VICKERS VILLAGE

ROSWELL, Georgia

Project #10287

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PLUMBING SUBMITTALS

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Dimensions, Weights, and Short Lengths

AMERICAN Flanged Pipe Companion Flanges for Use On Ductile Iron Pipe ANSI/AWWA C115/A21.15

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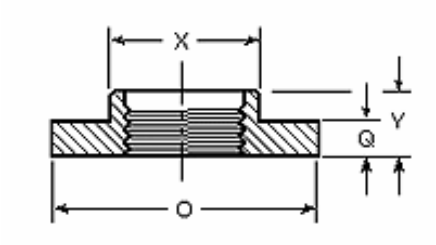

Ductile Companion Flange

ADIP Table No. 8-4

Size in.	Pipe O.D. in.	AWWA C115			
		O Dia. Of Flange in.	Q Thickness in.	X Dia. Hub in.	Y Length Incl. Hub in.
4	4.8	9	0.94	6.00	1.88
6	6.9	11	1.00	7.78	2.06
8	9.05	13.5	1.12	10.01	2.25
10	11.1	16	1.19	12.31	2.44
12	13.2	19	1.25	14.75	2.68
14	15.3	21	1.38	16.59	2.87
16	17.4	23.5	1.44	18.94	3.06
18	19.5	25	1.56	20.38	3.31
20	21.6	27.5	1.69	22.62	3.50
24	25.8	32	1.88	26.91	3.93
30	32	38.75	2.12	33.31	4.50
36	38.3	46	2.38	39.62	5.12
42	44.5	53	2.62	46.00	5.75
48	50.8	59.5	2.75	52.31	6.38
54	57.56	66.25	3.00	58.75	7.00
60	61.61	73	3.12	63.76	7.00
64	65.67	80	3.38	70.32	7.00

Notes:
Hub diameter and length are AMERICAN Design. See Table No. 8-3 for data on bolt holes and bolt circle.
When ordering Companion Flanges for Ductile Iron Pipe specify the outside diameter of the pipe.
"X" and "Y" dimensions may vary depending on foundry equipment.

> Companion Flange for Use On Ductile Iron Pipe ANSI/AWWA C115/A21.15
> Flange and Flange
> Flange and Plain End
> Flange and MJ
> Flange and Fastite
> Companion Flanges for Use On Ductile Iron Pipe Faced and Drilled Per ANSI B16.1 Class 250
> Flanges Faced and Drilled ANSI B16.1 Class 250

AMERICAN Flanged Pipe
AMERICAN Ductile Iron Flanged Pipe
ANSI/AWWA C115/A21.15

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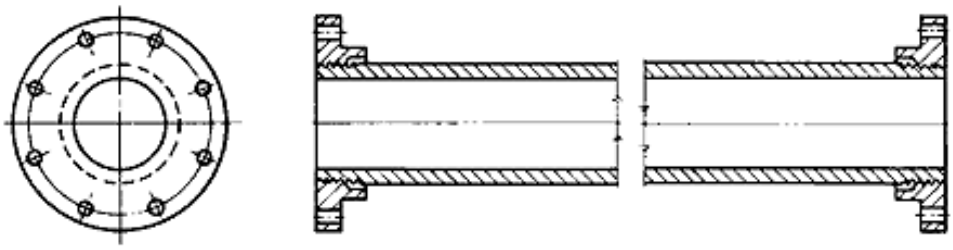

Flange and Flange

For more information, see the Short Body Flange Static Castings page.

ADIP Table No. 8-5

Size in.	Pressure* Rating psi	Nominal Wall Thickness in.	Pipe O.D. in.	Minimum Length** in.	Maximum Length** ft.-in.	Weight in Pounds		
						Per Foot Plain End	One Flange	Per Maximum Length with Two Flanges
4	350+	0.32	4.8	4 1/2	17'-6"	13.8	13	266
6	350+	0.34	6.9	4 1/2	20'-0"	21.4	17	460
8	350+	0.36	9.05	4 1/2	20'-0"	30.1	27	655
10	350+	0.38	11.1	6	20'-0"	39.2	38	860
12	350+	0.4	13.2	6	20'-0"	49.2	59	1100
14	350+	0.42	15.3	7	20'-0"	60.1	70	1340
16	350+	0.43	17.4	7	20'-0"	70.1	90	1580
18	350+	0.44	19.5	7	20'-0"	80.6	88	1790
20	350+	0.45	21.6	7	20'-0"	91.5	112	2060
24	350+	0.47	25.8	8	20'-0"	114.4	155	2600
30	250	0.51	32	12	19'-6"	154.4	245	3500
36	250	0.58	38.3	14	19'-6"	210.3	354	4810
42	250	0.65	44.5	18	19'-6"	274	512	6370
48	250	0.72	50.8	18	19'-6"	346.6	632	8020
54	250	0.81	57.56	20	19'-6"	441.9	716	10050
60	250	0.83	61.61	20	19'-6"	485	1113	11680
64	250	0.87	65.67	21	19'-0"	542	1824	13950

Notes:
*Pressure rating designated is maximum water working pressure. Contact AMERICAN on higher pressure requirements.
**Check AMERICAN if longer or shorter lengths required.
+This rating is only applicable to flanged joints utilizing AMERICAN Toruseal® gaskets as per

Flanged Pipe description.

Pipe is available with greater wall thickness than shown. Thicknesses above correspond to Special Class 53 for 4"-54" diameters, and Pressure Class 350 for 60" and 64" diameters as shown in AWWA C151.
Any length between minimum and maximum shown can be furnished.
Tolerance on length is ±0.12 in.
Standard drilling is with bolt holes aligned, straddling a common centerline. Special drilling can be furnished on request.
Where required, specify flanges "Tap for Studs."
The bolt circle and bolt holes of AWWA C115 flanges, AWWA C110 flanges and ANSI B16.1 Class 125 flanges are identical, and these flanges can be joined. AWWA C115 and AWWA C110 flanges are rated for 250-350 psi water working pressure depending on size and specified gasketing system.

AMERICAN Flanged Pipe
AMERICAN Ductile Iron Flanged Pipe
ANSI/AWWA C115/A21.15

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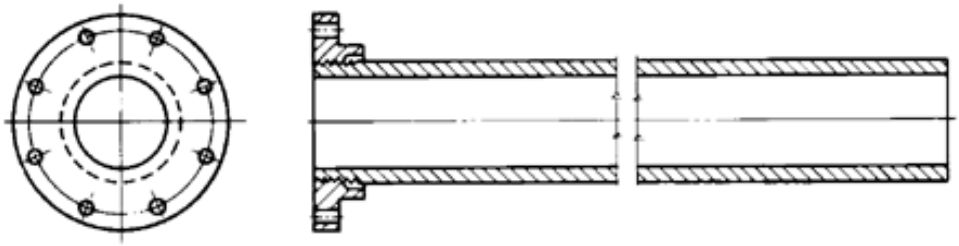

Flange and Plain End

ADIP Table No. 8-6

Size in.	Pressure* Rating psi	Nominal Wall Thickness in.	Pipe O.D. in.	Minimum Length** in.	Maximum Length** ft.-in.	Weight in Pounds		
						Per Foot Plain End	One Flange	Per Maximum Length with One Flange
4	350+	0.32	4.8	1 3/4	17'-6"	13.8	13	251
6	350+	0.34	6.9	2	20'-0"	21.4	17	445
8	350+	0.36	9.05	2 1/2	20'-0"	30.1	27	630
10	350+	0.38	11.1	2 1/2	20'-0"	39.2	38	820
12	350+	0.4	13.2	2 1/2	20'-0"	49.2	59	1045
14	350+	0.42	15.3	2 3/4	20'-0"	60.1	70	1270
16	350+	0.43	17.4	3	20'-0"	70.1	90	1490
18	350+	0.44	19.5	3	20'-0"	80.6	88	1700
20	350+	0.45	21.6	3	20'-0"	91.5	112	1950
24	350+	0.47	25.8	3 1/4	20'-0"	114.4	155	2450
30	250	0.51	32	8	19'-6"	154.4	245	3260
36	250	0.58	38.3	10	19'-6"	210.3	354	4450
42	250	0.65	44.5	10	19'-6"	274	512	5850

48	250	0.72	50.8	10	19'-6"	346.6	632	7390
54	250	0.81	57.56	12	19'-6"	441.9	716	9330
60	250	0.83	61.61	12	19'-6"	485	1113	10570
64	250	0.87	65.67	12	19'-0"	542	1824	12120

Notes:
*Pressure rating designated is maximum water working pressure. Contact AMERICAN on higher pressure requirements.
**Check AMERICAN if longer or shorter lengths required. All minimum lengths assume a "no-gauge" plain end (no joint will be made at the plain end).
+This rating is only applicable to flanged joints utilizing AMERICAN Toruseal® gaskets as per Flanged Pipe description.
Plain ends to be assembled in a joint (MJ, Fastite, coupling, etc.) must be ordered gauged for the specific joint.
Pipe is available with greater wall thickness than shown. Thicknesses above correspond to Special Class 53 for 4"-54" diameters, and Pressure Class 350 for 60" and 64" diameters as shown in AWWA C151.
Any length between minimum and maximum shown can be furnished.
Tolerance on length is ±0.25 in.
Where required, specify flanges "Tap for Studs."
The bolt circle and bolt holes of AWWA C115 flanges, AWWA C110 flanges and ANSI B16.1 Class 125 flanges are identical, and these flanges can be joined. AWWA C115 and AWWA C110 flanges are rated for 250-350 psi water working pressure depending on size and specified gasketing system.

AMERICAN Flanged Pipe
AMERICAN Ductile Iron Flanged Pipe
ANSI/AWWA C115/A21.15 and AMERICAN Standard

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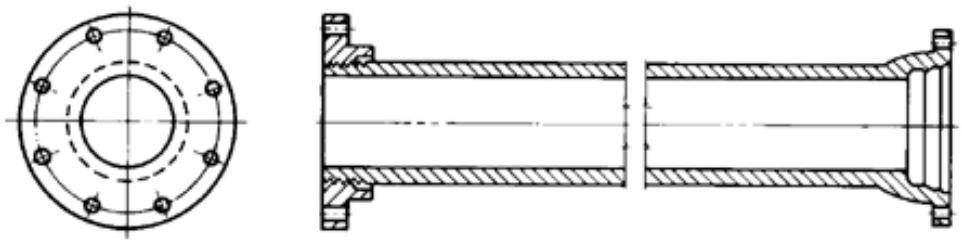

Flange and MJ

ADIP Table No. 8-7

Size in.	Pressure Rating psi*	Nominal Wall Thickness in.	Pipe O. D. in.	Minimum Laying Length** in.	Maximum Laying Length** ft.-in.	Weight in Pounds			
						Per Foot Plain End	Flange	MJ Bell	Maximum Length
4	350+	0.32	4.8	3 1/2	17'-6"	13.8	13	14	267
6	350+	0.34	6.9	3 1/2	19'-6"	21.4	17	19	455
8	350+	0.36	9.05	3 1/2	19'-6"	30.1	27	25	640
10	350+	0.38	11.1	6	19'-6"	39.2	38	31	835
12	350+	0.4	13.2	6	19'-6"	49.2	59	38	1055

Notes:
*Pressure rating designated is maximum water working pressure. Contact AMERICAN on higher pressure requirements.
**Check AMERICAN if longer or shorter lengths required.
+This rating is only applicable to flanged joints utilizing AMERICAN Toruseal® gaskets as per Flanged Pipe description.
14"-64"pipe is not available with integrally cast MJ Bell. See Table 8-8 (below) for Flange and Fastite Pipe.
Pipe is available with greater wall thickness than shown. Thicknesses above correspond to Special Class 53.
Any length between minimum and maximum shown can be furnished.
Tolerance on length is ±0.25 in.
If specified, bolt holes both ends can be drilled, straddling a common centerline.
Where required, specify flanges or MJ Bells "Tap for Studs."
The bolt circle and bolt holes of AWWA C115 flanges, AWWA C110 flanges and ANSI B16.1 Class 125 flanges are identical, and these flanges can be joined. AWWA C115 and AWWA C110 flanges are rated for 250-350 psi water working pressure depending on size and specified gasketing system.

AMERICAN Flanged Pipe
AMERICAN Ductile Iron Flanged Pipe
ANSI/AWWA C115/A21.15 and AMERICAN Standard

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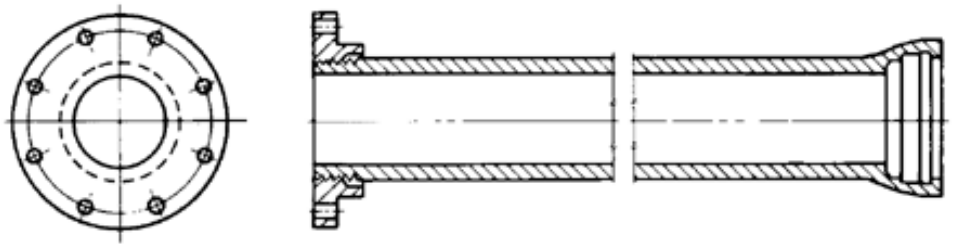

Flange and Fastite

ADIP Table No. 8-8

Size in.	Pressure Rating psi*	Nominal Wall Thickness in.	Pipe O. D. in.	Minimum Laying Length** in.	Maximum Laying Length** ft.-in.	Weight in Pounds			
						Per Foot Plain End	Flange	Fastite Bell	Maximum Length
4	350+	0.32	4.8	2 1/2	17'-6"	13.8	13	10	262
6	350+	0.34	6.9	2 1/2	19'-6"	21.4	17	15	450
8	350+	0.36	9.05	3	19'-6"	30.1	27	21	635
10	350+	0.38	11.1	2	19'-6"	39.2	38	27	830
12	350+	0.4	13.2	2	19'-6"	49.2	59	32	1050
14	350+	0.42	15.3	2 3/4	19'-6"	60.1	70	57	1300
16	350+	0.43	17.4	2 3/4	19'-6"	70.1	90	64	1520
18	350+	0.44	19.5	3	19'-6"	80.6	88	73	1735
20	350+	0.45	21.6	3	19'-6"	91.5	112	81	1980
24	350+	0.47	25.8	2 3/4	19'-6"	114.4	155	96	2480

30	250	0.51	32	12	19'-6"	154.4	245	164	3420
36	250	0.58	38.3	14	19'-6"	210.3	354	214	4670
42	250	0.65	44.5	14	19'-6"	274	512	289	6140
48	250	0.72	50.8	16	19'-6"	346.6	632	354	7745
54	250	0.81	57.56	16	19'-6"	441.9	716	439	9770
60	250	0.83	61.61	16	19'-6"	485	1113	819	11390
64	250	0.87	65.67	16	19'-6"	542	1824	932	13320

Notes:
*Pressure rating designated is maximum water working pressure. Contact AMERICAN on higher pressure requirements.
**Check AMERICAN if longer or shorter lengths required.
+This rating is only applicable to flanged joints utilizing AMERICAN Toruseal® gaskets as per Flanged Pipe description.
Pipe is available with greater wall thickness than shown. Thicknesses above correspond to Special Class 53 for 4"-54" diameters, and Pressure Class 350 for 60" and 64" diameters as shown in AWWA C151.
Any length between minimum and maximum shown can be furnished.
Tolerance on length is ±0.25 in.
Where required, specify flanges "Tap for Studs."
The bolt circle and bolt holes of AWWA C115 flanges, AWWA C110 flanges and ANSI B16.1 Class 125 flanges are identical, and these flanges can be joined. AWWA C115 and AWWA C110 flanges are rated for 250-350 psi water working pressure depending on size and specified gasketing system.

AMERICAN Flanged Pipe Companion Flanges for Use On Ductile Iron Pipe Faced and Drilled Per ANSI B16.1 Class 250

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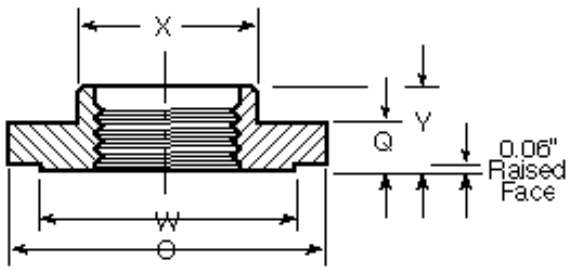

ADIP Table No. 8-12

Size in.	Pipe O.D. in.	Flanges Faced and Drilled Per ANSI B16.1 Class 250				
		O Dia. of Flange in.	Q Thickness in.	W Dia. Of Raised Face in.	X Dia. of Hub in.	Y Length incl. Hub in.
4	4.8	10	1.25	6.94	6	2.12
6	6.9	12.5	1.44	9.69	8.5	2.31
8	9.05	15	1.62	11.94	10.78	2.5
10	11.1	17.5	1.88	14.06	12.81	2.68
12	13.2	20.5	2	16.44	15.13	2.93

14	15.3	23	2.12	18.94	17.5	3.12
16	17.4	25.5	2.25	21.06	19.56	3.31
18	19.5	28	2.38	23.31	21.75	3.56
20	21.6	30.5	2.5	25.56	24	3.75
24	25.8	36	2.75	30.31	28.5	4.18
30	32	43	3	37.19	35	4.75
36	38.3	50	3.38	43.69	41.25	5.37
42	44.5	57	3.69	50.44	48.5	6
48	50.8	65	4	58.44	56.55	6.63

Notes:
Flanges faced and drilled per ANSI B16.1 Class 250 have a 0.06" raised face; they do not match AWWA C110 or C115 flanges.
Flanges may be furnished with a flat face upon special request.
Hub diameter and length are AMERICAN Design. See Table No. 8-11 (short lengths) for data on bolt holes and bolt circle.
When ordering Companion Flanges for Ductile Iron Pipe specify the outside diameter of the pipe.

AMERICAN Flanged Pipe
AMERICAN Ductile Iron Flanged Pipe
Flanges Faced and Drilled
ANSI/AWWA C115/A21.15 & ANSI B16.1 Class 250

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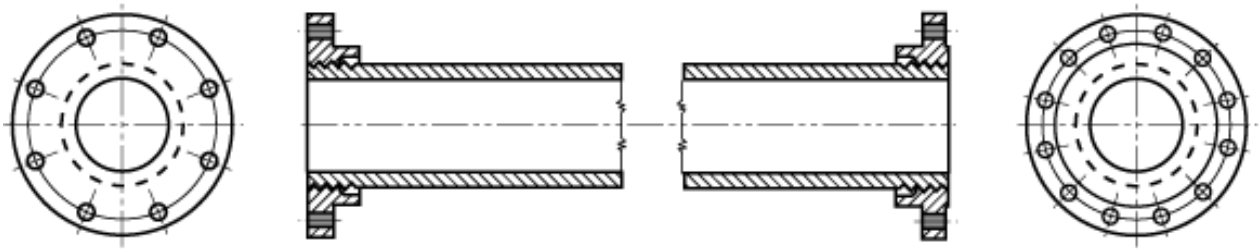


Flange and Flange
C115 to B16.1 Class 250 Transition Pipe

ADIP Table No. 8-13

Size in.	Pressure Rating** psi	Nominal Wall Thickness in.	Pipe O.D. in.	Minimum Laying Length in.*	Maximum Laying Length ft.-in.	Weight in Pounds			
						Per Foot Plain End	C115 Flange	B16.1 250 Flange	Min. Length Total Wt.
4	250	0.32	4.8	6	17'-6"	13.8	13	20	40
6	250	0.34	6.9	6	20'-0"	21.4	17	32	60
8	250	0.36	9.05	6	20'-0"	30.1	27	49	91
10	250	0.38	11.1	8	20'-0"	39.2	38	68	132
12	250	0.4	13.2	8	20'-0"	49.2	59	99	191
14	250	0.42	15.3	10	20'-0"	60.1	70	127	247

16	250	0.43	17.4	10	20'-0"	70.1	90	157	305
18	250	0.44	19.5	10	20'-0"	80.6	88	194	349
20	250	0.45	21.6	10	20'-0"	91.5	112	239	427
24	250	0.47	25.8	10	20'-0"	114.4	155	358	608
30	250	0.51	32	12	19'-6"	154.4	245	508	907
36	250	0.58	38.3	14	19'-6"	210.3	354	697	1296
42	250	0.65	44.5	18	19'-6"	274	512	1010	1933
48	250	0.72	50.8	18	19'-6"	346.6	632	1545	2697

Notes:
*The minimum lengths shown may not allow clearance in all cases for installation of bolts between flanges requiring bolt clearance from the other direction. Very short (shorter than the minimums as per above table) fabricated steel adapters are also available for connecting AWWA C115 flanged pipe or AWWA C110 fittings to ANSI B16.1 Class 250 flanged items. Contact AMERICAN for details.
Pressure rating designated is maximum water working pressure.
Flanges faced and drilled per ANSI B16.1 Class 250 have 0.06" raised face; they do not match AWWA C110 or C115 flanges. Flanges may be furnished with a flat face upon special request.
Pipe is available with greater wall thickness than shown.
Tolerance on length for Flange and Flange pipe is ±0.12 in.
Standard drilling is with bolt holes aligned, straddling a common centerline. Class 250 is special drilling and all connecting equipment must have flanges faced and drilled per ANSI B16.1 Class 250.
Where required, specify flanges "Tap for Studs."

AMERICAN DUCTILE IRON PIPE

Domestic and Fire Service stub Inn's only

AMERICAN Ductile Iron Pipe provides ...

High Impact Resistance

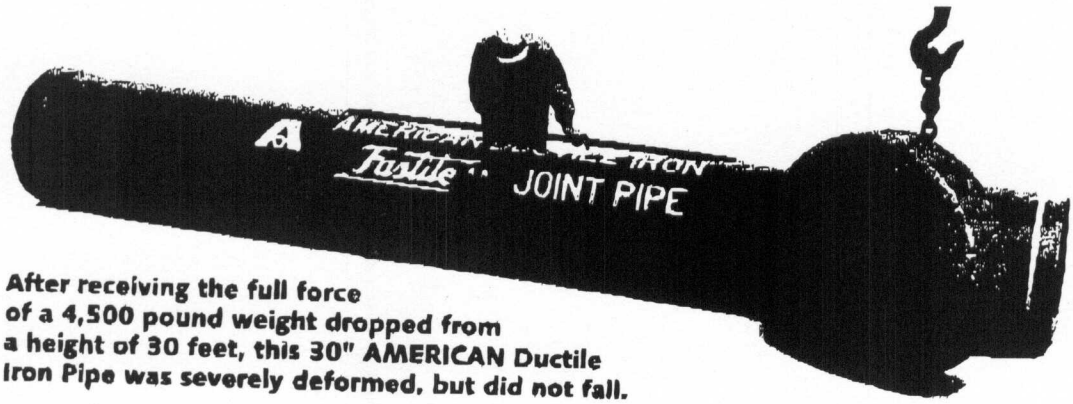
AMERICAN Ductile Iron Pipe has the high impact strength and toughness to withstand shocks usually encountered in transportation, handling and installation. These characteristics also provide added security against stresses induced by water hammer, highway traffic and unexpected adverse forces. Excellent impact resistance is confirmed by tests made at regular intervals in accordance with ANSI/AWWA C151/A21.51 Standard.

Superior Strength

AMERICAN utilizes the ideal combination of chemical analysis and heat treatment to produce a pipe with the most desirable combination of high strength and excellent ductility ... a pipe that will withstand high internal pressure and deep cover ... a pipe providing added reliability and additional factors of safety for normal and for unusual conditions such as expansive soils and earth movement due to freezing and thawing.

Assured, Proven Long Life

Historical records document the proven service for centuries of gray cast iron pipe. Extensive laboratory and field tests conducted by many authorities under various installation conditions prove the superiority of ductile iron for soil corrosion resistance over gray cast iron. The outstanding resistance of Ductile Iron Pipe to soil corrosion has been verified by more than four decades of service.



After receiving the full force of a 4,500 pound weight dropped from a height of 30 feet, this 30" AMERICAN Ductile Iron Pipe was severely deformed, but did not fall.

Design of AMERICAN Ductile Iron Pipe

The principal standards covering ductile iron pipe are ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51. These and other standards are referenced throughout this Section either by the full ANSI/AWWA designation or by only the AWWA numbering, such as AWWA C150.

AMERICAN Ductile Iron Pipe is designed for combinations of internal pressure, water hammer, earth load and truck load. Thicknesses are determined in accordance with ANSI/AWWA C150/A21.50, employing design methods applicable to flexible pipe. Utilizing the principal mechanical properties of high tensile strength, ductility and impact resistance, the design of ductile iron pipe is conservative in all respects and embodies high factors of safety. For qualification of pipe these properties are confirmed during production by frequent tensile and impact tests of specimens from the wall of pipe.

AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Fastite Joint and Mechanical Joint Pipe
ANSI/AWWA C151/A21.51
Weights for Special Classes

Table No. 3-13

Size In.	Thickness Class	Wall Thickness In.	Weight in Pounds				
			Per Foot Plain End	Fastite Joint		Mechanical Joint	
				Per Foot inc. Bell	Per 20' Nominal Length	Per Foot inc. Bell	Per 20' Nominal Length
4	51	.26	11.3	11.8	235	12.0	240
	52	.29	12.6	13.1	265	13.3	270
	53	.32	13.8	14.3	285	14.5	290
	54	.35	15.0	15.5	310	15.7	315
	55	.38	16.1	16.6	335	16.8	340
	56	.41	17.3	17.8	355	18.0	365
6	50	.25	16.0	16.7	335	16.9	340
	51	.28	17.8	18.5	370	18.8	380
	52	.31	19.6	20.3	410	20.5	415
	53	.34	21.4	22.1	445	22.3	450
	54	.37	23.2	23.9	480	24.1	485
	55	.40	25.0	25.7	515	26.0	525
	56	.43	26.7	27.4	550	27.6	555
8	50	.27	22.8	23.8	480	24.0	485
	51	.30	25.2	26.2	525	26.5	535
	52	.33	27.7	28.7	575	28.9	585
	53	.36	30.1	31.1	625	31.3	630
	54	.39	32.5	33.5	675	33.7	680
	55	.42	34.8	35.8	720	36.0	725
	56	.45	37.2	38.3	770	38.4	775
10	50	.29	30.1	31.4	630	31.7	640
	51	.32	33.2	34.5	695	34.7	700
	52	.35	36.2	37.5	755	37.7	760
	53	.38	39.2	40.5	815	40.7	820
	54	.41	42.1	43.5	875	43.6	880
	55	.44	45.1	46.5	935	46.6	940
	56	.47	48.0	49.3	990	49.5	1000
12	50	.31	38.4	40.0	805	40.2	810
	51	.34	42.0	43.6	875	43.9	885
	52	.37	45.6	47.2	950	47.5	960
	53	.40	49.2	50.8	1020	51.1	1030
	54	.43	52.8	54.3	1090	54.7	1105
	55	.46	56.3	57.9	1165	58.2	1175
	56	.49	59.9	61.5	1235	61.8	1245
14	50	.33	47.5	50.3	1010	50.4	1015
	51	.36	51.7	54.6	1095	54.6	1100
	52	.39	55.9	58.7	1175	58.8	1185
	53	.42	60.1	62.9	1260	63.0	1270
	54	.45	64.2	67.0	1345	67.1	1350
	55	.48	68.4	71.3	1430	71.3	1435
	56	.51	72.5	75.3	1510	75.4	1515
16	50	.34	55.8	59.0	1180	59.1	1190
	51	.37	60.6	63.8	1280	63.9	1285
	52	.40	65.4	68.6	1375	68.7	1385
	53	.43	70.1	73.3	1470	73.5	1480
	54	.46	74.9	78.1	1565	78.2	1575
	55	.49	79.7	82.9	1660	83.0	1670
	56	.52	84.4	87.6	1755	87.7	1765
18	50	.35	64.4	68.0	1365	68.3	1380
	51	.38	69.8	73.4	1470	73.7	1490
	52	.41	75.2	78.8	1580	79.1	1600
	53	.44	80.6	84.2	1690	84.5	1710
	54	.47	86.0	89.6	1795	89.9	1815
	55	.50	91.3	95.0	1905	95.2	1925
	56	.53	96.7	100.3	2010	100.6	2035

AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Fastite Joint and Mechanical Joint Pipe
ANSI/AWWA C151/A21.51
Weights for Special Classes

Table No. 3-13—Continued

Size in.	Thickness Class	Wall Thickness in.	Weight in Pounds				
			Per Foot Plain End	Fastite Joint		Mechanical Joint	
				Per Foot inc. Bell	Per 20' Nominal Length	Per Foot inc. Bell	Per 20' Nominal Length
20	50	.36	73.5	77.5	1555	78.1	1580
	51	.39	79.5	83.5	1675	84.1	1700
	52	.42	85.5	89.5	1795	90.1	1820
	53	.45	91.5	95.5	1915	96.1	1940
	54	.48	97.5	101.5	2035	102.1	2065
	55	.51	103.4	107.5	2155	108.0	2185
	56	.54	109.3	113.3	2270	113.9	2300
24	50	.38	92.9	97.7	1960	98.9	2000
	51	.41	100.1	104.9	2100	106.1	2145
	52	.44	107.3	112.1	2245	113.3	2290
	53	.47	114.4	119.2	2390	120.4	2435
	54	.50	121.6	126.4	2535	127.6	2580
	55	.53	128.8	133.5	2675	134.8	2725
	56	.56	135.9	140.7	2820	141.9	2870
30	50	.39	118.5	126.7	2540	-	-
	51	.43	130.5	138.7	2780	-	-
	52	.47	142.5	150.7	3020	-	-
	53	.51	154.4	162.6	3260	-	-
	54	.55	166.3	174.5	3495	-	-
	55	.59	178.2	186.4	3735	-	-
	56	.63	190.0	198.2	3970	-	-
36	50	.43	156.5	167.2	3350	-	-
	51	.48	174.5	185.2	3710	-	-
	52	.53	192.4	203.1	4070	-	-
	53	.58	210.3	221.0	4430	-	-
	54	.63	228.1	238.8	4785	-	-
	55	.68	245.9	256.5	5140	-	-
	56	.73	263.7	274.4	5500	-	-
42	50	.47	198.9	213.3	4265	-	-
	51	.53	224.0	238.4	4770	-	-
	52	.59	249.1	263.5	5270	-	-
	53	.65	274.0	288.5	5770	-	-
	54	.71	298.9	313.3	6265	-	-
	55	.77	323.7	338.2	6765	-	-
	56	.83	348.4	362.8	7255	-	-
48	50	.51	246.6	264.3	5285	-	-
	51	.58	280.0	297.7	5955	-	-
	52	.65	313.4	331.1	6620	-	-
	53	.72	346.6	364.3	7285	-	-
	54	.79	379.8	397.5	7950	-	-
	55	.86	412.9	430.6	8610	-	-
	56	.93	445.9	463.6	9270	-	-
54	50	.57	312.3	334.3	6685	-	-
	51	.65	355.6	377.5	7550	-	-
	52	.73	398.8	420.8	8415	-	-
	53	.81	441.9	463.8	9275	-	-
	54	.89	484.9	506.8	10135	-	-
	55	.97	527.7	549.7	10995	-	-
	56	1.06	570.4	592.3	11845	-	-

60" and 64" sizes are not available in Special Classes.

RECOMMENDED PRODUCT SPECIFICATION

CHARLOTTE PIPE AND FOUNDRY COMPANY

Suggested Specification

System: PVC Schedule 40 Solid Wall Pipe and PVC DWV Fitting System

Scope: This specification covers PVC Schedule 40 solid wall pipe and PVC DWV fittings used in sanitary drain, waste, and vent (DWV), sewer, and storm drainage applications. This system is intended for use in non-pressure applications where the operating temperature will not exceed 140°F.

Specification: Pipe and fittings shall be manufactured from virgin rigid PVC (polyvinyl chloride) vinyl compounds with a Cell Class of 12454-B as identified in ASTM D 1784.

PVC Schedule 40 pipe shall be Iron Pipe Size (IPS) conforming to ASTM D 1785 and ASTM D 2665. PVC DWV fittings shall conform to ASTM D 2665. Pipe and fittings shall be manufactured as a system and be the product of one manufacturer. All pipe and fittings shall be manufactured in the United States. All systems shall utilize a separate waste and vent system. Pipe and fittings shall conform to National Sanitation Foundation Standard 14.

Installation shall comply with the latest installation instructions published by Charlotte Pipe and Foundry and shall conform to all local plumbing, building, and fire code requirements. Solvent cement joints shall be made in a two step process with primer manufactured for thermoplastic piping systems and solvent cement conforming to ASTM D 2564. The system shall be protected from chemical agents, fire stopping materials, thread sealant, plasticized vinyl products, or other aggressive chemical agents not compatible with PVC compounds. Systems shall be hydrostatically tested after installation. Testing with compressed air or gas is not recommended.

Referenced Standards:

ASTM D 1784	Rigid Vinyl Compounds
ASTM D 1785	PVC Plastic Pipe, Schedule 40
ASTM D 2665	PVC Drain, Waste, and Vent Pipe & Fittings
ASTM D 2564	Solvent Cements for PVC Pipe and Fittings
NSF Standard 14	Plastic Piping Components and Related Materials

Note: Latest revision of all standards apply.

Domestic Water Pipe

2 1/2" and larger

CORZAN®

PIPING SYSTEMS

PRODUCT SPECIFICATION

Corzan® CPVC pipe and fittings

SCOPE:

This specification covers the manufacturing requirements for CPVC Schedule 80 Iron Pipe Size (IPS) pipe and fittings. Both the pipe and fittings are manufactured in North America and meet or exceed the requirements set forth by the American Society for Testing Materials (ASTM) and ANSI/NSF Standards 14 and 61.

CPVC Materials:

Corzan® CPVC pipe and fittings are extruded/molded from CPVC compounds manufactured by Noveon. The pipe compound meets cell class 24448 and the fitting compound meets cell class 23447 as defined by ASTM D1784. Both the pipe and the fitting compounds are certified by NSF International for use with potable water.

DIMENSIONS AND PROPERTIES:

Dimensions, tolerances and physical properties meet or exceed the requirements of ASTM Standards F441 for pipe, F439 for socket fittings and ASTM F437 or F439 for threaded fittings. Threaded fittings have taper pipe threads in accordance with ASTM F1498. Unions and flanges meet or exceed the requirements of ASTM F1970.

SOLVENT CEMENT:

All socket type joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493. The standard practice for safe handling of solvent cements shall be in accordance with ASTM F402. Solvent cement shall be listed by NSF International for use with potable water, and approved by the Corzan® pipe and fittings manufacturers.

FLAME AND SMOKE REQUIREMETNS:

Water filled Corzan® pipe and fittings (1/2" through 6") tested in general accordance with UL 723/ASTM E 84 (NFPA 255 and UBC 8-1) meets the 25/50 flame and smoke requirement and shall be permitted to be installed in return air plenums. Test reports from a third party testing laboratory shall be obtained and made available upon request.

MARKING:

The marking on the CPVC pipe meet the requirements of ASTM F441 and the marking on the fittings meets the requirements of ASTM Standards F437, F438 or F1970. The pipe and fittings markings state the pipe/fitting manufacture's name or trademark, the material designation, the size, the NSF mark for potable water and the ASTM designation.

RECOMMENDED PRODUCT SPECIFICATION

CHARLOTTE PIPE AND FOUNDRY COMPANY

Suggested Specification

System: FlowGuard Gold® CPVC Copper Tube Size (CTS) Hot and Cold Domestic Water Distribution System

Scope: This specification covers Copper Tube Size (CTS) CPVC manufactured to standard dimensional ratio (SDR) 11 for hot and cold domestic water distribution. This system is intended for pressure applications where the operating temperature will not exceed 180°F at 100 psi.

Specification: Pipe and fittings shall be manufactured from virgin rigid CPVC (chlorinated polyvinyl chloride) vinyl compounds with a Cell Class of 23447-B as identified in ASTM D 1784.

FlowGuard Gold CTS CPVC pipe and fittings shall conform to ASTM D 2846. Pipe and fittings shall be manufactured as a system and be the product of one manufacturer. All pipe and fittings shall be manufactured in the United States. Pipe and fittings shall conform to National Sanitation Foundation (NSF) Standard 61.

Installation shall comply with the latest installation instructions published by Charlotte Pipe and Foundry and shall conform to all local plumbing, building, and fire code requirements. Solvent cement joints shall be made in a two step process with primer manufactured for thermoplastic piping systems and solvent cement conforming to ASTM F 493. The system shall be protected from chemical agents, fire stopping materials, thread sealant, plasticized vinyl products, or other aggressive chemical agents not compatible with CPVC compounds. Systems shall be hydrostatically (water) tested after installation. Testing with compressed air or gas is not recommended.

Referenced Standards:

ASTM D 1784	Rigid Vinyl Compounds
ASTM D 2846	CPVC Plastic Hot and Cold Water Distribution System
ASTM F 493	Solvent Cements for CPVC Pipe and Fittings
NSF Standard 61	Drinking Water System Components - Health Effects

Note: Latest revision of all standards apply.

2

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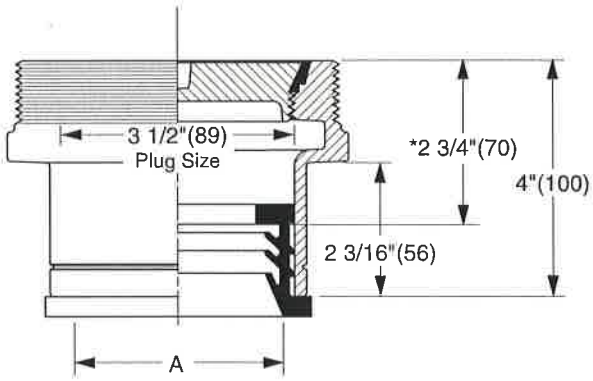
CUSTOMER DRIVEN
MEMBER OF:

LOCATION
C 0
4291

FLOOR CLEANOUTS FOR UNFINISHED FLOORS

CLEANOUT BODIES WITH CLOSURE PLUG

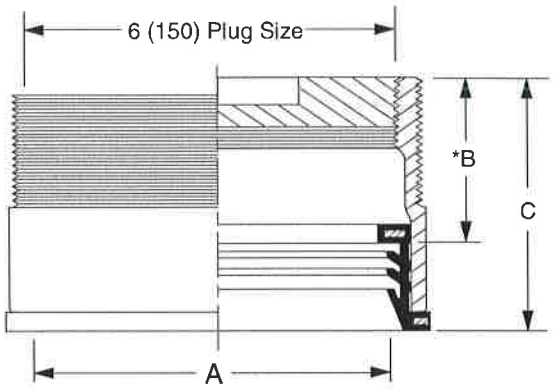
FUNCTION: Used where extension type cleanout is required. Not recommended for installation in floors or areas subjected to traffic unless access cover is provided.



SPEEDI-SET OUTLET ▲

"A" (Pipe Size) = 02(50), 03(75) or 04(100)

* This Dimension to Internal Stop of Speedi-set Gasket.



"A" (Pipe Size) = 06(150) & 08(200)

A Size	B	C
06 (150)	*3 (76)	4 9/16 (117)
08 (200)	*3 1/4 (83)	4 13/16 (121)

SPEEDI-SET OUTLET ▲

- [x] Fig. 4291L.....Gasket Seal - ABS Plug
- [ ] Fig. 4292L.....Gasket Seal - Bronze Plug
- [ ] Fig. 4293L.....Taper Thread - Bronze Plug
- [ ] Fig. 4294L.....Taper Thread - ABS Plug

SPEEDI-SET OUTLET ▲

- [ ] Fig. 4293L.....Taper Thread - Bronze Plug

REGULARLY FURNISHED:
Duco Cast Iron Cleanout with Closure Plug Type as Indicated By Figure Number Selected.

VARIATIONS:
- [ ] Flashing Flange -F
- [ ] Flange with Flashing Clamp -F-C

OPTIONAL MATERIALS:
- [ ] Galvanized Cast Iron -G

NOTE: Dimensions shown in parentheses are in millimeters.

REV.	DATE	DESCRIPTION	BY	CKD. BY
D	5-5-06	Revised Dwg.	RN	CL
C	7-22-03	Revised Dwg.	RN	CL
B	6-25-02	Revised Dwg.	RN	CL
A	04/12/01	Added dimension and note	JJ	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 4291 SERIES

FIGURE NUMBER 4291 SERIES | DRAWN BY: JJ | CHECKED BY: BS | APPROVED BY: | DATE: 02/01/01 | SCALE: NONE | SIZE A | DRAWING NUMBER S4291 | C

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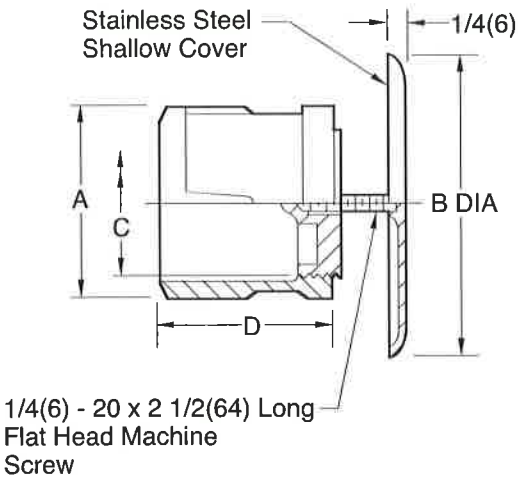
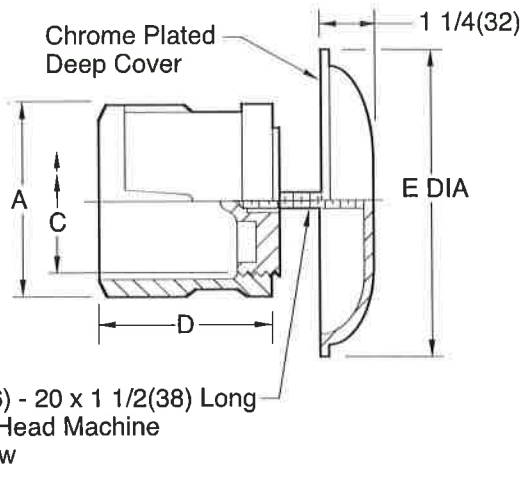
WCO
4422

CAULK FERRULE CLEANOUTS WITH ACCESS COVERS

TAPER THREAD PLUG WITH ROUND COVER

FUNCTION: Used in hub openings in drainage piping where a cleanout is required. Ribbing on outside of ferrule prevents turning of ferrule in the caulking lead. Face-of-wall cover is desirable on finished walls.





WITH COUNTERSUNK PLUG

- ☐ FIG. 4420C . . . . LESS COVER AND SCREW
- ☐ FIG. 4421C . . . . WITH DEEP COVER AND SCREW
- ☑ FIG. 4422C . . . . WITH SHALLOW COVER AND SCREW

	A SIZE	B DIA	C SIZE	D	E DIA
▲	02 (50)	4 1/4 (110)	1 1/2 (38)	3 1/2 (89)	*7 1/4 (185)
▲	03 (80)	5 1/2 (140)	2 1/2 (64)	3 3/4 (95)	*7 1/4 (185)
▲	04 (100)	5 1/2 (140)	3 1/2 (89)	4 1/4 (110)	*7 1/4 (185)
	05 (125)	7 (180)	4 (100)	4 1/4 (110)	*7 1/4 (185)
	06 (150)	9 1/4 (235)	5 (125)	4 1/4 (110)	9 1/4 (235)
	08 (200)	11 1/4 (285)	6 (150)	4 1/2 (115)	11 1/4 (285)

* = Die Formed SS Cover Only.

OPTIONAL MATERIALS: (4420 & 4422)

- ☐ Cast Bronze Ferrule -CB
- ☐ Prime Coated Steel Shallow Cover -PC

▲ Sized for Service Weight and/or NO-HUB

REGULARLY FURNISHED:
Duco Cast Iron Caulk Ferrule with Cast Bronze Taper Thread Plug. Type of Cover as Indicated by FigureNumber Selected.

VARIATIONS:

- ☐ Longer Screw 6"(150) Lg. -LS
- ☐ "T" Handle Plug -TH
  Plug Tapped 1/4"(6) -20 Thread
- ☐ Vandal Proof Screw-U

OPTIONAL MATERIALS: (4421)

- ☐ Cast Bronze Body -BB
- ☐ Nickel Bronze Deep Cover -NB
  9 1/4"(235) & 11 1/4"(285) sizes only
- ☐ Polished Bronze Deep Cover -PB
  9 1/4"(235) & 11 1/4"(285) sizes only

NOTE: Dimensions shown in parentheses are in millimeters.

REV.	DATE	DESCRIPTION	BY	CKD. BY
H	10-7-14	Revised Variations	TBW	BW
G	10-20-98	Revised S.W. and/or N.H	TBW	JCS
F	8-11-97	Chg'd Var. & Opt. Mat.	EMB	BS

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 4420 SERIES

FIGURE NUMBER 4420 SERIES | DRAWN BY: RK | CHECKED BY: BH | APPROVED BY: BH | DATE: 2-16-70 | SCALE: NONE | SIZE A | DRAWING NUMBER S4420 | H

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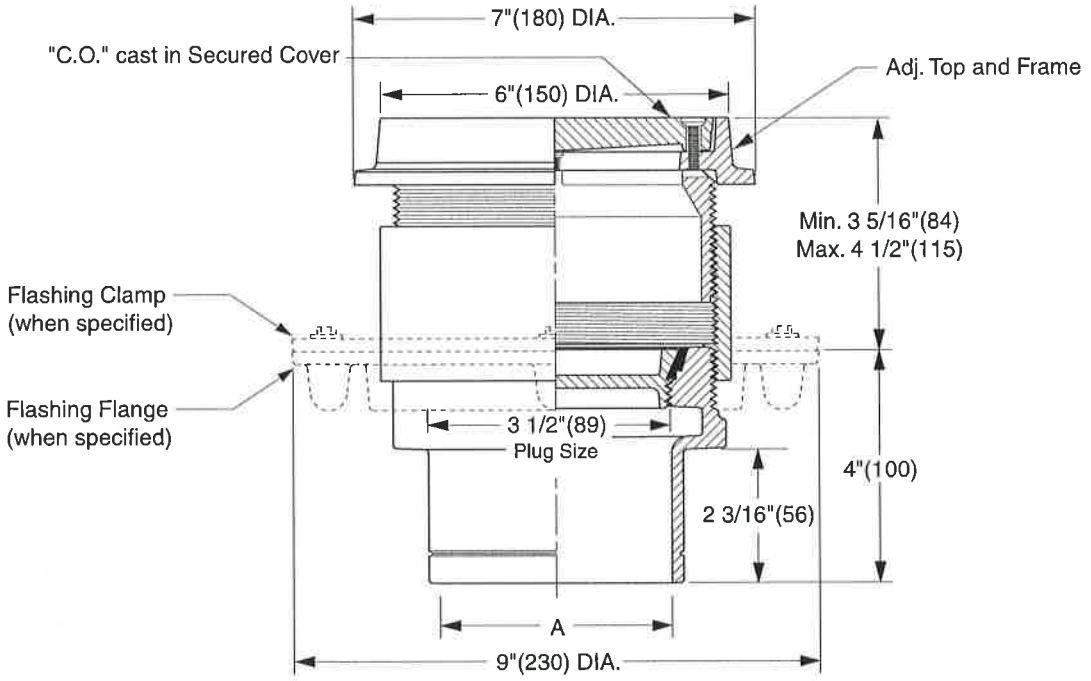
MEMBER OF:

LOCATION: PCo Concr. Floor 4220

FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR®" ADJUSTABLE TOPS FOR UNFINISHED AREAS

ROUND EXTRA HEAVY DUTY CAST IRON TOP

FUNCTION: Used in floors and areas where appearance of cast iron is satisfactory. Will withstand heavy load traffic.



TWIS-TO-FLOOR® ADJUSTMENT

NO-HUB OUTLET

"A" (Pipe Size) = 02(50), 03(75) or 04(100)

- [x] Fig. 4220S.....Gasket Seal - ABS Plug
- [ ] Fig. 4221S.....Gasket Seal - Bronze Plug
- [ ] Fig. 4223S.....Taper Thread - Bronze Plug
- [ ] Fig. 4224S.....Taper Thread - ABS Plug

(Twis-to-Floor® design shown with gasketed plug.)

NOTE: Dimensions shown in parentheses are in millimeters.

REGULARLY FURNISHED:
Duco Cast Iron Cleanout with Round Adjustable Scoriated Secured Cast Iron Top. Closure Plug Type as Indicated By Figure Number Selected.

VARIATIONS:
- [ ] Flashing Flange -F
- [ ] Flange with Flashing Clamp -F-C
- [ ] Vandal Proof Top -U

OPTIONAL MATERIALS:
- [ ] Galvanized Cast Iron -G
- [ ] Ductile Iron Cover -M

REV.	DATE	DESCRIPTION	BY	CKD. BY
P N	05/08/07 12/17/04	Revised Outlet Text Added Width Dimension at Top	JJ JJ	CL CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 4220 SERIES

FIGURE NUMBER 4220 SERIES | DRAWN BY: RK | CHECKED BY: BH | APPROVED BY: JM | DATE: 2-16-70 | SCALE: NONE | SIZE A | DRAWING NUMBER S4220 | P

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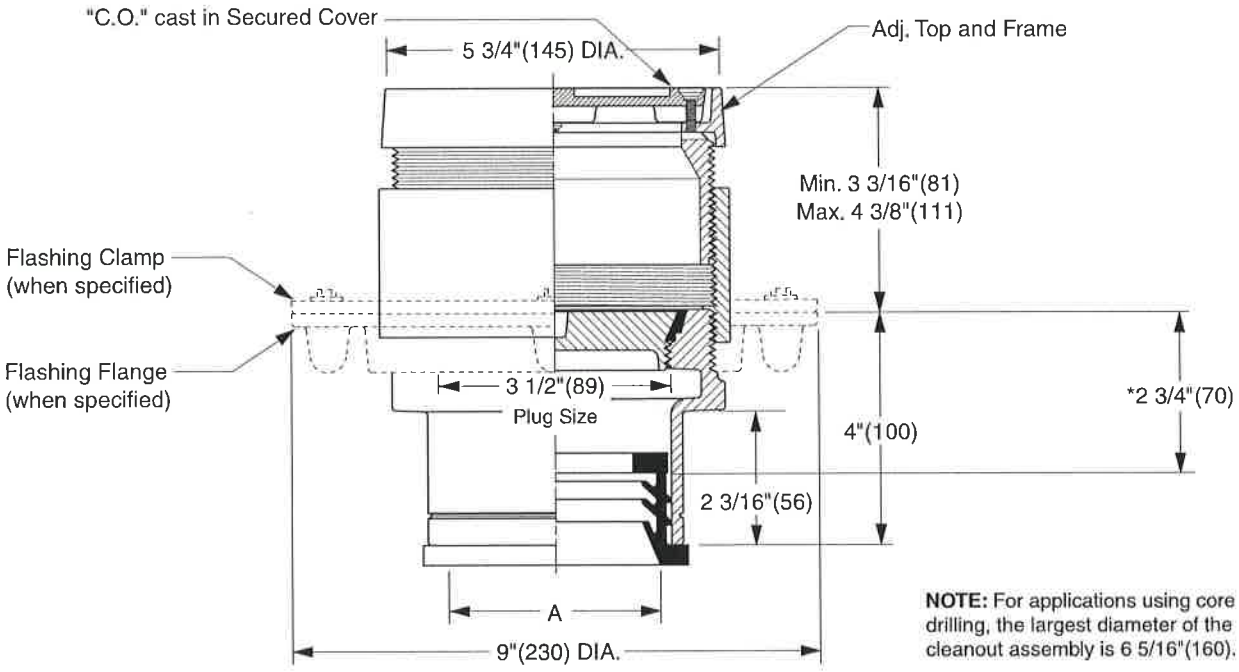
LOCATION
FCO VINYL TILE
4151

TILE FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR®" ADJUSTABLE TOPS

ROUND NICKEL BRONZE TOP WITH TILE RECESS

FUNCTION: For use in floors and areas which are covered with a floor covering such as asphalt or vinyl tile, linoleum, etc., bearing foot and medium load wheeled traffic. The recess receives inlay of floor material, presenting an unobtrusive appearance. Allows for easy floor level adjustment.



TWIS-TO-FLOOR® ADJUSTMENT

SPEEDI-SET OUTLET ▲

"A" (Pipe Size) = 02(50), 03(75) or 04(100)

NOTE: For applications using core drilling, the largest diameter of the cleanout assembly is 6 5/16"(160).

* This Dimension to Internal Stop of Speedi-set Gasket.

- ☐ Fig. 4151L.....Gasket Seal - ABS Plug
- ☐ Fig. 4152L.....Gasket Seal - Bronze Plug
- ☐ Fig. 4153L.....Taper Thread - Bronze Plug
- ☐ Fig. 4154L.....Taper Thread - ABS Plug

(Twis-to-Floor® design shown with gasketed plug.)

NOTE: Dimensions shown in parentheses are in millimeters.

REGULARLY FURNISHED:
Duco Cast Iron Cleanout with Round Adjustable Secured Nickel Bronze Top with 1/8"(3) Tile Recess. Closure Plug Type as Indicated By Figure Number Selected.

VARIATIONS:
- ☐ Flashing Flange -F
- ☐ Flange with Flashing Clamp -F-C
- ☐ Vandal Proof Top -U

OPTIONAL MATERIALS:
- ☐ Galvanized Cast Iron -G
- ☐ Polished Bronze Top -PB

▲ Available in Extra Heavy, Service Weight or NO-HUB.

REV.	DATE	DESCRIPTION	BY	CKD. BY
K	12/17/04	Added Core-Drilling Note	JJ	CL
J	07/29/02	Corrected Clamp & Flange view	JJ	CL
H	04/12/01	Added dimension and note	JJ	CL
G	10/17/00	New design	JJ	BS

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 4151 SERIES

FIGURE NUMBER 4151 SERIES | DRAWN BY: RK | CHECKED BY: BH | APPROVED BY: JM | DATE: 2-16-70 | SCALE: NONE | SIZE A | DRAWING NUMBER S4151 | K

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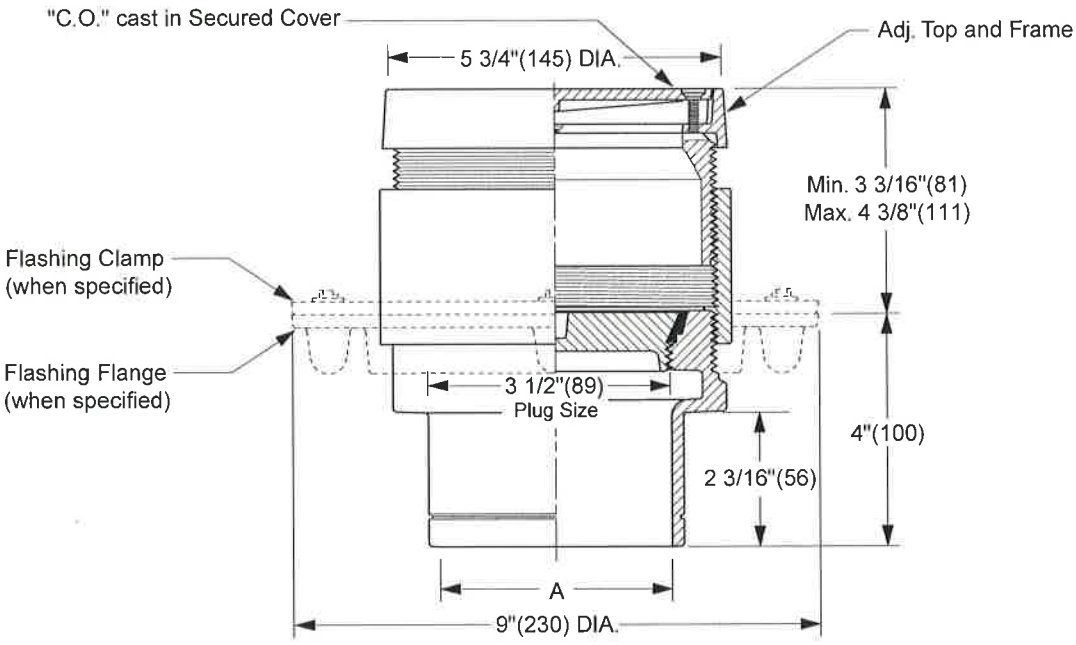
PCO Carlos
4s 20 -Y

FINISHED FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR®" ADJUSTABLE TOPS

ROUND NICKEL BRONZE TOP

FUNCTION: For use in finished floors bearing foot and medium load wheeled traffic. Allows for easy floor level adjustment.



TWIS-TO-FLOOR® ADJUSTMENT

NO-HUB OUTLET

"A" (Pipe Size) = 02(50), 03(75), 04(100) or 05(125)

NOTE: For applications using core drilling, the largest diameter of the cleanout assembly is 6 5/16"(160).

- [x] Fig. 4020S.....Gasket Seal - ABS Plug
- [ ] Fig. 4021S.....Gasket Seal - Bronze Plug
- [ ] Fig. 4023S.....Taper Thread - Bronze Plug
- [ ] Fig. 4024S.....Taper Thread - ABS Plug

(Twis-to-Floor® design shown with gasketed plug.)

REGULARLY FURNISHED:
Duco Cast Iron Cleanout with Round Adjustable Scoriated Secured Nickel Bronze Top. Closure Plug Type as Indicated By Figure Number Selected.

VARIATIONS:
- [ ] Flashing Flange -F
- [ ] Flange with Flashing Clamp -F-C
- [ ] Carpet Clamping Type -X
- [x] Carpet Marker Type -Y
- [ ] Vandal Proof Top -U
- [ ] Wide Flange (DX)

OPTIONAL MATERIALS:
- [ ] Galvanized Cast Iron -G
- [ ] Polished Bronze Top -PB

NOTE: Dimensions shown in parentheses are in millimeters.

REV.	DATE	DESCRIPTION	BY	CKD. BY
N	11-20-09	Revised Variations	RN	BW
M	12/18/08	Addition to Variations	JJ	BW
L	12/17/04	Added Core-Drilling Note	JJ	CL
K	07/26/02	Corrected Clamp & Flange view	JJ	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 4020 SERIES

FIGURE NUMBER 4020 SERIES | DRAWN BY: RK | CHECKED BY: BH | APPROVED BY: JM | DATE: 2-16-70 | SCALE: NONE | SIZE A | DRAWING NUMBER S4020 | N

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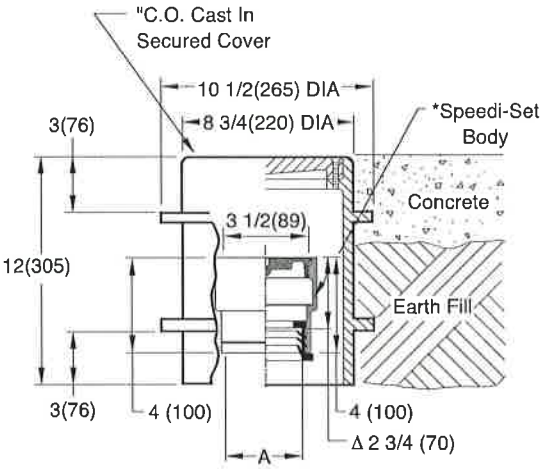
4261-U

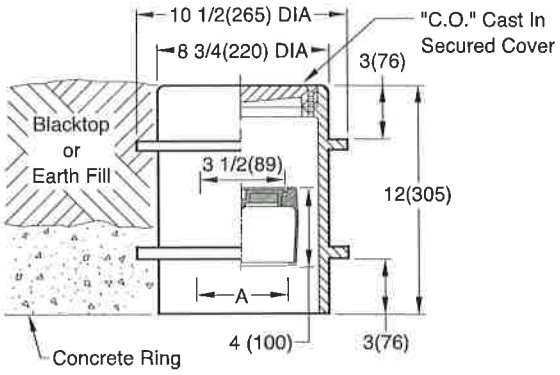
FLOOR CLEANOUTS FOR UNFINISHED AREAS

ROUND FLANGED HOUSING WITH HEAVY DUTY CAST IRON COVER

FUNCTION: Used in outside and inside areas. High flange permits use in areas surfaced with concrete or other poured materials. Low flange is used with a ring of concrete poured below the surface for non-surfaced areas and areas surfaced with asphalt paving. Housing is completely free of piping so that no loading is transmitted to the pipe.



"A" (Pipe Size) = 02(50), 03(75), 04(100) or 05(125)



"A" (Pipe Size) = 02(50), 03(75) or 04(100)

NO-HUB OUTLET	SPEEDI-SET* ΔΔ		INSIDE CAULK OUTLET
☐ Fig. 4250S	☑ 4261L	Gasket Seal - ABS Plug***	☐ Fig. 4255C
☐ Fig. 4251S	☐ 4262L	Gasket Seal - Bronze Plug	☐ Fig. 4256C
☐ Fig. 4253S	☐ 4263L	Taper Thread - Bronze Plug	☐ Fig. 4258C
☐ Fig. 4254S	☐ 4264L	Taper Thread - ABS Plug	☐ Fig. 4259C

*Speedi-Set available in 02(50),03(75) and 04(100) inch sizes only
***ABS plug regularly furnished all outlets in 02(50),03(75) and 04(100) inch sizes and 05(125) inch spigot.
Δ This Dimension to Internal Stop of Speedi-Set Gasket.
ΔΔ Available in Extra Heavy, Service Weight or NO-HUB.

REGULARLY FURNISHED:
Duco Cast Iron Cleanout and Double Flanged Housing with Heavy Duty Secured Scoriated Cast Iron Cover with Lifting Device. Closure Plug and Type of Outlet as Indicated By Figure Number Selected.

VARIATIONS:
- ☐ Cover Cast with Words "Gas Shut-Off" -GSO or "Water Shut-Off" -WSO
- ☐ Less Ferrule and Plug (See Fig. 4880)
- ☑ Vandal Proof Top -U

OPTIONAL MATERIALS:
- ☐ Galvanized Cast Iron -G
- ☐ Ductile Iron Cover -M

NOTE: Dimensions shown in parentheses are in millimeters.

REV.	DATE	DESCRIPTION	BY	CKD. BY
M	12-7-15	Revised Optional Materials	TBW	CL
L	05/07/01	Edited Outlet Text	JJ	BS
K	04/12/01	Added dimension and note	JJ	BS
J	02/02/01	New Design	JJ	BS

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 4250, 4261

FIGURE NUMBER 4250, 4261 | DRAWN BY: RK | CHECKED BY: BH | APPROVED BY: JM | DATE: 7-10-85 | SCALE: NONE | SIZE A | DRAWING NUMBER S4250, 4261 | M

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LAVATORY SUPPORTS
WITH CONCEALED ARMS
FLOOR MOUNTED WITH "PRO-SET" UPRIGHTS

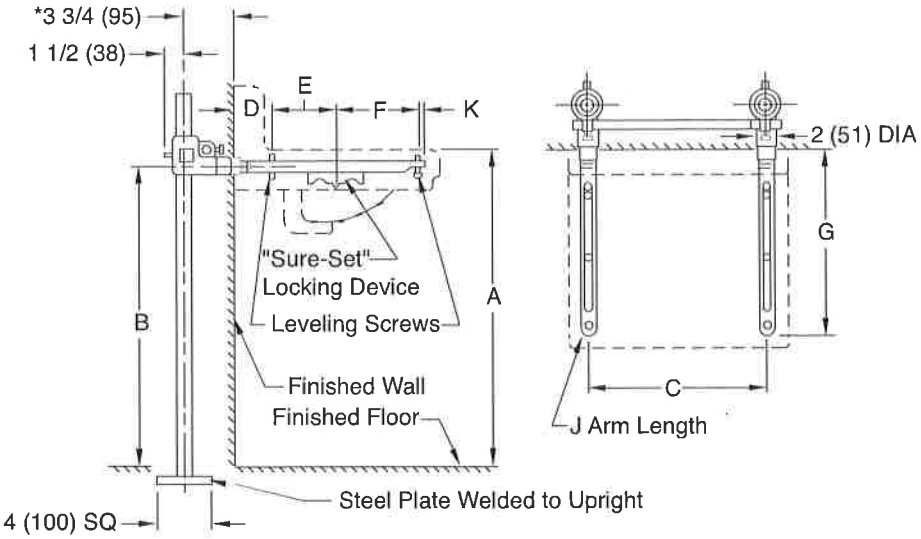
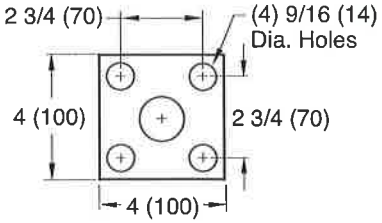


Fig. 0700 . . . FOR HIGH BACK LAVATORIES (shown)

NOTE: The rough-in dimensions listed on this drawing are based on current information available to Jay R. Smith by the fixture manufacturers. We recommend that you verify these dimensions with the fixture manufacturer. We will not accept responsibility for rough-in dimension changes by the fixture manufacturer.

NOTE: Dimensions shown in parentheses are in millimeters.



BASE DETAIL

ROUGHING-IN TABLE

FIXTURE MFG.	NAME	NUMBER	SIZE	A	B	C	D	E	F	G	J	K
AM. STD.	LUCERNE	0355.012	20 (510) x 18 (455)	31 (785)	29 1/4 (745)	16 3/4 (425)	4 (100)	6 (150)	6 (150)	16 1/2 (420)	19 (485)	1/2 (13)
AM. STD.	LUCERNE	0356.015	20 (510) x 18 (455)	31 (785)	29 1/4 (745)	16 3/4 (425)	4 (100)	6 (150)	6 (150)	16 1/2 (420)	19 (485)	1/2 (13)
AM. STD.	LUCERNE	0356.421	20 (510) x 18 (455)	31 (785)	29 1/4 (745)	16 3/4 (425)	4 (100)	6 (150)	6 (150)	16 1/2 (420)	19 (485)	1/2 (13)
AM. STD.	LUCERNE	0356.439	20 (510) x 18 (455)	31 (785)	29 1/4 (745)	16 3/4 (425)	4 (100)	6 (150)	6 (150)	16 1/2 (420)	19 (485)	1/2 (13)
AM. STD.	MURRO	0954.000	22 (560) x 21 (535)	34 (865)	32 3/8 (823)	16 3/4 (425)	4 (100)	6 (150)	4 (100)	14 1/2 (370)	17M (430)	1/2 (13)
AM. STD.	MURRO	0955.000	22 (560) x 21 (535)	34 (865)	32 3/8 (823)	16 3/4 (425)	4 (100)	6 (150)	4 (100)	14 1/2 (370)	17M (430)	1/2 (13)
AM. STD.	MURRO	0958.000	22 (560) x 21 (535)	34 (865)	32 3/8 (823)	16 3/4 (425)	4 (100)	6 (150)	4 (100)	14 1/2 (370)	17M (430)	1/2 (13)
CRANE	HARWICH	1-412	20 (510) x 18 (455)	31 (785)	29 1/4 (745)	16 1/4 (415)	4 (100)	5 5/8 (143)	4 3/8 (111)	16 1/2 (420)	18 (455)	2 1/2 (64)
ELJER	DELWYN	051-1634, 1838	18 (455) x 15 (380)	31 (785)	29 1/4 (745)	15 1/2 (395)	3 (76)	5 (125)	4 3/4 (120)	13 1/2 (345)	17M (430)	3/4 (19)
ELJER	SIGNATURE	051-2101, 4, 8	20 (510) x 18 (455)	34 (865)	32 (815)	17 (430)	4 (100)	5 5/8 (143)	5 5/8 (143)	15 3/4 (400)	18 (455)	1/2 (13)
KOHLER	GREENWICH	K-2030, 1, 2, 4, 6	20 (510) x 18 (455)	31 (785)	29 (735)	17 1/4 (440)	3 1/4 (83)	5 1/4 (135)	5 1/4 (135)	14 1/4 (360)	16 (405)	1/2 (13)
KOHLER	SOHO	K-2053, 4	20 (510) x 18 (455)	31 (785)	29 1/4 (745)	16 1/2 (420)	3 1/4 (83)	5 1/4 (135)	5 1/4 (135)	14 1/4 (360)	17M (430)	1/2 (13)
U. RUNDLE	NEW CAMDEN	4648, 9	20 (510) x 18 (455)	31 (785)	29 3/8 (746)	16 1/4 (415)	4 1/2 (115)	2 1/2 (64)	4 (345)	13 1/2 (345)	16 (405)	2 1/2 (64)

NOTE: *This dimension can be increased when fixture support is to be installed behind the wall. (Specify when required and wall thickness).

REV.	DATE	DESCRIPTION	BY	CKD. BY
J	09/27/10	Updated Drawing	JJ	CL
H	11/23/05	Revised Roughing-in Table	JJ	CL
G	03/19/04	Revised Roughing-in Table	JJ	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER **0700**

FIGURE NUMBER 0700 | DRAWN BY: CR | CHECKED BY: SJM | APPROVED BY: SJM | DATE: 2-20-85 | SCALE: NONE | SIZE A | DRAWING NUMBER S0700 | J

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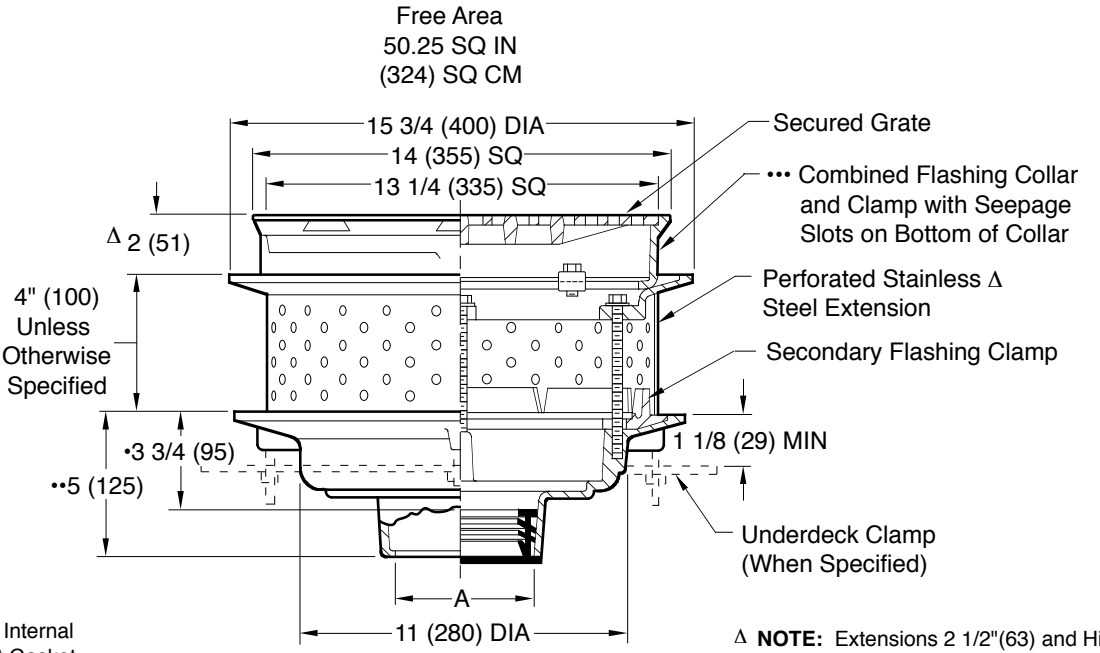
TAG: FD-DD

PROMENADE DECK DRAINS

PROMENADE DECK DRAIN FOR SPECIAL ROOF APPLICATIONS

FUNCTION: Used in roof deck systems where the insulated membrane assembly method of waterproofing is provided. Used where built-up felt and asphalt waterproofing is installed on a flat roof construction which is designed for parking decks or promenades for recreational purposes.



•This Dimension to Internal Stop of Speedi-Set Gasket.

••Same for Caulk, NO-HUB and Speedi-Set. 3 3/4(95) for Threaded.

•••Specify Suffix -W for Applications Requiring "Loose-Set" Pavers.

ΔAdd 1/8 "(3) when bronze top is specified.

A (Pipe Size) = 02(50), 03(75), 04(100), 05(125) and 06(150)

- [ ] Fig. 1409C . . . . . CAULK OUTLET
- [ ] Fig. 1409Y . . . . . NO-HUB OUTLET

Δ **NOTE:** Extensions 2 1/2"(63) and Higher are Regularly Furnished Perforated Stainless Steel. Extensions Less Than 2 1/2"(63) are Regularly Furnished Cast Iron with 2 Rows of Seepage Holes.

recommended deck opening

with suffix-R	17(430) DIA
less sufix-R	14(355) DIA

REGULARLY FURNISHED:
Duco Cast Iron Body, Perforated Stainless Steel Extension with Secondary Flashing Clamp, Cast Iron Top Frame and Heavy Duty Secured Grate.

NOTE: Floor drains or area drains used to drain areas subject to rainfall should have an open area equal to twice the cross sectional area of the connecting pipe.

VARIATIONS:
- [ ] Expansion Joint (Specify Fig. 1710)
- [ ] Extension -E (Specify Height)
- [ ] "L" Shaped Underdeck Clamp -CL
- [ ] L Speedi-Set Service Weight 02(50), 03(75) & 04"(100) sizes only
- [ ] LXH Speedi-Set Extra Heavy 02(50), 03(75) & 04"(100) sizes only
- [ ] Sump Receiver -R
- [ ] Underdeck Clamp -C
- [ ] Vandal Proof Grate -U
- [ ] T Threaded Outlet

OPTIONAL MATERIALS:
- [ ] Ductile Iron Grate -M
- [ ] Galvanized Cast Iron -G
- [X] Nickel Bronze Top -NB
- [ ] Polished Bronze Top -PB

NOTE: Dimensions shown in parentheses are in millimeters.

REV.	DATE	DESCRIPTION	BY	CKD. BY
T	8-8-13	Revised Note	TBW	CL
S	12/11/03	Removed C2 Variation	JJ	BW
R	2/2/01	Rev. Opt. Mat.	RN	CL
Q	12/13/99	Submittal Update	JJ	BS

WEIGHT POUNDS | VOLUME CUBIC FEET | **FIGURE NUMBER 1409**

FIGURE NUMBER 1409 | DRAWING NUMBER S1409 | SIZE A | SCALE: NONE | DATE: 3-1-85 | APPROVED BY: TD | CHECKED BY: TD | DRAWN BY: WAS | T

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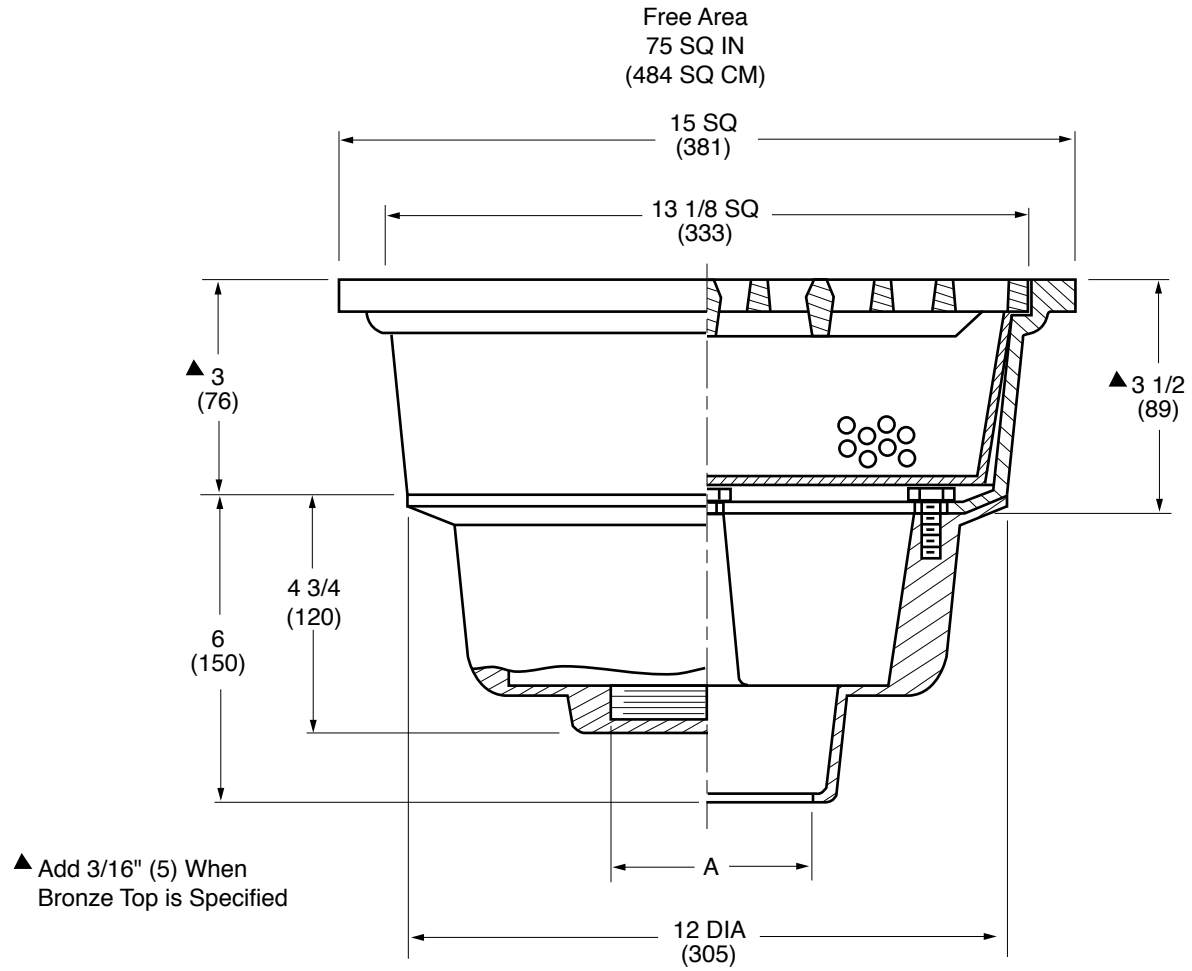
HEAVY DUTY FLOOR DRAIN



▲ Add 3/16" (5) When Bronze Top is Specified

A (Pipe Size) = 2 (50), 3 (75), 4 (100), 5 (125) or 6 (150)

- ☐ FIG 2295C ..... Caulk Outlet
- ☐ FIG 2295Y ..... No-Hub Outlet
- ☐ FIG 2295T ..... Threaded Outlet

REGULARLY FURNISHED:
Duco Cast Iron Body and Flashing Collar with Secured Ductile Iron Grate and Stainless Steel Sediment Bucket.

VARIATIONS:
- ☐ Vandal Proof -U
- ☐ LXH Speedi-Set Extra Heavy 02(50), 03(75) & 04(100) Sizes Only
- ☐ L Speedi-Set Service Weight 02(50), 03(75) & 04(100) Sizes Only
- ☐ Side Outlet
- ☐ Flat Bottom Strainer -FBS
- ☐ Quad Close Trap Seal (Specify Fig. 2692)

OPTIONAL MATERIALS:
- ☐ Galvanized -G
- ☐ Polished Bronze Top -PB
- ☐ Nickel Bronze Top -NB

NOTE: Dimensions shown in parentheses are in millimeters.

REV.	DATE	DESCRIPTION	BY	CKD. BY
B	6-18-15	Revised Variations	TBW	CL
A	1-17-13	Rev. Var. & Opt. Mat.	TBW	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | **FIGURE NUMBER 2295**

FIGURE NUMBER **2295** | DRAWN BY: RN | CHECKED BY: CL | APPROVED BY: CEL | DATE: 5/24/02 | SCALE: NONE | SIZE A | DRAWING NUMBER s2295 | B

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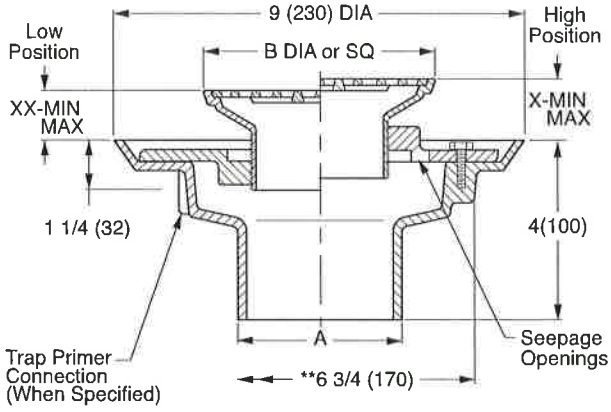
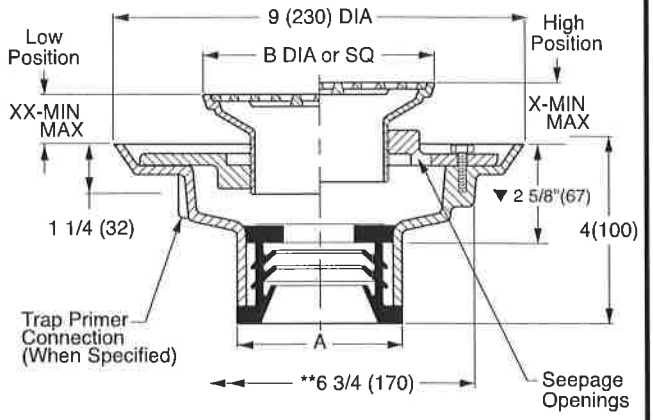
2005 - B06 NB - P050

FLOOR OR SHOWER DRAINS
WITH ADJUSTABLE STRAINER HEADS

FUNCTION: General service floor drain for use in showers, toilets, kitchens and other finished areas where foot traffic is expected. The round top strainer head is used for all types of poured finished floors. The square top is particularly adaptable to floors that are finished in material of square or straight line pattern. Reversible flashing collar permits adjustment of the strainer to meet finished floor level.





A (Pipe Size) = 02(50), 03(75), 04(100), 05(125) or 06(150)

NO-HUB OUTLET

- ☐ Fig. 2005Y.....(A) ROUND TOP
- ☑ Fig. 2005Y.....(B) SQUARE TOP

SPEEDI-SET OUTLET

- ☐ Fig. 2005L.....(A) ROUND TOP
- ☐ Fig. 2005L.....(B) SQUARE TOP

	Outlet Size	Nickel Bronze Strainer Head
▲	02(50)	05(125) DIA or SQ
▲	03(75)	06(150) DIA or SQ
▲	04(100)	08(205) DIA or SQ

	Strainer Size	*Collar In High Position		*Collar In Low Position		Free Area SQ IN (SQ CM)	
	B DIA or SQ	X MIN	X MAX	XX MIN	XX MAX	ROUND	SQUARE
☐	05 (125)	1 1/4(32)	2 1/4(57)	3/4(19)	1 5/8(41)	7(45)	6.5(42)
☑	06 (150)	1 1/4(32)	2 1/4(57)	3/4(19)	1 5/8(41)	9(58)	12.5(81)
☐	07 (180)	1 1/4(32)	2 1/4(57)	7/8(22)	1 7/8(48)	14(90)	11(71)
☐	08 (205)	1 1/2(38)	2 1/2(64)	1(25)	1 7/8(48)	17(110)	14(90)
☐	•09 (230)	1 1/2(38)	2 3/8(60)	1(25)	1 7/8(48)	18(116)	16(103)
☐	•10 (255)	1 1/2(38)	2 3/8(60)	1(25)	1 7/8(48)	23(48)	16(103)

▼ This dimension to internal stop of speedi-set gasket.
• Add 3/8"(10) to all min/max dimensions for round strainers.
* Collar is reversible to obtain extreme high and low strainer positions.
•• Not available for 5"(125) size strainer.
** MIN 6 3/4"(170) hole required for core drilled application.

REGULARLY FURNISHED:
Duco Cast Iron Body with Flashing Collar and Adjustable Strainer Head as Indicated by Suffix Letter Selected.

VARIATIONS:

- ☐ Flapper Type Backwater Valve -V
- ☐ Hinged Grate -H
- ☐ L Speedi-Set Service Weight 2(50), 3(75) & 4"(100) only
- ☐ LXH Speedi-Set Extra Heavy 2(50), 3(75) & 4"(100) only
- ☐ Sediment Bucket -B
- ☑ Trap Primer Connection -P050 1/2" (13) & -P075 3/4" (19)
- ☐ Vandal Proof Screws -U
- ☐ Wide Flanged Strainer (Specify Fig. DX2005)
- ☐ T Threaded Outlet
- ☐ Heelproof Grate -HP -AHP (Round) or -BHP (Square)
- ☐ Quad Close Trap Seal (Specify Fig. 2692)

OPTIONAL MATERIALS:

- ☐ Bronze Body -BB
- ☐ Chrome Plated Strainer -CP
- ☐ Galvanized Cast Iron Body -G
- ☐ Nickel Bronze Strainer -NB
- ☐ Polished Bronze Strainer -PB
- ☐ Stainless Steel (Specify Fig. 9700-A)

NOTE: Dimensions shown in parentheses are in millimeters.

▲ **Meets ASME Standard A112.6.3-2001 02(50), 03(75) or 04"(100) sizes only.**

SEE PM0457 FOR OPTIONAL STRAINER HEADS.

REV.	DATE	DESCRIPTION	BY	CKD. BY
R	6-10-15	Revised Variations	TBW	CL
Q	11-18-11	Rev. Dwg., Var.	TBW	CR
P	11-20-09	Revised Variations	RN	BW
N	12/18/08	Addition to Variations	JJ	BW

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER **2005**

FIGURE NUMBER 2005 | DRAWN BY: PJ | CHECKED BY: TD | APPROVED BY: TD | DATE: 5-17-85 | SCALE: NONE | SIZE A | DRAWING NUMBER S2005 | R

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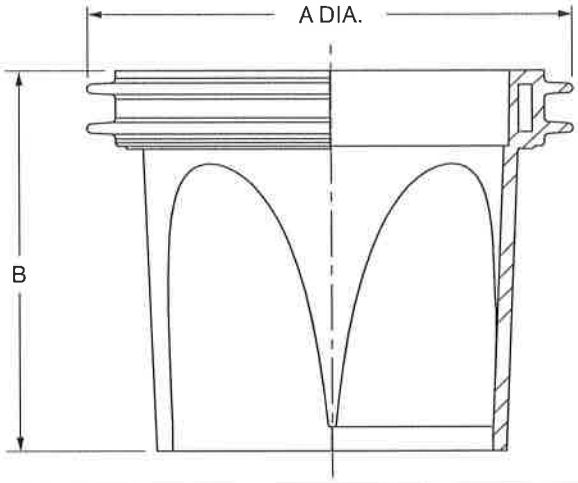
QUAD CLOSE® TRAP SEAL

FUNCTION: The Quad Close Trap Seal forms a barrier to minimize the evaporation of the trap seal of a floor drain. The Quad Close Trap Seal will open to allow drainage and close when there is no flow. It is for use in floor drain outlets or the adjustable strainer throats.



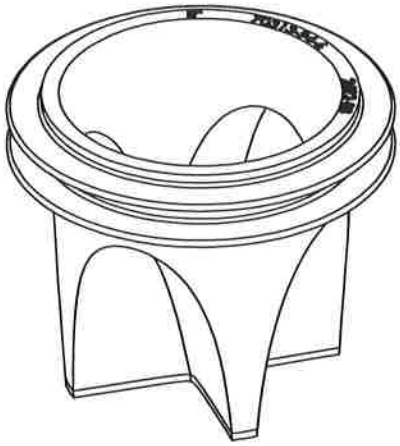


FIG. NO.	A (Pipe Size)	B	IAPMO LISTED ①	ASSE LISTED ①	GPM FLOW RATE ③
2692-0150	01.5(38)	2.09(53)	—	—	6.0 (22.7 L/M)
2692-02	02(50)	2.66(68)	FILE # 7479	REC.#1435 AF-GW ⑤	12.0 (45.4 L/M)
2692-03	03(75)	2.66(68)	FILE # 7479	REC.#1435 AF-GW ⑤	34.0 (128.7 L/M)
2692-0350 ②	0350(89) ②	2.66(68)	FILE # 7479	REC.#1435 AF-GW ⑤	51.0 (193.06 L/M)
2692-04	04(100)	2.66(68)	FILE # 7479	REC.#1435 AF-GW ⑤	73.0 (276.4 L/M)
2692-06	06(150)	3.66(93)	—	—	215.0 (814.0 L/M)

INSTALLATION: The 01.5(38), 02(50), 03(75), 04(100) & 06(150) Quad Close Trap Seal sizes install in the drain outlet. To install, simply insert the Quad Close Trap Seal in the drain outlet or ② throat of strainer until the top of it is flush with top of drain outlet or strainer throat. See reverse side of submittal for illustration.

NOTES:

① Tested by The IAPMO R&T Product Certification Agency to ASSE Standard #1072, Barrier Type Floor Drain Trap Seal Protection Devices. All sections of the Standard were successfully passed.

② The 0350 (89) Quad Close Trap seal size installs in the throat of Smith adjustable strainers. See reverse side of submittal for illustration.

③ Required flow rates per ASSE Standard #1072, Section I. All sizes meets or exceeds these flow rates.

④ Do not use in applications where the room/space has an atmospheric pressure less than the ambient pressure of the exterior of the room/space or building.

⑤ AF-GW represents floor designation/rated for all floor types per ASSE 1072, Section II.

⑥ Copies of the listing certificates and/or ASSE 1072 Test Report available upon request.

ONTARIO – BMEC
AUTHORIZATION NO. 14-04-370

NOTE: Dimensions shown in parentheses are in millimeters.

Patent No. 8,844,572

REV.	DATE	DESCRIPTION	BY	CKD. BY
K	9-9-16	Revised Note	TBW	JM
J	8-10-15	Added Note	TBW	CL
H	8-26-14	Revised Table	TBW	JM
G	7-30-14	Added L/M	TBW	JM

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER **2692**

FIGURE NUMBER **2692** | DRAWN BY: RN | CHECKED BY: CL | APPROVED BY: JM | DATE: 5-20-08 | SCALE: NONE | SIZE A | DRAWING NUMBER s2692 | K

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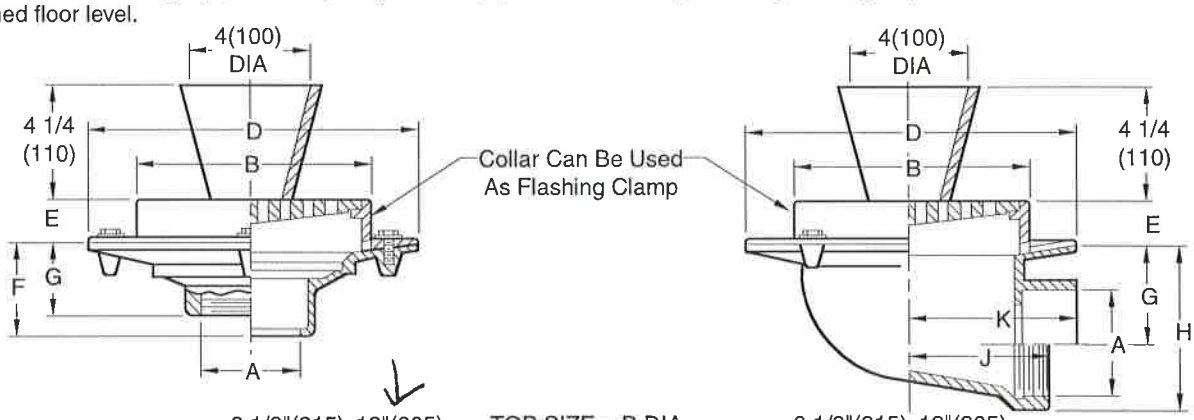
FUNNEL-CEPTOR® INDIRECT WASTE DRAINS

WITH ROUND TOPS

MEDIUM GRATE WITH ROUND FUNNEL

FUNCTION: Used to receive the drip, condensate or waste water from indirect waste lines. The funnel prevents splashing and directs the waste into the drain. The exposed portion of grate serves as drain for any other waste on the floor. The funnel is attached to the grate by means of concealed screws and it may be moved to any grate location desired. The round funnel is recommended for single pipe use only. Adjustable top permits accurate positioning of the grate, as necessary, to meet the finished floor level.



8 1/2"(215) 12"(305). . . . TOP SIZE = B DIA . . . . . 8 1/2"(215) 12"(305)
Fig. . . . 3710C . . . 3715C . . . . . CAULK OUTLET. . . . . Fig. . . . 3720C . . . 3725C
Fig. . . . 3710T . . . 3715T . . . THREADED OUTLET. . . Fig. . . . 3720T . . . 3725T

BOTTOM OUTLET DIMENSIONS

A SIZE	B DIA	D DIA	E	F	G THD.
02(50),03(75), 04(100)	8 1/2 (215)	11 1/2 (290)	2 (51)	3 3/4 (95)	2 (51)
02(50),03(75),04(100), 05(125) or 06(150)	12 (305)	15 1/4 (390)	2 1/2 (64)	5 (125)	3 3/4 (95)

*Add 1/4" (6) when bronze top is specified.

SIDE OUTLET DIMENSIONS

A SIZE	B DIA	D DIA	E	G	H	J	K
02(50) 03(75) 04(100)	8 1/2 (215)	12 (305)	2 (51)	4 1/4(110) 3 3/4(95) 3 1/4(83)	6 (150)	4 (100)	5 1/2 (140)
02(50) 03(75) 04(100)	12 (305)	15 1/4 (390)	2 1/2 (64)	6 7/8(175) 6 3/8(162) 5 7/8(149)	9 (230)	6 (150)	6 3/4 (170)
05(125) 06(150)	12 (305)	15 3/4 (400)	2 1/2 (64)	5(125) 4 1/2(115)	9 (230)	6 3/4 (170)	7 3/4 (195)

REGULARLY FURNISHED:
Duco Cast Iron Flanged Receptor, Bar Grate and Funnel.

NOTE: Dimensions shown in parentheses are in millimeters.

VARIATIONS:
- ☐ L Speedi-Set Service Weight (Available on Bottom Outlet Drains) 02(50), 03(75) & 04"(100) sizes only
- ☐ LXH Speedi-Set Extra Heavy (Available on Bottom Outlet Drains) 02(50), 03(75) & 04"(100) sizes only
- ☐ Secured Grate -SG
- ☐ Sediment Bucket -B
- ☐ 6"(150) Dia. Funnel (Fig. 3581) -6
- ☐ 6(150) x 2 1/2(64) x 1"(25) High Oval Funnel (Fig. 3590)
- ☐ Vandal Proof Secured Grate -U
- ☐ Y NO-HUB Outlet (Available on Bottom Outlet Drains)

OPTIONAL MATERIALS:
- ☐ Chrome Plated Grate and Funnel -CP
- ☐ Nickel Bronze Grate and Funnel -NB
- ☐ Polished Bronze Grate and Funnel -PB

NOTE: 02(50), 03(75) & 04"(100) sizes with 15 1/4(390) "D" Dim. require a transition collar (not shown in above illustration) which fits between the body and collar. Above illustration is typical for the 05(125) & 06"(150) sizes (3725 only).

REV.	DATE	DESCRIPTION	BY	CKD. BY
E	5-24-99	Revised	CMD	BS
D	5-13-99	Changed Reg. Furn.	CMD	BS

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 3710, 3715, 3720, 3725

FIGURE NUMBER 3710,3715,3720,3725 | DRAWN BY: VGD | CHECKED BY: JD | APPROVED BY: SJM | DATE: 9-19-85 | SCALE: NONE | SIZE A | DRAWING NUMBER S3710 | E

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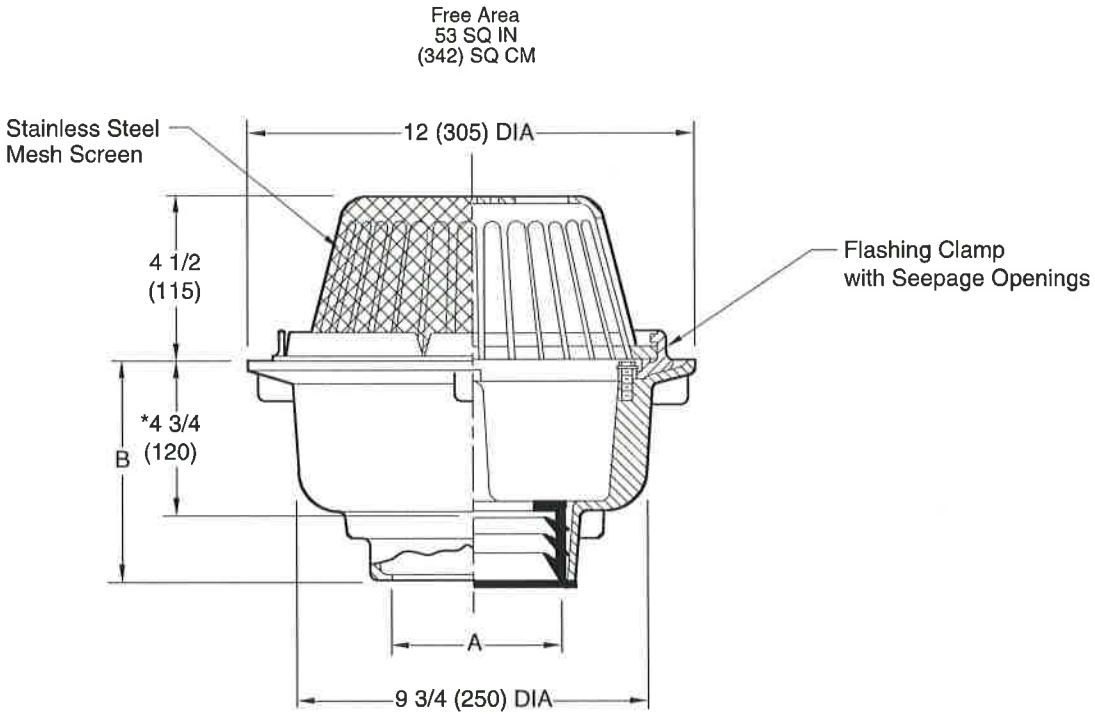
CUSTOMER DRIVEN
MEMBER OF:

LOCATION
RD PL
2675-BD

PLANTING AREA DRAIN

FOR LARGE AREAS

FUNCTION: Used to drain excess moisture which builds up in large planting or flower boxes. Extra large mesh covered dome insures greater drainage area and prevents soil or stones from entering the drain line.



☑ **Fig. 2675C . . . CAULK OUTLET**
☐ **Fig. 2675Y . . . NO-HUB OUTLET**

*This dimension to Internal Stop of Speedi-Set Gasket.

NOTE: Dimensions shown in parentheses are in millimeters.

A SIZE	02(50)	03(80)	04(100)	05(125)	06(150)
B	6 (150) for Caulk, NO-HUB and Speedi-Set 4 3/4 (120) for Threaded				

REGULARLY FURNISHED:
Duco Cast Iron Body and Flashing Clamp with Polyethylene Dome and Stainless Steel Mesh Screen.

VARIATIONS:
☐ L Speedi-Set Service Weight 02(50), 03(80) & 04"(100) sizes only
☐ LXH Speedi-Set Extra Heavy 02(50), 03(80) & 04"(100) sizes only
☐ T Threaded Outlet

OPTIONAL MATERIALS:
☐ Bronze Body -BB
☑ Bronze Dome -BD
☐ Cast Iron Dome -CID
☐ Galvanized Cast Iron -G

REV.	DATE	DESCRIPTION	BY	CKD. BY
B	7-7-95	Added Millimeters	EMB	BS
A	11-17-93	Submittal Update	EMB	BS

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 2675

FIGURE NUMBER 2675 | DRAWN BY: PJ | CHECKED BY: TD | APPROVED BY: TD | DATE: 5-17-85 | SCALE: NONE | SIZE A | DRAWING NUMBER S2675 | B

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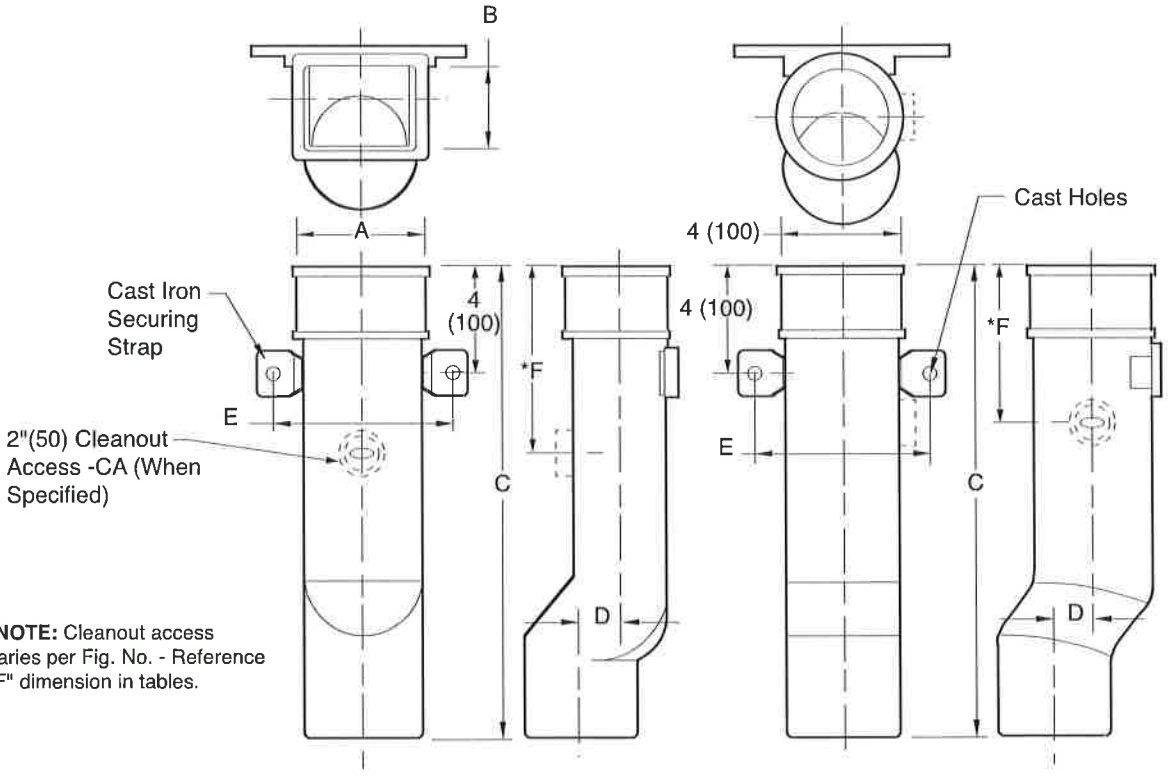
CUSTOMER DRIVEN SINCE 1925
MEMBER OF:

LOCATION
D5B
1787-18

DOWNSPOUT BOOTS

FUNCTION: Used as a transition piece for connecting sheet metal exposed downspout to underground cast iron soil piping. Sturdy cast iron construction provides the necessary protection of the lower part of the exposed downspout from damage.



A x B SIZE

Fig. 1785 Series . . . 4(100) x 3"(76) RECTANGULAR
Fig. 1786 Series . . . 5(125) x 4"(100) RECTANGULAR

Fig. 1787 Series . . . 4"(100) ROUND

4(100) x 3"(76) SIZE				
Figure No.	C Length	D	E	F
1785-12	12(305)			4 1/2(114)
1785-18	18(455)	1 1/2 (38)	6 5/8 (168)	9 (229)
1785-24	24(610)			

5(125) x 4"(100) SIZE				
Figure No.	C Length	D	E	F
1786-24	24(610)	1(25)	7 5/8(194)	9(229)
1786-36	36(915)	1(25)	7 5/8(194)	9(229)

4"(100) ROUND SIZE				
Figure No.	C Length	D	E	F
1787-18	18(455)	1(25)	6 1/8(155)	5(125)

NOTE: All downspout boots have 4"(100) spigot end for connection with 4"(100) pipe.

REGULARLY FURNISHED:
Cast iron body and strap with 5/16"(8) Dia. cast holes for flat head bolts, typical. All shapes unpainted.

VARIATIONS:
☐ 2" Cleanout Access -CA

OPTIONAL MATERIALS:
☐ Galvanized Cast Iron -G

NOTE: Dimensions shown in parentheses are in millimeters.

REV.	DATE	DESCRIPTION	BY	CKD. BY
G	1-13-16	Revised Drawing	TBW	TWK
F	2-6-14	Rev. Dwg., Dim., Added Note	TBW	CL
E	10-22-13	Added 1786-36	TBW	BW
D	10-7-13	Rev. Callouts, Tables	TBW	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 1785,1786,1787

G | DRAWING NUMBER S1785 | SIZE A | SCALE: NONE | DATE: 5-24-85 | APPROVED BY: TD | CHECKED BY: TD | DRAWN BY: PL | FIGURE NUMBER 1785,1786,1787

3

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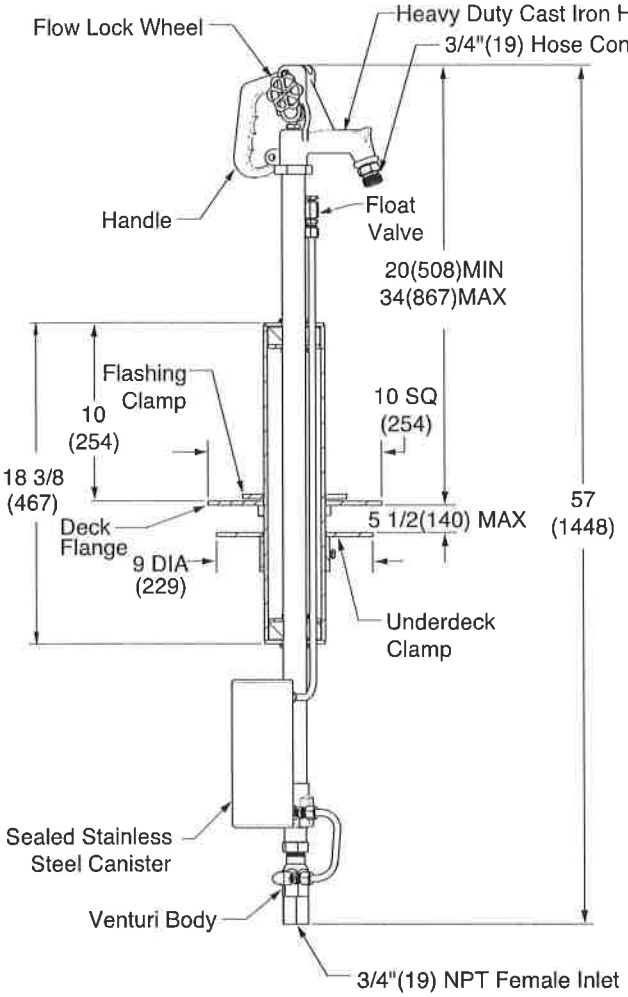
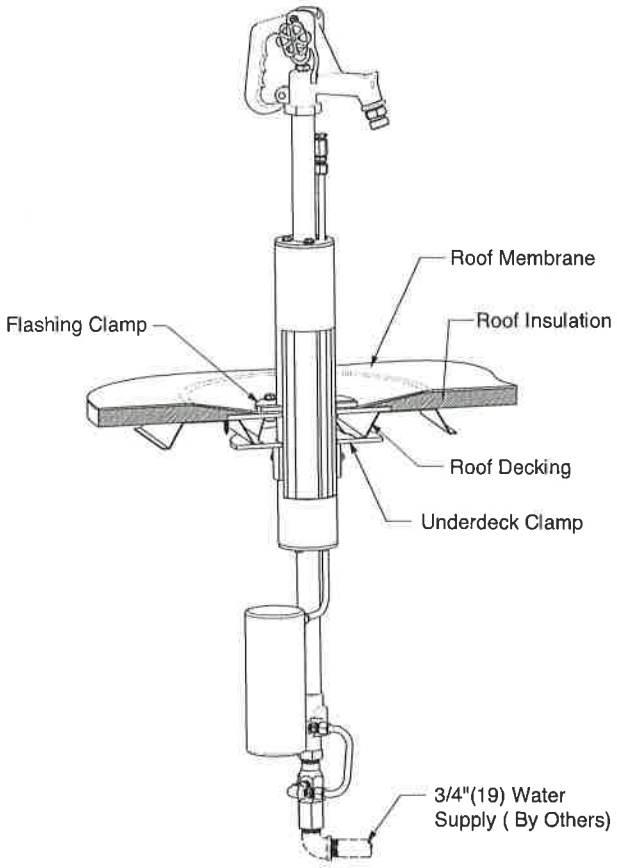
MEMBER OF:

LOCATION: NFRH 5903-H

NON-FREEZE SANITARY ROOF HYDRANT

FUNCTION: Used on roofs where water is required for window washing, cleaning of condenser coils, cooling towers and other types of roof equipment. Freezing is prevented by the valve housing being located below the roof in a heated or insulated area. The hydrant is engineered to be fully self contained by draining the water from casing after shut-off into the sealed canister.





Installation Illustration
(For Illustration Pupose Only)

REGULARLY FURNISHED:

Non-Freeze Sanitary (Self Contained) Roof Hydrant with Galvanized Casing, Adjustable Flow Wheel Lock Handle, Sealed Stainless Steel Canister, Venturi and Roof Mount Assembly.

VARIATIONS:

☑ Vacuum Breaker -H

NOTES:

1. Addition of vacuum breaker will not allow draining of the hydrant casing. Smith is not responsible for any casings that burst or related incidents if the hydrant is supplied with a vacuum breaker.
2. The AB1953 California Lead Law and NSF/ANSI Standard 61-2008 - Drinking Water system Components are not applicable to Jay R. Smith hydrants as they do not convey/dispense water for human consumption through drinking or cooking.
3. Do not leave a hose attached in freezing temperatures as it may prevent proper drainage of the casing.
4. Upon activating, hydrant should be dischcharged fully open a minimum of 30 seconds.
5. Minimum operating line pressure should be 25 psi for proper operation.
6. Dimensions shown in parentheses are in millimeters.
7. **FOR IRRIGATION PURPOSES ONLY.**

REV.	DATE	DESCRIPTION	BY	CKD. BY
D	2-11-15	Revised Notes	TBW	CL
C	1-8-15	Revised Callout	TBW	CL
B	2-5-13	Revised Notes	TBW	CL
A	7-18-12	Added Dim	TBW	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 5903

FIGURE NUMBER 5903 | DRAWN BY: CL | CHECKED BY: CL | APPROVED BY: CR | DATE: 5-17-12 | SCALE: NONE | SIZE A | DRAWING NUMBER s5903 | D

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CUSTOMER DRIVEN
MEMBER OF:

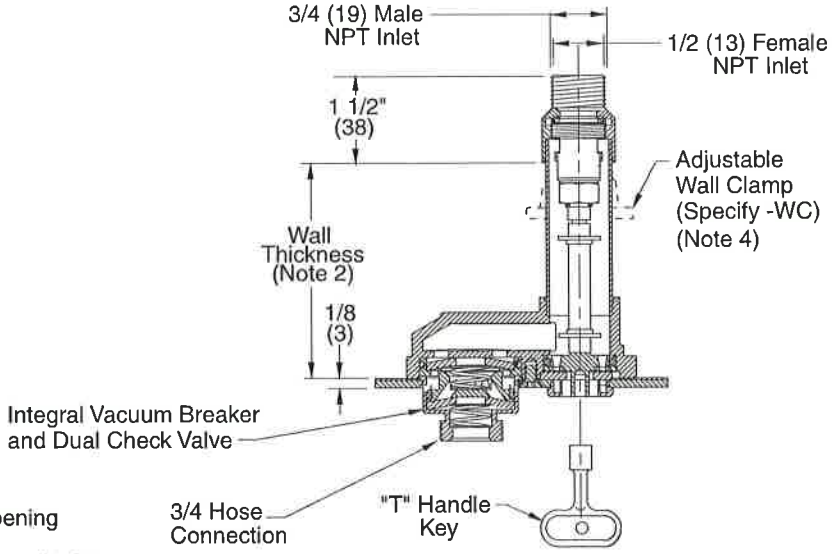
LOCATION
NFHB
5619

GUARDIAN DUAL CHECK
1/4 TURN NON-FREEZE WALL HYDRANT WITH AUTOMATIC DRAINING INTEGRAL VACUUM BREAKER AND DUAL CHECK VALVE

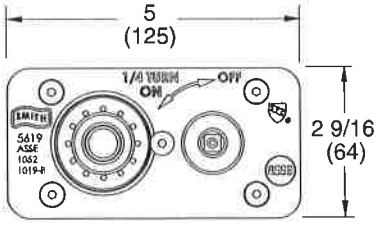
EXPOSED HOSE CONNECTION

FUNCTION: For installation in interior or exterior building walls where an exposed hose connection is acceptable. Provides positive non-freeze protection. Adaptable to all types of wall construction.

1/4 Turn of the Key Allows Full Flow to Be Obtained



TOP VIEW



FRONT VIEW

☐ **FIG. 5619**

NOTES:
1. Recommended wall opening 2 1/4 (57) x 4 (100).
2. When ordering, specify wall thickness in 1 (25) increments as follows 4,5,6,7,8.....24.
3. All Jay R. Smith hydrants are manufactured with "NO-LEAD" brazing rings, and USDA approved lubricants.
4. When wall clamp -WC is desired, increase wall thickness dimension by 2 (51).
5. Add 3/4 (19) to Overall Length When Specified
6. When specifying Fig. 5619 (-SAP) the wall thickness shall be 2 (51).
7. Dimensions shown in parentheses are in millimeters.
8. The AB1953, California Lead Law, and NSF/ANSI Standard 61-2008 - Drinking Water System Components are not applicable to Jay R. Smith hydrants as they do not convey/dispense water for human consumption through drinking or cooking.
9. **FOR IRRIGATION PURPOSES ONLY.**

Seepage of a small amount of water may occur from the Vacuum Breaker upon the initial opening and closing of this hydrant. This is normal operation.

Meets ANSI A112.21.3M Specifications
Complies w/ ASSE 1019-B,1052 and 1053.
IAPMO Listed- File #2749
Patent No. US 6,752,167

REGULARLY FURNISHED:
Bronze Quarter Turn Non-Freeze Automatic Draining Hydrant with Stainless Steel Face, Hose Connection, Integral Vacuum Breaker and Dual Check Valve and "T" Handle Key.

VARIATIONS:
- ☐ Adjustable Wall Clamp -WC (Note 4)
- ☐ 1 (25) Hose Connection -HC1
- ☐ 1 (25) Male NPT Inlet Connection -IC1 (Note 5)
- ☐ Mild Climate -SAP (Note 6)
- ☐ Wheel Handle (-WH)

OPTIONAL MATERIALS:
- ☐ Polished Bronze Face -PB
- ☐ Chrome Plated Face -CP

REV.	DATE	DESCRIPTION	BY	CKD. BY
G	2-4-13	Revised Notes	TBW	CL
F	6-13-11	Revised Note	TBW	CL
E	5-17-11	Added Note	TBW	CL
D	10-7-09	Revised Table	RN	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 5619

FIGURE NUMBER 5619 | DRAWN BY: RN | CHECKED BY: CL | APPROVED BY: CEL | DATE: 3-24-03 | SCALE: NONE | SIZE A | DRAWING NUMBER s5619 | G

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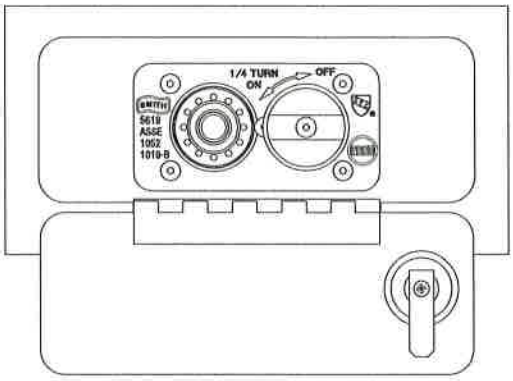
CUSTOMER DRIVEN SINCE 1926
MEMBER OF:

LOCATION
NFWH
5519N3

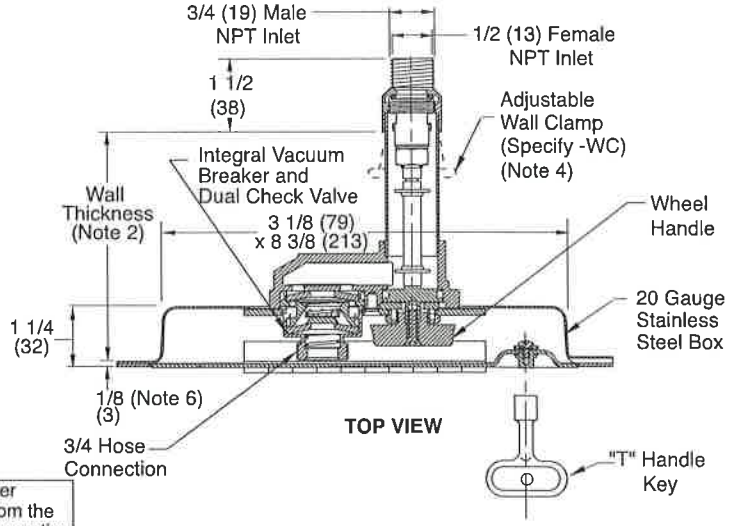
GUARDIAN DUAL CHECK
1/4 TURN NON-FREEZE WALL HYDRANT WITH AUTOMATIC DRAINING INTEGRAL VACUUM BREAKER, DUAL CHECK VALVE AND STAINLESS STEEL BOX
BOX TYPE WITH CONCEALED HOSE CONNECTION

FUNCTION: Provides positive non-freeze protection where water is required at the outside of the building and features an integral vacuum breaker and dual check valve. The stainless steel recessed box conceals the nozzle and operating mechanism. The locking cover prevents unauthorized use.

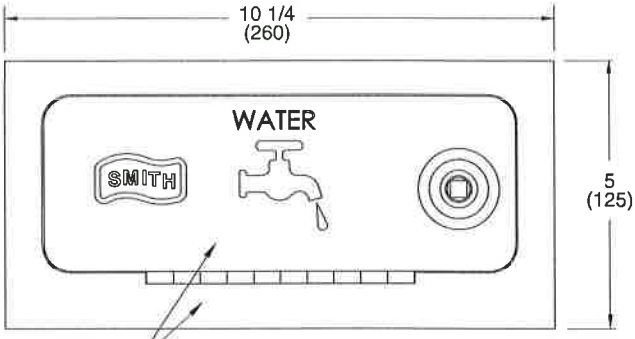
1/4 Turn of the Key or Wheel Handle Allows Full Flow to Be Obtained



FRONT VIEW with COVER OPEN



TOP VIEW



FRONT VIEW

FIG. 5519

NOTES:

1. Recommended wall opening 3 3/16 (83) x 8 1/2 (215).
2. When ordering, specify wall thickness in 1 (25) increments as follows 5,6,7,8,9.....24.
3. All Jay R. Smith hydrants are manufactured with "NO-LEAD" brazing rings, and USDA approved lubricants.
4. When wall clamp -WC is desired, increase wall thickness dimension by 2 (51).
5. Add 3/4 (19) to Overall Length When Specified.
6. Add 3/8 (10) When Optional Box Face Material is Specified.
7. When specifying Fig. 5519 (-SAP) the wall thickness shall be 3 (76).
8. Dimensions shown in parentheses are in millimeters.
9. The AB1953, California Lead Law, and NSF/ANSI Standard 61-2008 - Drinking Water System Components are not applicable to Jay R. Smith hydrants as they do not convey/dispense water for human consumption through drinking or cooking.
10. **FOR IRRIGATION PURPOSES ONLY.**

Meets ANSI A112.21.3M Specifications
Complies w/ ASSE 1019-B,1052 and 1053.
IAPMO Listed- File #2749
Patent No. US 6,752,167

A small amount of water seepage may occur from the vacuum breaker and operating screw upon initial opening and closing of the hydrant. This is normal operation.

Installer is responsible for providing a 100% watertight positive seal at the hydrant to box interface and hydrant to wall interface. Seal all interior joints, seams, gasket seams/closures including around the hydrant box flange with an appropriate sealant recommended by a sealant manufacturer. NOTE: Jay R. Smith does not warrant the performance or life expectancy of the sealant material.

REGULARLY FURNISHED:
Bronze Quarter Turn Non-Freeze Automatic Draining Hydrant with Stainless Steel Face, Hose Connection, Integral Vacuum Breaker and Dual Check Valve, "T" Handle Key, Wheel Handle and Stainless Steel Box with Full 180° Cover Opening.

VARIATIONS:
- ☐ Adjustable Wall Clamp -WC (Note 4)
- ☐ 1 (25) Hose Connection -HC1
- ☐ 1 (25) Male NPT Inlet Connection -IC1 (Note 5)
- ☐ Mild Climate -SAP (Note 7)
- ☐ Cylinder Lock -CL

OPTIONAL MATERIALS:
- ☐ Polished Bronze Box Face -PB
- ☑ Nickel Bronze Box Face -NB
- ☐ Rough Bronze Box Face -RB
- ☐ Chrome Plated Box Face -CP

REV.	DATE	DESCRIPTION	BY	CKD. BY
J	7-20-16	Added Note	TBW	BW
H	1-31-13	Revised Notes	TBW	CL
G	6-13-11	Revised Note	TBW	CL
F	5-17-11	Added Note	TBW	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 5519

FIGURE NUMBER 5519 | DRAWN BY: RN | CHECKED BY: CL | APPROVED BY: CEL | DATE: 3-24-03 | SCALE: NONE | SIZE A | DRAWING NUMBER S5519 | J

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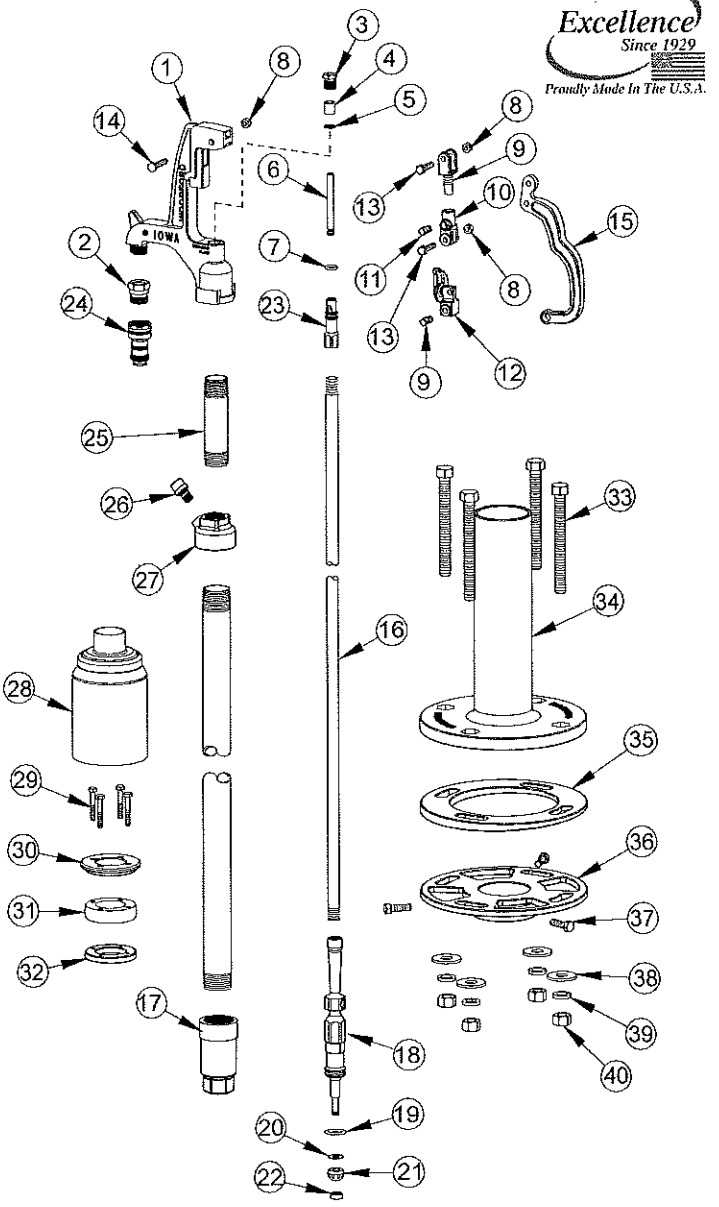
MODEL SRH-MS PARTS LIST

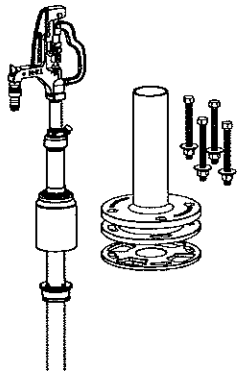
ITEM	PART#	DESCRIPTION
	15126	SRH Head Assembly (Includes Items 1-15, 23 & 24)
1	10632	SRH Head
2	10004	3/4" Brass Hose Nozzle
3	10100	Packing Nut
4	10101	Packing
5	10102	Packing Support Washer
6	15121	Brass Rod Stem
7	10117	O-Ring - 206
8	10206	Hex Nut (3)
9	10614	RH Upper Link
10	15242	RH Lower Link (Includes Item 11)
11	10019	Set Screw (2)
12	15243	RH Cam & Clevis Assembly
13	10020	Link Bolt (2)
14	10021	Lever Bolt
15	10613	RH Lever
16	10024	Operating Pipe
17	15122	Valve Body (3/4" NPT Inlet)
18	15123	Venturi Assembly
19	10118	Valve Body O-Ring
20	50027	Support Washer
21	51013	Ball Valve Rubber
22	50028	Round Brass Nut
23	10116	Sealing Head Coupling
24	50H-BR	50H Backflow Preventer
25	15120	Upper Pipe Assembly
26	15124	SRH Vent Assembly
27	15125	SRH Casing Cover
28	10608	RH Boot, EPDM
29	10625	Bolt, Allen Head 1/4-20 X 1 3/4" (4)
30	10626	Well Seal-1 1/2", Top
31	10119	Well Seal-1 1/2", EPDM
32	10627	Well Seal-1 1/2", Bottom
33	10584	Bolt, Hex Head 5/8-11 X 6" (4)
34	10579	Hydrant Support, Casting
35	10581	2° Shim, Casting
36	10580	Under Deck Flange
37	10607	Screw, Clamp 3/8-16 Hex Head X 1 3/4" (3)
38	10604	Washer, Plain 5/8 (4)
39	10605	Washer, Lock 5/8 (4)
40	10585	Nut, Hex 5/8-11 UNC (4)
	RK-SRH	Repair Kit (Includes items 3-7, 19-22)
	RK-RHL	Repair Kit (Includes items 8-15)



When ordering, specify SRH part number option listed below.

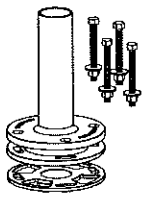
Part# SRH-MS Consists of the complete Roof Hydrant system:
Qty.1 **SRH** Hydrant shipped in 1 carton.
Qty. 1 **RH-MS** Mounting System shipped in 1 carton.

Total Shipping Wt.
2 cartons: 50 lbs



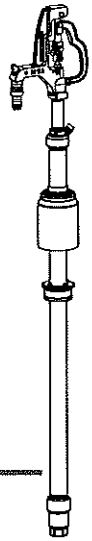
Part# RH-MS
Carton contents consists of:
Mounting System/ Rough-In Components (Parts 33-40 above)
- Hydrant Support
- 2° Shim,
- Under Deck Flange
- Mounting Bolts, Nuts, Washers.

Shipped in 1 Carton.
Shipping Wt. - 30 lbs



Part# SRH
Carton contents consists of:
- Hydrant Assembly (Parts 1-32 above)
- Well Seal (Parts 28-32 above)
- Boot (Part 28 above)

Shipped in 1 Carton.
Shipping Wt. - 20 lbs



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4

BUILDING A

SALES REP: Peacock Sales
PROJECT: Vickers Building A
ENGINEER:

PREPARED BY: Mark Howell
LOCATION: Georgia
DATE:

Duplex VFD IronHeart Pump System Scope

Motor HP	3
Motor Voltage	208
Pump Flow (GPM)	50
Pump Head (TDH)	70
Min. Suction (PSI)	40

Nominal System Flow (GPM)	100
Differential System Pressure (PSI)	30
Suction-Discharge Header Sizes	3" Flanged
Pump & Valve Branch Size	2"
Max. Suction (PSI)	45

SyncroFlo prefabricated pumping system. Pumps, controls and headers are all mounted on a common bent steel skid base for indoor installation in a pump house. The complete pump station will be ETL and UL listed, NSF certified and will be completely tested prior to shipment. System comprises of the following components:

- (2) SyncroFlo NSF Certified end suction pumps. Pump construction is formed 304 Stainless Steel with mechanical seal. Pump is close coupled to a 3600 RPM, ODP, 3 Phase, 60 Cycle, 1.15 Service Factor, class F insulation, High Efficiency motor, which will meet or exceed NEMA MG-1 Table 12-11 for epact motor efficiencies.
- (2) Suction Side, NSF Certified, lug style 150# Isolating butterfly valves,
- (2) Discharge Side, NSF Certified, lug style 150# Isolating butterfly valves
- (2) NSF Certified non-slam, wafer style, check valves
- (1) Flanged, 304 Stainless Steel Suction Header with Branch Connections
- (1) Flanged, 304 Stainless Steel Discharge Header with Branch Connections
- (1) Bent Carbon Steel System Skid and Bolted Panel Stand
- (1) NEMA 1 control panel with the following standard options:
  - Main Non-Fused Disconnect
  - Fusible Disconnect, Touch Safe with rated fuses for each VFD
  - Programmable Logic Controller (PLC) based operation
  - Sequencing by Horsepower and/or Pressure-VFD speed sequencing
  - Customer Accessible data and fault logs
  - Mounted and wired Suction & System Discharge Pressure Transducers
  - Alarm horn
  - 5.7” HMI Color Touchscreen with Compact Flash Drive Data Port
  - (2) Enclosure Mounted, Micro-Processor based Variable Frequency Drives
  - Minimum 10,000 Amp SCCR rating
  - Ventilated and fan-cooled enclosure, with positive cabinet pressure
- NSF Certified Plastic Tubing for instrumentation and system controls
- (2) NSF Certified Mechanical Thermal Purge Valve (shipped loose)
- (2) NSF System pressure gauges, 2.5” face dial, glycerin filled
- System Certified to NSF, ETL and UL certified to OSHA safety standards
- Factory assembled, wired, and FLOW TESTED at design conditions listed above
- 1 year part-only warranty, 5 Year PLC-VFD-HMI Warranty
- Standard SyncroFlo Terms and Conditions Apply

Job Name:	Vickers Building A	Reference #:	
Location:	Georgia	Prepared by:	Mark Howell
Sales Rep:	Peacock Sales	Date:	10/24/2016
Engineer:		System Dwg:	**22DA03XXX-3H-XX-SWF44-1**
Contractor:			

SYSTEM DATA

System Information

Model:	**22DA03XXX-3H-XX-SWF44-1**	
Design Flow rate:	100	Gpm
System Pressure:	70	Psig
Min. Suction Pressure:	40	Psig
Max. Suction Pressure:	45	Psig
Max. Boost Pressure:	30	Psig
Control Valve:	**2**	In
Headers:	**3 ”** **SS**	
Configuration:	**Horizontal**	
Connection:	**Flange**	

Nominal Pump Information

Pump #:	1&2	
Pump Type:	**CCES**	
Construction:	**SS**	
Pump Model:	**A3U-32-125**	
Design Split:	**50**	% Each
Design Flow:	50	Gpm
Pump Head:	70	Ft
Pump Shutoff:	**45**	Psig
Seal Type:	**Mechanical**	
Motor Size:	**3**	Hp
Motor Speed:	**3500**	Rpm
Motor Enclosure:	**ODP**	
Motor S.F.	**1.15**	

Power Data

Incoming Power Requirement:

Voltage:	3Ø/60~/	208	V
Connection FLA:		21.7	A
Wire Size:		10	G
Control panel:		**NEMA 12**	
Panel SCCR:		**10,000**	A

Special Comments

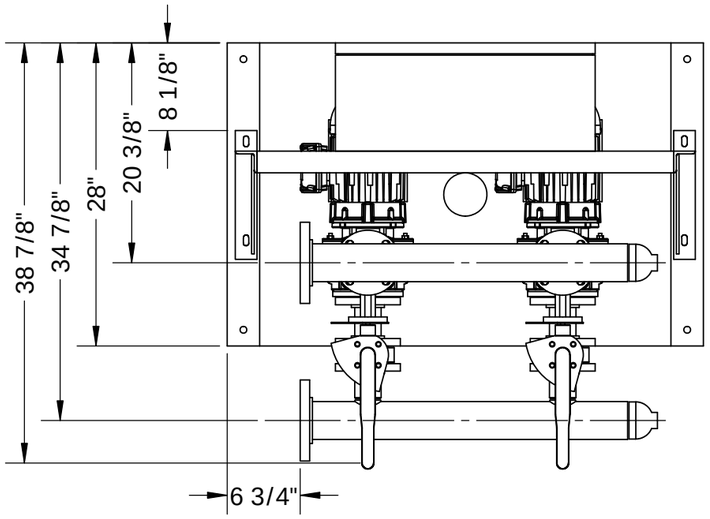
PRESSURE SET POINTS

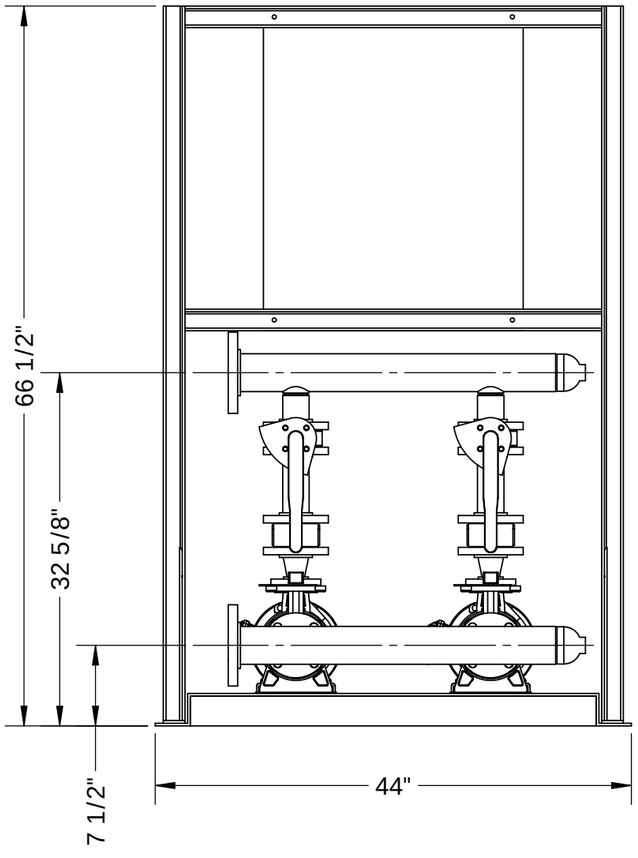
Low System set at:	**Sys Pr - 5**	Psig
Low Suction set at:	**5**	Psig
Horsepower set at:	**3**	Hp
Shutoff Boost:	**10**	Psid

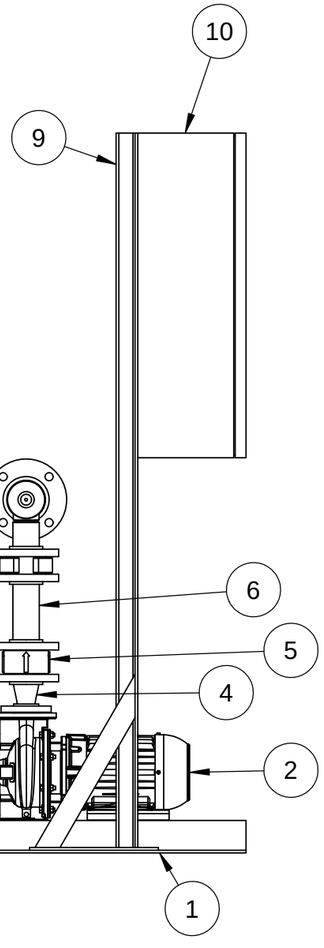
ITEM NO.	DESCRIPTION	Inventory #	QTY.
1	DUPLEX IRONHEART SKID	09-200-4428	1
2	A 3HP PUMP/MOTOR	12-511-4003	2
3	2" x 4.5" 150-150#	S770-020-0045	2
4	REDUCER SPOOL 2" X 1.25" 150-150#	S771-020-0012	2
5	CHECK VALVE WAFER STYLE 2"	43-022-1020	2
6	2" x 7" 150-150#	S770-020-0070	2
7	2" LUG ISOLATION BUTTERFLY VALVE NSF	42-447-3020	4
8	DUPLEX HEADER 3" X 2"	S772-030-0020	2
9	DUPLEX PANEL STAND 30" X 24"	779-200-3024	1
10	SYSTEM POWER AND CONTROL PANEL	SF952-0030-208S	1

PLEASE ENSURE THE USE OF PROVIDED
PIPE SUPPORT DURING SYSTEM INSTALLATION

APPROX. DRY WEIGHT: 661 LBS







NOTES:
1. ALL DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE
2. PURGE VALVE DRAIN LINE TO BE PIPED TO FLOOR DRAIN IN PROXIMITY OF BOOSTER SYSTEM (BY OTHERS)
3. SEE DATA SHEET FOR L/H OR R/H HEADERS ENTRY/EXIT CONNECTION

SYNCROFLO PACKAGED PUMPING SYSTEMS COMPLY WITH OSHA REGULATIONS AND FEDERAL REGULATION 29 CFR 1910.399. THE ENTIRE PACKAGED SYSTEM IS THIRD PARTY CERTIFIED.

REV	DESCRIPTION	BY DATE

ALL DIMENSIONS +/- TOLERANCE OF 1/2"

DUPLEX IRONHEART A 3HP

DRAWN BY: MWA	ENG. BY: MWA	CHK. BY:
DATE: 4/10/15	SIGN:	DATE:

SyncroFlo
Pumping System Solutions
6700 Best Friend Road - Norcross, GA 30071 - (770) 447-4443 - Fax (770) 447-0230

SCALE	DWG
1:14	22DA03XXX-3H-XX-SWF44-3

Model 32-125-3HP Data Sheet

Model No.: A3U-32-12530D3CSF

NSF61/ Annex G certified

Pump Data		
Size	1¼ x 2 x 5 3/16	
Flange - Suction	2" ANSI Equivalent	150 lb. ANSI R.F. equivalent
Flange - Discharge	1¼" ANSI Equivalent	150 lb. ANSI R.F. equivalent
Materials		
Casing	304L Stainless Steel	
Impeller (closed)	304L Stainless Steel	
Shaft Sleeve	304L Stainless Steel	
Mechanical Seal	Type 21, Carbon-Ceramic-Viton, Cup Seat	

Motor Data*

3 HP, 3 Phase, 60 Hertz, 208-230/460V, 3500 RPM, ODP, Frame 145JM

Amps: 8.3-7.6/3.8 Max. Temp.: 40C

Service Factor: 1.15 Power Factor: 89

Nominal Full Load Efficiency: 84% (NEMA MG-1 Table 12-11)

Direction of Rotation: Clockwise when viewed from motor end

**Values may vary with motor manufacturer.*

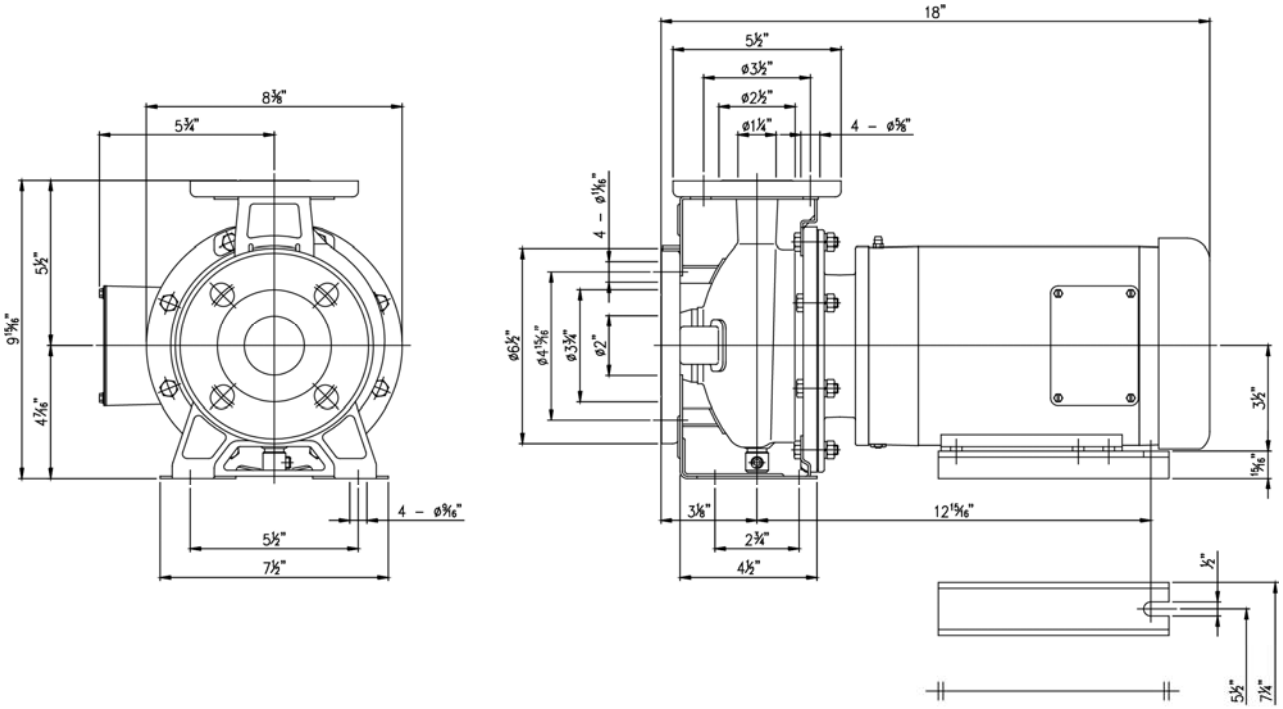
Limitations

Temperature: 212°F (100°C)

Working Pressure: 230 PSI

Approx. Weight (lbs) **76**

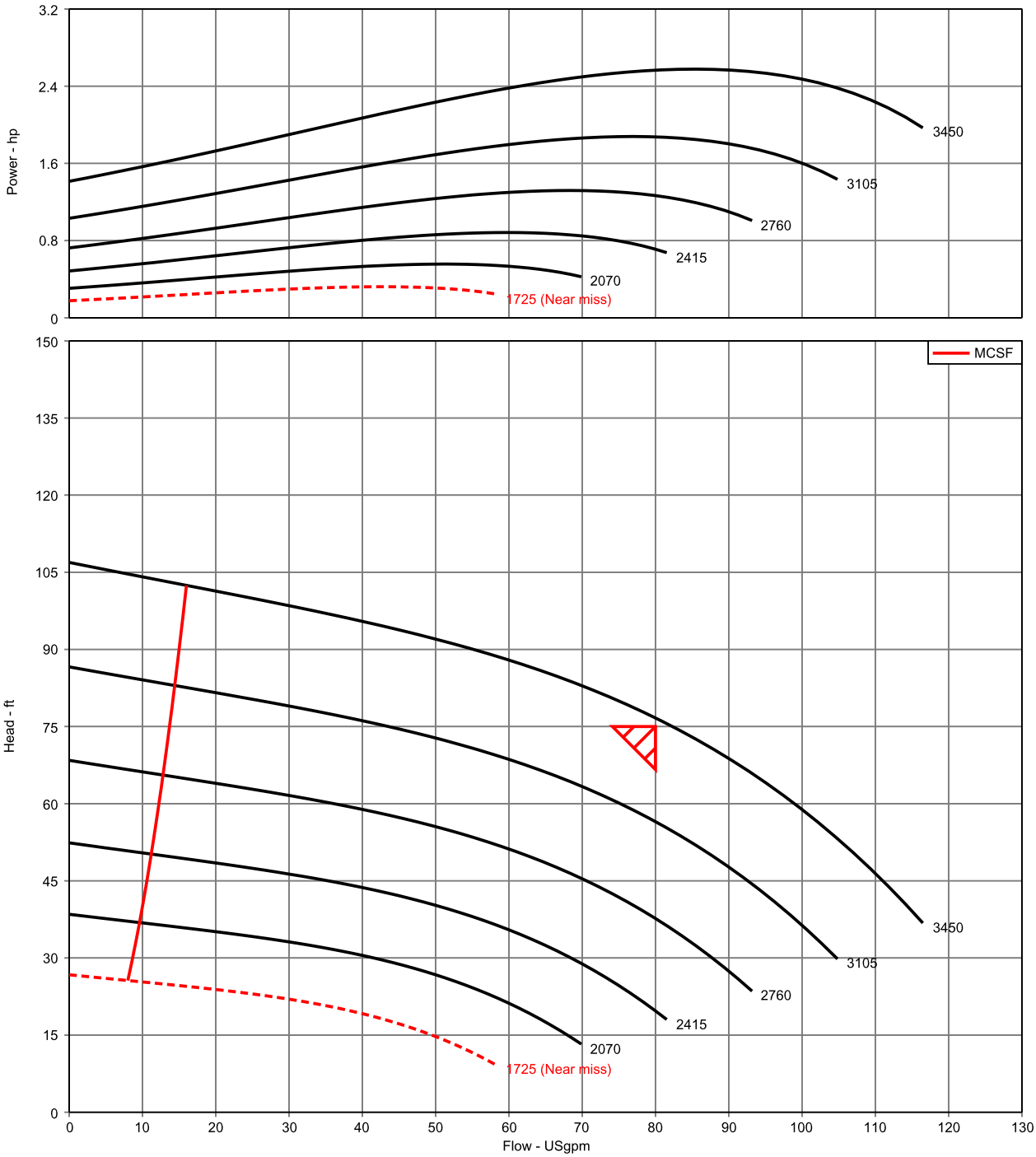
Dimensions



3U 32/125 133/3

SyncroFlo
Pumping System Solutions

Multi-Speed Performance Curve



Customer	:	Size	: 3U-32-125-3HP
Customer reference	:	Stages	: 1
Item number	: Default	Speed, rated	: 3,450 rpm
Service	:	Based on curve number	: 3S-C601-9309
Quantity	: 1	Efficiency	: 60.37 %
Quote number	:	Power, rated	: 2.57 hp
Date last saved	: 06 Mar 2014 1:31 PM	NPSH required	: 9.33 ft
Flow, rated	: 80.00 USgpm	Viscosity	: 1.00 cP
Differential head / pressure, rated	: 75.00 ft	Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Fluid density, rated / max	: 1.000 / 1.000 SG	Impeller diameter, rated	: 5.16 in

SyncroFlo

Pumping System Solutions

Certifications

Personnel

Steve Bradley, PE, Commercial Engineering Manager, is a registered controls engineer in Georgia.

12 degreed engineers on staff – (3) EIT, (3) NFPA 20 certified

9 Engineering Support Staff plus Certified Draftsman

James Blackburn, Operations Manager, is a Six-Sigma Black Belt.

Product

Quality Management System – ISO 9001:2008

BSI America, Inc. certifies the assembly of custom packaged pumping systems accessories and controls for use in commercial, irrigation, municipal, industrial and fire applications are in accordance with ISO 9001: 2008. (Certificate # FM 555054)

Safety Management System

All SyncroFlo packages are tested to applicable UL standards, per below. In addition, systems may be purchased to meet the ANSI/NSF 61 standard. All booster packages comply with ANSI/NSF 372 – Drinking Water System Components – Lead Content.

IAPMO certifies to NSF / ANSI 61 standards for safe drinking water that complies with Lead Plumbing Law (Files # N-5408 & 6961)

UL certifies SyncroFlo's compliance to OSHA standards for packaged pumping systems (UL508, UL508A, and UL778, File # E189340) plus control panels (UL 508A, File # E59076).

Intertek Testing Services certifies SyncroFlo's compliance to OSHA standards for packaged pumping systems (UL 508 and 778) for ETL, a nationally recognized third-party testing laboratory. (Report # 519309)

ETL certifies SyncroFlo's compliance to OSHA standards for packaged fire pumping systems (UL 508, 448, 1004, and 1247).

NTA certifies to various state modular building codes (project in progress)

In addition to these safety and quality certifications, SyncroFlo tests the performance of each and every pump system or control panel that it builds.

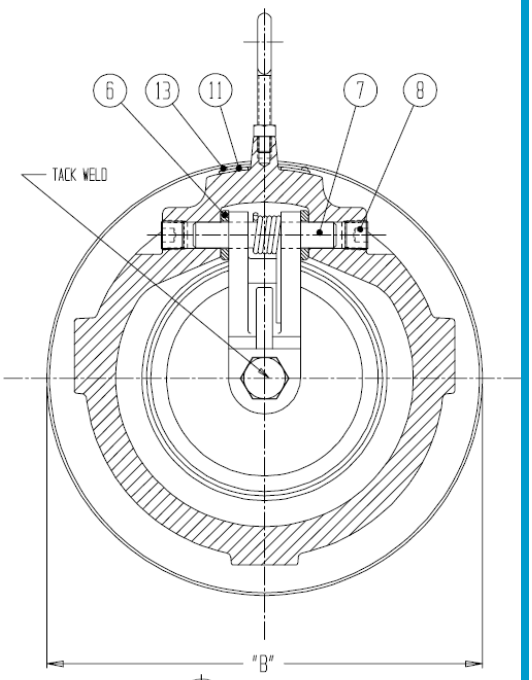
NTA INC. Smart Quality. Assured.℠

SyncroFlo
Pumping System Solutions

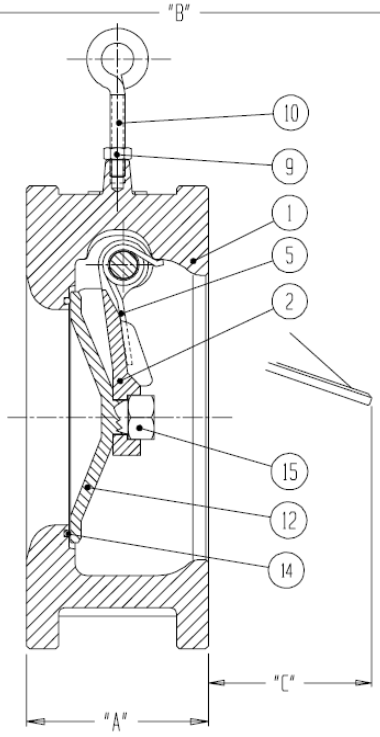
Check Valve Wafer Style
(Check Rite CETNSF)

Flanges, Bolts, Nuts and gaskets are not included

PART NO.	NAME	MATERIAL
1	BODY	ASTM A126-CLB
2	HINGE	ASTM A351-CF8M
5	SPRING	ASTM 313-316
6	SPACER	TEFLON
7	PIN	ASTM A479-316
8	PLUG	STEEL
9	LOCK NUT	STEEL ZINC PLATED
10	EYE BOLT	STEEL ZINC PLATED
11	NAME PLATE	NSF IDENT/ALUM.
12	DISC	ASTM A351-CF8M
13	RIVET	STEEL CAD. PLATED
14	O-RING	NSF EPDM
15	NUT	STAINLESS STEEL



ANSI CLASS 125				
Size (in)	Weight Lbs.	A (in)	B (in)	C (in)
2	3.50	2.13	4.29	1.19
2 1/2	5.00	2.38	5.08	1.50
3	6.50	2.63	5.67	1.69
4	11.00	2.25	6.46	2.44
5	15.00	2.50	7.64	3.38
6	20.00	2.75	8.66	4.25
8	30.00	2.88	10.83	5.38
10	47.00	3.13	13.03	7.00
12	70.00	3.38	15.19	8.13



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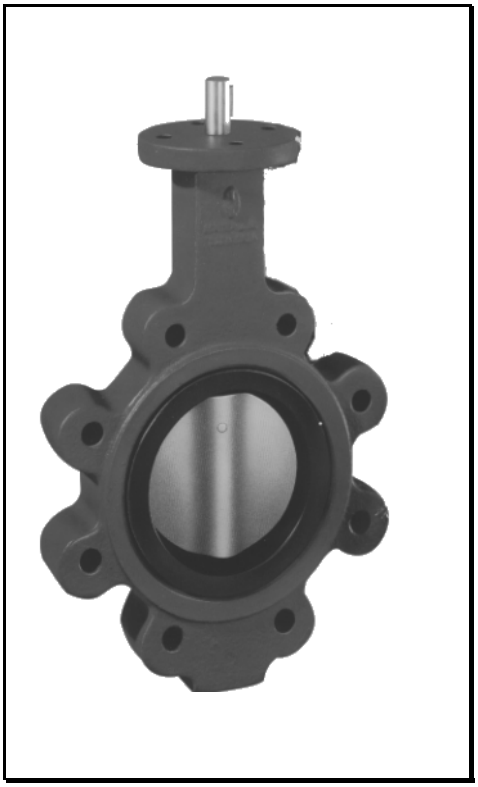
Effective: August 4, 2010

SyncroFlo
Pumping System Solutions

NSF 61 Butterfly Valve

Features:

- **Pressure Rating:** Bi-directional or dead end service, bubble-tight shut off, 250 psig.
- **Pressure Profile Disc:** Assures minimum torque and longer seat life.
- **One-Piece Thru Stem:** Blow out proof, ensures dependability and positive disc positioning.
- **Seat Face:** Negates need for flange gaskets. Valve interior completely isolated from the body.
- **Supported Stem Seal:** Blow out proof with packing gland to prevent entry of external substances.



Materials of Construction	
Body:	Cast Iron
Disc:	Nylon 11 Coated Ductile Iron
Seat:	EPDM
Stem:	416 Stainless Steel

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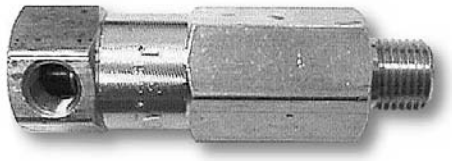
Pumping System Solutions

Mechanical Thermal Purge Valve

Operation



To prevent overheating and pump failure a thermal relief valve is installed in each pump casing, discharge head, or discharge piping. The valve will automatically sense the rise in temperature and discharge some of the hot fluid allowing cooler fluid to enter the pump casing. The valve will then close. On factory built pump systems, the thermal relief valves are piped to a common discharge tube. After installation, this discharge tube should be continued to a nearby drain. The discharge tube should be piped in a manner that discharge or leaks are visible to maintenance personnel.

Specifications	
Operating Pressure:	175 psig
Max Pressure Rating:	600 psi
Temperature Setting:	140° F

Materials of Construction	
Body:	Brass
Internal Seal:	Viton®
External Seal:	Buna
Spring:	Stainless Steel
Mounting Connection:	3/8” MPT
Tubing Connection:	¼” FPT

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Pressure Gauge Glycerin Filled

Applications

- Adverse service conditions where pulsating or vibration exists

Special Features

- Vibration and shock resistant
- Stainless steel case for better corrosion resistance
- Pressure ranges up to 15,000 psi

Specifications

- Design standard: ASME B40.100 & EN 837-1
- Protection: Nema 4X
- Face Dial: 2.5” standard, 4” optional
- Accuracy: 4” -/+1% of span
  2.5” -/+ 2.5% of span
- Operating Temperature: -4° F to +160° F

Materials of Construction

- Case: 304SS
- Window: Polycarbonate with Buna-N gasket
- Dial: White ABS with stop pin
- Movement: Copper alloy
- Bourdon Tube: Copper alloy
- Pointer: Black aluminum

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NSF 61 Pressure Transmitter Digital

Overview

The 40-801 is a high quality all stainless steel media isolated Pressure Sensor intended for use in the measurement of liquids compatible with stainless steel. 40-801 pressure sensors and transducers have been designed specifically for applications with demanding performance requirements.

40-801 sensors and transducers high strength stainless steel sensing element is machined from a solid piece of stainless steel, resulting in construction that contains no silicone oil, no welds and no internal O-rings.

Features

- High Accuracy
- High Strength Stainless Steel Construction
- No Silicone Oil. No Internal O-rings, no welds (50 PSI & above)
- Wide operating temperature range
- Fully welded case provides rugged design
- Compatible with wide range of gases and liquids
- Suitable for high shock and vibration applications
- Superior signal clarity compared to analog transmitters

Detailed Specifications

Performance @ 25°C (77°F)	
Accuracy[1]:	<±0.25% BFSL
Stability:	(1 year) ±0.25%FS,typ.
Over Range Protection:	2X Rated Pressure
Burst Pressure:	5X Rated Pressure
Pressure Cycles:	>100 Million
[1]Accuracy includes: Non-linearity, Hysteresis and Non-repeatability	

Environmental Data	
Temperature	
Operating:	-40 to 85°C (-40 to 185°F)
Storage:	-40 to 125°C (-40 to 250°F)
Thermal Limits	
Compensated Range:	0 to 55°C (30 to 130°F)
TC Zero:	<±1.5% of FS
TC Span:	<±1.5% of FS
Other	
Shock:	100G, 11msec, ½ sine
Vibration:	20G peak, 20 to 2400 Hz.
EMI / RFI Protection:	Yes
Rating:	IP-66

PHYSICAL DESCRIPTION	
Wetted Material:	17-4PH stainless steel NACE compatible
Electrical Connection:	Cable
Case (housing):	304 stainless steel

ELECTRICAL DATA	
Excitation:	10-28VDC, Typ.
Output:	Digital Pulse
Current Consumption:	<15mA
Bandwidth:	(-3dB): DC to 250Hz
Zero Offset:	<±1% of FS
Span Tolerance:	<±1.5% of FS
Output Noise:	<2mV RMS
Reverse Polarity Protection:	Ye

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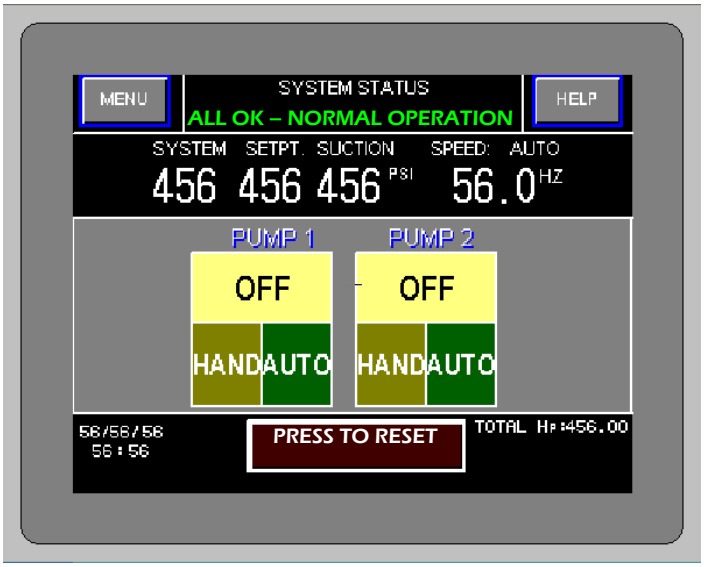
Effective: March 1, 2013

Human Machine Interface Model GT1455



(Illustration only)

SPECIFICATIONS

Display
Screen: 5.7" diagonal, 65,536 color, 320 x 240 dot
Type: Backlit TFT liquid crystal
Viewing Angle: 60 degrees minimum
Operational Life: Approx. 50,000 hrs / 1,000,000 touches min. (at 0.98N operating force)
Power Usage: 8.4 W

SDHC Card (for data retrieval)
4 GB max.
Writes in .CSV format, exportable to Excel
Performance data stored in daily files for up to one year (data recorded every 10 seconds or on alarm)
Data includes: Date, time, flow (if available), system pressure, set point, suction pressure, pumps on, individual drive Hz, V, A, and kW

Environmental
Equivalent to IP67F protection (frost panel with USB environmental protective cover attached)
Operating Temperature: 32 to 122° F [0 to 50°C]
Storage Temperature: -4 to 140°F [-20 to 60°C]

Certifications
UL listed and CE compliant

SyncroFlo

Pumping System Solutions

Mitsubishi D-700 VFD
(10 Hp and Less)

Control Specifications	
Control Method	Soft-PWM control / high carrier frequency PWM control (V/F control, general-purpose magnetic flux vector control, optimum excitation control can be selected)
Output Frequency Range	0.2 to 400Hz
Frequency Setting Resolution	0.01Hz
Frequency Accuracy	Within 0.01% of the set output frequency
Starting Torque	150% or more (at 1Hz) when general purpose magnetic flux vector control and slip compensation is set
Acceleration / Deceleration Time Setting	0.1 to 3600s (acceleration and deceleration can be set individually). Linear or S-pattern acceleration / deceleration mode can be selected
DC Injection Brake	Operation frequency (0 to 150Hz), operation time (0 to 10s), operation voltage (0 to 30%) variable
Stall Prevention Operation Level	Operation current level can be set (0 to 200% adjustable), whether to use the function or not can be selected

Protective / Warning Function	
Protective Function	Overcurrent during acceleration, overcurrent during constant speed, overcurrent during deceleration, overvoltage during acceleration, overvoltage constant speed, overvoltage during deceleration, inverter protection thermal operation, motor protection thermal operation, heatsink overheat, input phase failure* , output side earth (ground) fault overcurrent at start*, output phase failure, external thermal relay operation *, PTC thermistor operation*, parameter error, PU disconnection, retry count excess *, CPU fault, brake transistor alarm, inrush resistance overheat, analog input error, stall prevention operation, output current detection value exceeded
Warning Function	2Hp and above, overcurrent stall prevention, overvoltage stall prevention, PU stop, parameter write error, regenerative brake prealarm *, electronic thermal relay function prealarm, maintenance output *, undervoltage, operation panel lock, password locked, inverter reset

Operational Environment	
Ambient Temperature	-10°C to +50°C (non-freezing)
Ambient Humidity	90%RH maximum (non-condensing)
Storage Temperature	-20°C to + 65°C
Atmosphere	Indoors (without corrosive gas, flammable gas, oil mist, dust and dirt, etc.)
Altitude / Vibration	Maximum 1000m above sea level, 5.9m/s² or less

* If Enabled

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Effective: August 9, 2010

SyncroFlo

Pumping System Solutions

Mitsubishi F-700 VFD

Control Specifications	
Control System	High carrier frequency PWM control (V/F control)/optimum excitation control/simple magnetic flux vector control
Output Frequency Range	0.5 to 400Hz
Frequency Setting Resolution	0.01HZ
Frequency Accuracy	Within 0.01% of the set output frequency
Starting Torque	120% (3Hz) when set to simple magnetic flux vector control and slip compensation
Acceleration / Deceleration Time Setting	0 to 3600s (acceleration and deceleration can be set individually), linear or S-pattern acceleration/deceleration mode can be selected
DC Injection Brake	Operation Frequency (0 to 120Hz), operation time (0 to 10s), operation voltage (0 to 30%) variable
Stall Prevention Operation Level	Operation current level can be set (0 to 150% adjustable), whether to use the function or not can be selected

Protective / Warning Function
Overcurrent during acceleration, overcurrent during constant speed, overcurrent during deceleration, overvoltage during acceleration, overvoltage during constant speed, overvoltage during deceleration, inverter protection thermal operation, heatsink overheat, instantaneous power failure occurrence, undervoltage, input phase failure, motor overload, output side earth (ground) fault overcurrent, output phase failure, external thermal relay operation, PTC thermistor operation, option alarm, parameter error, PU disconnection, retry count excess, CPU alarm, power supply short for operation panel, 24VDC power output short, output current detection value over, inrush resistance overheat, communication alarm (inverter), analog input alarm, internal circuit alarm (15V power supply), fan fault, overcurrent stall prevention, overvoltage stall prevention, electronic thermal prealarm, PU stop, maintenance timer alarm*1, parameter write error, copy operation error, operation panel lock

Operational Environment	
Ambient Temperature	-10°C to +50°C (non-freezing)
Ambient Humidity	90%RH or less (non-condensing)
Storage Temperature	-20°C to +65°C
Atmosphere	Indoors (without corrosive gas, flammable gas, oil mist, dust and dirt, etc.)
Altitude, Vibration	Maximum 1000m above sea level, 5.9m/s² or less (conforms to JIS C 0040)

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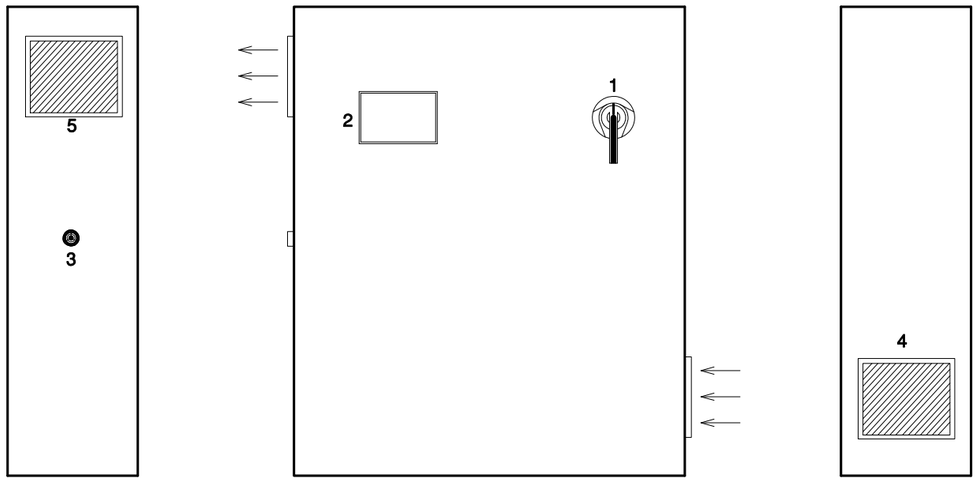


DUPLEX	TRIPLEX	FAN/VENT SIZE	ENCLOSURE SIZE
1-7.5 HP	1-5 HP	8"	30"Hx24"Wx10"D
10-15 HP	7.5-15 HP	10"	42"Hx36"Wx12"D

EQUIPMENT DESCRIPTION

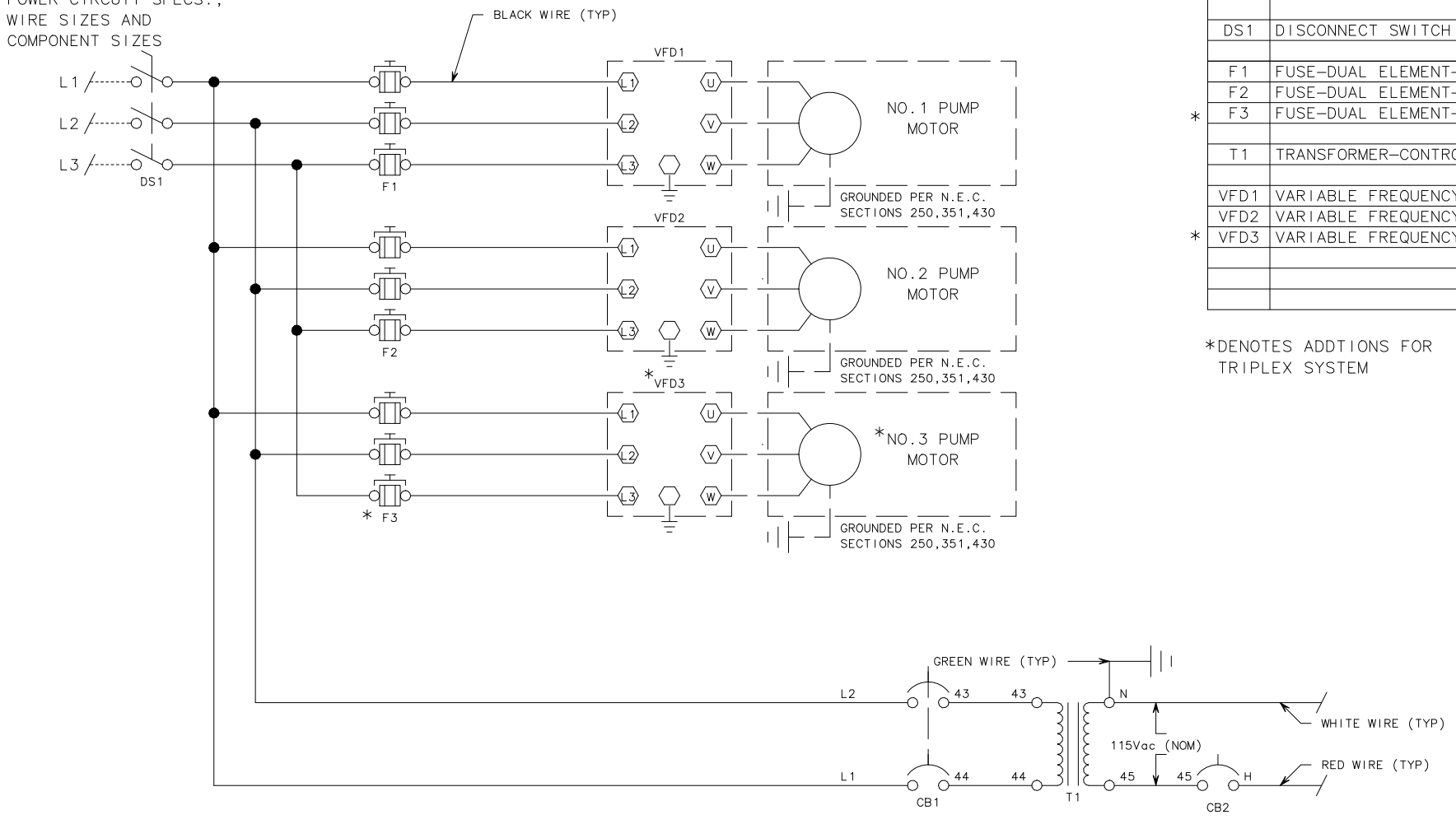
1. MAIN DISCONNECT SWITCH
2. HUMAN MACHINE INTERFACE (TOUCHSCREEN)
3. HORN
4. COOLING FAN
5. COOLING VENT

SyncroFlo
PumpingSystemSolutions
2905 Pacific Drive - Norcross, GA 30071
(770) 447-4443 - Fax (770) 447-0230

IRONHEART EXPRESS
TYPE "VFD"

BULLETIN NUMBER: _	REVISION: _
EFFECTIVE DATE: JUNE 2, 2014	
SUPERSEDES:	

1- SEE CONTROL PANEL DATA SHEET FOR ALL
2- POWER CIRCUIT SPECS., WIRE SIZES AND
3- COMPONENT SIZES



	COMPONENT	DESCRIPTION
	CB1	CIRCUIT BREAKER–PRIMARY (TRANSFORMER)
	CB2	CIRCUIT BREAKER–SECONDARY(TRANSFORMER)
	DS1	DISCONNECT SWITCH
	F1	FUSE–DUAL ELEMENT– –QTY. 3
	F2	FUSE–DUAL ELEMENT– –QTY. 3
*	F3	FUSE–DUAL ELEMENT– –QTY. 3
	T1	TRANSFORMER–CONTROL POWER
	VFD1	VARIABLE FREQUENCY DRIVE
	VFD2	VARIABLE FREQUENCY DRIVE
*	VFD3	VARIABLE FREQUENCY DRIVE

*DENOTES ADDTIONS FOR TRIPLEX SYSTEM

NOTES

THIS SCHEMATIC CONFORMS TO ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. SCHEMATIC DESIGNER DOES NOT WARRANT THAT IT WILL COMPLY WITH MORE RESTRICTIVE LOCAL ELECTRICAL CODES AND DOES NOT WARRANT THE DESIGN OR INSTALLATION OF CONNECTING CIRCUITS OR CIRCUIT DEVICES INSTALLED BY OTHERS WHETHER OR NOT REQUIRED BY NATIONAL OR LOCAL CODES OR BOTH.

ANY MODIFICATIONS OF, OR ADDITIONS TO, THESE CIRCUITS WITHOUT THE WRITTEN CONSENT OF THE DESIGNER WILL VOID ANY WRITTEN OR IMPLIED WARRANTIES.

ELECTRICAL SYMBOLS CONFORM TO NEMA STANDARDS.

ALL ELECTRICAL COMPONENTS SHOWN IN THE DE-ENERGIZED AND DE-PRESSURIZED POSITION.

CONTROL PANEL TO BE GROUNDED BY USER.

ALL WIRE TO BE TYPE THHN, THWN 600V. UNLESS OTHERWISE SPECIFIED.

U. L. LISTED ENCLOSED INDUSTRIAL CONTROL PANEL

A891-SBV

TWO OR THREE PUMP

FUSED DISCONNECT

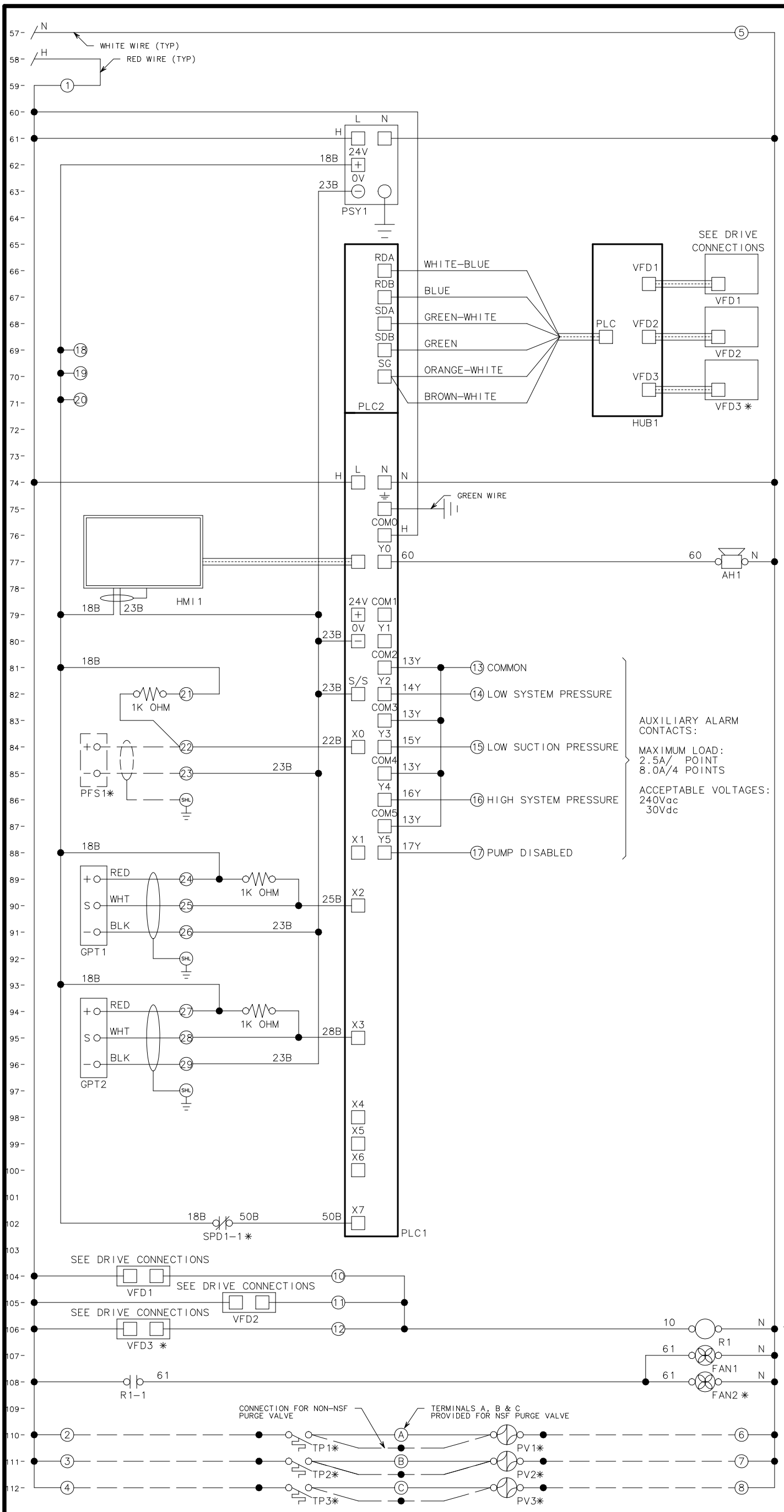
SINGLE CONNECTION - TYPE 'B'

SyncroFlo
PumpingSystemSolutions
2905 Pacific Drive - Norcross, GA 30071
(770) 447-4443 - Fax (770) 447-0230

MOTOR BRANCH
CIRCUIT DIAGRAM

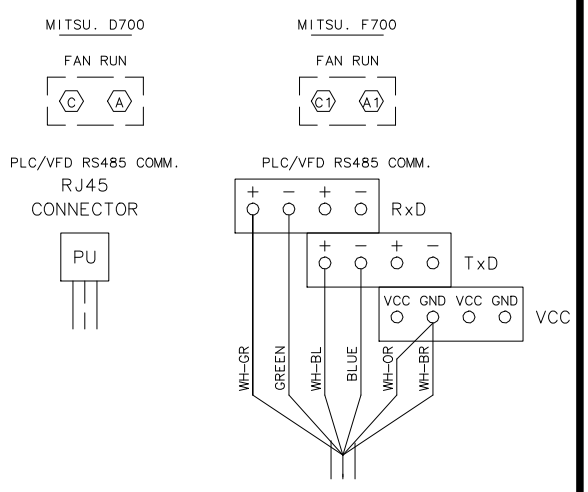
PRODUCTION NUMBER:			
DATE:	JUNE 2, 2014		
ENGINEER:	ACD	CHECKED BY:	
DRAWN BY:	BMP	SCALE:	NONE
DRAWING NUMBER:	A891–SBV	REVISION:	

LET.	REVISION	DATE/BY



		COMPONENT DESCRIPTION
	AH1	ALARM HORN
	FAN1	COOLING FAN
✳	FAN2	COOLING FAN
	GPT1	GAGE PRESSURE TRANSMITTER–SYSTEM (1–6KHz)
	GPT2	GAGE PRESSURE TRANSMITTER–SUCTION(1–6KHz)
	HMI1	HUMAN MACHINE INTERFACE
	HUB1	RJ–45 HUB
✳	PFS1	PADDLEWHEEL FLOW SENSOR
	PLC1	PROGRAMMABLE LOGIC CONTROLLER
	PLC2	PROGRAMMABLE LOGIC CONTROLLER–RS485
	PSY1	POWER SUPPLY–120Vac/24Vdc
✳	PV1	PURGE VALVE
✳	PV2	PURGE VALVE
✳	PV3	PURGE VALVE
	R1	RELAY – FAN RUN INTERFACE
✳	SPD1	SURGE PROTECTION DEVICE
	(TBC)	TERMINAL BOARD–36 POLE–CONTROL
✳	TP1	TEMPERATURE PROBE
✳	TP2	TEMPERATURE PROBE
✳	TP3	TEMPERATURE PROBE
	VFD1	VARIABLE FREQUENCY DRIVE
	VFD2	VARIABLE FREQUENCY DRIVE
✳	VFD3	VARIABLE FREQUENCY DRIVE

DRIVE CONNECTIONS



NOTES

THIS SCHEMATIC CONFORMS TO ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. SCHEMATIC DESIGNER DOES NOT WARRANT THAT IT WILL COMPLY WITH MORE RESTRICTIVE LOCAL ELECTRICAL CODES AND DOES NOT WARRANT THE DESIGN OR INSTALLATION OF CONNECTING CIRCUITS OR CIRCUIT DEVICES INSTALLED BY OTHERS WHETHER OR NOT REQUIRED BY NATIONAL OR LOCAL CODES OR BOTH.

ANY MODIFICATIONS OF, OR ADDITIONS TO, THESE CIRCUITS WITHOUT THE WRITTEN CONSENT OF THE DESIGNER WILL VOID ANY WRITTEN OR IMPLIED WARRANTIES.

ELECTRICAL SYMBOLS CONFORM TO NEMA STANDARDS.

ALL ELECTRICAL COMPONENTS SHOWN IN THE DE–ENERGIZED AND DE–PRESSURIZED POSITION.

CONTROL PANEL TO BE GROUNDED BY USER.

ALL WIRE TO BE TYPE THHN, THWN 600V. UNLESS OTHERWISE SPECIFIED.

◯ DENOTES TERMINAL NUMBER OF (TBC).

✳ DENOTES OPTIONAL EQUIPMENT (SEE CONTROL PANEL DATA SHEET FOR WHICH ITEMS APPLY).

U. L. LISTED ENCLOSED INDUSTRIAL CONTROL PANEL

A805-3226-402

2 OR 3 PUMP WITH VFD'S, SYSTEM AND SUCTION PRESSURE TRANSDUCERS

SyncroFlo
PumpingSystemSolutions
2905 Pacific Drive - Norcross, GA 30071
(770) 447-4443 - Fax (770) 447-0230

2 OR 3 PUMP
TYPE D700/F700 "VFD"
WITH FX3G–14

PRODUCTION NUMBER:			
DATE:	MARCH 5 2010		
ENGINEER:	SHB	CHECKED BY:	
DRAWN BY:	ACD	SCALE:	NONE
DRAWING NUMBER:	A805–3226–402	REV.:	E

Appendix 1 - Set Points

A. Non-Adjustable Set Points

Reset Delay after Alarm Silence	5 sec.
Pressure Transmitter Failed Low Delay	2 sec.
Pressure Transmitter Failed High Delay	8 sec.
VFD Fault Delay	0 sec.

B. Adjustable Set Points

i. Time Delay Set Points

	Default	Range
Low System Press. Alarm Delay	30 sec.	10 - 60 sec.
Low Suction Press. / Lev. Alarm Delay	5 sec.	0 - 30 sec.
Tank Charge Timer (if shutdown enabled)	30 sec.	0 - 999 sec.
Pump Pressure Start Time Delay	5 sec.	2 - 30 sec.
Lag Pump Power Start Time Delay	2 sec.	2 – 30 sec.
Lag Pump Flow Start Time Delay (if provided)	2 sec.	2 - 30 sec.
Pump Minimum Run Time (Manual or Auto-Adjust Set)	300 sec.	30 - 300 sec.

ii. Pressure Set Points

	Default	Range
System Pressure	(See Sys. Data Sheet)	0 - 999 psig
Pressure Sequencing Deadband	5 psid	0 - 999 psid
Low System Pressure Deadband	10 psid	0 - 999 psid
High System Pressure Deadband	30 psid	0 - 999 psid
Low Suction Press. Alarm (if available)	5 psig	0 - 999 psig
High Suction Press. Stop (if available)	System Pressure + 1	0 - 999 psig

iii. Power Set Points

	Default	Range
Lag 1 On Power	See Factory Default Sticker (inside control panel door)	0 – 999 Hp
Lag 1 Off Power	See Sticker	0 – 999 Hp
Lag 2 On Power (if available)	See Sticker	0 – 999 Hp
Lag 2 Off Power (if available)	See Sticker	0 – 999 Hp

iv. Flow Rate Set Points (optional)

	Default	Range
Lag 1 On Flow Rate	One Pump Capacity	0 - 9999 gpm
Lag 1 Off Flow Rate	85% of Pump Cap.	0 - 9999 gpm
Lag 2 On Flow Rate (if available)	200% of Pump Cap.	0 - 9999 gpm
Lag 2 Off Flow Rate (if available)	185% of Pump Cap.	0 - 9999 gpm

v. Speed Control

	Default	Range
VFD Minimum Speed	30 Hz	15 – 60 Hz
VFD Maximum Speed	60 Hz	15 – 60 Hz
VFD Manual Speed	50 Hz	Min. - Max. Speed
Lag Pump Start Speed	50 Hz	Min. - Max. Speed

vi. PID Set Points

	Default	Range
Proportional Gain	500 %	1 - 32767 %
Integral Time Constant	30 decisec.	0 - 32767 sec./10
Derivative Gain	100 %	1 - 100 %
Derivative Time Constant	5 centisec.	0 - 32767 sec./100

BUILGING B

SyncroFlo
Pumping System Solutions

SALES REP: Peacock Sales
PROJECT: Vickers Building B
ENGINEER:

PREPARED BY: Mark Howell
LOCATION: Georgia
DATE:

Duplex VFD IronHeart Pump System Scope

Motor HP	5
Motor Voltage	208
Pump Flow (GPM)	70
Pump Head (TDH)	70
Min. Suction (PSI)	40

Nominal System Flow (GPM)	140
Differential System Pressure (PSI)	30
Suction-Discharge Header Sizes	3" Flanged
Pump & Valve Branch Size	2"
Max. Suction (PSI)	45

SyncroFlo prefabricated pumping system. Pumps, controls and headers are all mounted on a common bent steel skid base for indoor installation in a pump house. The complete pump station will be ETL and UL listed, NSF certified and will be completely tested prior to shipment. System comprises of the following components:

- (2) SyncroFlo NSF Certified end suction pumps. Pump construction is formed 304 Stainless Steel with mechanical seal. Pump is close coupled to a 3600 RPM, ODP, 3 Phase, 60 Cycle, 1.15 Service Factor, class F insulation, High Efficiency motor, which will meet or exceed NEMA MG-1 Table 12-11 for epact motor efficiencies.
- (2) Suction Side, NSF Certified, lug style 150# Isolating butterfly valves,
- (2) Discharge Side, NSF Certified, lug style 150# Isolating butterfly valves
- (2) NSF Certified non-slam, wafer style, check valves
- (1) Flanged, 304 Stainless Steel Suction Header with Branch Connections
- (1) Flanged, 304 Stainless Steel Discharge Header with Branch Connections
- (1) Bent Carbon Steel System Skid and Bolted Panel Stand
- (1) NEMA 1 control panel with the following standard options:
  - Main Non-Fused Disconnect
  - Fusible Disconnect, Touch Safe with rated fuses for each VFD
  - Programmable Logic Controller (PLC) based operation
  - Sequencing by Horsepower and/or Pressure-VFD speed sequencing
  - Customer Accessible data and fault logs
  - Mounted and wired Suction & System Discharge Pressure Transducers
  - Alarm horn
  - 5.7” HMI Color Touchscreen with Compact Flash Drive Data Port
  - (2) Enclosure Mounted, Micro-Processor based Variable Frequency Drives
  - Minimum 10,000 Amp SCCR rating
  - Ventilated and fan-cooled enclosure, with positive cabinet pressure
- NSF Certified Plastic Tubing for instrumentation and system controls
- (2) NSF Certified Mechanical Thermal Purge Valve (shipped loose)
- (2) NSF System pressure gauges, 2.5” face dial, glycerin filled
- System Certified to NSF, ETL and UL certified to OSHA safety standards
- Factory assembled, wired, and FLOW TESTED at design conditions listed above
- 1 year part-only warranty, 5 Year PLC-VFD-HMI Warranty
- Standard SyncroFlo Terms and Conditions Apply

Job Name:	Vickers Building B	Reference #:	
Location:	Georgia	Prepared by:	Mark Howell
Sales Rep:	Peacock Sales	Date:	10/24/2016
Engineer:		System Dwg:	**22DC05XXX-3H-XX-SWF44-1**
Contractor:			

SYSTEM DATA

System Information

Model:	**22DC05XXX-3H-XX-SWF44-1**	
Design Flow rate:	140	Gpm
System Pressure:	70	Psig
Min. Suction Pressure:	40	Psig
Max. Suction Pressure:	45	Psig
Boost Pressure:	30	Psig
Control Valve:	**2**	In
Headers:	**3 ”**	**SS**
Configuration:	**Horizontal**	
Connection:	**Flange**	

Nominal Pump Information

Pump #:	1&2	
Pump Type:	**CCES**	
Construction:	**SS**	
Pump Model:	**A3U-32-160B**	
Design Split:	**50**	% Each
Design Flow:	70	Gpm
Pump Head:	70	Ft
Pump Shutoff:	**76**	Psig
Seal Type:	**Mechanical**	
Motor Size:	**5**	Hp
Motor Speed:	**3500**	Rpm
Motor Enclosure:	**ODP**	
Motor S.F.	**1.15**	

Power Data

Incoming Power Requirement:

Voltage:	3Ø/60~/	208	V
Connection FLA:		37.3	A
Wire Size:		8	G
Control panel:		**NEMA 12**	
Panel SCCR:		**10,000**	A

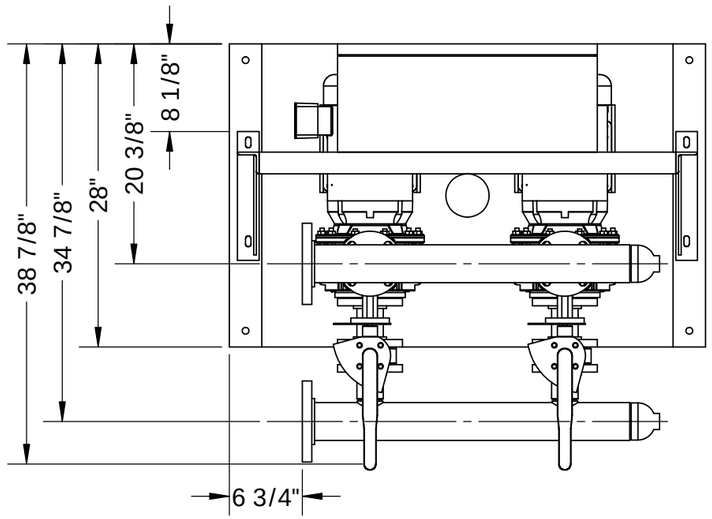
PRESSURE SET POINTS

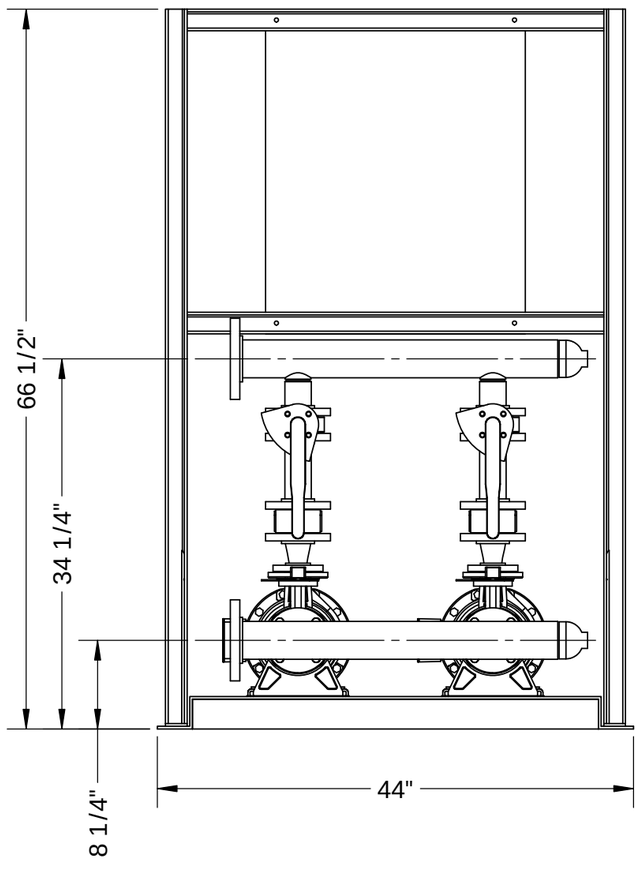
Low System set at:	**Sys Pr - 5**	Psig
Low Suction set at:	**5**	Psig
Horsepower set at:	**5**	Hp
Shutoff Boost:	**10**	Psid

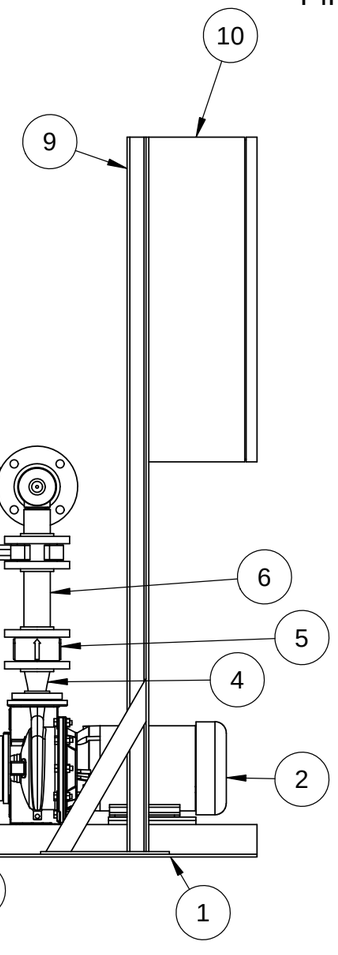
Special Comments

2905 Pacific Drive • Norcross, GA 30071 • Phone: 770-447-4443 • Fax: 770-447-0230

ITEM NO.	DESCRIPTION	Inventory #	QTY.
1	DUPLEX IRONHEART SKID	09-200-4428	1
2	C 5 HP PUMP/MOTOR	12-511-4006	2
3	2" x 4.5" 150-150#	S770-020-0045	2
4	REDUCER SPOOL 2" X 1.25" 150-150#	S771-020-0012	2
5	CHECK VALVE WAFER STYLE 2"	43-022-1020	2
6	2" x 7" 150-150#	S770-020-0070	2
7	2" LUG ISOLATION BUTTERFLY VALVE NSF	42-447-3020	4
8	DUPLEX HEADER 3" X 2"	S772-030-0020	2
9	DUPLEX PANEL STAND 30" X 24"	779-200-3024	1
10	SYSTEM POWER AND CONTROL PANEL	SF952-0050-208S	1







PLEASE ENSURE THE USE OF PROVIDED
PIPE SUPPORT DURING SYSTEM INSTALLATION

APPROX. DRY WEIGHT: 836 LBS

NOTES:
1. ALL DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE
2. PURGE VALVE DRAIN LINE TO BE PIPED TO FLOOR DRAIN IN PROXIMITY OF BOOSTER SYSTEM (BY OTHERS)
3. SEE DATA SHEET FOR L/H OR R/H HEADERS ENTRY/EXIT CONNECTION

SYNCROFLO PACKAGED PUMPING SYSTEMS COMPLY WITH OSHA REGULATIONS AND FEDERAL REGULATION 29 CFR 1910.399. THE ENTIRE PACKAGED SYSTEM IS THIRD PARTY CERTIFIED.

REV	DESCRIPTION	BY DATE

ALL DIMENSIONS +/- TOLERANCE OF 1/2"

DUPLEX IRONHEART
C 5 HP

DRAWN BY: MWA	ENG. BY: MWA	CHK. BY:
DATE: 4/10/15	SIGN:	DATE:

SyncroFlo
Pumping System Solutions
6700 Best Friend Road - Norcross, GA 30071 - (770) 447-4443 - Fax (770) 447-0230

SCALE 1:14

DWG 22DC05XXX-3H-XX-SWF44-3

Model 32-160B-5HP Data Sheet

Model No.: A3U-32-160B50D3CSF

NSF61/ Annex G certified

Pump Data		
Size	1¼ x 2 x 6 9/16	
Flange - Suction	2" ANSI Equivalent	150 lb. ANSI R.F. equivalent
Flange - Discharge	1¼" ANSI Equivalent	150 lb. ANSI R.F. equivalent
Materials		
Casing	304L Stainless Steel	
Impeller (closed)	304L Stainless Steel	
Shaft Sleeve	304L Stainless Steel	
Mechanical Seal	Type 21, Carbon-Ceramic-Viton, Cup Seat	

Motor Data*

5 HP, 3 Phase, 60 Hertz, 208-230/460V, 3500 RPM, ODP, Frame 182JM
Amps: 14.1-12.8/6.4 Max. Temp.: 40C
Service Factor: 1.15 Power Factor: 85
Nominal Full Load Efficiency: 85.5% (NEMA MG-1 Table 12-11)
Direction of Rotation: Clockwise when viewed from motor end

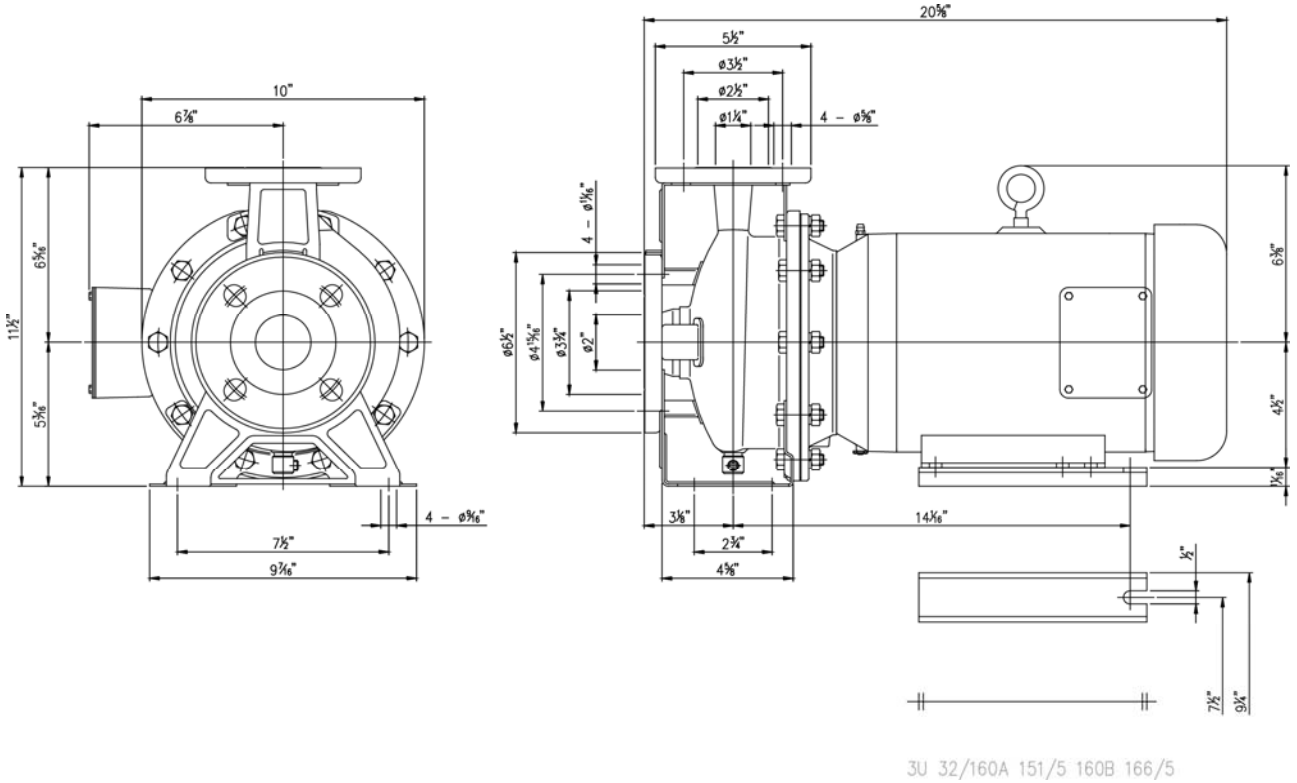
**Values may vary with motor manufacturer.*

Limitations

Temperature: 212°F (100°C)
Working Pressure: 230 PSI

Approx. Weight (lbs) **98**

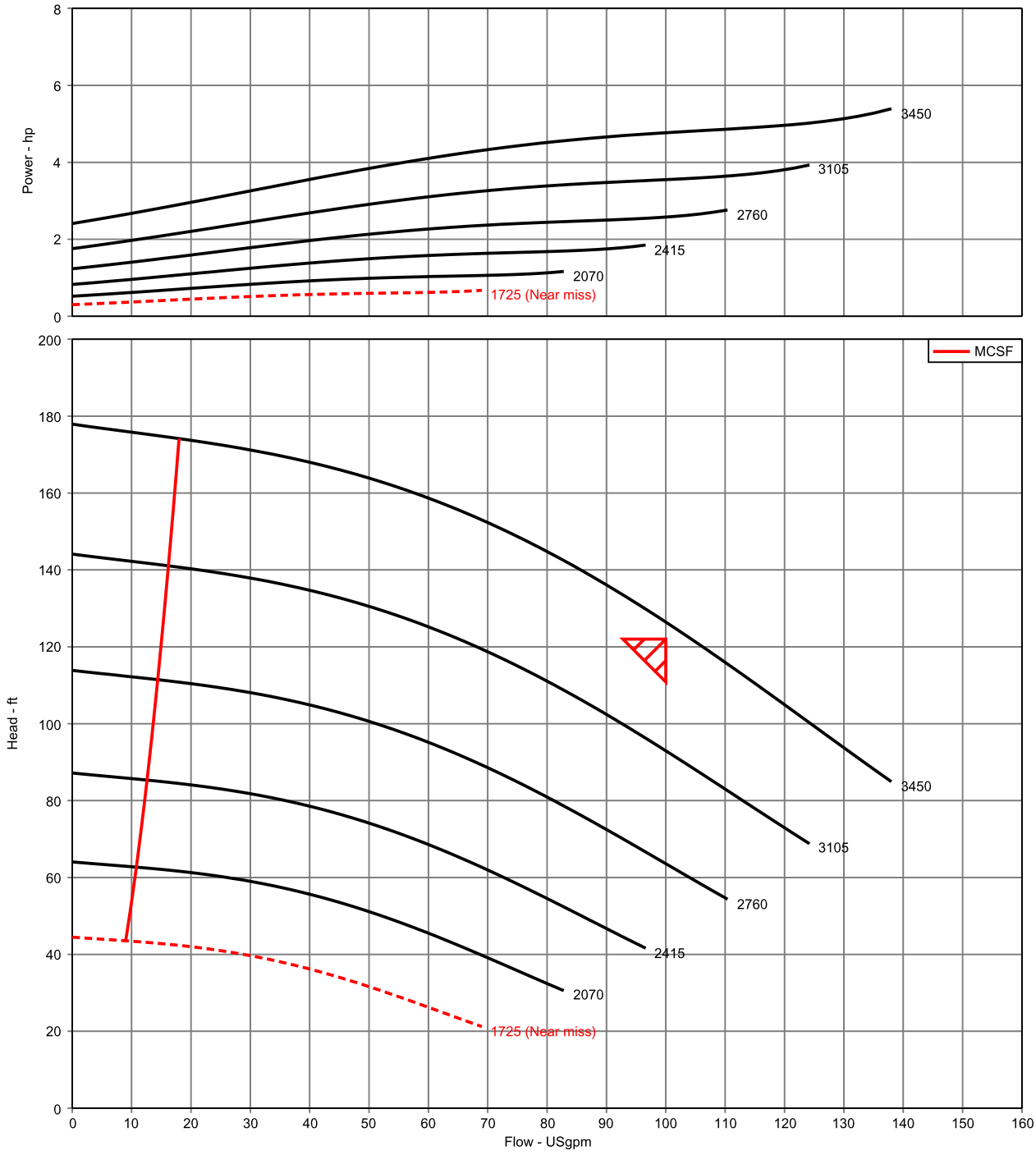
Dimensions



3U 32/160A 151/5 160B 166/5

SyncroFlo
Pumping System Solutions

Multi-Speed Performance Curve



Customer	:	Size	: 3U-32-160B-5HP
Customer reference	:	Stages	: 1
Item number	: Default	Speed, rated	: 3,450 rpm
Service	:	Based on curve number	: 3S-C603-9309
Quantity	: 1	Efficiency	: 66.95 %
Quote number	:	Power, rated	: 4.77 hp
Date last saved	: 06 Mar 2014 3:17 PM	NPSH required	: 9.44 ft
Flow, rated	: 100.0 USgpm	Viscosity	: 1.00 cP
Differential head / pressure, rated	: 122.0 ft	Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Fluid density, rated / max	: 1.000 / 1.000 SG	Impeller diameter, rated	: 6.54 in

SyncroFlo

Pumping System Solutions

Certifications

Personnel

Steve Bradley, PE, Commercial Engineering Manager, is a registered controls engineer in Georgia.

12 degreed engineers on staff – (3) EIT, (3) NFPA 20 certified

9 Engineering Support Staff plus Certified Draftsman

James Blackburn, Operations Manager, is a Six-Sigma Black Belt.

Product

Quality Management System – ISO 9001:2008

BSI America, Inc. certifies the assembly of custom packaged pumping systems accessories and controls for use in commercial, irrigation, municipal, industrial and fire applications are in accordance with ISO 9001: 2008. (Certificate # FM 555054)

Safety Management System

All SyncroFlo packages are tested to applicable UL standards, per below. In addition, systems may be purchased to meet the ANSI/NSF 61 standard. All booster packages comply with ANSI/NSF 372 – Drinking Water System Components – Lead Content.

IAPMO certifies to NSF / ANSI 61 standards for safe drinking water that complies with Lead Plumbing Law (Files # N-5408 & 6961)

UL certifies SyncroFlo's compliance to OSHA standards for packaged pumping systems (UL508, UL508A, and UL778, File # E189340) plus control panels (UL 508A, File # E59076).

Intertek Testing Services certifies SyncroFlo's compliance to OSHA standards for packaged pumping systems (UL 508 and 778) for ETL, a nationally recognized third-party testing laboratory. (Report # 519309)

ETL certifies SyncroFlo's compliance to OSHA standards for packaged fire pumping systems (UL 508, 448, 1004, and 1247).

NTA certifies to various state modular building codes (project in progress)

In addition to these safety and quality certifications, SyncroFlo tests the performance of each and every pump system or control panel that it builds.

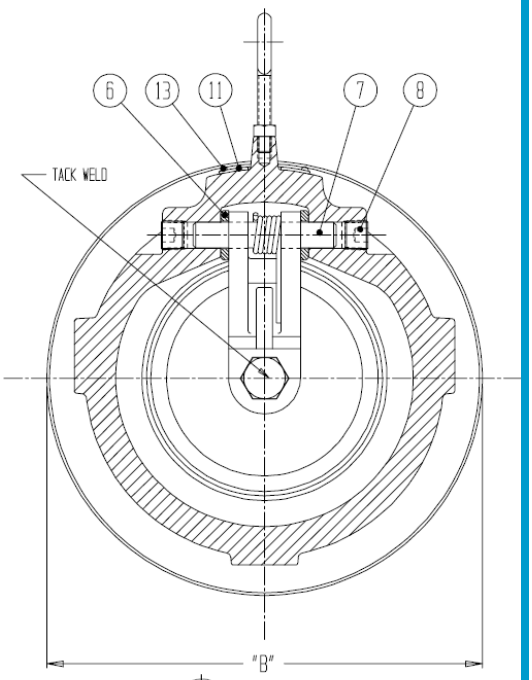
NTA INC. Smart Quality. Assured.℠

SyncroFlo
Pumping System Solutions

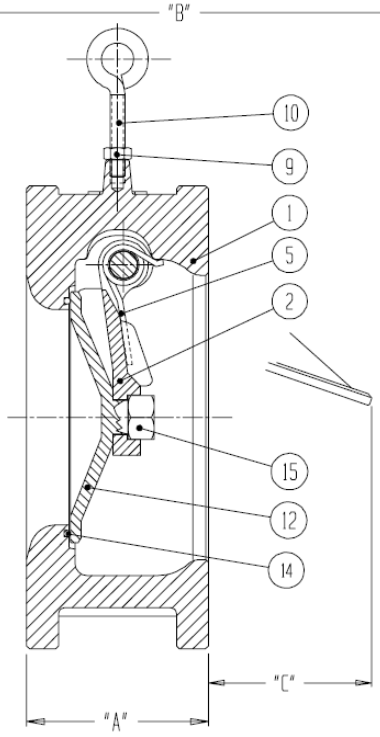
Check Valve Wafer Style
(Check Rite CETNSF)

Flanges, Bolts, Nuts and gaskets are not included

PART NO.	NAME	MATERIAL
1	BODY	ASTM A126-CLB
2	HINGE	ASTM A351-CF8M
5	SPRING	ASTM 313-316
6	SPACER	TEFLON
7	PIN	ASTM A479-316
8	PLUG	STEEL
9	LOCK NUT	STEEL ZINC PLATED
10	EYE BOLT	STEEL ZINC PLATED
11	NAME PLATE	NSF IDENT/ALUM.
12	DISC	ASTM A351-CF8M
13	RIVET	STEEL CAD. PLATED
14	O-RING	NSF EPDM
15	NUT	STAINLESS STEEL



ANSI CLASS 125				
Size (in)	Weight Lbs.	A (in)	B (in)	C (in)
2	3.50	2.13	4.29	1.19
2 1/2	5.00	2.38	5.08	1.50
3	6.50	2.63	5.67	1.69
4	11.00	2.25	6.46	2.44
5	15.00	2.50	7.64	3.38
6	20.00	2.75	8.66	4.25
8	30.00	2.88	10.83	5.38
10	47.00	3.13	13.03	7.00
12	70.00	3.38	15.19	8.13



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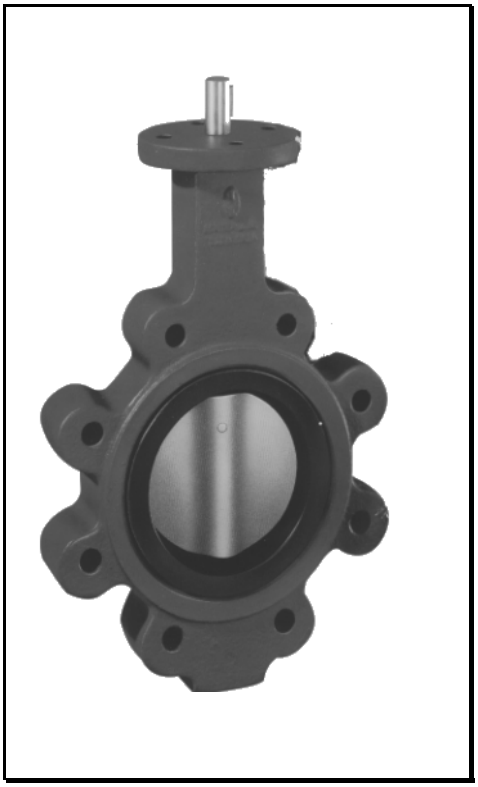
Effective: August 4, 2010

SyncroFlo
Pumping System Solutions

NSF 61 Butterfly Valve

Features:

- **Pressure Rating:** Bi-directional or dead end service, bubble-tight shut off, 250 psig.
- **Pressure Profile Disc:** Assures minimum torque and longer seat life.
- **One-Piece Thru Stem:** Blow out proof, ensures dependability and positive disc positioning.
- **Seat Face:** Negates need for flange gaskets. Valve interior completely isolated from the body.
- **Supported Stem Seal:** Blow out proof with packing gland to prevent entry of external substances.



Materials of Construction	
Body:	Cast Iron
Disc:	Nylon 11 Coated Ductile Iron
Seat:	EPDM
Stem:	416 Stainless Steel

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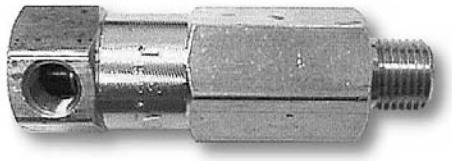
SyncroFlo

Pumping System Solutions

Mechanical Thermal Purge Valve

Operation



To prevent overheating and pump failure a thermal relief valve is installed in each pump casing, discharge head, or discharge piping. The valve will automatically sense the rise in temperature and discharge some of the hot fluid allowing cooler fluid to enter the pump casing. The valve will then close. On factory built pump systems, the thermal relief valves are piped to a common discharge tube. After installation, this discharge tube should be continued to a nearby drain. The discharge tube should be piped in a manner that discharge or leaks are visible to maintenance personnel.

Specifications	
Operating Pressure:	175 psig
Max Pressure Rating:	600 psi
Temperature Setting:	140° F

Materials of Construction	
Body:	Brass
Internal Seal:	Viton®
External Seal:	Buna
Spring:	Stainless Steel
Mounting Connection:	3/8” MPT
Tubing Connection:	¼” FPT

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Pressure Gauge Glycerin Filled

Applications

- Adverse service conditions where pulsating or vibration exists

Special Features

- Vibration and shock resistant
- Stainless steel case for better corrosion resistance
- Pressure ranges up to 15,000 psi

Specifications

- Design standard: ASME B40.100 & EN 837-1
- Protection: Nema 4X
- Face Dial: 2.5” standard, 4” optional
- Accuracy: 4” -/+1% of span
  2.5” -/+ 2.5% of span
- Operating Temperature: -4° F to +160° F

Materials of Construction

- Case: 304SS
- Window: Polycarbonate with Buna-N gasket
- Dial: White ABS with stop pin
- Movement: Copper alloy
- Bourdon Tube: Copper alloy
- Pointer: Black aluminum

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Effective: August 4, 2010

NSF 61 Pressure Transmitter Digital

Overview

The 40-801 is a high quality all stainless steel media isolated Pressure Sensor intended for use in the measurement of liquids compatible with stainless steel. 40-801 pressure sensors and transducers have been designed specifically for applications with demanding performance requirements.

40-801 sensors and transducers high strength stainless steel sensing element is machined from a solid piece of stainless steel, resulting in construction that contains no silicone oil, no welds and no internal O-rings.

Features

- High Accuracy
- High Strength Stainless Steel Construction
- No Silicone Oil. No Internal O-rings, no welds (50 PSI & above)
- Wide operating temperature range
- Fully welded case provides rugged design
- Compatible with wide range of gases and liquids
- Suitable for high shock and vibration applications
- Superior signal clarity compared to analog transmitters

Detailed Specifications

Performance @ 25°C (77°F)	
Accuracy[1]:	<±0.25% BFSL
Stability:	(1 year) ±0.25%FS,typ.
Over Range Protection:	2X Rated Pressure
Burst Pressure:	5X Rated Pressure
Pressure Cycles:	>100 Million
[1]Accuracy includes: Non-linearity, Hysteresis and Non-repeatability	

Environmental Data	
Temperature	
Operating:	-40 to 85°C (-40 to 185°F)
Storage:	-40 to 125°C (-40 to 250°F)
Thermal Limits	
Compensated Range:	0 to 55°C (30 to 130°F)
TC Zero:	<±1.5% of FS
TC Span:	<±1.5% of FS
Other	
Shock:	100G, 11msec, ½ sine
Vibration:	20G peak, 20 to 2400 Hz.
EMI / RFI Protection:	Yes
Rating:	IP-66

PHYSICAL DESCRIPTION	
Wetted Material:	17-4PH stainless steel NACE compatible
Electrical Connection:	Cable
Case (housing):	304 stainless steel

ELECTRICAL DATA	
Excitation:	10-28VDC, Typ.
Output:	Digital Pulse
Current Consumption:	<15mA
Bandwidth:	(-3dB): DC to 250Hz
Zero Offset:	<±1% of FS
Span Tolerance:	<±1.5% of FS
Output Noise:	<2mV RMS
Reverse Polarity Protection:	Ye

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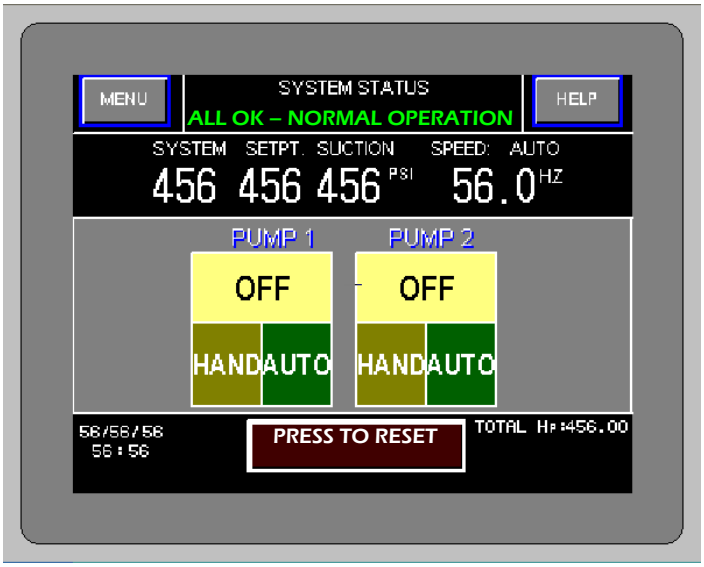
Effective: March 1, 2013

Human Machine Interface Model GT1455



(Illustration only)

SPECIFICATIONS

Display
Screen: 5.7" diagonal, 65,536 color, 320 x 240 dot
Type: Backlit TFT liquid crystal
Viewing Angle: 60 degrees minimum
Operational Life: Approx. 50,000 hrs / 1,000,000 touches min. (at 0.98N operating force)
Power Usage: 8.4 W

SDHC Card (for data retrieval)
4 GB max.
Writes in .CSV format, exportable to Excel
Performance data stored in daily files for up to one year (data recorded every 10 seconds or on alarm)
Data includes: Date, time, flow (if available), system pressure, set point, suction pressure, pumps on, individual drive Hz, V, A, and kW

Environmental
Equivalent to IP67F protection (frost panel with USB environmental protective cover attached)
Operating Temperature: 32 to 122° F [0 to 50°C]
Storage Temperature: -4 to 140°F [-20 to 60°C]

Certifications
UL listed and CE compliant

SyncroFlo

Pumping System Solutions

Mitsubishi D-700 VFD
(10 Hp and Less)

Control Specifications	
Control Method	Soft-PWM control / high carrier frequency PWM control (V/F control, general-purpose magnetic flux vector control, optimum excitation control can be selected)
Output Frequency Range	0.2 to 400Hz
Frequency Setting Resolution	0.01Hz
Frequency Accuracy	Within 0.01% of the set output frequency
Starting Torque	150% or more (at 1Hz) when general purpose magnetic flux vector control and slip compensation is set
Acceleration / Deceleration Time Setting	0.1 to 3600s (acceleration and deceleration can be set individually). Linear or S-pattern acceleration / deceleration mode can be selected
DC Injection Brake	Operation frequency (0 to 150Hz), operation time (0 to 10s), operation voltage (0 to 30%) variable
Stall Prevention Operation Level	Operation current level can be set (0 to 200% adjustable), whether to use the function or not can be selected

Protective / Warning Function	
Protective Function	Overcurrent during acceleration, overcurrent during constant speed, overcurrent during deceleration, overvoltage during acceleration, overvoltage constant speed, overvoltage during deceleration, inverter protection thermal operation, motor protection thermal operation, heatsink overheat, input phase failure* , output side earth (ground) fault overcurrent at start*, output phase failure, external thermal relay operation *, PTC thermistor operation*, parameter error, PU disconnection, retry count excess *, CPU fault, brake transistor alarm, inrush resistance overheat, analog input error, stall prevention operation, output current detection value exceeded
Warning Function	2Hp and above, overcurrent stall prevention, overvoltage stall prevention, PU stop, parameter write error, regenerative brake prealarm *, electronic thermal relay function prealarm, maintenance output *, undervoltage, operation panel lock, password locked, inverter reset

Operational Environment	
Ambient Temperature	-10°C to +50°C (non-freezing)
Ambient Humidity	90%RH maximum (non-condensing)
Storage Temperature	-20°C to + 65°C
Atmosphere	Indoors (without corrosive gas, flammable gas, oil mist, dust and dirt, etc.)
Altitude / Vibration	Maximum 1000m above sea level, 5.9m/s² or less

* If Enabled

2905 Pacific Drive • Norcross, GA 30071 • Phone: 770-447-4443 • Fax: 770-447-0230 • http://www.syncroflo.com
Effective: August 9, 2010

SyncroFlo

Pumping System Solutions

Mitsubishi F-700 VFD

Control Specifications	
Control System	High carrier frequency PWM control (V/F control)/optimum excitation control/simple magnetic flux vector control
Output Frequency Range	0.5 to 400Hz
Frequency Setting Resolution	0.01HZ
Frequency Accuracy	Within 0.01% of the set output frequency
Starting Torque	120% (3Hz) when set to simple magnetic flux vector control and slip compensation
Acceleration / Deceleration Time Setting	0 to 3600s (acceleration and deceleration can be set individually), linear or S-pattern acceleration/deceleration mode can be selected
DC Injection Brake	Operation Frequency (0 to 120Hz), operation time (0 to 10s), operation voltage (0 to 30%) variable
Stall Prevention Operation Level	Operation current level can be set (0 to 150% adjustable), whether to use the function or not can be selected

Protective / Warning Function
Overcurrent during acceleration, overcurrent during constant speed, overcurrent during deceleration, overvoltage during acceleration, overvoltage during constant speed, overvoltage during deceleration, inverter protection thermal operation, heatsink overheat, instantaneous power failure occurrence, undervoltage, input phase failure, motor overload, output side earth (ground) fault overcurrent, output phase failure, external thermal relay operation, PTC thermistor operation, option alarm, parameter error, PU disconnection, retry count excess, CPU alarm, power supply short for operation panel, 24VDC power output short, output current detection value over, inrush resistance overheat, communication alarm (inverter), analog input alarm, internal circuit alarm (15V power supply), fan fault, overcurrent stall prevention, overvoltage stall prevention, electronic thermal prealarm, PU stop, maintenance timer alarm*1, parameter write error, copy operation error, operation panel lock

Operational Environment	
Ambient Temperature	-10°C to +50°C (non-freezing)
Ambient Humidity	90%RH or less (non-condensing)
Storage Temperature	-20°C to +65°C
Atmosphere	Indoors (without corrosive gas, flammable gas, oil mist, dust and dirt, etc.)
Altitude, Vibration	Maximum 1000m above sea level, 5.9m/s² or less (conforms to JIS C 0040)

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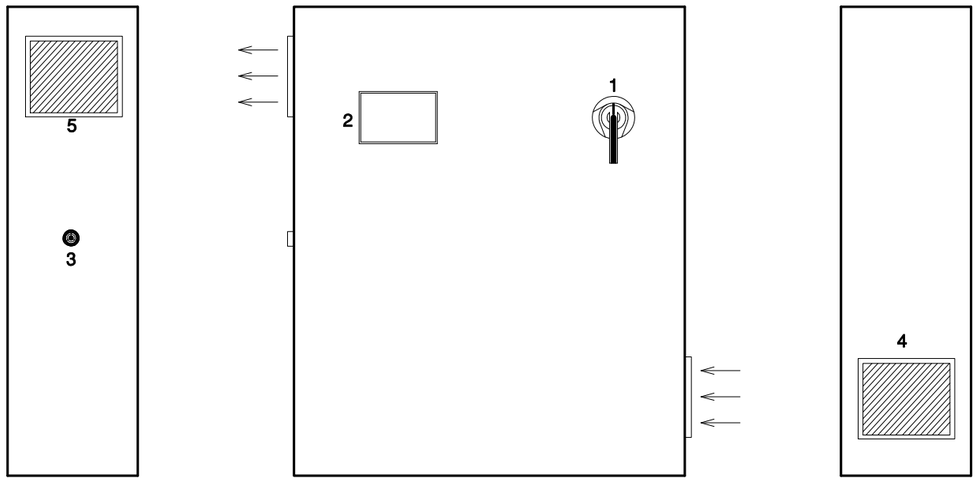
Effective: August 9, 2010



DUPLEX	TRIPLEX	FAN/VENT SIZE	ENCLOSURE SIZE
1-7.5 HP	1-5 HP	8"	30"Hx24"Wx10"D
10-15 HP	7.5-15 HP	10"	42"Hx36"Wx12"D

EQUIPMENT DESCRIPTION

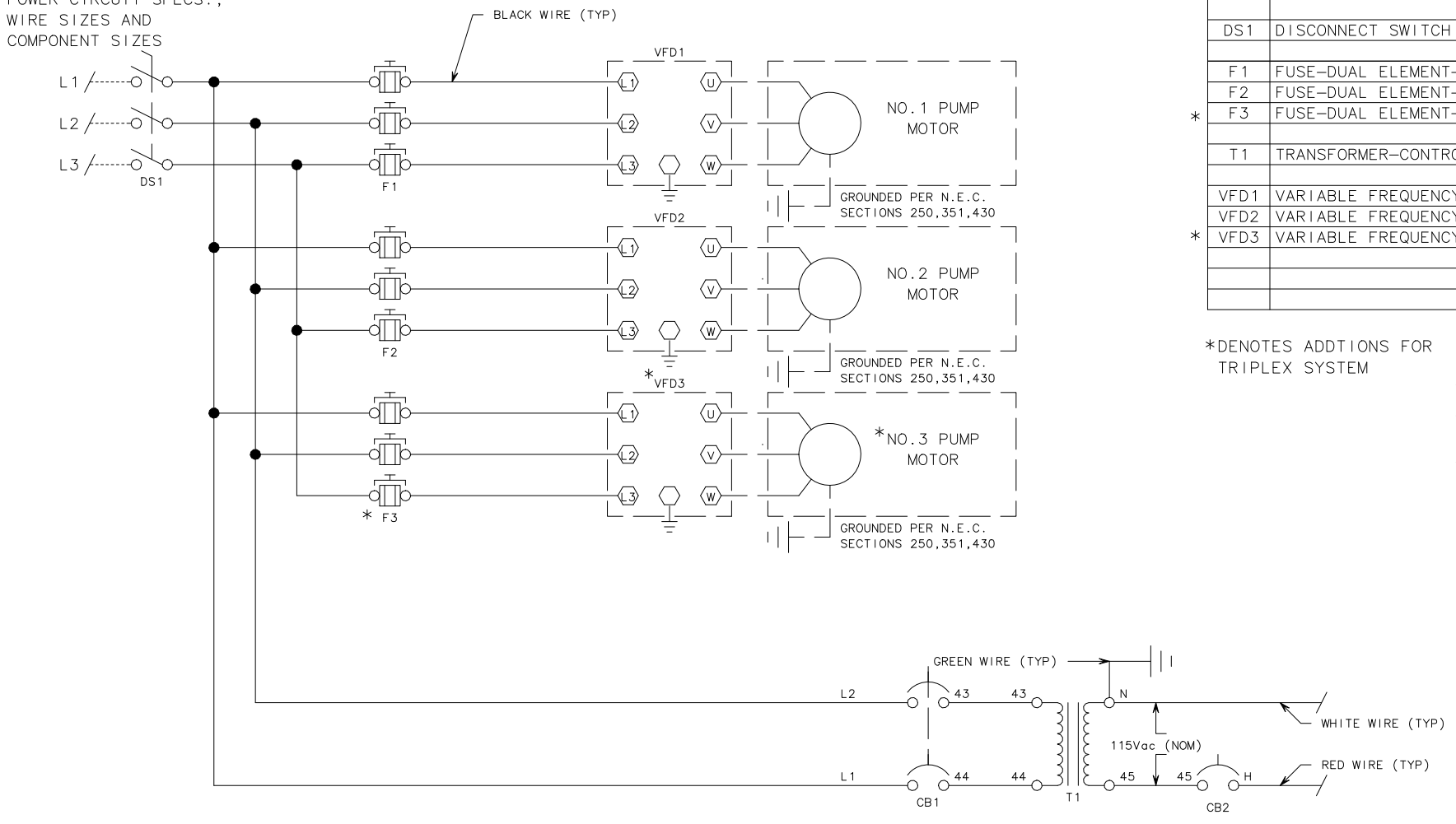
1. MAIN DISCONNECT SWITCH
2. HUMAN MACHINE INTERFACE (TOUCHSCREEN)
3. HORN
4. COOLING FAN
5. COOLING VENT

SyncroFlo
PumpingSystemSolutions
2905 Pacific Drive - Norcross, GA 30071
(770) 447-4443 - Fax (770) 447-0230

IRONHEART EXPRESS
TYPE "VFD"

BULLETIN NUMBER: _	REVISION: _
EFFECTIVE DATE: JUNE 2, 2014	
SUPERSEDES:	

1- SEE CONTROL PANEL DATA SHEET FOR ALL
2- POWER CIRCUIT SPECS., WIRE SIZES AND
3- COMPONENT SIZES



	COMPONENT	DESCRIPTION
	CB1	CIRCUIT BREAKER–PRIMARY (TRANSFORMER)
	CB2	CIRCUIT BREAKER–SECONDARY(TRANSFORMER)
	DS1	DISCONNECT SWITCH
	F1	FUSE–DUAL ELEMENT– –QTY. 3
	F2	FUSE–DUAL ELEMENT– –QTY. 3
*	F3	FUSE–DUAL ELEMENT– –QTY. 3
	T1	TRANSFORMER–CONTROL POWER
	VFD1	VARIABLE FREQUENCY DRIVE
	VFD2	VARIABLE FREQUENCY DRIVE
*	VFD3	VARIABLE FREQUENCY DRIVE

*DENOTES ADDTIONS FOR TRIPLEX SYSTEM

NOTES

THIS SCHEMATIC CONFORMS TO ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. SCHEMATIC DESIGNER DOES NOT WARRANT THAT IT WILL COMPLY WITH MORE RESTRICTIVE LOCAL ELECTRICAL CODES AND DOES NOT WARRANT THE DESIGN OR INSTALLATION OF CONNECTING CIRCUITS OR CIRCUIT DEVICES INSTALLED BY OTHERS WHETHER OR NOT REQUIRED BY NATIONAL OR LOCAL CODES OR BOTH.

ANY MODIFICATIONS OF, OR ADDITIONS TO, THESE CIRCUITS WITHOUT THE WRITTEN CONSENT OF THE DESIGNER WILL VOID ANY WRITTEN OR IMPLIED WARRANTIES.

ELECTRICAL SYMBOLS CONFORM TO NEMA STANDARDS.

ALL ELECTRICAL COMPONENTS SHOWN IN THE DE-ENERGIZED AND DE-PRESSURIZED POSITION.

CONTROL PANEL TO BE GROUNDED BY USER.

ALL WIRE TO BE TYPE THHN, THWN 600V. UNLESS OTHERWISE SPECIFIED.

U. L. LISTED ENCLOSED INDUSTRIAL CONTROL PANEL

A891-SBV

TWO OR THREE PUMP

FUSED DISCONNECT

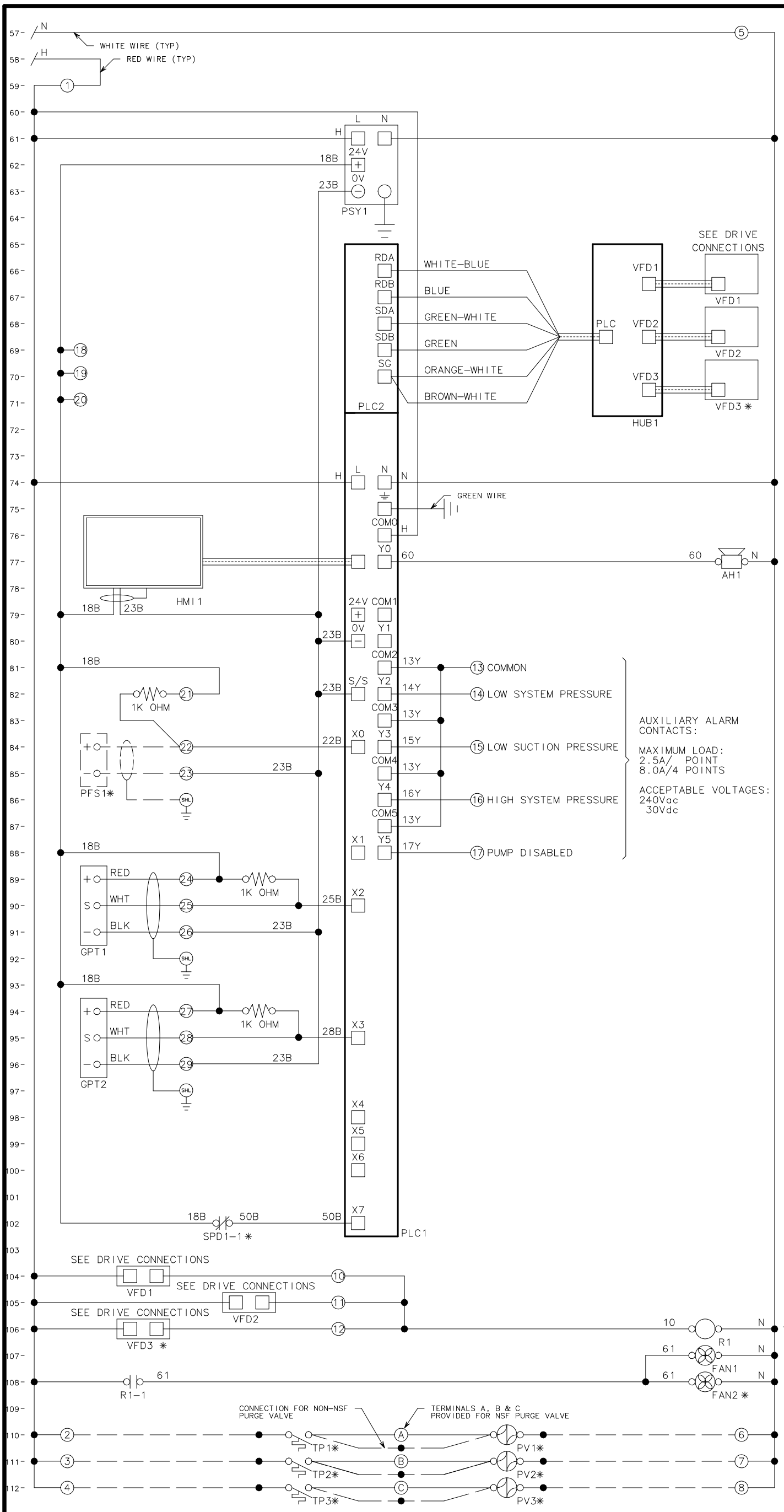
SINGLE CONNECTION - TYPE 'B'

SyncroFlo
PumpingSystemSolutions
2905 Pacific Drive - Norcross, GA 30071
(770) 447-4443 - Fax (770) 447-0230

MOTOR BRANCH
CIRCUIT DIAGRAM

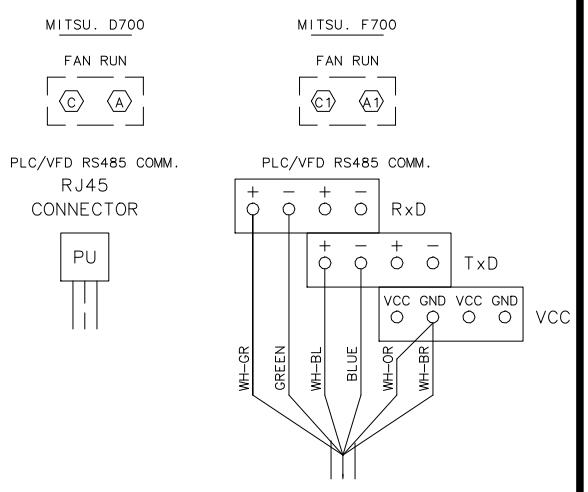
PRODUCTION NUMBER:			
DATE:	JUNE 2, 2014		
ENGINEER:	ACD	CHECKED BY:	
DRAWN BY:	BMP	SCALE:	NONE
DRAWING NUMBER:	A891–SBV	REVISION:	

LET.	REVISION	DATE/BY



		COMPONENT DESCRIPTION
	AH1	ALARM HORN
	FAN1	COOLING FAN
✳	FAN2	COOLING FAN
	GPT1	GAGE PRESSURE TRANSMITTER–SYSTEM (1–6KHz)
	GPT2	GAGE PRESSURE TRANSMITTER–SUCTION(1–6KHz)
	HMI1	HUMAN MACHINE INTERFACE
	HUB1	RJ–45 HUB
✳	PFS1	PADDLEWHEEL FLOW SENSOR
	PLC1	PROGRAMMABLE LOGIC CONTROLLER
	PLC2	PROGRAMMABLE LOGIC CONTROLLER–RS485
	PSY1	POWER SUPPLY–120Vac/24Vdc
✳	PV1	PURGE VALVE
✳	PV2	PURGE VALVE
✳	PV3	PURGE VALVE
	R1	RELAY – FAN RUN INTERFACE
✳	SPD1	SURGE PROTECTION DEVICE
	(TBC)	TERMINAL BOARD–36 POLE–CONTROL
✳	TP1	TEMPERATURE PROBE
✳	TP2	TEMPERATURE PROBE
✳	TP3	TEMPERATURE PROBE
	VFD1	VARIABLE FREQUENCY DRIVE
	VFD2	VARIABLE FREQUENCY DRIVE
✳	VFD3	VARIABLE FREQUENCY DRIVE

DRIVE CONNECTIONS



NOTES

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ANY MODIFICATIONS OF, OR ADDITIONS TO, THESE CIRCUITS WITHOUT THE WRITTEN CONSENT OF THE DESIGNER WILL VOID ANY WRITTEN OR IMPLIED WARRANTIES.

ELECTRICAL SYMBOLS CONFORM TO NEMA STANDARDS.

ALL ELECTRICAL COMPONENTS SHOWN IN THE DE–ENERGIZED AND DE–PRESSURIZED POSITION.

CONTROL PANEL TO BE GROUNDED BY USER.

ALL WIRE TO BE TYPE THHN, THWN 600V. UNLESS OTHERWISE SPECIFIED.

◯ DENOTES TERMINAL NUMBER OF (TBC).

✳ DENOTES OPTIONAL EQUIPMENT (SEE CONTROL PANEL DATA SHEET FOR WHICH ITEMS APPLY).

U. L. LISTED ENCLOSED INDUSTRIAL CONTROL PANEL

A805-3226-402

2 OR 3 PUMP WITH VFD'S, SYSTEM AND SUCTION PRESSURE TRANSDUCERS

SyncroFlo
PumpingSystemSolutions
2905 Pacific Drive - Norcross, GA 30071
(770) 447-4443 - Fax (770) 447-0230

2 OR 3 PUMP
TYPE D700/F700 "VFD"
WITH FX3G–14

PRODUCTION NUMBER:			
DATE:	MARCH 5 2010		
ENGINEER:	SHB	CHECKED BY:	
DRAWN BY:	ACD	SCALE:	NONE
DRAWING NUMBER:	A805–3226–402	REV.:	E

Appendix 1 - Set Points

A. Non-Adjustable Set Points

Reset Delay after Alarm Silence	5 sec.
Pressure Transmitter Failed Low Delay	2 sec.
Pressure Transmitter Failed High Delay	8 sec.
VFD Fault Delay	0 sec.

B. Adjustable Set Points

i. Time Delay Set Points

	Default	Range
Low System Press. Alarm Delay	30 sec.	10 - 60 sec.
Low Suction Press. / Lev. Alarm Delay	5 sec.	0 - 30 sec.
Tank Charge Timer (if shutdown enabled)	30 sec.	0 - 999 sec.
Pump Pressure Start Time Delay	5 sec.	2 - 30 sec.
Lag Pump Power Start Time Delay	2 sec.	2 – 30 sec.
Lag Pump Flow Start Time Delay (if provided)	2 sec.	2 - 30 sec.
Pump Minimum Run Time (Manual or Auto-Adjust Set)	300 sec.	30 - 300 sec.

ii. Pressure Set Points

	Default	Range
System Pressure	(See Sys. Data Sheet)	0 - 999 psig
Pressure Sequencing Deadband	5 psid	0 - 999 psid
Low System Pressure Deadband	10 psid	0 - 999 psid
High System Pressure Deadband	30 psid	0 - 999 psid
Low Suction Press. Alarm (if available)	5 psig	0 - 999 psig
High Suction Press. Stop (if available)	System Pressure + 1	0 - 999 psig

iii. Power Set Points

	Default	Range
Lag 1 On Power	See Factory Default Sticker (inside control panel door)	0 – 999 Hp
Lag 1 Off Power	See Sticker	0 – 999 Hp
Lag 2 On Power (if available)	See Sticker	0 – 999 Hp
Lag 2 Off Power (if available)	See Sticker	0 – 999 Hp

iv. Flow Rate Set Points (optional)

	Default	Range
Lag 1 On Flow Rate	One Pump Capacity	0 - 9999 gpm
Lag 1 Off Flow Rate	85% of Pump Cap.	0 - 9999 gpm
Lag 2 On Flow Rate (if available)	200% of Pump Cap.	0 - 9999 gpm
Lag 2 Off Flow Rate (if available)	185% of Pump Cap.	0 - 9999 gpm

v. Speed Control

	Default	Range
VFD Minimum Speed	30 Hz	15 – 60 Hz
VFD Maximum Speed	60 Hz	15 – 60 Hz
VFD Manual Speed	50 Hz	Min. - Max. Speed
Lag Pump Start Speed	50 Hz	Min. - Max. Speed

vi. PID Set Points

	Default	Range
Proportional Gain	500 %	1 - 32767 %
Integral Time Constant	30 decisec.	0 - 32767 sec./10
Derivative Gain	100 %	1 - 100 %
Derivative Time Constant	5 centisec.	0 - 32767 sec./100

5

WATER HEATER 2:			38
AENLB50202173000	AO SMITH	48G 4.5KW 208V 1PH LB WHTR	39
PFXT5I	PROFLO	LF 2 GAL THERMAL EXPANSION TANK	41
WATER HEATER 3:			42
AENT55202773000	AO SMITH	6KW 208V 1PH WHTR ALUM	43
PFXT5I	PROFLO	LF 2 GAL THERMAL EXPANSION TANK	45
ELEVATOR PUMP:			46
LELV290	LIBERTY	3/4 HP 115 VOLTS 1PH CAST IRON SUBMERSIBLE SUMP PUMP	47

FERGUSON ENTERPRISES, INC.®

UNIT AREA

STERLING WATER CLOSET:

S4033150	STERLING	1.6/1.28 GALLONS PER FLUSH 12 ELONGATED BOWL ADA WINDHAM WHITE
S4045510	STERLING	WINDHAM CLOSET TANK WHITE 1.28 GALLONS PER FLUSH
PFTSE2000WH	PROFLO	ELONGATED CLOSET SEAT PLASTIC ECONOMY WHITE

STERLING
A KOHLER COMPANY

WINDHAM™

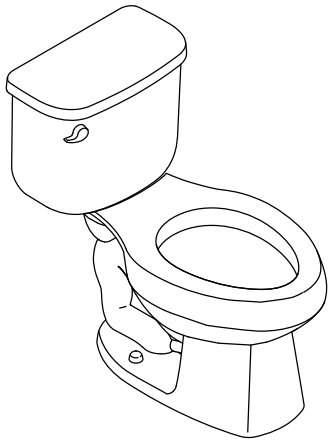
LUXURY HEIGHT® HET-HIGH EFFICIENCY TOILET 403082

ADA | CSA B651 | OBC

WaterSense Meets EPA Criteria Certified by IAPMO R&T

Features

- *Vitreous china*
- *Sterling Pro Force® Technology*
- *Luxury Height® elongated bowl*
- *5-year limited warranty*
- *1.28 gpf (4.8 lpf)*
- *Flushes efficiently regardless of incoming water pressure*
- *Three-bolt, quick-connect installation system*
- *Polished chrome trip lever*
- *Less seat and supply*
- *12″ (305 mm) rough-in*
- *8″ (203 mm) x 10″ (254 mm) water area*
- *29-1/8″ (740 mm) x 15″ (381 mm) x 31 (787 mm)*



Codes/Standards Applicable

Specified model meets or exceeds the following:

- *ADA*
- *ICC/ANSI A117.1*
- *CSA B651*
- *OBC*
- *ASME A112.19.2/CSA B45.1*
- *EPA WaterSense®*

Colors/Finishes

- 0: White
- Other: Refer to Price Book for additional colors/finishes

Accessories

- 0: White
- Other: Refer to Price Book for additional colors/finishes

Specified Model

Model	Description	Trip Lever	Included Tank	Included Bowl	Colors/Finishes	
403082	Luxury Height HET-High Efficiency toilet (shown)	left-hand	404551	403315	❑ 0	❑ Other_____
403082-RA	Luxury Height HET-High Efficiency toilet	right-hand	404551-RA	403315	❑ 0	❑ Other_____

Recommended Accessories			
K-4650	Lustra™ elongated open-front toilet seat – for Accessibility compliance	❑ 0	❑ Other_____
K-4650-A	Lustra elongated open-front toilet seat with anti-microbial agent – for Accessibility compliance	❑ 0	

WINDHAM™

Product Information

Fixture:	
Configuration	Two-piece, elongated
Water per full flush	1.28 gpf (4.8 lpf)
Passageway	2″ (51 mm)
Water area	8″ (203 mm) x 10″ (254 mm)
Seat post hole centers	5-1/2″ (140 mm)

Included components:	
Bowl	403315
Tank – left-hand **OR**	404551
Tank – right-hand	404551-RA
Tank cover	1203861
Trip lever – left-hand **OR**	84625
Trip lever – right-hand	1213048
Bolt cap accessory pack	1013092

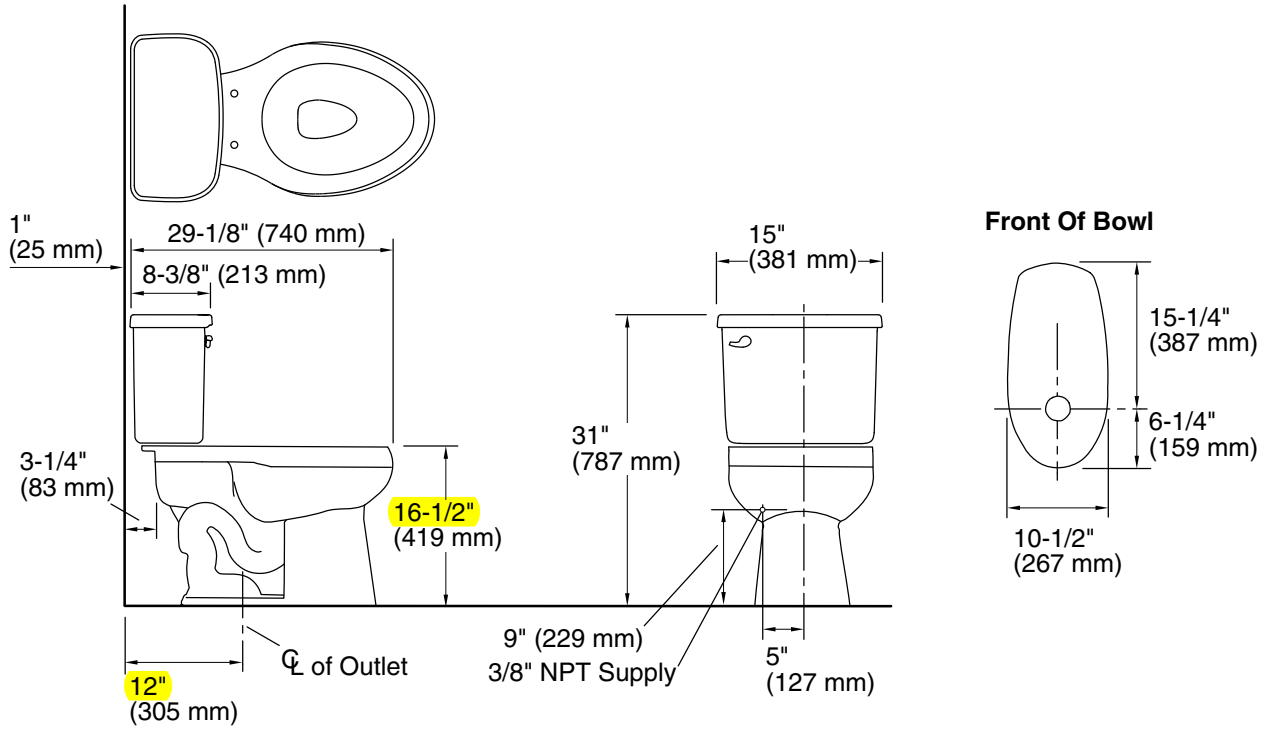
Installation Notes

Install this product according to the installation guide.

Will comply with the Americans with Disabilities Act **(ADA)** when installed per the requirements of the 2010 ADA Standards for Accessible Design, Section 604 Water Closets and Toilet Compartments, of the Act. The Model Plumbing Codes require the installation of elongated open-front toilet seats in public bathrooms.

Will comply with **CSA B651** when installed per Clause 4.3.6 of the standard.

Will comply with **OBC** when installed per Clause 3.8.3.8 and 3.8.3.9.



Product Diagram

STERLING
A KOHLER COMPANY

WINDHAM™

LUXURY HEIGHT® HET-HIGH EFFICIENCY TOILET 403082

ADA | CSA B651 | OBC

WaterSense Meets EPA Criteria Certified by IAPMO R&T

Features

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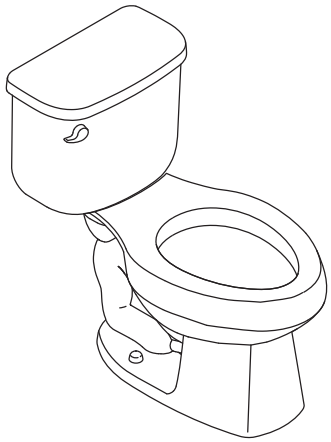

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- *ICC/ANSI A117.1*
- *CSA B651*
- *OBC*
- *ASME A112.19.2/CSA B45.1*
- *EPA WaterSense®*

Colors/Finishes

- 0: White
- Other: Refer to Price Book for additional colors/finishes

Accessories

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- Other: Refer to Price Book for additional colors/finishes

Specified Model

Model	Description	Trip Lever	Included Tank	Included Bowl	Colors/Finishes	
403082	Luxury Height HET-High Efficiency toilet (shown)	left-hand	404551	403315	❑ 0	❑ Other_____
403082-RA	Luxury Height HET-High Efficiency toilet	right-hand	404551-RA	403315	❑ 0	❑ Other_____

Recommended Accessories			
K-4650	Lustra™ elongated open-front toilet seat – for Accessibility compliance	❑ 0	❑ Other_____
K-4650-A	Lustra elongated open-front toilet seat with anti-microbial agent – for Accessibility compliance	❑ 0	

WINDHAM™

Product Information

Fixture:	
Configuration	Two-piece, elongated
Water per full flush	1.28 gpf (4.8 lpf)
Passageway	2″ (51 mm)
Water area	8″ (203 mm) x 10″ (254 mm)
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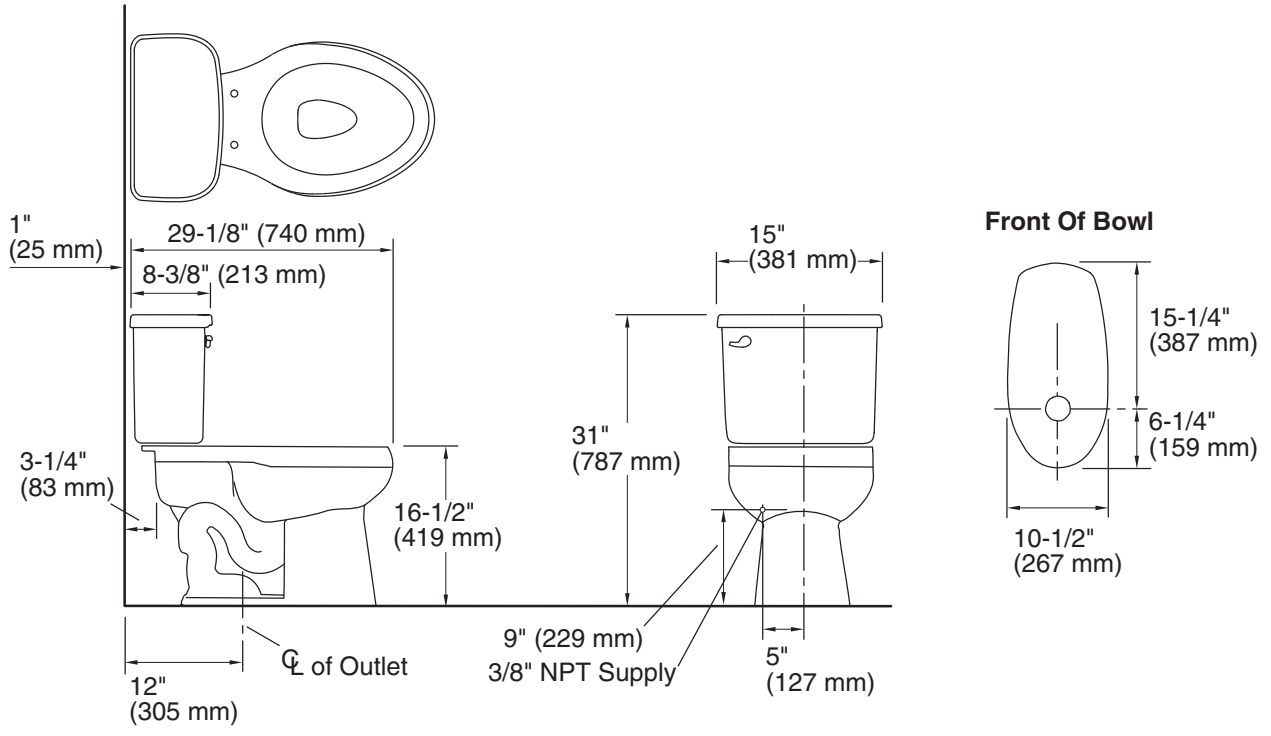


Product Diagram

PFTSE2000WH

Plastic Toilet Seats

PROFLO®

Product Features

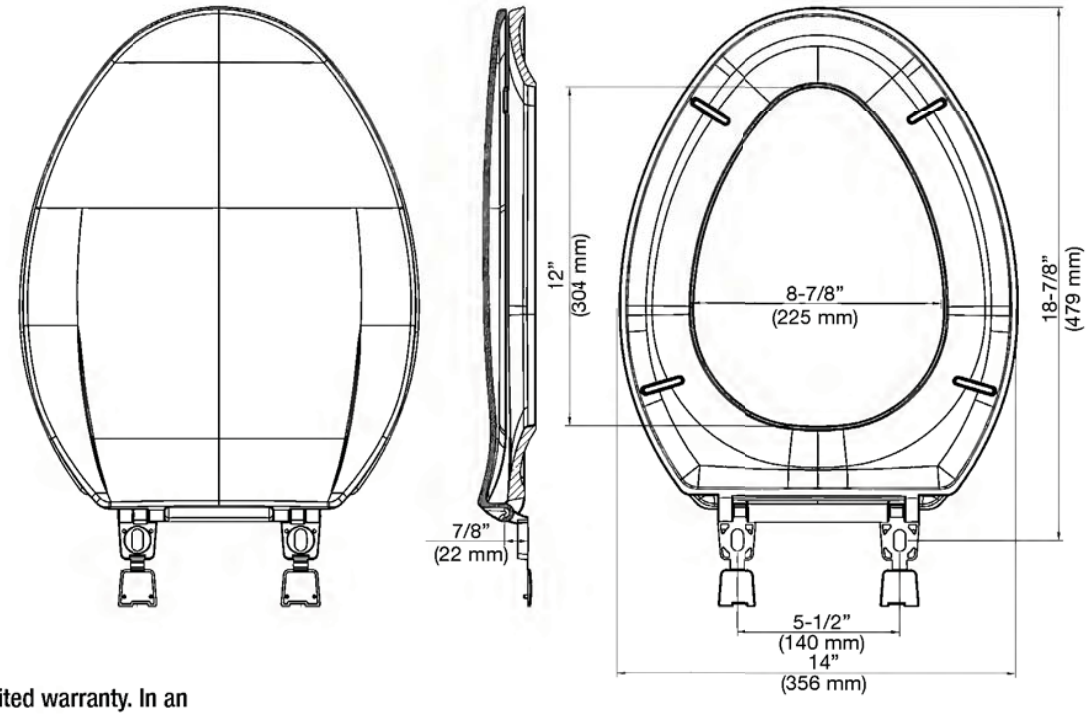
- Impact resistant plastic construction
- Available in round or elongated
- Closed front with cover
- Conforms to ANSI Z124.5
- White only

PFTSE2000WH

Model Numbers

PFTSE2000WH Elongated plastic toilet seat, white

Product Specifications



Warranty and Codes

PROFLO toilet seats carry a 1-year limited warranty. In an effort to continually improve our products, FEI will make design changes from time to time. We reserve the right to ship newly designed product to fill any order unless we agree in writing to do otherwise. Conforms to ANSI Z124.5

Distributed Exclusively by Ferguson and Wolseley Canada

6869 12/10

FERGUSON ENTERPRISES, INC.®

LAVATORY:

K2210-0	KOHLER	17"X14" VC UNDERCOUNTER LAVATORY BOWL W/ MOUNTING HARDWARE
PFWSC8850CP	PROFLO	LEAD LAW COMPLIANT 1.2 GPM 1 HANDLE LAVATORY FAUCET WITH POP UP POLISHED CHROME

KOHLER®

Caxton®
Bathroom Sink
K-2210

Features
- Vitreous china.
- Under-mount
- With overflow.
- Includes 1193643 clamp assembly.
- Available with KOHLER Artist Editions designs
- 19-1/4" (489 mm) x 16-1/4" (413 mm)

Recommended Accessories
K-8998 P-Trap

Components
Additional included component/s: Basin Clamp Assembly.

ADA | **CSA B651**

Codes/Standards
ASME A112.19.2/CSA B45.1
ADA
ICC/ANSI A117.1
CSA B651

KOHLER® One-Year Limited Warranty
See website for detailed warranty information.

Available Color/Finishes
Color tiles intended for reference only.

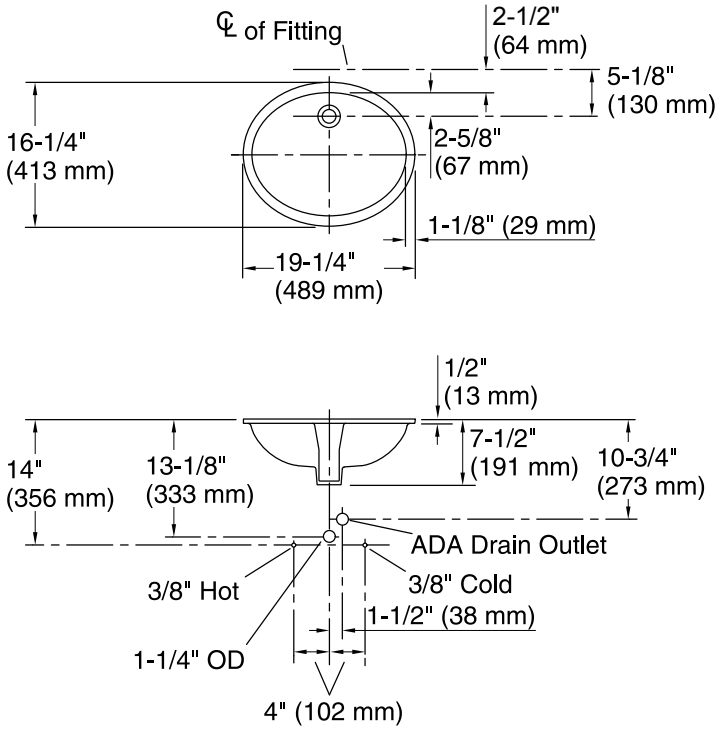
Color	Code	Description
✓	0	White
	96	Biscuit
	47	Almond
	NY	Dune
	95	Ice™ Grey
	G9	Sandbar
	33	Mexican Sand™
	K4	Cashmere
	58	Thunder™ Grey
	7	Black Black™

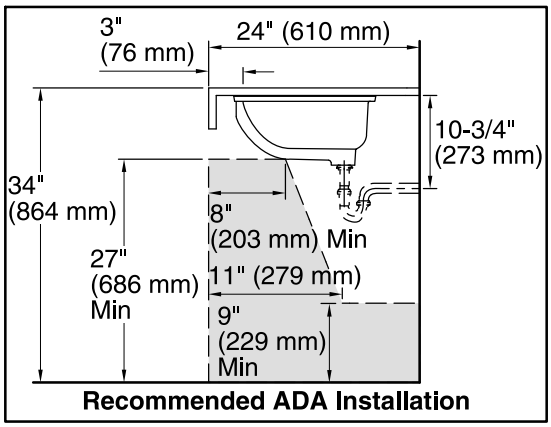
KOHLER®

Caxton®

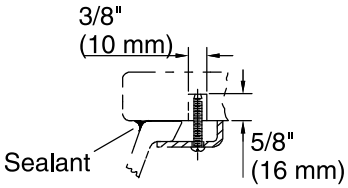
Bathroom Sink

K-2210

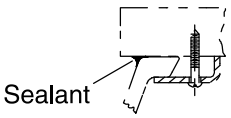




Recommended ADA Installation



Marble Installation



Wood Installation

Technical Information

All product dimensions are nominal.

Installation:	Under-mount
Bowl area	Length: 17" (432 mm) Width: 14" (356 mm) With overflow: Yes Water depth: 4" (102 mm)
Bowl area	With overflow: Yes
Drain hole:	1-3/4" (44 mm)
Template:	Under-mount, 1151011-7, required, not included

Notes

Install this product according to the installation instructions.

NOTICE: Countertop manufacturer or cutter must use the current product template available at www.kohler.com, or by calling 1-800-4KOHLER. Kohler Co. is not responsible for cutout errors when the incorrect cutout template is used.

ADA, CSA B651 compliant when installed to the specific requirements of these regulations.

PFWSC8850

Single Handle Lavatory Faucet

Product Features

- One piece brass body
- Ceramic cartridge
- Metal lever handle
- 1.2 GPM water saving aerator
- Complies with ASME:A112.18.1-2011/CSA:B125.1-11
- NSF61 compliant
- Complies with Lead Plumbing Law
- cUPC/IAPMO Listed
- ADA Compliant

PFWSC8850CP

Model Numbers

PFWSC8850CP Chrome plated
PFWSC8850BN Brushed nickel

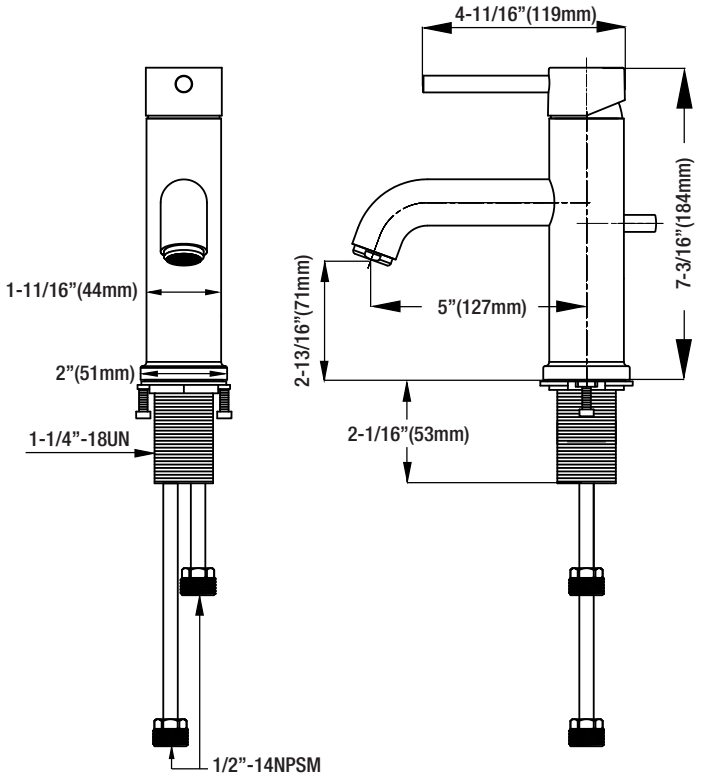
Available Parts

PF141715 Cartridge

Optional Accessories

PFXAER05 0.5 GPM Aerator insert

Product Specifications



Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions.
This PROFLO faucet carries a limited lifetime warranty when installed in residential applications.
The warranty is five years in commercial applications. This product meets ASME: A112.18.1-2011
*Compliant with lead content requirements of US Senate Bill S.3874

Distributed Exclusively by Ferguson and Wolseley Canada

CAP 15/08-B

FERGUSON ENTERPRISES, INC.®

BATHTUB:

S711011100	STERLING	60X36 LH VIKRELL BATH ENSEMBLE WHITE
PF2830CP	PROFLO	CCY 1.8 1 HANDLE LEVER TUB AND SHOWER FAUCET TRIM POLISHED CHROME
PF3001	PROFLO	CERAMIC TUB AND SHOWER VALVE MIP AND SWEAT WITH STOPS

STERLING
A KOHLER COMPANY

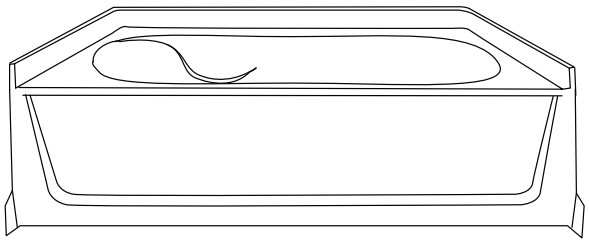
ENSEMBLE™

Features

- *Compression molded from Sterling's exclusive solid Vikrell® material*
- *Gentle sloping back, neck, and armrest in bath design*
- *Bath and integral apron eliminates installation step*
- *Lightly pebbled bottom surface for sure footing*
- *Durable high gloss finish*
- *10 year consumer/3 year commercial limited warranty*
- *16″ (40.6 cm) bath depth (floor to top of dam)*
- *3″ (7.6 cm) wainscot/tile ledge*
- *60″ (152.4 cm) x 37-1/2″ (95.3 cm) x 20″ (50.8 cm) rough-in dimensions include flanges*
- *60″ (152.4 cm) x 36″ (91.4 cm) x 19″ (48.3 cm) finished dimensions*

36″ (91.4 cm) OVAL BATH
71101110
ALSO 71101120

SOLID VIKRELL MATERIAL



Codes/Standards Applicable

Specified model meets or exceeds the following:

- *ASTM E162*
- *ASTM E662*
- *ANSI Z124.1.2*
- *IAPMO/UPC*
- *HUD, UM Bulletin 73A*
- *NAHB Research Foundation, Inc.*

Colors/Finishes

- 0: White
- Other: Refer to Price Book for additional colors/finishes

Specified Model

Model	Description	Colors/Finishes	
71101110	36″ (91.4 cm) oval bath, left drain	❑ 0	❑ Other_____
71101120	36″ (91.4 cm) oval bath, right drain	❑ 0	❑ Other_____
71101310	36″ (91.4 cm) oval bath, 3 pack, right drain	❑ 0	❑ Other_____
71101320	36″ (91.4 cm) oval bath, 3 pack, right drain	❑ 0	❑ Other_____

SterlingPlumbing.com

Visit us online for fixture color choices, detailed product information, color photos, installation instructions, care guides, and warranties. Sterling offers additional lines of plumbing products to complement the Sterling product you've chosen. Sign up for the Sterling monthly e-newsletter which showcases our latest product innovations. You may also call our Sterling Plumbing Answer Center from within the USA at 1-888-STERLING in addition to consulting with your local dealer. Sterling. Strong. Professional. Design.

ENSEMBLE™

Technical Information

Fixture*:	basin area	top area
Bathing well	40″ (101.6 cm) x 21″ (53.3 cm)	52″ (132.1 cm) x 29″ (73.7 cm)
To overflow	water depth	capacity
	11″ (27.9 cm)	40 gal (151.4 L)
* Approximate measurements for comparison only.		

Model	door maximum width	door maximum height
71101110 71101120	58-1/2″ (148.6 cm)*	NA*
* Varies with alternative walls.		

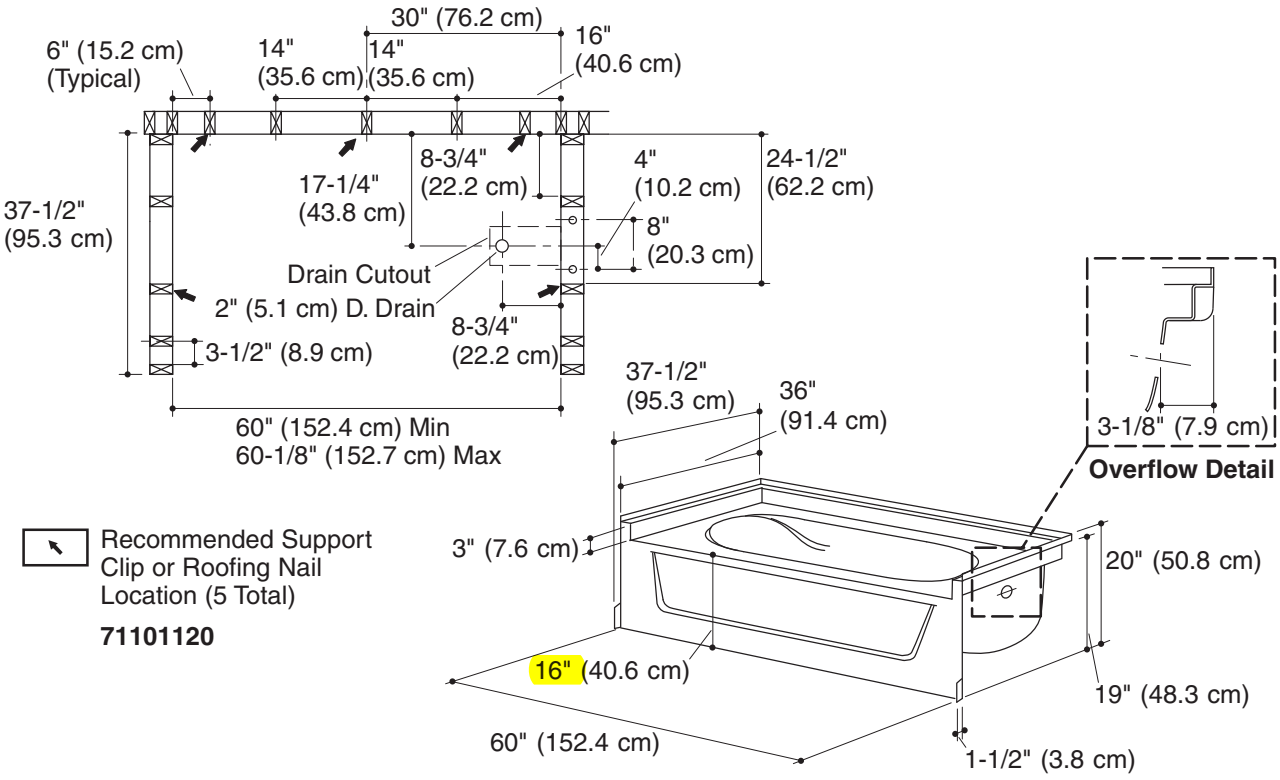
Installation Notes

Install this product according to the installation guide.

Size the drain cutout to fit the drain assembly that will be used.

Stud positioning is critical.

Studs should be positioned roughly as shown for support clip or roofing nail installation.



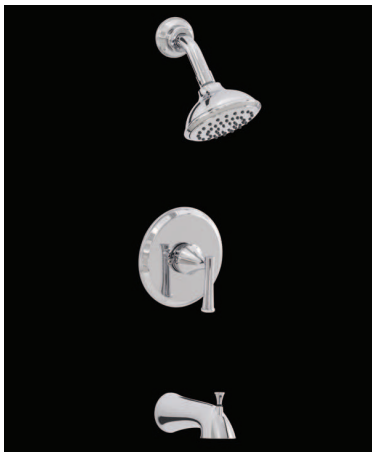
Product Diagram

PF2830

Single Handle Tub and Shower Trim

Product Features

- Flow rate: 2.0 gpm
- Metal lever handle
- Showerhead with easy clean rubber nozzles
- Brass shower arm & flange
- Extension Kit Available -ACF3001EXT
- Slip fit diverter tub spout
- Meets ANSI:A112.18.1M
- cUPC/IAPMO Listed



PF2830CP

Model Numbers

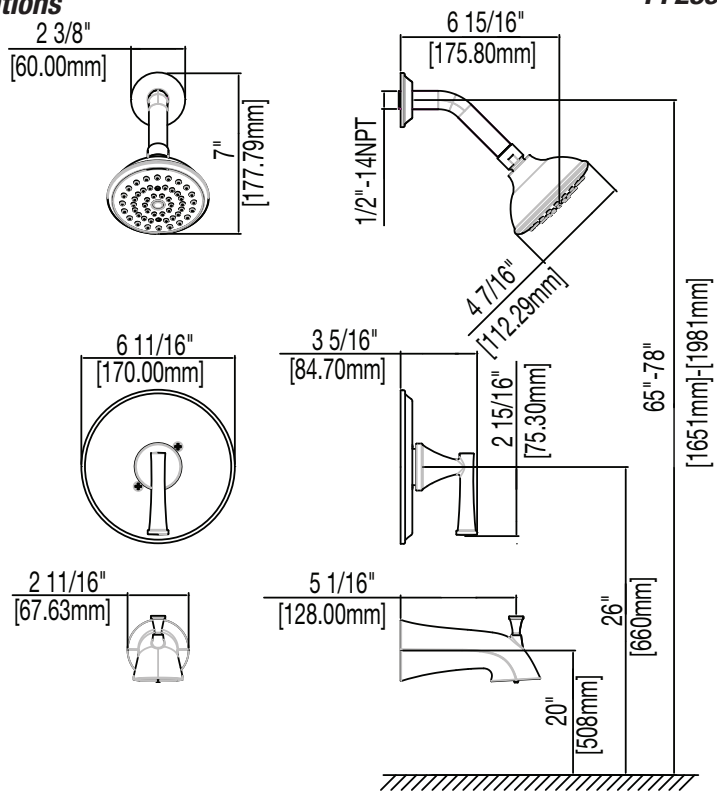
PF2830CP	chrome
PF2830BN	brushed nickel
PF2830ORB	oil rubbed bronze

To be used with PF3001 Pressure balanced series

ACCUFIT

PROFLO showering accessories available

Product Specifications



Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions
This PROFLO faucet carries a limited lifetime warranty when installed in residential applications.
The warranty is five years in commercial applications. This product meets ANSI: A112.18.1M.

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14747 02/13

PF3001

ACCUFIT™ *Pressure Balance Tub and Shower Valve with Stops*

Product Features

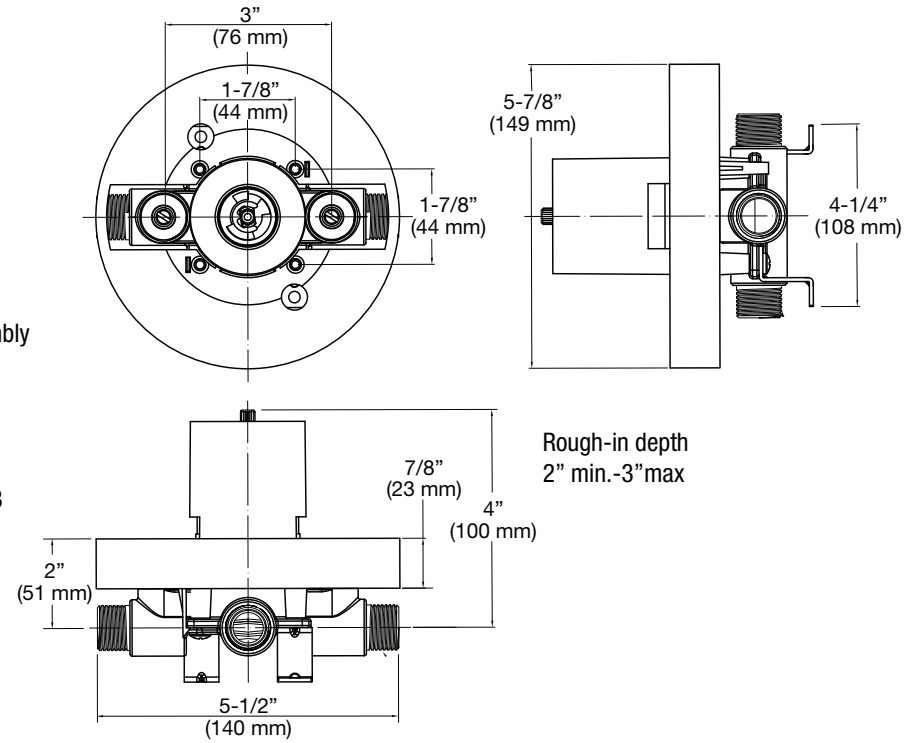
- Pressure balance valve with integral stops
- One-piece cartridge design for ease of maintenance
- Ceramic disc valve cartridge
- Back-to-back capability
- Cast bronze valve body
- Optional air test cap available
- Adjustable temperature limit stop
- 6.26 GPM flow rate at 60 psi
- IAPMO Approved
- Quick remove plaster guard
- Easy mounting brackets
- Meets or exceeds ASSE 1016-P standards (anti-scald)

PF3001

Model Numbers

PF3001	Ceramic disc tub & shower valve with stops 1/2" MIP &SWT
PF3001C	Ceramic disc tub & shower valve with stops CPVC connection
PF3001F	Ceramic disc tub & shower valve with stops FIP
PF3001P	Ceramic disc tub & shower valve with stops PEX crimp connector

Product Specifications



Rough-in depth
2" min.-3"max

Parts Available

ACF3001CRT	Replacement cartridge assembly
ACF3001AIR	Air test cap
ACF3001GRD	Plaster guard
ACF3001EXTCP	Deep rough extension kit CP
ACF3001EXTBN	Deep rough extension kit BN
ACF3001EXTORB	Deep rough extension kit ORB

Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions. This PROFLO product carries a limited lifetime warranty. This product meets ANSI: A112.18.1M and ASSE 1016-P

Distributed Exclusively by Ferguson and Wolseley Canada

17720 10/13

FERGUSON ENTERPRISES, INC.®

SHOWER:

S721311000	STERLING	60 ENSEMBLE SHOWER RECEPTOR WHT
PF2820CP	PROFLO	CCY 1.8 1 HANDLE LEVER SHOWER FAUCET TRIM POLISHED CHROME
PF3001	PROFLO	CERAMIC TUB AND SHOWER VALVE MIP AND SWEAT WITH STOPS

STERLING®
A KOHLER® COMPANY

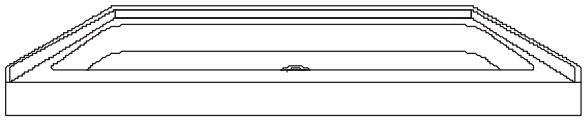
ENSEMBLE™

60″ (152.4 cm) SHOWER RECEPTOR
72131100

VIKRELL®
MATERIAL STRENGTH.
PROVEN PERFORMANCE.™

Features

- *Compression molded from our exclusive solid Vikrell® material*
- *Available with tile or curve wall surrounds*
- *Durable high-gloss finish*
- *10-year consumer/3-year commercial limited warranty*
- *60-1/4″ (153 cm) x 34″ (86.4 cm) x 5-1/2″ (14 cm) receptor rough-in dimensions include nailing flange*
- *60″ (152.4 cm) x 34″ (86.4 cm) x 4-1/2″ (11.4 cm) unit finished dimensions*



Codes/Standards Applicable

Specified model meets or exceeds the following:

- *ANSI Z124.1.2*
- *CSA B45*
- *ASTM E162*
- *ASTM E662*

Colors/Finishes

- 0: White
- Other: Refer to Price Book for additional colors/finishes

Specified Model

Model	Description	Colors/Finishes	
72131100	60″ (152.4 cm) shower receptor	✓ 0	❑ Other_____

For more information visit SterlingPlumbing.com or call 1-800-STERLING

ENSEMBLE™

Technical Information

Model	door maximum width	door maximum height
72131100	*56-5/8″ (143.8 cm)	*NA
* Varies with alternative walls.		

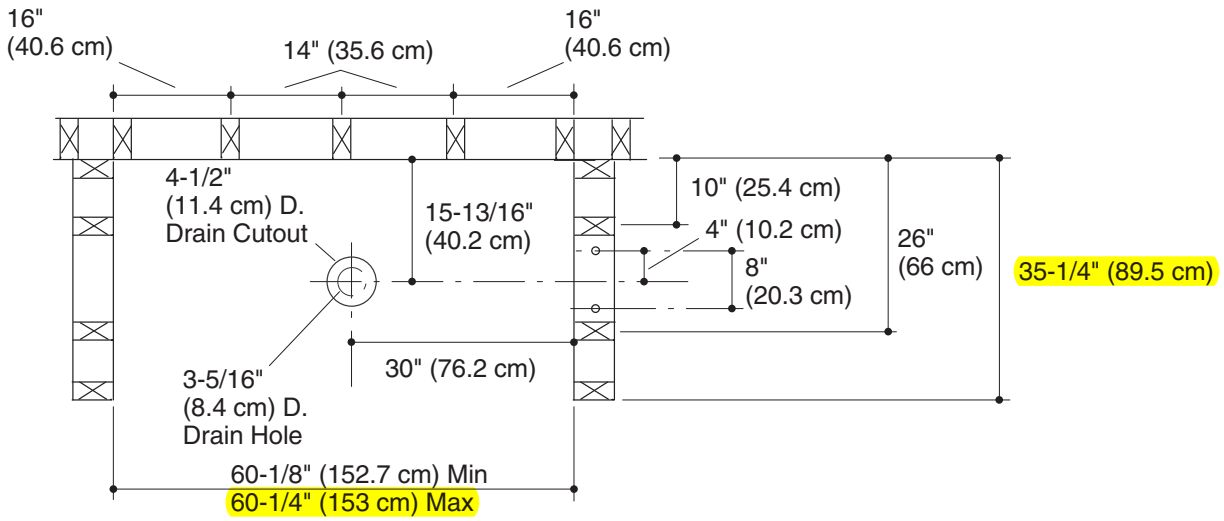
Size the drain cutout to fit the drain assembly that will be used.

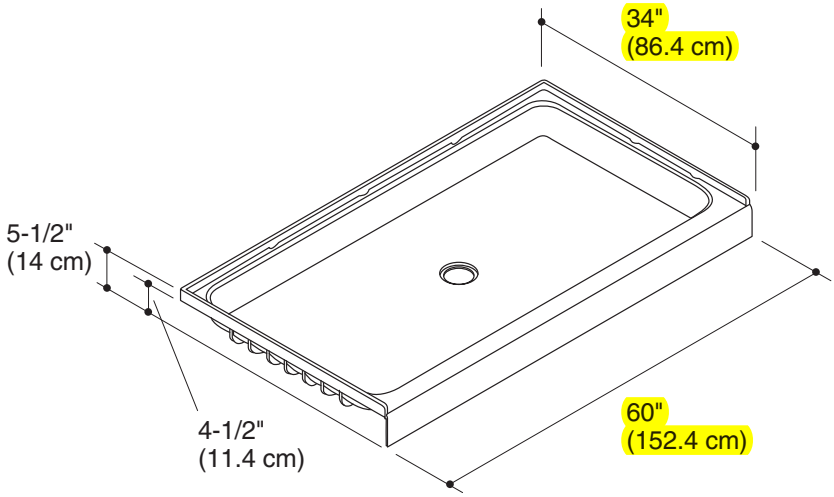
Double studding is recommended for pivot shower door installations.

Studs should be positioned roughly as shown.

Installation Notes

Install this product according to the installation guide.





Product Diagram

PF2820

Single Handle Shower Trim

Product Features

- Flow rate: 2.0 gpm
- Metal lever handle
- Showerhead with easy clean rubber nozzles
- Brass shower arm & flange
- Extension Kit Available -ACF3001EXT
- Meets ANSI:A112.18.1M
- cUPC/IAPMO Listed

PF2820CP

Model Numbers

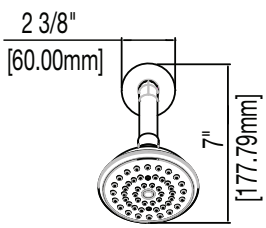
PF2820CP	chrome
PF2820BN	brushed nickel
PF2820ORB	oil rubbed bronze

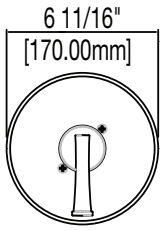
To be used with PF3001 Pressure balanced series

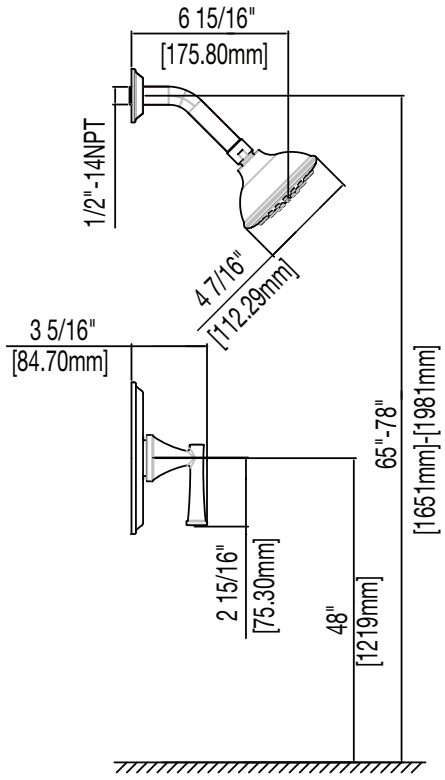
ACCUFIT

PROFLO showering accessories available

Product Specifications







Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions
This PROFLO faucet carries a limited lifetime warranty when installed in residential applications.
The warranty is five years in commercial applications. This product meets ANSI: A112.18.1M.

Distributed Exclusively by Ferguson and Wolseley Canada

14747 02/13

PF3001

ACCUFIT™ *Pressure Balance Tub and Shower Valve with Stops*

Product Features

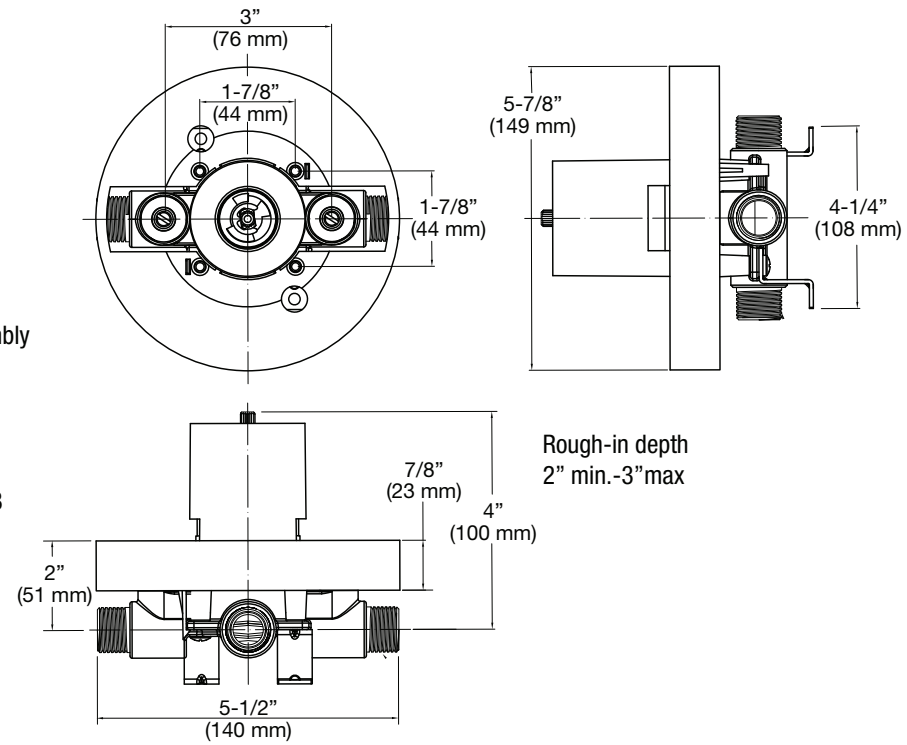
- Pressure balance valve with integral stops
- One-piece cartridge design for ease of maintenance
- Ceramic disc valve cartridge
- Back-to-back capability
- Cast bronze valve body
- Optional air test cap available
- Adjustable temperature limit stop
- 6.26 GPM flow rate at 60 psi
- IAPMO Approved
- Quick remove plaster guard
- Easy mounting brackets
- Meets or exceeds ASSE 1016-P standards (anti-scald)

PF3001

Model Numbers

PF3001	Ceramic disc tub & shower valve with stops 1/2" MIP &SWT
PF3001C	Ceramic disc tub & shower valve with stops CPVC connection
PF3001F	Ceramic disc tub & shower valve with stops FIP
PF3001P	Ceramic disc tub & shower valve with stops PEX crimp connector

Product Specifications



Rough-in depth
2" min.-3"max

Parts Available

ACF3001CRT	Replacement cartridge assembly
ACF3001AIR	Air test cap
ACF3001GRD	Plaster guard
ACF3001EXTCP	Deep rough extension kit CP
ACF3001EXTBN	Deep rough extension kit BN
ACF3001EXTORB	Deep rough extension kit ORB

Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions. This PROFLO product carries a limited lifetime warranty. This product meets ANSI: A112.18.1M and ASSE 1016-P

Distributed Exclusively by Ferguson and Wolseley Canada

17720 10/13

KITCHEN SINK:

PFUC301A	PROFLO	23-5/16X17-5/8 1 BOWL 18 GAUGE UNDERCOUNTER STAINLESS STEEL SINK
PFXC7011CP	PROFLO	LEAD LAW COMPLIANT 1 HANDLE LEVER KITCHEN FAUCET WITH PULL DOWN STANDING PILOT POLISHED CHROME

PFUC301A

Stainless Steel Undermount Sinks

PROFLO®

Product Features

- Stainless steel single bowl sink
- Type 304 stainless steel
- Undermount
- 18 gauge
- Sound absorption pads and coating to minimize vibration and sound and increase durability
- Clips and template included in box

General Specifications

- Overall Size: 23-5/16" X 17-5/8"
- Bowl Size: 21-5/16" X 15-5/8"
- Drain Diameter: 3-1/2"
- Bowl Depth: 8"

PFUC301A

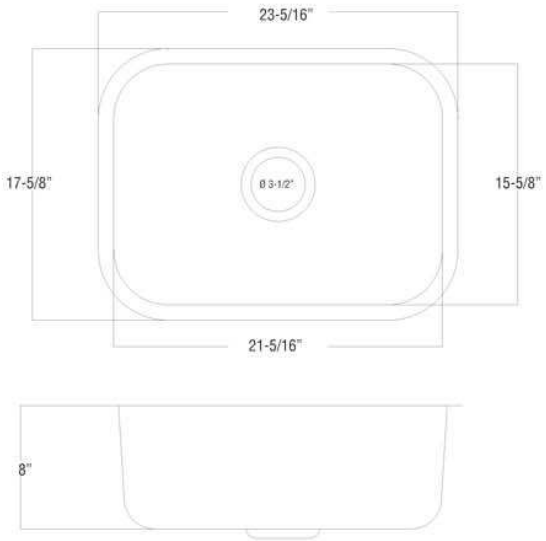
Model Numbers

✔ **PFUC301A**	23-5/16" X 17-5/8" 1B UC SS SINK

Available parts

PFG1712	Sink basin grid

Product Specifications



Warranty and Codes

This PROFLO stainless steel sink carries a limited lifetime warranty. In an effort to continually improve our products, we will make design changes from time to time. We reserve the right to ship newly designed product to fill any order unless it is agreed in writing to do otherwise.

These products meet or exceed ASME/ANSI A112.19.3m.

UPC

* All measurements are nominal. Please verify before actual installation.

Distributed Exclusively by Ferguson, Stock Building Supply and Wolseley Canada

CAP 06/2015

PFXC7011

SINGLE HANDLE PULL-DOWN KITCHEN FAUCET

Product Features

- Ceramic disc cartridge
- Metal handle
- Non-kink nylon hose
- 3-Function sprayer -stream, full spray & pause with 360° swivel
- Single hole or 3-hole sink Installation
- Max. flow rate: 1.8 GPM at 60 PSI
- Optional deck plate
- Lifetime limited warranty
- Meets ANSI:A112.18.1M
- cUPC/IAPMO listed
- ADA compliant

PFXC7011CP

Model Numbers

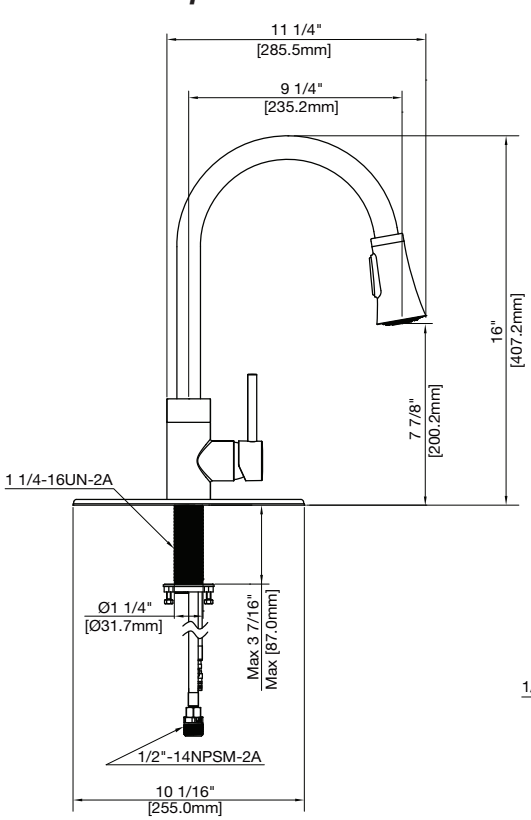
PFXC7011CP chrome

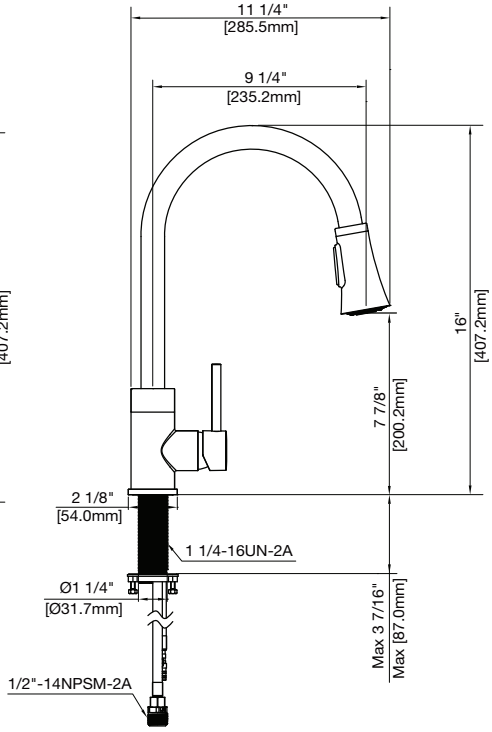
PFXC7011BN brushed nickel

Available Parts

PF3357061 Cartridge

Product Specifications





Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions. This PROFLO faucet carries a limited lifetime warranty when installed in residential applications. The warranty is five years in commercial applications. This product meets ANSI: A112.18.1M.

*Compliant with lead content requirements of California AB 1953.

Distributed Exclusively by Ferguson and Wolseley Canada

03/01/14 Rev.A

FERGUSON ENTERPRISES, INC.®

ICEMAKER BOXES:

O39148	OATEY	LF IMB QT HAMMER BV CPVC

Oatey®
4700 W. 160th St.
Cleveland, Ohio 44135
Ph: (800) 321-9532
Fax: (800) 321-9535
www.oatey.com

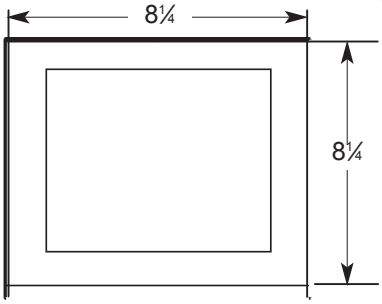
SUBMITTAL SPECIFICATION

Ice Maker Outlet Boxes

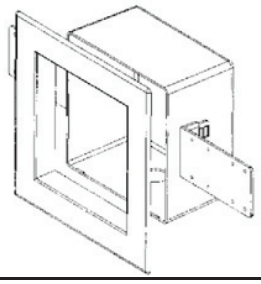
ISO 9001

Engineering Specification: Oatey Ice Maker boxes can be used in commercial or residential applications which require supply valves recessed into the wall. Available water hammer arrestor option provides water pressure shock arrestors required for installation on supply lines to quick closing valves.

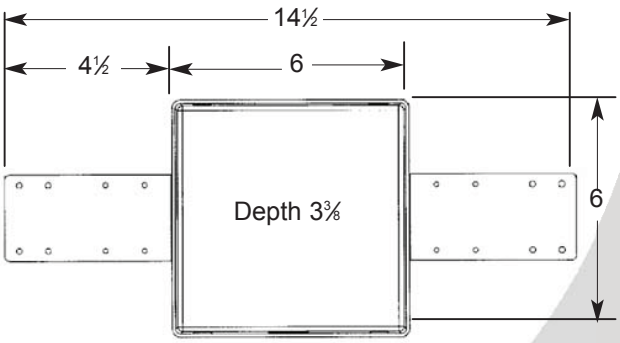
Job Reference



Faceplate



Front View



(All dimensions in inches)

- Provides quick, safe water supply and shut-off for refrigerator ice maker and water dispenser
- Box made of high impact polystyrene
- 2 support brackets
- Snap-on faceplate frame accommodates up to 1" drywall
- Valves comply with requirements of NSF 61, Section 9

✓	Prod. No	Description
	38574	1/4 Turn Brass Ball Valve - Copper Sweat - Standard Pack w/6' Stainless Steel Hose
	38570	1/4 Turn Brass Hammer Ball Valve - Copper Sweat - w/6' Stainless Steel Hose
	38575	1/4 Turn Brass Ball Valve - 1/2" ASTM F1807 PEX- Standard Pack
	38572	1/4 Turn Brass Hammer Ball Valve - 1/2" ASTM F1807 PEX- Standard Pack
	38578	1/4 Turn Brass Hammer Ball Valve - ASTM F1807 PEX
	38579	1/4 Turn Brass Hammer Ball Valve - 3/8" PEX
	38602	1/4 Turn Brass Hammer Ball Valve - CPVC - Standard Pack (6 per)
	38604	1/4 Turn Brass Hammer Ball Valve - ASTM F1807 PEX - Standard Pack (6 per)
	38605	1/4 Turn Brass Hammer Ball Valve - ASTM F1960 - Standard Pack (6 per)
	38607	1/4 Turn Brass Hammer Ball Valve - Copper Sweat - Display Pack (6 per)
	38608	1/4 Turn Brass Hammer Ball Valve - Copper Sweat - Standard Pack (6 per)
	38623	1/4 Turn Brass Ball Valve - CPVC - Standard Pack w/6' Stainless Steel Hose
	38624	1/4 Turn Brass Ball Valve - ASTM F1960 PEX - w/6' Stainless Steel Hose
	38571	1/4 Turn Brass Hammer Ball Valve - CPVC - Standard Pack w/6' Stainless Steel Hose
	38680	1/4 Turn Brass Ball Valve - CPVC - Standard Pack (6 per)
	38681	1/4 Turn Brass Ball Valve - Copper Sweat - Standard Pack (6 per)
	38683	1/4 Turn Brass Ball Valve - Copper Sweat - Contractor Pack (12 per)
	38684	1/4 Turn Brass Ball Valve - ASTM F1807 PEX - Standard Pack (6 per)
	38685	1/4 Turn Brass Ball Valve - CPVC - Contractor Pack (12 per)
	38690	1/4 Turn Brass Ball Valve - Copper Sweat - No Faceplate - Tract Pack (6 per)
	38691	1/4 Turn Brass Ball Valve - ASTM F1807 PEX - Contractor Pack (12 per)
	38692	1/4 Turn Brass Ball Valve - ASTM F1974 PEX - Standard Pack (6 per)
	38693	1/4 Turn Brass Ball Valve - ASTM F1960 PEX - Standard Pack (6 per)
	38739	Boiler Drain Valve - Copper Sweat - Contractor Pack (12 per)
	38805	Plain Box - No Valve - No Hole - Standard Pack (6 per)
	38806	Plain Box - No Valve - No Hole - Standard Pack - With Grommet (6 per)
	38807	North American Boiler Drain Valve - Copper Sweat - Standard Pack (6 per)
	38808	1/4 Turn Brass Ball Valve - Copper Sweat - Display Bag
	38810	Plain Box - No Valve - Standard Pack (6 per)
	38812	Plain Box - No Valve - No Faceplate - Tract Pack (6 per)
	38823	1/4 Turn Brass Ball Valve - Copper Sweat - Display Box
	38950	1/4 Turn Brass Ball Valve - ASTM F1807 PEX - Display Bag
	38951	Boiler Drain Valve - CPVC - Standard Pack (6 per)

Valves meet ASME A112.18.1 Water Hamm
Data is subject to manufacturing tolerances.

1/08

Visit www.oatey.com for updates.

✓	Prod. No	Description
	38952	FlowGuard Gold ALL-CPVC Valve - CPVC – Standard Pack
	39142	1/4 Turn Brass Hammer Ball Valve Low Lead - Copper Sweat - w/6' Stainless Steel Hose
	39143	1/4 Turn Brass Hammer Ball Valve Low Lead – CPVC - w/6' Stainless Steel Hose
	39144	1/4 Turn Brass Hammer Ball Valve Low Lead-1/2" ASTM F1807 PEX-w/6' Stainless Steel Hose
	39145	1/4 Turn Brass Valve Low Lead - Copper Sweat - w/6' Stainless Steel Hose
	39146	1/4 Turn Brass Valve Low Lead - 1/2" ASTM F1807 PEX - w/6' Stainless Steel Hose
✓	39147	1/4 Turn Brass Hammer Ball Valve Low Lead - 3/8 ASTM F1807 PEX- Standard Pack
	39148	1/4 Turn Brass Hammer Ball Valve Low Lead - CPVC - Standard
	39149	1/4 Turn Brass Hammer Ball Valve Low Lead - 1/2" ASTM F1807 PEX - Standard Pack
	39150	1/4 Turn Brass Hammer Ball Valve Low Lead - 1/2" ASTM F1960 PEX - Standard Pack
	39151	1/4 Turn Brass Hammer Ball Valve Low Lead - Copper Sweat – Display Box
	39152	1/4 Turn Brass Hammer Ball Valve Low Lead - Copper Sweat – Standard Pack
	39153	1/4 Turn Brass Ball Valve Low Lead - CPVC - w/6' Stainless Steel Hose
	39154	1/4 Turn Brass Ball Valve Low Lead - 1/2" ASTM F1960 PEX - w/6' Stainless Steel Hose
	39155	1/4 Turn Brass Ball Valve Low Lead - CPVC - Standard Pack
	39156	1/4 Turn Brass Ball Valve Low Lead - Copper Sweat - Standard Pack
	39157	1/4 Turn Brass Ball Valve Low Lead - Copper Sweat - Contractor Pack
	39158	1/4 Turn Brass Ball Valve Low Lead - 1/2" ASTM F1807 PEX - Standard Pack
	39160	1/4 Turn Brass Ball Valve Low Lead - 1/2" ASTM F1807 PEX - Contractor Pack
	39161	1/4 Turn Brass Ball Valve Low Lead - 1/2" ASTM F1960 PEX - Standard Pack
	39162	North America Brass Boiler Drain Valve Low Lead - Copper Sweat - Standard Pack
	39259	1/4 Turn Brass Ball Valve - CPVC - Contractor Pack
	385961	Square ¼ Turn F1960 – Standard Pack, 6' SS Hose
	39159	Square ¼ Turn CPVC Low Lead – Contractor Pack
	38942	Square, Plastic Faceplate
	38768	Brackets 4" Long Plastic
	38648	Brackets 12" Long Plastic

FERGUSON ENTERPRISES, INC.®

WASHING MACHINE BOX:

O38103	OATEY	CENTROII CPVC HAMM

Oatey®
4700 W. 160th St.
Cleveland, OH 44135
1-800-321-9532
1-800-321-9535
www.oatey.com
TECHNICAL SPECIFICATION

CENTRO II WASHING MACHINE OUTLET BOX

TECHNICAL SPECIFICATION: Oatey's Centro II Washing Machine Box is used for commercial and residential washing machine applications. Oatey's Centro WMOB can be mounted with the valves on the top or bottom. Oatey's WMOB comes with two support brackets and two piece uninstalled valves.

- Takes up less space and will fit almost anywhere
- WMOB made of PVC
- Brackets and Faceplate made of HIPS
- 2 knockout drain caps
- 2" Socket Hubs
- Mountable with valves on top or bottom
- 2 piece valves come uninstalled or installed
- Two support brackets
- Available in a wide variety of tailpiece configurations and packaging options
- Dimensions:
  - WMOB-8"W x 4-3/4"H x 3"D
  - Faceplate- 10"W x 6-3/4"H

PRODUCT NUMBER	DESCRIPTION	CTN. QTY.
No Hammer Assembled		
38100	¼ Turn, Copper, No Hammer, Assembled, Standard Pack	12
38102	¼ Turn, CPVC, No Hammer, Assembled, Standard Pack	12
38104	¼ Turn, ASTM F1807, No Hammer, Assembled, Standard Pack	12
38106	¼ Turn, ASTM F1960, No Hammer, Assembled, Standard Pack	12
38150	¼ Turn, Copper, No Hammer, Assembled, Contractor Pack	12
38153	¼ Turn, CPVC, No Hammer, Assembled, Contractor Pack	12
38151	¼ Turn, ASTM F1807, No Hammer, Assembled, Contractor Pack	12
38152	¼ Turn, ASTM F1960, No Hammer, Assembled, Contractor Pack	12
Hammer Assembled		
38101	¼ Turn, Copper, Hammer, Assembled, Standard Pack	12
38103	¼ Turn, CPVC, Hammer, Assembled, Standard Pack	12
38105	¼ Turn, ASTM F1807, Hammer, Assembled, Standard Pack	12
38107	¼ Turn, ASTM F1960, Hammer, Assembled, Standard Pack	12
38154	¼ Turn, Copper, Hammer, Assembled, Contractor Pack	12
38157	¼ Turn, CPVC, Hammer, Assembled, Contractor Pack	12
38155	¼ Turn, ASTM F1807, Hammer, Assembled, Contractor Pack	12
38156	¼ Turn, ASTM F1960, Hammer, Assembled, Contractor Pack	12

Oatey®
4700 W. 160th St.
Cleveland, OH 44135
1-800-321-9532
1-800-321-9535
www.oatey.com
TECHNICAL SPECIFICATION

CENTRO II WASHING MACHINE OUTLET BOX

Quality ISO 9001 System

No Hammer Unassembled		
38108	¼ Turn, Copper, No Hammer, Unassembled, Standard Pack	12
38110	¼ Turn, CPVC, No Hammer, Unassembled, Standard Pack	12
38112	¼ Turn, ASTM F1807, No Hammer, Unassembled, Standard Pack	12
38114	¼ Turn, ASTM F1960, No Hammer, Unassembled, Standard Pack	12
Hammer Unassembled		
38109	¼ Turn, Copper, Hammer, Unassembled, Standard Pack	12
38111	¼ Turn, CPVC, Hammer, Unassembled, Standard Pack	12
38113	¼ Turn, ASTM F1807, Hammer, Unassembled, Standard Pack	12
38115	¼ Turn, ASTM F1960, Hammer, Unassembled, Standard Pack	12
Plain Boxes		
38120	Plain Box, Display Pack	4
38121	Plain Box, Standard Pack	12
Accessories		
38381	Centro II, Plastic Faceplate	12
38382	Brackets 4" Long Plastic	12
38383	Brackets 12" Long Plastic	12
38294	Hot/Cold Temperature Indicator Clips for Supply Valves (12 Red, 12 Blue)	24

WATER HEATER 1:

AENLB40202173000	AO SMITH	38 GALLON 4.5 KW 208 VOLTS 1 PH LOBOY WATER HEATER ALUMINUM (WITH BLANKET)
PFXT5I	PROFLO	LF 2 GAL THERMAL EXPANSION TANK

Residential Electric Water Heaters

ProMax®

NAECA COMPLIANT 2015 ENERGY EFFICIENT

ENHANCED HEATING ELEMENTS

- Dual 4500 watt elements for fast recovery and reliable operation.
- Incoloy stainless steel lower element lasts longer than a standard copper element.

DYNACLEAN™ DIFFUSER DIP TUBE

- Helps reduce lime and sediment buildup and maximizes hot water output. Made from long-lasting PEX cross-linked polymer.

HIGH ENERGY FACTORS

- Eco-friendly non-CFC foam insulation, heat traps and other features combine to yield a higher Energy Factor that maximizes savings on operating costs.

COREGARD™ ANODE ROD

- Our anode rods have a stainless steel core that extends the life of the anode rod allowing superior tank protection far longer than standard anode rods.

BLUE DIAMOND® GLASS COATING

- Provides superior corrosion resistance compared to industry standard glass lining.

ENHANCED FLOW BRASS DRAIN VALVE

- Our residential water heaters have a solid brass, tamper resistant, enhanced flow, ball type, drain valve.
- Uses a standard female hose fitting that allows for fast and easy draining during maintenance.
- Designed for easy operation, this valve includes an integral screwdriver slot that features a ¼ turn (open/close) radius, which not only permits full straight-through water flow but also a quick and positive shut off.

CODE COMPLIANCE

- Meets UBC, CEC and HUD National Codes.
- Meets the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA 90.1.
- Complies with the Federal Energy Conservation Standards effective April 16, 2015, in accordance with the Energy Policy and Conservation Act (EPCA), as amended.

APPROVED FOR MANUFACTURED HOUSING

- All residential electric water heaters are compliant with HUD Standards for mobile homes/ manufactured housing.

CERTIFIED TO UL 174 FOR HOUSEHOLD ELECTRIC WATER HEATERS

CSA CERTIFIED AND ASME RATED T&P RELIEF VALVE

DESIGN-LISTED BY CSA INTERNATIONAL

- Certified at 300 PSI test pressure and 150 PSI working pressure.
- Listed according to ANSI Z21.10.1-CSA 4.1 standards governing storage tank-type water heaters.

6-YEAR LIMITED TANK AND PARTS WARRANTY

- For complete information, consult written warranty or A. O. Smith.

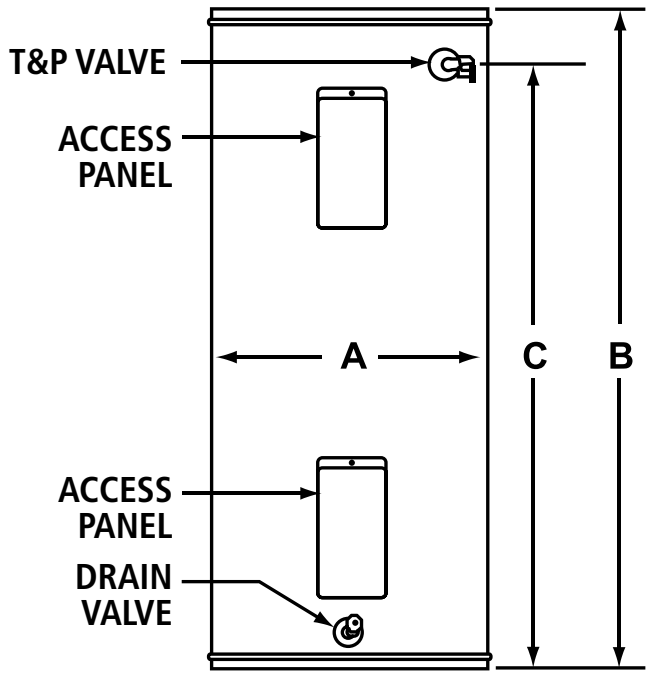
Low Lead Content

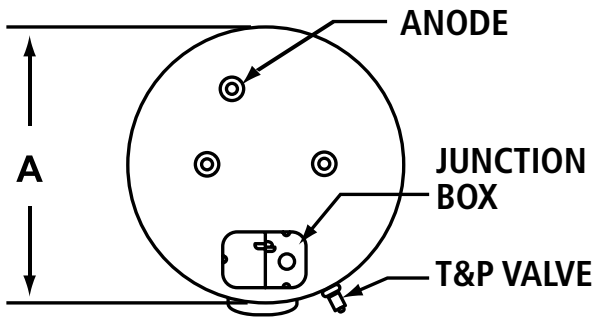
ENLB40202173000 ✓

Residential Electric Water Heaters

					Element Wattage 240V		Dimensions in Inches			
Model Number	Gallon Capacity	First Hour Rating Gallon	Energy Factor	Recovery @ 90°F Rise Gallon Per Hour	Standard	Maximum	A	B	C	Approx. Shipping Weight (lbs)
ENT-30†	30	43	0.95	20.7	4500	6000	19	46-1/2	39-1/2	95
ENT-40†	40	51	0.95	20.7	4500	6000	20	60-1/4	53-1/4	118
ENTB-50*	50	69	0.95	20.7	4500	6000	21	60-1/4	51-1/4	131
ENT-50†	50	69	0.95	20.7	4500	6000	22	60-1/2	51-1/4	134
ENT-55†	55	76	0.94	20.7	4500	6000	24	56-1/2	48-1/2	145
ENSB-30*	30	43	0.95	20.7	4500	6000	20	39	30-1/2	95
ENS-30†	30	43	0.95	20.7	4500	6000	22	39-3/4	30-1/2	94
ENS-40†	40	54	0.95	20.7	4500	6000	22	50	40-3/4	109
ENS-50†	50	62	0.95	20.7	4500	6000	24	49-3/4	40-3/8	161
ENL-30	28	41	0.95	20.7	4500	6000	24	31-1/4	21-3/4	115
ENLB-30*	28	40	0.95	20.7	4500	6000	22	30	21-3/4	96
ENLB-40*	38	46	0.95	20.7	4500	6000	24	31-3/4	24	118

3/4" water connections on 8" center.
*Models ship with supplied insulation blanket.
†For 10-year tank and 6-year parts warranty, change "E" to "P" in the model number (example: ENT-30 becomes PNT-30).
Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.





4.5KW 208V 1PH L/B ALUM

PFXT

Thermal Expansion Tanks

Product Features

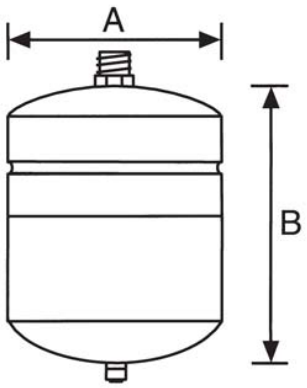
- Diaphragm-type
- Pre-pressurized expansion tank
- Designed for potable hot water systems
- Eliminates relief valve spills
- Controls pressure build-up
- Protects plumbing fixtures
- Extends water heater life
- Eliminates hot water waste
- Factory precharged to 40 PSI
- Low lead compliant
- 3/4" SS NPTM connection

PFXT5I

Product Specifications

Model No.	Total Volume Gals.	Max Accept. Factor	Diameter A	Height B	System Connection	Ship Weight Lbs.
PFXT5I	2.1	.45	8"	11,6"	3/4" NPTM	5
PFXT12I	4.8	.73	11"	14,5"	3/4" NPTM	10

Water Heater Size/Volume	130°F	140°F	160°F	180°F
30 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT5I
40 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT5I
50 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT12I
60 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT12I
80 gallons	PFXT5I	PFXT12I	PFXT12I	PFXT12I
100 gallons	PFXT12I	PFXT12I	PFXT12I	*
120 gallons	PFXT12I	PFXT12I	PFXT12I	*
150 gallons	PFXT12I	PFXT12I	*	*
175 gallons	PFXT12I	*	*	*



Maximum Operating Conditions

Operating Temperature - 200°F

Working Pressure - 150 psig (10.5 kg/cm²)

Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions. All PROFLO tanks carry a 1-year limited warranty. NSF 61 approved.

Distributed Exclusively by Ferguson and Wolseley Canada

0215 24425

WATER HEATER 2:

AENLB50202173000	AO SMITH	48G 4.5KW 208V 1PH LB WHTR
PFXT5I	PROFLO	LF 2 GAL THERMAL EXPANSION TANK

A.O. Smith | Residential Electric Water Heaters

ProMax

NAECA COMPLIANT 2015 ENERGY EFFICIENT

ENHANCED HEATING ELEMENTS

- Dual 4500 watt elements for fast recovery and reliable operation.*
- Incoloy stainless steel lower element lasts longer than a standard copper element.

DYNACLEAN™ DIFFUSER DIP TUBE

- Helps reduce lime and sediment buildup and maximizes hot water output. Made from long-lasting PEX cross-linked polymer.

HIGH ENERGY FACTORS

- Eco-friendly non-CFC foam insulation, heat traps and other features combine to yield a higher Energy Factor that maximizes savings on operating costs.

COREGARD™ ANODE ROD

- Our anode rods have a stainless steel core that extends the life of the anode rod allowing superior tank protection far longer than standard anode rods.

BLUE DIAMOND® GLASS COATING

- Provides superior corrosion resistance compared to industry standard glass lining.

ENHANCED-FLOW BRASS DRAIN VALVE

- Our residential water heaters have a solid brass, tamper resistant, enhanced-flow, ball type, drain valve.
- Uses a standard female hose fitting that allows for fast and easy draining during maintenance.
- Designed for easy operation, this valve includes an integral screwdriver slot that features a ¼ turn (open/close) radius, which not only permits full straight-through water flow but also a quick and positive shut off.

CODE COMPLIANCE

- Meets UBC and ICC National Codes and listed with CEC.
- Complies with the Federal Energy Conservation Standards effective April 16, 2015, in accordance with the Energy Policy and Conservation Act (EPCA), as amended.

APPROVED FOR MANUFACTURED HOUSING

- All residential electric water heaters are compliant with HUD Standards for mobile homes/manufactured housing.

CERTIFIED TO UL 174 FOR HOUSEHOLD ELECTRIC WATER HEATERS

CSA CERTIFIED AND ASME RATED T&P RELIEF VALVE

DESIGN-LISTED BY UNDERWRITERS LABORATORIES

- Certified at 300 psi test pressure and 150 psi working pressure.
- Listed according to UL 174 standards governing storage tank-type electric water heaters.

6-YEAR LIMITED TANK AND PARTS WARRANTY

- For complete information, consult written warranty or go to hotwater.com.

Low Lead Content

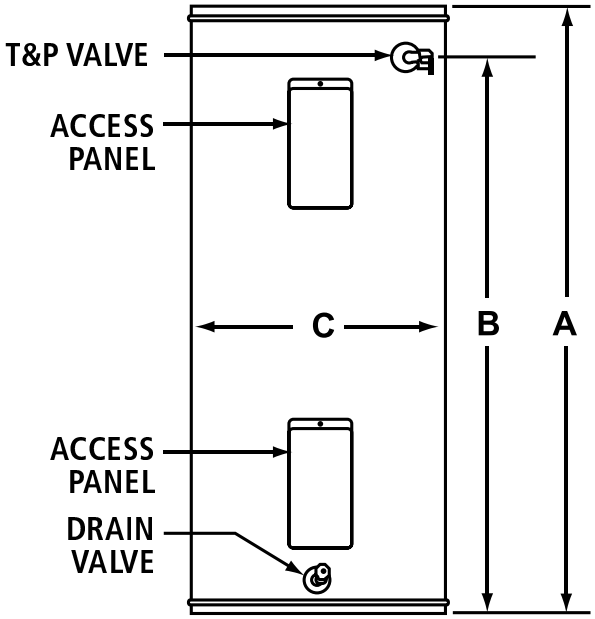
*Model ENL-20 has a single element.

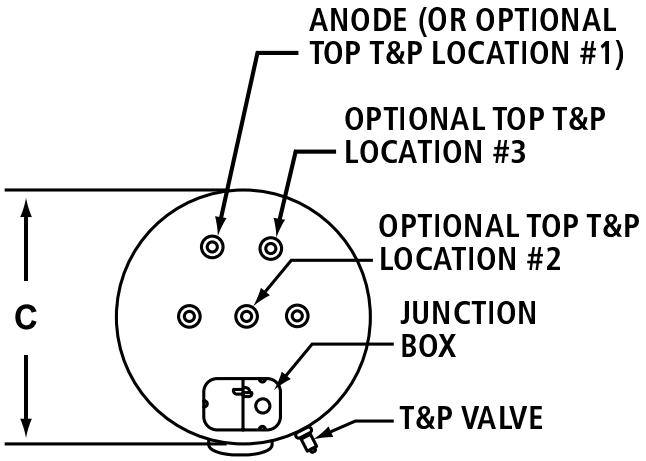
ENLB50202173000

Residential Electric Water Heaters

Model Number	Gallon Capacity	First Hour Rating Gallon	Energy Factor	Recovery @ 90° F Rise Gallon Per Hour	Element Wattage 240V		Dimensions in Inches			Approx. Shipping Weight (lbs)
					Standard	Maximum	A	B	C	
Tall Models										
ENT-30†	30	47	0.95	21	4500	6000	46-1/2	39-1/2	19	95
ENT-40†	40	51	0.95	21	4500	6000	60-1/4	53-1/4	20	118
ENT-50†	50	73	0.95	21	4500	6000	60-1/2	51-1/4	20-1/2	125
ENT-55†	55	76	0.94	21	4500	6000	56-1/2	48-1/2	24	145
Short Models										
ENSB-30*	30	48	0.95	21	4500	6000	39	30-1/2	20	95
ENS-30†	30	49	0.95	21	4500	6000	39-3/4	30-1/2	22	94
ENS-40†	40	55	0.95	21	4500	6000	50	40-3/4	20-1/2	109
ENS-50†	50	62	0.95	21	4500	6000	49-3/4	40-3/8	23	161
Lowboy Top Connect Models										
ENL-20	19.5	N/A	N/A	21	4500	6000	30	21-1/4	20	65
ENLB-30*	28	40	0.95	21	4500	6000	30	21-3/4	20	90
ENL-30†	28	43	0.95	21	4500	6000	31-1/4	21-3/4	24	115
ENLB-40*	38	46	0.95	21	4500	6000	31-3/4	24	24	118
ENL-40†+	38	44	0.95	21	4500	6000	33-1/2	24	26	118
ENLB-50*†	48	57	0.95	21	4500	6000	34	25	26-1/2	172

Male 3/4" water connections on 8" center.
*Models ship with supplied insulation blanket.
†For 10-year tank and 6-year parts warranty, change "E" to "P" in the model number (example: ENT-30 becomes PNT-30).
+ Top T&P option not available on this model.
ENL-20 is a single element configuration only
Optional top T&P location #2 is used on the ENT-50, ENT-55, ENS-40 and ENS-50
Optional top T&P location #3 is used on the ENLB-50, ENL-30 and ENLB-30.
Top T&P is not available on the 10 year model PNLB-50.
Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.





48G 4.5KW 208V 1PH

For technical information call 800-527-1953. A. O. Smith Corporation reserves the right to make product changes or improvements without prior notice.

www.hotwater.com | 800-527-1953 Toll-Free USA
AOSRE50602

PFXT

Thermal Expansion Tanks

Product Features

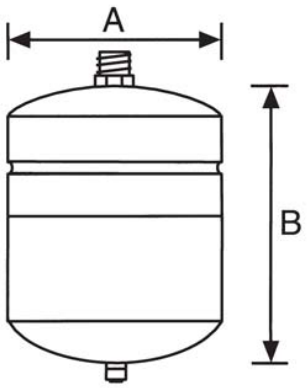
- Diaphragm-type
- Pre-pressurized expansion tank
- Designed for potable hot water systems
- Eliminates relief valve spills
- Controls pressure build-up
- Protects plumbing fixtures
- Extends water heater life
- Eliminates hot water waste
- Factory precharged to 40 PSI
- Low lead compliant
- 3/4" SS NPTM connection

PFXT5I

Product Specifications

Model No.	Total Volume Gals.	Max Accept. Factor	Diameter A	Height B	System Connection	Ship Weight Lbs.
PFXT5I	2.1	.45	8"	11,6"	3/4" NPTM	5
PFXT12I	4.8	.73	11"	14,5"	3/4" NPTM	10

Water Heater Size/Volume	130˚F	140˚F	160˚F	180˚F
30 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT5I
40 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT5I
50 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT12I
60 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT12I
80 gallons	PFXT5I	PFXT12I	PFXT12I	PFXT12I
100 gallons	PFXT12I	PFXT12I	PFXT12I	*
120 gallons	PFXT12I	PFXT12I	PFXT12I	*
150 gallons	PFXT12I	PFXT12I	*	*
175 gallons	PFXT12I	*	*	*



Maximum Operating Conditions

Operating Temperature - 200˚F

Working Pressure - 150 psig (10.5 kg/cm²)

Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions. All PROFLO tanks carry a 1-year limited warranty. NSF 61 approved.

Distributed Exclusively by Ferguson and Wolseley Canada

0215 24425

WATER HEATER 3:

AENT55202773000	AO SMITH	6KW 208V 1PH WHTR ALUM
PFXT5I	PROFLO	LF 2 GAL THERMAL EXPANSION TANK

Residential Electric Water Heaters

ProMax®

NAECA COMPLIANT 2015 ENERGY EFFICIENT

ENHANCED HEATING ELEMENTS

- Dual 4500 watt elements for fast recovery and reliable operation.
- Incoloy stainless steel lower element lasts longer than a standard copper element.

DYNACLEAN™ DIFFUSER DIP TUBE

- Helps reduce lime and sediment buildup and maximizes hot water output. Made from long-lasting PEX cross-linked polymer.

HIGH ENERGY FACTORS

- Eco-friendly non-CFC foam insulation, heat traps and other features combine to yield a higher Energy Factor that maximizes savings on operating costs.

COREGARD™ ANODE ROD

- Our anode rods have a stainless steel core that extends the life of the anode rod allowing superior tank protection far longer than standard anode rods.

BLUE DIAMOND® GLASS COATING

- Provides superior corrosion resistance compared to industry standard glass lining.

ENHANCED FLOW BRASS DRAIN VALVE

- Our residential water heaters have a solid brass, tamper resistant, enhanced flow, ball type, drain valve.
- Uses a standard female hose fitting that allows for fast and easy draining during maintenance.
- Designed for easy operation, this valve includes an integral screwdriver slot that features a ¼ turn (open/close) radius, which not only permits full straight-through water flow but also a quick and positive shut off.

CODE COMPLIANCE

- Meets UBC, CEC and HUD National Codes.
- Meets the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA 90.1.
- Complies with the Federal Energy Conservation Standards effective April 16, 2015, in accordance with the Energy Policy and Conservation Act (EPCA), as amended.

APPROVED FOR MANUFACTURED HOUSING

- All residential electric water heaters are compliant with HUD Standards for mobile homes/ manufactured housing.

CERTIFIED TO UL 174 FOR HOUSEHOLD ELECTRIC WATER HEATERS

CSA CERTIFIED AND ASME RATED T&P RELIEF VALVE

DESIGN-LISTED BY CSA INTERNATIONAL

- Certified at 300 PSI test pressure and 150 PSI working pressure.
- Listed according to ANSI Z21.10.1-CSA 4.1 standards governing storage tank-type water heaters.

6-YEAR LIMITED TANK AND PARTS WARRANTY

- For complete information, consult written warranty or A. O. Smith.

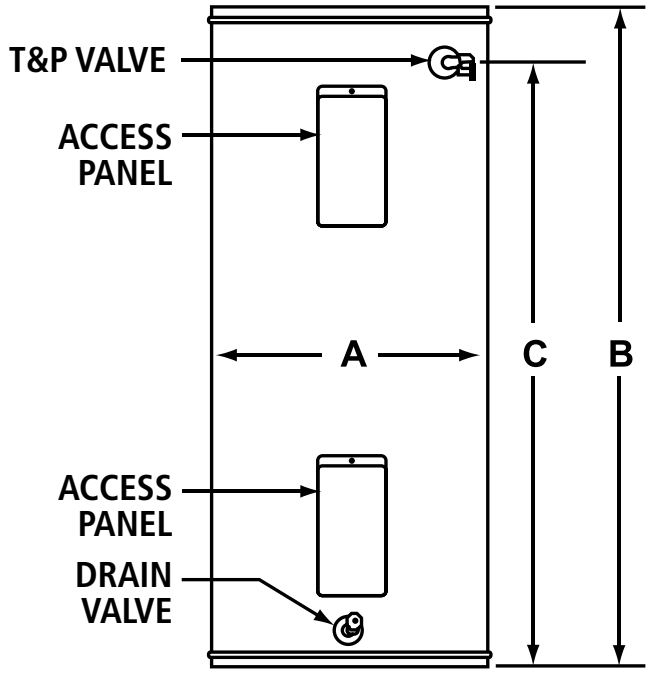
Low Lead Content

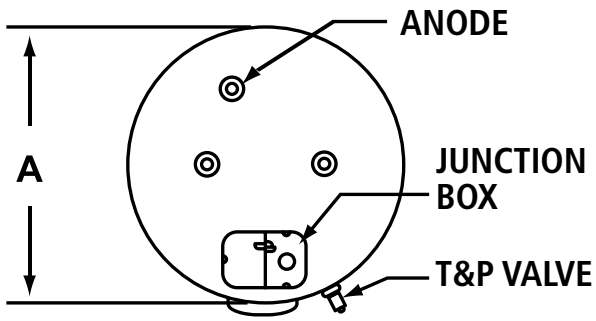
ENT55202773000 ✔

Residential Electric Water Heaters

					Element Wattage 240V		Dimensions in Inches			
Model Number	Gallon Capacity	First Hour Rating Gallon	Energy Factor	Recovery @ 90°F Rise Gallon Per Hour	Standard	Maximum	A	B	C	Approx. Shipping Weight (lbs)
ENT-30†	30	43	0.95	20.7	4500	6000	19	46-1/2	39-1/2	95
ENT-40†	40	51	0.95	20.7	4500	6000	20	60-1/4	53-1/4	118
ENTB-50*	50	69	0.95	20.7	4500	6000	21	60-1/4	51-1/4	131
ENT-50†	50	69	0.95	20.7	4500	6000	22	60-1/2	51-1/4	134
ENT-55†	55	76	0.94	20.7	4500	6000	24	56-1/2	48-1/2	145
ENSB-30*	30	43	0.95	20.7	4500	6000	20	39	30-1/2	95
ENS-30†	30	43	0.95	20.7	4500	6000	22	39-3/4	30-1/2	94
ENS-40†	40	54	0.95	20.7	4500	6000	22	50	40-3/4	109
ENS-50†	50	62	0.95	20.7	4500	6000	24	49-3/4	40-3/8	161
ENL-30	28	41	0.95	20.7	4500	6000	24	31-1/4	21-3/4	115
ENLB-30*	28	40	0.95	20.7	4500	6000	22	30	21-3/4	96
ENLB-40*	38	46	0.95	20.7	4500	6000	24	31-3/4	24	118

3/4" water connections on 8" center.
*Models ship with supplied insulation blanket.
†For 10-year tank and 6-year parts warranty, change "E" to "P" in the model number (example: ENT-30 becomes PNT-30).
Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.





6KW 208V 1PH ALUM

PFXT

Thermal Expansion Tanks

Product Features

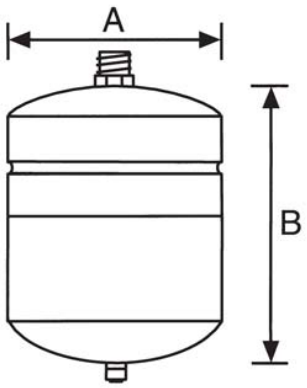
- Diaphragm-type
- Pre-pressurized expansion tank
- Designed for potable hot water systems
- Eliminates relief valve spills
- Controls pressure build-up
- Protects plumbing fixtures
- Extends water heater life
- Eliminates hot water waste
- Factory precharged to 40 PSI
- Low lead compliant
- 3/4" SS NPTM connection

PFXT5I

Product Specifications

Model No.	Total Volume Gals.	Max. Accept. Factor	Diameter A	Height B	System Connection	Ship Weight Lbs.
PFXT5I	2.1	.45	8"	11,6"	3/4" NPTM	5
PFXT12I	4.8	.73	11"	14,5"	3/4" NPTM	10

Water Heater Size/Volume	130°F	140°F	160°F	180°F
30 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT5I
40 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT5I
50 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT12I
60 gallons	PFXT5I	PFXT5I	PFXT5I	PFXT12I
80 gallons	PFXT5I	PFXT12I	PFXT12I	PFXT12I
100 gallons	PFXT12I	PFXT12I	PFXT12I	*
120 gallons	PFXT12I	PFXT12I	PFXT12I	*
150 gallons	PFXT12I	PFXT12I	*	*
175 gallons	PFXT12I	*	*	*



Maximum Operating Conditions

Operating Temperature - 200°F

Working Pressure - 150 psig (10.5 kg/cm²)

Warranty and Codes

This product comes complete with installation, operating, care and maintenance instructions. All PROFLO tanks carry a 1-year limited warranty. NSF 61 approved.

Distributed Exclusively by Ferguson and Wolseley Canada

0215 24425

6

SAME AS UNIT PLUMBING FIXTURE WITH THE EXCEPTION OF THE FOLLOWING

MOLDED-STONE® MOP SERVICE BASIN

MSB 2424
MSB 3624

Molded-Stone® Mop Service Basin

NOTES

OPTIONS

- *Service Faucet (830-AA): Chrome plated with vacuum breaker, integral stops, adjustable wall brace, pail hook and ¾" hose thread on spout.*
- *Hose and Hose Bracket (832-AA)*
- *Mop Hanger (889-CC)*
- *Alternate Strainer (1453-BB) - For residential use (EFS-3624 and EFS-2424)*
- *3" Quick Drain Connector (QDC-3XH): Neoprene connecting gasket suitable for attaching extra heavy cast iron soil pipe and Schedule 40 steel pipe to the drain body. Neoprene connecting gasket (QDC-3SN) suitable for attaching hubless cast iron pipe (no hub, nominal O.D. of 3.31") and service weight cast iron soil pipe (nominal O.D. of 3.38") to the drain body.*
- *Silicone Sealant (833-AA)*
- *Vinyl Bumperguard (E-77-AA)*
- *Stainless Steel Bumperguard (E-88-AA)*
- *Stainles Steel Wall Guard (MSG2424, MSG2828, MG3232, MSG3636, and MSG3624)*

FEATURES

- ***MSB 2424***

  The MSB 2424 shall have overall outside dimensions of 24" x 24" x 10". The molding shall be done in matched metal dies under heat and pressure resulting in a one-piece homogeneous product. The unit shall have 10" high walls with not less than 1" wide.

  The stainless steel drain body is designed to provide for a caulk connection or QDC-3 joint to a 3" drain pipe. A combination dome strainer and lint basket made from stainless steel shall be included with factory installed stainless steel drain body for caulked joint to accept a 3" pipe.

- ***MSB 3624***

  The MSB 3624 shall have overall outside dimensions of 36" x 24" x 10". The molding shall be done in matched metal dies under heat and pressure resulting in a one-piece homogeneous product. The unit shall have 10" high walls with not less than 1" wide shoulders and an integrally molded shelf 10 9/16" wide where indicated.

  The stainless steel drain body is designed to provide for a caulk connection or QDC-3 joint to a 3" drain pipe. A combination dome strainer and lint basket made from stainless steel shall be included with factory installed stainless steel drain body for caulked joint to accept a 3" pipe.

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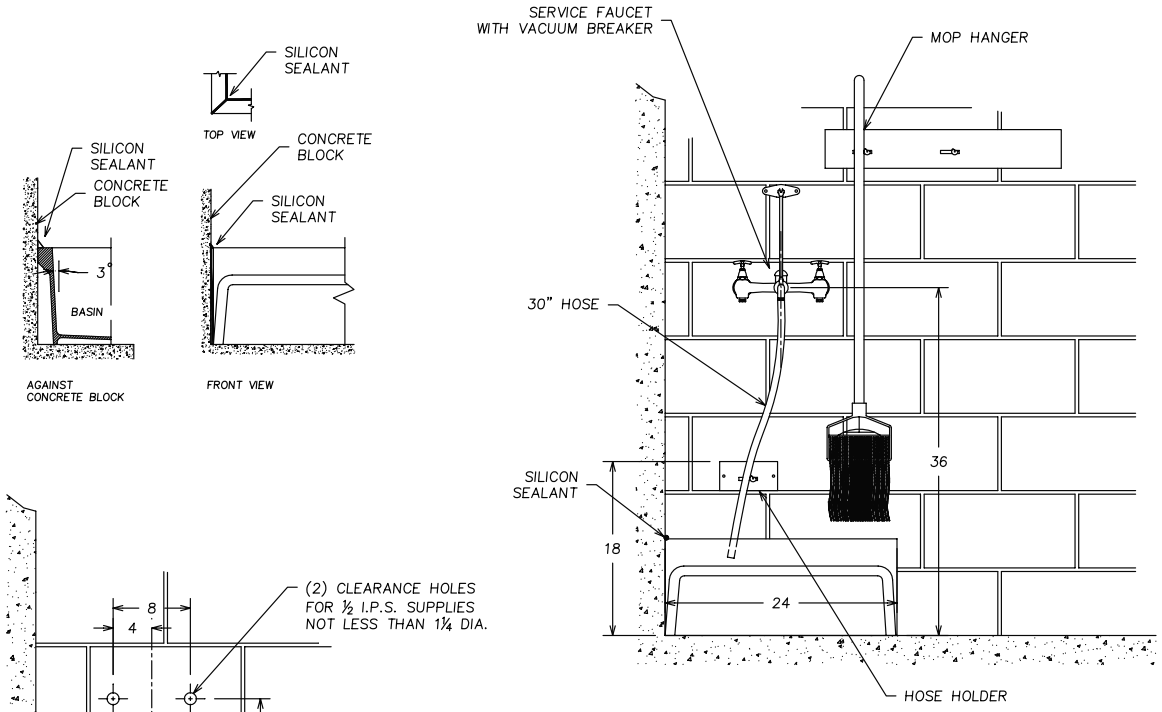
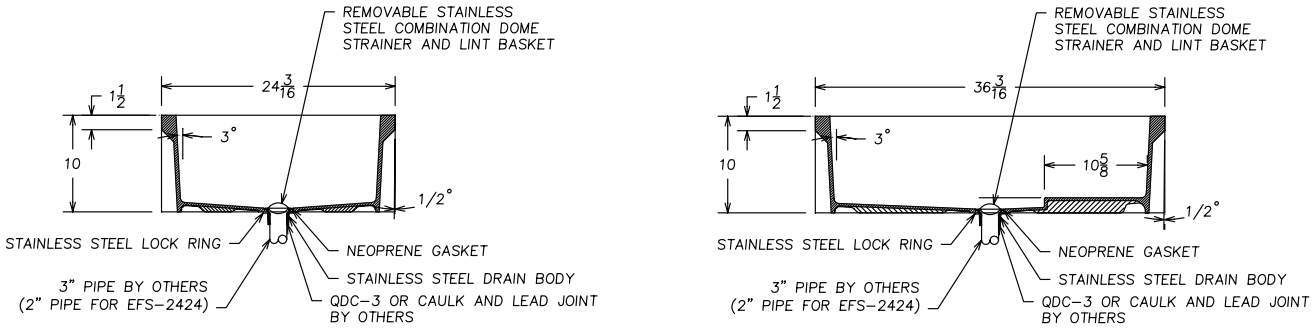
MOLDED-STONE® MOP SERVICE BASIN

MSB 2424
MSB 3624

Molded-Stone® Mop Service Basin



MODEL NO.	A	B	C	D	E
MSB–2424	24 3/16	24 3/16	12	12	10
MSB–3624	36 3/16	24 3/16	18	12	10



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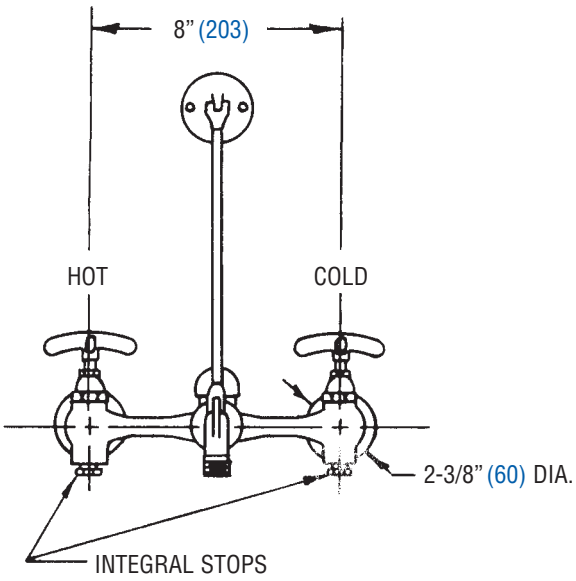
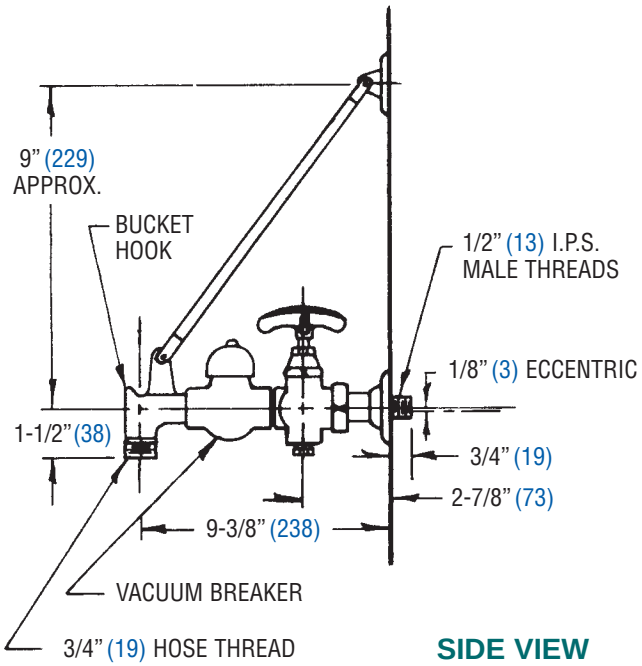
IMPORTANT: Roughing-in dimensions may vary ½" and are subject to change or cancellation without prior notice.

Service-Sink Faucet
Model: 830-AA

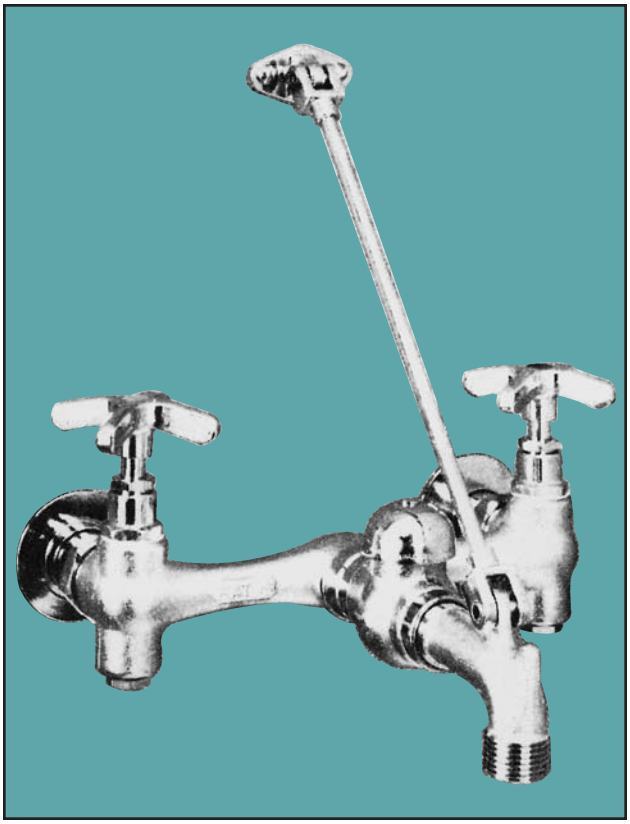
FIAT



FRONT VIEW



SIDE VIEW



General: 830-AA Service Faucet - Chrome plated with vacuum breaker, integral stops, adjustable wall brace, pail hook and 3/4" hose thread on spout. Body inlets 8" center to center, four arm handles. Valves contain renewable hub, renewable seats, swivel discs, encased washers and brass washer screws.

Material: Commercial red brass alloy casting-rough finish.

Finish: Chrome plating exceeding requirements of ANSI/ASTM B-456-71. Indicators cold (blue) and hot (red) are included.

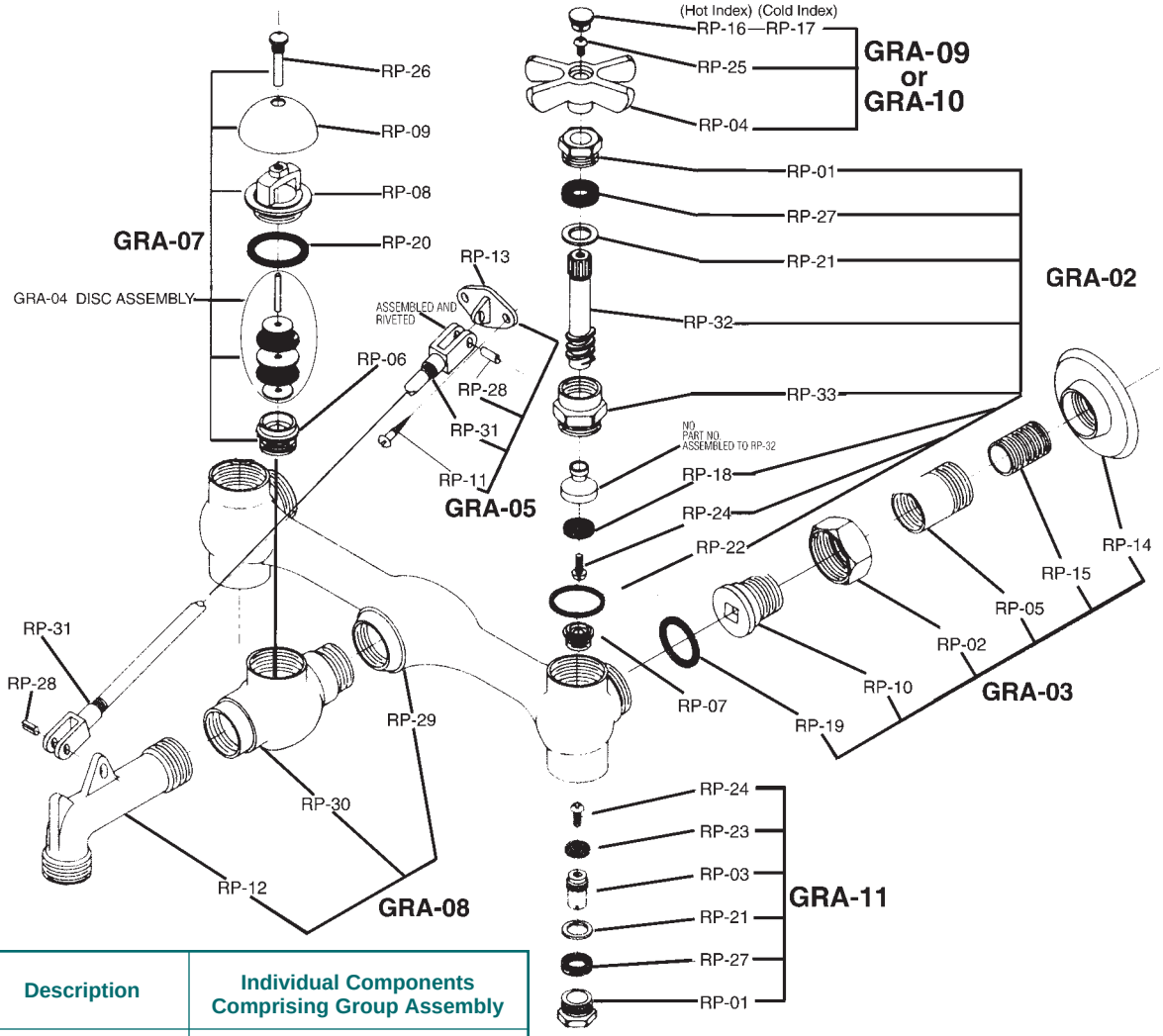
Specifications and Codes: In the U.S.A., meets or exceeds requirements of ANSI-A112.18.1M-1979 for "Finished and Rough Brass Plumbing Fixture Fittings." In Canada, meets or exceeds the requirements of CSA standards B125 - "Plumbing Fittings," B64.1.1 - "Vacuum Breakers - Atmosphere Type" and B64.0 - "General Requirements for Backflow Preventers and Vacuum Breakers," and is approved under Product Class No. 6811 01 under Report #LM57412-1. Conforms to ASSE 1001.

NOTE: These roughing measurements may vary 1/4" (plus or minus).

FIAT PRODUCTS®
A CRANE PLUMBING COMPANY

255 Hutchings St. • Winnipeg, MB • R2X 2R4 • Ph. 800-665-7531 • 204-633-6122 • Fx. 204-632-4854
e-mail: info@fiat.ca • website: www.fiat.ca

830-AA Group Replacement Assembly Parts List



Group Assembly Part #	Description	Individual Components Comprising Group Assembly	
GRA-02	Handle Mounting Group Assembly	RP-01 RP-27 RP-21 RP-32 RP-33 RP-18 RP-24 RP-22	Packing Nut Packing Brass Washer Spindle Handle Hub Seat Washer Seat Washer Screw Hub Washer
GRA-03	Coupling Assembly	RP-14 RP-15 RP-05 RP-02 RP-10 RP-19	Wall Flange Nipple Bushing (socket) Coupling Nut Swivel Washer
GRA-05	Brace Assembly	RP-13 RP-28(2) RP-31 RP-11(2)	Brace Flange S.S. Roll Pin Wall Brace Rod Wood Screw
GRA-07	Vacuum Breaker & Disc Assembly	RP-26 RP-09 RP-08 RP-20 RP-06 GRA-04	V.B. Cap Screw Cap V.B Hub V.B Hub Washer Seat Vacuum Breaker Disc Assembly

Group Assembly Part #	Description	Individual Components Comprising Group Assembly	
GRA-08	Complete Body Assembly	RP-29 RP-30 RP-12	Center Body V.B. Body Nozzle
GRA-09	Handle Assembly (Cold)	RP-17 RP-25 RP-04	Cold Index Handle Screw Handle
GRA-10	Handle Assembly (Hot)	RP-16 RP-25 RP-04	Hot Index Handle Screw Handle
GRA-11	Integral Stop Assembly	RP-24 RP-23 RP-03 RP-21 RP-27 RP-01	Seat Washer Screw Washer Spindle Brass Washer Packing Packing Nut
RP-07	(2 per package)	RP-07	Seat

MOLDED-STONE® LAUNDRY TUBS

L-7 / FL-7

Molded-Stone® Serv-A-Sink®
Single Compartment Laundry Tubs

FEATURES

- ***L-7 Wall Hung Serv-A-Sink®***

  Model L-7 Single Tub is furnished with and supported by a mounting bracket of heavy gauge galvanized steel capable of being secured to the wall with mechanical fasteners. Model L-7 side fillers and bottom tub support, which are assembled in the field to the mounting bracket are made of white molded plastic polymer. Model L-7 has an integral drain and is available in 4" or 8" knockout center which are field drilled.

- ***FL-7 Floor Mounted Serv-A-Sink®***

  FL-7 Single Tub is furnished with and supported by white baked enamel steel angle legs that slip into molded retainers and/or sockets for rigid friction fit. Legs are supplied with leveling devices. Model FL-7 has an integral drain and is available in 4" or 8" knockout centers which are field drilled.

NOTES

- *Model L-7 has an overall outside dimensions of 24" x 20" x 13 3/8", and inside compartment dimensions of 20 1/8" x 17 3/4" x 11 5/8".*
- *Model FL-7 has an overall outside dimensions of 24" x 20" x 13 3/8", and inside compartment dimensions of 20 1/8" x 17 3/4" x 11 5/8".*

OPTIONS

- *Deck type faucet (4" center set) with 6 3/4" spout. (A-1)*
- *Overflow pipe with "O" ring to fit 1 1/2" strainer. (A-2)*
- *Polypropylene faucet block, 5 1/8" x 1 1/2" x 1 1/4" for installing clamp-on or integral clamp faucets to deck to accept over head water supplies. (A-3)*
- *Faucet for top supplies. Clamps on with swing spout and angled nose end. (A-17)*
- *Deck type faucet (8"center set) with spout. (A-18)*

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* Not furnished by Fiat Products. Description for specification purposes only.

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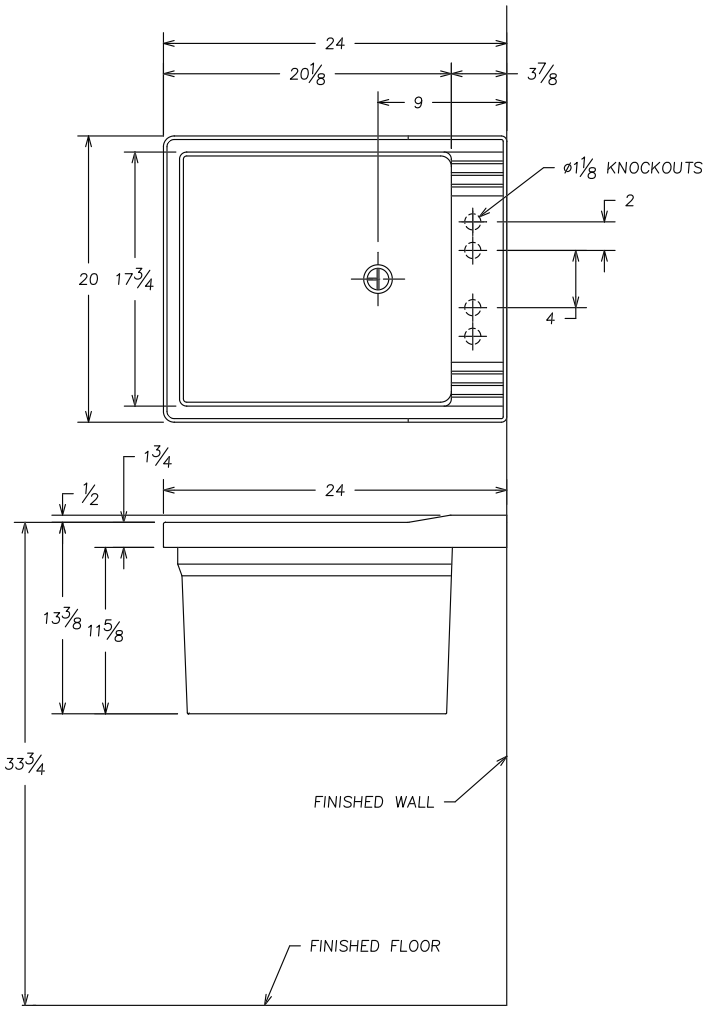
MOLDED-STONE® LAUNDRY TUBS

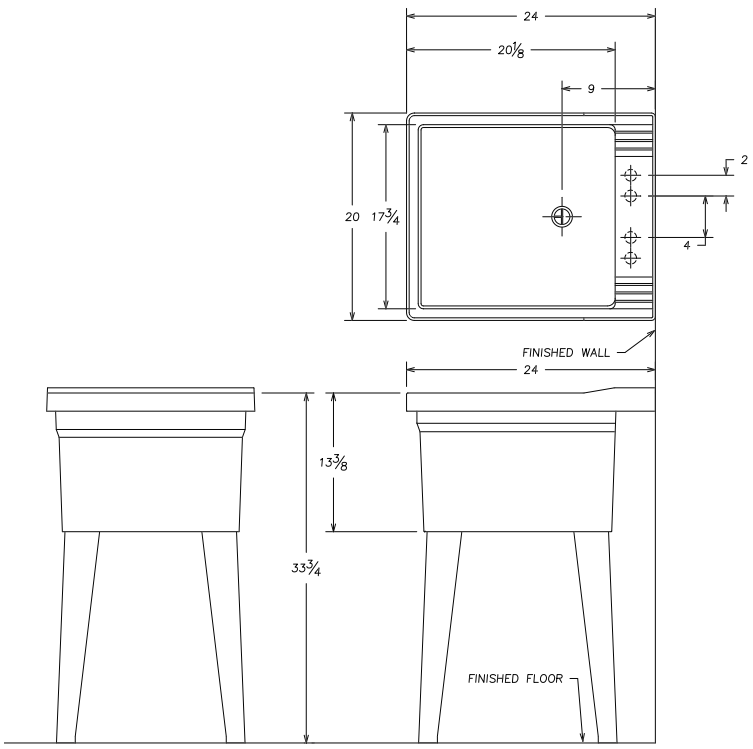
L-7 / FL-7

Molded-Stone® Serv-A-Sink® Single Compartment Laundry Tubs

MODEL L-7 WALL HUNG



MODEL FL-7 FLOOR MOUNTED



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IMPORTANT: Roughing-in dimensions may vary ½" and are subject to change or cancellation without prior notice.

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Ward Manufacturing LLC
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Blossburg, PA 16912
Tel: (570) 638-2131
Fax: (570) 638-3410
www.wardflex.com
www.wardmfg.com

WARDFLEX® Corrugated Steel Tubing
Specification Sheet

WARDFLEX® Corrugated Stainless Steel Tubing has been designed and certified for use in natural gas and propane piping systems per the requirements of ANSI LC-1.

Certifications:

- CSA International
  - Certifies that WARDFLEX® CSST conforms to the latest revision of ANSI LC-1 which governs the safe performance standards for CSST fuel gas piping systems.
  - File #: 112940_0_000
- UL – Underwriters Laboratory
  - WARDFLEX® CSST has UL Through Penetration Firestop Listings ranging from 1 hour to 4 hours for both the U.S. and Canada.
  - File # R18357
- FM – Factory Mutual
- IAPMO – International Association of Plumbing and Mechanical Officials
  - File #: 3353
- ICC – International Code Council
  - Report #: ESR-1879

Tubing

- CSST:
  - All WARDFLEX® CSST sizes are made from 300 series Stainless Steel conforming to ASTM A240.
  - 10A thru 32A WARDFLEX® tubing sizes are fully annealed.
  - WARDFLEX® CSST is approved for 25 PSI when used in conjunction with the WARDFELX® STEPSAVER fittings.
- Coating
  - All WARDFLEX® CSST is coated with a non halogenated Polyethylene (PE) jacket intended to facilitate installation and protect against accidental contact with substances shown to be caustic to 300 series stainless steel.
  - WARDFLEX® PE coating has been tested per ASTM E84 and shown to have a flame spread/smoke density rating of less than 25/50, thus allowing it to be installed in air plenums and ducts.
  - WARDFLEX® PE coating is UV resistant.

Released On: 4/2/08

- WARDFLEX® CSST EHD (Equivalent Hydraulic Diameter) Values

Tubing Size	10A (3/8")	15A (1/2")	20A (3/4")	25A (1")	32A (1-1/4")	38A (1-1/2")	50A (2")
EHD	15	19	25	30	37	48	62

Fittings

- WARDFLEX® male and female mechanical joints, couplings, adapter nuts, and some tees are made from C360 free machining brass or equivalent.
- WARDFLEX® floor flanges, manifolds and some tees are made from ASTM A197 compliant malleable iron.

Striker Plates

- WARDDFLEX® striker plates are made of case hardened steel and conform to the requirements of ANSI LC-1.

For additional on WARDFLEX® accessories, sizing, or installation practices refer to the latest versions of the WARDFLEX® Design and Installation Guide available for free download @ www.WARDFLEX.com.

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FERGUSON ENTERPRISES, INC.®

ELEVATOR PUMP:

LELV290	LIBERTY	3/4 HP 115 VOLTS 1PH CAST IRON SUBMERSIBLE SUMP PUMP

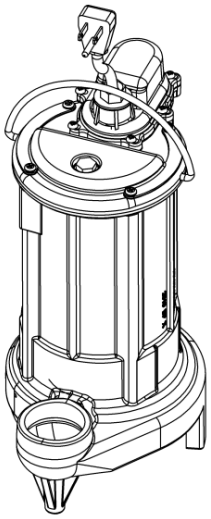
Pump Specifications

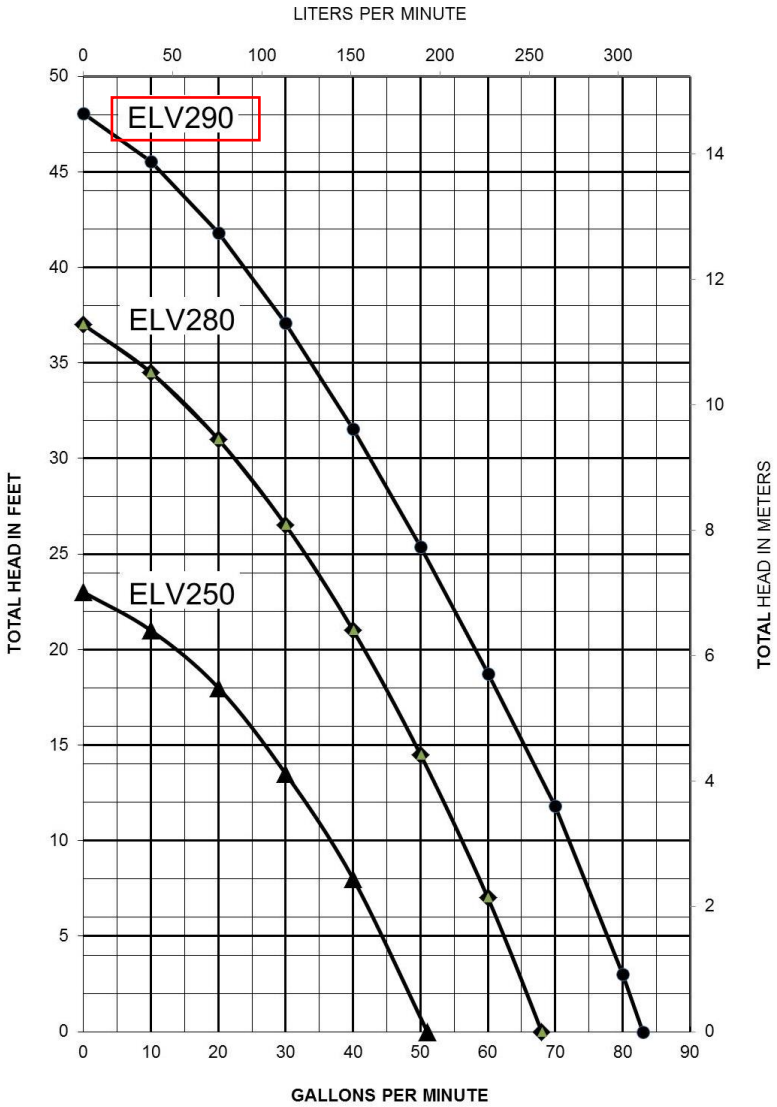
ELV Series Submersible Sump Pump with OilTector Control

ELV250 1/3 hp

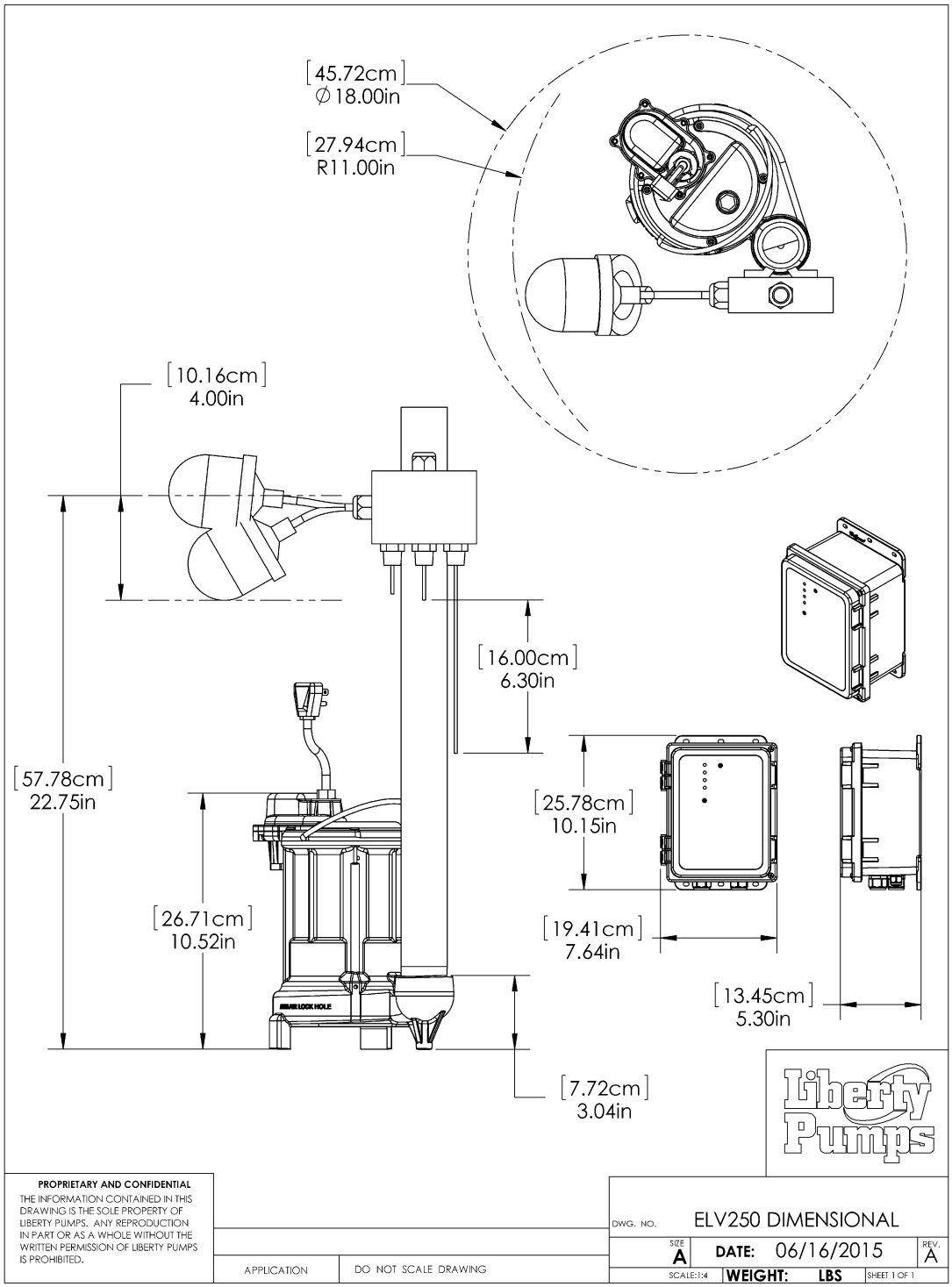
ELV280 1/2 hp

ELV290 3/4 hp

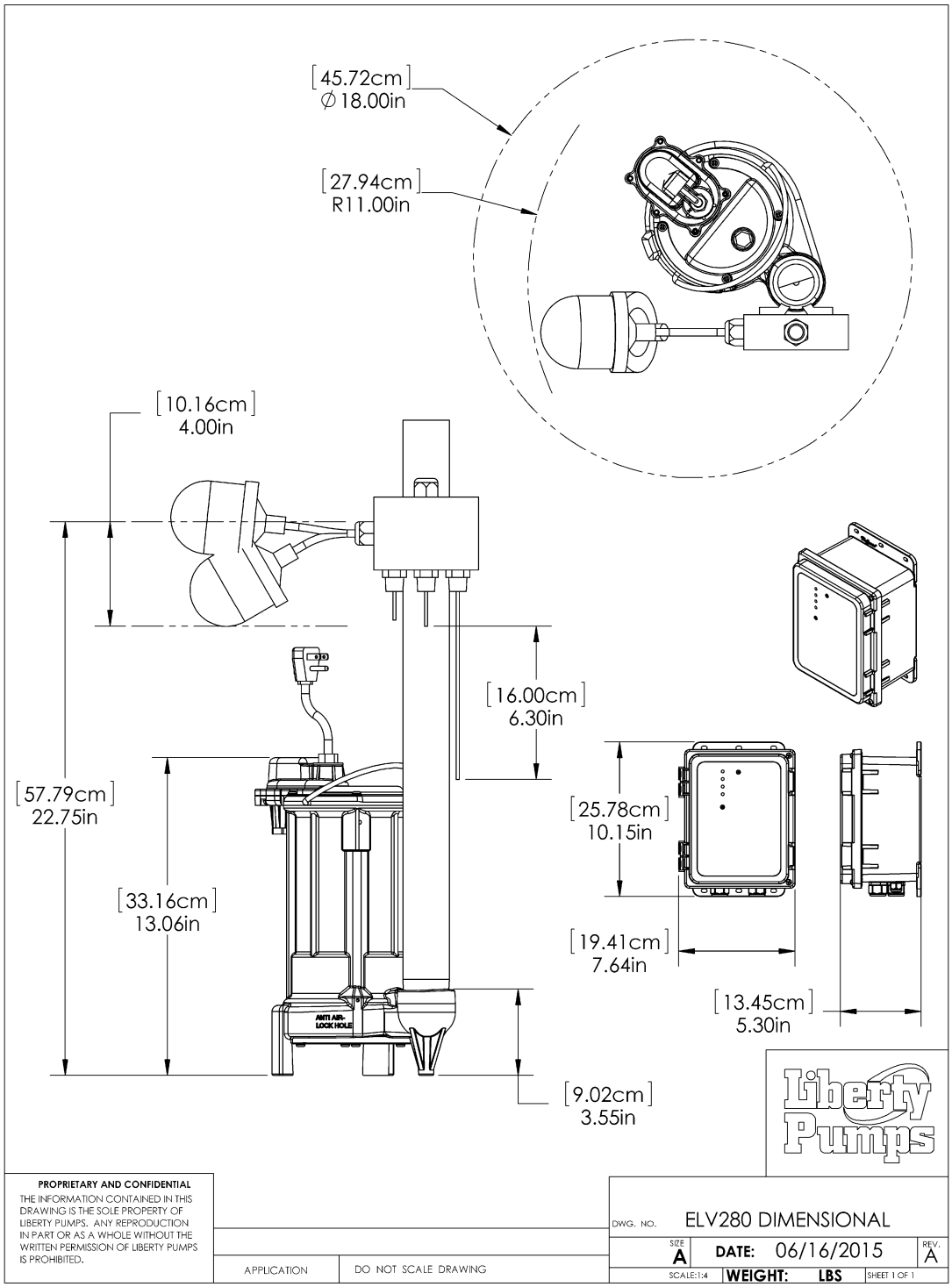




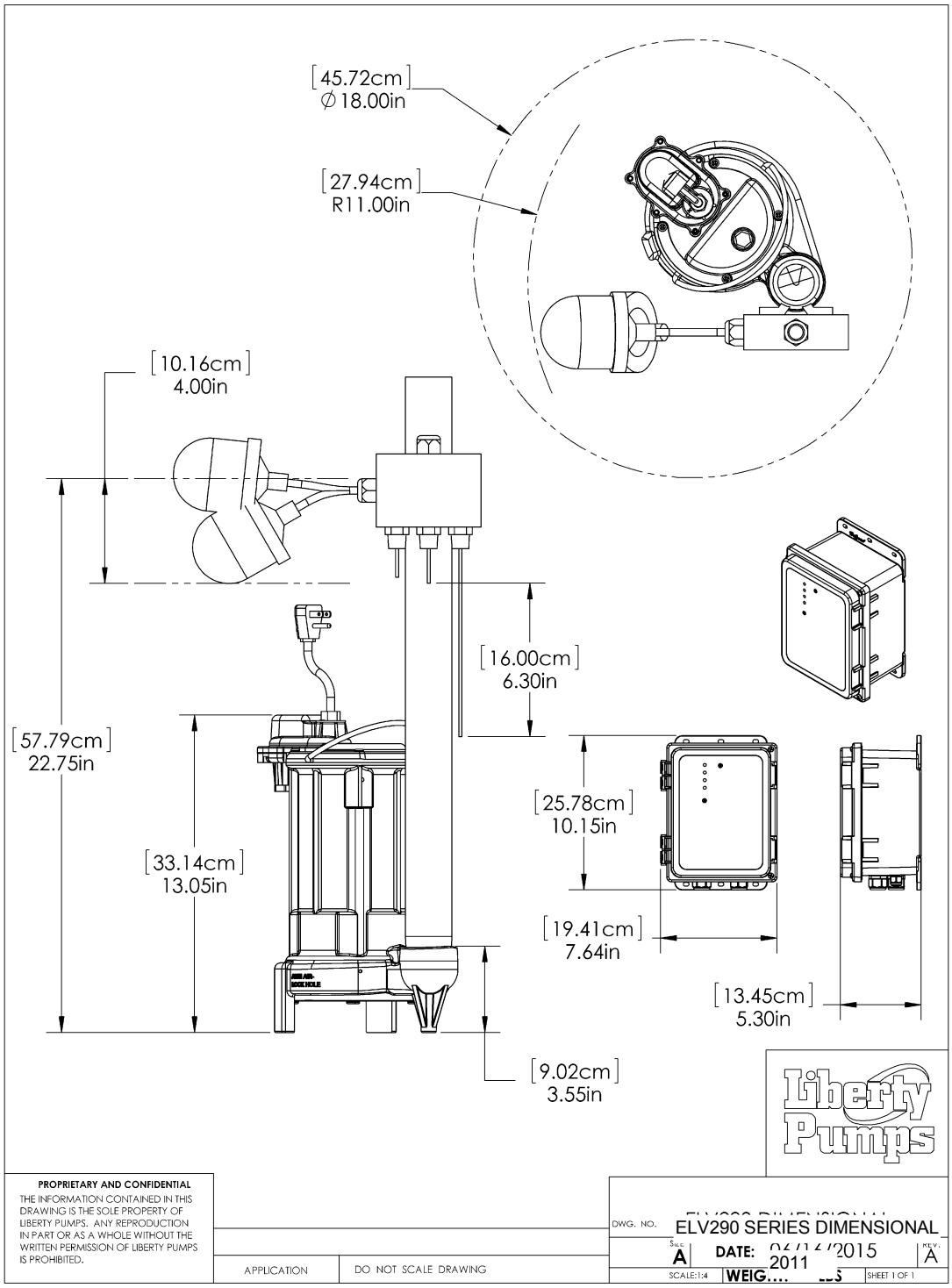
ELV250 Dimensional Data



ELV280 Dimensional Data



ELV290 Dimensional Data



ELV-Series Electrical Data

MODEL	HP	VOLTAGE	PHASE	FULL LOAD AMPS	LOCKED ROTOR AMPS	THERMAL OVERLOAD TEMP	STATOR WINDING CLASS	CORD LENGTH FT	DISCHARGE	AUTOMATIC
ELV290	3/4	115	1	10.4	24	120˚C/ 248˚F	B	25	1 1/2	YES W/ CONTROL
ELV290-06	3/4	115	1	10.4	24	120˚C/ 248˚F	B	6	1 1/2	YES W/ CONTROL
ELV290-5	3/4	115	1	10.4	24	120˚C/ 248˚F	B	50	1 1/2	YES W/ CONTROL
ELV290HV	3/4	208-230	1	5.3	13	105˚C/ 221˚F	B	25	1 1/2	YES W/ CONTROL
ELV290HV-06	3/4	208-230	1	5.3	13	105˚C/ 221˚F	B	6	1 1/2	YES W/ CONTROL
ELV290HV-5	3/4	208-230	1	5.3	13	105˚C/ 221˚F	B	50	1 1/2	YES W/ CONTROL
ELV280	1/2	115	1	8.0	23	105˚C/ 221˚F	B	25	1 1/2	YES W/ CONTROL
ELV280-06	1/2	115	1	8.0	23	105˚C/ 221˚F	B	6	1 1/2	YES W/ CONTROL
ELV280-5	1/2	115	1	8.0	23	105˚C/ 221˚F	B	50	1 1/2	YES W/ CONTROL
ELV280HV	1/2	208-230	1	4.0	12.5	105˚C/ 221˚F	B	25	1 1/2	YES W/ CONTROL
ELV280HV-06	1/2	208-230	1	4.0	12.5	105˚C/ 221˚F	B	6	1 1/2	YES W/ CONTROL
ELV280HV-5	1/2	208-230	1	4.0	12.5	105˚C/ 221˚F	B	50	1 1/2	YES W/ CONTROL
ELV250	1/3	115	1	5.2	8	105˚C/ 221˚F	B	25	1 1/2	YES W/ CONTROL
ELV250-06	1/3	115	1	5.2	8	105˚C/ 221˚F	B	6	1 1/2	YES W/ CONTROL
ELV250-5	1/3	115	1	5.2	8	105˚C/ 221˚F	B	50	1 1/2	YES W/ CONTROL

ELV-Series Technical Data

IMPELLER	VORTEX ENGINEERED POLYMER
SOLIDS HANDLING SIZE	
ELV250	½"
ELV280, ELV280HV, ELV290, ELV290HV	¾"
PAINT	POWDER COAT
MAX LIQUID TEMP	60˚C/ 140˚F
MAX STATOR TEMP	CLASS B 130˚C/ 266˚F
THERMAL OVERLOAD	
ELV250, ELV280, ELV280HV, ELV290HV	105˚C/ 221˚F
ELV290	120˚C/ 248˚F
MOTOR HOUSING/ VOLUTE	CLASS 25 CAST IRON
SHAFT	STAINLESS
HARDWARE	STAINLESS
ORINGS	BUNA N
SHAFT SEAL	
ELV250	ENGINEERED DOUBLE LIP WITH STAINLESS STEEL SPRINGS
ELV280 & ELV280HV ELV290 & ELV290HV	UNITIZED CERAMIC CARBON
PUMP WEIGHT	
ELV250	23 LBS
ELV280, ELV280HV, ELV290, ELV290HV	30 LBS
MIN. SUMP SIZE	Ø18" X 30"

ELV-Series Specifications

1.01 GENERAL:

The contractor shall provide labor, material, equipment, and incidentals required to provide_____(QTY) centrifugal pumps as specified herein. The pump models covered in this specification are ELV Series single phase pumps. The pump furnished for this application shall be model _____as manufactured by Liberty pumps.

2.01 OPERATING CONDITIONS:

Each submersible pump shall be rated for ____hp, _____volts, single phase, 60 Hz, & 3450 RPM. The unit shall produce _____G.P.M. at_____ feet of total dynamic head.

The submersible pump shall be capable of handling water with _____ solid handling capability. The submersible pump shall have a shut-off head of ____ feet and a maximum flow of _____ GPM @ 5 feet of total dynamic head.

The manual pump is connected to a control which has the ability to prevent oil from being pumped from the vault. This same control unit will activate an alarm when an oil “film” is detected or when a high water condition exits. The system will continue to monitor and remove water from the vault even if an oil condition is detected.

3.01 CONSTRUCTION:

Each centrifugal sump pump shall be equal to the c US Certified ELV-Series pumps as manufactured by Liberty Pumps, Bergen NY. The castings shall be constructed of class 25 cast iron. The motor housing shall be oil filled to dissipate heat. Air filled motors shall not be considered equal since they do not properly dissipate heat from the motor. All mating parts shall be machined and sealed with a Buna-N o-ring. All fasteners exposed to the liquid shall be stainless steel. The motor shall be protected on the top side with sealed cord entry plate with molded pins to conduct electricity eliminating the ability of water to enter internally through the cord. The motor shall be protected on the lower side with a unitized ceramic/carbon seal with stainless steel housings and spring or engineered double lip seal with stainless steel springs. The pump shall be furnished with stainless steel handle.

4.01 ELECTRICAL POWER CORD

The submersible pump shall be supplied with a multi-conductor power cord which is a maximum of 50 feet in length. It shall be cord type YELLOW or BLACK, UL 16-3 SJEOOW 300V 105°C, capable of continued exposure to the pumped liquid. The power cord shall be sized for the rated full load amps of the pump in accordance with the National Electric Code. The power cable shall not enter the motor housing directly but will conduct electricity to the motor by means of a water tight compression fitting cord plate assembly, with molded pins to conduct electricity. This will eliminate the ability of water to enter internally through the cord, by means of a damaged or wicking cord.

5.01 MOTORS

Single phase motors shall be oil filled, capacitor start, class B insulated NEMA B design, rated for continuous duty. At maximum load the winding temperature shall not exceed 135 degrees C unsubmerged. Since air filled motors are not capable of dissipating heat they shall not be considered equal. Single phase motors shall have an integral thermal overload switch in the windings for protecting the motor.

6.01 BEARINGS AND SHAFT

An upper and lower ball bearing shall be required. Both the upper and lower bearing shall be a single ball / race type bearing. Both bearings shall be permanently lubricated by the oil, which fills the motor housing. The motor shaft shall be made of 300 or 400 series stainless steel.

7.01 SEALS

The pump shall have a unitized carbon / ceramic seal with stainless steel housings and spring, or engineered double lip seal with stainless steel springs. The motor plate / housing interface shall be sealed with a Buna-N o-ring.

8.01 IMPELLER

The impeller shall be vortex style made of an engineered polymer, with pump out vanes on the back shroud to keep debris away from the seal area. It shall be threaded to the motor shaft.

9.01 CONTROLS

The control unit has three probes and a float ball switch. The pump will activate when the middle probe contacts water, and will remain on until the first, longest probe no longer is in contact with water. A high water alarm is activated when third or shortest probe contacts water. The system will ignore a small film of oil, however larger volumes of oil will be detected when the alarm probe does not detect water and the float ball activates. The system will continue to operates, removing water not oil from the vault even when oil has been detected.

10.01 PAINT

The exterior of the casting shall be protected with powder coat paint.

11.01 SUPPORT

The pump shall have cast iron support legs, enabling it to be a free standing unit.

12.01 SERVICEABILITY

Components required for the repair of the pump shall be shipped within a period of 24 hours.

13.01 TESTING

The pump shall have a ground continuity check and the motor chamber shall be Hi-potted to test for electrical integrity, moisture content and insulation defects. The motor and volute housing shall be pressurized, and an air leak decay test is performed to ensure integrity of the motor housing. The pump shall be run, voltage current monitored, and the tester checks for noise or other malfunction.

14.01 QUALITY CONTROL

The pump shall be manufactured in an ISO 9001 certified Facility.

15.01 WARRANTY

Standard limited warranty shall be 3 years.