

## Specialty Equipment (Section X)

<u>Part No.</u>	<u>Description</u>	<u>Page No.</u>
	Hoses of PTFE	3
	Metal Expansion Joints - 321 Stainless Steel	4-7
	3" - 8"	4
	10" - 18"	5
	20" - 36"	6
	42" - 48"	7
AMS	Single Arch Rubber Bellows/Expansion Joint with Flanges	8
AMT	Twin Arch Rubber Bellows/Expansion Joint with Flanges	9
243-BT	Tank Cleaning Coupling	10
472-BT-25	Tank Cleaning Wye	10
HSA	Hose Saddle	10
843-BT	Tank Cleaning Coupling Spanner Wrench	10
	Hydraflex Sem-Jet Water Gun Tobey	11
	Marpol Blind Flange	12
	Marpol Flange	12
	Hose Reel with Gasoline Hose	12
HB	Hose Bun	13
LHH	Hose Handling Sling	13
HC	Hose Caddy	14
LHH	Hose Horse	14
AHB	Air Horn / Air Movers	15
TYPHOON-12, 15	12" and 15" Water, Air, and Hydraulic Driven Ventilators	16
PA-12, 20, 24	12", 20", and 24" Air Driven Ventilators	17
TORNADO	8", 12", and 16" Electric Driven Ventilators	18
VP450WS	Victor Pyrate Portable Water Driven Gas Freeing Fan	19
VP800W	Victor Pyrate Portable Water Driven Gas Freeing Fan	19
VP850A	Victor Pyrate Portable Air Driven Gas Freeing Fan	20
VP1350W	Victor Pyrate Portable Water Driven Gas Freeing Fan	20
VP-MINOR	Portable Tanking Washing Machine for Smaller Vessels	21
VP-STANDARD	Portable Tanking Washing Machine for Hire	22
VP-MAJOR	Portable or Fixed Tanking Washing Machine for Large Vessels	23
	Insulating Flange	24
110	Pipe Patch Clamps	25
112	Heavy Duty Pipe Repair Clamps	26
113	Multi-Band Pipe Repair Clamps	26

## Specialty Equipment (Section X) - *continued*

<u>Part No.</u>	<u>Description</u>	<u>Page No.</u>
	Polly Pigs - Industrial Pipeline Cleaners	27
	Pumps	28
	Filters, Lubricators, and Regulators	28
	Foot Valves	28
	Skimmers	28
	Strainers	28
	Pressure Wash Hose	28
	Pressure Gauges	28
	Pressure Wash Spray Gun	28
	Vapor Recovery Ecentric Reducer	29
	Custom Wye	29
	Plate Blind Flange	29
	Hose Bunch Binder	29
	Pancake Blind Flange with Handle	29
	Neoprene Polyester Ducting Coupled with Flanges	29
	Vapor Recovery Concentric Reducer	30
	Flanged Tee	30
	TTMA Flanged Elbow	30
	Flanged Spool Piece	30
HW	Pyrex Brand Heavy Wall Glass Tubing	31
HP	Pyrex Brand High Pressure Glass Tubing	32-33
RL	Pyrex Brand Red Line Glass Tubing	34
MG	"Marvel" Gage Glass & Glass Tubing Gaskets	35
20	Conbraco Water Gauges	36
	Gage Glass Cutter	37
	Polycarbonate Tubing	37
	Sight Glass	37
	Gage Glass Washer	37
	Reflex Gage Glass	37
	Strainer	38
	Tank Lid Hatch Pipe Flanges	38
	Hammer Unions	38
	Swivel Joints	38
	Custom Fabrication	39

## HOSES of PTFE

PTFE hoses offer unmatched corrosion resistance over a broad range of operating temperatures and pressures. PTFE is fully resistant to: all acids, all chlorides, all sulfates, all bleach solutions, all solvents, all phenols, all caustics, and all peroxides. Unexcelled corrosion resistance, coupled with the clean ability of its unique non-stick property, makes it an economical multi-use hose. This one material is ageless, and can be repeatedly steam cleaned or caustic washed and returned to service on a variety of media, eliminating the need for process dedicated hoses. PTFE hoses are the product of choice for all your tough applications.

PTFE hoses are available with smoothbore, for maximum clean ability, or convoluted tubing to maximize flexibility. Reinforcements or covers can be selected to achieve desired operating pressure, temperature, corrosion resistance and durability. Hoses are available with conductive tubing where electrostatic dissipation is required.

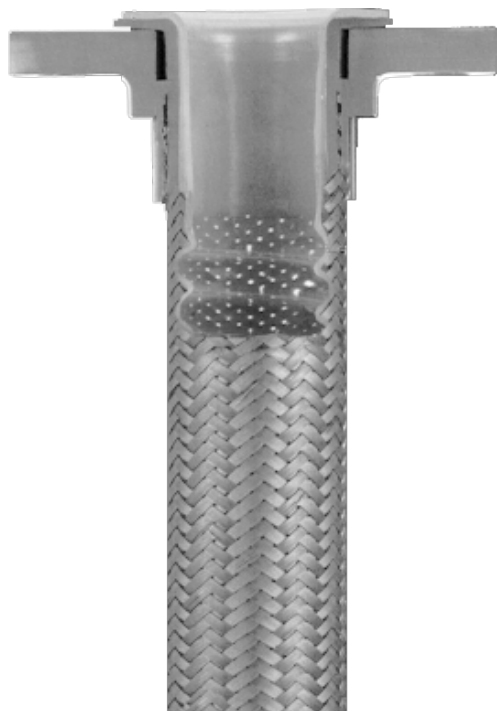


### Smoothbore PTFE Tube with EPDM Rubber Cover

EPDM covers available in blue, green or light gray.  
Materials meet or exceed FDA and 3A requirements.  
Full vacuum rated hose.  
Rated for pressures to 500 psi.  
Temperature Range: -40°F (-40°C) to +350°F (+177°C)  
Sizes: 1/2" thru 6" I.D.

### Smoothbore PTFE with Stainless Steel Braided Reinforcement

Materials meet or exceed FDA and 3A requirements.  
Rated for pressures to 3000 psi.  
Temperature Range: -100°F (-73°C) to +450°F (+232°C)  
Sizes: 1/8" thru 1 1/2" I.D.



### Ultra-Flexible, Self-Draining Convoluted PTFE Tube

The most ultra-flexible PTFE hose available.  
Materials meet or exceed FDA and 3A requirements.  
Available with Stainless Steel, Bronze, Polypropylene, Kynar or Kalrez® braided reinforcement, or unreinforced.  
Thick wall tubing can be flared through fittings.  
Full vacuum rated hose.  
Rated for pressures to 400 psi.  
Temperature Range: -100°F (-73°C) to +450°F (+232°C)  
Sizes: 1/2" thru 4" I.D.

### High-Profile, Self-Draining Convoluted PTFE Tube

Combined excellence in flexibility and high pressure rating.  
Materials meet or exceed FDA and 3A requirements.  
Available with stainless Steel or Polypropylene braided reinforcement.  
Rated for pressures to 1500 psi.  
Stainless Temperature Range: -100°F (-73°C) to +450°F (+232°C)  
Polypropylene Temperature Range: -40°F (-40°C) to +350°F (+177°C)  
Sizes: 1/2" thru 3" I.D.

**Couplings:** NPT, F NPT, Flange and Cam & Groove Splice, Reducing Cam & Groove, Tube Butt weld & Pipe Butt weld Teflon Encapsulated: CAM x Flange Adapter, Flange Retainer X Lap Joint, Female Cam & Groove, Male Cam & Groove, Spool Adapter, Flange Retainer x Flare thru JIC, Compression, O-Ring: JIC Female Swivel, JIC/NPT Male Adapter, NPSH, Compression Tube Adapter, O-Ring, JIC/NPT Female Adapter, Compression with Nut & Ferrule.

**METAL EXPANSION JOINTS - Constructed of 321 Stainless Steel**



I.D.	Working Pressure PSI	Part Number	Axial Movement	Axial Force Lbs./In.	Lateral Movement	Total Lateral Force Lbs.	Overall Length	Est. Wt. w/ pipe nipples Lb.	Overall Length	Est. Wt. w/ flanges Lb.
3"	75	375S	0.60	600	.08	512	8"	5	4-1/2"	11
3"	75	375M	1.20	300	.32	256	10"	5	6-1/2"	11
3"	75	375L	1.80	200	.64	128	12"	6	8-1/2"	12
3"	150	315S	0.50	1590	.05	480	8"	5	4-1/2"	17
3"	150	315M	1.00	795	.20	240	10"	5	6-1/2"	17
3"	150	315L	1.50	530	.40	120	12"	6	8-1/2"	18
3"	300	330S	0.31	3300	.04	1152	8"	6	5-1/2"	27
3"	300	330M	0.62	1650	.14	504	10"	6	7-1/2"	28
3"	300	330L	1.00	1100	.31	279	12"	7	9-1/2"	28
4"	75	475S	0.68	930	.09	806	8-3/4"	8	5-1/4"	14
4"	75	475M	1.37	465	.36	403	11-1/4"	8	8"	14
4"	75	475L	2.00	310	.72	202	14"	9	10-1/2"	15
4"	150	415S	0.50	1260	.06	1574	8-3/4"	8	5-1/4"	27
4"	150	415M	1.00	630	.24	787	11-1/4"	8	8"	28
4"	150	415L	1.50	420	.48	394	14"	9	10-1/2"	28
4"	300	430S	0.38	2184	.05	2200	8-3/4"	9	6-1/2"	46
4"	300	430M	0.75	1092	.20	1100	11-1/4"	9	9"	46
4"	300	430L	1.25	728	.38	523	14"	10	11-3/4"	47
5"	75	575S	1.00	810	.08	1203	8-3/4"	12	5-3/4"	17
5"	75	575M	2.00	405	.32	602	11-1/2"	13	8-1/2"	17
5"	75	575L	3.00	270	.64	300	14-1/4"	14	11-1/4"	18
5"	150	515S	0.90	1350	.06	2362	8-3/4"	12	5-3/4"	33
5"	150	515M	1.80	675	.24	1180	11-1/2"	13	8-1/2"	34
5"	150	515L	2.70	450	.48	590	14-1/4"	14	11-1/4"	34
5"	300	530S	0.62	2190	.05	2368	8-3/4"	14	6-3/4"	60
5"	300	530M	1.25	1095	.20	1184	11-1/2"	15	9-1/2"	61
5"	300	530L	1.88	730	.40	592	14-1/4"	16	12-1/4"	62
6"	75	675S	1.00	675	.12	845	9-1/4"	14	6-1/4"	19
6"	75	675M	2.00	337	.50	440	12-1/4"	16	9-1/2"	19
6"	75	675L	3.00	225	1.0	220	15-1/2"	18	12-1/2"	20
6"	150	615S	1.00	1350	.10	3808	9-1/4"	16	6-1/4"	42
6"	150	615M	2.00	675	.38	1809	12-1/4"	18	9-1/2"	44
6"	150	615L	3.00	450	.62	738	15-1/2"	20	12-1/2"	46
6"	300	630S	0.62	2760	.06	2995	9-1/4"	20	7-1/4"	84
6"	300	630M	1.25	1380	.25	1560	12-1/4"	22	10-1/2"	86
6"	300	630L	1.88	920	.50	780	15-1/2"	24	13-1/2"	88
8"	75	875S	1.17	1500	.15	2160	9-1/2"	19	7-1/4"	40
8"	75	875M	2.34	750	.60	1080	13-1/4"	21	10-3/4"	43
8"	75	875L	3.50	500	1.20	540	17"	24	14-1/2"	46
8"	150	815S	1.00	2274	.09	3456	9-1/2"	20	7-1/4"	64
8"	150	815M	2.00	1387	.36	1728	13-1/4"	22	10-3/4"	68
8"	150	815L	3.00	925	.72	864	17"	26	14-1/2"	72
8"	300	830S	0.62	6520	.06	7027	9-1/2"	23	8-1/2"	122
8"	300	830M	1.25	3262	.24	3514	13-1/4"	25	12-1/4"	127
8"	300	830L	1.88	2175	.48	1757	17"	29	16"	132

**METAL EXPANSION JOINTS - Constructed of 321 Stainless Steel**

I.D.	Working Pressure PSI	Part Number	Axial Movement	Axial Force lbs/in	Lateral Movement	Total Lateral Force Lbs.	Overall Length	Est. Wt. w/ pipe nipples Lb.	Overall Length	Est. Wt. w/ flanges Lb.
10"	75	1075S	1.25	1110	0.14	2732	10"	24	8"	44
10"	75	1075M	2.50	555	0.56	1366	14"	28	12"	49
10"	75	1075L	3.75	370	1.12	683	18"	34	16"	58
10"	150	1015S	1.00	2478	0.10	7008	10"	25	8"	90
10"	150	1015M	2.00	1239	0.40	3504	14"	30	12"	96
10"	150	1015L	3.00	826	0.80	1752	18"	35	16"	102
10"	300	1030S	0.68	6840	0.07	8646	10"	30	9-1/4"	172
10"	300	1030M	1.38	3420	0.28	4323	14"	40	13-1/4"	182
10"	300	1030L	2.00	2280	0.56	2162	18"	50	17-1/4"	192
12"	25	1225S	1.32	800	0.09	6451	8-3/4"	32	7-1/4"	66
12"	25	1225M	2.00	480	0.25	2560	10-1/2"	36	9"	74
12"	25	1225L	4.00	240	1.00	1280	14-3/4"	40	13-1/2"	82
12"	75	1275S	1.00	3683	0.07	14728	8-3/4"	33	7-1/4"	68
12"	75	1275M	1.75	2210	0.15	6312	10-1/2"	37	9"	76
12"	75	1275L	3.50	1105	0.60	3156	14-3/4"	41	13-1/2"	84
12"	150	1215S	0.88	5533	0.05	27440	8-3/4"	38	7-1/4"	141
12"	150	1215M	1.50	3320	0.10	7840	10-1/2"	43	9"	154
12"	150	1215L	3.00	1660	0.40	3920	14-3/4"	48	13-1/2"	167
12"	300	1230S	0.62	9953	0.03	35246	8-3/4"	43	8-1/2"	248
12"	300	1230M	1.00	5756	0.09	15105	10-1/2"	48	10-1/2"	266
12"	300	1230L	2.00	2878	0.36	7552	14-3/4"	53	14-1/2"	284
14"	25	1425S	1.32	1066	0.09	8467	9"	35	7-1/2"	77
14"	25	1425M	2.00	640	0.25	3360	10-3/4"	42	9-1/4"	84
14"	25	1425L	4.00	320	1.00	1680	15-1/4"	49	13-3/4"	91
14"	75	1475S	1.00	3660	0.07	28380	9"	42	7-1/2"	84
14"	75	1475M	1.75	2196	0.15	8688	10-3/4"	56	9-1/4"	98
14"	75	1475L	3.50	1098	0.60	4344	15-1/4"	70	13-3/4"	112
14"	150	1415S	0.88	6600	0.05	35336	9"	48	7-1/2"	200
14"	150	1415M	1.50	3960	0.10	10096	10-3/4"	68	9-1/4"	220
14"	150	1415L	3.00	1980	0.40	5048	15-1/4"	88	13-3/4"	240
14"	300	1430S	0.62	8533	0.03	24864	9"	56	9"	358
14"	300	1430M	1.00	5120	0.09	10656	10-3/4"	132	10-3/4"	386
14"	300	1430L	2.00	2560	0.36	5328	15-1/4"	160	15-1/4"	414
16"	25	1625S	1.32	866	0.10	6720	9-1/2"	40	8-1/2"	90
16"	25	1625M	2.00	520	0.25	2400	11-1/2"	48	10-1/2"	98
16"	25	1625L	4.00	260	1.00	1200	17"	56	16"	106
16"	75	1675S	1.00	2866	0.07	20384	9-1/2"	47	8-1/2"	97
16"	75	1675M	1.75	1720	0.14	5824	11-1/2"	62	10-1/2"	112
16"	75	1675L	3.50	860	0.56	2912	17"	77	16"	127
16"	150	1615S	0.88	5600	0.05	33600	9-1/2"	50	8-1/2"	214
16"	150	1615M	1.50	3360	0.12	11520	11-1/2"	68	10-1/2"	232
16"	150	1615L	3.00	1680	0.48	5760	17"	86	16"	250
16"	300	1630S	0.88	7066	0.03	23520	9-1/2"	62	10"	410
16"	300	1630M	1.50	4240	0.10	11200	11-1/2"	92	12"	440
16"	300	1630L	3.00	2120	0.40	5600	17"	122	17-1/2"	470
18"	25	1825S	1.32	1766	0.09	16129	9-1/2"	44	9"	98
18"	25	1825M	2.00	1060	0.20	5120	11-1/2"	53	11"	107
18"	25	1825L	4.00	530	0.80	2560	17"	62	16-1/2"	116
18"	75	1875S	1.00	2733	0.06	24192	9-1/2"	46	9"	101
18"	75	1875M	1.75	1640	0.13	7488	11-1/2"	57	11"	112
18"	75	1875L	3.50	820	0.52	3744	17"	68	16-1/2"	123
18"	150	1815S	0.88	8666	0.05	66360	9-1/2"	53	9"	278
18"	150	1815M	1.50	5200	0.11	20856	11-1/2"	71	11"	296
18"	150	1815L	3.00	2600	0.44	10428	17"	89	16-1/2"	314
18"	300	1830S	0.88	10800	0.02	30128	9-1/2"	67	10-1/2"	532
18"	300	1830M	1.50	6480	0.09	19368	11-1/2"	99	12-1/2"	564
18"	300	1830L	3.00	3240	0.36	9684	17"	131	18"	598

**METAL EXPANSION JOINTS - Constructed of 321 Stainless Steel**

I.D.	Working Pressure PSI	Part Number	Axial Movement	Axial Force lbs/in	Lateral Movement	Total Lateral Force Lbs.	Overall Length	Est. Wt. w/ pipe nipples Lb.	Overall Length	Est. Wt. w/ flanges Lb.
20"	25	2025S	1.32	2066	.09	22176	9-1/2"	52	9-1/4"	110
20"	25	2025M	2.00	1240	.19	6688	11-1/2"	64	11-1/4"	122
20"	25	2025L	4.00	620	.76	3344	17"	76	16-3/4"	134
20"	75	2075S	1.00	3266	.06	32256	9-1/2"	56	9-1/4"	114
20"	75	2075M	1.75	1960	.13	9984	11-1/2"	72	11-1/4"	130
20"	75	2075L	3.50	980	.52	4992	17"	88	16-3/4"	146
20"	150	2015S	0.88	9333	.05	88760	9-1/2"	64	9-1/4"	354
20"	150	2015M	1.50	5600	.11	27896	11-1/2"	88	11-1/4"	378
20"	150	2015L	3.00	2800	.44	13948	17"	112	16-3/4"	402
20"	300	2030S	0.88	11873	.02	39200	9-1/2"	93	11"	670
20"	300	2030M	1.50	7124	.09	25200	11-1/2"	133	13"	710
20"	300	2030L	3.00	3562	.36	12600	17"	173	18-1/2"	750
22"	25	2225S	1.32	2133	.08	23296	9-1/2"	57	9-3/4"	119
22"	25	2225M	2.00	1280	.18	7488	11-1/2"	70	11-3/4"	132
22"	25	2225L	4.00	640	.72	3744	17"	83	17-1/4"	145
22"	75	2275S	1.00	3400	.06	40656	9-1/2"	61	9-3/4"	123
22"	75	2275M	1.75	2040	.12	11616	11-1/2"	78	11-3/4"	140
22"	75	2275L	3.50	1020	.48	5808	17"	95	17-1/4"	157
22"	150	2215S	0.88	9483	.05	108350	9-1/2"	72	9-3/4"	398
22"	150	2215M	1.50	5690	.11	34056	11-1/2"	100	11-3/4"	426
22"	150	2215L	3.00	2845	.44	17028	17"	128	17-1/4"	454
22"	300	2230S	0.88	19640	.02	80640	9-1/2"	112	11-1/2"	785
22"	300	2230M	1.50	11784	.07	40320	11-1/2"	152	13-1/2"	830
22"	300	2230L	3.00	5892	.28	20160	17"	202	19"	875
24"	25	2425S	1.32	2200	.07	26656	9-1/2"	62	10"	145
24"	25	2425M	2.00	1320	.17	9248	11-1/2"	76	12"	160
24"	25	2425L	4.00	660	.68	4624	17"	90	17-1/2"	175
24"	75	2475S	1.00	4093	.05	40600	9-1/2"	68	10"	200
24"	75	2475M	1.75	2456	.11	12760	11-1/2"	88	12"	220
24"	75	2475L	3.50	1228	.44	6380	17"	108	17-1/2"	240
24"	150	2415S	0.88	10093	.04	104160	9-1/2"	82	10"	460
24"	150	2415M	1.50	6056	.10	37200	11-1/2"	116	12"	495
24"	150	2415L	3.00	3028	.40	18600	17"	150	17-1/2"	520
24"	300	2430S	0.88	20493	.02	104160	9-1/2"	140	12"	990
24"	300	2430M	1.50	12296	.06	44640	11-1/2"	180	14"	1030
24"	300	2430L	3.00	6148	.24	22320	17"	220	19-1/2"	1070
30"	25	3025S	1.32	2266	.06	23520	9-1/2"	85	7"	265
30"	25	3025M	2.00	1360	.16	8960	11-1/2"	110	9"	290
30"	25	3025L	4.00	680	.64	4480	17"	135	14-1/2"	315
30"	75	3075S	1.00	8226	.04	62720	9-1/2"	94	7"	335
30"	75	3075M	1.75	4936	.10	22400	11-1/2"	128	9"	370
30"	75	3075L	3.50	2468	.40	11200	17"	162	14-1/2"	405
30"	150	3015S	0.88	17576	.03	94080	9-1/2"	128	<b>Client-to-specify flanges.</b>	
30"	150	3015M	1.50	10546	.09	40320	11-1/2"	196		
30"	150	3015L	3.00	5273	.36	20160	17"	264		
36"	25	3625S	1.32	5606	.06	76608	9-1/2"	100	7"	360
36"	25	3625M	2.00	3364	.15	27360	11-1/2"	126	9"	385
36"	25	3625L	4.00	1682	.60	13680	17"	152	14-1/2"	410
36"	75	3675S	1.00	9876	.04	103040	9-1/2"	127	7"	525
36"	75	3675M	1.75	5926	.09	33120	11-1/2"	180	9"	575
36"	75	3675L	3.50	2963	.36	16560	17"	230	14-1/2"	625
36"	150	3615S	0.88	20846	.03	157920	9-1/2"	155	<b>Client-to-specify flanges.</b>	
36"	150	3615M	1.50	12508	.08	60160	11-1/2"	235		
36"	150	3615L	3.00	6254	.32	30080	17"	315		

**METAL EXPANSION JOINTS - Constructed of 321 Stainless Steel**

I.D.	Working Pressure PSI	Part Number	Axial Movement	Axial Force Lbs./In.	Lateral Movement	Total Lateral Force Lbs.	Overall Length	Est. Wt. w/ pipe nipples Lb.	Overall Length	Est. Wt. w/ flanges Lb.
42"	25	4225S	1.32	6213	.05	95200	9-1/2"	113	7"	430
42"	25	4225M	2.00	3728	.13	35360	11-1/2"	198	9"	458
42"	25	4225L	4.00	1864	.52	17680	17"	226	14-1/2"	486
42"	75	4275S	1.00	11520	.03	11760	9-1/2"	142	7"	710
42"	75	4275M	1.75	6912	.08	44800	11-1/2"	198	9"	770
42"	75	4275L	3.50	3456	.32	22400	17"	254	14-1/2"	830
42"	150	4215S	0.88	22983	.02	156800	9-1/2"	175	<b>Client-to Specify Flanges</b>	
42"	150	4215M	1.50	13790	.06	67200	11-1/2"	265	<b>Client-to Specify Flanges</b>	
42"	150	4215L	3.00	6895	.24	33600	17"	355	<b>Client-to Specify Flanges</b>	
48"	25	4825S	1.32	7746	.05	140000	9-1/2"	130	8-1/2"	530
48"	25	4825M	2.00	4648	.12	48000	11-1/2"	160	10-1/2"	560
48"	25	4825L	4.00	2324	.48	24000	17"	190	16"	590
48"	75	4875S	1.00	13216	.03	174720	9-1/2"	160	8-1/2"	910
48"	75	4875M	1.75	7930	.06	49920	11-1/2"	220	10-1/2"	970
48"	75	4875L	3.50	3965	.24	24960	17"	280	16"	1030
48"	150	4815S	0.88	26320	.02	232960	9-1/2"	210	<b>Client-to Specify Flanges</b>	
48"	150	4815M	1.50	15792	.05	83200	11-1/2"	320	<b>Client-to Specify Flanges</b>	
48"	150	4815L	3.00	7896	.20	41600	17"	420	<b>Client-to Specify Flanges</b>	



**No. AMS - SINGLE ARCH RUBBER BELLOWS WITH FLOATING FLANGES**



Part Number	Size I.D.	Length	Fo	Axial Compression	Axial Elongation	Transverse Movement	Angular Deflection	Weight lbs.
AMS201H	1-1/2"	6"	2.7"	1/2"	3/8"	±1/2"	15°	6.1
AMS202	2"	6"	3.4"	1/2"	3/8"	±1/2"	15°	8.9
AMS202H	2-1/2"	6"	4.17"	1/2"	3/8"	±1/2"	15°	12.3
AMS203	3"	6"	4.5"	1/2"	3/8"	±1/2"	15°	14.0
AMS204	4"	6"	6.0"	5/8"	3/8"	±1/2"	15°	18.3
AMS205	5"	6"	7.1"	5/8"	3/8"	±1/2"	15°	22.8
AMS206	6"	6"	8.2"	5/8"	3/8"	±1/2"	15°	26.8
AMS208	8"	6"	10.2"	5/8"	3/8"	±1/2"	15°	40.6
AMS210	10"	8"	12.6"	3/4"	1/2"	±3/4"	15°	56.6
AMS212	12"	8"	14.5"	3/4"	1/2"	±3/4"	15°	80.3
AMS214	14"	8"	16.0"	3/4"	1/2"	±3/4"	15°	115.0
AMS216	16"	8"	18.6"	3/4"	1/2"	±3/4"	15°	165.0
AMS218	18"	8"	20.6"	3/4"	1/2"	±3/4"	15°	168.0
AMS220	20"	8"	22.4"	3/4"	1/2"	±3/4"	15°	170.0

**Construction:** Elastomer neoprene, also available are Butyl, EPDM and Buna-N.

**Reinforcement:** Synthetic fiber fabric.

**Flanges:** Carbon steel. May be replaced with ANSI, BS, JIS and DIN standard (drillings), please specify when ordering.

**Applicable Fluids:** Water, warm water, sea water, weak leaks, alkalies, compressed air, etc..

**Operating Pressures:** 1-1/2" - 12" 214 PSI; 14" - 20" 114 PSI.

**Vacuum Rating:** Full.

**Temperature & Range:** 14°F to 220°F.



**No. AMT - TWIN ARCH RUBBER BELLOWS WITH FLOATING FLANGES**



Part Number	Size I.D.	Length	Fo	Axial Compression	Axial Elongation	Transverse Movement	Angular Deflection	Weight lbs.
AMT201H	1-1/2"	7"	2.7"	1"	3/4"	1"	30°	6.8
AMT202	2"	7"	3.4"	1"	3/4"	1"	30°	9.0
AMT202H	2-1/2"	7"	4.1"	1"	3/4"	1"	30°	12.3
AMT203	3"	7"	4.5"	1"	3/4"	1"	30°	14.3
AMT204	4"	9"	6.0"	1-1/4"	1"	1-1/4"	30°	20.3
AMT205	5"	9"	7.1"	1-1/4"	1"	1-1/4"	30°	24.5
AMT206	6"	9"	8.2"	1-1/4"	1"	1-1/4"	30°	29.5
AMT208	8"	13"	10.2"	1-1/2"	1"	1-1/2"	30°	42.3
AMT210	10"	13"	12.6"	1-1/2"	1"	1-1/2"	30°	56.6
AMT212	12"	13"	14.5"	1-1/2"	1"	1-1/2"	30°	95.0

**Construction:** Elastomer neoprene, also available are Butyl, EPDM and Buna-N.

**Reinforcement:** Synthetic fiber fabric.

**Flanges:** Carbon steel. May be replaced with ANSI, BS, JIS and DIN standard (drillings), please specify when ordering.

**Applicable Fluids:** Water, warm water, sea water, weak leaks, alkalies, compressed air, etc..

**Operating Pressures:** 214 PSI.

**Vacuum Rating:** Full.

**Temperature & Range:** 14°F to 220°F.

### No. 243-BT - BUTTERWORTH, TANK CLEANING COUPLINGS

Tank cleaning couplings are commonly referred to as Butterworth couplings. Tank cleaning couplings are available in either brass or stainless steel. Typically in either NST/NH or BSPP threads. Butterworth couplings are usually furnished complete with four bolt clamps.



Part Number	Shank Size	Thread Size	Thread Type	Nut Type
243-BT-150BS	1-1/2"	1-1/2"	BSP	Hex
243-BT-150NP	1-1/2"	1-1/2"	NPT	Hex
243-BT-200BS	1-1/2"	2"	BSP	Hex
243-BT-200NP	1-1/2"	2"	NPT	Hex
243-BT-250NS	1-1/2"	2-1/2"	NST	Lug
243-BT-225NS	2"	2-1/2"	NST	Lug
243-BT-225NSL	2"	2-1/2"	NST	Lug

### No. 472-BT-25 - TANK CLEANING WYE

The 472-BT-25 wye is used for joining three lengths of hose coupled with 2-1/2" female NST.



### No. 843-BT - TANK CLEANING SPANNER

843-BT is made of high strength manganese bronze and is shaped to conform to the wing nut lug of 243-BT tank cleaning coupling.



### No. HSA - HOSE SADDLE



This lightweight aluminum alloy hose saddle is designed to accommodate 1-1/2" or 2" I.D. tank cleaning hoses. The base will suit deck opening and support the hose over tank opening. The clamp fitting secures the hose at operating depth of tank-washing machine. Smooth curve of support prevents hose damage.

\* **Note:** Also available in stainless steel.

## HYDRAFLEX SEM-JET WATER GUN/TOBEY

Hydraflex water guns have been specifically designed for Hold carriers and cargo vessels of all sizes. The Hydraflex uses a combination of water and compressed air resulting in a powerful, tightly compressed jet of water able to reach up to 100 feet (30 meters) with adjustment to the control valve. One man operation ensures hold cleaning time is reduced to an absolute minimum without the need of additional equipment such as scaffolding, pumps and scrapers.

**Features and Benefits:**

- Cleans Holds and Superstructures
- No Need for Trained Skilled Operator
- Easily Removes Cargo Residue, Flaking Paint and Rust
- Adjustable Control Valve Provides Suitable Jet Control for the Job at Hand
- High Quality Non-Corrosive Stainless Steel Material Ensures Almost Indefinite Life with Minimum Maintenance
- Easy & Fast Hook up with Instantaneous Couplings
- Choice of Water Hose Coupling Size 2" or 2-1/2"



Technical Data	
<b>Gun Weight:</b>	13 Lbs.; 6 Kg
<b>Stand Weight:</b>	13 Lbs.; 6 Kg
<b>Water Consumption:</b>	110 Gallons/Minute; 485 Liters/Minute
<b>Water Pressure:</b>	85 to 90 PSI; 6kg/cm2
<b>Air Consumption:</b>	71 CFM; 2m3/Minuter
<b>Air Pressure:</b>	100 to 120 PSI; 7-8kg/cm2
<b>Air Hose:</b>	3/4"; 19mm
<b>Water Hose:</b>	2"; 51mm or 2-1/2"; 64mm
<b>IMPA Code:</b>	590742

**MARPOL BLIND FLANGE**



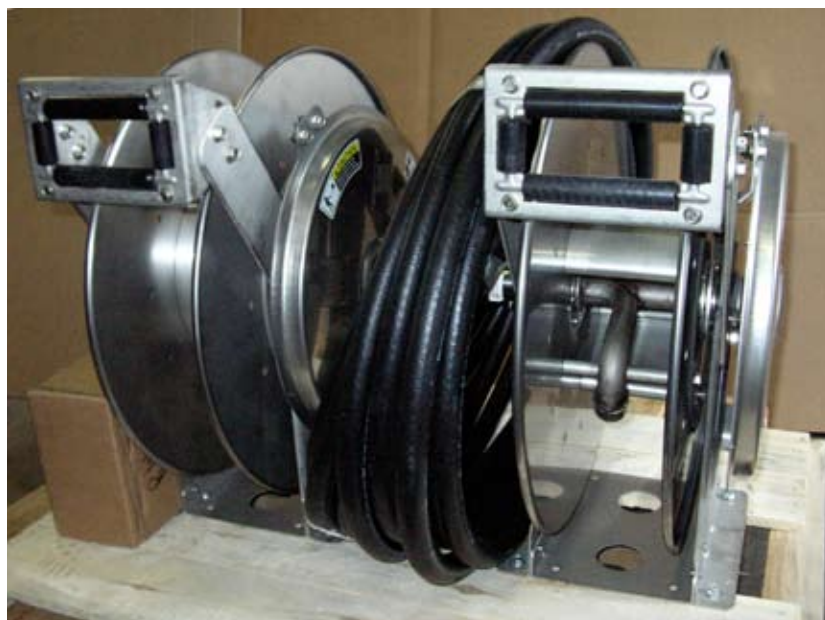
**MARPOL FLANGE**



**Marpol Flanges:** are available in pipe ID sizes ranging from 2" to 5" ID, have 6 slotted holes, 7" flange PCD, and 8-1/2" flange OD. Marpol flanges are typically used for oil discharge and/or sewage discharge. The flange is constructed of carbon steel.

Technical Data	
<b>Inner Diameter:</b>	According to pipe outside diameter, ranging from 2" pipe OD (2-7/16"; 62mm) to 5" OD pipe (5-1/4"; 133mm)
<b>Outer Diameter:</b>	8-1/2"; 216mm
<b>Bolt Circle:</b>	7"; 178mm
<b>Slots:</b>	6; equally placed on the bolt circle diameter
<b>Slot Diameter:</b>	7/8"; 22mm
<b>Flange Thickness:</b>	3/4"; 20mm
<b>Bolts &amp; Nuts:</b>	Not Included

**HOSE REEL WITH GASOLINE HOSE**



Accord International, Inc.  
**No. HB - HOSE BUN**



Part Number	Hose Size	Length	Sling Height	Shipping Weight lbs	Shipping Dimensions	Rated Capacity	Replacement Sling PN
HB-300	3"	12-3/4"	8.50"	5	14" x 6" x 5"	800	HBBS-300
HB-400	4"	11-1/2"	16.00"	5	23" x 9" x 15"	1500	HBBS-400
HB-600	6"	21-1/2"	22.5"	16	23" x 9" x 15"	8000	HBBS-600
HB-800	8"	30-1/2"	18"	35	32" x 12" x 15"	12000	HBBS-800
HB-1000	10"	40-3/4"	19.25"	60	42" x 14" x 18"	15000	HBBS-1000
HB-1200	12"	40-3/4"	23.25"	62	42" x 14" x 18"	15000	HBBS-1200

**Description:** Hose Buns are composed of red urethane and used with latex-treated yellow web slings uniquely engineered for each specific model. Sling rated capacities are established using a 5-to-1 safety factor. All slings are to be used in a choker hitch position to eliminate hose slippage.

Hose Buns increase productivity and reduced hose costs. The curvature prevents hose collapse by supplying recommended curvature of the hose, allowing an uninterrupted flow of material through the hose. Design features include: moisture drainage troughs that readily allow the hose to breathe, and friction ribs to prevent the hose from slipping. Reduces premature hose failures, thus increasing the life of the hose and decreasing the cost of replacement. Offers fast implementation with no special tools and low ongoing maintenance. Reduces fire and explosion hazards with non-sparking, non-conductive, static-free construction. Slings are easily replaced when worn or damaged. Increased awareness with high visibility safety red colors. Increased control during rigging changes and adjustments. Reduces risk to personnel working under or near a hoisted hose.

Hose Buns are manufactured to meet the standards of a comprehensive quality control program and the standards of independent regulatory bodies. With a reduced chance of costly cleanup, the liabilities of a liquid terminal operator are significantly minimized.

Hose Buns properly selected for the job and correctly installed, provide years of maintenance-free service.

**No. LHH - HOSE HANDLING SLING**



Part Number	Hose Size	Sling Width	Length	Rated Capacity
LHH-400	4"	4"	3' 6"	3000
LHH-600	6"	6"	4' 6"	4000
LHH-800	8"	8"	6'	5000
LHH-1000	10"	10"	9'	6000
LHH-1200	12"	12"	11'	7000

These hose handling slings are used to handle hoses to help prevent kinking, crushing and cutting of the hose. This is accomplished by distributing the load evenly over the width of the sling. The sling is designed for use in a choker hitch only. Variations of width and length are available.

### No. HC - HOSE CADDY



**Description:** Hose Caddy's are composed of rugged steel construction that is hot dipped galvanized. (Powder coating available for small fee).

- Weighing only 93lbs.; the hose caddy is lightweight and durable.
- Easy rolling heavy duty 6" swivel castors on all four corners have a working load capacity of 1600 lbs.
- Equipped with latex treated nylon slings, designed to secure hose and prevent slippage during transport.
- Slings are easily replaced when worn or damaged.
- Hi intensity reflective markers are applied to both ends of caddy for easy locating in night time conditions.
- Hose Caddy's are available in a variety of colors.
- Designed for 6" through 12" large bore hose or a bundle of small 3-4" hoses.
- Overall dimensions: 45" long x 20 1/4" wide x 25" high.
- Delivered in 2 Boxes. One for the caddy and one for wheels

### No. HH - HOSE HORSE

**Description:** Hose Horse's are designed to get your hose off of the ground. These are Stackable, Durable, and Affordable.

- Molded plastic hose stands
- Available in Orange, Yellow and Red.
- Contoured radius accommodates any size hose from 2" to 24"
- Reflective decals.
- Molded handles or Rope handles
- Meets FDA sanitary hose regulations.
- Weight: From 4 - 18 lbs (depends on model)
- Height: From 11" to 42" high (depends on model)
- Width & Length: Depends on Model.



**No. AHB - AIR HORN / AIR MOVERS**



Air movers, or air horns, are used wherever there is a need to disperse fumes, move air into confined spaces, cool men working in elevated temperature conditions, or cool machinery or products with a blast of directed air. Common applications are found in refineries, chemical plants, utilities and co-generation units, metal fabrication plants, paper and pulp plants, shipyards, the marine industry and the steel industry.

Part Number	Overall Length	Base Diameter	Horn Diameter	NPT Size	Bolt Circle Dia.	Base Slot Diameter	Weight (lbs.)
AHB-3S	16-3/4"	7-3/8"	6"	1/2"	6-9/16"	13/32"	5.5
AHB-3	30-1/2"	7-3/8"	7"	1/2"	6-9/16"	13/32"	8.5
AHB-6	44-1/4"	11-1/4"	12-1/2"	1"	10-1/2"	13/32"	22.3
AHB-8	46-1/16"	14-3/8"	14-1/4"	1"	13-5/8"	1/2"	36.0

The free flow ratings listed below are based on tests to AMCA standard 210. Under identical testing situations, these Air movers equaled or exceeded the air flow of competitively manufactured air movers.

Part Number	Total Air Flow @ 40 PSIG	Air Consumed @ 40 PSIG	Total Air Flow @ 60 PSIG	Air Consumed @ 60 PSIG	Total Air Flow @ 80 PSIG	Air Consumed @ 80 PSIG
AHB-3S	815 CFM	36 SCFM	981 CFM	50 SCFM	1182 CFM	62 SCFM
AHB-3	1017 CFM	35 SCFM	1231 CFM	45 SCFM	1462 CFM	62 SCFM
AHB-6	2385 CFM	73 SCFM	2885 CFM	98 SCFM	3347 CFM	124 SCFM
AHB-8	3152 CFM	114 SCFM	4152 CFM	152 SCFM	4929 CFM	193 SCFM

**AIR MOVER REFURBISHING**

Refurbishing of Texas Pneumatics, Carling, Lamb, Mine Safety and Coppus air movers consists of replacement of the complete horn, replacement of handle, sandblasting and painting of the base, chase inlet threads and boxing.

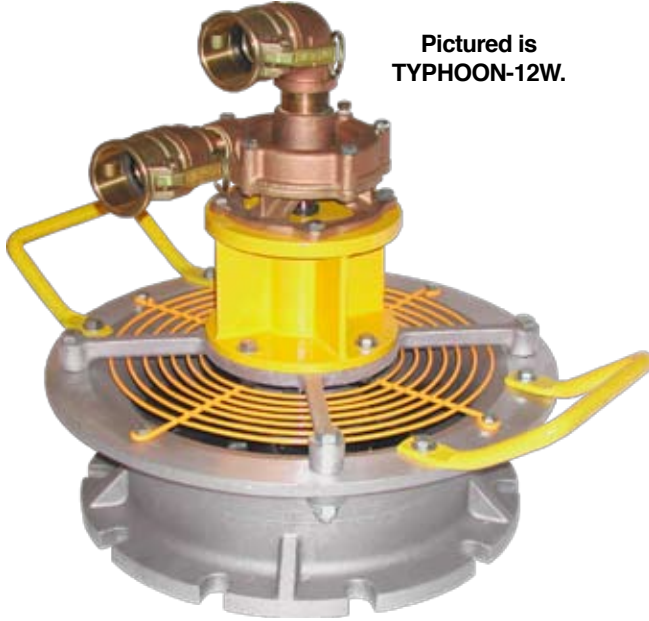
**REPLACEMENT HORNS**

Horns can be fabricated for Texas Pneumatics, Carling, MSA and Coppus air movers.

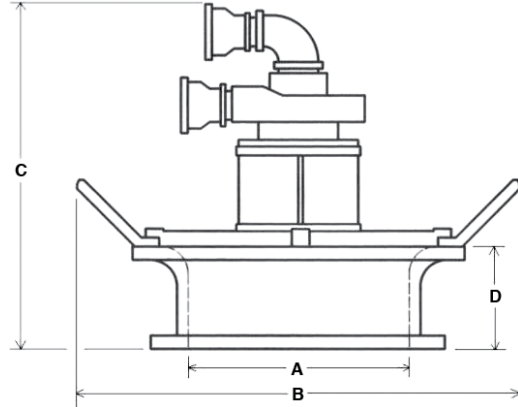
Replacement Horn Part Number	Horn Model Number
HO-3S	AHB-3S
HO-3	AHB-3
HO-6	AHB-6
HO-8	AHB-8

**No. TYPHOON; WATER, AIR, and HYDRAULIC DRIVEN VENTILATORS**

The Typhoon-12W and Super Typhoon-15W Marine Blowers are designed for onboard marine application. With our standard Butterworth Cast Aluminum Mounting Housing, these rugged, reliable and efficient Marine Blowers are designed to operate on water (Typhoon-12W and Super Typhoon-15W). The high volume capacities of these blowers make it easy to handle gas freeing, ventilating, drying, or de-icing applications aboard ship. They are compact, lightweight and easy to handle.



**Pictured is TYPHOON-12W.**



	Typhoon-12W	Typhoon-12A	Typhoon-15W
A	12.25"	12.25"	15.25"
B	24"	24"	29.875"
C	18.25"	18.25"	18.75"
D	5.75"	5.75"	6.25"
Weight	65 lbs.	65 lbs.	85 lbs.

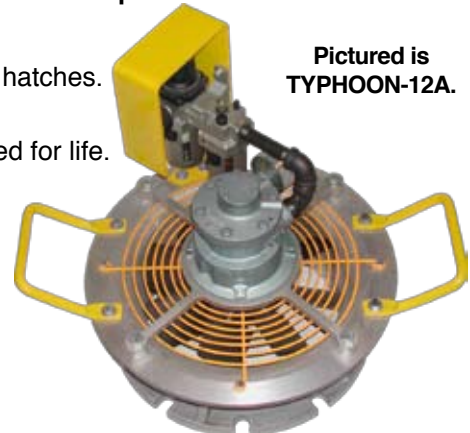
	TYPHOON-12W		SUPER TYPHOON-15W	
Rated Air Flow @ 0" Static Pressure	5000 CFM	8495 M <sup>3</sup> /HR	4700 CFM	7985 M <sup>3</sup> /HR
Rated Speed @ Free Delivery	5330 RPM		5330 RPM	
Maximum Speed	6100 RPM		5500 RPM	
Rated Motor Power Consumption	3.3 HP	2.46 KW	3.3 HP	3.3 HP
Maximum Inlet Water Pressure	150 PSIG	10.5 KG/CM <sup>2</sup>	150 PSIG	10.5 KG/CM <sup>2</sup>
Maximum Exhaust Water Pressure	100 PSIG	7.0 KG/CM <sup>2</sup>	100 PSIG	7 KG/CM <sup>2</sup>
Maximum Differential Water Pressure	50 PSIG	3.5 KG/CM <sup>2</sup>	150 PSIG	10.5 KG/CM <sup>2</sup>
Rated Water Consumption	63 GPM	14.3 M <sup>3</sup> /HR	87 GPM	19.76 M <sup>3</sup> /HR

**Special Features of Water Driven Ventilators:**

- These units are designed specifically for marine applications.
- Cast aluminum main housing is flanged for tie-down on Butterworth hatches.
- Rugged cast aluminum spark resistant housing and motor mount
- Heavy duty stainless steel sealed ball bearings, lubricated and sealed for life.
- Stainless steel fan shaft eliminates internal rust problems.
- Spark resistant fan blade with OSHA safety screen
- Two carry handles
- Two 2" Bronze cam-lock fittings are supplied with water-driven units
- Quality construction & materials resulting in low maintenance.

**Also available to work on hydraulic oil (12H and Super 15H).**

**TYPHOON-12A produces 3120 CFM @ 100PSI**

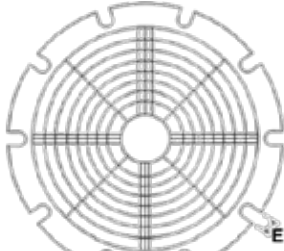


**Pictured is TYPHOON-12A.**

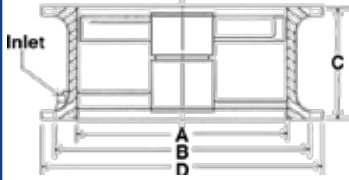


**No. PA-12, PA-16, PA-20, and PA-24; PNEUMATIC DRIVEN VENTILATORS**

The PA Series of Marine Blowers are designed for onboard marine application. With our standard Butterworth Cast Aluminum Mounting Housing, these rugged, reliable and efficient Marine Blowers are designed to operate on air. The high volume capacities of these blowers make it easy to handle gas freeing, ventilating, drying, or de-icing applications aboard ship. They are compact, lightweight and easy to handle. The 24" is designed to fit 24" API tank openings. PA-12, PA-20, and PA-24 all have 3/4" Female NPT threaded inlet.



Drawing of PA-12.



Pictured is PA-20 / PA-24 with 4 slots.

	PA-12	PA-20	PA-24
A	12.25"	20.125"	24.25"
B	15.31" BCD	22.5" BCD	30.25 BCD
C	9.75"	9.875"	11.75"
D	16.50"	24.75"	32.75"
E	1.125"	1.125"	1.125"
Weight	35 lbs.	75 lbs.	165 lbs.

**PA-12 \*\* (Note: has 10 Slots)**

Rated Air Flow @ 0" Static Pressure @ 80 PSIG Inlet Pressure	4000 CFM	6780 M <sup>3</sup> /HR
--	----------	-------------------------

**PA-20 \*\* (Note: has 4 Slots)**

Rated Air Flow @ 0" Static Pressure @ 80 PSIG Inlet Pressure	11000 CFM	18645 M <sup>3</sup> /HR
Rated Air Flow @ 0" Static Pressure @ 60 PSIG Inlet Pressure	9500 CFM	16100 M <sup>3</sup> /HR
Rated Air Flow @ 0" Static Pressure @ 40 PSIG Inlet Pressure	7000 CFM	11865 M <sup>3</sup> /HR

**PA-24 \*\* (Note: has 4 Slots)**

Rated Air Flow @ 0" Static Pressure @ 60 PSIG Inlet Pressure	14500 CFM	24575 M <sup>3</sup> /HR
Rated Air Flow @ 0" Static Pressure @ 40 PSIG Inlet Pressure	11500 CFM	19490 M <sup>3</sup> /HR

**Features of PA-12, PA-20, PA-24 Ventilators:**

- These units are designed specifically for marine applications.
- Cast aluminum main housing is flanged for tie-down on standard Butterworth hatches.
- Matching heavy duty inlet and exhaust flanges allow the unit to be reversed for either ventilating or exhausting applications.
- Rugged cast aluminum spark resistant housing and motor mount
- Heavy duty stainless steel sealed ball bearings, permanently lubricated and sealed for life.
- Stainless steel fan shaft eliminates internal rust problems.
- Spark resistant fan blade with OSHA safety screen
- Two carry handles
- Quality construction & materials resulting in low maintenance.



Pictured is PA-16.

**PA-16**

Rated Air Flow @ 0" Static Pressure @ 80 PSIG Inlet Pressure	5150 CFM	8729 M <sup>3</sup> /HR
--	----------	-------------------------

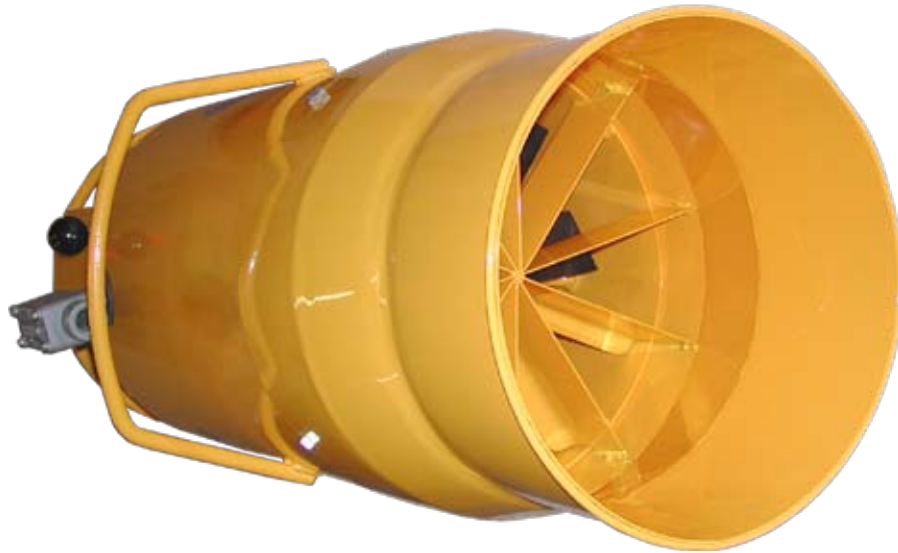
**Features of PA-16 Ventilator:**

- Cast-In handles and feet allow for maximum portability.
- Use for fresh air supply or fume exhaust.
- Convenient mounting bolt holes for optional adapter plate.
- Spark resistant cast aluminum housing and fan blade
- Permanently lubricated and sealed for life stainless steel sealed ball bearings.
- Cast in-bead to accept 16"/406mm ducting.
- Safety screens meeting OSHA standards.
- Lightweight 55 lbs.

## No. TORNADO - ELECTRIC DRIVEN VENTILATOR

Tornado electric ventilators are lightweight, but ruggedly built for use of ventilation of tanks, manholes, process vessels and similar confined spaces, as well as for cooling/drying applications. Electric motors available in either TEFC (Totally Enclosed Fan Cooled) or Explosion Proof (XP), makes these ventilators lightweight and can be easily transported from job site to job site. Tripods and vertical adapting equipment are available upon request.

When fitted with optional inlet duct adaptors, the Tornado's high static pressure capability makes these units ideal for exhaust applications. Single and dual adapters are available. A dual adapter is available with two exhaust ducts for removing welding fumes or toxic vapors from two locations at once.



Part Number	Motor Horsepower	Motor Input Voltages	Frequency	Total Air Flow
TORNADO-8-TEFC, totally enclosed motor	3/4 HP	115/208/230V	1 PH, 60Hz	1650 CFM
TORNADO-8-XP, explosion proof motor	3/4 HP	115/208/230V	1PH, 60Hz	1650 CFM
TORNADO-12-TEFC, totally enclosed motor	1 HP	115/208/230V; 230/460V	1PH, 60Hz; 3PH 60Hz	3000 CFM
TORNADO-12-XP, explosion proof motor	1 HP	115/208/230V; 230/460V	1PH, 60Hz; 3PH 60Hz	3000 CFM
TORNADO-16-TEFC, totally enclosed motor	2 HP	230/460V	3PH 60Hz	5500 CFM
TORNADO-16-XP, explosion proof motor	2 HP	230/460V	3PH 60Hz	5500 CFM

### Special Features of the TORNADO Vaneaxial Blower/Exhauster Fan:

1. Available in either TEFC (Totally Enclosed Fan Cooled) or Explosion Proof (XP).
2. Heavy gauge rolled and welded steel housing with carry handle(s).
3. Rugged steel welded nose cone with welded air guide, eliminates rattling & insures a quality product for years of trouble-free service.
4. Glass filled polymer or cast aluminum fan blade.
5. All welded steel construction standard (no casting to break/crack).
6. Powder coated OSHA Safety yellow, inlet and outlet safety screens OSHA approved.

**No. VP450WS - VICTOR PYRATE PORTABLE WATER DRIVEN GAS FREEING FAN**

This fan is designed for gas freeing on smaller oil, chemical and product tankers, with ability to reach down 12 meters.

**Features:**

- \* In-line drive, with dual purpose supply and exhaust.
- \* High performance water driven turbine with sealed drive unit.
- \* Lightweight operation - one man, only 13 Kg.
- \* 316 Stainless Steel, Non sparking construction.
- \* Meets I.M.O. requirements, performance tested to BS848

**Description:**

The unit is an axial fan comprising of a 305mm axial impeller driven by a Francis Turbine water motor. Construction is of stainless steel with exception of the motor which is of aluminum alloy.

The fan case is a one piece stainless steel sheet fabrication, with flanges on each end by which the fan can be clamped to the standard 318mm deck opening.

Reversibility of flow is achieved by simply reversing the orientation of the fan.

Water supply and discharge couplings normally provided are secured through the fan case into the motor, sealing is achieved by double "O" rings with 1-1/2" BSP male thread connectors also available with NST or VP thread.

A 12.7mm mesh guard is fitted to the fan inlet and outlet. Blade tip clearance not below 2.5mm at any one position. The fan can be carried by the handle mounted on the outer case.



Part Number	Air Displacement
VP450WS	5000m³/hr @ 13m³/hr @ 10 bar

**No. VP800W - VICTOR PYRATE PORTABLE WATER DRIVEN GAS FREEING FAN**

This fan is designed for gas freeing on small and medium sized tankers, with ability to reach down 30 meters.

**Features:**

- \* Deep penetration down to 30 meters.
- \* Lightweight operation - one man, only 29 Kg.
- \* Water driven
- \* Non sparking construction.
- \* Meets I.M.O. requirements, performance tested to BS848

**Description:**

The unit is an identical construction to VP's more powerful 1350W. It has exactly the same dimensions, but the performance data differs due to lower capacity water motor.

The fan will fit over standard deck openings, or can be provided with a bespoke fitting to suit the vessels deck opening. The fan is non-sparking and is reversible for dual capability extract or supply duty.

All components are corrosion protected and fasteners are stainless steel with the anodized aluminum alloy casing epoxy resin coated.

Water supply and discharge couplings normally provided are secured through the fan case into the motor, sealing is achieved by double "O" rings with 1-1/2" BSP male thread connectors also available with NST or VP thread.

A 12.7mm mesh guard is fitted to the fan inlet and outlet. Blade tip clearance not below 2.5mm at any one position.



Part Number	Air Displacement
VP800W	8000m³/hr @ 19.5m³/hr @ 10.5 bar

## No. VP850A - VICTOR PYRATE PORTABLE AIR DRIVEN GAS FREEING FAN

This fan is designed for gas freeing on small and medium sized tankers, with ability to reach down 30 meters.

### Features:

- \* Deep penetration down to 30 meters.
- \* Lightweight operation - one man, only 28.5 Kg.
- \* Air driven.
- \* 316 Stainless Steel, Non sparking construction.
- \* Meets I.M.O. requirements, performance tested to BS848

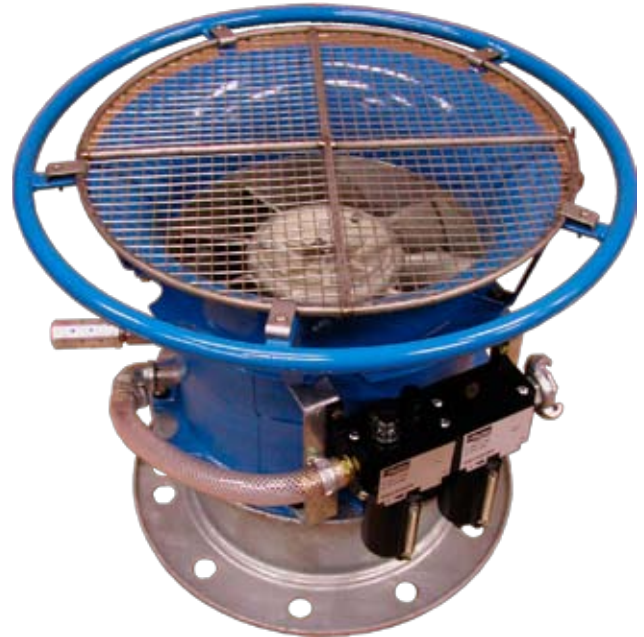
### Description:

The unit is follows the same design characteristics as the other VP fans, but differs in that it is fitted with a quality integral air motor. Most fans with air motors have them fitted externally but VP goes further, not only do they have an internal air motor but they have fitted a filter and lubricator.

The fan will fit over standard deck openings, or can be provided with a bespoke fitting to suit the vessels deck opening. The fan is non-sparking and is reversible for dual capability extract or supply duty.

All components are corrosion protected and fasteners are stainless steel with the anodized aluminum alloy casing epoxy resin coated.

Water supply and discharge couplings normally provided are secured through the fan case into the motor, sealing is achieved by double "O" rings with 1-1/2" BSP male thread connectors also available with NST or VP thread.



Part Number	Air Displacement
VP850A	8000m <sup>3</sup> /hr @ 3.7m <sup>3</sup> /hr @ 7.5 bar

## No. VP1350W - VICTOR PYRATE PORTABLE WATER DRIVEN GAS FREEING FAN

This fan is designed for gas freeing on medium and larger sized tankers, with ability to reach down 30 meters.

### Features:

- \* Deep penetration down to 30 meters.
- \* Lightweight operation - one man, only 29 Kg.
- \* Water driven
- \* Non sparking construction.
- \* Meets I.M.O. requirements, performance tested to BS848

### Description:

The unit is the most powerful, of its type in the marketplace, relative to its compact size and weight. Designed as a lightweight, ultra efficient, deep penetration fan.

The fan will fit over standard deck openings, or can be provided with a bespoke fitting to suit the vessels deck opening. The fan is non-sparking and is reversible for dual capability extract or supply duty.

All components are corrosion protected and fasteners are stainless steel with the anodized aluminum alloy casing epoxy resin coated.

Water supply and discharge couplings normally provided are secured through the fan case into the motor, sealing is achieved by double "O" rings with 1-1/2" BSP male thread connectors also available with NST or VP thread.

A 12.7mm mesh guard is fitted to the fan inlet and outlet. Blade tip clearance not below 2.5mm at any one position.



Part Number	Air Displacement
VP1350W	13500m <sup>3</sup> /hr @ 70m <sup>3</sup> /hr @ 10.5 bar

**VP-MINOR - Portable tanking washing machine for smaller vessels.**



**Features:**

- Tank-washing machine portable use or fixed installation for: Crude oil, Product, or Chemical tankers.
- Two or three nozzles available.
- Lightweight for easy movement.
- Simple service routine.
- Robust and durable.
- Available in Bronze or 316L stainless steel. With or without fabricated downtube.
- Designed for frequent washing operations.
- Progressive intensity wash.
- Integral turbine - self starting.

Available in corrosion resistant Bronze with sealed grease chamber - no topping up required. Turbine driven - powered by wash media (self starting). Automatic slip devices protection to drive mechanisms. Long life gears. Easy to service - gear assembly removed in seconds. Filter plate included. (Available with media lubricated gearbox. No grease).

The 316L stainless steel machine has wash media lubrication and self draining gearbox to avoid cargo contamination (no grease). All machines suitable for cold or hot wash up to 93°C with standard wash chemicals.

All machines available with rubber protectors to protect tank coatings.

**Fixed Installation:** Available with downtube assemblies and deck flange to suit deck opening.

**Lengths:** 1-4 meters. In stainless steel or shot blasted and coated mild steel.

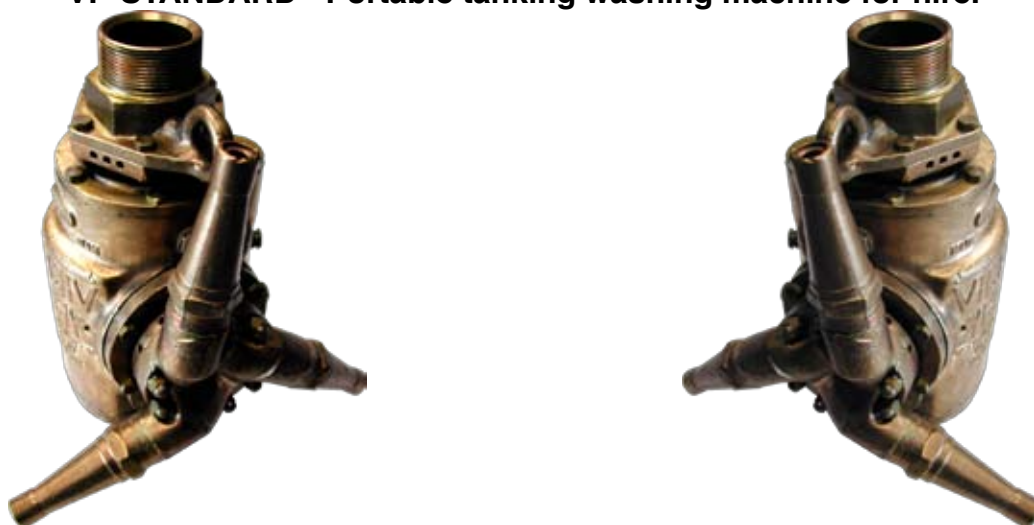
**Technical Specifications:**

**Weight:** 9 kgs portable, 10 kgs flanged.  
**Height:** 210mm portable, 240mm flanged.  
**Connections:** 1-1/2" BSP male, 50 mm flanged  
 ASA/DIN/JIS/BS.

**Material:** Bronze or stainless steel 316L.  
**Wash Pattern:** Spherical - progressive intensity.  
**Deck Opening:** Fits 215mm opening.

Nozzle Size	2 x 7mm			3 x 7mm			3 x 9mm			2 x 10mm			2 x 11mm		
	6	8	10	6	8	10	6	8	10	6	8	10	6	8	10
Pressure kg/cm2	6	8	10	6	8	10	6	8	10	6	8	10	6	8	10
Flow m <sup>3</sup> /hr	7.3	8.0	8.5	10.9	11.9	12.8	15.6	17.4	18.9	13	14.2	16	15	16.2	17.7
Jet length - meter (solid effect)	9.6	10.3	11	9.6	10.3	11	10.6	11.3	12	11.6	12.4	13	12.6	13.3	14
Jet length - meter (water) horizontal throw	16	18	20	16	18	20	17	20	22	17.5	20.5	24	18	21	25
Standard wash time (min)	27	21	18.5	29	24	21	27	23	19	26	22	20	24	20	18

**VP-STANDARD - Portable tanking washing machine for hire.**



**Features:**

- Portable tank-washing machines for rental hire.
- 4 models: “S”, “V”, “L”, and “OBW”.
- Long term or short term hire.
- Long term reliability.
- Robust and durable.
- Easy to use.
- Repair & maintenance by VP included.
- Easy worldwide exchange facilities.
- Turbine drive - self starting.

**Types “S”, “V”, and “L”**

- Corrosion resistant bronze.
- Automatic, repeating spherical wash pattern for maximum coverage.
- Can be used on cold or hot wash up to 93°C.
- Suitable for standard wash chemicals.
- Robust and durable.
- Standard machine with 3 nozzles.
- Self drive by integral water turbine.
- Enters standard 318mm deck opening.
- Grease filled gearbox.

**Hose Connections:** Available with connections to suit. VP standard. BW optional. VP hoses 2 3/8” x 11.5 TPI and also with adapters to suit 2” BSP, 2 1/2” BSP, 2 1/2” x 7 1/2” TPI USA or Storz hose couplings.

**Dimensions:** 305 x 205 x 320 **Weight:** 21 kgs. (47 lbs.) - complete with carrying handle and storage box.

Multi-level washing gives complete coverage of all difficult-to-reach areas.

Supply Pressure kg/cm <sup>2</sup>	Type “S” 3 x 5/16” nozzle			Type “V” 3 x 3/8” nozzles			Type “L” 3 x 1/2” nozzles		
	Flow m <sup>3</sup> /hr	Jet Length-m	Cycle mins.	Flow m <sup>3</sup> /hr	Jet Length-m	Cycle mins.	Flow m <sup>3</sup> /hr	Jet Length-m	Cycle mins.
4	10	5	30	17	7	43	27	9	23
6	13	5	23	21	7	32	33	10	18
8	15	6	18	24	8	26	38	12	16
10	17	7	16	27	9	22	43	14	14
12	19	9	14	29	11	20	47	16	12

**Type “OBW”**

- Designed for bottom washing operations to remove difficult cargoes.
- Unique oscillating action over narrow wash area.
- Tank bottom washer.
- Supplements other machines to give concentrated wash on tank bottom.
- Downward pointing nozzles direct powerful jets in close pattern to rapidly breakdown sediments.
- Corrosion resistant bronze.

**Capacity:** 35m<sup>3</sup>/hr.

**Dimensions:** 460 x 300mm.

**Temperature:** Up to 200°F (93°C).

**Weight:** 29 kgs.

**VP-MAJOR - Portable or fixed tanking washing machine for large vessels.**



**Features:**

- Tank-washing machine portable use or fixed installation for: Crude oil, Product, or Chemical tankers.
- Crude oil or water wash. Fully approved to IMO.
- Sealed gearbox or media lubricated gearbox.
- Ideal for submerged duty.
- Available in Bronze or 316L stainless steel. With or without fabricated downtube for fixed installation.
- 5 nozzle sizes, up to 70 m³/hr..
- Progressive intensity wash.

Suitable for progressively intense tank washing on all types of tanker up to 100,000 DWT.

Twin orbital nozzles with smooth jet flow with integral turbine drive. Fits through standard 318mm deck opening or down to 250mm deck opening. Grease packed gearbox sealed against leakage, or self lubricating and self draining with no grease - this will be dependant upon cargoes carried.

All machines suitable for cold or hot wash up to 93°C with standard wash chemicals.

**Technical Specifications:**

**Weight:** 20 kgs.

**Material:** Bronze or stainless steel 316L.

**Height:** 210mm portable, 240mm flanged.

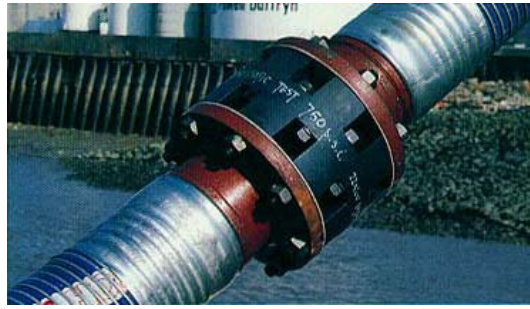
**Wash Pattern:** Spherical - progressive intensity.

**Connections:** 50mm (2") flanges. ASA/DIN/JIS/BS.

**Deck Opening:** Fits 318mm opening.

Nozzle Size	2 x 12mm			2 x 12.4mm			2 x 14mm			2 x 16mm			2 x 18mm		
Pressure kg/cm2	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Flow m³/hr	32	35	40	34	38	41	42	45	51	50	55	61	57	64	70
Jet length - meter (solid effect)	15	17	19	16	18	20	17	19	21	18	20	22	19	21	23
Jet length - meter (water) horizontal throw	23	26	28	24	28	32	26	30	34	28	32	34	30	34	38
Standard wash time (min)	39	36	34	38	34	32	43	39	37	42	39	37	49	46	44

**INSULATING FLANGE**



**Spool-Type Insulating Flange:** A different principle of an insulation joint is to use a spool of insulating material bolted between the two hose flanges.

**Advantages:** The main advantage of this type of insulating flange is that the minimum resistive path is in the order of one inch. The flange is very simply a one-piece item and the method of fixing is foolproof. Tests carried out on this flange show very high electrical resistance and, during a flow test when a flow rate of 4.7 metres/sec using kerosene was achieved, there was no indication of any electrostatic build-up whatsoever.

**Construction:** The material of construction is cast nylon, machined to suit the relevant flange sizes and early test indications of this type of insulating flange show that it possesses all the required properties of a properly fitted standard insulating gasket set, with the additional advantage of being more easily fitted and more readily inspected and tested.

**Conductivity:** There is no doubt that the undesirable electrical currents that occur in ships' product-transfer hoses can be controlled by inserting an insulating flange between two lengths of conductive hose. The spool-type flange has the definite advantage of simpler fitting and greater resistive path, and the very high resistance of this flange has not produced dangerous electrostatic fields under test conditions.

- |                                 |   |
|---------------------------------|---|
| Material                        | - Nylatron GSM  |
| Tensile Strength at 23°C        | - 11,000 to 14,000 PSI (7,750 to 9,850 kg/cm <sup>2</sup> )       |
| Mod. of Elasticity at 23°C      | - 350,000 to 450,000 PSI (246,000 to 316,000 kg/cm <sup>2</sup> ) |
| Flexural Strength at 23°C       | - 15,000 to 15,800 PSI (10,500 to 11,200 kg/cm <sup>2</sup> )     |
| Coefficient of Linear Expansion | - 100 x 10 <sup>-6</sup> mm/mm°C/105 x 10 <sup>-5</sup> in/in°F   |
| Melting Point                   | - 220°C/428°F   |
| Flammability                    | - Self-extinguishing  |
| Electrical Resistivity          | - 1012 ohm/cm   |
| Electrical Field Generation     | - None  |

Bolting Dimensions conform to ASA 150 lb. Resistant to: most common solvents, lubricants, hydrocarbons, esters, ketones, and aqueous solutions of acids and alkalis at pH5 to pH11.

Nom. Pipe Diameter inches	BCD #Hole x Dia Flange OD	Length Test PSI Long Stress
4	7-1/2	4-3/4
	16 x 7/8	750
	9	600
6	9-1/2	5-5/8
	16 x 7/8	750
	11	1,121
8	11-3/4	5-5/8
	16 x 7/8	750
	13-1/2	1,333

Nom. Pipe Diameter inches	BCD #Hole x Dia Flange OD	Length Test PSI Long Stress
10	14-1/4	6
	24 x 1	750
	16	1,408
12	17	6
	24 x 1	750
	19	1,273
14	18-3/4	6-1/2
	24 x 1-1/8	750
	21	1,656
16	21-1/4	6-1/2
	32 x 1-1/8	750
	23-1/2	1,608

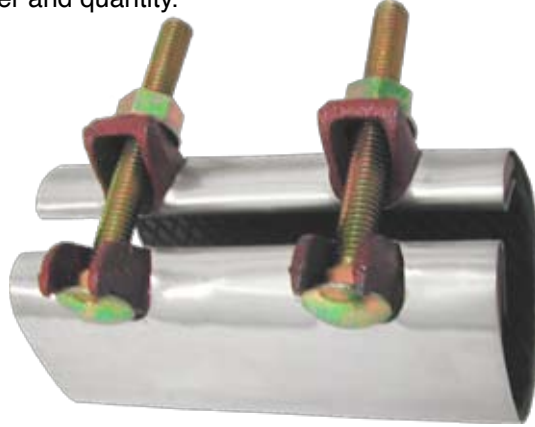


**No. 110 - PIPE PATCH CLAMPS**

Patch clamps are fast economical repair clamps to permanently repair pin holes, punctures or splits in steel pipe. These inexpensive clamps are used for plumbing, industrial, water, gas, oil, and irrigation.

**How To Order or Request For Quotation:**

1. Determine clamp size and width required.
2. Order by clamp number and quantity.



Part Number	Nominal Pipe I.D.	Pipe O.D.	Clamp Width	Weight Lbs./Ea.
110-0084-03	1/2"	.84"	3"	.6
110-0084-06	1/2"	.84"	6"	1.2
110-0105-03	3/4"	1.05"	3"	.6
110-0105-06	3/4"	1.05"	6"	1.2
110-0132-03	1"	1.32"	3"	.6
110-0132-06	1"	1.32"	6"	1.4
110-0166-03	1-1/4"	1.66"	3"	.7
110-0166-06	1-1/4"	1.66"	6"	1.4
110-0190-03	1-1/2"	1.90"	3"	1.1
110-0190-06	1-1/2"	1.90"	6"	2.2
110-0238-03	2"	2.38"	3"	1.1
110-0238-06	2"	2.38"	6"	2.3
110-0238-09	2"	2.38"	9"	3.4
110-0238-12	2"	2.38"	12"	4.5
110-0288-03	2-1/2"	2.88"	3"	1.2
110-0288-06	2-1/2"	2.88"	6"	2.4
110-0288-09	2-1/2"	2.88"	9"	3.6
110-0288-12	2-1/2"	2.88"	12"	4.8
110-0350-03	3"	3.50"	3"	1.6
110-0350-06	3"	3.50"	6"	3.2
110-0350-09	3"	3.50"	9"	4.8
110-0350-12	3"	3.50"	12"	6.4
110-0450-03	4"	4.50"	3"	1.6
110-0450-06	4"	4.50"	6"	3.2
110-0450-09	4"	4.50"	9"	4.8
110-0450-12	4"	4.50"	12"	6.4
110-0556-03	5"	5.56"	3"	1.7
110-0556-06	5"	5.56"	6"	3.4
110-0556-09	5"	5.56"	9"	5.1
110-0556-12	5"	5.56"	12"	6.8
110-0663-03	6"	6.63"	3"	1.9
110-0663-06	6"	6.63"	6"	3.8
110-0663-09	6"	6.63"	9"	5.7
110-0663-12	6"	6.63"	12"	7.6
110-0863-03	8"	8.63"	3"	2.2
110-0863-06	8"	8.63"	6"	4.4
110-0863-09	8"	8.63"	9"	6.6
110-0863-12	8"	8.63"	12"	8.8

**No. 112 - HEAVY DUTY PIPE REPAIR CLAMP;  
No. 113 - MULTI-BAND PIPE REPAIR CLAMP**

Heavy duty patch clamps provide fast permanent repair of pin holes, punctures or splits in steel and other types of pipe. These clamps are readily available for all sizes of pipe 1 1/2" and larger.

**Material Specifications:**

Gasket: Gridded gasket is compounded for use with water, salt solutions, mild acids and bases.

Bolt & Nuts: Corrosion resistant, high strength low alloy (AWWA C-111, ANSI A21.11).

Optional Stainless steel, 18-8 Type 304 available.

Lug: Ductile Iron ASTM A536

Band: Stainless steel, 18-8 Type 304

Buna-N gasket is also available.



Larger Sizes available upon request.

**How To Order or Request For Quotation:**

1. Determine pipe size.
2. Select proper clamp and width.
3. Order by clamp number and quantity.

Part Number	Nominal Pipe I.D.	Pipe O.D.	Clamp Width	Weight Lbs./Ea.
112-0190-06	1-1/2	1.90 - 2.00	6	6
112-0190-12	1-1/2	1.90 - 2.00	12	12
112-0238-06	2	2.38 - 2.50	6	6
112-0238-12	2	2.38 - 2.50	12	12
112-0288-06	2-1/2	2.88 - 3.00	6	6
112-0288-12	2-1/2	2.88 - 3.00	12	12
112-0350-06	3	3.50 - 3.88	6	6
112-0350-12	3	3.50 - 3.88	12	13
112-0400-06	3-1/2	4.00 - 4.35	6	7
112-0400-12	3-1/2	4.00 - 4.35	12	14
112-0450-06	4	4.50 - 4.85	6	8
112-0450-12	4	4.50 - 4.85	12	15
112-0556-06	5	5.56 - 6.00	6	8
112-0556-12	5	5.56 - 6.00	12	15
112-0663-06	6	6.63 - 6.90	6	8
112-0663-12	6	6.63 - 6.90	12	16
112-0863-06	8	8.63 - 9.05	6	8
112-0863-12	8	8.63 - 9.05	12	17
112-1000-06	10	10.00 - 10.30	6	9
112-1000-12	10	10.00 - 10.30	12	18
112-1075-06	10	10.75 - 11.10	6	9
112-1075-12	10	10.75 - 11.10	12	18
112-1200-06	12	12.00 - 12.30	6	10
112-1200-12	12	12.00 - 12.30	12	20
112-1275-06	12	12.75 - 13.05	6	10
112-1275-12	12	12.75 - 13.05	12	20
113-1000-06	10	10.00 - 10.75	6	17
113-1000-12	10	10.00 - 10.75	12	34
113-1200-06	12	12.00 - 12.75	6	19
113-1200-12	12	12.00 - 12.75	12	38
113-1400-06	14	14.00 - 14.75	6	20
113-1400-12	14	14.00 - 14.75	12	40
113-1600-06	16	16.00 - 16.75	6	23
113-1600-12	16	16.00 - 16.75	12	46
113-1800-06	18	18.00 - 18.75	6	24
113-1800-12	18	18.00 - 18.75	12	49
113-2000-06	20	20.00 - 20.75	6	26
113-2000-12	20	20.00 - 20.75	12	52

## POLLY PIGS - INDUSTRIAL PIPELINE CLEANERS



Part #:	Description	Application
SBD	Scarlet Bare Durofoam	Heavy wiping and dewatering
SSS	Scarlet Single Spiral	Heavy wiping
SCC	Scarlet Criss-Cross	Heavy cleaning and dewatering
SCC-WB	Scarlet Criss-Cross Wire Brush	Heavy scraping
SCC-SC	Scarlet Criss-Cross Silicon Carbide	Heavy scraping
SCC-T	Scarlet Criss-Cross Turning	Heavy cleaning and dewatering
SCC-WB-T	Scarlet Criss-Cross Wire Brush Turning	Heavy scraping
SCC-SC-T	Scarlet Criss-Cross Silicon Carbide Turning	Heavy scraping
RBS	Red Bare Squeegee	Regular wiping and dewatering
RSS	Red Single Spiral	Regular wiping
RCC	Red Criss-Cross	Regular cleaning and dewatering
RCC-WB	Red Criss-Cross Wire Brush	Regular scraping
RCC-SC	Red Criss-Cross Silicon Carbide	Regular scraping
RCC-T	Red Criss-Cross Turning	Regular cleaning and dewatering
RCC-WB-T	Red Criss-Cross Wire Brush Turning	Regular scraping
RCC-SC-T	Red Criss-Cross Silicon Carbide Turning	Regular scraping
YBS	Yellow Bare Swab	Drying
YBS-B	Yellow Bare Swab Bullet	Drying
YCC	Yellow Criss-Cross	Light cleaning
YCC-SC	Yellow Criss-Cross Silicon Carbide	Light scraping
YCC-T	Yellow Criss-Cross Turning	Light cleaning
YCC-SC-T	Yellow Criss-Cross Silicon Carbide Turning	Light scraping

### Notes:

- **Density:** Scarlet = 8 lbs. / cu. ft.; Density of Red = 5 lbs. / cu. ft.; Density of Yellow = 2 lbs. / cu. ft..
- When inquiring and/or ordering, please specify size and type.
- Special application polly pigs are also available, upon request.

**DIAPHRAGM PUMPS**



**FILTERS, LUBRICATORS, & REGULATORS**



**FOOT VALVES**



**SKIMMERS**



**STRAINERS**



**PRESSURE WASH HOSE**



**PRESSURE GAUGES**



**PRESSURE WASH SPRAY GUN**



**VAPOR RECOVERY ECENTRIC REDUCER**



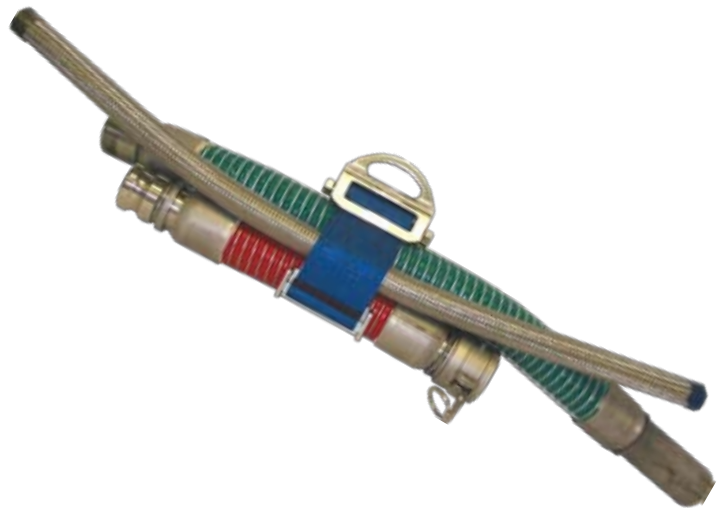
**CUSTOM WYE PIECE**



**PLATE BLIND FLANGE**



**HOSE BUNCH BINDER**



**PANCAKE BLIND FLANGE WITH HANDLE**



**FLANGED NEOPRENE POLYESTER DUCTING**



**CUSTOM FABRICATION**

**VAPOR RECOVERY  
CONCENTRIC REDUCER**



**FLANGED TEE**



**TTMA FLANGED ELBOW**



**FLANGED SPOOL PIECE**



**No. HW - PYREX® BRAND HEAVY WALL GLASS TUBING**

These are made from Corning's well known heat-resistant Pyrex® brand tubing. They also have the highest pressure ratings of any tubular gage glass.



Part Number	Size	Length	Standard Package Quantity	Max. W/P Temp. up to 150°F, no corrosion - PSI	Max. W/P steam boiler service up to 425°F - PSI
HW-5808		8"	6	600	350
HW-5810	<b>5/8" O.D.</b>	10"	6	600	345
HW-5812		12"	6	600	340
HW-5814	+1/64", -3/64"	14"	6	600	335
HW-5816		16"	6	600	325
HW-5818	Wall	18"	6	600	320
HW-5820	3/16" +3/64", -0	20"	6	600	315
HW-5824		24"	6	580	300
HW-5830		30"	6	550	**
HW-5836		36"	6	500	**
HW-5848	Max. Length	48"	5	340	**
HW-3408		8"	6	600	350
HW-3410	<b>3/4" O.D.</b>	10"	6	600	345
HW-3412		12"	6	600	340
HW-3414	+1/64", -3/64"	14"	6	600	335
HW-3416		16"	6	600	325
HW-3418	Wall	18"	6	600	320
HW-3420	7/32" +1/16", -0	20"	6	600	315
HW-3424		24"	6	580	300
HW-3430		30"	6	550	**
HW-3436		36"	6	500	**
HW-3448	Max. Length	48"	5	340	**
HW-7808		8"	3	600	350
HW-7810	<b>7/8" O.D.</b>	10"	3	600	345
HW-7812		12"	3	600	340
HW-7814	+1/64", -3/64"	14"	3	600	335
HW-7816		16"	3	600	325
HW-7818	Wall	18"	3	600	320
HW-7820	1/4" +1/16", -0	20"	3	600	315
HW-7824		24"	3	580	300
HW-7830		30"	3	550	**
HW-7836		36"	3	500	**
HW-7848	Max. Length	48"	3	340	**
HW-1008		8"	3	600	350
HW-1010	<b>1" O.D.</b>	10"	3	600	345
HW-1012		12"	3	600	340
HW-1014	+1/64", -3/64"	14"	3	600	335
HW-1016		16"	3	600	325
HW-1018	Wall	18"	3	600	320
HW-1020	5/16" +1/16", -0	20"	3	600	315
HW-1024		24"	3	580	300
HW-1030		30"	3	550	**
HW-1036		36"	3	500	**
HW-1048	Max. Length	48"	3	340	**

\* Note: Maximum recommended length is 24".

## No. HP - PYREX® HIGH PRESSURE GLASS TUBING

These gage glasses are made from heat-resistant Pyrex® brand tubing. They are most versatile and widely used of all tubular gage glass.



Part Number	Size	Length	Standard Package Quantity	Max. W/P Temp. up to 150°F, no corrosion - PSI	Max. W/P steam boiler service up to 425°F - PSI
HP-1208		8"	6	460	340
HP-1210	1/2" O.D.	10"	6	445	335
HP-1212		12"	6	435	325
HP-1214	+0, -1/32"	14"	6	415	315
HP-1216		16"	6	400	300
HP-1218	Wall	18"	6	385	295
HP-1220	5/64" ±1/64	20"	6	375	285
HP-1224		24"	6	340	270
HP-1230		30"	6	295	**
HP-1236		36"	6	260	**
HP-1248		48"	6	205	**
HP-1260	Max. Length	60"	3	155	**
HP-1272	is 150"	72"	3	110	**
HP-5808		8"	6	435	320
HP-5810	5/8" O.D.	10"	6	420	315
HP-5812		12"	6	410	305
HP-5814	+0 -1/32"	14"	6	390	295
HP-5816		16"	6	375	285
HP-5818	Wall	18"	6	360	280
HP-5820	3/32", ±1/64"	20"	6	350	270
HP-5824		24"	6	320	255
HP-5830		30"	6	280	**
HP-5836		36"	6	245	**
HP-5848		48"	6	195	**
HP-5860	Max. Length	60"	3	150	**
HP-5872	is 150"	72"	3	100	**
HP-3408		8"	6	425	315
HP-3410	3/4" O.D.	10"	6	410	310
HP-3412		12"	6	400	300
HP-3414	+0 -1/32"	14"	6	385	290
HP-3416		16"	6	370	280
HP-3418	Wall	18"	6	355	275
HP-3420	7/64", ±1/64"	20"	6	345	265
HP-3424		24"	6	315	250
HP-3430		30"	6	275	**
HP-3436		36"	6	240	**
HP-3448		48"	6	190	**
HP-3460	Max. Length	60"	3	145	**
HP-3472	is 150"	72"	3	100	**
HP-7808		8"	3	380	
HP-7810	7/8" O.D.	10"	3	370	Not
HP-7812		12"	3	360	recommended
HP-7814	+0, -1/32"	14"	3	350	in this service.
HP-7816		16"	3	340	
HP-7818	Wall	18"	3	335	Not
HP-7820	1/8" ±1/32"	20"	3	330	recommended
HP-7824		24"	3	315	in this service.
HP-7830		30"	3	285	
HP-7836		36"	3	265	Not
HP-7848		48"	3	210	recommended
HP-7860	Max. Length	60"	3	160	in this service.
HP-7872	is 150"	72"	3	110	

\* Note: Maximum recommended length is 24".



## No. HP - PYREX<sup>®</sup> HIGH PRESSURE GLASS TUBING

These gage glasses are made from heat-resistant Pyrex<sup>®</sup> brand tubing. They are most versatile and widely used of all tubular gage glass.



Part Number	Size	Length	Standard Package Quantity	Max. W/P Temp. up to 150°F, no corrosion - PSI	Max. W/P steam boiler service up to 425°F - PSI
HP-1008		8"	3	345	
HP-1010	<b>1" O.D.</b>	10"	3	335	Not recommended
HP-1012		12"	3	325	in this service.
HP-1014	+0, -1/32"	14"	3	320	
HP-1016		16"	3	310	
HP-1018	Wall	18"	3	305	Not recommended
HP-1020	1/8" ±1/32"	20"	3	300	in this service.
HP-1024		24"	3	285	
HP-1030		30"	3	260	
HP-1036		36"	3	240	Not recommended
HP-1048		48"	3	190	in this service.
HP-1060	Max. Length is 150"	60"	3	145	
HP-1072		72"	3	100	
HP-11810	<b>1-1/8" O.D.</b>	10"	3	265	Not recommended
HP-11812		12"	3	260	in this service.
HP-11814	+0, -3/64"	14"	3	250	
HP-11816		16"	3	245	
HP-11818	Wall	18"	3	240	Not recommended
HP-11820	1/8" ±1/32"	20"	3	240	in this service.
HP-11824		24"	3	235	
HP-11830		30"	3	225	
HP-11836		36"	3	200	Not recommended
HP-11848		48"	3	180	in this service.
HP-11860	Max. Length is 150"	60"	3	150	
HP-11872		72"	3	130	
HP-11408		8"	1	240	
HP-11410	<b>1-1/4 O.D.</b>	10"	1	235	Not recommended
HP-11412		12"	1	230	in this service.
HP-11414	+0, -3/64"	14"	1	225	
HP-11416		16"	1	220	
HP-11418	Wall	18"	1	215	Not recommended
HP-11420	1/8" ±1/32"	20"	1	215	in this service.
HP-11424		24"	1	210	
HP-11430		30"	1	200	
HP-11436		36"	1	180	Not recommended
HP-11448		48"	1	160	in this service.
HP-11460	Max. Length is 150"	60"	1	135	
HP-11472		72"	1	115	
HP-11208		8"	1	210	
HP-11210	<b>1-1/2" O.D.</b>	10"	1	205	Not recommended
HP-11212		12"	1	200	in this service.
HP-11214	+0, -1/32"	14"	1	200	
HP-11216		16"	1	195	
HP-11218	Wall	18"	1	190	Not recommended
HP-11220	1/8" ±1/32"	20"	1	190	in this service.
HP-11224		24"	1	185	
HP-11230		30"	1	175	
HP-11236		36"	1	160	Not recommended
HP-11248		48"	1	140	in this service.
HP-11260	Max. Length is 150"	60"	1	120	
HP-11272		72"	1	100	

\* Note: Maximum recommended length is 24".

**No. RL - PYREX® BRAND RED LINE GLASS TUBING**

It is easy to spot liquid levels from a distance when using Pyrex® Brand Red Line tubular gage glass. The red stripe on a white background gives a special optical effect which makes the liquid level stand out clearly. Thus the gage can be easily read from across a room. Made from heat-resistant Pyrex® brand tubing.



Part Number	Size	Length	Standard Package Quantity	Max. W/P Temp. up to 150°F, no corrosion - PSI	Max. W/P steam boiler service up to 425°F - PSI
RL-1208		8"	6	390	300
RL-1210	1/2" O.D.	10"	6	370	295
RL-1212		12"	6	360	295
RL-1214	+0, -1/32"	14"	6	345	290
RL-1216		16"	6	335	285
RL-1218	Wall	18"	6	325	280
RL-1220	5/64", ±1/64"	20"	6	310	280
RL-1224		24"	6	280	270
RL-1230		30"	6	250	**
RL-1236		36"	6	215	**
RL-1248		48"	6	175	**
RL-1260		60"	3	135	**
RL-1272	Max. Length	72"	3	100	**
RL-5808		8"	6	370	285
RL-5810	5/8" O.D.	10"	6	345	280
RL-5812		12"	6	335	280
RL-5814	+0, -1/32"	14"	6	325	275
RL-5816		16"	6	315	270
RL-5818	Wall	18"	6	305	265
RL-5820	3/32", ±1/64"	20"	6	290	265
RL-5824		24"	6	265	255
RL-5830		30"	6	235	**
RL-5836		36"	6	205	**
RL-5848		48"	6	165	**
RL-5860		60"	3	125	**
RL-5872	Max. Length	72"	3	90	**
RL-3408		8"	6	360	280
RL-3410	3/4" O.D.	10"	6	340	275
RL-3412		12"	6	330	275
RL-3414	+0, -1/32"	14"	6	320	270
RL-3416		16"	6	310	265
RL-3418	Wall	18"	6	300	260
RL-3420	7/64", ±1/64"	20"	6	285	260
RL-3424		24"	6	260	250
RL-3430		30"	6	230	**
RL-3436		36"	6	200	**
RL-3448		48"	6	160	**
RL-3460		60"	3	125	**
RL-3472	Max. Length	72"	3	90	**
RL-7808		8"	3	315	
RL-7810	7/8" O.D.	10"	3	310	Not recommended
RL-7812		12"	3	305	in this service.
RL-7814	+0, -1/32"	14"	3	300	
RL-7816		16"	3	285	
RL-7818	Wall	18"	3	280	Not recommended
RL-7820	1/8", ±1/32"	20"	3	275	in this service.
RL-7824		24"	3	265	
RL-7830		30"	3	240	
RL-7836		36"	3	225	Not recommended
RL-7848		48"	3	185	in this service.
RL-7860		60"	3	145	
RL-7872	Max. Length	72"	3	100	
RL-1008		8"	3	275	
RL-1010	1" O.D.	10"	3	270	Not recommended
RL-1012		12"	3	265	in this service.
RL-1014	+0, -1/32"	14"	3	260	
RL-1016		16"	3	250	
RL-1018	Wall	18"	3	245	Not recommended
RL-1020	1/8", ±1/32"	20"	3	240	in this service.
RL-1024		24"	3	230	
RL-1030		30"	3	210	
RL-1036		36"	3	195	Not recommended
RL-1048		48"	3	160	in this service.
RL-1060		60"	3	125	
RL-1072	Max. Length	72"	3	90	

\* Note: Maximum recommended length is 24".

**No. MG - “MARVEL”\* GAGE GLASS & GLASS TUBING GASKETS**

These gaskets are made from a heat resistant compound that is flexible enough to allow proper expansion of the molded lip against the glass. Correctly installed, with lip toward the bottom of the stuffing box, the applied pressure will force the lip tightly against the glass forming an effective seal and at the same time cushioning the glass from the metal. The outer wall will simultaneously expand against the stuffing box nut preventing pressure escape from the outside. The washer section is made thin enough to allow the glass to become adjusted to its proper alignment without any danger of breaking. In installing Marvel gaskets the nut should be made up thumb and finger tight. A wrench should not be used.



Part Number	Size of Glass	O.D.	Depth
MG-30	3/8"	13/16"	1/4"
MG-01	1/2"	13/16"	9/32"
MG-21	1/2"	7/8"	3/8"
MG-02	1/2"	7/8"	1/2"
MG-29	1/2"	1"	5/16"
MG-28	1/2"	1"	3/8"
MG-34	1/2"	1-7/16"	3/8"
MG-19	9/16"	13/16"	9/32"
MG-12	9/16"	27/32"	19/32"
MG-18	9/16"	1-3/32"	1/2"
MG-03	5/8"	7/8"	9/32"
MG-52	5/8"	7/8"	3/8"
MG-13	5/8"	15/16"	9/32"
MG-09	5/8"	15/16"	9/16"
MG-04	5/8"	1"	9/32"
MG-25	5/8"	1"	15/32"
MG-05	5/8"	1-1/8"	3/8"
MG-37	5/8"	1-1/4"	1/2"
MG-35	5/8"	1-5/16"	13/32"
MG-50	21/32"	1-1/4"	1/4"
MG-20	11/16"	1"	9/32"
MG-51	11/16"	1-1/8"	3/8"
MG-42	11/16"	1-3/16"	7/16"
MG-44	11/16"	1-3/8"	3/8"
MG-56	11/16"	1-7/16"	13/32"
MG-31	3/4"	1"	3/8"
MG-43	3/4"	1"	3/4"
MG-06	3/4"	1-1/16"	9/32"

Part Number	Size of Glass	O.D.	Depth
MG-15	3/4"	1-1/16"	1/2"
MG-47	3/4"	1-1/16"	3/4"
MG-24	3/4"	1-3/32"	13/32"
MG-14	3/4"	1-1/8"	3/8"
MG-39	3/4"	1-1/8"	7/16"
MG-33	3/4"	1-1/8"	1/2"
MG-17	3/4"	1-1/8"	5/8"
MG-54	3/4"	1-1/8"	7/8"
MG-11	3/4"	1-3/16"	13/32"
MG-22	3/4"	1-1/4"	1/4"
MG-07	3/4"	1-1/4"	13/32"
MG-53	3/4"	1-1/4"	1/2"
MG-23	3/4"	1-1/4"	3/4"
MG-08	3/4"	1-5/16"	13/32"
MG-16	3/4"	1-5/16"	5/8"
MG-41	3/4"	1-3/8"	3/8"
MG-32	3/4"	1-3/8"	1/4"
MG-10	3/4"	1-7/16"	13/32"
MG-46	3/4"	1-5/8"	1/2"
MG-45	3/4"	1-15/16"	3/8"
MG-27	7/8"	1-3/8"	13/32"
MG-55	7/8"	1-31/64"	7/8"
MG-40	31/32"	1-3/4"	3/8"
MG-48	31/32"	1-3/4"	7/16"
MG-26	1"	1-5/8"	1/2"
MG-38	1"	1-1/2"	1"
MG-36	1-1/4"	1-7/8"	1-5/16"
MG-49	1-7/8"	2-1/4"	3/4"

## No. 20 - CONBRACO WATER GAUGES

These water gages are equipped with ball checks to prevent scalding the operator in the event of glass breakage. The sudden rush of steam and water will carry the balls to their seats thereby shutting off the escape of steam and water. 1/4" Needle Drain Valve in lower arm standard - 1/4" Pet cock in lower arm available upon request.



Description	Pipe Size (in)	Glass Size (in)	Wheel Type	Part Number
<b>20-100 Series</b> Self cleaning. Tested for pressure to 125 pounds. 1/4" needle drain valve in lower arm standard.	1/2"	5/8"	Aluminum	20-100-104
	1/2"	5/8"	Composition	20-100-105
<b>20-200 Series</b> Self cleaning. Tested for pressure to 200 pounds with standard glass. 250 pounds with high pressure glass. 1/4" needle drain valve in lower arm standard.	1/2"	5/8"	Aluminum	20-200-204
	1/2"	5/8"	Composition	20-200-205
	1/2"	3/4"	Aluminum	20-200-207
<b>20-500 Series</b> Self cleaning. Tested for pressure 250 pounds pressure with high pressure glass. Ball checks in the upper and lower arms prevent the escape of steam and water should the gauge glass be accidentally broken. The sudden rush of steam and water carry the balls to their seats, immediately shutting off the escape of steam and water.	1/2"	5/8"	Aluminum	20-500-501
	1/2"	5/8"	Composition	20-500-502
	1/2"	3/4"	Aluminum	20-500-504
<b>20-150 Series</b> Standard Pattern Tested for pressure to 125 pounds; with ball check.	1/2"	5/8"	Aluminum	20-150-150
	1/2"	5/8"	Composition	20-150-151
<b>20-250 Series</b> Heavy Pattern Tested for pressure to 200 pounds with standard glass. 250 pounds with high pressure glass; with ball check.	1/2"	5/8"	Aluminum	20-250-250
<b>20-350 Series</b> Tested for pressure to 200 pounds with standard glass. 250 pounds with high pressure glass; with ball check.	1/2"	5/8"	Aluminum	20-350-350
	3/4"	3/4"	Aluminum	20-350-353

**Note:** Conbraco water gages do not include glass tubing or brass guard rods. Accord International can supply both items. Glass tubing can be cut to your specifications utilizing Pyrex® brand Gauge glass.

Formula to determine Glass and Rod: Glass is 1-1/4" shorter than centerline to centerline dimension. Rods are 2" longer than glass.

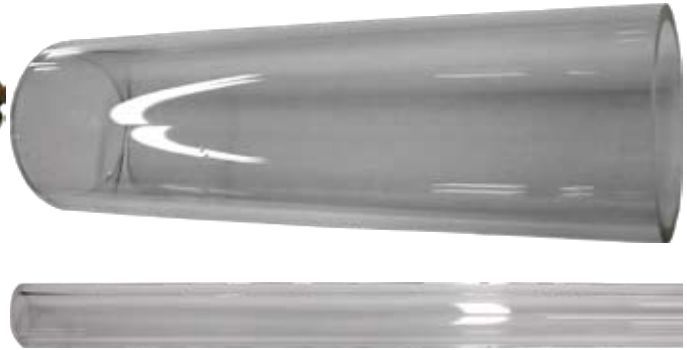
Exception: For 20-350 Series, glass is 2" shorter than centerline to centerline dimension. Rods are 1-1/4" longer than glass.

**ADDITIONAL GAGE GLASS PRODUCTS**

**No. 1079-9701 - GAGE GLASS CUTTER**



**POLYCARBONATE TUBING**



**SIGHT GLASSES**



**GAGE GLASS WASHER**



**REFLEX GAGE GLASS**



**CUSTOM FABRICATION**

**STRAINER**



**TANK LID HATCH PIPE FLANGES**



**FORGED CARBON STEEL  
HAMMER UNION**



**SWIVEL JOINTS**



## ACCORD'S CUSTOM FABRICATION VERSUS the COMPETITION

### Competition supplied ball valve system



**The Problem:** Customer complaint of Flanged Ball Valve System that has leaks throughout the system. The top picture is the Competitor's Flanged Ball Valve System. The bottom picture is Accord's Flanged Ball Valve System.

**Competitor's Flanged Ball Valve:** A customer brought the ball valve shown at the left, complaining of perpetual leaking of the ball valve system when operating under pressure. The competitor's solution to the problem was to backweld the threaded pipe inlets and outlets of the ball valves. In addition, pipe dope was applied on the outside of a threaded end, hoping the leaking would stop but to no avail. The competitor's solution caused more problems because threaded ball valves are not intended for welding. The internal seals of the ball valve will fail when exposed to excessive heat.

### Accord supplied ball valve system



**Accord Flanged Ball Valve:** The solution Accord provided included socket weld ball valves to socket weld tees, and fittings. Socket weld ball valves have heat resistance seals, which can withstand the heat of being welded. Consequently, Accord provided a leak free system for the customer.

