APPENDIX D – Proposed Equipment Cut Sheets



TECHNICAL BROCHURE
B5-25GS R4

FEATURES

Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.

Field Serviceable: Units have left hand threads and are field serviceable with common tools and readily available repair parts.

Sand Handling Design: Our face clearance, floating impeller stack has proven itself for over 50 years as a superior sand handling, durable pump design.

FDA Compliant Non-Metallic Parts: Impellers, diffusers and bearing spiders are constructed of glass filled engineered composites. They are corrosion resistant and non-toxic.

Discharge Head/Check Valve: Cast 303 stainless steel for strength and durability. Two cast-in safety line loops for installer convenience. The built-in check valve is constructed of stainless steel and FDA compliant BUNA rubber for abrasion resistance and quiet operation.

Motor Adapter: Cast 303 stainless steel for rigid, accurate alignment of pump and motor. Easy access to motor mounting nuts using standard open end wrench.

Stainless Steel Casing: Polished stainless steel is strong and corrosion resistant.

Hex Shaft Design: Six sided shafts for positive impeller drive.

Engineered Polymer Bearings: The proprietary, engineered polymer bearing material is strong and resistant to abrasion and wear. The enclosed upper bearing is mounted in a durable Noryl® bearing spider for excellent abrasion resistance.

5GS, 7GS, 10GS, 13GS, 18GS & 25GS

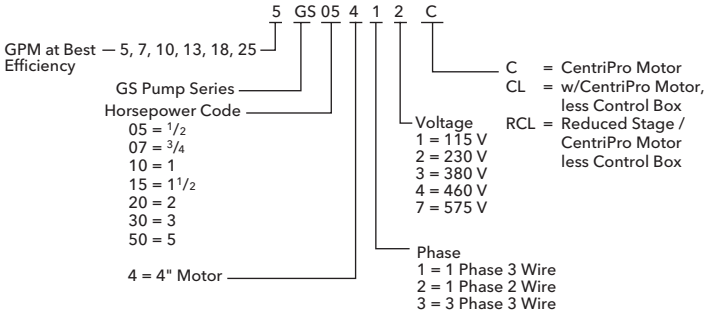
5-25 GPM, ½ – 5 HP, 60 HZ, SUBMERSIBLE PUMPS

GOULDS WATER TECHNOLOGY
a xylem brand

WATER END DATA

Series	Model	Required HP	Stages	Length (in)	Weight (lbs)
5GS	5GS05R	.5	9	12.9	8
	5GS05	.5	12	15.0	9
	5GS07	.75	15	17.0	11
	5GS10	1	20	21.7	13
	5GS15	1.5	26	25.8	15
	5GS20	2	33	31.6	19
7GS	7GS05R	.5	7	11.7	6
	7GS05	.5	10	13.8	7
	7GS07	.75	13	16.0	8
	7GS10	1	17	18.8	9
	7GS15	1.5	22	23.6	12
	7GS20	2	27	27.2	13
	7GS30	3	34	33.2	18
10GS	10GS05R	.5	5	10.1	6
	10GS05	.5	7	11.5	7
	10GS07	.75	10	13.6	8
	10GS10	1	12	15.0	9
	10GS15	1.5	17	18.4	12
	10GS20	2	20	21.7	13
	10GS30	3	27	27.5	18
	10GS50R	5	35	33.0	21
	10GS50	5	42	40.2	24
13GS	13GS05	.5	5	10.1	6
	13GS07	.75	7	11.5	7
	13GS10	1	10	13.6	8
	13GS15	1.5	12	15.0	9
	13GS20	2	17	18.4	12
	13GS30	3	21	22.3	15
18GS	18GS07	.75	6	11.8	7
	18GS10	1	8	13.5	8
	18GS15	1.5	11	16.1	10
	18GS20	2	14	18.6	11
	18GS30	3	19	24.1	15
	18GS50R	5	24	28.3	17
	18GS50	5	30	34.4	21
25GS	25GS10	1	7	13.4	8
	25GS15	1.5	9	15.3	9
	25GS20	2	11	17.2	10
	25GS30	3	15	20.9	14
	25GS50R	5	22	28.7	17
	25GS50	5	26	33.4	21

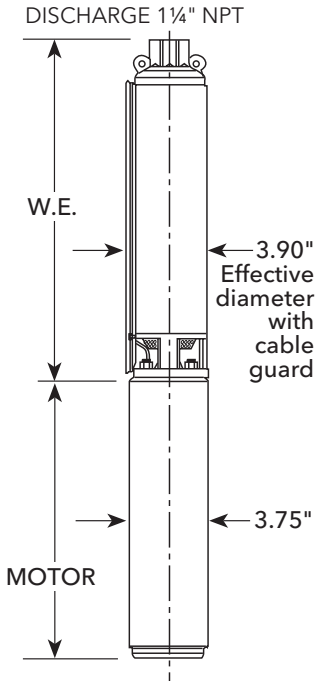
NOMENCLATURE See price book for complete order numbers.



"GS" SERIES MATERIALS OF CONSTRUCTION

Part Name	Material
Discharge Head	AISI 303 SS
Check Valve Poppet	AISI 304 SS
Check Valve Seal	BUNA, FDA compliant
Check Valve Seat	AISI 304 SS
Check Valve Retaining Ring	AISI 302 SS
Bearing Spider - Upper	Noryl® GFN2
Bearing	Proprietary Engineered Polymer
Klipring	AISI 301 SS
Diffuser	Lexan®
Impeller	Noryl®
Bowl	AISI 304 SS
Intermediate Sleeve *	AISI 304 SS, Powder Metal
Intermediate Shaft Coupling *	AISI 304 SS, Powder Metal
Intermediate Bearing Spider *	Glass Filled Engineered Composite
Intermediate Bearing Spider *	AISI 303 SS
Shim	AISI 304 SS
Screws – Cable Guard	AISI 304 SS
Motor Adapter	AISI 303 SS
Casing	AISI 304 SS
Shaft	
Coupling	AISI 304 SS, Powder Metal
Cable Guard	AISI 304 SS
Suction Screen	AISI 304 SS

*See repair parts for where used.



SPECIFICATIONS

Model	Flow Range GPM	Horsepower Range	Best Efficiency GPM	Discharge Connection	Minimum Well Size	Rotation①
5GS	1.2 – 7.5	½ – 2	5	1¼	4"	CCW
7GS	1.5 – 10	½ – 3	7	1¼	4"	CCW
10GS	3 – 16	½ – 5	10	1¼	4"	CCW
13GS	4 – 20	½ – 3	13	1¼	4"	CCW
18GS	6 – 28	¾ – 5	18	1¼	4"	CCW
25GS	8 – 33	1 – 5	25	1¼	4"	CCW

① Rotation is counterclockwise when observed from pump discharge end.

CENTRIPRO 4" SINGLE-PHASE MOTORS

Order No.	Type	HP	Volts	Length in. (mm)	Weight lb. (kg.)
M05421	2-wire PSC	½	115	11.0 (279)	20 (9.1)
M05422		½	230	11.0 (279)	20 (9.1)
M07422		¾		12.4 (314)	23 (10.4)
M10422		1		13.3 (337)	25 (11.3)
M15422		1.5		14.9 (378)	29 (13.2)
M05411	3-wire	½	115	10.0 (253)	19 (8.6)
M05412		½	230	9.7 (246)	18 (8.2)
M07412		¾		10.8 (275)	22 (10)
M10412		1		11.7 (297)	23 (10.4)
M15412		1.5		13.6 (345)	28 (12.7)
M20412		2		15.1 (383)	31 (14.1)
M30412		3		18.3 (466)	40 (18.1)
M50412		5		27.7 (703)	70 (31.8)

NEMA MOTOR

- Corrosion resistant stainless steel construction.
- Built-in surge arrestor is provided on single phase motors through 5 HP.
- Stainless steel splined shaft.
- Hermetically sealed windings.
- Replaceable motor lead assembly.
- NEMA mounting dimensions.
- Control box is required with 3 wire single phase units.
- Three phase units require a magnetic starter with three leg Class 10 overload protection.

CENTRIPRO 4" THREE-PHASE MOTORS

Order No. by Voltage			HP	Length in. (mm)	Weight lb. (kg.)
200V	230V	460V			
M05430	M05432	M05434	½	10.8 (275)	22 (9.7)
M07430	M07432	M07434	¾	10.8 (275)	22 (9.7)
M10430	M10432	M10434	1	11.7 (297)	23 (10.4)
M15430	M15432	M15434	1.5	11.7 (297)	23 (10.4)
M20430	M20432	M20434	2	13.8 (351)	28 (12.7)
M30430	M30432	M30434	3	15.3 (389)	32 (14.5)
M50430	M50432	M50434	5	21.7 (550)	55 (24.9)
M75430	M75432	M75434	7.5	27.7 (703)	70 (1.8)

Order No.	HP	Volts	Length in. (mm)	Weight lb. (kg.)
M15437	1.5	575	11.7 (297)	23 (10.4)
M20437	2		15.3 (389)	32 (14.5)
M30437	3		15.3 (389)	32 (14.5)
M50437	5		27.7 (703)	70 (31.8)
M75437	7.5		27.7 (703)	70 (31.8)

AGENCY LISTINGS

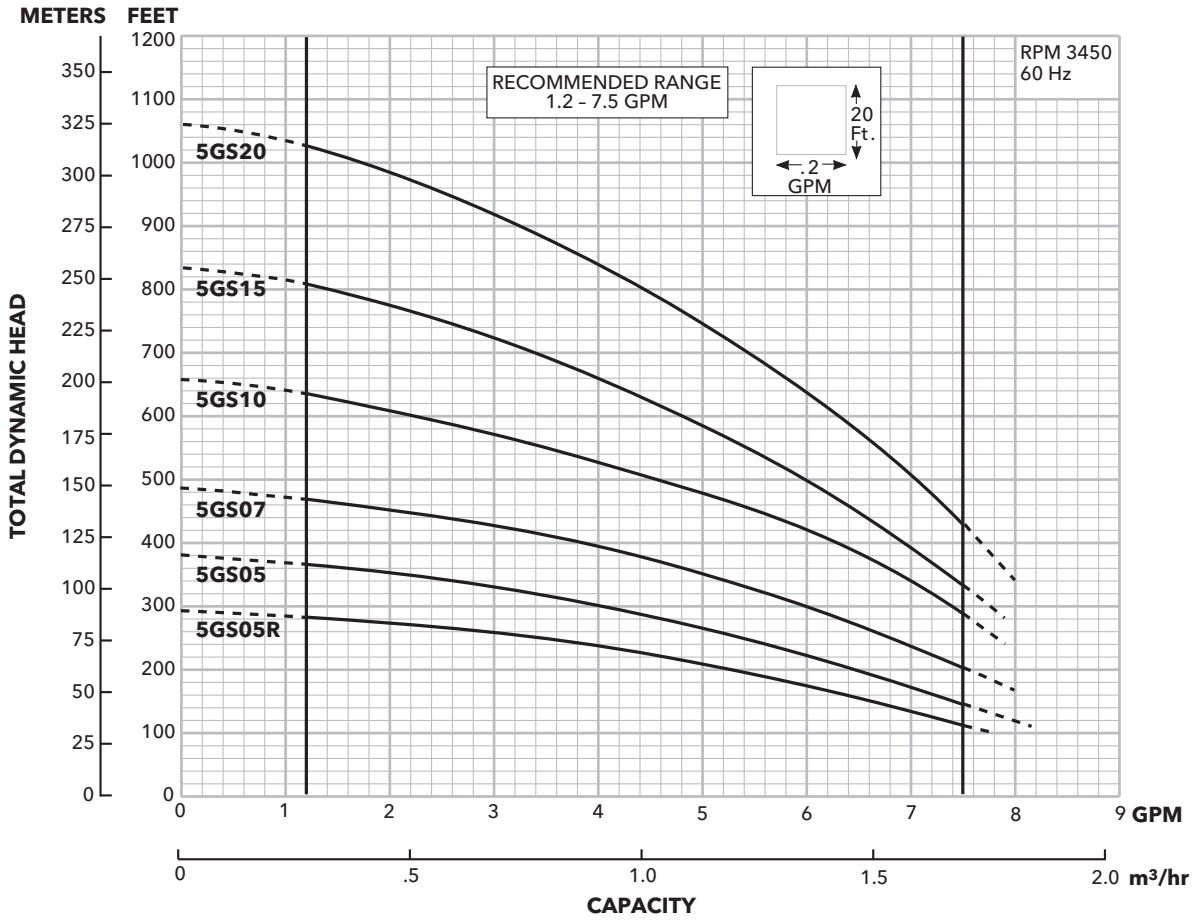
Pump/Water End and CentriPro Motor - tested to UL778 and CAN 22.2 by CSA International (Canadian Standards Association)

CentriPro Motor - Certified to NSF/ANSI 61, Annex G, Drinking Water System Components 4P49

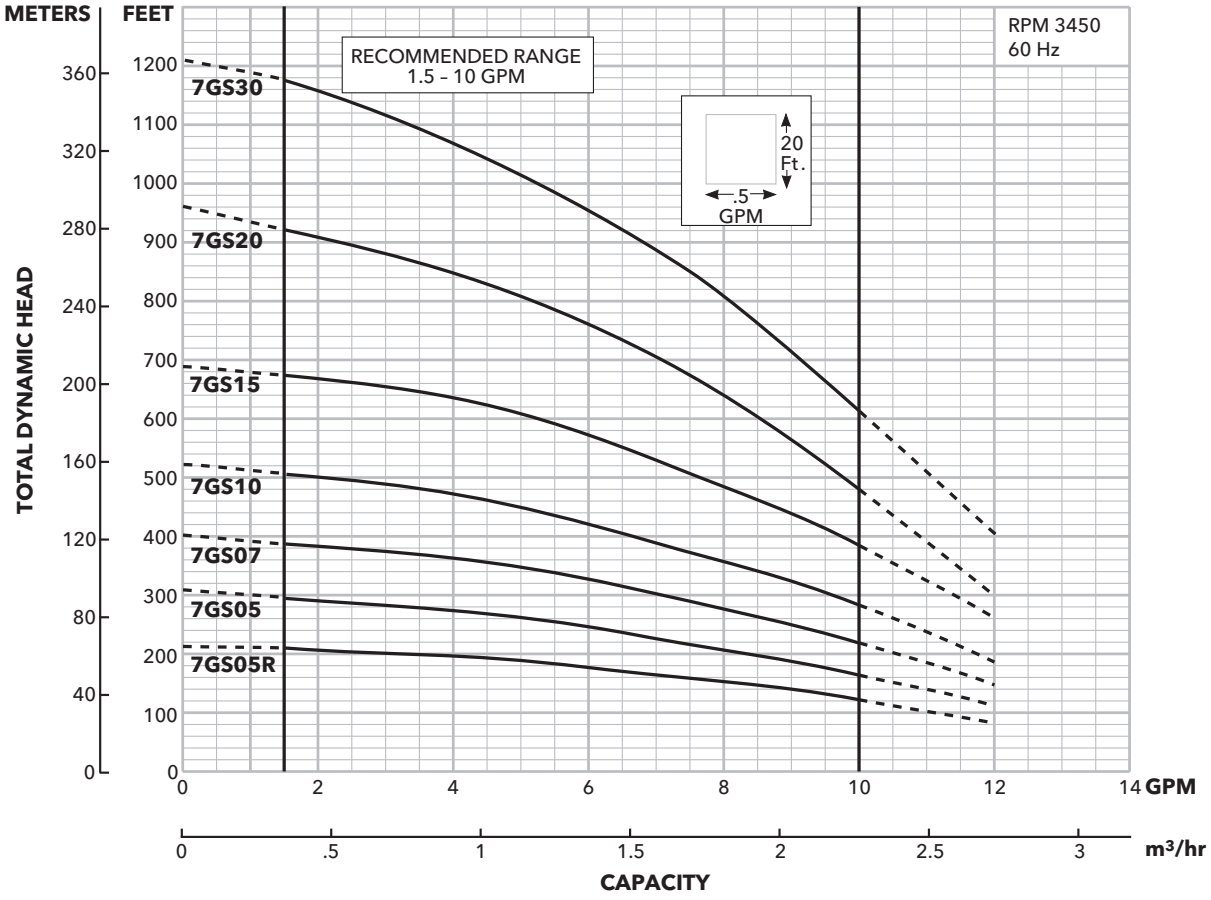
NSF/ANSI 372 – Drinking Water System Components – Lead Content

CLASS 6853 01 - Low Lead Content Certification Program - - Plumbing Products

Model 5GS



Model 7GS



PolyPipe® for POTABLE WATER



PW PE3408/PE4710

High Performance Pipe for Potable Water Service

FEATURES:

- Suitable applications include Potable Water, Reclaim Water, Intake Water, Raw Water and Waste Water
- Heat-fused, fully restrained, leak proof joints
- Maintains optimum flow rates due to resistance to corrosion & biological growth
- Fatigue resistant
- NSF-61 & NSF-14 certified
- Meets ASTM D3350 cell classification PE445574C
- Material grades PE3408/PE4710/PE100 per PPI TR-4
- AWWA C901 / ASTM D3035 & AWWA C906 / ASTM F714

SAMPLE PRINTLINE:	12 '' IPS - SDR 11 - DURALINE-POLYPIPE®PW - PE3408 - AWWA C906-PC160-PE4710-ASTM F714-200PSI - (Resin Code)(Color Code) - 1GA - (ddmmmyy) - NSF-61
APPLICATION:	Potable Water Service & applications such as Mining, Landfill, Dredging, Water Reclamation or Wastewater
SIZE RANGE:	½" – 65" (IPS, DIPS)
COLOR/STRIPE:	Solid black, or with Stripes: blue, green, purple

PolyPipe is manufactured with high performance resins engineered with outstanding resistance to Slow Crack Growth (SCG) and Rapid Crack Propagation (RCP). The fatigue resistance of these resins improves design life in water systems where cyclic pressure surges exist.

Dura-Line is ISO 9001 certified and PolyPipe is qualified using exacting laboratory procedures and test methods, and a consistent uncompromised quest for design and manufacturing excellence.

PolyPipe® for POTABLE WATER

PW PE3408/PE4710

TYPICAL PHYSICAL PROPERTIES

PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		SI Units	English Units
Density, Natural	D1505	0.949 gm/cc	–
Density, Black	D1505	0.960 gm/cc	–
Melt Index (190°C/2.16 kg)	D1238	0.08 gm/10 min.	–
Flow Rate (190°C/21.6 kg)	D1238	7.5 gm/10 min.	–
Tensile Strength @ Yield	D638	24.8 MPa	3,500 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus	D790	1,034 MPa	150,000 psi
2% Secant			
Environmental Stress Crack Resistance (ESCR)			
F_0, Condition C	D1693	--	--
PENT	F1473	>500 hrs.	>500 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64
Vicat Softening Temperature	D1525	124°C	255°F
Izod Impact Strength (Notched)	D256	0.42 KJ/m	8 ft – lb_f/in
Volume Resistivity	D991	$>10^{15}$ ohm-cm	--
Thermal Expansion Coefficient		$2x10^{-4}$ cm/cm/°C	$1.0x10^{-4}$ in/in/°F
CELL CLASSIFICATION:	D3350	445574C	PE47
		445576C	PE100
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	11.0 MPa @ 23°C	1,600 psi @ 73.4°F
(As listed in PPI TR-4)		6.9 MPa @ 140°C	1,000 psi @ 140°F
PPI HYDROSTATIC DESIGN STRESS (HDS)		6.9 MPa @ 23°C	1,000 psi @ 73.4°F
(As established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI))			

*Nominal values are intended to be guides only, and not as specification limit.

*Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens.

PolyPipe®

PE3408/PE4710/PE100 Pipe
Pipe Data and Pressure Ratings - IPS

ISO 9001 REGISTERED

Pressure Rating		DR7 335 psi		DR9 255 psi		DR11 200 psi		DR13.5 160 psi		DR17 125 psi		DR21 100 psi		DR26 80 psi		DR32.5 65 psi	
Nominal Pipe Size	OD (inches)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)
½"	0.840	0.120	0.119	0.093	0.096	0.076	0.080	–	–	–	–	–	–	–	–	–	–
¾"	1.050	0.150	0.185	0.117	0.150	0.095	0.126	–	–	–	–	–	–	–	–	–	–
1"	1.315	0.188	0.291	0.146	0.235	0.120	0.197	–	–	–	–	–	–	–	–	–	–
1 ¼"	1.660	0.237	0.463	0.184	0.374	0.151	0.314	0.123	0.261	–	–	–	–	–	–	–	–
1 ½"	1.900	0.271	0.607	0.211	0.490	0.173	0.411	0.141	0.342	–	–	–	–	–	–	–	–
2"	2.375	0.339	0.948	0.264	0.766	0.216	0.642	0.176	0.534	0.140	0.431	–	–	–	–	–	–
3"	3.500	0.500	2.058	0.389	1.664	0.318	1.395	0.259	1.159	0.206	0.936	0.167	0.768	0.135	0.626	–	–
4"	4.500	0.643	3.402	0.500	2.751	0.409	2.306	0.333	1.916	0.265	1.548	0.214	1.269	0.173	1.035	0.138	0.835
5"	5.375	0.768	4.854	0.597	3.925	0.489	3.289	0.398	2.733	0.316	2.208	0.256	1.810	0.207	1.477	0.165	1.192
5"	5.563	0.795	5.199	0.618	4.204	0.506	3.523	0.412	2.928	0.327	2.366	0.265	1.939	0.214	1.582	0.171	1.277
6"	6.625	0.946	7.374	0.736	5.963	0.602	4.997	0.491	4.152	0.390	3.355	0.315	2.750	0.255	2.244	0.204	1.811
7"	7.125	1.018	8.529	0.792	6.897	0.648	5.780	0.528	4.802	0.419	3.881	0.339	3.181	0.274	2.596	0.219	2.094
8"	8.625	1.232	12.498	0.958	10.106	0.784	8.470	0.639	7.037	0.507	5.687	0.411	4.662	0.332	3.804	0.265	3.069
10"	10.75	1.536	19.416	1.194	15.700	0.977	13.157	0.796	10.932	0.632	8.834	0.512	7.242	0.413	5.909	0.331	4.767
12"	12.75	1.821	27.312	1.417	22.085	1.159	18.508	0.944	15.379	0.750	12.427	0.607	10.187	0.490	8.312	0.392	6.703
14"	14.00	2.000	32.930	1.556	26.628	1.273	22.315	1.037	18.542	0.824	14.983	0.667	12.282	0.538	10.022	0.431	8.086
16"	16.00	2.286	43.010	1.778	34.779	1.455	29.146	1.185	24.218	0.941	19.569	0.762	16.042	0.615	13.090	0.492	10.561
18"	18.00	2.571	54.435	2.000	44.017	1.636	36.888	1.333	30.651	1.059	24.767	0.857	20.304	0.692	16.567	0.554	13.366
20"	20.00	2.857	67.203	2.222	54.342	1.818	45.541	1.481	37.840	1.176	30.577	0.952	25.066	0.769	20.453	0.615	16.501
22"	22.00	–	–	2.444	65.754	2.000	55.105	1.630	45.787	1.294	36.998	1.048	30.330	0.846	24.748	0.677	19.967
24"	24.00	–	–	2.667	78.253	2.182	65.579	1.778	54.490	1.412	44.031	1.143	36.095	0.923	29.452	0.738	23.762
28"	28.00	–	–	3.111	106.51	2.545	89.260	2.074	74.167	1.647	59.931	1.333	49.130	1.077	40.087	0.862	32.342
30"	30.00	–	–	3.333	121.63	2.727	102.467	2.222	85.141	1.765	68.798	1.429	56.399	1.154	46.019	0.923	37.128
32"	32.00	–	–	3.556	139.12	2.909	116.59	2.370	96.871	1.882	78.277	1.524	64.169	1.231	52.359	0.985	42.243
36"	36.00	–	–	4.000	176.07	3.273	146.78	2.667	121.96	2.118	99.069	1.714	81.214	1.385	66.267	1.108	53.464
42"	42.00	–	–	–	–	–	–	3.111	166.88	2.471	134.844	2.000	110.542	1.615	89.73	1.292	72.771
48"	48.00	–	–	–	–	–	–	–	–	2.824	176.122	2.286	144.381	1.846	117.808	1.477	95.047
54"	54.00	–	–	–	–	–	–	–	–	3.176	222.91	2.571	182.732	2.077	149.100	1.662	120.294
63"	63.00	–	–	–	–	–	–	–	–	3.706	303.398	3.000	248.72	2.423	202.94	1.938	163.73
65"	65.00	–	–	–	–	–	–	–	–	3.824	322.967	3.095	264.76	2.500	216.03	2.000	174.29

PolyPipe®

PE3408/PE4710/PE100 Pipe
Pipe Data and Pressure Ratings - DIPS

Pressure Rating		DR7 335 psi		DR9 255 psi		DR11 200 psi		DR13.5 160 psi		DR17 125 psi		DR21 100 psi		DR26 80 psi		DR32.5 65 psi	
Nominal Pipe Size	OD (inches)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)	Min. Wall (inches)	Weight (lbs/ft)
3″	3.96	0.566	2.635	0.440	2.130	0.360	1.785	0.293	1.483	0.233	1.199	0.189	0.983	0.152	0.802	0.122	0.647
4″	4.80	0.686	3.871	0.533	3.130	0.436	2.623	0.356	2.180	0.282	1.761	0.229	1.444	0.185	1.178	0.148	0.950
6″	6.90	0.986	7.999	0.767	6.468	0.627	5.421	0.511	4.504	0.406	3.639	0.329	2.984	0.265	2.434	0.212	1.964
8″	9.05	1.293	13.760	1.006	11.127	0.823	9.325	0.670	7.748	0.532	6.261	0.431	5.132	0.348	4.188	0.278	3.379
10″	11.10	1.586	20.700	1.233	16.739	1.009	14.028	0.822	11.656	0.653	9.418	0.529	7.721	0.427	6.300	0.342	5.083
12″	13.20	1.886	29.274	1.467	23.671	1.200	19.838	0.978	16.483	0.776	13.319	0.629	10.919	0.508	8.909	0.406	7.188
14″	15.30	2.186	39.329	1.700	31.802	1.391	26.652	1.133	22.145	0.900	17.894	0.729	14.669	0.588	11.969	0.471	9.657
16″	17.40	2.486	50.866	1.933	41.132	1.582	34.470	1.289	28.641	1.024	23.144	0.829	18.973	0.669	15.481	0.535	12.490
18″	19.50	2.786	63.885	2.167	51.659	1.773	43.292	1.444	35.972	1.147	29.067	0.929	23.829	0.750	19.443	0.600	15.687
20″	21.60	3.086	78.386	2.400	63.385	1.964	53.119	1.600	44.137	1.271	35.665	1.029	29.237	0.831	23.856	0.665	19.247
24″	25.80	–	–	2.867	90.431	2.345	75.785	1.911	62.970	1.518	50.883	1.229	41.713	0.992	34.035	0.794	27.460
30″	32.00	–	–	–	–	–	–	2.370	96.871	1.882	78.277	1.524	64.169	1.231	52.359	0.985	42.243
36″*	38.30	–	–	–	–	–	–	–	–	2.253	112.132	1.824	91.923	1.473	75.005	1.178	60.514
42″*	44.50	–	–	–	–	–	–	–	–	2.618	151.374	2.119	124.093	1.712	101.254	1.369	81.692
48″*	50.80	–	–	–	–	–	–	–	–	–	–	2.419	161.717	1.954	131.953	1.563	106.460
54″*	57.56	–	–	–	–	–	–	–	–	–	–	2.741	207.620	2.214	169.408	1.771	136.678
60″*	61.61	–	–	–	–	–	–	–	–	–	–	–	–	2.370	194.086	1.896	156.588

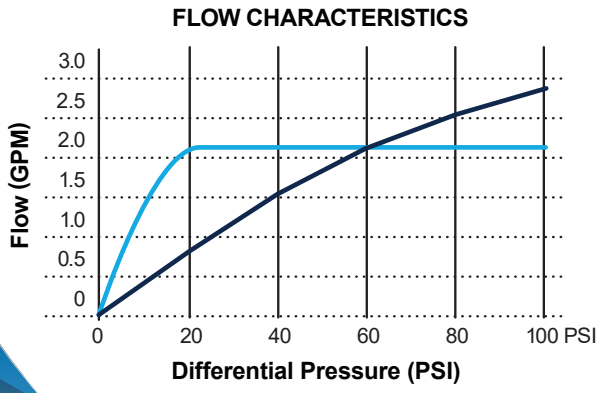
PolyPipe® Potable Water PE4710 Pipe is manufactured in accordance with the following standards:

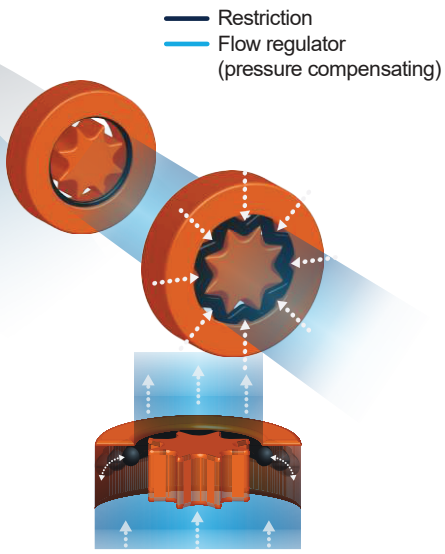
- For sizes ½″ IPS through 3″ IPS products are manufactured in accordance with ASTM D3035 & AWWA C901.
- For sizes 4″ IPS through 60″ DIPS products are manufactured in accordance with ASTM F714 & AWWA C906.
- Metric sizes also available.
- Coiled pipe available through 6″ OD and straight lengths available in 40′ and 50′ lengths. For custom lengths, contact a Customer Service Representative.

- Pressures are based on water at 23°C (73.4°F) and are determined by use of the Hydrostatic Design Stress (HDS) as established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI).
- The above weights for IPS and DIPS sizes are calculated in accordance with Plastics Pipe Institute (PPI) TR-7, using a value of 0.960 for density.
- Available with color-coded striping.
- Some sizes listed are special order. Call for availability on sizes.
- *May require additional lead time.

SureFLO™

FLOW CONTROL VALVES





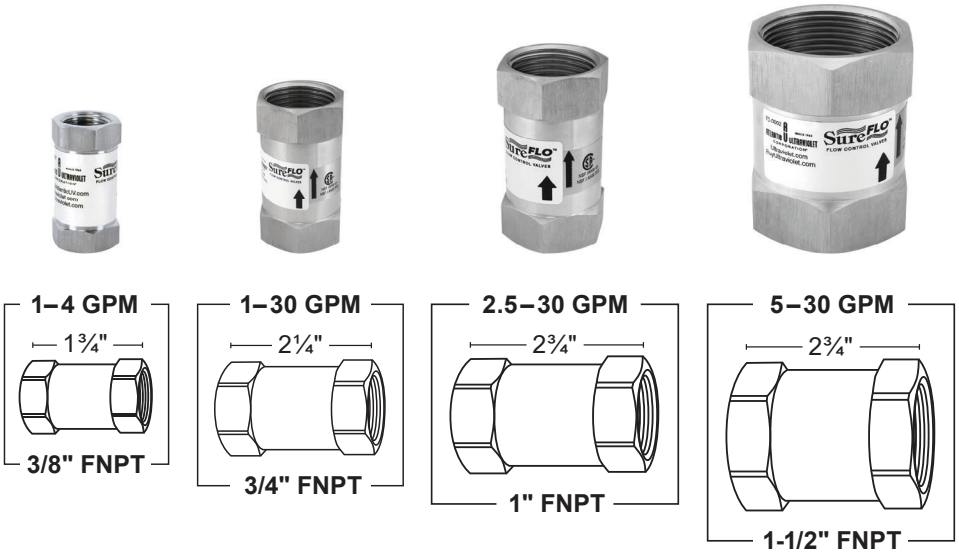
WORKING PRINCIPLE
Flow regulators are used to maintan a defined flow rate regardless of pressure variations of the supply line. Precise flow control improves system performance and in the case of plumbing systems, it provides comfort of use at low pressure as well as water and energy saving at high pressure. When there is no flow or pressure, the O-Ring is relaxed. When there is normal pressure, the O-Ring subjected to the line pressure is compressed into the seating area. As the pressure increases, the O-Ring is compressed further into the seating area. As the pressure decreases, the O-Ring relaxes. Since the flow rate for a given orifice changes to the square root of delta P, the O-Ring deformation is equal to this thus giving a constant flow over a wide range of pressure variations.

FLOW TOLERANCE refers to the deviation from Nominal Flow tolerated across the pressure range once the threshold pressure is reached. In general the flow tolerance is +/15%.

WORKING CONDITIONS refers to the usual parameters of the application such as medium (usually drinking water), pressure range (usually 0 to 150 PSI) and temperature range (usually 40 to 150°F).

THRESHOLD PRESSURE refers to the pressure at which the flow regulator effectively begins controlling the flow. Standard regulators begin controlling at 15 PSI.

304 Stainless Steel Models & Specifications



Certified to NSF®/ANSI 61 & 372

Drinking water
NSF®/ANSI 61
NSF®/ANSI 372 LLC

Flow Rate (GPM)	Fitting Size (FNPT)	Part No.
1.5	3/8"	27-0082
6	3/4"	27-0095
9	1"	27-0084
12	1"	27-1212
15	1-1/2"	27-1213
20	1-1/2"	27-1220
25	1-1/2"	27-0094
30	1-1/2"	27-1030

More flow rates available. Contact factory.

The information and recommendations contained in this publication are based upon data collected by the Atlantic Ultraviolet Corporation® and are believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. Specifications and information are subject to change without notice.

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