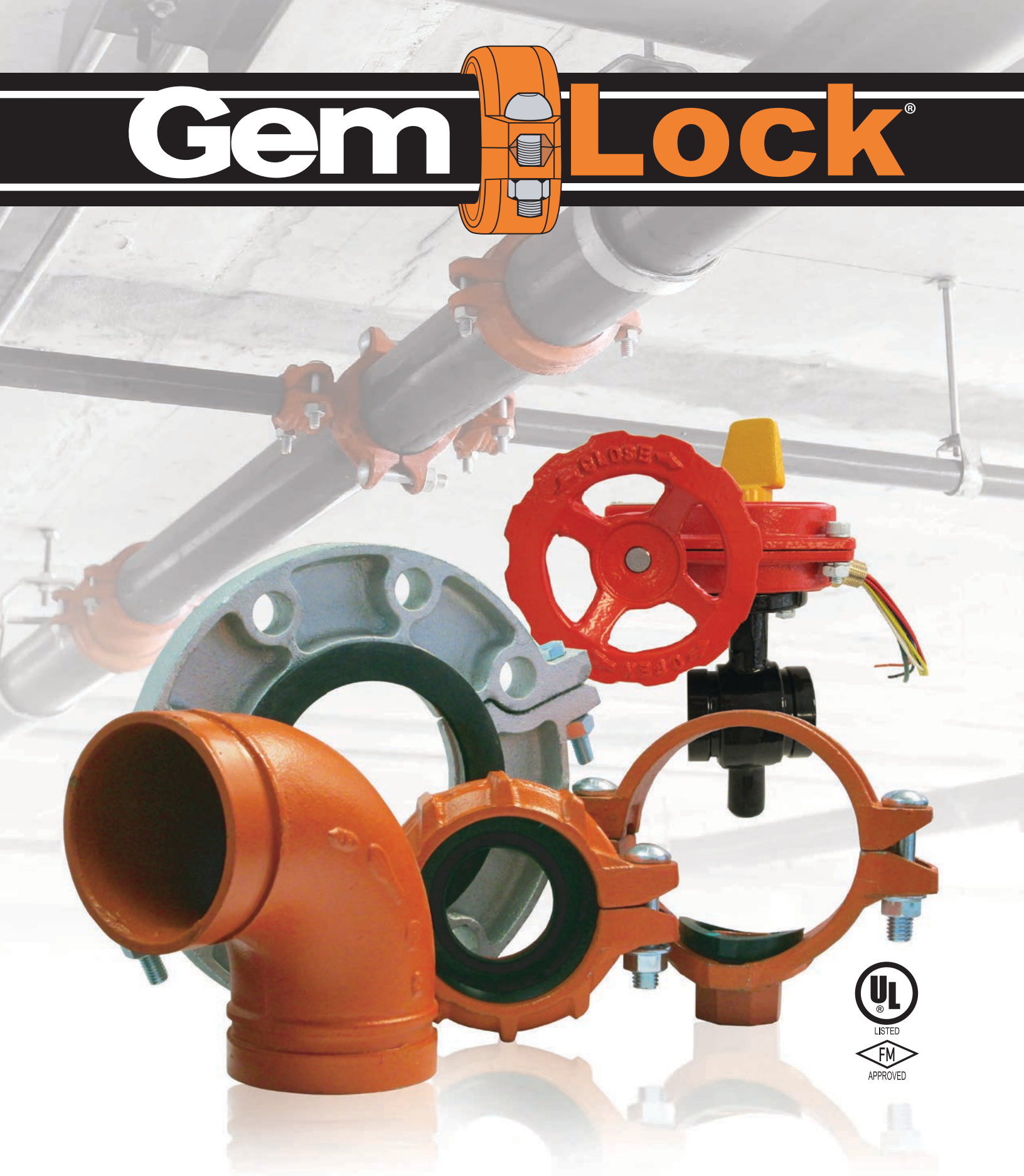
Gem Lock®



LISTED

APPROVED

GROOVED PIPING SYSTEMS

Gem Lock®

GLOBAL DISTRIBUTION

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GemLock is reliable and faster to install than welding, threading or flanging, resulting in lower installed cost. Triple sealing of the C-shaped pressure responsive gasket is made from specially compounded rubber polymers with low compression set properties. Couplings perform equally well under pressure and vacuum. Couplings are available for flexible and rigid systems, and are all pre-lubricated.

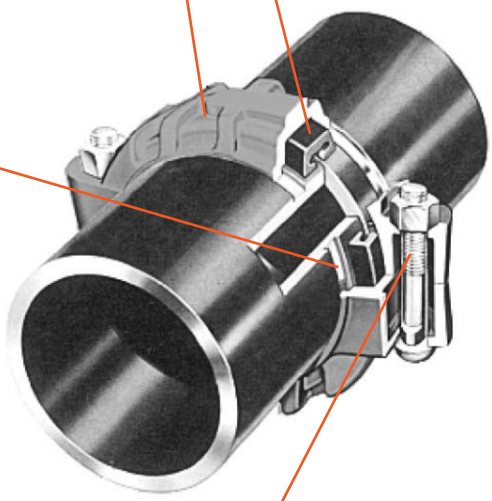
HOUSINGS

Ductile iron housing segments conforming to ASTM-A 536 Grade 65-45-12 which fully enclose the gasket. The housing keys engage into the grooves around the full pipe circumference, securing the pipe ends together with a positive grip. Housings are normally two identical castings for couplings through 12" sizes. The housing is designed to provide the optimum combination of pressure, stress relief and end load conditions while maintaining reasonable weight and manufacturing characteristics. Every grooved pipe coupling, flange adapter and reducing coupling has a similar key section. This engages fully into the groove tying the joint integrally to the pipe.

GASKETS

The sealing efficiency of gaskets is such that the gasket forms an initial seal as it is stretched over the pipe ends. As the housing segments are installed and secured the pressure responsive gasket is slightly compressed to form a leak-tight joint. The strength of the seal is further enhanced by internal line pressure that creates downward pressure on the lips of the gasket. The gasket also seals well under vacuum conditions up to 10inHg (-0.35 Bar) which may occur when a system is drained. Please refer to the gasket selection guide for additional details and gasket materials. Gaskets are pre-lubricated for easy assembly of the coupling but should be lightly lubed for further ease of assembly and performance.

Roll or cut grooved standard steel pipe.



BOLTS AND NUTS

Oval neck track bolt conforming to ASTM A183 with minimum tensile strength of 110,000 psi or square neck carriage bolt to ASTM A446 with 120,000 psi minimum tensile strength permits tightening of the nuts from one side with a single wrench. Nuts conform to ASTM A194. Bolts and nuts are electro galvanized.

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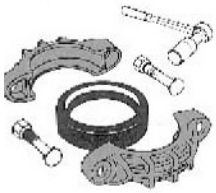
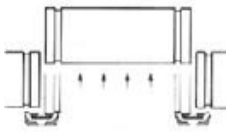
FEATURES

REDUCED COSTS



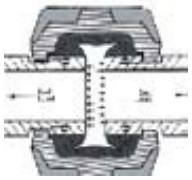
Coupling assembly is quick and easy. Minimal training required. The system is free from contaminates such as weld slag and pipe dope. Installation costs are controllable and estimates are more precise.

UNION TYPE JOINT



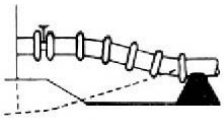
Couplings can be disassembled easily permitting maintenance and servicing of the piping system. It will facilitate periodic rotation of pipe to distribute internal wear from slurries or other abrasive media.

RELIABILITY



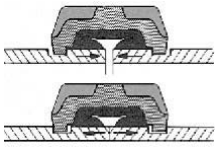
The couplings engage the pipe around the entire circumference and restrain the pipe ends from separation due to pressure and other forces, up to the maximum coupling rated working pressure.

DEFLECTION AND MISALIGNMENT



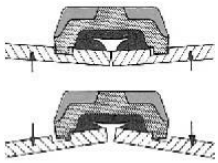
Precise location of pipe openings through walls and floors is unnecessary. Long radius curves may be designed with fewer elbows. Useful for providing pitch for drainage. Facilitates laying pipe on rough or uneven terrain.

EXPANSION AND CONTRACTION



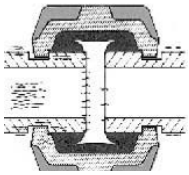
Provides linear movement at each joint. Allows pipe expansion and contraction. Suitable for hot and cold water lines and dual temperature systems.

STRESS FREE JOINT



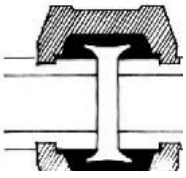
Flexibility of the joint reduces or eliminates stresses from settlement of burried pipe or induced by seismic tremors.

NOISE AND VIBRATION



Slight gap between pipe ends isolates noise and vibration. Resilient gasket also helps to absorb noise and vibration. Often permits elimination of noise suppression devices.

RIGIDITY



Couplings available for rigidity at valves, equipment or mechanical rooms. Couplings grip pipe to provide a rigid system used with standard groove specifications.

RIGID COUPLING

STYLE 5

- Provides joint rigidity, for the support and hanging requirements of ANSI B31.1
- Tongue and groove arrangements in housings do not permit expansion, contraction or deflection
- Available with hot dipped galvanized coating as optional
- Supplied with pre-lubed gasket
- Provided with EPDM Gasket

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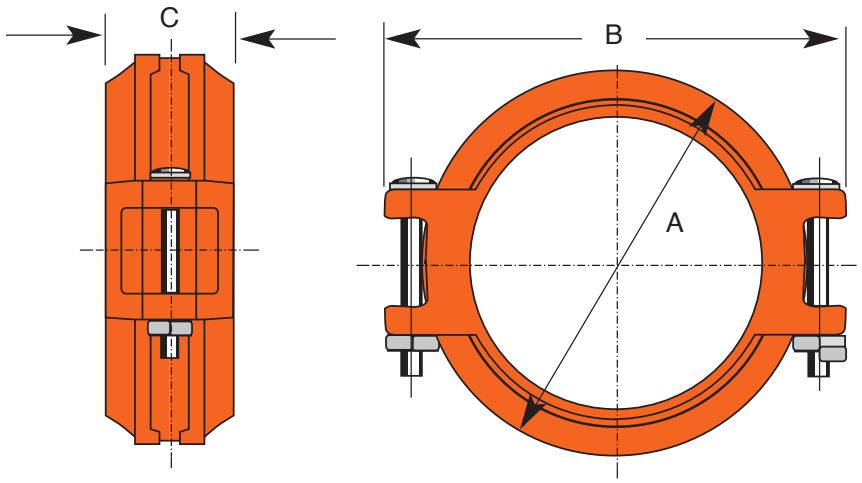

Pipe		Max Working Pressure (psi)*	Allow Pipe End Separation (In.)	Dimensions (In.)			Approx. Weight Each (lb.)
Nominal Size	Actual SIze (In.)			A	B	C	
1”	1.315	300	0.1	2.188	3.86	1.73	1.2
1¼”	1.66	300	0.1	2.638	4.213	1.732	1.31
1½”	1.9	300	0.1	2.835	4.37	1.732	1.26
2”	2.375	300	0.1	3.346	4.921	1.732	1.47
2½”	2.875	300	0.1	3.898	5.472	1.772	1.76
3”	3.5	300	0.1	4.567	6.535	1.772	2.41
4”	4.5	300	0.16	5.551	7.52	1.929	2.93
5”	5.563	300	0.16	6.575	8.622	1.929	3.55
6”	6.625	300	0.16	7.874	9.882	1.929	4.73
8”	8.625	300	0.19	9.961	12.598	2.323	8.15
10”	10.75	300	0.19	13.189	16.772	2.677	17.08
12”	12.75	300	.20	14.96	18.50	2.56	24.5

NOTES:

Allowable pipe end separation is for cut groove pipe for roll groove, figures will be one-half of the values listed at time of initial pressurization.

□ - Bolts and Nuts are galvanized. * - Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product. EPDM gasket is supplied as standard. For other gaskets contact us.

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FLEXIBLE COUPLING

STYLE 12

- Provides joint flexibility required in some piping systems
- Conforms to the requirements of ANSI B31.1 Power Piping Code; ANSI B31.9 Building Service Pipe Code and NFPA 13 Sprinkler Systems
- Available with hot dipped galvanized coating as optional
- Supplied with pre-lubed gasket
- Provided with EPDM Gasket

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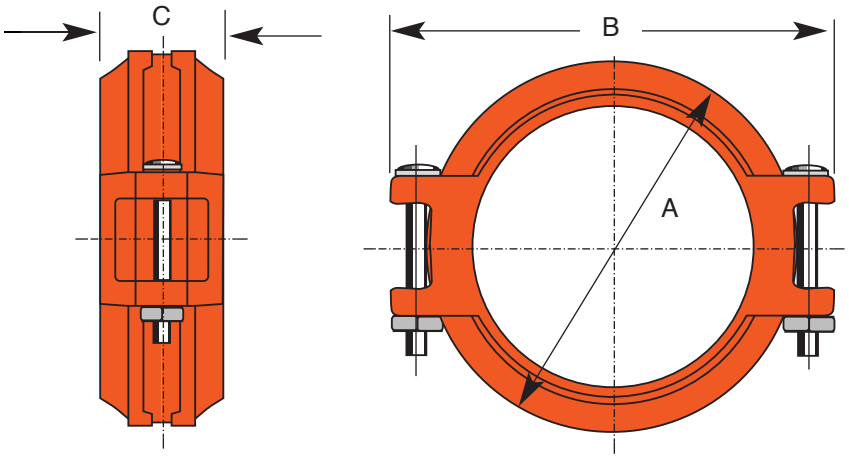

Pipe		Max Working Pressure (psi)*	Allow Pipe End Separation (In.)	Max Deflection from Center Line		Dimensions (In.)			Approx. Weight Each (lb.)
Nominal Size	Actual SIze (In.)			Per Coup. Deg.	Pipe (In.)	A	B	C	
1”	1.315	300	0.1	5˚-26’	1.14	2.19	3.86	1.73	1.2
1¼”	1.66	300	0.1	4˚-19’	0.9	2.638	4.213	1.732	1.30
1½”	1.9	300	0.1	3˚-46’	0.79	2.835	4.37	1.732	1.27
2”	2.375	300	0.1	3˚-1’	0.62	3.346	4.882	1.732	1.48
2½”	2.875	300	0.1	2˚-29’	0.52	3.898	5.433	1.772	1.71
3”	3.5	300	0.1	2˚-3’	0.43	4.567	6.496	1.772	2.44
4”	4.5	300	0.16	3˚-11’	0.67	5.551	7.48	1.929	2.89
5”	5.563	300	0.16	2˚-35’	0.54	6.575	8.622	1.929	3.58
6”	6.625	300	0.16	2˚-10’	0.46	7.874	9.843	1.929	4.73
8”	8.625	300	0.19	1˚-40’	0.34	9.961	12.559	2.323	7.91
10”	10.75	300	0.19	0˚-95’	0.13	12.48	15.787	2.48	16.95
12”	12.75	300	.20	0˚-23’	0.12	14.76	17.91	2.52	24.0

NOTES:

Allowable pipe end separation is for cut groove pipe for roll groove, figures will be one-half of the values listed at time of initial pressurization.

□- Bolts and Nuts are galvanized. * - Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product. EPDM gasket is supplied as standard. For other gaskets contact us.

REDUCING COUPLING

STYLE 25

- Replaces two couplings and in-line reducer (concentric or eccentric)
- Available with hot dipped galvanized coating
- Provided with EPDM Gasket

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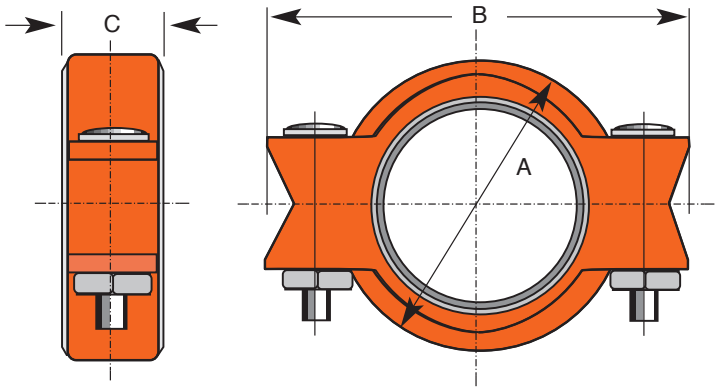
HEAD LOSS

Size (In.)	Flow Reducing		Flow Expanding	
	C_L Value	Equivalent Pipe Length (Smaller Dia.)	C_L Value	Equivalent Pipe Length(Smaller Dia.)
6" x 4"	0.16	4.5 ft	0.08	2.3 ft
5" x 4"	0.14	3.0 ft	0.14	3.3 ft
4" x 3"	0.37	6.0 ft	0.15	2.5 ft
3" x 2½"	0.30	3.8 ft	0.19	2.5 ft
3" x 2"	0.50	5.5 ft	0.30	3.5 ft
2½" x 2"	0.18	1.9 ft	0.09	1.0 ft
2" x 1½"	0.25	1.9 ft	0.23	2.0 ft



In above table, $C_L = \frac{2GH_L}{V^2}$

H_L = Head Loss in feet

V = Velocity in smaller pipe in feet/sec.

G =Acceleration due to gravity = 32.2 feet/sec.^{2}

Pipe Nominal Size	Max. Working Pressure (psi)	Allow Pipe End Separation (in.)	Max. Deduction from center line		Dimensions (in.)			Approx. Weight Each (lb.)
			Per Coup Deg.	Pipe (in.)	A	B	C	
1½" x 1¼"	300	0.12	1°-53'	0.4	2.88	4.55	1.77	1.75
2" x 1¼"	300	0.12	1°-53'	0.4	3.543	5.079	1.85	1.88
2" x 1½"	300	0.12	1°-33'	0.4	3.543	5.079	1.85	1.95
2½" x 2"	300	0.12	1°-33'	0.32	3.976	5.394	1.8	2.50
3" x 2"	300	0.12	1°-17'	0.26	4.724	6.45	1.89	3.64
3" x 2½"	300	0.12	1°-17'	0.26	4.72	6.457	1.89	3.27
4" x 2"	300	0.25	2°-38'	0.55	5.906	7.677	1.929	4.74
4" x 2½"	300	0.25	2°-38'	0.55	5.906	7.677	1.929	4.55
4" x 3"	300	0.25	2°-38'	0.55	5.906	7.677	1.929	4.16
5" x 4"	300	0.25	2°-5'	0.44	6.969	8.74	1.909	6.65
6" x 4"	300	0.25	1°-44'	0.38	7.992	9.252	1.969	8.16
8" x 6"	300	0.25	1°-15'	0.26	10.394	12.32	2.362	15.15

NOTES:

Allowable pipe end separation is for cut groove pipe for roll groove, figures will be one-half of the values listed at time of initial pressurization. □ – Bolts and Nuts are galvanized. * – Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product. EPDM gasket is supplied as standard.

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GROOVED FLANGE

STYLE 14

- Designed to connect ANSI Class 125 or 150 flanged components to a grooved piping system
- Made of a ductile iron conforming to ASTM A-536. Every lot is metallurgically examined to insure compliance
- Provided with EPDM rubber gasket as standard, suitable for -30 ˚ F to 150 ˚ F (-34 ˚ C to 110 ˚ C)
- Available with hot dipped galvanized coating

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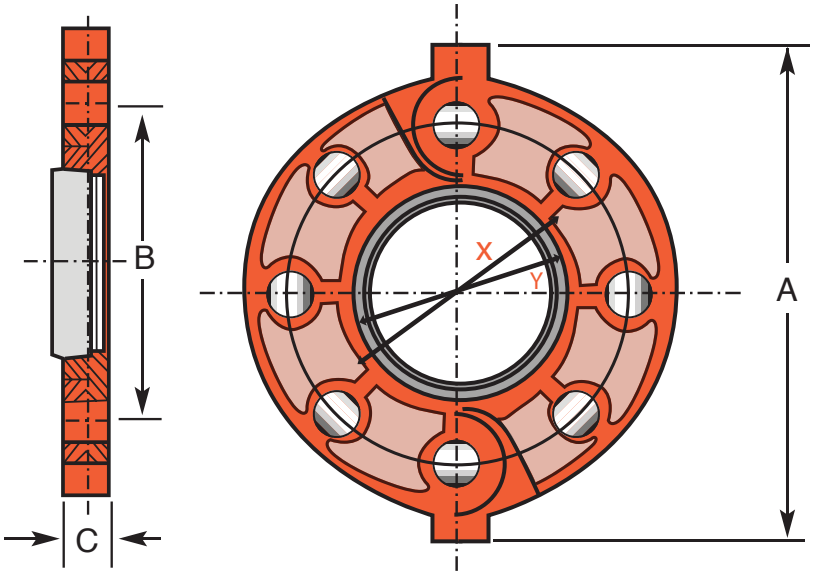

Pipe		Max Working Pressure (psi) *	Sealing Surface (in.)		Dimensions (In.)			Approx. Weight Each (lb.)
Nominal Size	Actual Size (In.)		X Min.	Y Max.	A	B	C	
2”	2.375	300	3.09	2.42	8.11	4.763	0.866	3.84
2½”	2.875	300	3.58	2.92	9.055	5.511	0.866	5.08
3”	3.5	300	4.21	3.56	9.527	5.984	0.944	5.17
4”	4.5	300	5.26	4.57	11.023	7.519	0.944	6.46
5”	5.563	300	6.41	5.65	12.795	8.503	0.964	8.64
6”	6.625	300	7.48	6.71	13.583	9.5	0.964	8.49
8”	8.625	300	9.58	8.7	16.311	11.751	1.102	13.48
10”	10.75	300	11.65	10.85	20	14.25	1.195	24.0

MECHANICAL TEES

STYLE 15 GROOVED & STYLE 16 THREADED

Mechanical Branchlet provides a direct branch connection at any location along the pipe run without welding. A hole cut along the center line of pipe will receive the hole locator collar to secure the outlet. A pressure responsive EPDM gasket molded to suit the run pipe insures leak tight joints. Cross type connections can be made utilizing upper housings only. Available with hot dipped galvanized coating.

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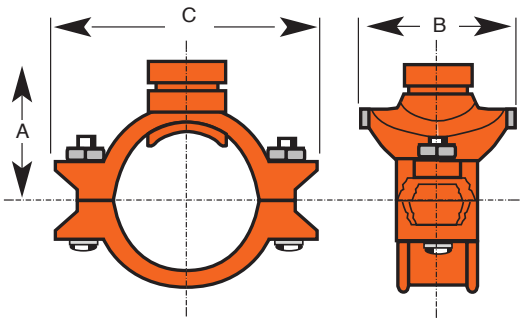
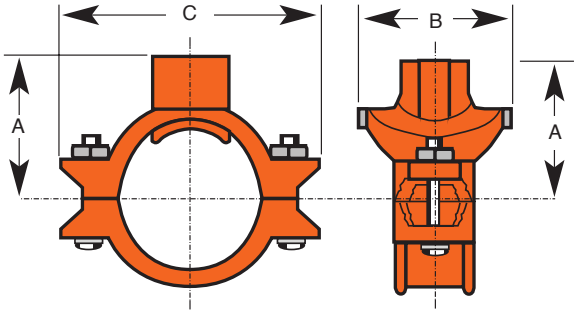
STYLE 15



STYLE 16



Run Size	Outlet Size (In.)	Max Working Pressure (psi)*	Hole Diameter		Grooved Dimensions (In.)			Threaded Dimensions (In.)			Approx. Weight Each	
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	A	B	C	Grooved lb.	Thrd. lb.
1½"	1"	300	1.25	1.30	—	—	—	2.20	2.40	4.40	—	1.95
2	1"	300	1.5	1.63	—	—	—	2.36	2.71	4.567	—	1.53
	1-¼"	300	1.75	1.63	2.32	2.71	4.57	2.36	2.71	4.567	2.27	1.66
	1-½"	300	1.75	1.81	2.32	2.71	4.57	2.36	2.71	4.567	2.46	1.88
2½	1"	300	1.5	1.63	—	—	—	2.76	3.03	5.67	—	1.98
	1-¼"	300	2	1.63	2.76	3.307	5.67	2.76	3.27	5.67	2.27	2.36
	1-½"	300	2	2.13	2.76	3.267	5.67	2.76	3.27	5.67	2.47	2.33
3	1"	300	1.5	1.63	—	—	—	3.23	3.03	5.98	—	2.48
	1-¼"	300	2	1.63	2.76	3.23	5.98	3.23	3.27	5.98	2.50	2.47
	1-½"	300	2	2.13	2.76	3.58	5.98	3.23	3.62	5.98	2.89	2.60
	2"	300	2.5	2.13	3.23	2.4	5.98	3.23	3.89	5.98	3.23	2.96
4	1"	300	1.5	1.63	—	—	—	3.43	3.03	6.77	—	2.86
	1-¼"	300	2	1.63	3.66	3.27	7.32	3.43	3.27	6.77	3.40	3.261
	1-½"	300	2	2.13	3.66	3.62	7.32	3.43	3.62	6.77	3.16	3.25
	2"	300	2.5	2.13	3.66	3.82	7.4	3.43	3.82	6.77	3.30	3.55
	2-½"	300	3	2.63	3.82	4.84	7.4	3.43	4.41	6.77	4.55	3.59
	3"	300	3.5	3.05	3.82	4.92	7.4	3.43	4.9	6.77	4.56	4.84

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MECHANICAL TEES
STYLE 15 GROOVED & STYLE 16 THREADED

Mechanical Branchlet provides a direct branch connection at any location along the pipe run without welding. A hole cut along the center line of pipe will receive the hole locator collar to secure the outlet. A pressure responsive gasket molded to suit the run pipe insures leak tight joints. Cross type connections can be made utilizing upper housings only.

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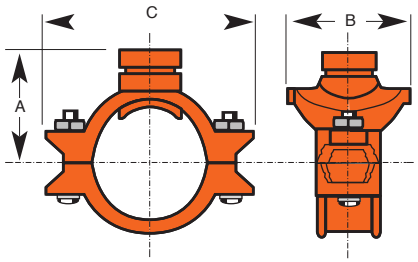
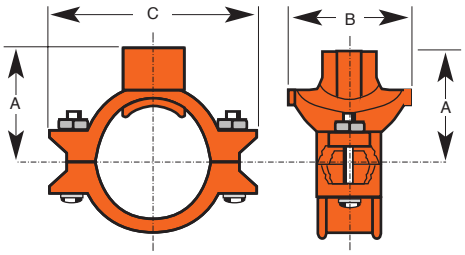
STYLE 15



STYLE 16



PERFORMANCE DATA

OUTLET SIZE Nominal Size (In.)	Cv Values	Equiv. Feet of Pipe	
		Grvd.	Female Thrd.
½	15	—	2.0
¾	18	—	4.0
1	22	—	5.0
1¼	39	5.5	6.0
1½	52	7.0	8.0
2	87	9.0	10.5
2½	117	11.0	12.5
3	173	13.5	15.5
4	346	20.0	22.0

Run Size	Outlet Size (In.)	Max Working Pressure (psi)*	Hole Diameter		Grooved Dimensions (In.)			Threaded Dimensions (In.)			Approx. Weight Each	
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	A	B	C	Grooved lb.	Threaded lb.
5	1½	300	2	2.13	—	—	—	3.94	3.62	8.27	—	3.65
	2	300	2.5	2.63	4.21	3.82	8.66	3.94	3.82	8.27	4.47	3.89
	2½	300	2.75	2.88	4.21	4.84	8.66	3.94	4.84	8.27	—	—
	3	300	3.5	3.63	4.21	5.35	8.66	3.94	4.84	8.27	6.03	6.04
6	1¼	300	2	2.13	5.04	3.23	9.72	4.61	3.27	9.53	5.50	5.32
	1½	300	2	2.13	5.04	3.62	9.72	4.61	3.62	9.53	5.55	5.80
	2	300	2.5	2.63	5.04	3.86	9.72	4.61	3.82	9.53	6.18	5.96
	2½	300	3.25	3.35	5.04	4.84	9.72	4.61	4.84	9.53	5.32	5.325
	3	300	3.5	3.63	5.04	5.35	9.72	4.61	5.35	9.53	7.32	7.32
	4	300	4.5	4.63	5.04	6.18	9.72	4.61	6.14	9.53	7.60	7.6
8	2	300	2.5	2.63	5.98	5.11	12.2	5.75	3.82	12.2	7.50	7.50
	2½	300	2.75	2.88	5.98	5.11	12.2	5.75	5.11	12.2	7.71	7.71
	3	300	3.5	3.63	5.98	5.39	12.2	5.75	5.39	12.2	8.3	8.3
	4	300	4.5	4.63	5.98	6.38	12.2	5.75	6.38	12.2	9.09	10.17

NOTES:

□ – Bolts and Nuts are galvanized. * – Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product. EPDM gasket is supplied as standard. For other gaskets contact us.

GROOVED FITTINGS-
SHORT PATTERN

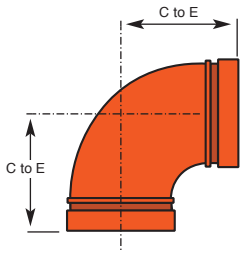
STYLES F105, F106, F107, F135 & F155

- Sized to improve flow
- Designed to Fire Protection Industry standards for short patterned fittings
- Rated for 300 psi
- Made of durable, high-strength ductile iron conforming to ASTM A536; every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating

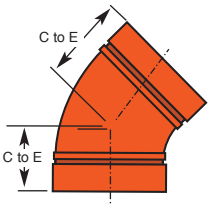
UL Listed Under File No. EX15591

FLOW DATA Frictional Resistance (Expressed as equivalent Straight Pipe in Ft.)								
Nominal Size (In)	90° Elbow		45° Elbow		Tee			
					Branch		Run	
	STD	F105	STD	F106	STD	F107	STD	F107
1	1.7	1.4	0.9	0.9	4.4	4.0	1.7	1.4
1¼	2.3	1.8	1.2	1.0	5.8	4.2	2.3	1.8
1½	2.7	2.5	1.3	1.3	6.7	5.5	2.7	2.5
2	3.4	3.2	1.7	1.6	8.6	8.2	3.4	2.5
2½	4.1	3.9	2.1	2.0	10.3	10.1	4.1	3.9
3	5.1	4.8	2.6	2.4	12.8	12.5	5.1	4.8
4	6.7	6.5	3.4	3.2	16.8	16.0	6.7	6.5
5	8.4	8.4	4.2	4.0	21.0	20.5	8.4	8.2
6	10.1	10.0	5.1	4.8	25.3	24.0	10.1	9.6
8	13.3	13.0	6.7	6.5	33.3	33.0	13.3	13.0

Flow data is based upon the pressure drop of Sch. 40 pipe



Style F105



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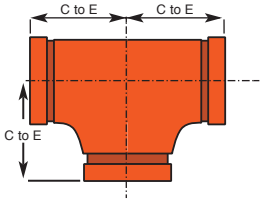

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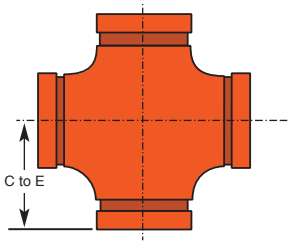


Style F135

Style F155

Pipe		90° Elbow No. F105		45° Elbow No. F106		Equal Tee No. F107		Cross No. F135		End Cap No. F155	
Nominal Size	Actual Size (In.)	C to E (In.)	Approx. Wgt. Ea. (lb.)	C to E (In.)	Aprox. Wgt. Ea. (lb.)	C to E (In.)	Aprox. Wgt. Ea. (lb.)	C to E (In.)	Aprox. Wgt. Ea. (lb.)	E to E (In.)	Aprox. Wgt. Ea. (lb.)
1¼	1.66	2.362	.80	1.73	.70	2.362	1.10	2.75	2.1	0.99	.33
1½	1.9	2.362	1.01	1.73	.78	2.362	1.34	2.75	2.5	0.99	0.44
2	2.375	2.755	1.24	2.00	1.20	2.755	1.98	2.75	2.49	0.99	0.61
2½	2.875	2.992	2.03	2.24	1.63	2.992	2.82	2.99	3.19	0.99	0.85
3	3.5	3.368	2.53	2.52	2.38	3.386	3.90	3.38	5.09	0.99	1.01
4	4.5	3.996	3.74	3.00	3.84	3.996	5.72	3.99	7.22	0.99	1.42
5	5.563	4.803	7.20	3.28	5.74	4.803	9.52	4.80	7.23	0.99	2.80
6	6.625	5.5	9.06	3.51	8.11	5.5	14.13	5.5	15.97	0.99	4.40
8	8.625	6.889	20.52	4.25	14.27	6.889	27.07	6.88	28.66	1.181	9.30

75 Cohoes Ave. Green Island, NY 12183

STANDARD GROOVED FITTINGS

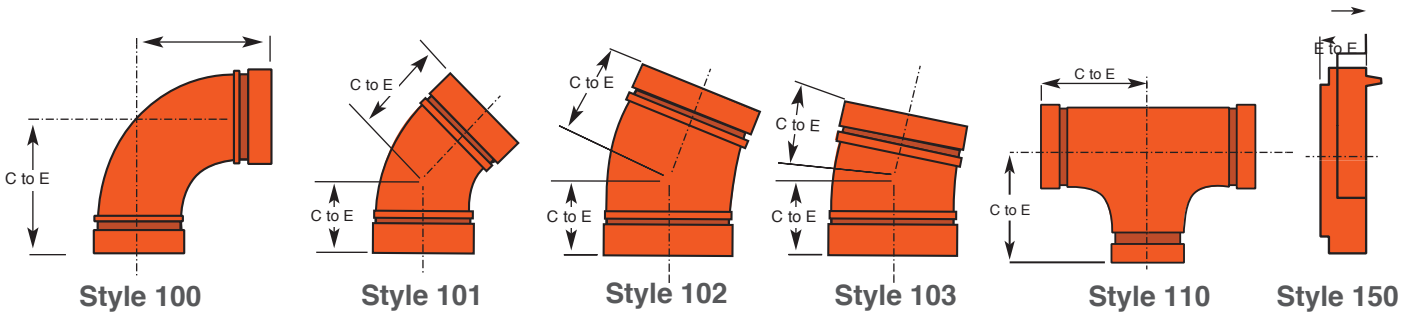
STYLES 100, 101, 102, 103, 110 & 150

- All fittings are full flow design
- Made of durable, high-strength ductile iron conforming to ASTM A536; every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating
- Suitable for HVAC, plumbing, & fire protection systems
- Rated for 300 psi

UL Listed Under File No. EX15591

FLOW DATA Frictional Resistance (Expressed as equivalent Straight Pipe in Ft.)									
Nominal Size (In.)	Elbow		Tee		Nominal Size (In.)	Elbow		Tee	
	90° Elbow	45° Elbow	Branch	Run		90° Elbow	45° Elbow	Branch	Run
1¼	2.3	1.2	5.8	2.3	5	8.4	4.2	21.0	8.4
1½	2.7	1.3	6.7	2.7	6	10.1	5.1	25.3	10.1
2	3.4	1.7	8.6	3.4	8	13.3	6.7	33.3	13.3
2½	4.1	2.1	10.3	4.1	10	16.7	8.4	41.8	16.7
3	5.1	2.6	12.8	5.2					
4	6.7	3.4	16.8	6.7					

Flow data is based upon the pressure drop of Sch. 40 pipe.



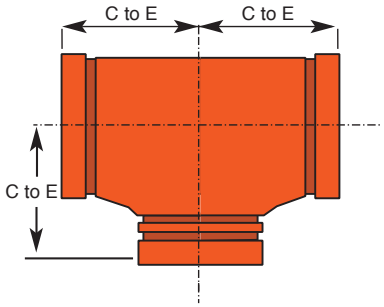
Style 100 Style 101 Style 102 Style 103 Style 110 Style 150

Pipe		90° Elbow No. 100		45° Elbow No. 101		22½" Elbow No. 102		11¼" Elbow No. 103		Equal Tee No. 110		End Cap No. 150	
Nominal Size (In.)	Actual Size (In.)	C to E (In.)	Approx. Wgt. Ea. (lb.)	C to E (In.)	Approx. Wgt. Ea. (lb.)	C to E (In.)	Approx. Wgt. Ea. (lb.)	C to E (In.)	Approx. Wgt. Ea. (lb.)	C to E (In.)	Approx. Wgt. Ea. (lb.)	E to E (In.)	Approx. Wgt. Ea. (lb.)
1¼	1.66	2.24	0.93	1.73	0.70	1.732	.80	1.38	0.55	2.755	1.52	0.99	.33
1½	1.9	2.755	1.17	1.73	0.78	1.732	.84	1.38	0.63	2.755	1.74	0.99	.44
2	2.375	3.257	1.77	2	1.20	2	1.14	1.38	0.82	3.267	2.5	0.99	.62
2½	2.875	3.74	2.76	2.24	1.63	2	1.50	1.5	1.22	3.74	3.73	0.99	.86
3	3.5	4.251	3.44	2.52	2.38	2.24	2.53	1.5	1.62	4.251	6.24	0.99	1.01
4	4.5	5.0	5.32	3	3.84	2.87	3.91	1.89	2.63	5	8.70	0.99	1.42
5	5.563	5.51	8.0	3.28	5.74	2.87	5.10	2	3.90	5.511	12.44	0.99	2.80
6	6.625	6.496	14.31	3.51	8.11	3.11	7.16	2	4.78	6.496	18.21	0.99	2.0
8	8.625	8.755	21.63	4.25	14.27	3.86	11.88	2	7.10	7.755	33.25	1.181	7.31
10	10.75	9.015	37.04	4.76	22.00	4.37	30.0	2.13	14.5	9.015	46.35	1.259	9.33
12	12.75	10.0	57.25	31.50	10.0	—	—	—	—	10.0	59.50	1.26	13.25

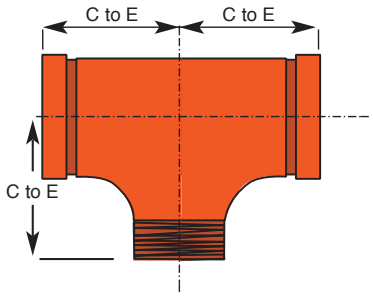
REDUCER TEE-
SHORT PATTERN
STYLE 115

- Made of durable, high-strength ductile iron conforming to ASTM A536
- Every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating
- Rated for 300 psi

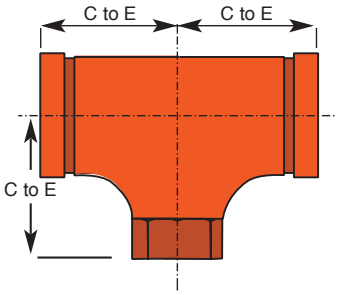
UL Listed Under File No. EX15591



Style 115



Style 115TM



Style 115TF

FLOW DATA Frictional Resistance (Expressed as equivalent Straight Pipe in Ft.)					
Nominal Size (In.)	Reducer Tee		Nominal Size (In.)	Reducer Tee	
	Branch	Run		Branch	Run
1¼	5.8	2.3	5	21.0	8.4
1½	6.7	2.7	6	25.3	10.1
2	8.6	3.4	8	33.3	13.3
2½	10.3	4.1	10	41.8	16.7
3	12.8	5.1			
4	16.8	6.7			

Flow data is based upon the pressure drop of Sch. 40 pipe.

Reducer Tee - No.115
Add after part number the letters TF for internal or TM for external threaded outlet

Nominal Size (In.)	C to E (In.)	Approx. Wgt. Ea. (lb.)
2 x 2 x 1¼	2.76	2.7
2 x 2 x 1½	2.76	2.7
2½ x 2½ x 1	3.00	4.8
2½ x 2½ x 1¼	3.00	4.8
2½ x 2½ x 1½	3.00	5.1
2½ x 2½ x 2	3.00	5.1
3 x 3 x 1	3.38	5.8
3 x 3 x 1¼	3.38	6.4
3 x 3 x 1½	3.38	7.5
3 x 3 x 2	3.38	8.4
3 x 3 x 2½	3.38	8.6
4 x 4 x 1	4.00	7.8
4 x 4 x 1¼	4.00	9.6
4 x 4 x 1½	4.00	10.2
4 x 4 x 2	4.00	10.4
4 x 4 x 2½	4.00	11.4
4 x 4 x 3	4.00	11.6
5 x 5 x 1½	4.80	14.3
5 x 5 x 2	4.80	14.5
5 x 5 x 2½	4.80	15.2
5 x 5 x 3	4.80	15.4
5 x 5 x 4	4.80	16.1
6 x 6 x 1½	5.60	24.0
6 x 6 x 2	5.60	26.4
6 x 6 x 2½	5.60	26.5
6 x 6 x 3	5.60	26.5
6 x 6 x 4	5.60	29.3

Nominal Size (In.)	C to E (In.)	Approx. Wgt. Ea. (lb.)
6 x 6 x 5	5.60	30.9
6½ x 6½ x 2	5.60	26.4
6½ x 6½ x 2½	5.60	26.5
6½ x 6½ x 3	5.60	24.0
6½ x 6½ x 4	5.60	25.0
8 x 8 x 1½	7.05	33.0
8 x 8 x 2	7.05	33.5
8 x 8 x 2½	7.05	39.0
8 x 8 x 3	7.05	33.6
8 x 8 x 4	7.05	47.4
8 x 8 x 5	7.05	48.3
8 x 8 x 6	7.05	49.8
8 x 8 x 6½	7.05	50.5
10 x 10 x 2	8.46	84.9
10 x 10 x 2½	8.46	83.8
10 x 10 x 3	8.46	82.7
10 x 10 x 4	8.46	79.4
10 x 10 x 5	8.46	78.9
10 x 10 x 6	8.46	78.3
10 x 10 x 8	8.46	77.2

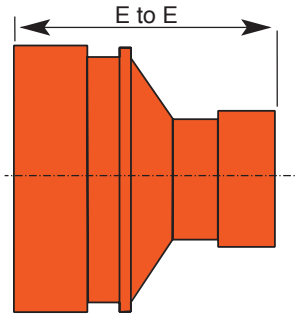
Style 115TM and 115TF are available up to 8" run size and 2½" outlet size.

75 Cohoes Ave. Green Island, NY 12183

STANDARD CONCENTRIC REDUCER

STYLE 140

- Made of durable, high-strength ductile iron conforming to ASTM A536
- Every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating
- Rated for 300 psi



See Style 140TM and 140TF for threaded outlet.

Concentric Reducer - No.140			Concentric Reducer - No.140		
Nominal Size	E to E (In.)	Approx. Wgt. Ea. (lb.)	Nominal Size	E to E (In.)	Approx. Wgt. Ea. (lb.)
1¼ x 1	2.52	.49	5 x 2½	3.5	2.57
1½ x 1	2.52	.60	5 x 3	3.5	2.73
2 x 1	2.52	.72	5 x 4	3.5	2.95
2 x 1¼	2.52	.69	6 x 2	4.02	4.36
2 x 1½	2.52	.72	6 x 2½	4.02	4.10
2½ x 1	2.52	.86	6 x 3	4.02	4.12
2½ x 1¼	2.52	.91	6 x 4	4.02	4.63
2½ x 1½	2.52	.92	6 x 5	4.02	4.35
2½ x 2	2.52	1.02	8 x 3	5	7.71
3 x 1	2.52	1.10	8 x 4	5	6.76
3 x 1¼	2.52	1.15	8 x 5	5	7.71
3 x 1½	2.52	1.16	8 x 6	5	8.15
3 x 2½	2.52	1.25	10 x 4	5.98	20.0
4 x 1	3	2.2	10 x 5	5.98	20.0
4 x 1¼	3	2.2	10 x 6	5.98	14.48
4 x 1½	3	2.3	10 x 8	5.98	14.16
5 x 2	3.5	4.6			

UL Listed Under File No. EX15591

ECCENTRIC REDUCER

STYLE 145

Eccentric Reducer - No.145 Add TF after part number for Internal or TM for External threaded outlet.		
Nominal Size (In.)	E to E (in.)	Approx. Wgt. Ea. (lb.)
2 x 1¼	9	4.6
2 x 1½	9	4.6
2½ x 2	9.5	1.4
3 x 1¼	9.5	4.8
3 x 1½	9.5	5.0
3 x 2	9.5	1.8
3 x 2½	9.5	1.6
4 x 2	10	2.6
4 x 2½	10	2.8
4 x 3	10	3.3
5 x 2	11	5.2
5 x 2½	11	10.8
5 x 3	11	11.0
5 x 4	11	5.1
6 x 2	11.5	14.5
6 x 2½	11.5	14.1
6 x 3	11.5	14.9
6 x 4	11.5	6.6
6 x 5	11.5	9.4
8 x 3	12	22.0
8 x 4	12	22.9
8 x 5	12	26.5
8 x 6	12	30.8
10 x 3	13	29.7
10 x 4	13	31.9
10 x 5	13	34.6
10 x 6	13	36.5
10 x 8	13	38

STANDARD DRAIN ELBOW

STYLE F100D & F105D

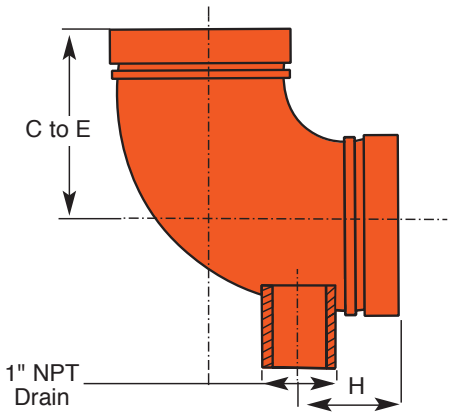
- Provides 1" NPT drain required on some fire protection stand pipes
- Smoother flow than fabricated segmented steel elbows
- Made of ductile iron conforming to ASTM A536
- Every lot is metallurgically tested to insure compliance
- Available with hot dipped galvanized coating
- Pressure rating of 300 psi

UL Listed Under File No. EX15591

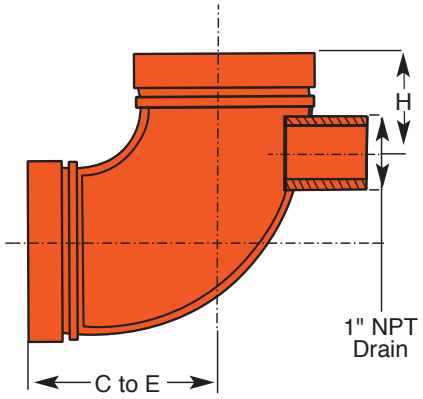
FLOW DATA Equivalent Feet of Straight Pipe		
Nominal Size (In.)	90° Elbow	
	STD	Short Pattern
2	3.5	3.2
2½	4.3	3.9
3	5.0	4.8
4	6.8	6.5
6	10.0	10.0

Flow data is based upon the pressure drop of Sch. 40 pipe.

Drain Elbow-Standard
Style F100D



Drain Elbow-Short Pattern
Style F105D



Drain Elbow-Standard - Style F100D

Pipe		Dimensions (In.)		Approx. Wgt. Ea. (Lb.)
Nominal Size (In.)	Actual Size (In.)	C to E	H	
2	2.375	3.25	2.75	3.8
2½	2.875	3.75	2.75	5.2
3	3.500	4.25	2.75	5.3
4	4.500	5.00	2.75	8.8
6	6.625	6.50	2.75	18.7

Drain Elbow-Short Pattern - Style F105D

Pipe		Dimensions (In.)		Approx. Wgt. Ea. (Lb.)
Nominal Size (In.)	Actual Size (In.)	C to E	H	
2	2.375	2.75	2.00	1.0
2½	2.875	3.00	2.00	1.7
3	3.500	3.50	2.00	2.5
4	4.500	4.00	2.00	5.3
6	6.625	5.50	2.00	13.9

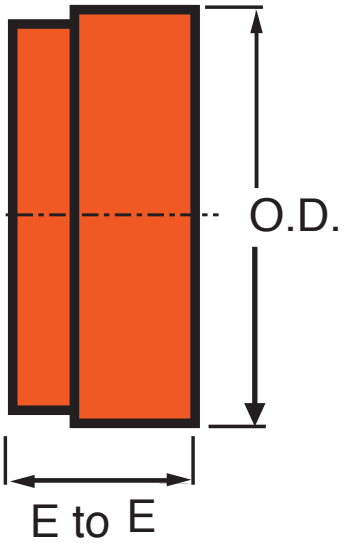
75 Cohoes Ave. Green Island, NY 12183

GROOVED END CAP WITH TAPPED 1" HOLE

- GemLock Style F155D End Cap with 1" Hole
- Rated to 300 psi
- Available Hot Dipped Galvanized

UL Listed Under File No. EX15591

Figure F155D CAP			
Nominal Size	O.D.	End to End	Approx. Wt. Ea.
In./DN	In.	In.	Lbs.
1¼	1.660	1¼	0.4
1½	1.900	1¼	0.5
2	2.375	1	0.5
2½	2.875	1	0.7
3	3.500	1	1.1
4	4.500	1⅛	2.8
5	5.563	1⅛	4.0
6	6.625	1 5/16	6.0
8	8.625	1½	12.5
10	10.750	1½	21.9



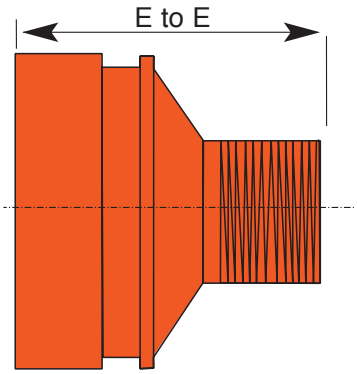
CONCENTRIC REDUCER

STYLE 140 TF, TM

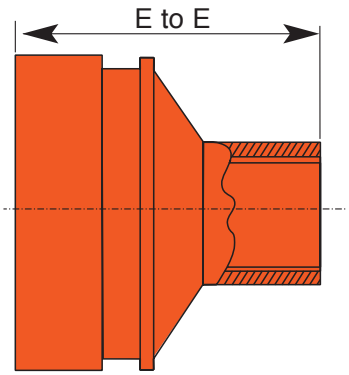
- Available with hot dipped galvanized coating
- Rated for 300 psi

UL Listed Under File No. EX15100 • Designation: XGQT16S

Style 140 TM



Style 140 TF



Nominal Size (in.)	E to E (In.)	Approx. Wgt. Each (lb.)
2 x1	2.5	1.39
2 x1¼	2.5	0.74
2 x1½	2.5	0.74
2 x1	2.5	1.14
2½ x1¼	2.5	1.14
2½ x1½	2.5	1.14
2½ x 2	2.5	1.14
3x1	2.5	1.59
3x1¼	2.5	1.59
3x1½	2.5	1.59
3x2	2.5	1.38
4x1	3	2.28
4x1¼	3	2.28
4x1½	3	2.28
4x2	3	2.28
6x1	4	6.92
6x1¼	4	6.92
6x1½	4	6.92
6x2	4	6.92

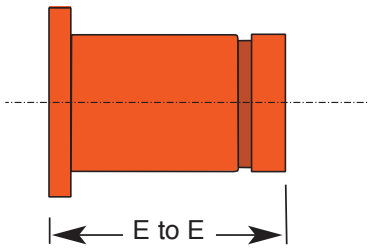
FLANGE ADAPTERS

STYLE F190 & STYLE F190 TM

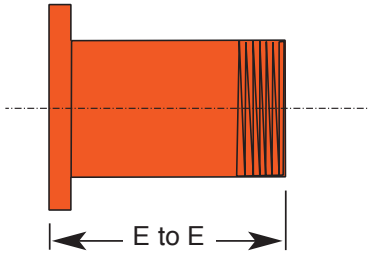
- Conforms to Class ANSI 125 lb. flange
- Available with an external threaded or grooved end
- Every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating
- Rated for 300 psi

UL Listed Under File No. EX15591

Style 190



Style 190TM



Nominal Size (In.)	Actual Size (In.)	E to E (In.)	Approx. Wgt. Ea. (lb.)
2	2.375	4.0	6.6
2½	2.875	4.0	8.8
3	3.500	4.0	11.0
4	4.500	6.0	19.8
5	5.563	6.0	22.0
6	6.625	6.0	28.6
8	8.625	6.0	43.0
10	10.750	8.0	60.5

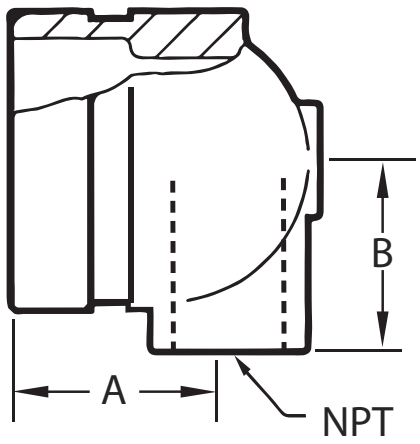
75 Cohoes Ave. Green Island, NY 12183

90° ADAPTER ELL

STYLE 105TL

- Transitions From Grooved to Threaded Connection
- Direct Connection to Sprinkler Heads
- Available in Rust Inhibitive Black Paint & Galvanized Finish
- UL/FM Rated for 500 psi

UL Listed Under File No. EX15591



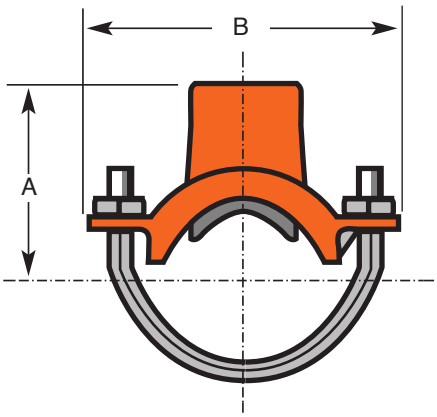
Nominal Size Inch	Max. Work Press. (psi)	Dimensions (In)	
		A	B
1¼ x ½	500	1.77	1.20
1¼ x ¾	500	1.77	1.20
1¼ x 1	500	1.91	1.24
1½ x ½	500	1.77	1.32
1½ x ¾	500	1.77	1.32
1½ x 1	500	1.91	1.32
2 x ½	500	1.75	1.57
2 x ¾	500	1.77	1.57
2 x 1	500	1.91	1.63
2½ x ½	500	1.75	1.75
2½ x ¾	500	1.75	1.75
2½ x 1	500	1.91	1.81

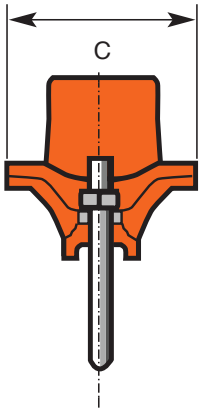
TEE LOCK

STYLE 13

- Molded gasket for each header size is made to insure a leak tight connection
- Rated for 300 psi. UL Listed and FM Approved
- Manufactured from Ductile Iron, per ASTM A536
- Grade E EPDM gasket rated for -30ºF to 150ºF*
- Available with hot dipped galvanized coating

UL Listed Under Designation: EX15592





Nominal Size (In.)	Max. Working Pressure (psi)	Hole Saw Inch	Dimensions Inches			Weight
			A	B	C	
1¼ x ½	300	13/16	1.693	3.543	2.205	0.78
1¼ x ¾	300	13/16	1.772	3.543	2.205	0.85
1¼ x 1	300	13/16	1.969	3.543	2.20	0.95
1½ x ½	300	13/16	1.693	3.661	2.323	0.78
1½ x ¾	300	13/16	2.126	3.661	2.323	0.89
1½ x 1	300	13/16	2.283	3.661	2.323	0.98
2 x ½	300	13/16	2.126	3.780	2.323	0.82
2 x ¾	300	13/16	2.205	3.780	2.323	0.90
2 x 1	300	13/16	2.598	3.780	2.323	1.02
2½ x ½	300	13/16	2.362	4.331	2.323	0.90
2½ x ¾	300	13/16	2.480	4.331	2.323	0.93
2½ x 1	300	13/16	2.756	4.331	2.323	0.95

Note: Tee Lock gaskets should not be lubricated.

GROOVED BUTTERFLY VALVE

FEATURES:

- Rated 300 psi
- UL Listed/ FM Approved
- Indoor/ Outdoor use
- Pre-wired double tamper switches
- Eliminates water hammer
- Slow open/ Slow close
- Flag type position indicator
- DI body encapsulated with a resistant durable polymer coating to ensure a long service life
- Disc is EPDM Coated with SS Stem
- Manufactured by Lansdale Valve and Manufacturing for Gemlock

UL Listed Under Designation: EX15837

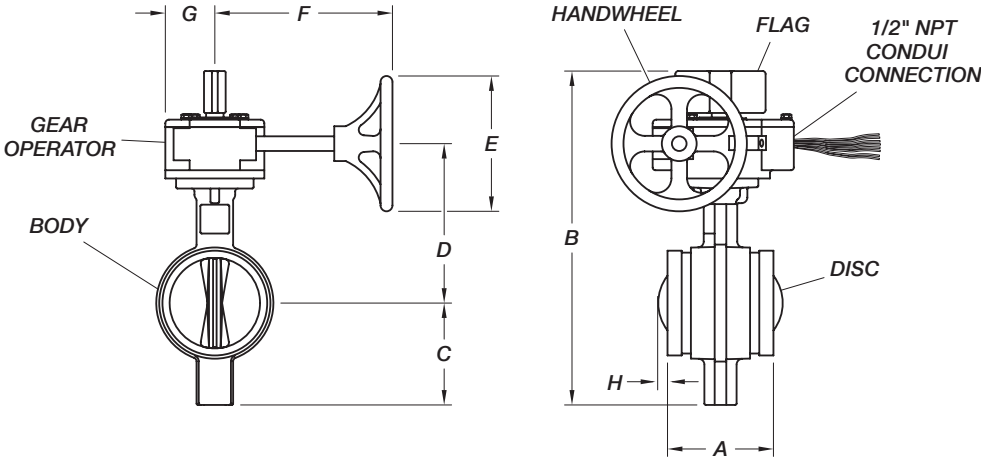


FIGURE 1
MODEL BFV-N GROOVED END BUTTERFLY VALVE
NOMINAL DIMENSIONS

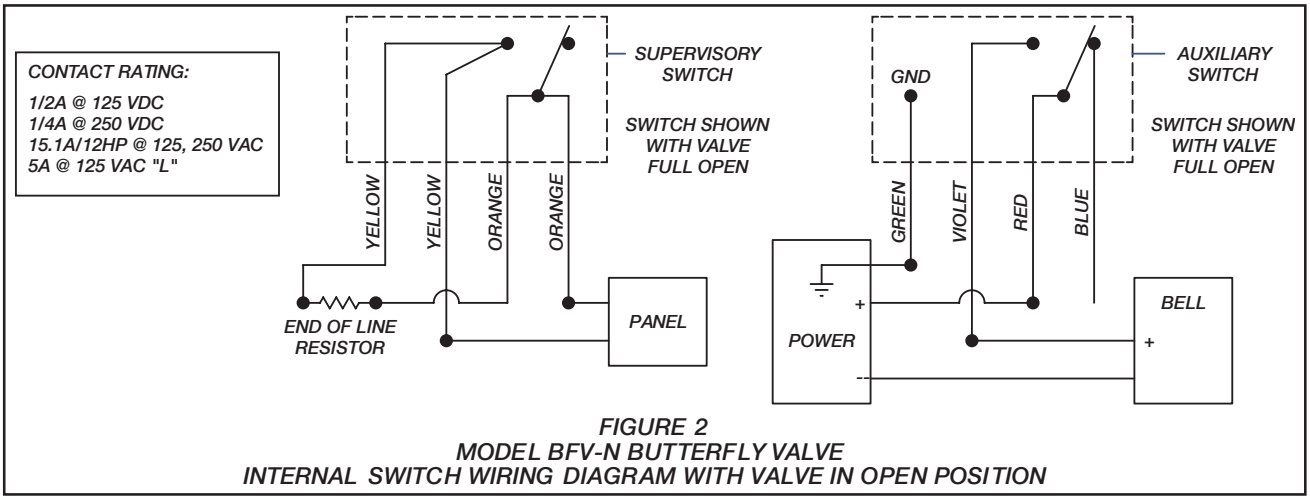


FIGURE 2
MODEL BFV-N BUTTERFLY VALVE
INTERNAL SWITCH WIRING DIAGRAM WITH VALVE IN OPEN POSITION

Size in Inches	A	B	C	D	E	F	G	H
2½"	3.85	11.95	3.25	5.67	5.90	5.82	2.13	0
3"	3.85	12.50	3.50	6.00	5.90	5.82	2.13	0
4"	4.50	14.18	4.35	6.30	5.90	7.65	2.13	0
5"	5.85	15.20	4.85	7.32	5.90	7.65	2.13	0
6"	5.85	17.50	6.0	8.60	5.90	7.65	2.13	.15
8"	5.25	19.40	6.90	9.80	9.80	7.90	2.13	1.27
10"*	6.30	24.0	9.20	11.60	18.00	9.5	3.0	1.75

*Rated 175 psi

POWERBALL 300

SPRINKLER CONTROL VALVE

Sprinkler Control Valve for indoor and outdoor use. Brass body, chrome plated brass disc, and 300 PSI. UL Listed/FM Approved. Available threaded in sizes 1" to 2-1/2" and grooved from 1-1/4" to 2-1/2". Complete with Position Indicator and integral Tamper Switch.

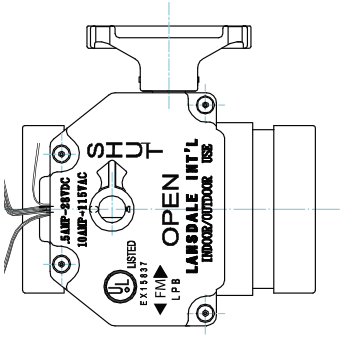
Features:

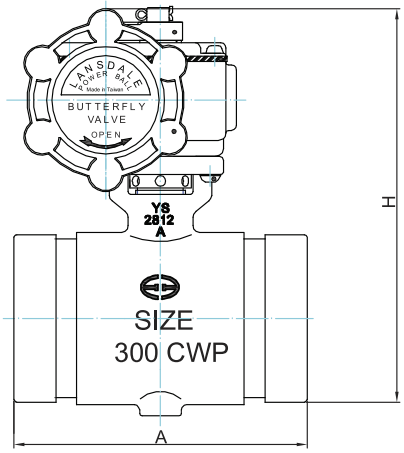
Internal tamper switch for Indoor/Outdoor Use

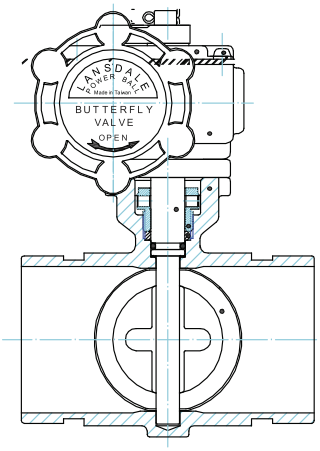
- Flag type indicator
- Prewired double tamper switch
- Elimination of Water Hammer
- Slow opening and closing
- Patent Pending
- Manufactured by Lansdale Valve and Manufacturing

UL Listed Under Designation: EX15837

Note: See submittal sheet for dimensional data







POWERBALL THREADED

SIZE	WEIGHT
1"	3.42
1 -¼"	3.75
1 -½"	4.03
2"	5.18
2 -½"	7.46

POWERBALL GROOVED

SIZE	WEIGHT
1 -¼"	3.90
1 -½"	4.12
2"	4.78
2 -½"	6.17

DIMENSIONS

Size	1"	1¼"	1½"	2"	2½"
A	2.125	3.86	4.02	4.09	4.49
H	5.125	5.20	5.47	6.07	6.58

MATERIAL LIST

NO	NAME	MATERIAL LIST
1	BODY	BRONZE ASTM 584 C83600
2	DISC	SS304
3	HANDWHEEL	ASTM A216 WCB
4	SEAT	ASTM D2000 VITON
5	INDICATOR	POWDER METAL FD0205 95HT
6	HOUSING	BRASS ASTM B16 C36000
7	COVER	BRASS ASTM B16 C36000

RESIDENTIAL RISER ASSEMBLY

The Lansdale Residential Riser is a cost effective factory assembled riser assembly. The assembly comes in three configurations to meet all of your needs and features cast in place mounting brackets for ease of installation. The assembly has a working pressure of 250 psi and all components are UL Listed.

UL Listed Under File No. EX15816

Features:

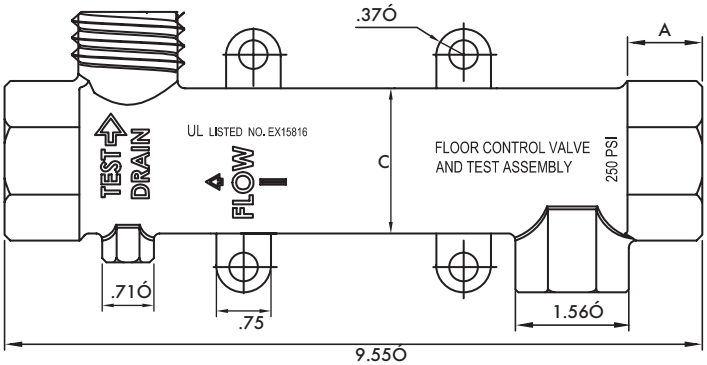
Lead Free stainless steel body construction

- Factory assembled
- Factory pressure tested at 250 psi (13.8 bar)
- Choice of 3 kinds of trim:
- Basic Trim (as shown), Test & Drain, Basic Trim with Pressure Relief Kit
- Supply/System lines support the assembly or lugs can be bolted to a wall
- NPT (female x female) connections - Grooved x Threaded Adapter Available
- Slim design allows for easy installation within 2" x 4" x 16" centers wood frame construction
- Optimum sensitivity is assured through a dedicated UL Listed and ULC Listed Water Flow Detector. Water Flow Detector is factory installed with a plastic, non-conductive, waterproof cover.
- Triggering flow rate is 4 GPM.
- Manufactured by Lansdale Valve and Manufacturing

Basic Trim

Test and Drain

Basic Trim w/ Pressure Relief Kit



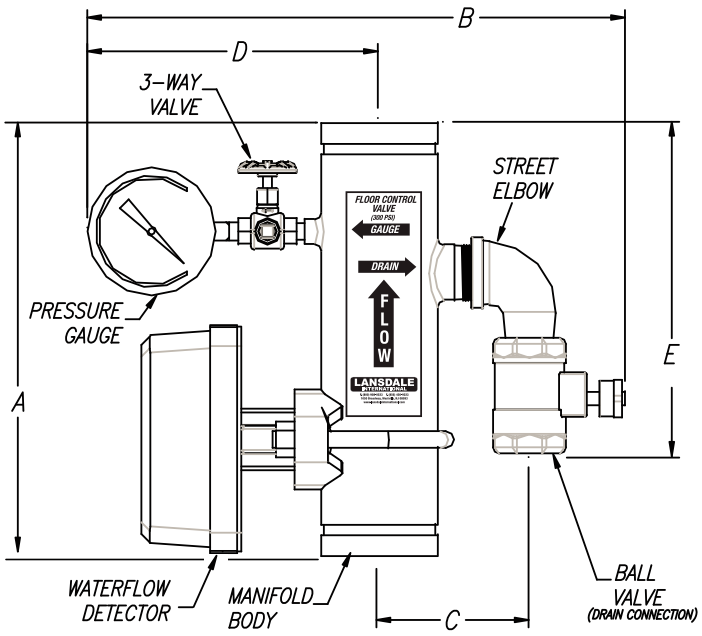
Size	A
1"	.75"
1¼"	1.02"
1½"	1.02"
2"	1.02"

COMMERCIAL RISER ASSEMBLY

Lansdale Commercial Risers are factory assembled with brass and galvanized trim. Each riser is factory tested at 300 psi and available with "Test and Drain" or Ball Valve Trim and pressure relief kit.

- Rated for 300 psi working pressure
- Built in Water Flow Switch assures optimum sensitivity
- ¼" 3-way valve allows for easy testing and replacing of pressure gauge
- Manufactured by Lansdale Valve Manufacturing

UL Listed Under Designation: EX15816



Nominal Size	2"	2.5"	3"	4"	6"
A	13"	13"	13"	13"	13"
B (Ball Valve)	13"	13¾"	15¾"	19½"	20"
B (Test & Drain)	13½"	14¼"	16¼"	19"	20¾"
C	5¼"	5"	5½"	7"	8¼"
D	9¼"	9½"	9½"	10⅜"	11"
E (Ball Valve)	5⅝"	7⅛"	9⅞"	12⅛"	13½"
E (Test & Drain)	10"	10¼"	12¼"	14¾"	14½"

MADE IN THE USA

Basic Trim

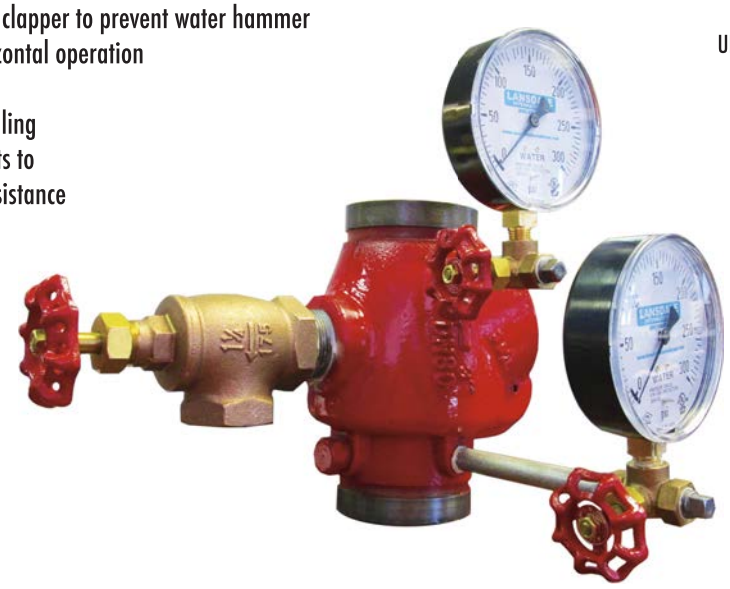
Test and Drain

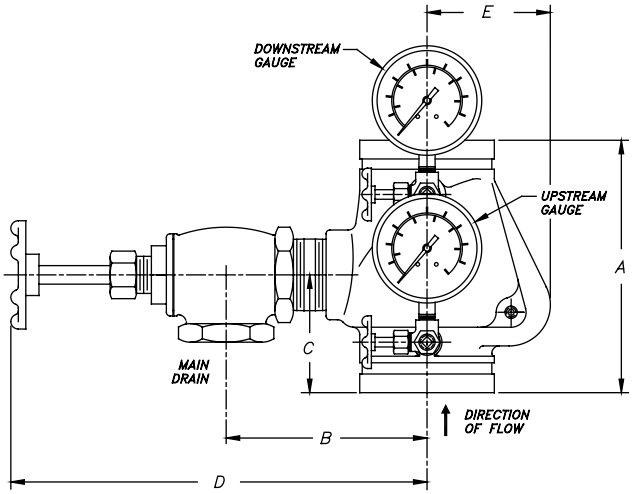
Basic Trim w/ Pressure Relief Kit

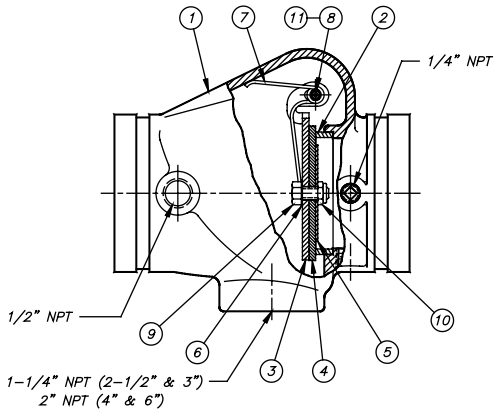
SHOTGUN RISER CHECK VALVE

- Designed to be compact, lightweight & cost effective
- Grooved end connections for easy installation
- Non-slamming spring loaded clapper to prevent water hammer
- Approved for vertical or horizontal operation
- Designed for low friction loss
- EPDM non-stick leak tight sealing
- All Stainless steel wetted parts to provide superior corrosion resistance
- Rated for 300 psi

UL Listed Under Lansdale: HMER. EX26984







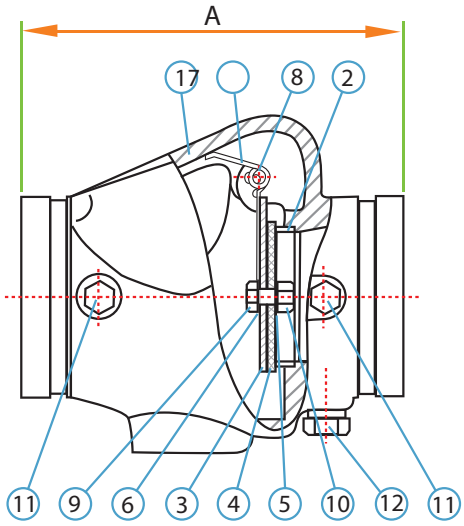
Size	A	B	C	D	E
2"	6.65"	5"	3¼"	9½"	2½"
2½"	7"	5"	3¼"	9½"	3"
3"	8"	5"	3¼"	9½"	3½"
4"	8¾"	7"	4¼"	13½"	4¼"
6"	10¾"	8"	6"	14½"	4¾"
8"	13"	9"	7½"	16"	6¼"

	MATERIAL LIST
1	Valve Body Gray Iron, ASTM–A48 Class 30A
2	Seat Bronze C83600 or C93200, ASTM–B505
3	Clapper Stainless Steel 304, ASTM–A240
4	Facing Seal ** EPDM Rubber
5	Clamping Ring Stainless Steel 304, ASTM–A240
6	Gasket ** EPDM Rubber
7	Spring Stainless Steel 302, ASTM–A313
8	Hinge Pin Stainless Steel 303, ASTM–A582
9	Bolt Stainless Steel 304, ASTM–F593
10	Locknut ** Stainless Steel 303, ASTM–F594
11	Plug, ½"NPT Steel

GROOVED CHECK VALVE

- Installed in both horizontal or vertical line with upward flow
- Easier and faster to maintain and install
- Low pressure drop
- EPDM non-stick leak tight sealing
- All Stainless steel wetted parts to provide superior corrosion resistance
- FM Approved and UL/ULC Listed
- Pressure rated to 350 psi

UL Listed Under Lansdale: HMER. EX26984



GROOVED CHECK VALVE

Inches	A	Weight
2	6.65	5.6
2.5	7.2	8.9
3	7.8	13.3
4	8.58	19.9
5	10.51	33.6
6	10.63	41.9
8	12.8	77.2
10	17	92.59
12	19.49	149.91

MATERIAL SPECIFICATIONS

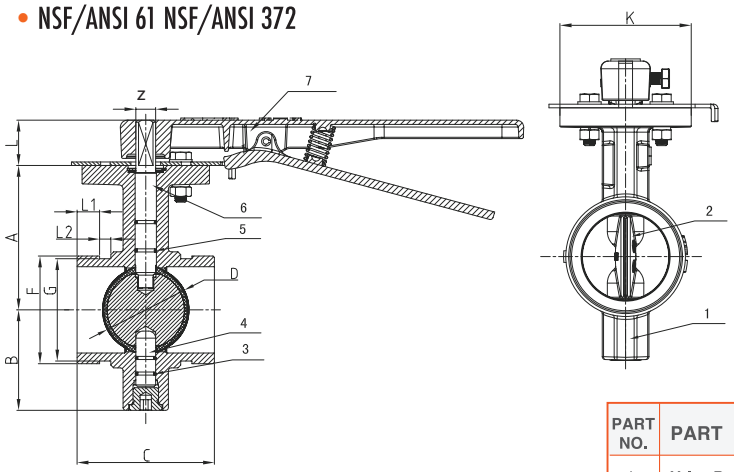
PART	SPECIFICATIONS
1. BODY	DUCTILE IRON ASTM A 536
2. SEAT	BRONZE
3. CLAPPER	STAINLESS STEEL 304
4. FACING SEAL	EPDM RUBBER
5. CLAMPING RING	STAINLESS STEEL 304
6. GASKET	EPDM RUBBER
7. SPRING	STAINLESS STEEL 304
8. HINGE PIN	STAINLESS STEEL 304
9. BOLT	STAINLESS STEEL 304
10. LOCKNUT	STAINLESS STEEL 304
11. PLUG ¼“ NPT	CARBON STEEL
12˚ PLUG ½“ NPT	CARBON STEEL

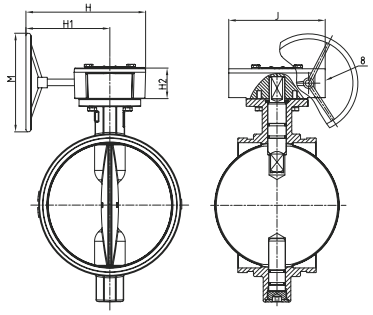
75 Cohoes Ave. Green Island, NY 12183

GROOVED BUTTERFLY VALVE

STYLE 700

- Design Standard: MSS SP-67
- Connection Ends: Groove to AWWA C606
- Top Flange Standard: ISO 5211
- Lever operated - 10 position lockable handle or gear operated Suitable for HVAC and Industrial Applications
- Working Pressure: 300 psi
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request
- NSF/ANSI 61 NSF/ANSI 372





LEVER OPERATED

GEAR OPERATED

MATERIAL SPECIFICATION

PART NO.	PART	STANDARD SPECIFICATION	OPTIONS
1	Valve Body	ASTM A536, 65-45-12	
2	Disc	ASTM A536, 65-45-12+EPDM	ASTM A536, 65-45-12+NBR
3	O-Ring	NBR	EPDM
4	Stem	Stainless Steel	AISI 304, AISI 316, AISI 420, AISI 431
5	O-Ring	NBR	EPDM
6	Stem	Stainless Steel	AISI 304, AISI 316, AISI 420, AISI 431
7	Lever	ASTM A536, 65-45-12	Aluminum
8	Gear Box	ASTM A536, 65-45-12	

DIMENSIONS (INCHES)

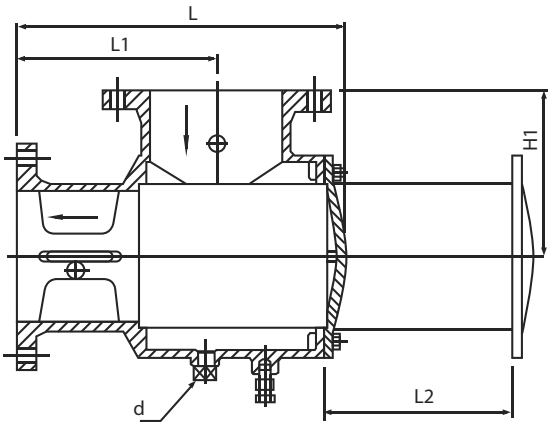
SIZE	A	B	C	D	F	G	L1	L2	L	K	H	H1	H2	J	M	Z	E
2"	3.5	2.56	3.20	2.0	2.37	2.25	.625	.31	1.25	3.54	8.10	6.22	2.0	4.50	5.90	.55	2.75
2.5"	4.0	2.80	3.82	2.40	2.87	2.72	.625	.31	1.25	3.54	8.10	6.22	2.0	4.50	5.90	.55	2.75
3"	4.30	3.20	3.82	3.00	3.50	3.34	.625	.31	1.25	3.54	8.10	6.22	2.0	4.50	5.90	.55	2.75
4"	5.0	3.75	4.57	3.88	4.50	4.33	.625	.375	1.25	3.54	8.10	6.22	2.0	4.50	5.90	.63	2.75
5"	5.55	4.37	5.83	4.83	5.56	5.40	.625	.375	1.25	3.54	8.10	6.22	2.0	4.50	5.90	.63	2.75
6"	6.0	5.24	5.83	5.83	6.63	6.46	.625	.375	1.25	3.54	8.10	6.22	2.0	4.50	5.90	.79	4.0
8"	7.25	6.46	5.25	7.84	8.63	8.44	.75	.44	1.77	4.92	12.20	9.40	2.70	6.58	11.80	1.02	4.0
10"	8.50	7.72	6.25	9.92	10.75	10.56	.75	.50	1.77	4.92	12.20	9.40	2.70	6.58	11.80	1.02	4.0
12"	10.0	8.90	6.50	11.83	12.75	12.53	.75	.50	1.77	4.92	12.20	9.0	2.87	7.48	11.80	1.10	4.0
14"	11.4	9.50	7.00	12.75	14.85	14.62	.94	.50	1.77	5.90	12.20	9.0	2.87	7.48	11.80	1.25	4.92

SUCTION DIFFUSER

STYLE - 720

- Pump Protection Fitting: Reducing elbow, protective strainer, and flow straightener
- Removable 20 mesh start up screen
- Oversized diffuser screen
- Creates uniform flow to pump
- Working Pressure: 232 psi
- Working Temp: -14º F to 250º F
- Internally and externally liquid epoxy painted or fusion bonded epoxy powder coated (FBE)
- Avaliable from 2" thru 24" in straight and reducing sizes

*Note: For sizes and dimensional data please see the submittal sheet

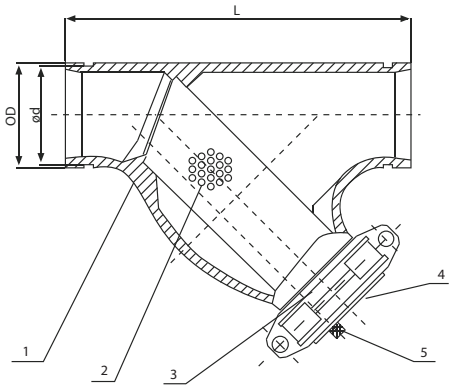


Part Name	Material	ASTM Spec.
Body	Cast Iron	A126 Class B
Cover	Cast Iron	A126 Class B
Screen	Stainless Steel	AISI 304
Stud & Nuts	Carbon Steel	ASTM A307B

Y Strainer

Style - 760

- Connection Ends: Groove to AWWA C606
- Working Pressure: 300 psi
- Working Temperature: 0ºC - 100ºC
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request



DIMENSIONS (INCH)

Size	L	OD	D
2"	9.75	2.40	2.25
2.5"	10.75	2.90	2.72
3"	11.75	3.50	3.35
4"	14.25	4.50	4.33
5"	16.5	5.56	5.40
6"	18.5	6.63	6.50
8"	24.0	8.63	8.45
10"	27.0	10.75	10.56
12"	30.0	12.75	12.53

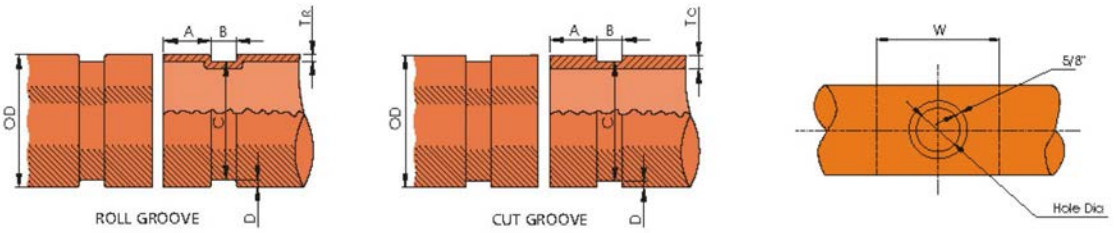
MATERIAL SPECIFICATION

PART NO.	PART	STANDARD SPECIFCATION	OPTIONS
1	Valve Body	ASTM A536, 65-45-12	
2	Screen	AISI 304	AISI 316
3	Rigid Coupling	ASTM A536, 65-45-12	
4	Cap	ASTM A536, 65-45-12	
5	Plug	Malleable Iron Galvanized	Bronze ASTM B584

PIPE PREPARATION FOR MECHANICAL BRANCHLETS

Cut or drill the hole in pipe. The hole diameter for each size is listed in the Table. Holes must be drilled on the centerline of the pipe. Remove the coupon and cutting chips. Check the pipe surface within 5/8" of the hole. This surface must be clean, smooth and free from indentation or projection, which would affect proper sealing. The pipe around the entire circumference within the "W" dimension must be free from any dirt and scale, which might affect the sealing performance on the pipe surface.

PIPE GROOVING SPECIFICATIONS



1 Nominal Size (In.)	2 Pipe Outside Diameter OD (In.)			3 Gasket Seat A (In.)	4 Groove Width B (In.)		5 Groove Diameter C (In.)		6 Groove Depth Ref. D (In.)	7 Min. Allowable Wall Thickness (In.)		8 Max Allowable Flare Diameter (In.)
	Actual Size	Tolerance			Roll Groove	Cut Groove	Actual Size	Toler.		Roll Groove	Cut Groove	
1	1.315	+0.013	−0.013	0.625	0.281	0.313	1.190	−0.015	0.063	0.065	0.133	1.43
1¼	1.660	+0.016	−0.016	0.625	0.281	0.313	1.535	−0.015	0.063	0.065	0.140	1.77
1½	1.900	+0.019	−0.019	0.625	0.281	0.313	1.775	−0.015	0.063	0.065	0.145	2.01
2	2.375	+0.024	−0.024	0.625	0.344	0.313	2.250	−0.015	0.063	0.065	0.154	2.48
2½	2.875	+0.029	−0.029	0.625	0.344	0.313	2.720	−0.018	0.078	0.083	0.188	2.98
3	3.500	+0.035	−0.031	0.625	0.344	0.313	3.344	−0.018	0.078	0.083	0.188	3.60
4	4.500	+0.045	−0.031	0.625	0.344	0.375	4.334	−0.020	0.083	0.083	0.203	4.60
4½	5.000	+0.050	−0.031	0.625	0.344	0.375	4.834	−0.020	0.083	0.095	0.203	5.10
5	5.563	+0.056	−0.031	0.625	0.344	0.375	5.395	−0.022	0.084	0.109	0.203	5.66
6	6.625	+0.063	−0.031	0.625	0.344	0.375	6.455	−0.022	0.085	0.109	0.219	6.73
8	8.625	+0.063	−0.031	0.750	0.469	0.438	8.441	−0.025	0.092	0.109	0.238	8.80
10	10.750	+0.063	−0.031	0.750	0.469	0.500	10.562	−0.027	0.094	0.134	0.250	10.92
12	12.750	+0.063	−0.031	0.750	0.469	0.500	12.531	−0.030	0.109	0.156	0.279	12.92

Run Size (In.)	Branch Size (In.)	Hole Diameter (In.) +1/8 −0	W Dimensions (In.)
All	½, ¾, 1	1½	3½
2	1¼, 1½	1¾	4
All	1¼, 1½	2	4
All	2	2½	4½
All*	2 ½*	2¾*	4¾
All	3	3½	5½
All	4	4½	5½
*4" x 2 ½- Hole Size 3", 6" x 2½"- Hole Size 3¼"			

Column 1
Nominal IPS pipe outside diameter.

Column 2
Maximum deviation from square cut ends for 1.25" thru 3" is 0.03"; for 4" thru 6" is 0.045" and for 8" and above is 0.06".

Column 3
To provide a lock tight seal, the gasket seating area on pipe shall be free of roll marks, indentations, paint scale, dirt, chips, grease, rust and etc.

Column 4
Groove width. Groove bottom to be free from loose dirt, chips, rust and scales. Bottom of grooves to be radius and the vertical wall of grooves must provide at least 0.03" vertical side for proper assembly of couplings.

Column 5
Groove outside diameter. The groove must be concentric to the pipe circumference. Groove must be within the diameter tolerance indicated.

Column 6
Groove depth. For reference only. Refer to Column 5.

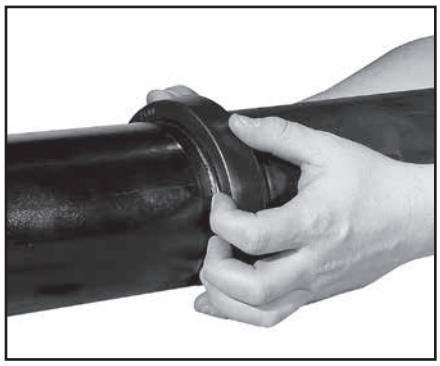
Column 7
Minimum allowable wall thickness to which the pipe may be roll grooved or cut grooved.

Column 8
Maximum allowable pipe and flare diameter. Measured at the most extreme pipe ends.

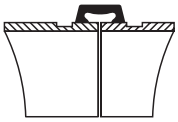
GEMLOCK INSTALLATION AND ASSEMBLY

1 CHECK & LUBRICATE GASKET—
Apply a thin coating of lubricant to the exterior surface and sealing lips of the EPDM gasket. Be careful that foreign particles do not adhere to lubricated surfaces.

2 GASKET INSTALLATION—
Slip the gasket over the pipe end making sure the gasket lip does not overhang the pipe end.



3 ALIGNMENT —
After aligning the two pipe ends, pull the gasket into position centering it between the grooves it should not extend into the groove on either pipe.

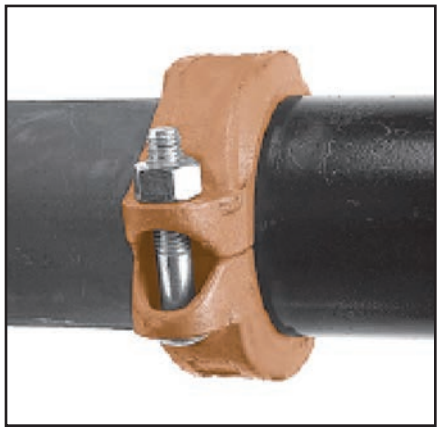


4 HOUSINGS—
Place the coupling housing halves over the gasket making sure the housing keys engage the grooves. Insert bolts and turn nuts finger tight.

5 Tighten the nuts alternately and equally until there is a small gap of approximately 1/16 of an inch.

CAUTION: Uneven tightening may cause the gasket to pinch.

Note: Flexible couplings should be tightened bolt pad to bolt pad



6 ASSEMBLY IS COMPLETE—
Visually inspect the pipe joint to assure the coupling keys are fully engaged in the pipe grooves and the bolt pads have equal gaps.

Nuts should be securely tightend but no specific torque specified.

75 Cohoes Ave. Green Island, NY 12183

GASKET DATA
Standard IPS Gaskets

GRADE	E	T
TEMPERATURE RANGE	-30˚F to +230˚F -34˚C to +110˚C	-20˚F to +180˚F -29˚C to +82˚C
COMPOUND	EPDM Conforming to ASTM D2000 (2CA615A25B24F17Z)	NITRILE (BUNA - N)
GENERAL SERVICE RECOMMENDATIONS	Recommended for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for cold -30˚F (-34˚C) and hot +230˚F (+110˚C) potable water service. Not recommended for petroleum services.	Recommended for petroleum products, air with oil vapors, vegetables and mineral oils within the specified temperature range. Not recommended for hot water services over +150˚F (+66˚C) or hot dry air over +140˚F (+60˚C).
CHEMICAL SERVICES	Acetaidehyde Acetic Acid up to 10% 100˚F (38˚C) Acetic Anhydride Acetone Acetophenone Acetylene Alkalis Allyl Alcohol to 96% Alums Aluminum Chloride Aluminum Flouride Aluminum Hydroxide Aluminum Nitrate Aluminum Phosphate Aluminum Salts Aluminum Sulfate Ammonia Gas, Cold Ammonia Gas, Hot Ammonia, Liquid Ammonium Carbonate Ammonium Flouride Ammonium Hydroxide Ammonium Metaphosphate Ammonium Nitrate Ammonium Persulfate to 10% Ammonium Sulfate Ammonium Sulfide Ammonium Thictnate Ammonium Thioynate Amyl Acetate Amyl Alcohol Aniline Aniline Dyes Aniline Hydrochloride Aniline Oil Antimony Chloride Antimony Trichloride Argon Gas Barium Carbonate Barium Chloride Barium Hydroxide Benzaldehyde Benzoic Acid Benzyl Alcohol Benzyl Benzoate Bleach, 12% Active CP Borax Borddeaux Mixture Boric Acid Butanol (see Butyl Alcohol) Butyl Acetate Butyl Acetyl Ricinoleate Butyl Alcohol Butyl “Cellosolve Adipate” Butyl Phenol Butylene Glycol Calcium Chloride Calcium Hydroxide (Lime) Calcium Hypochlorite Calcium Hypochloride Calcium Nitrate Calcium Sulfide Carbotol Carbon Dioxide, Dry Carbon Dioxide, Wet Carbon Monoxide Caustic Potash Cellosolve Acetate Cellosolve (Alcohol Ether) Cellulose Acetate Cellulube 220 (Tri-Aryl-Phosphate) Cellulube Hydraulic Fluids Chloric Acid to 20% Chlorine, Water Chloroacetic Acid Chloroacetone Citric Acid Copper Flouride Copper Nitrate Copper Sulfate Cyclohexanone Deionized Water Dibutyl Phialate Diethyl Sewbacate Diethylene Glycol Dioctyl Phthalate Diozane Dowtherm SR-1 Ethanolamine Ethyl Acetoacetate Ethyl Alcohol Ethyl Cellulose Ethyl “Cellusolve” Ethyl Chloride Ethyl Oxalate Ethylene Chlorohydrin Ethylene Glycol Ferric Chloride to 35% Ferric Chloride, Saturated Ferric Hydroxide Fluboric Acid Fly Ash Foam Formaldehyde Formic Acid Freon 134a, 176˚F (80˚C) Fumaric Acid Furfuryl Alcohol Glue Glycerin Glycerol Glycol Glycolic Acid Halon Hexaldehyde Hydrobromic Acid to 40% Hydrochloric Acid to 36%, 75˚F (28.9˚C) Hydrocyamic Acid Hydrogen Gas, Cold Hydrogen Gas, Hot Hydrogen Sulfide Hydroxylamine Sulfate Hydrochlorous Acid, Dilute Isobutyl Alcohol Isopropyl Acetate Isopropyl Alcohol Ketones Lead Chloride Lime and H_2O Magnesium Chloride Magnesium Hydroxide Magnesium Sulfate Mercuric Chloride Mercuric Cyanide Mercury Methyl Acetate Methyl Alcohol, Methanol Methyl Cellosolve (Ether) Methyl Ethyl Ketone Methyl Formate Methyl Isobutyl Carbinol Methyl Isobutyl Ketone Nickel Chloride Nickel Nitrate Nickel Plating Solution 125°F (52°C)-Max. Nitric Acid, to 10%, 75°F-(24°C)-Max. Nitric Acid, to 10%, 75°F-(24°C)-Max. Nitrous Oxide Oxalic Acid Ozone Phosphate Ester Phosphoric Acid, to 75% & 70°F (21°C)-Max. Potassium Bromide Potassium Carbonate Potassium Chloride Plating Solutions (gold, brass cadmium, copper, lead, silver, tin, zinc) Potassium Cyanide Potassium Ferricyanide Potassium Ferrocyanide Potassium Iodide Potassium Nitrate Potassium Permanganate, saturated, to 25% Potassium Sulphate Propanol Propyl Alcohol Propylene Glycol Pyroguard 55 Pyrrole Salicylic Acid Silver Cyanide Silver Nitrate Skydrol 500 Phosphate Ester Soda Ash,-Sodium Carbonate Sodium Bicarbonate Sodium Bisulphate Sodium Bisulphite (black liquor) Sodium Bromide Sodium Chlorate Sodium Chloride Sodium Cyanide Sodium Hydroxide, to 50% Sodium Hypochlorite, to 20% Sodium Metaphosphate Sodium Nitrate Sodium Peroxide Sodium Phosphate Sodium Silicate Sodium Sulphide Sodium Sulphite Solution, to 20% Sodium Thiosulphate, “Hypo” Stannous Chloride, to 15% Starch Sulphur Sulphuric Acid, to 25%, 150°F (66°C)-Max. Tributyl Phosphate Triethanolamine Trisodium Phosphate Urea Vinyl Acetate White Liquor Zinc Sulphate	ASTM #3 Oil Acetamide Acetonitrate Acetylene Adipic Acid Alums Aluminum Chloride Aluminum Flouride Aluminum Nitrate Aluminum Oxychloride Aluminum Sulfate Ammonium Biflouride Ammonium Chloride Ammonium Nitrate Ammonium Phosphate Ammonium Sulfamate Amyl Chloronaphthalene Arsenic Acid to 75% Barium Chloride Barium Hydroxide Barium Sulfide Black Sulfate Liquor Blast Furnace Gas Boric Acid Butane Gas Butanol (See Butyl Alcohol) Butyl Alcohol Butyl “Cellosolve Adipate” Butyl Stearate Butylene Calcium Acetate Calcium Bisulphate Calcium Bisulphite Calcium Fluophosphate Calcium Hydroxide (Lime) Calcium Sulfate Caliche Liquors Carbitol Carbon Dioxide, Dry Carbon Dioxide, Wet China Wood Oil, Tung Oil Chlorinated Paraline Chrome Alum Coke Oven Gas Copper Chloride Copper Cyanide Copper Nitrate Copper Sulfate Cupric Fluoride Cupric Sulfate Dextrim Dichloro-Difluoro-Methane Dichloro Hexamine Diesel Oil Diethyl Ether Diethylene Glycol Dimethylamine Dipentene (Terpene Hydrocarbon) Dipropylene Glycol Dowtherm SR-1 Ethyl Alcohol Ethyl Ether Ethyl Silicate Ethylene Diamine Ethylene Glycol F Ferric Chloride to 35% Ferric Sulfate Fog Oil Formaldehyde Formanide Freon 11, 130˚F (54˚C) Freon 12, 130˚F (54˚C) Freon 113, 130˚F (54˚C) Freon 114, 130˚F (54˚C) Freon 134a, 176˚F (80˚C) Fructose Fuel Oil Gasoline, Refined Glue Glycerin Glycerol Glycol Grease Green Sulfate Liquor Heptane Hexane Haxanol Tertiary Hexyl Alcohol Hexylene Glycol Hydrofluosilicic Acid Hydrogen Gas, Cold Hydroquicone Iso Octane, 100˚F (38˚C) Isopropyl Ether JP-3 JP-4 JP-5 Kerosene Lauric Acid Lavender Oil Lead Acetate Lead Sulfate Lime and H_2O Lithium Bromide Lithium Chloride Lubricating Oil, Refined Lubricating Oil, Sour Lubricating Oil to 150˚F (66˚C) Magnesium Chloride Magnesium Hydroxide Magnesium Sulphate Maleic Acid Malic Acid Mercuric Chloride Mercuric Cyanide Mercury Methyl Alcohol, Methanol Methyl Isobutyl Carbinol Mineral Oils Nickel Chloride Octyl Alcohol Olive Oil Phosphoric Acid, to 75% & 70°F (21°C)-Max. Photographic Solutions Potassium Bromide Potassium Carbonate Potassium Chloride Potassium Chromate Potassium Cyanide Potassium Ferricyanide Potassium Ferrocyanide Potassium Hydroxide Potassium Iodide Potassium Nitrate Potassium Sulphate Propyl Alcohol Propylene Glycol Pyroguard “C” &-“D” Salicylic Acid Soda Ash,-Sodium Carbonate Sodium Bicarbonate Sodium Bisulphate Sodium Bisulphite (black liquor) Sodium Bromide Sodium Chlorate Sodium Chloride Sodium Cyanide Sodium Metaphosphate Sodium Nitrate Sodium Phosphate Sodium Silicate Sodium Sulphide Sodium Sulphite Solution, to 20% Sodium Thiosulphate, “Hypo” Soybean Oil Stannous Chloride, to 15% Starch Stearic Acid Sucrose Solutions Triethanolamine Trisodium Phosphate Turpentine 158°F-(70°C)-Max. Urea Vegetable Oils Vinegar Zinc Sulphate

CROSS REFERENCE CHART

Product	GemLock®	Victaulic ®	Gruvlok ®	Anvil Star ®
Rigid Coupling	5	005	7400	C-4
Light Flexible Coupling	12	-	7000	C-3
Plain End Coupling	-	99	7005	-
Reducing Coupling	25	750	7010	RC-1/RC-2
Groove Flange	14	744	7012	SF-1
Mechanical Tee with Grooved Outlet	15	920	7046	MT-2
Mechanical Tee with Threaded Outlet	16	920	7045	MT-1
Standard 90˚ Elbow	100	10	7050	E-1
Standard 45˚ Elbow	101	11	7051	E-2
Standard 22½˚ Elbow	102	12	7052	E-3
Standard 11¼˚ Elbow	103	13	7053	E-4
Standard Tee	110	20	7060	T-1
Reducing Tee (Short Pattern)	115	25	7061	T-2
Standard Bullhead Tee	F111	21	7062	-
Reducing Tee with Threaded Outlet	115TM (TF)	29T	7064	T-3
Concentric Reducer with Grooved Outlet	140	50	7072	R-1
Concentric Reducer with Threaded Outlet	140TM (TF)	52	7076	R-3
Drain Elbow	F105D	10DR	7059	E-9
Short Pattern 90˚ Elbow	F105	001	7450	SE-1
Short Pattern 45˚ Elbow	F106	003	7451	-
Short Pattern Straight Tee	F107	002	7460	ST-1
Short Pattern Standpipe Tee	F127	27	7065	-
Short Pattern Cross	F135	-	7468	X-1
Short Pattern Cap	F155	006	7074	SK-1
Standard Cap	150	-	7074	K-1
Flange Adapter Nipple	190	41	7083P	F-2

Victaulic ® - Registered Trademark of Victaulic Company of America.
Gruvlok® - Registered Trademark of Anvil International Inc., USA.
AnvilStar® - Registered Trademark of Anvil International Inc., USA.

75 Cohoes Ave. Green Island, NY 12183

Terms: Net 30 Days

Accounts over 30 days will be charged 1-1/2% interest per month (18% per annum).

Completion of all orders accepted and fulfillment of all agreements or contracts entered into are subject to any delay which might be occasioned by strikes, fires, accidents or other causes whether or not beyond our control and Gemlock®, all Subsidiaries and/or Affiliates shall not be liable for any consequential damages arising from any such delay.

We guarantee products which are manufactured by Gemlock, or its Subsidiaries and/or Affiliates, and will replace those having manufacturing defects, when used in the service of which we recommend them, for one year from date of sale.

No charge for labor or expense required to repair defective goods will be accepted. The measure of the damage is the replacement of the defective goods or the cost of said goods only.

All allegedly defective goods must be returned as a condition of replacement or credit.

No goods will be taken back and credited unless our consent has been first obtained, and accompanied by a return authorization memo.

All products returned with our permission must be goods obtained through us and in clean salable condition.

All products returned will be covered by the manufacturer's warranty only.

Credit will only be allowed on the basis of prices agreed upon, less 20% to cover handling costs, less any costs of putting in salable condition, and less transportation charges on original and return shipments.

Orders for fabricated goods are not subject to cancellation for any reason whatsoever after work has been started on them, except upon agreement to make payment for all work which has been performed.

All promises of shipment will be as closely estimated as possible. We use our efforts in every case to ship within the time promised, but cannot guarantee to do so.

All claims for shortage must be made on receipt of goods.

Clerical errors are subject to corrections.

Upon opening and/or maintaining an account with Gemlock, or any of its Subsidiaries and/or Affiliates, you hereby agree that all disputes, including those arising as a result of your nonpayment may be submitted to New York State courts located in Nassau County (including Nassau County district courts).

Any claims against GemLock®, and or any of its Subsidiaries and/or Affiliates must be brought, if at all, in the Supreme or District court of the State of New York, County of Nassau.

In the event your account is placed with an attorney for collections, you will be responsible for attorney's fees in the amount not less than 25% of your outstanding balance.

These terms may be modified from time to time. In such event you will be bound by such revised terms unless you elect in writing, within five (5) business days of receipt of said revised terms to close your account and your account is paid in full within sixty (60) days thereafter.

NOTES:

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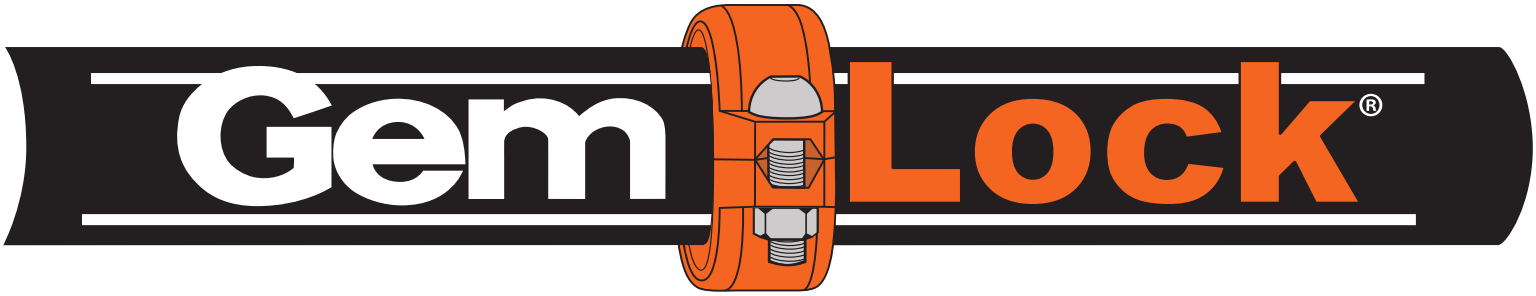
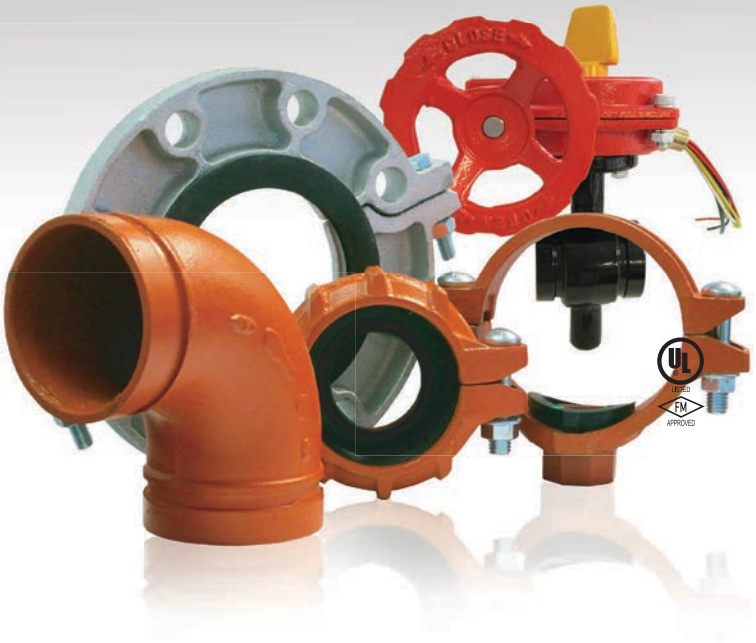


NOTES:

GemLock®



GemLock Grooved Products

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