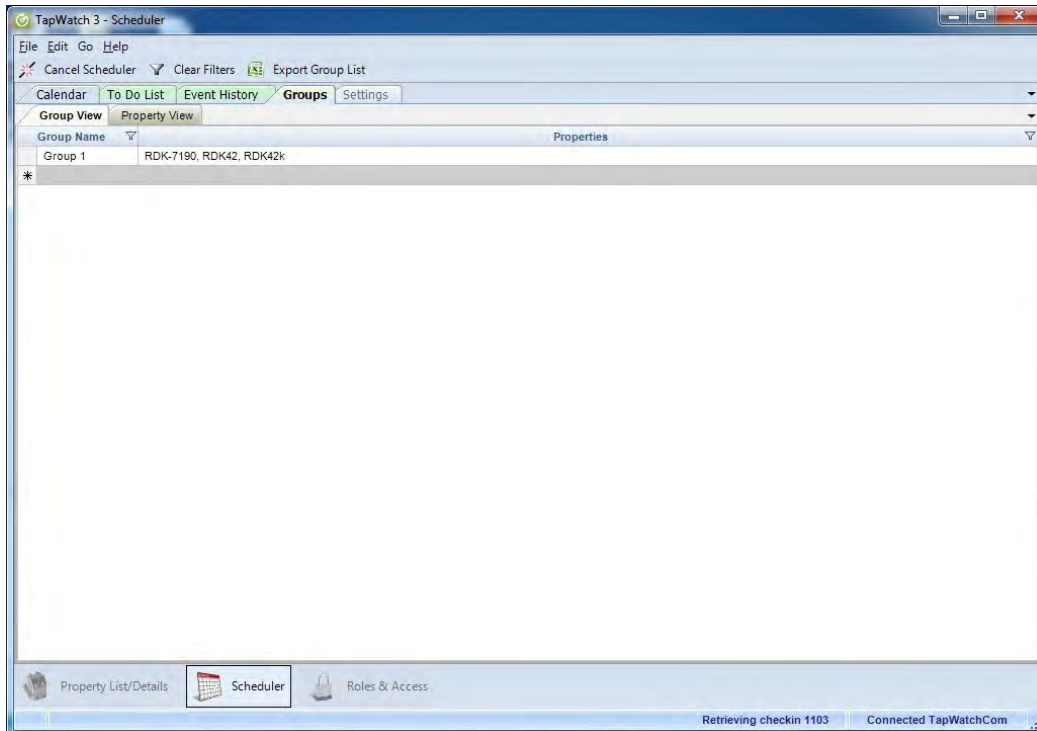


Figure 5-4 Group View Screen

5.5.1.1 Export Group List

The group view screen can be exported as a spreadsheet. To export the group view screen:

1. Navigate to File > Export > Group List; or right click anywhere on the group view screen and select Export Group List.
2. To use the default backup location, click Save; to backup elsewhere, navigate to a new location.

5.5.1.2 Create a New Group

To create a new group:

1. Navigate to File > New > Group.
2. The new group will display on the group view screen. Enter a group name.

5.5.1.3 Manage Groups

The manage groups function is used to assign and remove properties to and from groups. To manage groups:

1. Either click on a group to select it and navigate to File > Manage Group; or, right click on a group and select Manage Groups; or, double click the Properties field of a group.
2. Select the properties you want to add to the group, or deselect the properties you want to remove from the group.
3. Click Save.

5.5.1.4 Delete a Group

Groups can be deleted on the group view screen. To delete a group:

1. Right click on any group and select Delete Group; or, navigate to Edit > Delete Group.
2. Click Yes to confirm deletion.

5.5.1.5 Group Name

The group name field displays the group name. To edit the group name:

1. Click anywhere in the group name field.
2. Enter a new group name.

5.5.1.6 Properties

The properties field displays the properties associated with the group. To edit the properties:

1. Either click on a group to select it and navigate to File > Manage Groups; or, right click on a group and select Manage Groups; or, double-click the Properties field of a group.
2. Select the properties you want to add to the group, or deselect the properties you want to remove from the group.

3. Click Save.

5.5.2 Property View

The property view screen displays detailed information about individual properties, and can be used to assign properties to groups.

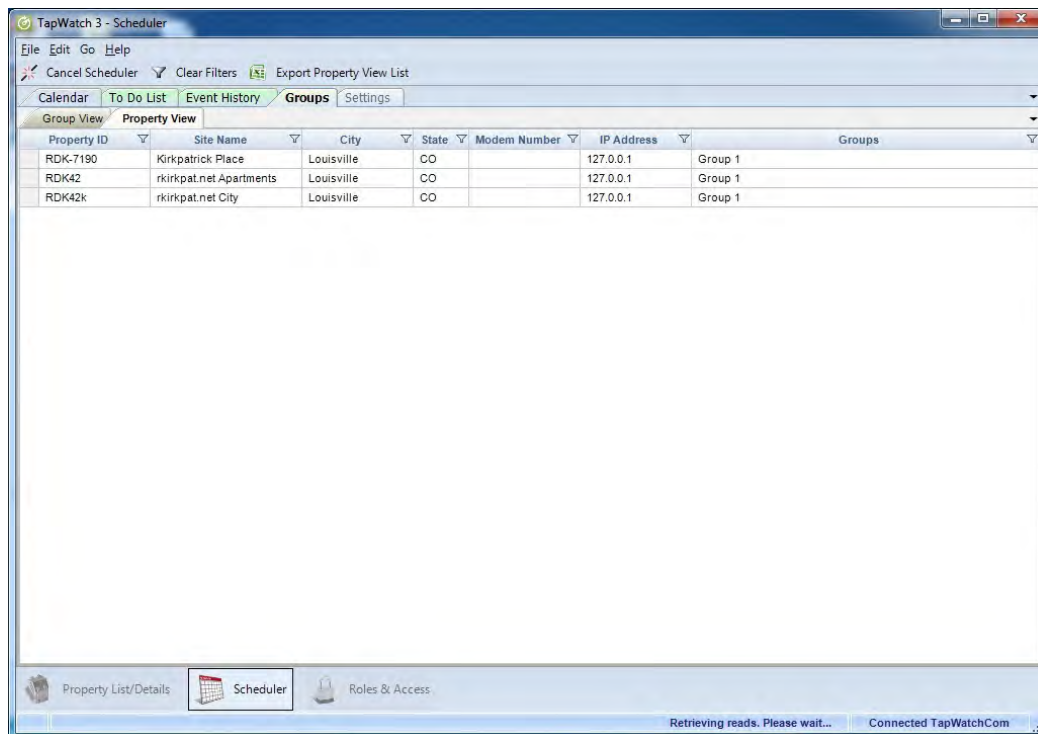


Figure 5-5 Property View Screen

5.5.2.1 Export Group List

The property view screen can be exported as a spreadsheet. To export the group view screen:

1. Navigate to File > Export > Group List; or right click anywhere on the group view screen and select Export Group List.
2. To use the default backup location, click Save; to back up elsewhere, navigate to a new location.

5.5.2.2 Manage Groups

The manage groups function is used to assign and remove groups to and from properties.

1. Either click on a group to select it and navigate to File > Manage Groups; or, right click on a group and select Manage Groups; or, double click anywhere on a property.
2. Select the groups to which you want to add the property, or deselect the groups you want to remove from the property.
3. Click Save.

5.5.2.3 Properties ID

Displays the ID of the property.

5.5.2.4 Site Name

Displays the name of the site where the property is located.

5.5.2.5 City

Displays the name of the city where the property is located.

5.5.2.6 State

Displays the state where the property is located.

5.5.2.7 Modem Number

Displays the modem number used to reach the property's data logger.

5.5.2.8 IP Address

Displays the IP address of the property's data logger.

5.5.2.9 Groups

Displays the groups to which the property is assigned.

5.6 Settings

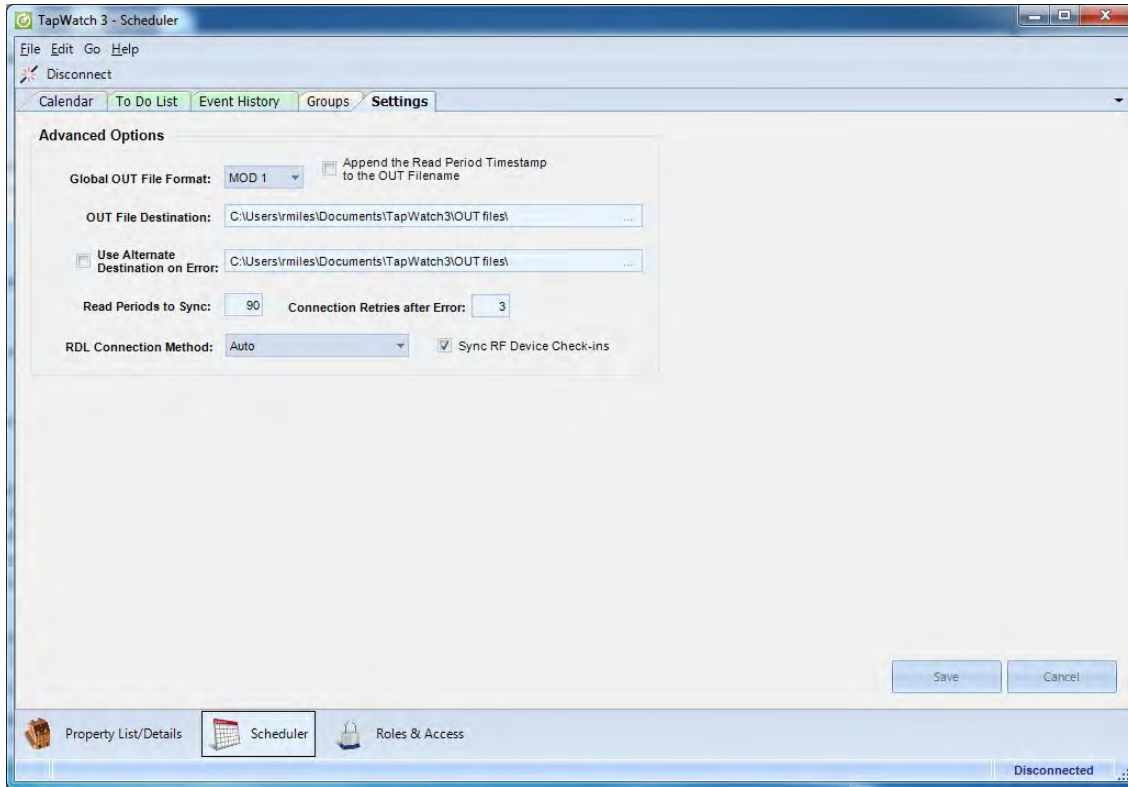


Figure 5-6 Scheduler Settings Screen

5.6.1 Advanced Options

5.6.1.1 Global OUT File Format:

Select the format in which .OUT files will be created.

Note: For more information about .OUT file formats, see section 4.6.1, “.OUT Files On-Demand” on page 41.

5.6.1.2 Append the Read Period Timestamp in the OUT Filename

Select to add a timestamp to the .OUT file’s filename indicating the read period.

5.6.1.3 OUT File Destination:

Enter a destination for the .OUT files.

5.6.1.4 Use Alternate Destination on Error:

Enter an alternate destination for .OUT files. This is usually a local drive destination to save .OUT files in case of an error accessing an initial network drive destination.

5.6.1.5 Read Periods to Sync:

Enter the number of days for which data will be collected when reads are synchronized.

5.6.1.6 Connection Retries after Error:

Enter a value of 0-10, indicating the number of times to attempt a connection before moving to the next site.

Chapter 6

Roles & Access

6.1 Overview

The roles and access screens provide an integral part of the communication between the TapWatch software and each RDL8500 data logger. In order to maintain the integrity of the site configuration and the TapWatch submetering systems at each site, the roles and access screen is used to control who can access and who can change data in the RDL8500.

There are three access roles: View Only, Field Technician and Network Administrator.

6.1.1 View Only

Users with view only roles cannot change any data in the data logger or create user keys. They have access to all other TapWatch 3 functions.

6.1.2 Field Technician

Users with field technician roles cannot access the scheduler or create user keys. They have access to all other TapWatch 3 functions.

6.1.3 Network Administrator

Users with network administrator roles have all the rights of users with field technician and view only roles, as well as the ability to create keys, change data, and access the scheduler.

6.2 My Keys

The My Keys screen is used to view your key or keys.

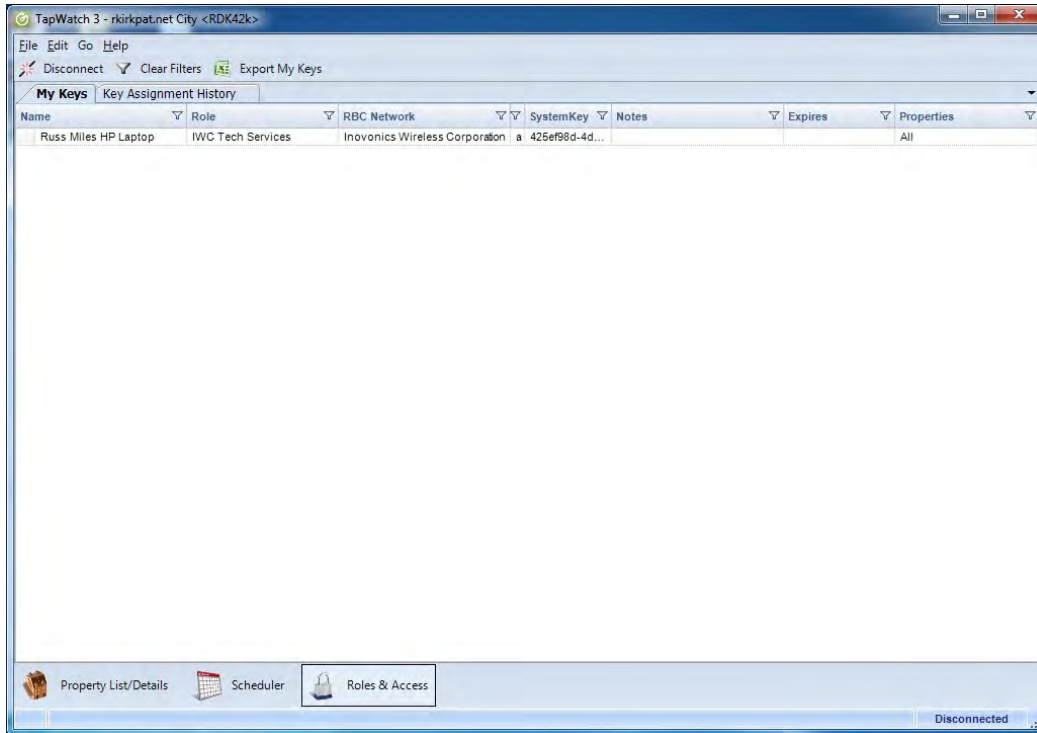


Figure 6-1 My Keys Screen

6.2.1 My Keys

These fields are for review only; they cannot be edited.

Name The name of person to whom the key is assigned.

Role The role of the person to whom the key is assigned: View Only, Field Technician, or RBC Administrator.

RBC Network The network to which the key provides access.

Expires The expiration date of the key, if applicable.

Properties The properties to which the key provides access.

6.2.2 Export My Keys

A list of your keys can be exported as a spreadsheet. To export keys:

1. Navigate to File > Export > My Keys.

2. To use the default backup location, click Save; to back up elsewhere, navigate to a new location.

6.2.3 Request a Key

To request a key:

1. Navigate to File > Key Management > Request a Key.
2. Enter your name in the Your Full Name field.
3. Optionally, enter any notes in the Notes field for the network administrator who will be creating the key from the key request file.
4. Click Save and choose a directory for the key request file.
5. Email the key request file to someone with RBC administrator access to your system.

6.2.4 Create a Key

Note: Keys can only be created by the RBC administrator.

To create a key:

1. Navigate to File > Key Management > Create a Key.
2. Use the Request File field to navigate to the key request file received from the RBC administrator.
3. Review the name of the key requestor and any notes.
4. Select the role to assign the requestor of this key in the Role field: View Only, Field Technician, or RBC Administrator.
5. Select the network to which you wish to assign the key in Network field.
6. If you are creating a temporary key, set an expiration date for the key in the Date/Time Expires field; otherwise leave blank.
7. If desired, restrict access in the Properties field.
8. Click Save and choose a directory for the key file.
9. Email the key file to the person who requested the key.

6.2.5 Import a Key

Keys can be imported so that all rights and information associated with the key are transferred to your TapWatch 3 software. To import a key:

1. Navigate to File > Key Mgmt > Import a Key.
2. Navigate to the key file you wish to import.
3. Review the information contained in the key fields.
4. Click Import to import the key.

6.2.6 Delete Access Key

To delete an access key:

1. Right click on the key which you wish to delete and select the Delete Access Key option; or, navigate to Edit > Delete Access Key.
2. Click on Yes when prompted whether or not you wish to delete the key.

6.3 Key Assignment History

The key assignment history screen is used to view the keys you have assigned. Only RBC administrators will see data here.

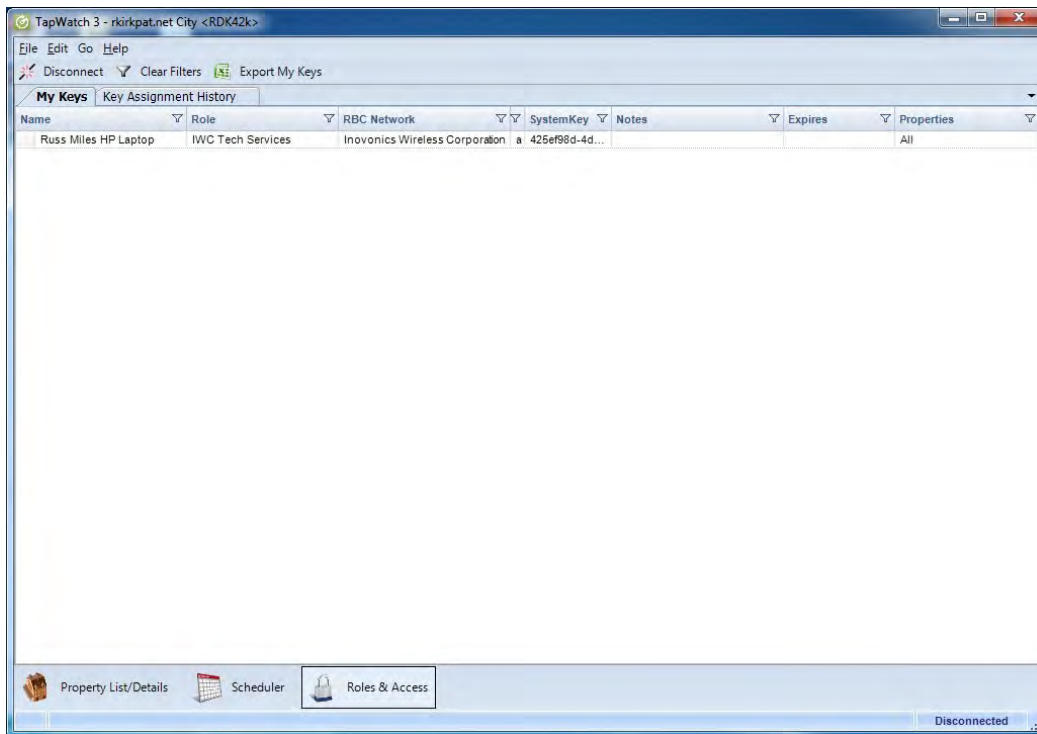


Figure 6-2 Key Assignment History Screen

6.3.1 Export Key History

The key history list can be exported as a spreadsheet. To export key history:

1. Navigate to File > Export > Key History.
2. To use the default backup location, click Save; to back up elsewhere, navigate to a new location.

6.3.2 Delete Key History Entry

To delete a key history entry:

1. Right click on the key which you wish to delete and select the Delete Key History Entry option; or, navigate to Edit > Delete Key History Entry.
2. Click on Yes when prompted whether or not you wish to delete the key.

6.3.3 Keys Assignment History

These fields are for review only; they cannot be edited.

Name The name of the person to whom the key is assigned.

Role The role of the person to whom the key is assigned: View Only, Field Technician, or RBC Administrator.

RBC Network The network to which the key provides access.

Expires The expiration date of the key, if applicable.

Properties The properties to which the key provides access.

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Inovonics will advance replace defective equipment that has failed upon initial installation (bad-out-of-box) with new equipment for a period of 60 days from the original date of shipment. All replacements will be invoiced at shipment and credited upon receipt of the defective product. Invoices will remain outstanding if the returned product does not qualify under the advanced replacement terms. Please contact Inovonics Technical Support to see if your product is eligible for Advance Replacement.

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Exclusions

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- **Warning:** Users must recognize that even a properly installed and maintained security, life safety, medical alert, nurse call, mobile duress, or other alarm or notification system may only reduce the risk of events such as burglary, robbery, assault, personal injury, and fire. It does not and cannot ensure or guarantee that such events will not occur or that there will be no death, personal injury and/or damage to property as a result of such events. Inovonics does not claim that its products may not be compromised and/or circumvented, or that its products will prevent any death, personal or bodily injury, and/or loss or damage to property resulting from burglary, robbery, assault, fire or otherwise. Inovonics shall have no liability for any death, loss, injury, or damage of any nature, however incurred, based on a claim that Inovonics' products failed to function properly or accurately.
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ADVERTENCIA: Este producto contiene sustancias químicas que en el Estado de California se conocen como causantes de cáncer y malformaciones u otros daños reproductivos. Para más información: www.watts.com/prop65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
For more information: www.watts.com/pp65

Repair Kits

Kit for No. LF223 includes parts shown

Ordering Code No.	Kit No.	Valve Series	Size	
			<i>In.</i>	<i>mm</i>
0125123	LFKIT-C-RK	LF223	1½, ¾	15, 20
0125124	LFKIT-D-RK		1	25
0125125	LFKIT-E-RK		1¼	32
0125369	1½ RK LF223N		1½	40
0125370	2 RK LF223N		2	50
0125371	2½ RK LF223N		2½	65
0009909	2½ LFRK-223	LFN223B	2½ 3 Bronze	65, 80
0125372	2½ RK LFN223M2	LFN223BM1	2½ Bronze	65

NOTICE

When ordering, specify Ordering Code Number, Kit Number and Valve Size.

⚠ WARNING

Conduct a thorough inspection of the valve for external leaks after the “final” installation of the regulator.

ENGLISH INSTRUCTIONS

⚠ WARNING



Read this Manual BEFORE using this equipment.

Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.

Keep this Manual for future reference.

Installation Instructions

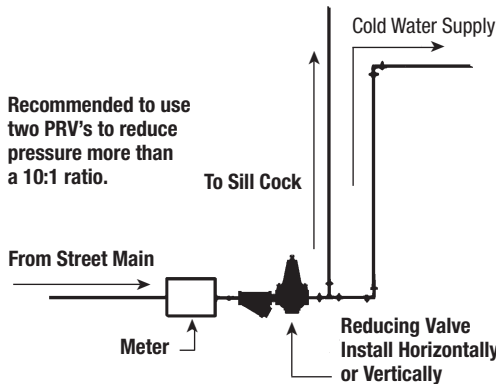
- This valve should be installed where it is accessible with sufficient clearance for cleaning, service or adjustment.
- Flush dirt and scale from supply pipe.
- You may install the regulator vertically or horizontally, but you must install it with the arrow in the direction of flow.
- Regulator is preset at 50psi (345 kPa). To adjust, loosen locknut and turn adjusting screw clockwise to increase pressure; counter-clockwise to decrease.
- The LF223 has a built-in thermal expansion bypass. If using the LF223 model when the inlet pressure is higher than the discharge setting of the water heater T&P valve (typically 150psi, 10.3 bar), or when there is a check valve or backflow preventer installed on the line, you must make provisions for pressure relief protection to protect your plumbing system and its components. We suggest the use of a model DET expansion tank, the Watts Governor 80 ball cock and thermal expansion relief valve, or a 530C calibrated pressure relief valve. (Send for folder F-RV, S-Therm Expansion, or consult your plumbing professional).

⚠ CAUTION

Any time a reducing valve is adjusted, the use of a pressure gauge is recommended to verify correct pressure setting. Do not bottom out adjusting screw on spring cage.

Main Line Service

Install in tandem with smaller size regulator to improve system performance and extend valve life.

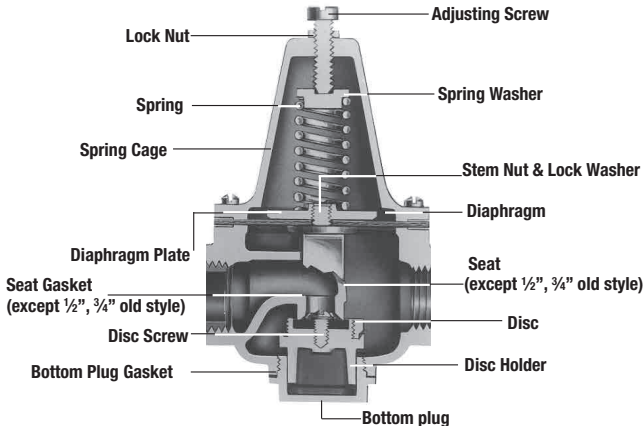


Maintenance Instructions

- To clean or replace parts; shut off supply, loosen lock-nut and back off adjusting screw.
- Remove spring cage, spring, washer.
Remove bottom plug.
- Disassemble module. Use wrench to loosen stem nut and remove lock washer and diaphragm plate. Remove yoke by loosening disc holder using a screw driver.
- When replacing disc holder, apply a drop of low strength thread lock. Do not over torque.

NOTICE

When furnished with a strainer, flush periodically.



ADVERTENCIA
Lea este manual ANTES de utilizar este equipo.
El no leer y seguir todas las medidas de seguridad y usar la información puede causar la muerte, lesiones personales graves, daños materiales o daños en el equipo.
Guarde este manual para referencia futura.

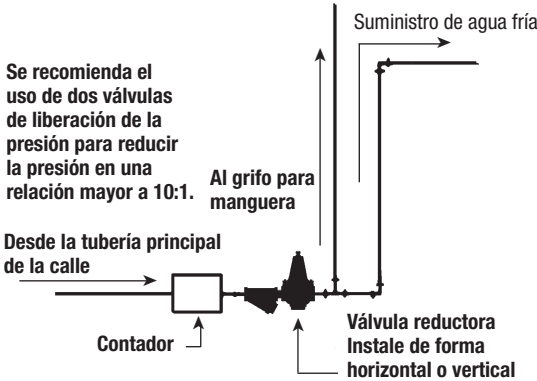
Instrucciones de instalación

- Esta válvula debe instalarse en un lugar accesible con suficiente espacio para la limpieza, el servicio o el ajuste.
- Enjuague la tierra y el sarro de la tubería de suministro.
- Puede instalar el regulador de forma vertical u horizontal, pero debe instalarlo con la flecha en la dirección del flujo.
- El regulador está configurado a 345 kPa (50 psi). Para ajustar, afloje la tuerca de seguridad y gire el tornillo de ajuste en el sentido de las agujas del reloj para aumentar la presión, en el sentido contrario para disminuirla.
- El LF223 tienen una válvula de derivación de expansión térmica incorporada. Si usa el modelo LF223 cuando la presión de entrada es mayor que la configuración de descarga de la válvula T&P (temperatura y presión) del calentador de agua (comúnmente 10,3 bar, 150 psi) o cuando exista una válvula de retención o válvula de contraflujo de agua instalada en la línea, debe hacer previsiones para la protección de la liberación de la presión a fin de proteger su sistema de tuberías y sus componentes. Le sugerimos el uso de un tanque de expansión modelo DET, la válvula de flotador y la válvula de liberación de la expansión térmica Governor 80 de Watts o una válvula de liberación de presión calibrada 530C. (Solicite la carpeta F-RV, S-Therm Expansion, o consulte a un plomero profesional).

PRECAUCIÓN
siempre que ajuste una válvula reductora, se recomienda el uso de un medidor de presión para verificar la configuración correcta de la presión. No quite el tornillo de ajuste hacia atrás en el compartimiento del resorte.

Línea principal de servicio

Instale en serie con un regulador más pequeño para mejorar el rendimiento del sistema y extender la vida útil de la válvula.

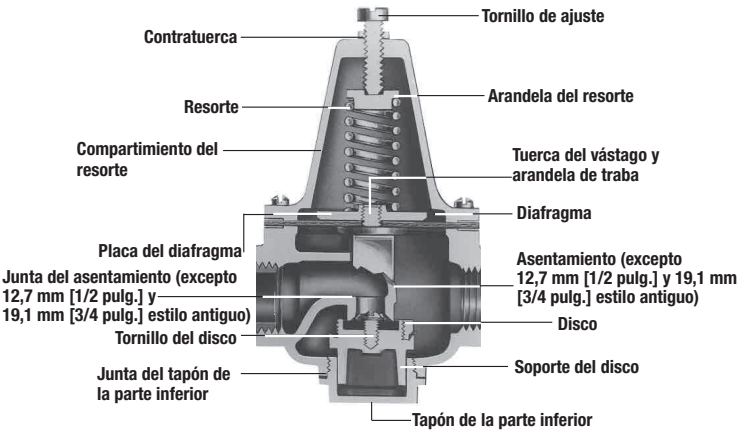


Instrucciones de mantenimiento

- Para limpiar o cambiar piezas; cierre el suministro, afloje la contratuerca y retire el tornillo de ajuste.
- Quite el compartimiento del resorte, el resorte, la arandela. Quite el tapón de la parte inferior.
- Desarme el módulo. Use la llave para aflojar la tuerca de vástago y quitar la arandela de traba y la placa del diafragma. Quite el yugo aflojando el soporte del disco usando un destornillador.
- Cuando cambie un soporte de disco, aplique una gota de selladores de rosca de baja resistencia. No apriete demasiado.

AVISO

cuando se proporcione con un filtro, enjuague periódicamente.



Juegos para reparación

El juego para el N.º LF223 incluye las piezas que se muestran

N.º de código de pedido	N.º de juego	Serie de la válvula	Tamaño	
			<i>Pulg.</i>	<i>mm</i>
0125123	LFKIT-C-RK	LF223	½, ¾	15, 20
0125124	LFKIT-D-RK		1	25
0125125	LFKIT-E-RK		1¼	32
0125369	1½ RK LF223N		1½	40
0125370	2 RK LF223N		2	50
0125371	2½ RK LF223N	LFN223B	2½	65
0009909	2½ LFRK-223		2½, 3	65, 80
0125372	2½ RK LFN223M2		2½	80
		LFN223BM1	2½	65

AVISO

Cuando haga el pedido, especifique el número de código del pedido, el número del juego y el tamaño de la válvula.

ADVERTENCIA
realice una inspección minuciosa de la válvula para verificar que no presenta pérdidas externas luego de la instalación “final” del regulador.

AVERTISSEMENT
Lisez attentivement ce manuel avant d'utiliser cet équipement.
Négliger de lire et de suivre toutes les consignes de sécurité et d'utilisation de l'information peut entraîner la mort, des blessures graves ou des dégâts matériels, ou endommager l'équipement.
Veuillez conserver ce manuel pour toute référence ultérieure.

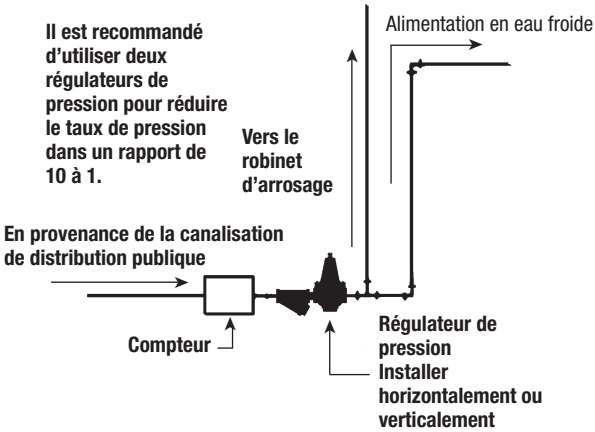
Instructions d’installation

- Ce robinet doit être installé dans un endroit accessible avec un dégagement suffisant pour le nettoyage, l'entretien ou le réglage.
- Purger les saletés et le tartre présents dans la conduite d'alimentation.
- Le régulateur peut être installé verticalement ou horizontalement, en autant que la flèche soit orientée dans la direction du débit.
- Le régulateur est préréglé à 345 kPa (50 psi). Pour le régler, desserrer le contre-écrou et tourner la vis de réglage dans le sens horaire pour augmenter la pression, ou dans le sens antihoraire pour la diminuer.
- Le modèle LF223 comporte une dérivation thermostatique intégrée. Pour le modèle LF223, lorsque la pression d'entrée est supérieure au réglage de l'évacuation de la soupape T&P du chauffe-eau (habituellement 10,3 bars/150 psi), ou lorsqu'une soupape à clapet ou un dispositif anti-refoulement est installé sur la conduite, prévoir l'installation d'un limiteur pour protéger la plomberie et ses composants. Il est suggéré d'utiliser un réservoir de dilatation modèle DET, le robinet à flotteur Governor 80 de Watts et une soupape de sécurité thermostatique ou une soupape de décharge étalonnée 530C. (Demander le dossier F-RV, S-Therm Expansion, ou consulter un plombier professionnel).

ATTENTION
Chaque fois qu'un robinet est ajusté, il est recommandé d'utiliser un manomètre pour vérifier le réglage de la pression. Ne pas dévisser complètement la vis de réglage de la cage à ressort.

Conduite principale

Installer en tandem avec un régulateur plus petit afin d’améliorer la performance du système et de prolonger la durée de vie de la soupape.

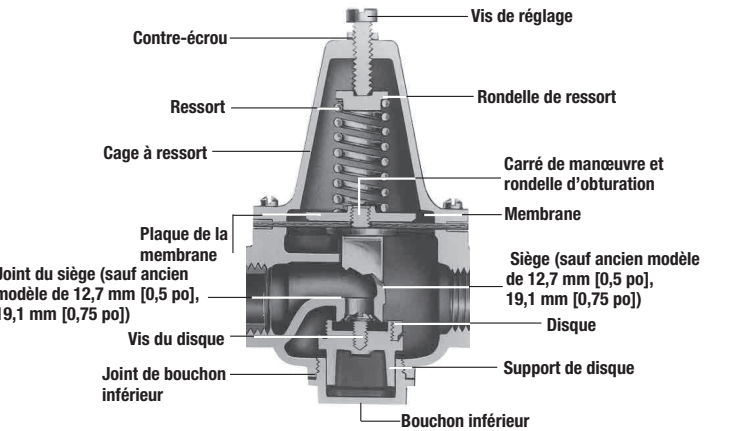


Instructions d’entretien

- Pour nettoyer ou remplacer des pièces, couper l'alimentation, desserrer le contre-écrou et dégager la vis de réglage
- Déposer la cage à ressort, le ressort et la rondelle. Enlever le bouchon inférieur.
- Démonter le module. Utiliser une clé pour desserrer le carré de manœuvre et enlever la rondelle d'obturation et la plaque de la membrane. Enlever la fourche en desserrant le support de disque à l'aide d'un tournevis.
- Lors de la remise en place du support de disque, appliquer une goutte d'enduit frein pour filet à faible résistance. Ne pas trop serrer.

AVIS

Lorsque le dispositif est équipé d'un filtre, le purger régulièrement.



Trousses de réparation

La trousse pour le modèle n° LF223 comporte les pièces illustrées

N° de code de commande	N° de trousse	Soupape de série	Taille	
			<i>po</i>	<i>mm</i>
0125123	LFKIT-C-RK	LF223	½, ¾	15, 20
0125124	LFKIT-D-RK		1	25
0125125	LFKIT-E-RK		1¼	32
0125369	1½ RK LF223N		1½	40
0125370	2 RK LF223N		2	50
0125371	2½ RK LF223N	LFN223B	2½	65
0009909	2½ LFRK-223		Bronze de 2½, 3	65, 80
0125372	2½ RK LFN223M2		Bronze de 2½	65
		LFN223BM1		

AVIS

Pour commander, indiquer le numéro de code de commande, le numéro de trousse et la taille de la soupape.

AVERTISSEMENT
Effectuer une inspection complète de la soupape afin de détecter les fuites externes après l'installation « finale » du régulateur.

INSTALLATION INSTRUCTIONS



For more information contact...

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Rev 06/10 Form No. II19.102

Model 16 & 19

Anti-Burst Freezeless Wall Faucet



FIGURE 1

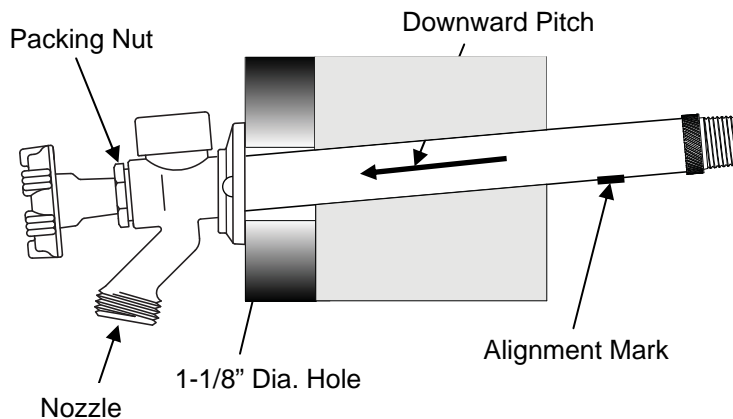
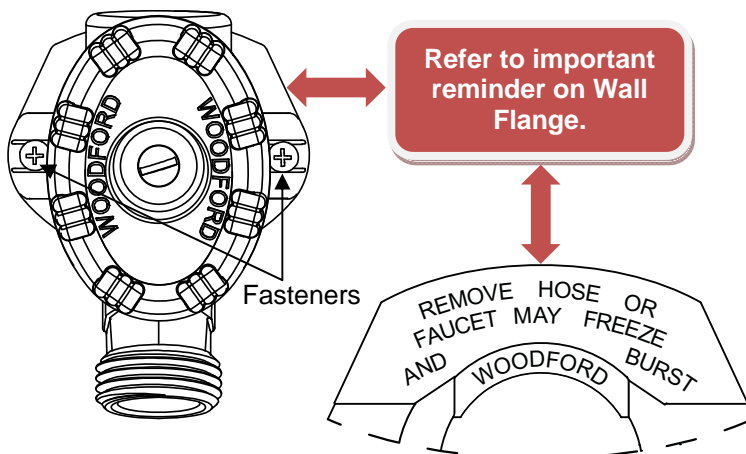


FIGURE 2



Wall faucets must be properly installed and operated to insure drainage. Improperly installed or operated wall faucets may freeze and burst in freezing weather.

INSTALLATION INSTRUCTIONS:

1. Before installation, flush supply line to remove any debris.
2. Drill a 1-1/8" diameter hole through the wall in the desired location and insert the faucet from the outside. **FIGURE 1**
3. Install with nozzle pointing down. **FIGURE 1**
4. From inside the building, the alignment mark on the tube can be used to correctly align the faucet when the mark is pointed down. **FIGURE 1**
5. The tube must have a slight downward pitch for proper drainage. **FIGURE 1**
6. For solder connection, open faucet to full open position before soldering. Excessive heat can damage valve seat rubber or stainless steel seat and factory solder joint.
7. Secure faucet to the wall using appropriate fasteners installed through the holes in the flange. Adjustable flange matches slope of siding. **FIGURE 2**

NOTE: The packing nut, located behind the handle, has been factory adjusted. If leakage should occur after installation or use, the packing nut can be tightened to stop the leak. **FIGURE 1**

TROUBLESHOOTING & MAINTENANCE



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Rev 07/12 Form No. TM19.102

Model 19 Freezeless Wall Faucet

How A Frost-Proof Faucet Works

Fig 1

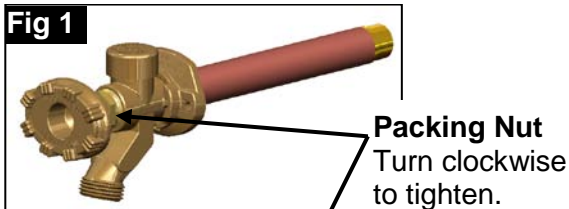


Fig 2

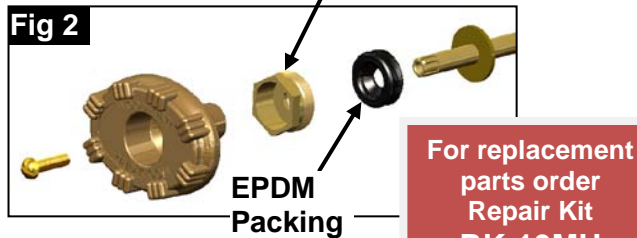


Fig 3

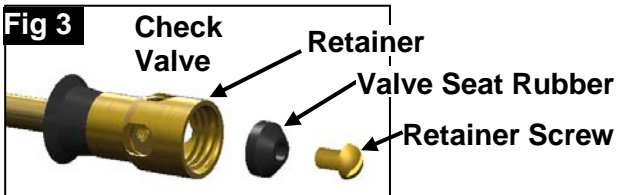


Fig 4

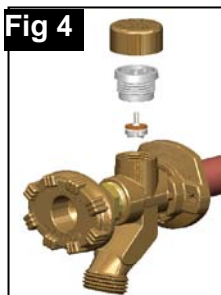


Fig 5

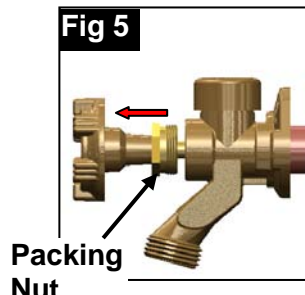
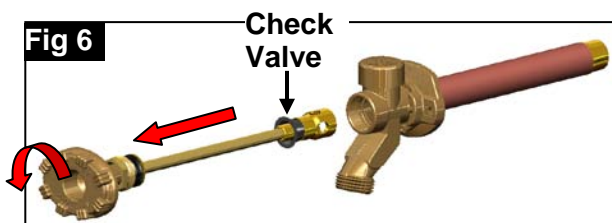


Fig 6



- **Packing leak: Faucet leaks from around the operating stem when it is on**

The hex **Packing Nut** (30059) will occasionally need to be tightened to stop a packing leak. **(Fig 1)** Without removing any parts, tighten the packing nut behind the handle until snug and the leak stops. Persistent leaks will require a new **EPDM Packing** (30560) **(Fig 2)**.

- **Faucet will not shut off: Water runs or drips out nozzle when the faucet is off**

The **Valve Seat Rubber** (30008) is worn or damaged and needs to be replaced or the **Retainer Screw** (30804) is loose. **(Fig 3)** Follow the instructions below on how to remove the **Operating Rod**. **(Fig 4 & 5)** If this does not fix the leak, the faucet may have a damaged seat and the faucet will need to be replaced.

- **Faucet leaks from the vacuum breaker, on top of the faucet, when the faucet is on.**

Vacuum breaker is fouled or damaged. **(Fig 4)** Pry off plastic cap and use pliers to remove the vacuum breaker body. Check for fouling or replace with vacuum breaker float kit (RK-19VB).

- **Valve Stem Assembly - Operating Rod Removal**

To remove the operating rod from the faucet, shut off the water supply, loosen the handle and back out the **Packing Nut** **(Fig 5)**. Use the handle to turn the rod counterclockwise until the rod becomes disengaged from the valve seat. Use a small screwdriver to pry the packing loose. Pull the rod assembly out of the faucet. **(Fig 6)** The rod may have a check valve that will add resistance to removal. Use a swift pull to disengage it.

PART	DESCRIPTION	WHERE USED	PRICE	PART	DESCRIPTION	WHERE USED	PRICE
10004	Hose Nozzle, ¾"	Y34, Y1, W34, X34, R34	5.10	30512	Packing Nut w/Stem Gd.	14, 17	4.25
10007	Hose Nozzle, 1"	Y34, Y1, W34, X34, R34	19.75	30559	Oval Handle	19	2.95
10008	Lever	Y34, Y1, Y2	13.20	30560	EPDM Packing	14, 17, 19, 22, V22	2.10
10009	Link, Upper	Y34, Y1, Y2	5.40	30565	C - Plug Button-large	29	0.85
10011	Coupling	Y34, Y1, Y2, W34	5.30	30566	H - Plug Button-large	29	0.85
10018	Valve Body	W34, X34, Y30, Y34, Y70, Y95	25.05	35280	Drain Valve Assembly	20, 25, 27	3.30
10020	Bolt	Y34, Y1, Y2	1.25	35504	Repl. Assy. 4" Wall	20, 25, 27	34.00
10021	Bolt	Y34, Y1, Y2	1.25	35506	Repl. Assy. 6" Wall	20, 25, 27	34.45
10100	Packing Nut	Y34, Y1, Y2, W34	2.90	35508	Repl. Assy. 8" Wall	20, 25, 27	35.30
10101	Packing	Y34, Y1, Y2, W34	1.00	35510	Repl. Assy. 10" Wall	20, 25, 27	35.90
10102	Washer	Y34, Y1, Y2, W34	1.00	35512	Repl. Assy. 12" Wall	20, 25, 27	36.50
10103	Rod Stem	Y34, Y1	2.75	35720	Rod Assy. 4" Wall	14,17,22,V22 (6" OAL w/ check)	8.25
10104	Rod Stem	Y34, Y1, Y2, W34	1.85	35721	Rod Assy. 6" Wall	14,17,22,V22 (8" OAL w/ check)	8.80
10105	Plunger	Y30, Y34, Y70, Y95, W34	8.45	35722	Rod Assy. 8" Wall	14,17,22,V22 (10" OAL w/ chk)	9.55
10106	Plunger	Y1, Y2	10.60	35723	Rod Assy. 10" Wall	14,17,22,V22 (12" OAL w/ chk)	10.20
10107	Plunger, 7/16-20 Thread	X34 - Yellow Head	7.25	35724	Rod Assy. 12" Wall	14,17,22,V22 (14" OAL w/ chk)	10.75
10108	Plunger, 3/8-16 Thread	X34 - blue head, R34	7.85	35725	Rod Assy. 14" Wall	14,17,22,V22 (16" OAL w/ chk)	11.45
10109	Yoke Nut	Y30, Y70, Y95	10.45	50009	Tee Key, Short - 1 3/4"	5/16" Square Stem	2.20
10206	Hex Nut	Y34, Y1, W34, X34	1.05	50010	Tee Key, Long - 3 1/4"	5/16" Square Stem	3.50
10630	Metal Oval Whl. Hdl.	RHMC, Y30	8.15	50012	Tee Key, Long - 3 1/4"	8 Pt. Spline-14,16,17,19,22,V22	3.50
10633	Metal Oval Whl. Hdl.	Wheel Handle Utility Hydrants	8.80	50023	Wheel Handle	Y30	2.10
15001	Head Assembly	Y1	89.00	50024	Packing	All WH, Y70, Y95, Y30	2.10
15002	Head & Nozzle	Y1	57.70	50027	Washer	32, 70	2.85
15003	Head Assembly	Y34	81.95	50028	Nut	32, 70	0.55
15004	Head & Nozzle	Y34	49.65	50040	Door Hinge Pin	All Wall Hydrant Boxes	1.10
15007	Link, Lower	Y34, Y1	4.65	50250	Plunger	All Auto Drain Hydrants	6.95
15008	Cam & Clevis Assy	Y34, Y1	9.10	50251	"C" Washer	All Auto Drain Hydrants	2.60
15009	Clevis & Set Screw	Y34, Y1	6.40	50252	Stem Washer	All Auto Drain Hydrants	1.15
15021	Head & Nozzle	X34	45.35	50264	Head Nut, Chrome	All Auto Drain Hydrants	11.15
15037	Head Assembly	X34	55.90	50502	Gasket (2 Req)	HC Series	2.55
15039	Head Assy., Complete	W34	59.25	51013	Valve Rubber	70, 72	1.85
15040	Head & Nozzle	W34	46.35	51014	Yoke Nut	All Freezeless WH	7.70
15050	Pivot Assembly	W34, X34	5.95	51117	Door Lock Screw Ch	All Wall Hydrant Boxes	8.05
15220	Diverter	S3, S4H	22.20	51120	Door Lock Screw E-Ring	All Wall Hydrant Boxes	1.70
15238	Diverter	Y2	22.20	55062	Stem Screw	All Auto Drain Hydrants	13.80
15246	Head & Nozzle	R34	21.65	55079	Shuttle Housing Assy.	HC Series	28.45
15247	Head Assembly	R34	44.75	55105	Yoke Nut Assembly	All Non-Freeze Area WH	9.70
30002	Handle Screw, Br.	14,17,24/26 Series Y30	0.55	55176	Head Nut Assy., Br	All WH, Y70, Y95	21.75
30006	Packing Washer	14, 22, V22	1.05	55177	Head Nut Assy., Ch	All WH, Y70, Y95	26.05
30008	Valve Rubber	14,17,19,22,V22, 24/26 Series	0.70	55178	Head Nut Assy., Br	Y30	13.90
30009	Screw	14,17,19,22,V22, 24/26 Series	0.50	55182	Head Nut Assy., Br	75, B75, 79, B79	21.80
30059	Nut, Br	14, 17	2.50	55183	Head Nut Assy., Ch	75, B75, 79, B79	22.60
30096	Wheel Handle-metal	14, 17	1.85	55404	Operating Rod Assy.	Auto. Drain (6 5/16 OAL)	24.30
30104	Stem	24/26 Series	6.10	55406	Operating Rod Assy.	Auto. Drain (8 5/16 OAL)	24.80
30105	Washer	24/26 Series	1.40	55408	Operating Rod Assy.	Auto. Drain (10 5/16 OAL)	25.25
30107	Packing Nut, Brass	24/26, WH, Y30 Series	4.30	55410	Operating Rod Assy.	Auto. Drain (12 5/16 OAL)	26.10
30109	Packing Nut, Chrome	24/26, WH Series	6.20	55412	Operating Rod Assy.	Auto. Drain (14 5/16 OAL)	26.80
30120	Wheel Handle, Clear	24/26 Series	1.55	55434	Hose Nozzle Br	20, 22, V22, 60	7.10
30121	Screw, Nickel	24/26 Series, HC67, Y30	1.25	55435	Nozzle W/o-ring, Brass	21, 70, Y70	5.05
30230	Plunger Assembly	20, 25, 27	3.60	55437	Nozzle W/o-ring, Ch.	70, 71, B71, 81	6.15
30233	Wheel Handle, Tan	24/26 Series	1.30	80005	Packing Nut	Thermaline	3.75
30234	Handle Screw	20, 25, 27	0.90	80008	Packing Ring	Thermaline	2.25
30236	Drain Guard	20, 25, 27	0.50	80013	Handle, Brass	Thermaline	10.95
30238	Stem Screw	20, 25, 27	1.80	80055	Cover, Woodford	Thermaline	3.60
30239	Wheel Handle, Metal	20, 25, 27	2.20	80056	Cover, Thermaline	Thermaline	3.60
30241	Head Nut, Br	20, 25, 27	16.30	80061	Heater Cover	Thermaline	0.95
30245	Head Nut Gasket	25	1.15	80062	Heater Well Thumb Nut	Thermaline	2.30
30247	Packing	24/26 Series, B24	1.45	80063	Heater Well Washer	Thermaline	0.80
30304	Operating Rod 4"	20, 25, 27	1.60	80066	Yoke Nut	Thermaline	6.35
30306	Operating Rod 6"	20, 25, 27	2.30	80068	Wing Nut	Thermaline	0.90
30308	Operating Rod 8"	20, 25, 26	2.90	80073	Carriage Bolt	Thermaline	1.05
30310	Operating Rod 10"	20, 25, 26	3.60	85001	Heater Well Assy., 1'	Thermaline	8.65
30312	Operating Rod 12"	20, 25, 26	4.25	85002	Heater Well Assy., 2'	Thermaline	9.10
30421	Packing Washer	17	1.45	85015	Valve Assembly	Thermaline	6.25
30462	C - Plug Button-small	22, V22	0.85	85061	Heater, 1'	Thermaline	37.20
30463	H - Plug Button-small	22, V22	0.85	85062	Heater, 2'	Thermaline	37.20

TECH-NOTE



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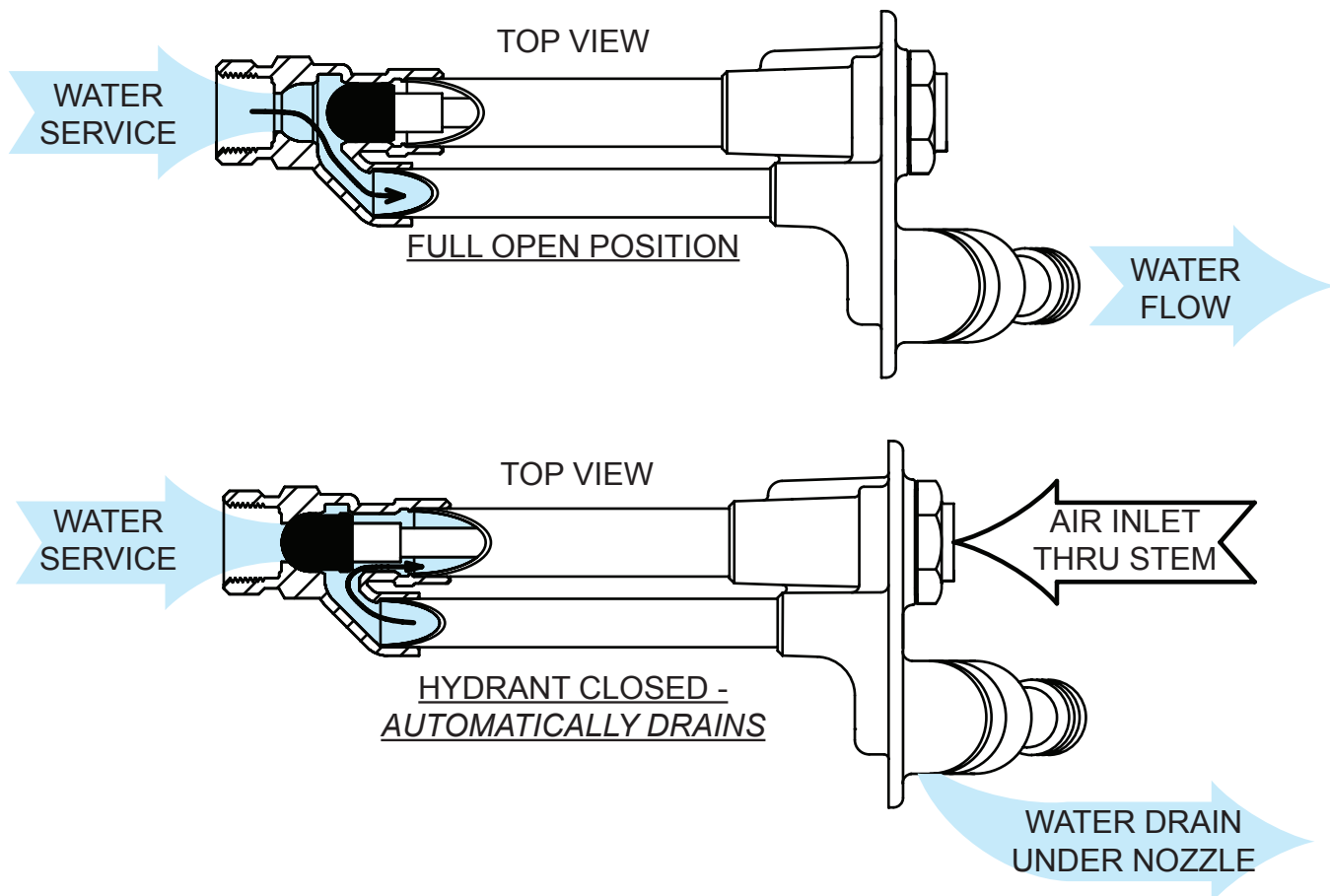
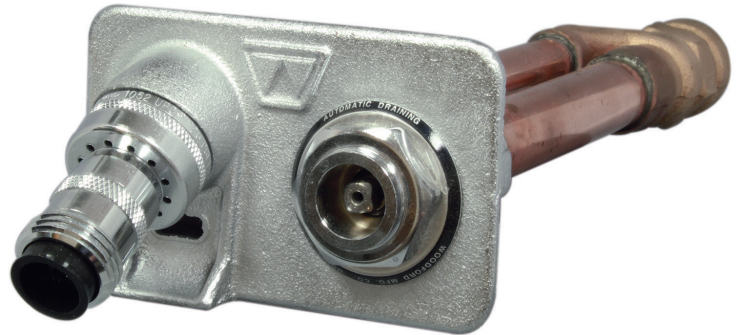
07/12 Rev 2

Model 67

Freezeless Wall Hydrant with....

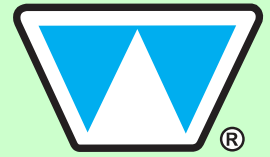
PATENTED HIGH FLOW DOUBLE CHECK BACKFLOW PREVENTER

- NIDEL® Model 50HA with ¾ inch male hose thread
- ASSE Standard 1052 approved
- Field Testable
- Two Independent Check Valves
- Drains automatically when hose is removed
- No spray back



NOTE: HYDRANTS DRAIN AUTOMATICALLY WITH OR WITHOUT HOSE ATTACHED.

TECH-NOTE



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07/12 Rev 2

RB65 & RB67

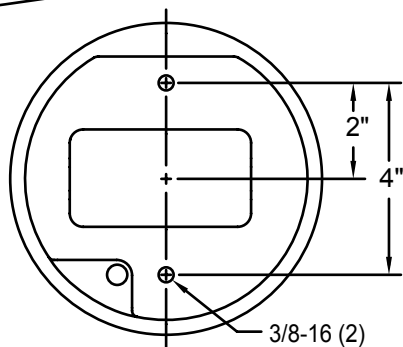
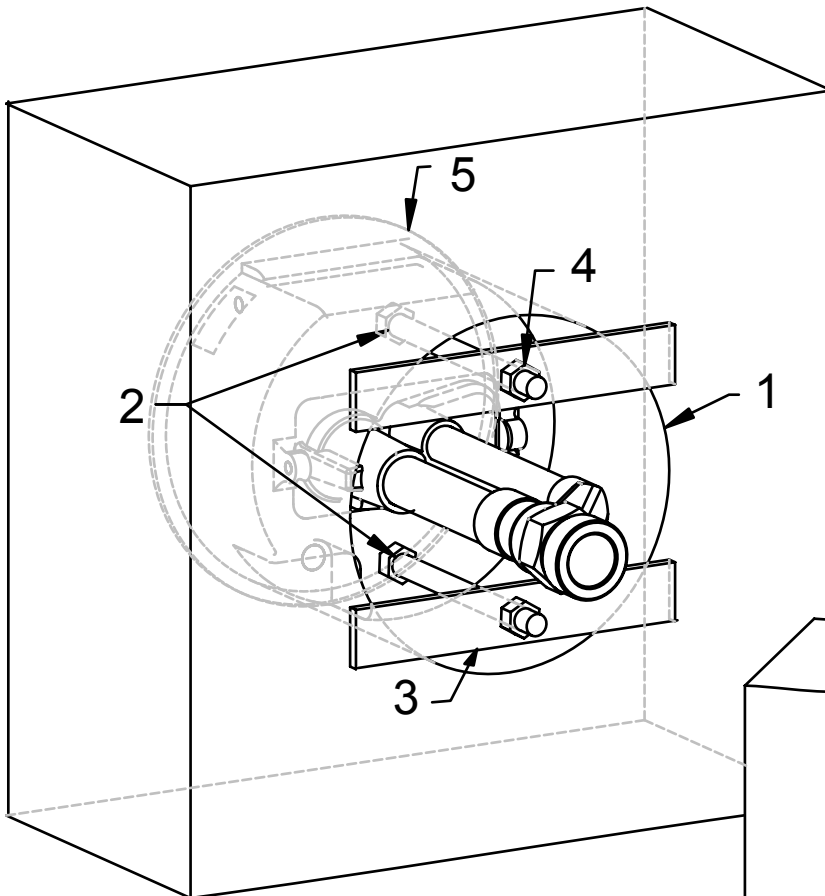
Round box

Installation Instructions

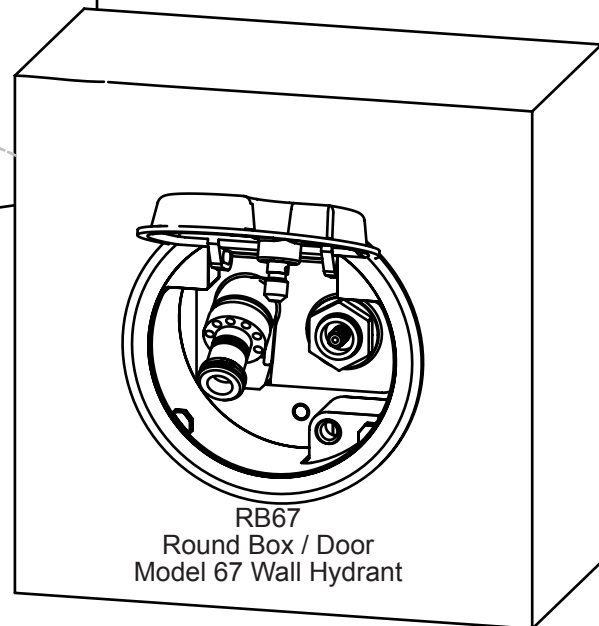
Round Box Patent No. US D470,915 S

Suggested installation through concrete wall:

1. Using a 6" core drill, locate and core drill a 6" diameter hole through wall.
2. Cut two lengths of 3/8-16 threaded rod long enough to protrude 1" through the back of the hole when box is installed. Spin one 3/8 back-up nut onto each rod to lock rods in place against box. Screw rods into provided tapped holes located in back of round box then tighten back-up nuts.
3. Make two back-up plates from available metal bar or angle to span 6" hole.
4. Set round box assembly in hole. Install back-up plates and draw-up loosely with 3/8 nuts.
5. Position and plumb unit in hole. Tighten back-up plate nuts to complete installation.



Mounting Hole Detail



INSTALLATION INSTRUCTIONS



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Model 65 & 67 Automatic Draining Wall Hydrant

Rev 08/12 Form No. II65.103



Model 65 with Single Check
Vacuum Breaker



Model 67 with Double Check
Backflow Preventer

FIGURE 1

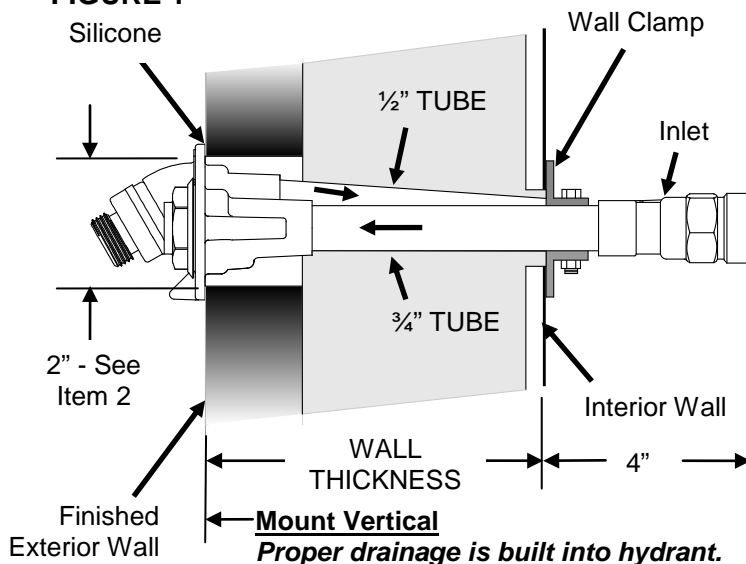
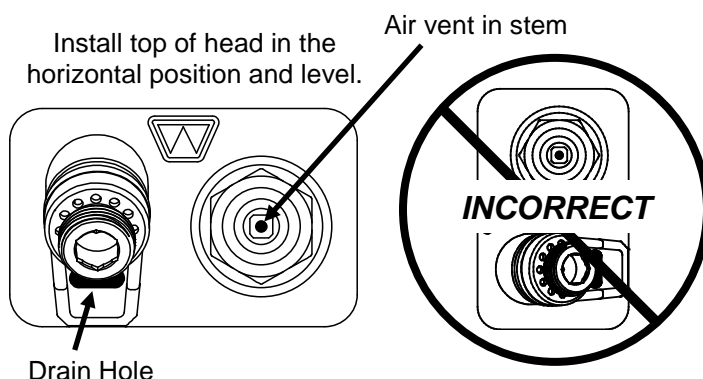


FIGURE 2



The hydrant must be properly installed and operated to insure drainage. Improperly installed or operated hydrants may freeze and burst in freezing weather.

INSTALLATION INSTRUCTIONS:

1. Before installation, flush supply line to remove any debris.
2. Cut a 2" X 3 7/8" opening through the wall in the desired location and insert the faucet from the outside. FIGURE 1
3. Install top of head in the horizontal position and level. *Do not install in vertical position.* FIGURE 2
4. *Note: Proper drainage is built into hydrant: FIGURE 1 (1/2" tube must slope slightly down toward inlet.) (3/4" tube must be level.)*
5. Apply silicone or equivalent to seal and help support hydrant FIGURE 1
6. Air vent in stem **must not** be plugged to ensure proper draining. FIGURE 2
7. Hydrant Inlet must be in a warm area. FIGURE 1
8. Install adjustable Wall Clamp over water tubes and slide snug to interior wall. FIGURE 1

Note: For solder connection, open hydrant to full open position before soldering. Excessive heat can damage valve seat rubber.

OPERATING INSTRUCTIONS:

To **OPEN**, turn stem counter-clockwise

To **CLOSE** and **DRAIN**, turn stem clockwise until seated and water drains out the drain hole.

INSTALLATION INSTRUCTIONS



For more information contact...

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Rev 08/12 Form No. IIB65.102

Model B65 & B67 Box Type - Automatic Draining Wall Hydrant



Model B65 with Single Check
Vacuum Breaker



Model B67 with Double Check
Backflow Preventer

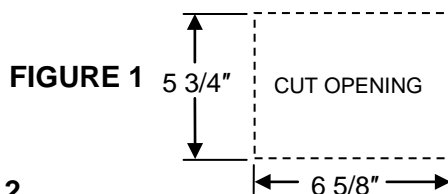


FIGURE 1

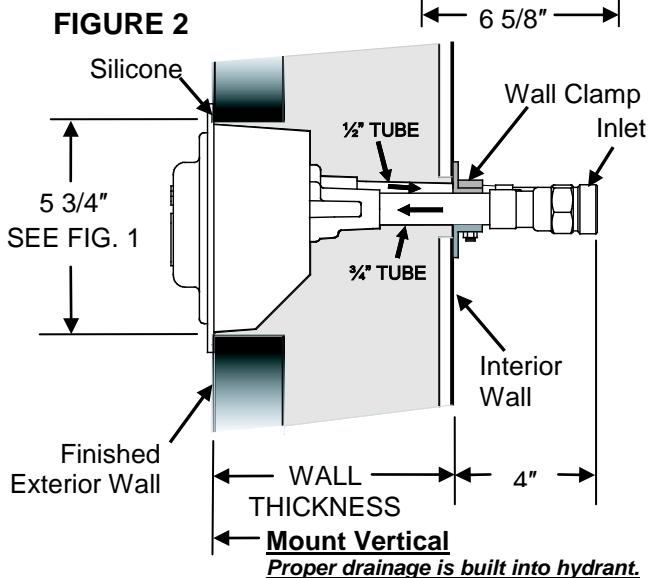


FIGURE 2

Finished
Exterior Wall

WALL
THICKNESS

Mount Vertical
Proper drainage is built into hydrant.

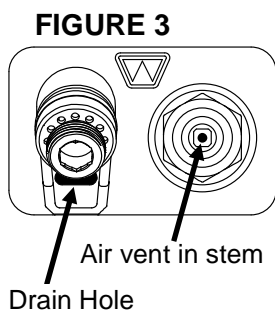


FIGURE 3

Air vent in stem

Drain Hole



EXAMPLE: B65 or B67
installed in a block wall.

The hydrant must be properly installed and operated to insure drainage. Improperly installed or operated hydrants may freeze and burst in freezing weather.

INSTALLATION INSTRUCTIONS:

1. Before installation, flush supply line to remove any debris.
2. Cut a 5 3/4" X 6 5/8" opening through the wall in the desired location. FIGURE 1
3. Apply silicone or equivalent behind the box flange to seal and help support hydrant. FIGURE 2
4. Insert the box and faucet assembly from the outside. FIGURE 2
5. The top box flange must be installed in the horizontal position and level. *Do not install in vertical position.* FIGURE 2
- Note: Proper drainage is built into hydrant: (1/2" tube must slope slightly down toward inlet.) (3/4" tube must be level.)*
6. The hydrant Inlet must be located in a warm area of the building interior. FIGURE 2
7. Install adjustable Wall Clamp over water tubes and slide snug to interior wall. FIGURE 2
8. The operating stem air vent **must not** be plugged to ensure proper draining. FIGURE 3

Note: For solder connection, open hydrant to full open position before soldering. Excessive heat can damage valve seat rubber.

OPERATING INSTRUCTIONS:

Use Tee Key to lock/unlock door and operate hydrant. To **OPEN**, turn stem counter-clockwise. To **CLOSE** and **DRAIN**, turn stem clockwise until seated and water drains out the drain hole.

INSTALLATION INSTRUCTIONS



For more information contact...

WOODFORD MANUFACTURING COMPANY

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Model MB65 & MB67

Rev 08/12 Form No. IIMB65.101

Box Type - Automatic Draining Wall Hydrant



Model MB65 or MB67
DOOR OPEN



Model MB65 or MB67
DOOR CLOSED

FIGURE 1

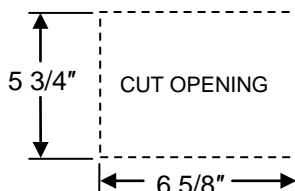
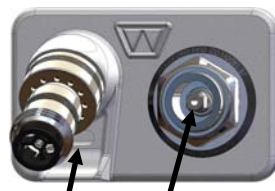
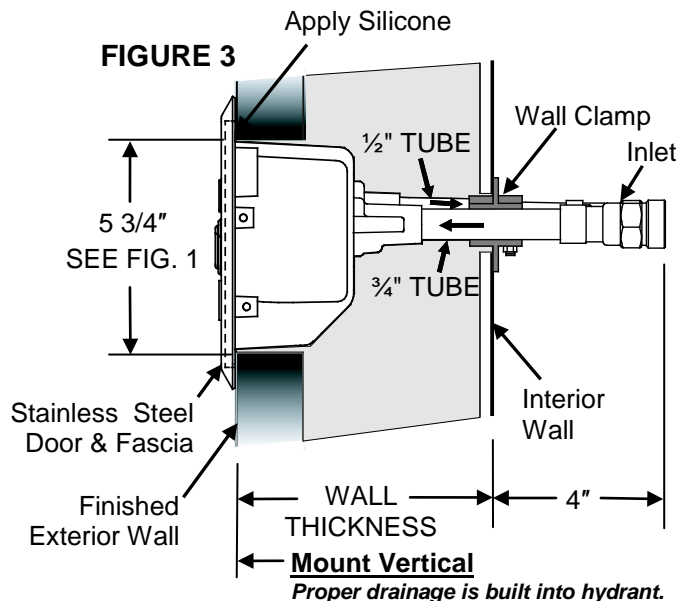


FIGURE 2



Air vent in stem
Drain Hole

FIGURE 3



The hydrant must be properly installed and operated to insure drainage. Improperly installed or operated hydrants may freeze and burst in freezing weather.

INSTALLATION INSTRUCTIONS:

1. Before installation, flush supply line to remove any debris.
2. Cut a 5 3/4" X 6 5/8" opening through the wall in the desired location. FIGURE 1
3. The operating stem air vent **must not** be plugged to ensure proper draining. FIGURE 2
4. Apply silicone or equivalent behind the box flange to seal and help support hydrant. FIGURE 3
5. Insert the box and faucet assembly from the outside. FIGURE 3
6. The top box flange must be installed in the horizontal position and level. *Do not install in vertical position.* FIGURE 3
Note: Proper drainage is built into hydrant: (1/2" tube must slope slightly down toward inlet.) (3/4" tube must be level.)
7. The hydrant Inlet must be located in a warm area of the building interior. FIGURE 3
8. Install adjustable Wall Clamp over water tubes and slide snug to interior wall. FIGURE 3

Note 1:

For solder connection, open hydrant to full open position before soldering. Excessive heat can damage valve seat rubber.

Note 2:

If desired, the stainless steel Door and Fascia assembly can be removed to prevent damage while installing the box hydrant unit. Open door and remove 4 screws inside of box.

OPERATING INSTRUCTIONS:

Use Tee Key to lock/unlock door and operate hydrant. To **OPEN**, turn stem counter-clockwise. To **CLOSE** and **DRAIN**, turn stem clockwise until seated and water drains out the drain hole.

TROUBLESHOOTING & MAINTENANCE



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Model 65 & 67 Freezeless Wall Hydrant

Rev 06/15 Form No. TM65.103



Fig 1



Fig 2



Fig 3



Fig 4

Drain Hole Air Vent



Fig 5

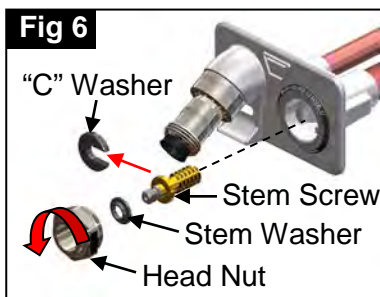


Fig 6

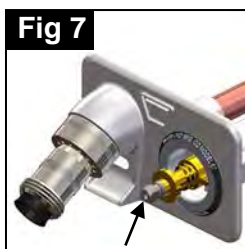


Fig 7

Stem Screw

For replacement
parts order
Repair Kit
RK-65

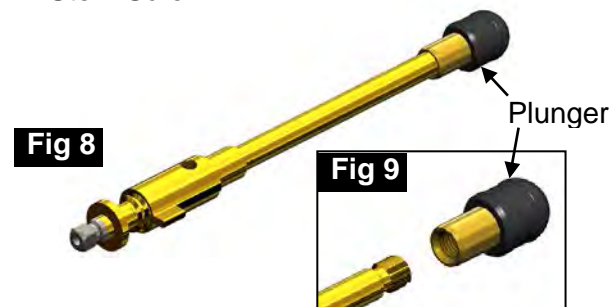


Fig 8



Fig 9

- **Water leaks from drain hole (Fig 1) and/or air vent in Stem Screw when the hydrant is on.**
Plunger (50250) is damaged and needs to be replaced.
See **Operating Rod Removal**
 - **Hydrant will not shut off. Water leaks out nozzle (Fig 2) and/or drain hole when hydrant is off.**
If a new installation debris or other obstruction may be prohibiting the plunger from seating properly. Remove rod assembly, inspect plunger for damage and flush the casing before reassembling. See **Operating Rod Removal**
 - **Hydrant does not drain when it is shut off.**
Drain hole cavity in casting and/or air vent hole in Stem Screw (Fig 3) may be blocked with insect nest or other debris. Use a stiff wire to clear any obstructions.
 - **Hydrant does not flow water when it is on.**
The Vacuum Breaker may be obstructed or damaged. Remove the Vacuum Breaker (Fig 4) and check to see if the hydrant flows water with the Vacuum Breaker removed. Inspect the Vacuum Breaker for obstruction or damage. If the hydrant still does not flow water with the Vacuum Breaker removed, remove the Operating Rod Assembly and turn on the water supply to flush the casing. See **Operating Rod Removal**
- Operating Rod Removal:**
1. Shut off water supply.
 2. Turn the Stem Screw counterclockwise to the full open position. (Fig 5)
 3. Remove the Head Nut and Stem Screw. (Fig 6)
 4. Remove the "C" Washer from the stem screw. (Fig 6)
 5. Thread the stem screw back in the operating rod one or two turns. (Fig 7) Use a screwdriver or small pry bar to pry under the ledge of the stem screw, against the face of the hydrant, to pull the rod out of the hydrant. A damaged plunger may require a significant force to pull the rod free. (Fig 8)
 6. Once the rod is out of the hydrant, inspect and/or replace the plunger, which is threaded on the rod. (Fig 8 & 9) If the plunger rubber has come off the insert and is stuck inside the hydrant, a special plunger removal tool is available on loan from Woodford.

The Model 65, B65, RB65 are automatic draining, freezeless wall hydrants with single check hose connection anti-siphon vacuum breakers. Hydrants drain as handle is shut off, *even if hose is attached*. All models are designed for irrigation purposes to blend in with modern architecture for installation on restaurants, schools, office buildings, churches, apartments, motels, stores, shopping centers and industrial buildings.

SPECIFICATIONS:

MODEL 65/B65/RB65

- Approved under ASSE Standard 1019-B
- Listed by IAPMO®
- Meets Government Specification WW-P-541b

VACUUM BREAKER - ANTI SIPHON -

- NIDEL® Model 34HA with 3/4 inch male hose thread
- Approved under ASSE 1011
- Listed by IAPMO®

VALVE SEAT – Permanent type brass valve body with hemispherical seating surface.

VALVE – One piece valve plunger accurately controls both flow and drainage with a minimum number of turns and without need for adjustments.

DRAIN – Under nozzle away from hands of operator and with a lip to divert water away from building.

CASING – Copper tubes.

NO LEAD SOLDER - All solder joints.

STEM – Hardened stainless steel stem resists damage.

TEE KEY – Loose key operates hydrant.

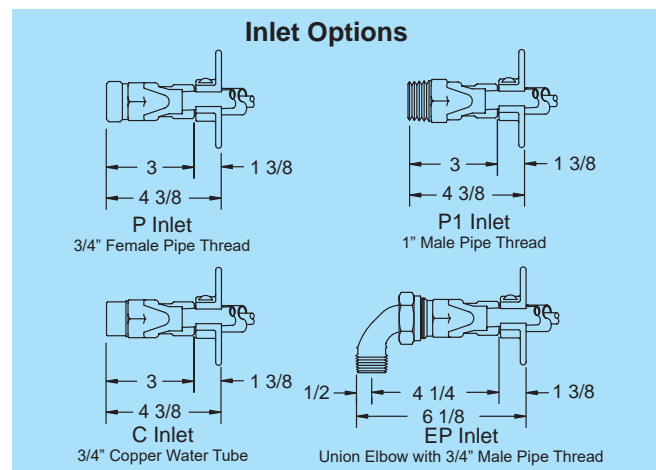
OPERATING ROD – 3/8" solid brass operating rod.

INLETS – As shown.

WALL CLAMP – Furnished on all 60 series except close coupled.

MAX PRESSURE – 125 p.s.i.

MAX TEMPERATURE - 120° F



Specify as follows:

Wall hydrant shall be Woodford Model 65 (exposed type), B65, RB65 or MB65 (concealed box type), automatic draining with anti-siphon vacuum breaker. ASSE Standard 1019-B approved. 3/4" inlet and outlet (specify type of inlet). Hardened stainless steel operating stem and one-piece valve plunger to control both flow and drain functions. Exterior finish to be Chrome Plated (options: Polished Brass or Rough Brass). Loose tee key to be furnished with each hydrant. Wall thickness to be _____ inches.

When ordering, specify model, inlet and wall thickness



Anti-Siphon Freezeless Wall Hydrants Model 65/B65/RB65



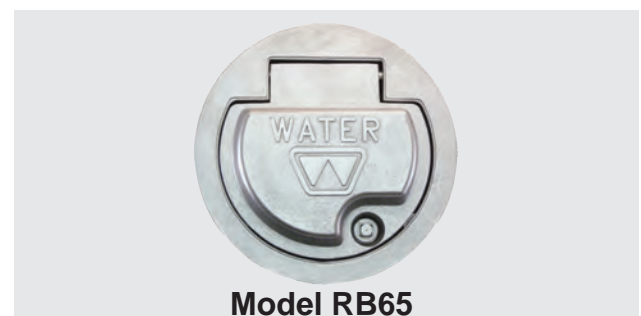
Model 65

Standard - Chrome (CH)
Optional - Brass (BR) Polished Brass (PB)
Fits one standard modular brick course.



Model B65

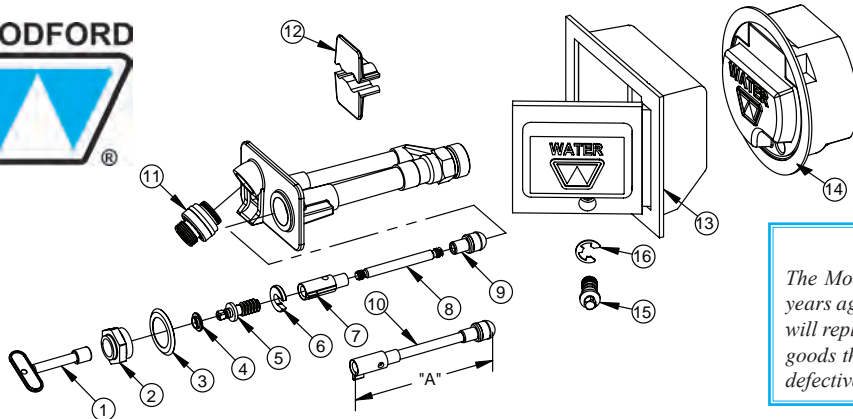
Exterior Finish: Box & Door
Standard - Chrome (CH)
Optional - Brass (BR) Polished Brass (PB)
Anodized Aluminum Box (AL)
Fits two std. modular brick course or one course of facing tile.



Model RB65

Exterior Finish: Box & Door - Chrome (CH) Only
Designed especially for tilt-up wall construction.
Install through 6" diameter hole.
Two 3/8"-16 tapped holes for all-thread anchors in back of box.
Lift and latch door stays open when hydrant is in use.

**SEE WOODFORDMFG.COM FOR INSTRUCTIONS
AND DETAILS OF APPLICABLE PATENTS AND
PATENTS PENDING OR CALL 1-800-621-6032**



MODEL 65/B65/RB65 PARTS LIST

ITEM	PART #	DESCRIPTION
1	50009	Tee Key
	50010	Long Tee Key (Box Models)
2	50264	Head Nut – chrome
	50265	Head Nut – brass
3	50583	I.D. RING
4	50252	Stem Washer
5	55062	Stem Screw
6	50251	"C" washer
7	51014	Yoke Nut
8	Operating Rod (Sold With Item 10 Only)	
9	50250	Plunger
10	554XX	Operating Rod Assembly (Includes Items 7,8,9) (Select required assembled length from table below)
11	34HA-CH	34HA Vacuum Breaker – chrome
	34HA-BR	34HA Vacuum Breaker – brass
12	55063	Wall Clamp Assembly
13	67BX	Box/Door Assembly – Chrome
	65BXF	Box/Flat Door Assembly – Chrome
	67BX-BR	Box/Door Assembly - Brass
	65BXF-BR	Box/Flat Door Assembly - Brass
	67BX-PB	Box/Door Assembly – Polished Brass
	65BXF-PB	Box/Flat Door Assembly – Polished Brass
	67BX-AL	Box/Door Assembly – Aluminum
14	RB67BX	Round Box/Door Assembly - Chrome
	RK-65	Chrome Repair Kit (Includes Items 1, 2, 4-7 & 9)
15	51117	Door Lock Screw - Chrome
	51116	Door Lock Screw - Brass
16	51120	E-Ring

Operating Rod Assy. "A"

Wall Thickness	Length	Part No.
65	B65/RB65	
CC	CC	3 1/2" 55401
N/A	4	4 1/2" 55402
4	6	6 1/2" 55404
6	8	8 1/2" 55406
8	10	10 1/2" 55408
10	12	12 1/2" 55410
12	14	14 1/2" 55412
14	16	16 1/2" 55414
16	18	18 1/2" 55416
18	20	20 1/2" 55418
20	22	22 1/2" 55420
22	24	24 1/2" 55422
24	N/A	26 1/2" 55424

Manufactured under one or more of the following patents:
 U.S. Patents:
 3,414,001
 4,178,956
 4,316,481
 4,532,954
 D216,790
 D216,791
 D277,365
 D277,366
 Canada Patents:
 852,529
 865,995
 1,146,438

Wall Thickness (Inch)	CC	4	6	8	10	12	14	16	18	20	22	24
Overall Length - Hydrant	5	8	10	12	14	16	18	20	22	24	26	28
Overall Length - Box Models	7 3/8	8 3/8	10 3/8	12 3/8	14 3/8	16 3/8	18 3/8	20 3/8	22 3/8	24 3/8	26 3/8	28 3/8
Shipping Wt. (Lbs)**	3.8	4.4	4.8	5.2	5.6	6	6.4	6.8	7.2	7.6	8	8.4

** Add 8.3 Lbs. for brass box models.

** Add 2.5 Lbs. for aluminum box models.

NOTE: Close Coupled Models are not recommended for use in freezing climates and cannot use wall clamp.

For more information contact...

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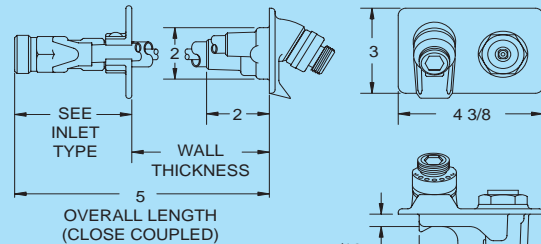
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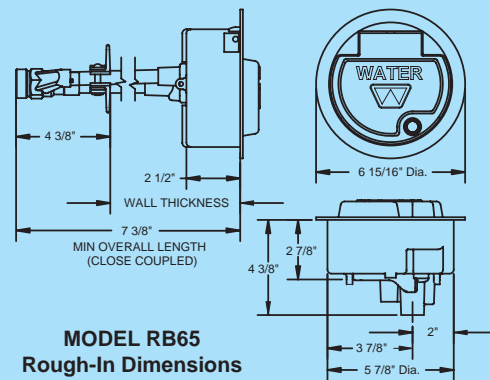
Rev. 12/15 Form No. 65.112

LIMITED WARRANTY

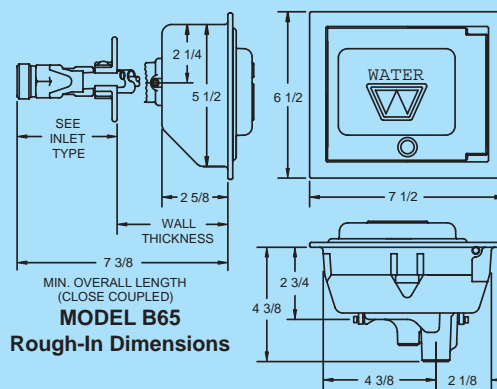
The Model 65 is sold with a limited warranty for five years against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within five years of purchase from Woodford.



MODEL 65
Rough-In Dimensions



MODEL RB65
Rough-In Dimensions



MODEL B65
Rough-In Dimensions

INSTALLATION INSTRUCTIONS



For more information contact...

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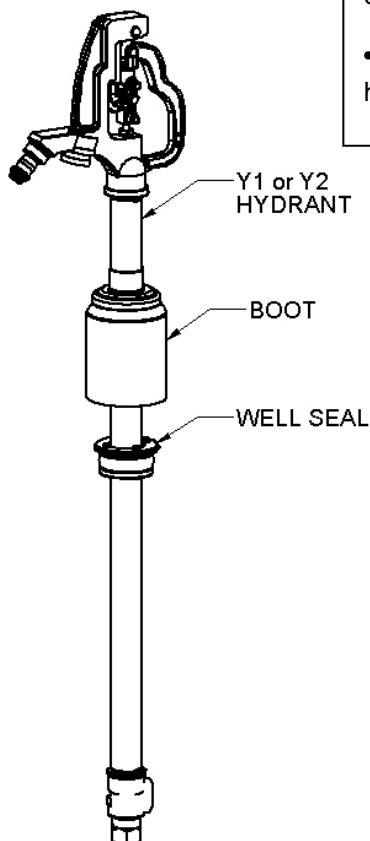
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RHY1 or RHY2

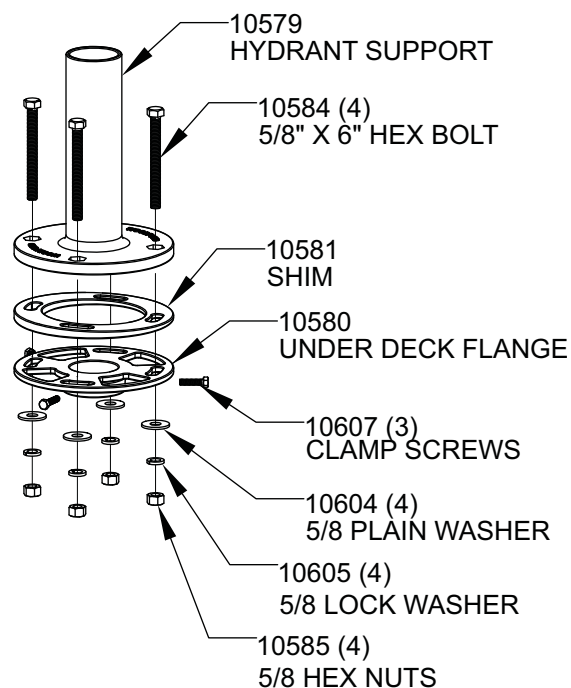
Roof Hydrant

Rev 06/10 Form No. IIRH.102



- The complete RHY1-MS or RHY2-MS Hydrant with Mounting System will be received in 2 separate cartons. See carton contents below.

- Both cartons are required to complete the Roof hydrant installation.



**RHY1-MS or
RHY2-MS (Shown)
Complete Roof Hydrant
Mounting System
includes both cartons 1
and 2.**

**CARTON 1
RHY1 or
RHY2 (Shown)
CONTENTS**

- Y1 or Y2 Hydrant
- Well Seal
- Boot

**CARTON 2
RH-MS
CONTENTS**

- Hydrant Support – cast iron
- 2" Shim – cast iron
- Under Deck Flange – cast iron
- Mounting Bolts, Nuts & Washers

INSTALLATION INSTRUCTIONS



For more information contact...

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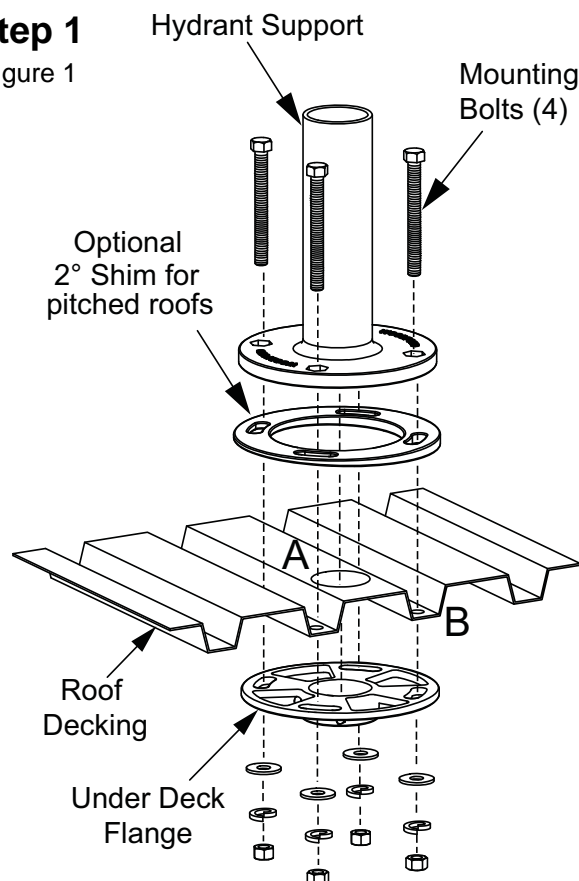
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RHMS Mounting System

Rev 06/10 Form No. IIRH.102

Step 1

Figure 1

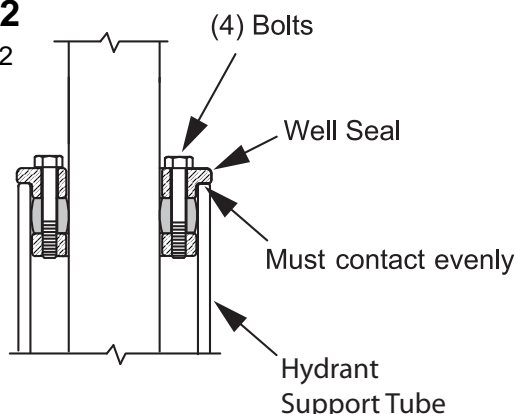


STEP 1 Figure 1

1. Set Hydrant Support in desired location on roof decking.
2. Transfer (5) hole locations using Hydrant Support flange as a template.
3. Set aside Hydrant Support and cut (1) 3" hole for the hydrant (A) and drill (4) 11/16" bolt holes (B) through roof decking.
4. Reposition Hydrant Support over holes in decking.
5. Drop (4) 5/8" X 6" Mounting Bolts through Hydrant Support flange. Heads should bottom in hex pockets.
6. From underneath roof decking, install Under Deck Flange. Position slots in Flange over the (4) bolts and secure with plain washers, lock washers and nuts.

Step 2

Figure 2



STEP 2 Figure 2

7. Loosen, but do not remove, the (4) bolts on the Well Seal.
8. Install the hydrant through the top of the Hydrant Support.
9. Position the hydrant to desired height.
10. Slide the Well Seal down and seat into the Hydrant Support tube.
Make sure that the top of the Well Seal contacts the top of the tube evenly all around.
11. Tighten the four bolts evenly until hydrant pipe is clamped securely.
 - a. NOTE: Installer may desire to not tighten the well seal until supply and drain connections are attached.

INSTALLATION INSTRUCTIONS



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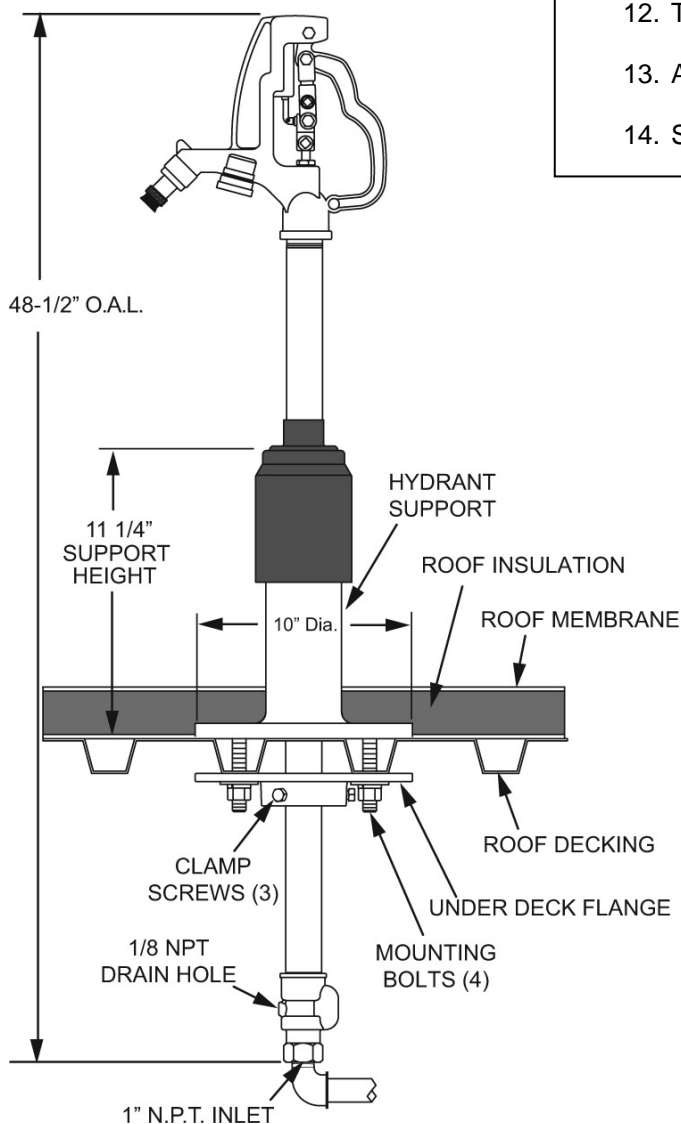
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RHY1-MS or RHY2-MS

Rev 06/10 Form No. IIRH.102

Roof Hydrant & Mounting System Rough-In



12. Tighten (3) Under-Deck Flange Clamp Screws.
13. Attach supply and drain lines.
14. Slide protective Boot down over Well Seal.

TROUBLESHOOTING & MAINTENANCE



For more information contact...

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Y34, Y1 or Y2 Yard Hydrant Plunger Replacement

Rev 06/15 Form No.TMYH-1.104

If rocks or other debris are believed to have settled in the Valve Body, causing the Plunger not to seat properly, follow these instructions for inspecting or replacing the Plunger:

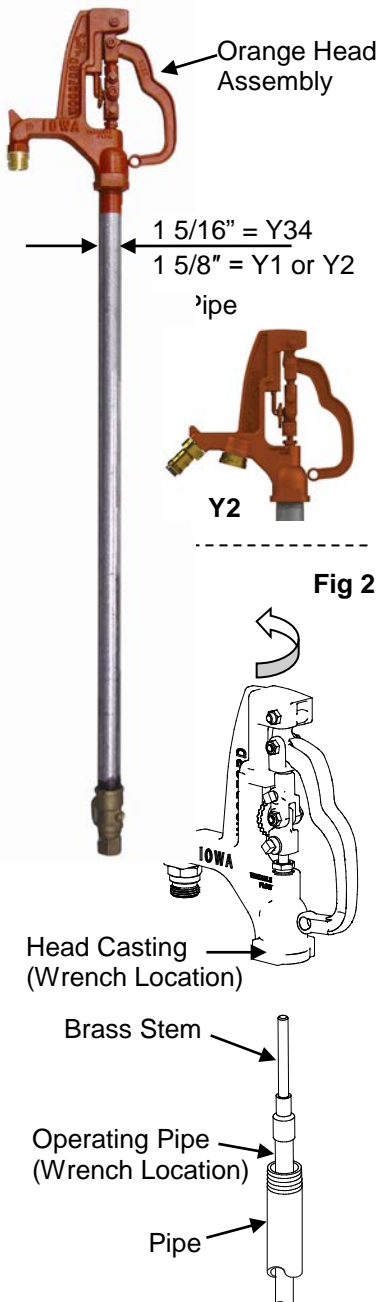


Fig 2

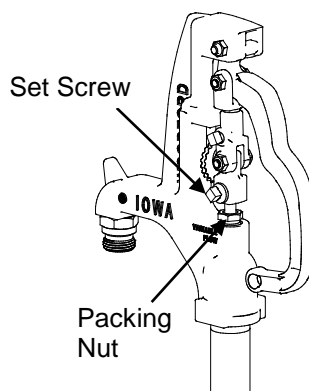


Fig 1

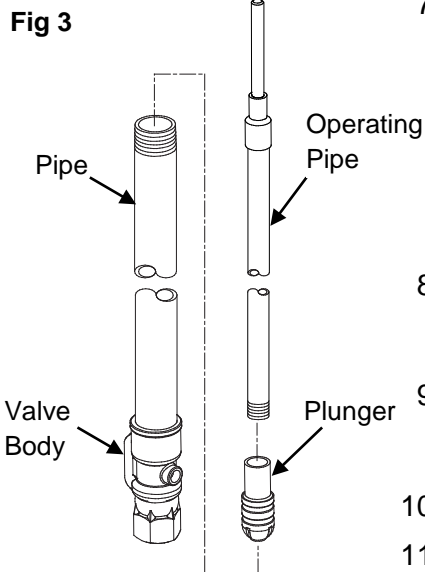


Fig 3

1. Shut off water supply to hydrant.
 2. Loosen the linkage Set Screw. Fig 1
 3. Loosen, do not remove, the Packing Nut. Fig 1
 4. Remove head casting using two pipe wrenches, one on head casting and the other on the pipe. Fig 2
 5. Remove operating pipe by gripping pipe with vice grips and prying upward. **DO NOT attach vice grips to brass stem. Damage to stem may cause leakage around packing nut.** Fig 2
 6. **Turn on water and allow to flow and flush the casing.**
 7. Examine plunger for damage and replace if necessary. Fig 4
 - 7a Remove plunger from operating pipe with either pipe wrenches or vise grips.
 - 7b Install new Plunger.
- Order #10105 Plunger for a Y34 hydrant or #10106 Plunger for a Y1 hydrant - Fig 3*
8. Apply a small amount of Silicone grease to plunger to aid the reinsertion into hydrant. (Do not use petroleum based grease).
 9. Insert operating rod assembly in hydrant using a mallet or block of wood. Tap rod assembly until plunger is seated in the valve body.
 10. Reinstall head assembly.
 11. Adjust linkage so handle will snap closed at very end of closing. See ["Linkage Adjustment"](#)

TROUBLESHOOTING & MAINTENANCE



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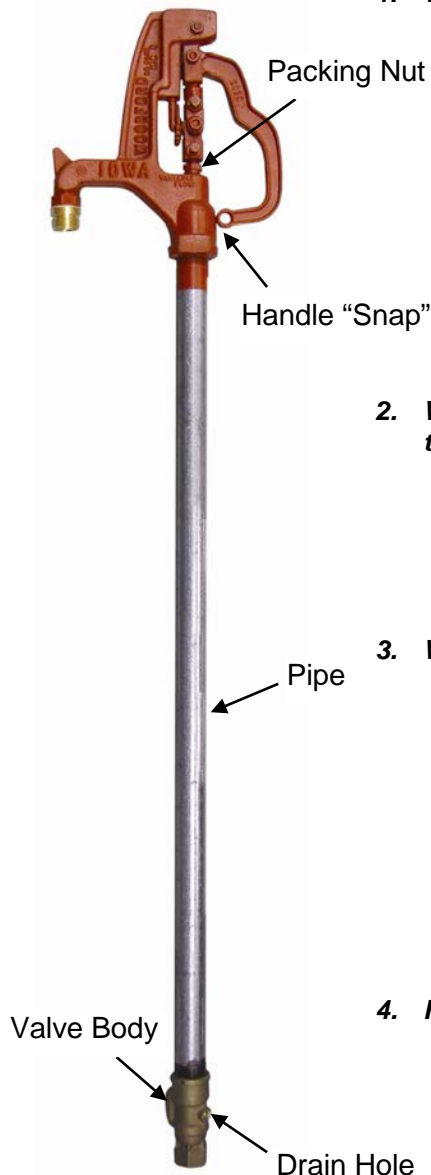
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Y34 & Y1 Yard Hydrant

Rev 06/15 Form No. TMYH-1.104



1. Water leaks from the nozzle when the hydrant is off.

- Check the closing force of the handle. If the handle does not “snap” closed at the end of the closing stroke, see [Linkage Adjustment](#) instructions.
- If the hydrant leaks just after installation, the valve seat may be fouled with debris, such as small rocks. The operating pipe assembly will have to be removed and the hydrant casing flushed. See [Operating Pipe Assembly Removal](#) instructions.
- To inspect and/or replace the plunger if it is worn or damaged, see [Operating Pipe Assembly Removal](#) instructions.

2. Water leaks around the brass stem below the handle linkage when the hydrant is on.

- The Packing Nut will occasionally need to be tightened to stop a packing leak. Tighten the Packing Nut until snug and the leak stops. Persistent leaks will require a new Packing #10101. See [Packing Replacement](#) instructions.

3. Water leaks from below ground level when the hydrant is on.

- A small leak may be the result of a leak at the drain hole. Replace the plunger if it is old and worn. See [Operating Pipe Assembly Removal](#) instructions.
- A large leak may be the result of a hole in the pipe casing caused by electrolysis corrosion. Some soil conditions can cause premature failure of the pipe casing near the valve body. Brass pipe is recommended for these conditions. *Contact the factory for details.*

4. Hydrant will not drain when shut off.

- Make sure there are no attachments on the nozzle, such as a hose or vacuum breaker.
- Improper linkage adjustment (not enough tension) may prevent the hydrant from draining properly. See [Linkage Adjustment](#) instructions.
- A poor drain field around the valve body or a blocked drain hole will prevent drainage. See [Yard Hydrant Installation Instructions](#).

TERMS AND CONDITIONS OF SALE

Selling Policy - Possession of our price list or jobber discounts is not an offer to sell. All orders are subject to acceptance by the home office in Colorado Springs, Colorado.

Minimum Invoice - No invoice will be rendered for less than \$25.00 list.

Cash Discount - 3% 15 days from date of invoice or 2% 10th Prox., Net EOM

Freight Allowance - All goods sold F.O.B shipping point. For shipments in the continental United States and Canada, **full freight will be allowed on orders of \$2,000.00 or more list.** No freight allowance on smaller shipments. We reserve the right to ship the most economical way.

Foreign Shipments - (including **Alaska and Hawaii**) will be allowed full freight, according to the conditions listed above, to the embarkation point in the continental United States only.

Claims, Shortages and Damage - All claims for shortages or goods damaged in transit must be made within **10 days after receipt of merchandise.** (All claims should be made to Woodford Manufacturing Co. by the consignee.)

Prices, Designs and Quotation - Prices, designs and dimensions of products are subject to change without notice. Quotations, unless otherwise stated, are for immediate acceptance and prices quoted are based on the sellers standard tolerances of materials. We reserve the right to invoice all merchandise at prices in effect at the time of shipment.

Cancellations - Orders covering special merchandise are not subject to cancellation without our written permission. Purchaser subject to expense incurred by cancellation of special orders.

Limited Warranty - All goods are sold with a limited warranty for one year against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within one year of purchase from Woodford.

Implied warranties - Implied warranties are limited to one year from date of purchase from Woodford.

Taxes and Government Regulations - Sales or manufactures tax imposed under any existing or future statutes shall be added to the price of merchandise effective at the time shipment is made.

Ordering Procedure - Purchase order must include the following: Model number, inlet size & type, handle type, wall thickness or depth of bury and type of finish required where applicable.

Returned Goods - Standard catalog material may be returned. All returns of resalable new and unused product is subject to a 25% restocking charge, plus the cost of reconditioning, not to exceed an additional 25% (50% total). Credit for used or freight damaged material to be determined by factory upon receipt of material.

We will not accept returns for:

1. Any non-defective return under \$25.00 net or product over 18 months old.
2. Special lengths on any product.
3. Obsolete merchandise and product not listed in current price guide.
4. Competitor's product or product abused by installation.
5. Items not reviewed and RGA form signed by local Woodford representative before being sent back for factory approval.

All items claimed defective must be returned prepaid to address shown on back cover:

Model 19 Limited 5 Year Warranty



*All **Model 19** Wall faucets are sold with a limited warranty for five (5) years against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within five (5) years of purchase from Woodford. In addition, Woodford will pay up to \$5,000.00 toward the cost to repair damages incurred as a result of a defective **Model 19** Wall Faucet that was properly installed. This limited warranty does not cover defects caused by: modification, alteration or repair of the product by anyone other than Woodford; physical abuse to, or misuse of, the product or operation thereof in a manner contrary to accompanying instructions.*

Commercial Limited 5 Year Warranty



*All **Commercial** Wall hydrants and Roof hydrants shown in this brochure are sold with a limited warranty for five years against defects in material and workmanship. We will replace or issue credit (at our option) for defective goods that are returned for inspection and found to be defective within five years of purchase from Woodford.*

Patented and Patents Pending: See woodfordmfg.com for details
For Individual Spec Sheets, Installation and Troubleshooting Instructions
Go to **woodfordmfg.com** or Call Customer Service 1-800-621-6032