FluoroSeal

SEVERE SERVICE (FE)

SEVERE SERVICE (FE) PLUG VALVES

FluoroSeal Inc. has developed the Severe Service (FE) Sleeved Plug Valve for tight emission control in more demanding applications. This valve is intended for applications in processes involving thermal cycling or a high number of mechanical operations. This compact but robust package is based on the standard FluoroSeal® Sleeved Plug Valve design combined with other proven seal technologies.

Extensive field experience has demonstrated this valves' ability to perform in a variety of severe applications. FluoroSeal® Severe Service (FE) Valves have one of the best fugitive emissions test results on the market, as demonstrated by independent lab testing.

Please ask your local Representative for a full fugitive emission test report.

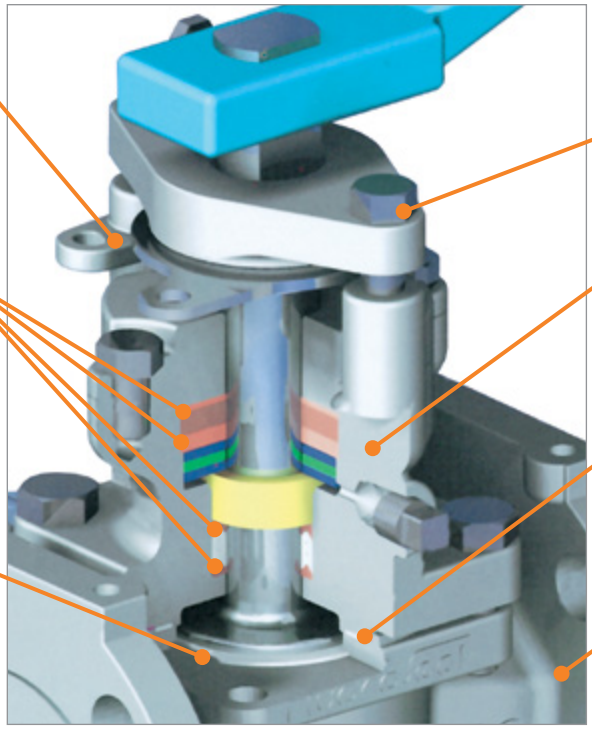
DIN valves are available upon request.

ANSI/ASME Severe Service (FE) FluoroSeal® Plug Valve

Standard lockout capability and solid position stop.

Primary shaft seal extrusion is controlled with reinforced PTFE end rings, secondary shaft seal utilizes tight gap metallic shaft for full metal containment.

PTFE sleeve provides in-line and primary external seals. Performance is enhanced with full encapsulation at port opening and precise body ribs to focus sealing forces on plug.



In-line seal adjustable independent of shaft seal.

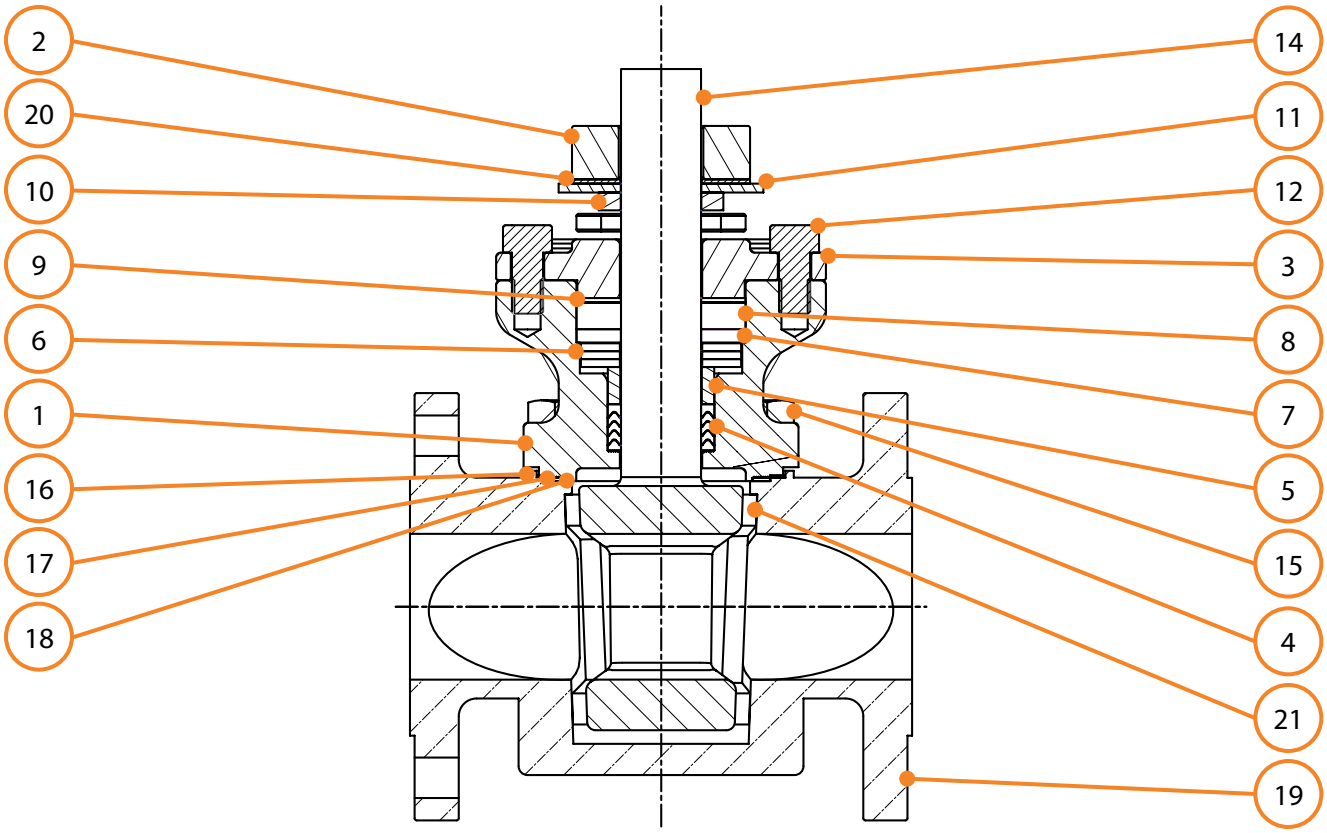
Innovative shaft seal provides self-adjusting, redundant and independent packing available in all PTFE or PTFE and flexible graphite combinations. Configured for optional monitoring or injection port.

Bonnet is double sealed with fully contained independent PTFE and flexible graphite seal backing up the primary seal at the sleeve.

Precision (investment) cast body provides tight dimensional control to assure concentricity between plug and body. This minimizes induced side loads to the primary seals and shaft seals during operation.

PLUG-SLEEVED-R003-2025

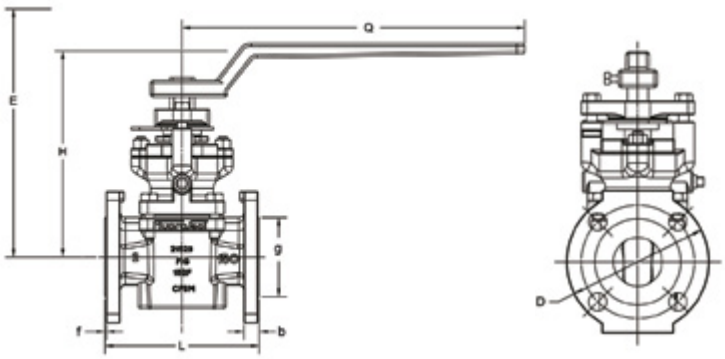
1 888 269 0220 (Canada & U.S.A.)



MATERIALS OF CONSTRUCTION

Item	Quantity		
1	1	Bonnet	Customer Specified
2	1	Plug Adjuster	CD4MCu
3	1	Packing Gland	CD4MCu
4	1	Packing Set	Carbon Filled PTFE & Virgin PTFE
5	1	Follower	Customer Specified
6	3	Belleville Washer	PH 17-7 or INCONEL®
7	1	Seal Washer	NITRONIC 60®
8	1	Top Packing	Flexible Graphite or PTFE
9	1	Seal Retainer	NITRONIC 60®
10	1	Shaft Adapter	304 Stainless Steel
11	1	Stop	304 Stainless Steel
12	2	Packing Bolt	304 Stainless Steel
13	2	Plug Bolt	304 Stainless Steel
14	1	Plug	Customer Specified
15	4	Bonnet Bolt	Customer Specified
16	1	Body Seal Retainer	Customer Specified
17	1	Body Seal	Flexible Graphite
18	1	Body Seal	Virgin PTFE
19	1	Body	Customer Specified
20	1	Thrust Washer	Carbon RPTFE
21	1	Sleeve	Virgin PTFE
22	1	Handle	Carbon Steel
23	1	Handle Bolt	Carbon Steel
24	1	Pipe Plug	316 Stainless Steel

This product is engineered for each application and is available in many alloys as well as custom configurations.

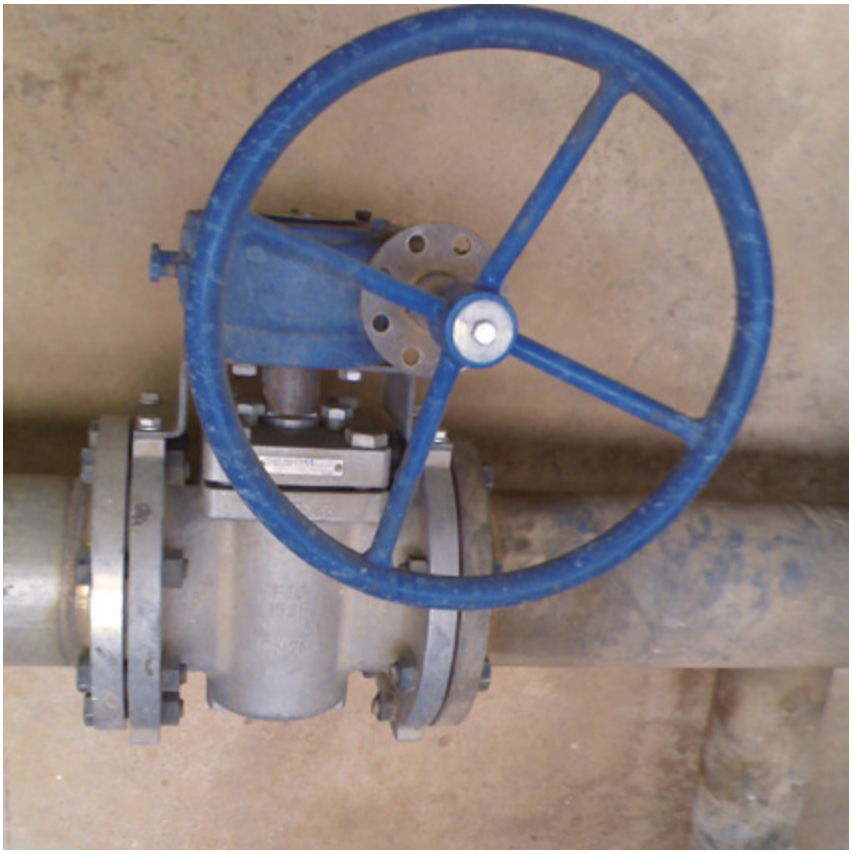


SEVERE SERVICE (FE) ANSI/ASME CLASS 150/300/600 LBS

E = Clearance required for resleeving measured from center line
Larger dimensions available on request

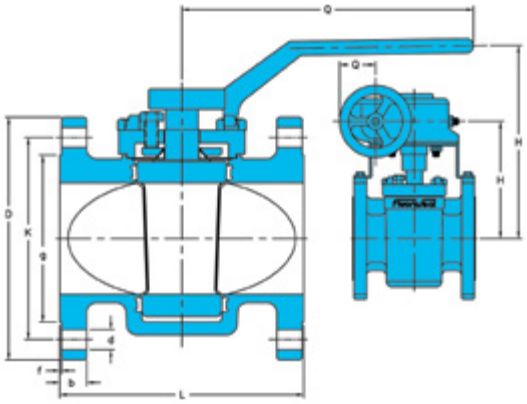
SIZE	H		E		
	in	mm	in	mm	
1/2″	8.09	205.49	7.80	198.12	For all other dimensions see 2-Way ANSI/ASME Class 150 / 300 / 600 Lbs on page BA2 – BA3
3/4″	8.09	206.49	7.80	198.12	
1″	8.50	215.90	9.94	252.48	
2″	10.25	260.35	12.75	323.85	
3″	10.50	266.70	14.38	365.25	
4″	12.50	317.50	17.62	447.55	
4" EG	13.75	349.25	17.62	447.55	
6″ EG	20.25	514.35	23.75	603.25	
8″ EG	23.25	590.55	31.00	787.40	
10″ EG	24.81	630.17	35.00	889.00	
12" EG	23.25	590.55	-	-	

FluoroSeal



SLEEVED 2-WAY

SLEEVED PLUG VALVES — 2-WAY



2-WAY ANSI/ASME CLASS 150 LBS

Flanged Ends
Wrench or Enclosed Gear Operated
Actuators Optional on All Sizes

Dimensions to ANSI B16.5 & B16.10
E = Clearance required for resleeving measured from center line
EG = Enclosed gear operated
N = Number of holes
Two (2) top holes in flanges are tapped with UNC threads. See Hole-UNC column
[1] Six (6) top holes
* 2 1/2" valves are made from 3" casting, but flanges are machined to 2 1/2" dimensions

SIZE	L		H		D		K		g		b		f		d		Q		Weight		E		N	Hole-UNC
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	kg	lbs	in	mm	#	
1/2"	4.25	108.00	3.38	86.00	3.50	88.90	2.38	60.50	1.38	35.00	0.37	9.50	0.06	1.52	0.63	16.00	8.00	203.00	2.3	5.0	6.38	162.10	4	-
3/4"	4.63	117.50	3.38	86.00	3.88	98.50	2.75	69.90	1.68	42.90	0.37	9.50	0.06	1.52	0.63	16.00	8.00	203.00	2.7	6.0	6.38	162.10	4	-
1"	5.00	127.00	4.50	114.00	4.25	108.00	3.13	79.50	2.00	50.80	0.44	11.20	0.06	1.52	0.63	16.00	9.00	229.00	3.6	8.0	8.50	215.90	4	-
1 1/2"	6.50	165.10	5.31	135.00	5.00	127.00	3.88	98.60	2.88	73.20	0.56	14.20	0.06	1.52	0.63	16.00	14.25	362.00	6.4	14.0	10.38	263.70	4	-
2"	7.00	177.80	6.25	159.00	6.00	152.40	4.75	120.70	3.63	92.00	0.63	16.00	0.06	1.52	0.75	19.00	16.50	419.00	10.5	23.0	12.25	311.20	4	-
*2 1/2"	8.00	203.20	6.56	167.00	7.50	190.50	5.50	139.70	4.13	104.60	0.75	19.00	0.06	1.52	0.75	19.00	16.50	419.00	16.4	36.0	12.63	320.80	4	-
3"	8.00	203.20	6.56	167.00	7.50	190.50	6.00	152.40	5.00	127.00	0.75	19.00	0.06	1.52	0.75	19.00	16.50	419.00	16.4	36.0	13.63	346.20	4	-
4"	9.00	228.60	7.63	194.00	9.00	228.60	7.50	190.50	6.19	157.20	0.94	23.90	0.06	1.52	0.75	19.00	23.63	600.00	26.8	59.0	16.25	412.80	8	-
4" EG	9.00	228.60	9.10	231.00	9.00	228.60	7.50	190.50	6.19	157.20	0.94	23.90	0.06	1.52	0.75	19.00	7.25	184.00	35.9	79.0	17.63	447.80	8	-
6" EG	10.50	266.70	10.80	274.00	11.00	279.40	9.50	241.30	8.50	215.90	1.00	25.40	0.06	1.52	0.88	22.40	7.25	184.00	55.5	122.0	21.75	552.50	8	-
8" EG	11.50	292.10	12.75	324.00	13.50	342.90	11.75	298.50	10.63	269.80	1.13	28.70	0.06	1.52	0.88	22.40	9.75	248.00	100.0	220.0	26.63	676.40	8	3/4"-10
10" EG	13.00	330.20	14.68	373.00	16.00	406.40	14.25	362.00	12.75	323.90	1.19	30.20	0.06	1.52	1.00	25.40	9.75	248.00	150.0	330.0	31.25	793.80	12	7/8"-9
12" EG	14.00	355.60	16.40	417.00	19.00	482.60	17.00	431.80	15.00	381.00	1.25	31.80	0.06	1.52	1.00	25.40	13.75	349.25	198.6	437.0	33.75	857.30	12	7/8"-9
14" EG	15.00	381.00	17.40	442.00	21.00	533.40	18.75	476.30	16.25	412.80	1.38	35.10	0.06	1.52	1.12	28.40	13.75	349.25	295.0	650.0	34.75	882.70	12	1"-8
16" EG	30.00	762.00	21.29	540.72	23.00	584.20	21.25	539.75	18.50	469.90	1.38	35.05	0.06	1.52	1.13	28.58	9.85	250.19	-	-	46.00	1168.40	16	1"-8
18" EG	34.00	863.60	21.29	540.84	25.00	635.00	22.75	577.85	21.00	533.40	1.50	38.10	0.06	1.52	1.25	31.75	9.85	250.19	-	-	46.00	1168.40	16	1 1/8"-8
20" EG	36.00	914.40	27.43	696.70	27.00	685.80	25.00	635.00	23.00	584.20	1.62	41.15	0.06	1.52	1.25	31.75	9.85	250.19	-	-	57.63	1463.80	20	1 1/8"-8[1]
24" EG	42.00	1066.8	27.43	696.70	31.00	787.40	29.50	749.30	27.25	692.15	1.81	45.97	0.06	1.52	1.38	34.93	9.85	250.19	-	-	57.63	1463.80	20	1 1/4"-8

2-WAY ANSI/ASME CLASS 300 LBS

Flanged Ends
Wrench or Enclosed Gear Operated
Actuators Optional on All Sizes

Dimensions to ANSI B16.5 & B16.10
E = Clearance required for resleeving measured from center line
EG = Enclosed gear operated
N = Number of holes
Two (2) top holes in flanges are tapped with UNC threads. See Hole-UNC column
[1] Four (4) top holes
* 2 1/2" valves are made from 3" casting, but flanges are machined to 2 1/2" dimensions

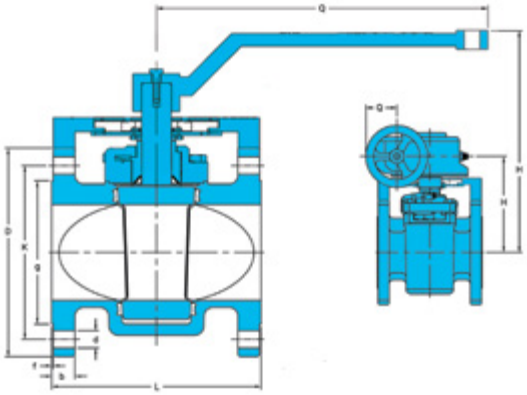
SIZE	L		H		D		K		g		b		f		d		Q		Weight		E		N	Hole-UNC
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	kg	lbs	in	mm	#	
1/2"	5.50	139.70	3.38	86.00	3.75	95.30	2.63	66.80	1.38	35.00	0.56	14.20	0.06	1.52	0.63	16.00	8.00	203.00	3.2	7.0	6.38	162.10	4	-
3/4"	6.00	152.40	3.38	86.00	4.63	117.60	3.25	82.60	1.69	42.70	0.63	16.00	0.06	1.52	0.75	19.00	8.00	203.00	4.1	9.0	6.38	162.10	4	-
1"	6.50	165.10	4.50	114.00	4.88	124.00	3.50	88.90	2.00	50.80	0.69	17.50	0.06	1.52	0.75	19.00	9.00	229.00	5.5	12.0	8.50	215.90	4	-
1 1/2"	7.50	190.50	5.31	135.00	6.13	155.70	4.50	114.30	2.88	73.20	0.81	20.60	0.06	1.52	0.88	22.40	14.25	362.00	9.5	21.0	10.38	263.70	4	-
2"	8.50	215.90	6.25	159.00	6.50	165.10	5.00	127.00	3.63	92.00	0.88	22.40	0.06	1.52	0.75	19.00	16.50	419.00	13.2	29.0	12.25	311.20	8	-
*2 1/2"	11.13	282.70	6.56	167.00	8.25	209.60	5.88	149.40	4.13	104.60	1.13	28.70	0.06	1.52	0.88	22.40	16.50	419.00	21.8	48.0	12.63	320.80	8	-
3"	11.13	282.70	6.56	167.00	8.25	209.60	6.63	168.40	5.00	127.00	1.13	28.70	0.06	1.52	0.88	22.40	16.50	419.00	21.8	48.0	13.63	346.20	8	-
4"	12.00	304.80	7.63	194.00	10.00	254.00	7.88	200.20	6.19	157.20	1.25	31.80	0.06	1.52	0.88	22.40	23.63	600.00	42.0	92.0	16.25	412.80	8	-
4" EG	12.00	304.80	9.10	231.00	10.00	254.00	7.88	200.20	6.19	157.20	1.25	31.80	0.06	1.52	0.88	22.40	7.25	184.00	54.0	119.0	17.63	447.80	8	-
6" EG	15.88	403.40	10.80	274.00	12.50	317.50	10.63	270.00	8.50	215.90	1.44	36.60	0.06	1.52	0.88	22.40	7.25	184.00	91.4	201.0	21.75	552.50	12	-
8" EG	16.50	419.10	12.75	324.00	15.00	381.00	13.00	330.20	10.63	269.80	1.63	41.40	0.06	1.52	1.00	25.40	9.75	248.00	141.4	311.0	26.63	676.40	12	7/8"-9
10" EG	18.00	457.20	14.68	373.00	17.50	444.50	15.25	387.40	12.75	323.90	1.88	47.80	0.06	1.52	1.13	28.70	9.75	248.00	210.9	464.0	31.25	793.80	16	1"-8
12" EG	19.75	501.70	16.40	417.00	20.50	520.70	17.75	450.90	15.00	381.00	2.00	50.80	0.06	1.52	1.25	31.80	13.75	349.25	279.0	614.0	33.75	857.30	16	1 1/8"-8
14" EG	30.00	762.00	17.40	442.00	23.00	584.20	20.25	514.40	16.25	412.80	2.12	53.80	0.06	1.52	1.25	31.80	13.75	349.25	363.0	800.0	34.75	882.70	20	-
16" EG	33.00	838.20	21.29	540.72	25.50	647.70	22.50	571.50	18.50	469.90	2.19	55.63	0.06	1.52	1.38	34.93	9.85	698.50	-	-	46.00	1168.40	20	1 1/4"-8
18" EG	36.00	914.40	21.29	540.84	28.00	711.20	24.75	628.65	21.00	533.40	2.31	58.67	0.06	1.52	1.38	34.93	9.85	698.50	-	-	46.00	1168.40	24	-
20" EG	39.00	990.60	27.43	696.70	30.50	774.70	27.00	685.80	23.00	584.20	2.44	61.98	0.06	1.52	1.38	34.93	9.85	698.50	-	-	57.63	1463.80	24	1 1/4"-8[1]
24" EG	45.00	1143.0	27.43	696.70	36.00	914.40	32.00	812.80	27.25	692.15	2.69	68.33	0.06	1.52	1.63	41.28	9.85	698.50	-	-	57.63	1463.80	24	1 1/2"-8

2-WAY ANSI/ASME CLASS 600 LBS

Flanged Ends
Wrench or Enclosed Gear Operated
Actuators Optional on All Sizes

E = Clearance required for resleeving measured from center line
EG = Enclosed gear operated
N = Number of holes
Two (2) top holes in flanges are tapped with UNC threads. See Hole-UNC column
* Available upon request

SIZE	L		H		D		K		g		b		f		d		Q		Weight		E		N	Hole-UNC
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	kg	lbs	in	mm	#	
1/2"	6.50	165.10	3.38	85.70	3.75	95.30	2.62	66.50	1.38	35.10	0.56	14.20	0.25	6.35	0.62	15.70	8.00	203.20	3.6	8.0	6.38	162.10	4	-
3/4"	7.50	190.50	3.38	85.90	4.62	117.30	3.25	82.60	1.69	42.90	0.62	15.70	0.25	6.35	0.75	19.10	8.00	203.20	5.0	11.0	6.38	162.10	4	-
1"	8.50	215.90	4.50	114.30	4.88	124.00	3.50	88.90	2.00	50.80	0.69	17.50	0.25	6.35	0.75	19.10	9.00	228.60	7.3	16.0	8.50	215.90	4	-
1 1/2"	9.50	241.30	5.31	134.90	6.12	155.40	4.50	114.30	2.88	73.20	0.88	22.40	0.25	6.35	0.88	22.40	14.25	362.00	12.3	27.0	10.38	263.70	4	-
2"	11.50	292.10	6.25	158.80	6.50	165.10	5.00	127.00	3.62	91.90	1.00	25.40	0.25	6.35	0.75	19.10	16.50	419.10	18.2	40.0	12.25	311.20	8	-
2 1/2"	14.00	355.60	6.56	166.60	7.50	190.50	5.88	149.40	4.12	104.60	1.12	28.40	0.25	6.35	0.88	22.40	16.50	419.10	38.6	85.0	12.63	320.80	8	-
3"	14.00	355.60	6.56	166.60	8.25	209.60	6.62	168.10	5.00	127.00	1.25	31.80	0.25	6.35	0.88	22.40	16.50	419.10	38.6	85.0	13.63	346.20	8	-
4"	17.00	431.80	7.53	191.10	10.75	273.10	8.50	215.90	6.19	157.20	1.50	38.10	0.25	6.35	1.00	25.40	23.63	600.20	68.2	150.0	16.25	412.80	8	-
4" EG	17.00	431.80	9.10	231.10	10.75	273.10	8.50	215.90	6.19	157.20	1.50	38.10	0.25	6.35	1.00	25.40	7.25	184.20	81.8	180.0	17.63	447.80	8	-
6" EG	22.00	558.80	10.80	274.30	14.00	355.60	11.50	292.10	8.50	215.90	1.88	47.80	0.25	6.35	1.12	28.40	7.25	184.20	152.3	335.0	21.75	552.50	12	-
8" EG	26.00	660.40	12.75	323.90	16.50	419.10	13.75	349.30	10.62	269.70	2.19	55.60	0.25	6.35	1.25	31.80	9.75	247.70	222.7	490.0	26.63	676.40	12	1 1/8"-8
10" EG*	31.00	787.40	14.68	372.90	20.00	508.00	17.00	431.80	12.75	323.90	2.50	63.50	0.25	6.35	1.38	35.10	9.75	247.70	-	-	31.25	793.80	16	1 1/4"-8
12" EG*	33.00	838.20	16.40	416.60	22.00	558.80	19.25	489.00	15.00	381.00	2.62	66.50	0.25	6.35	1.38	35.10	13.75	349.25	-	-	33.75	857.30	20	1 1/4"-8
14" EG*	35.00	889.00	15.66	397.84	23.75	603.25	20.75	527.05	16.25	412.75	2.75	69.85	0.25	6.35	1.50	38.10	13.75	349.25	-	-	34.75	882.70	20	1 3/8"-8
16" EG*	39.00	990.60	21.29	540.72	27.00	685.80	23.75	603.25	18.50	469.90	3.00	76.20	0.25	6.35	1.63	41.28	9.85	250.19	-	-	46.00	1168.40	20	1 1/2"-8
18" EG*	43.00	1092.20	21.29	540.84	29.50	749.30	25.75	654.10	21.00	533.40	3.25	82.60	0.25	6.35	1.75	44.50	9.85	250.19	-	-	46.00	1168.40	20	1 5/8"-8



2-WAY DIN PN 16 & PN 40

Flanged Ends
Wrench or Enclosed Gear Operated
Actuators Optional on All Sizes

Dimensions to DIN EN 1092-1 & DIN EN 558-1
Enclosed gear optional on DN 100, and standard on DN 125 and DN 150
E = Clearance required for resleeving measured from center line
N = Number of holes
Two (2) top holes in flanges are tapped with metric threads. See Bolt Size column
*According to DIN EN 1092-2 (Cast Iron Flanges) and DIN prEN 1092-3 (Copper Alloy Flanges), the flanges in this DN and PN may be supplied with four (4) holes. Where steel flanges are required with four (4) holes, these may be supplied by agreement between manufacturer and purchaser.

SIZE	PN	L	H	D	K	g	b	f	d	Q	Weight	E	N	Bolt Size
		mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	mm	#	
DN 15	16 & 40	130.00	145.00	95.00	65.00	45.00	16.00	2.00	14.00	210.00	-	131.00	4	M12
DN 20	16 & 40	150.00	145.00	105.00	75.00	58.00	18.00	2.00	14.00	210.00	-	131.00	4	M12
DN 25	16 & 40	160.00	145.00	115.00	85.00	68.00	18.00	2.00	14.00	210.00	-	131.00	4	M12
DN 32	16 & 40	180.00	176.00	140.00	100.00	78.00	18.00	2.00	18.00	262.50	-	161.00	4	M16
DN 40	16 & 40	200.00	176.00	150.00	110.00	88.00	18.00	2.00	18.00	262.50	-	161.00	4	M16
DN 50	16	230.00	195.00	165.00	125.00	102.00	18.00	2.00	18.00	419.10	-	189.00	4	M16
	40	230.00	195.00	165.00	125.00	102.00	20.00	2.00	18.00	419.10	-	189.00	4	M16
DN 65	16	290.00	173.00	185.00	145.00	122.00	18.00	2.00	18.00	419.10	-	217.00	8*	M16
	40	290.00	173.00	185.00	145.00	122.00	22.00	2.00	18.00	419.10	-	217.00	8	M16
DN 80	16	310.00	173.00	200.00	160.00	138.00	20.00	2.00	18.00	419.10	-	217.00	8	M16
	40	310.00	173.00	200.00	160.00	138.00	24.00	2.00	18.00	419.10	-	217.00	8	M16
DN 100	16	350.00	200.00	220.00	180.00	158.00	20.00	2.00	18.00	618.00	-	270.00	8	M16
	40	350.00	200.00	235.00	190.00	162.00	24.00	2.00	22.00	618.00	-	270.00	8	M20
DN 125	16	325.00	303.00	250.00	210.00	188.00	22.00	2.00	18.00	184.20	-	370.00	8	M16
	40	325.00	303.00	270.00	220.00	188.00	26.00	2.00	26.00	184.20	-	370.00	8	M24
DN 150	16	350.00	290.00	285.00	240.00	212.00	22.00	2.00	22.00	184.20	-	370.00	8	M20
	40	350.00	290.00	300.00	250.00	218.00	28.00	2.00	26.00	184.20	-	370.00	8	M24

FluoroSeal

SPECIAL SERVICE

SPECIAL SERVICE FLUOROSEAL® PLUG VALVES

Whether you are looking for a valve to suit a specific application, or want to customize a standard FluoroSeal® Plug Valve, you have come to the right place. Our special service valves provide you with both an array of turn-key solutions and the ability to fully match your application needs.

CAGED CONTROL PLUG VALVES

The Caged Control Valve is ideal for abrasive applications with high solids concentrations and is commonly used in both throttling and on/off applications. Caged valves have been used successfully in many critical applications in the Mining, Pulp & Paper, and Chemical Processing industries.

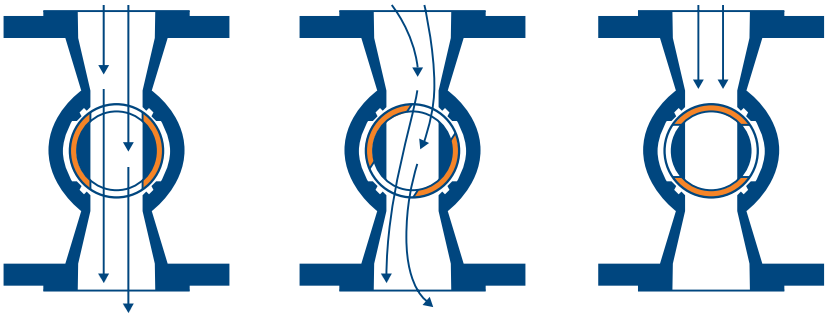
The design of the Caged Control Valve provides maximum protection to the polymer sealing surfaces in the plug valves. The key to the caged design is that the PTFE sleeve in the valve is never directly exposed to the process flow. This allows the sleeve to maintain its sealing integrity in abrasive applications.

The design of the Caged Control Valve allows the plug to rotate freely around a fixed cage within the body. The cage is stationary in the body while the plug rotates, thus allowing the sealing area of the plug to be in direct contact with the sleeve to provide bubble-tight shutoff. The cage stays in position protecting the polymer sleeve from erosion/abrasion while the plug is in any intermediate position such as when the valve is moving from the open to the closed position or when the valve is throttling.

The cage has upper and lower graphite filled RTFE bearings that prevent galling between the plug and cage. A keyway keeps the cage from rotating in the body. This allows free movement of the plug around the cage.

The Caged Control Valve still allows for in-line adjustment for through valve leakage just as a standard plug valve does since the plug and the cage are independent of each other.

The cage and plug in the Caged Control Valve are generally made from CD4MCu material, an abrasion resistant alloy with the corrosion resistance of 316 SS. Caged Control Valves are available in any material, from carbon steel and stainless steel to any of the more exotic alloys.



From Left to Right: Full Flow (Plug 0°), Control Flow (Plug Throttling), Shutoff (Plug 90°)

PLUG-SLEEVED-R003-2025

FIRE SAFE SLEEVED PLUG VALVES

FluoroSeal® Fire Safe Plug Valve

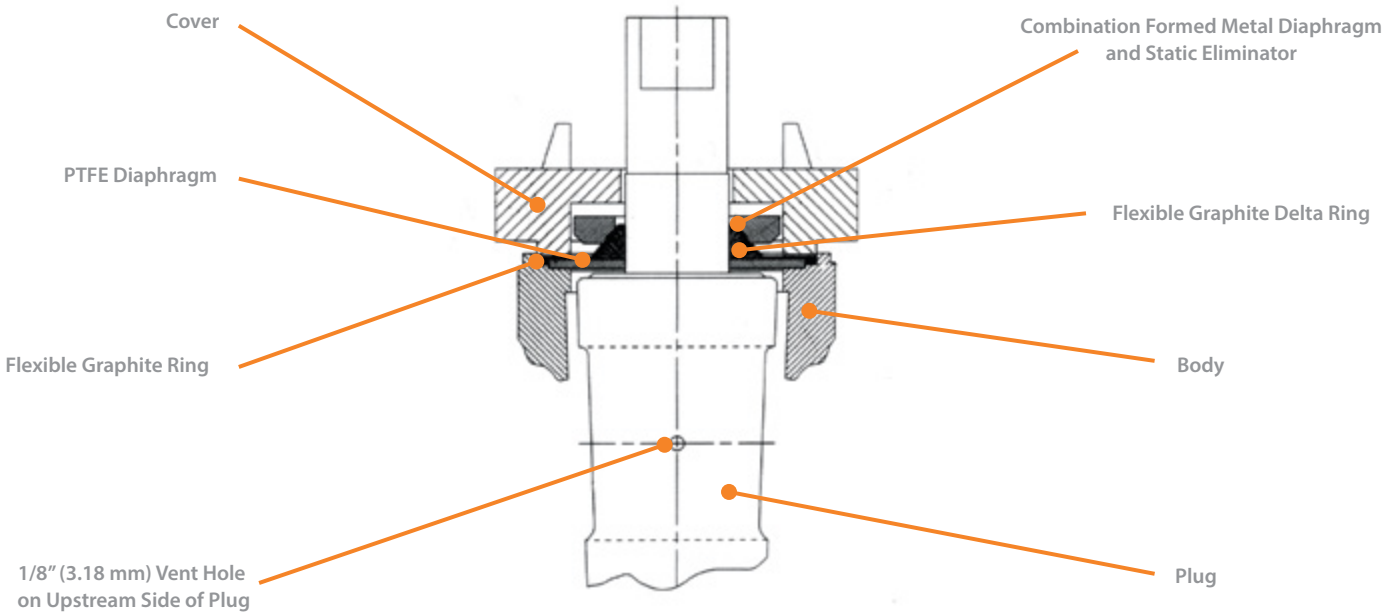
FluoroSeal® Sleeved Plug Valves with the Fire Safe top seal have been tested and certified by an independent laboratory to the requirements of API 607, latest edition (ISO 10497-5) for external leakage.

The FluoroSeal® Fire Safe design utilizes a PTFE sleeve and PTFE diaphragm as the external sealing components under normal conditions. Should these components be destroyed by fire, external leakage is prevented by:

1. A secondary flexible graphite seal ring encapsulated and compressed between the metal diaphragm and the machined counterbore in the valve body

2. A flexible graphite delta ring encapsulated and compressed between the unique shaped metal diaphragm and the machined plug stem

FluoroSeal® Fire Safe Valves also utilize a vented plug designed to relieve pressure buildup resulting from expansion of the service media within the plug, due to elevated temperatures caused by fire. The pressure is relieved to the upstream side, providing a preferred flow direction indicated by an arrow on the valve cover.



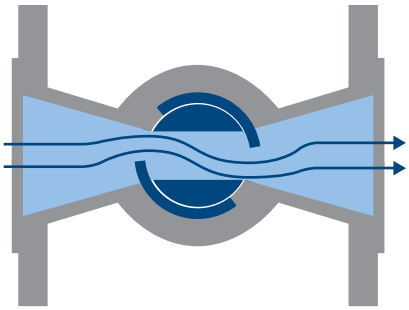
Fire Safe Assembly

FluoroSeal

OPTIONS

V-PORT & CHARACTERIZED PLUGS

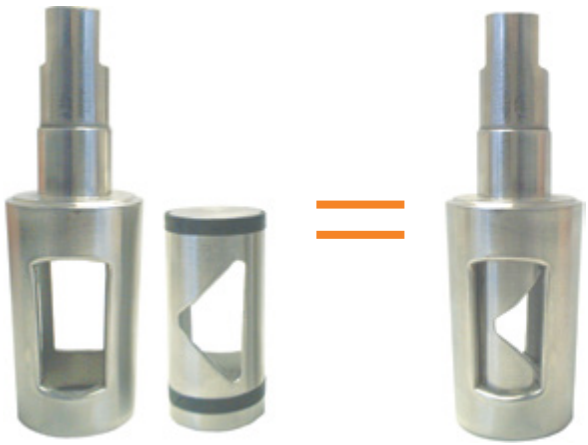
FluoroSeal® Plug Valves are also available with Characterized Plugs for fine control applications. Standard V-Ports in 60° and other custom configurations are available in all trim materials.



Flow Diagram

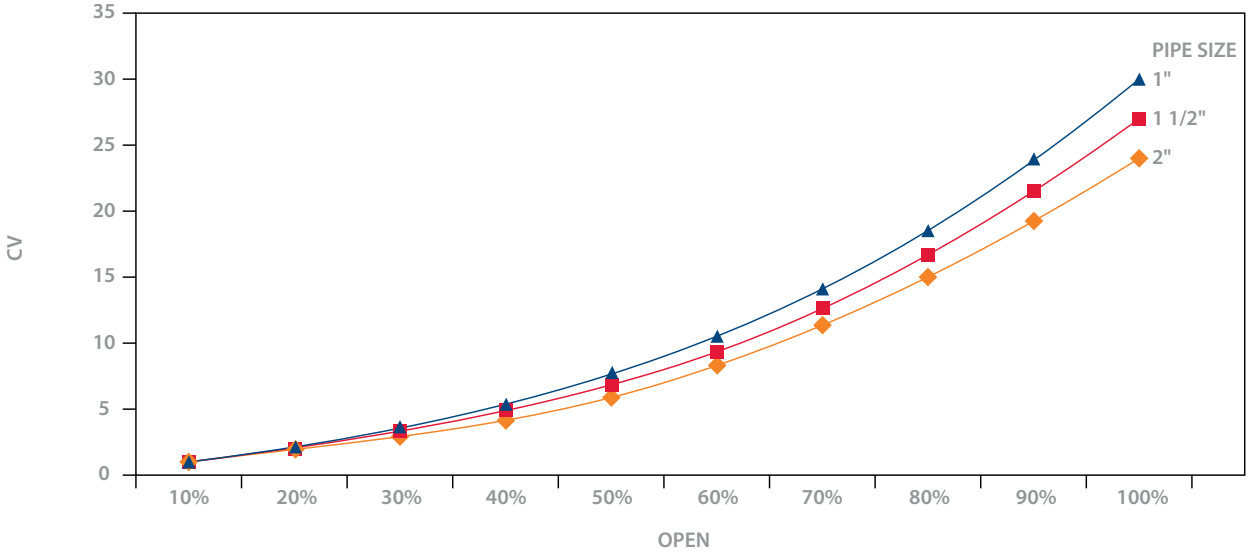
The design and features of the FluoroSeal® Plug Valve makes it an excellent choice for fine throttling in slurry and chemical applications. The no cavity design allows the plug valve to throttle without exposing the stem seal to line pressure, a definite advantage over most ball valves specifically in high cycling applications.

The Cage Control V-Port Plug Valve is mostly used in highly abrasive applications offering the benefits of a metal seated control valve, with the added advantage of a bubble-tight shutoff at a fraction of the cost. This product is available in all materials from 1" to 14" (DN 25 to DN 150).

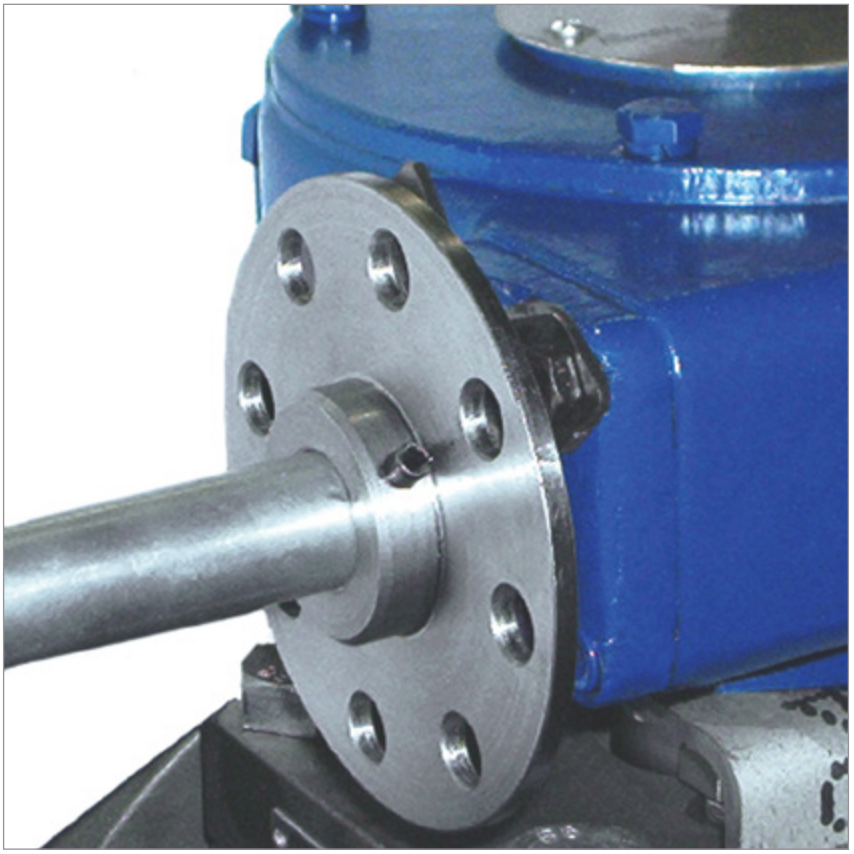


Characterized Plug

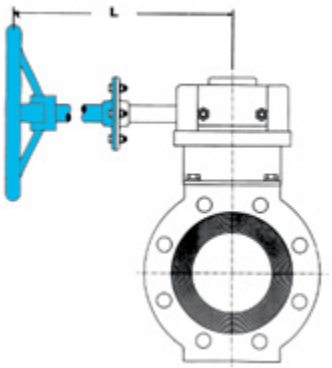
TYPICAL FLOW CHART FOR A 1" 60° V-PORT PLUG VALVE



FluoroSeal

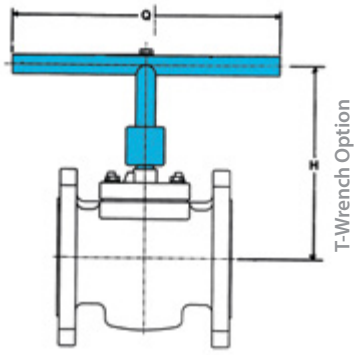


ACCESSORIES



HANDWHEEL EXTENSION — GEAR OPERATOR

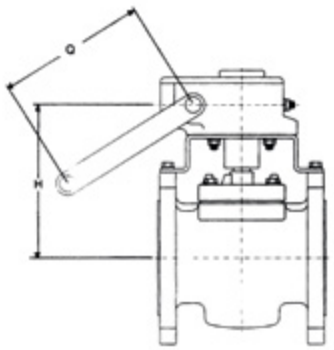
Custom extension to fit your particular space requirements. Please specify the length (L) needed. Support may be required depending on the length of the extension. (To be supplied by the customer.)



T-WRENCH AND EXTENSION OPTION

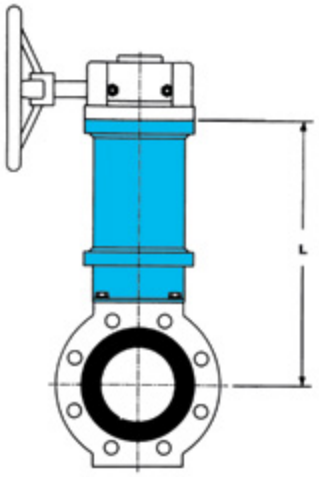
If longer "H" dimension, please specify.

VALVE SIZE	1/2" (DN 15)		3/4" (DN 20)		1" (DN 25)		1 1/2" (DN 40)		2" (DN 50)		3" (DN 80)		4" (DN 100)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
Q	12.00	304.80	12.00	304.80	18.00	457.20	28.00	711.20	36.00	914.40	36.00	914.40	42.00	1066.80
H	6.80	172.72	6.80	172.72	7.40	187.96	8.00	203.20	8.40	213.36	9.00	228.60	9.60	243.84



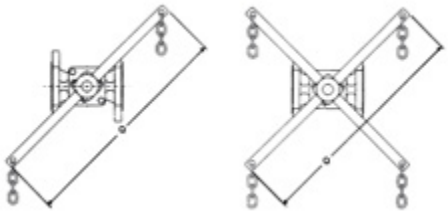
CRANK HANDLE

VALVE SIZE	4" EG (DN 100)		6" EG (DN 150)		8" EG		10" EG		12" EG	
	in	mm	in	mm	in	mm	in	mm	in	mm
Q	7.25	184.15	7.25	184.15	9.75	247.65	9.75	247.65	13.75	349.25
H	10.75	273.05	11.50	292.10	13.00	330.20	15.50	393.70	17.25	438.15



STEM EXTENSION — GEAR OPERATOR

Stem extensions are used for remote operation of the valve. Actuators can be attached to the top of the extension. Specify the length (L) of the extension required and the figure number of the valve it is to be attached to.



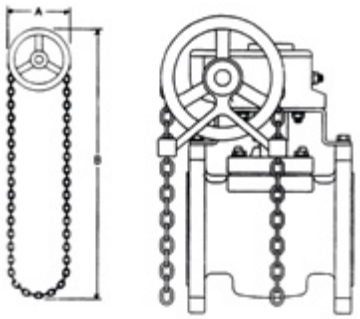
CHAIN WRENCH

Specify the chain length required and whether the valve will be installed in a horizontal or vertical line. To calculate chain length:

90° rotation: 1. Double required drop
2. Multiply Q by 0.5
3. 1+2 = required chain length

180° rotation: Double calculation for 90°

VALVE SIZE	1/2" (DN 15)		3/4" (DN 20)		1" (DN 25)		1 1/2" (DN 40)		2" (DN 50)		3" (DN 80)		4" (DN 100)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
Q	13.00	330.20	13.00	330.20	16.00	406.40	24.00	406.40	36.00	914.40	36.00	914.40	60.00	1524.00



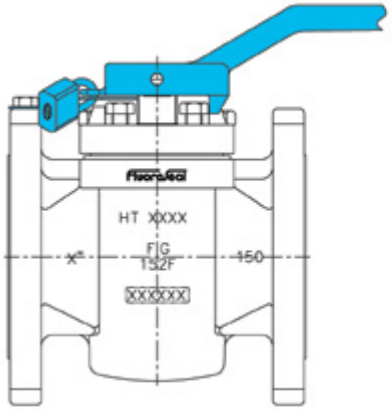
CHAIN WHEEL

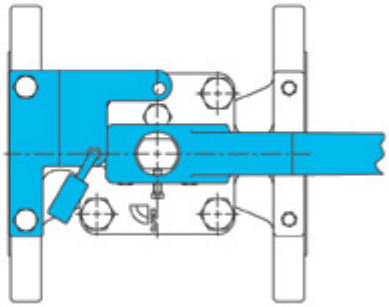
Specify the chain length required and whether the valve will be installed in a horizontal or vertical line. To calculate chain length:

1. Double required drop B
2. Multiply chain wheel diameter A by 2.6
3. 1+2 = required chain length

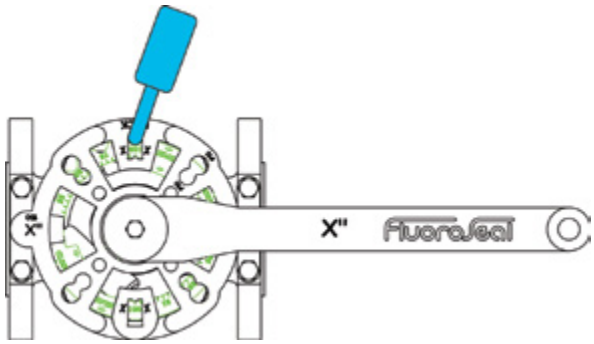
WRENCH OPERATOR LOCKING DEVICE

Padlock is not supplied.





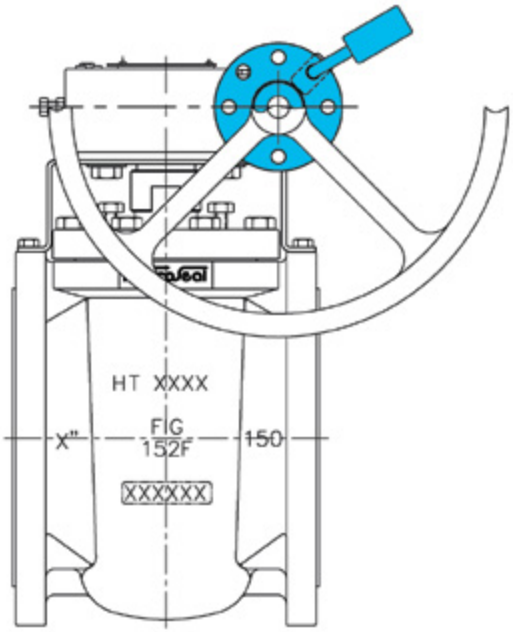
Locking Device on Regular Cover

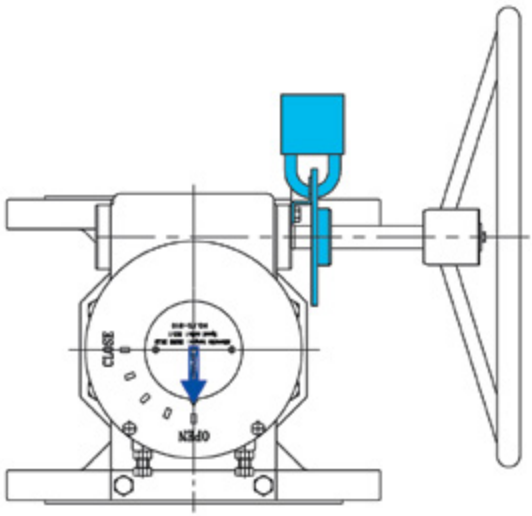


Locking Device on EZ-SEAL®

GEAR OPERATOR LOCKING DEVICE

Padlock is not supplied.





PLUG-SLEEVED-R003-2025

FluoroSeal

TECHNICAL DATA

OUR ENGINEERING COMMITMENT

We will assist you in making the most appropriate selection of alloys and polymers to suit your application. We will provide you with CV factors and other necessary flow calculations, therefore making your decision process as easy as possible. We will work together with you to develop the best valve possible, no matter what your industry sector. Our Engineered Solutions Division (ESD) is staffed with highly skilled engineers, technicians and draftsmen specialized in modifying existing designs to meet your specific needs.

Please consult our website, www.fluorosealvalves.com, for the most up-to-date listing of torque and CV values.


Chemical


Mining


Oil & Gas


Power Generation


Pulp & Paper

QUALITY ASSURANCE

FluoroSeal® Plug Valves possess all of the best design features presently available in a non-lubricated valve. They are inspected throughout the full manufacturing process from foundry to final assembly and packaging to assure high quality and consistency in every unit.

All internal processes are vetted according to best standard industry practices, inspections performed with equipment subject to periodic calibrations, and for special processes, such as welding, procedures and operators are fully qualified to the requirements of the ASME Boiler and Pressure Vessel Code, as well as to PED/CE requirements.

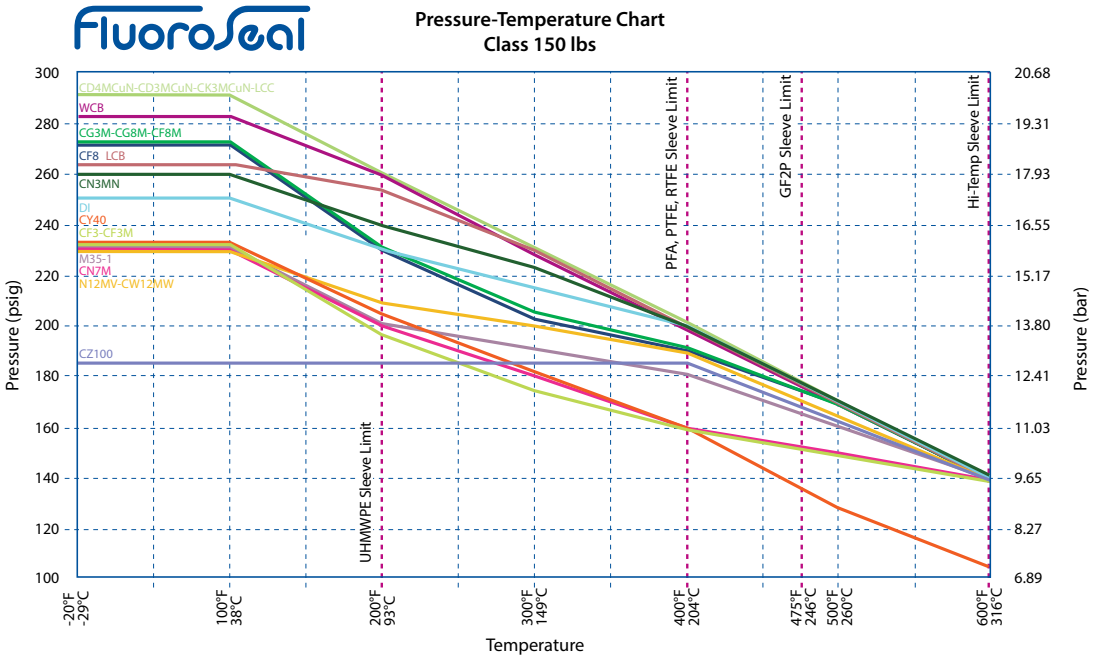
Please consult our website, www.fluorosealvalves.com, for the latest copy of our ISO, PED and AD Certificates.

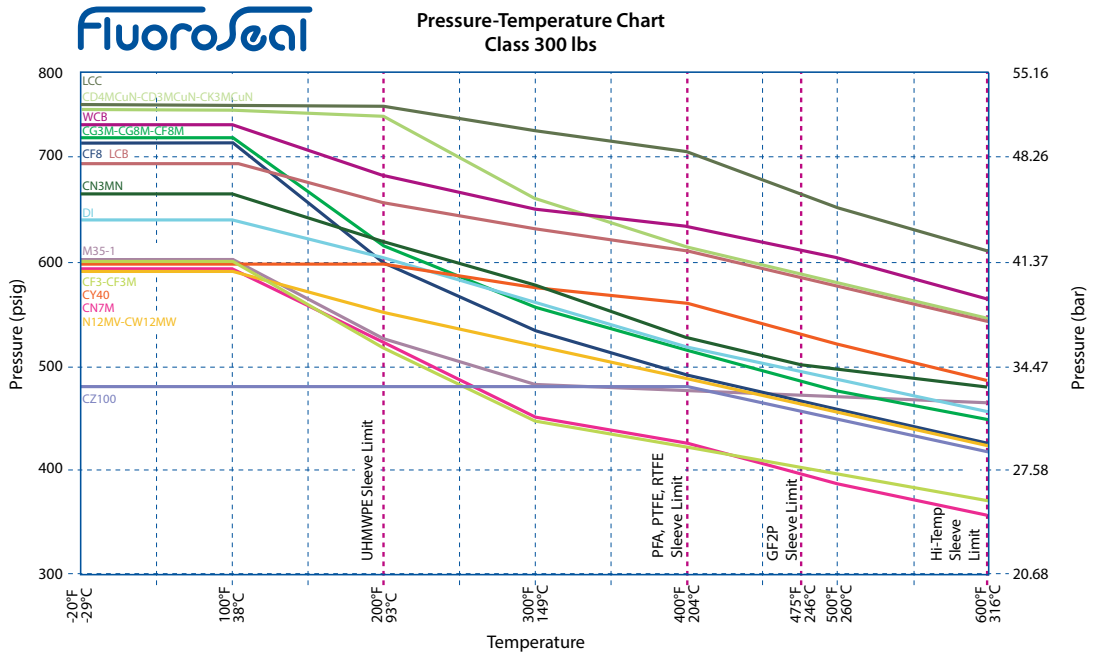
TESTING

All FluoroSeal® valves are pressure tested prior to shipment to ensure full compliance with ANSI B16.34 and MSS SP-61 (or DIN EN 12266-1) shell and seat test requirements. At customer option, API 598 requirements can also be met.

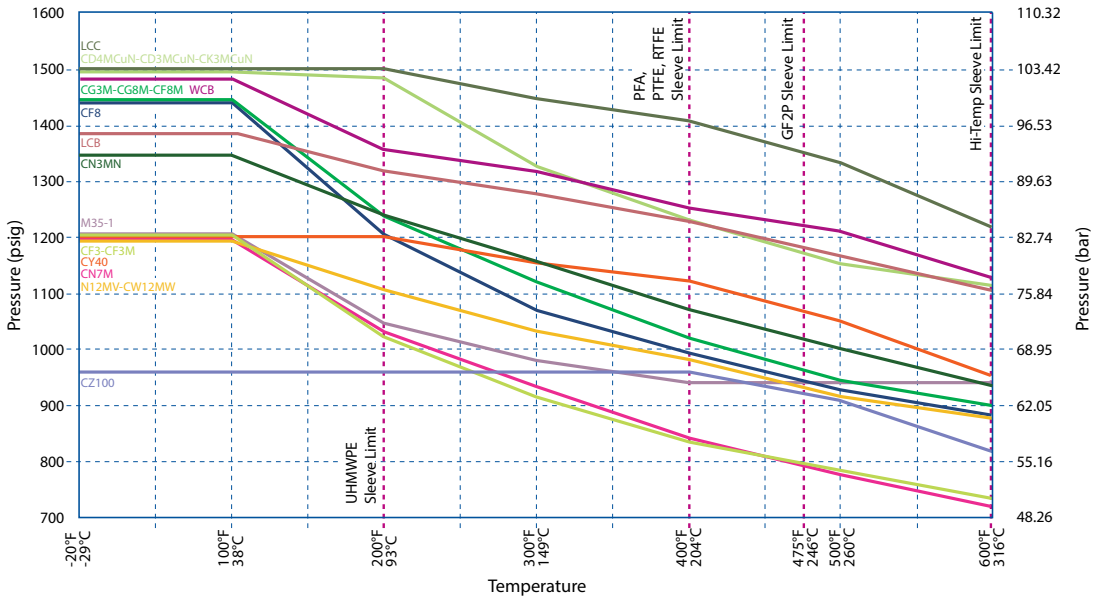
All high nickel alloy valves are also shell tested with helium on a standard basis. In addition, non-destructive tests such as radiographic, liquid penetrant or magnetic particle evaluations can be performed to various requirements, at customer option.

MATERIAL PROPERTIES

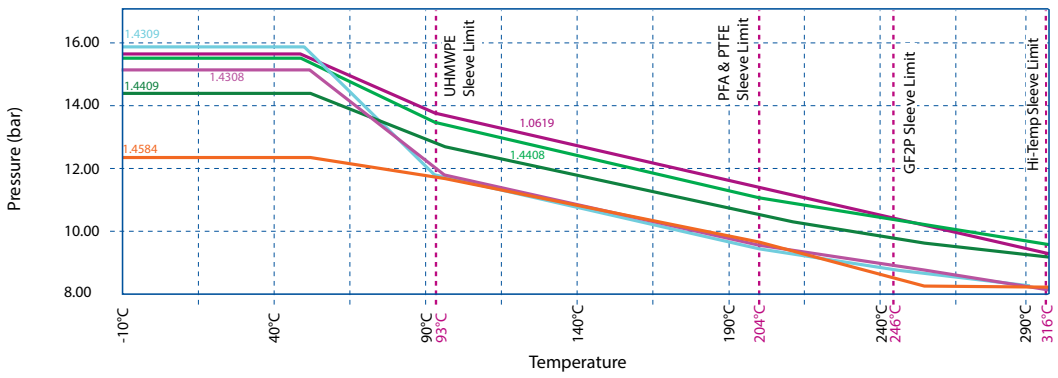




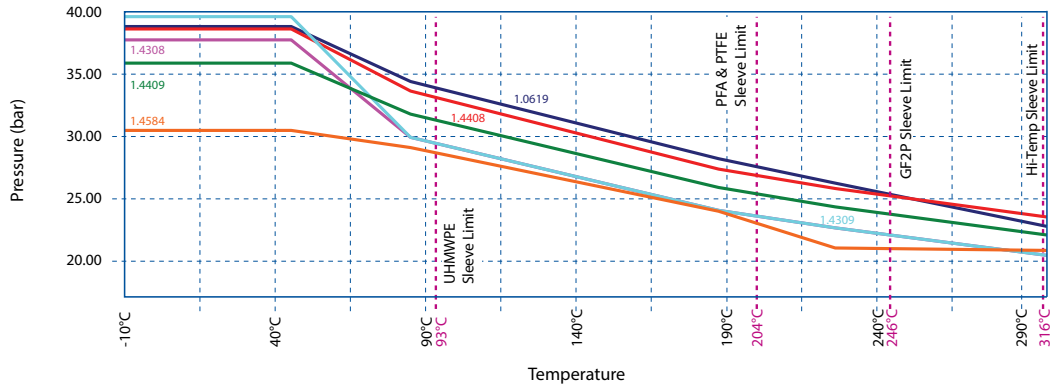
Pressure-Temperature Chart
Class 600 lbs



Pressure-Temperature Chart
PN 16



Pressure-Temperature Chart
PN 40



SLEEVED PLUG VALVES ORDERING INSTRUCTIONS

Size	Port	Class	Flow	End Connection	/	Operator	–	Flow Pattern	–	Body Material	/	Plug Material	–	Cover Bolt Material	–	Sleeve Material	–	Special and / or Option

Size
1/2" to 24" or DN15 to DN600
Refer to catalog for Class avail.

Port

R	Reduced	F	Full

Class

15	Class 150 lbs	30	Class 300 lbs
60	Class 600 lbs	D10	PN10
D16	PN 16	D25	PN25
D40	PN 40		

Flow

2	2-Way	3	3-Way

End Connection

F	Flanged Raised Face	FF	Flanged Flat Face
SE	Screwed	SW	Socket Weld
X	Screwed x Socket Weld	BW	Butt Weld
S	Special		

Operator

B	Bare Stem	EG	Enclosed Gear
EGL	Enclosed Gear + Locking Device	W	Wrench
WL	Wrench + Locking Device	WXT	Wrench + Stem Extension

Flow Pattern (Leave blank for 2-Way)

FA1, FA2, FA3, FA4, FA5	Refer to catalog for Flow Patterns

Body Material
Refer to Body & Plug Material Table

Plug Material
Refer to Body & Plug Material Table

Cover Bolt Material

1	B7*	2	B7M*
3	B8*	4	B16*
5	B8M Class 1*	6	B8M Class 2*
7	L7**	8	L7M**
9	B446 Gr.1	10	TC3
11	A20	12	A20 (Teflon Coated)
13	MO 400	14	HC
15	HC (Teflon Coated)	16	Inconel 718
17	TC5	18	ISO 898-1, 5.6
19	A2-70	20	A4-70
21	Special		

*According to ASTM A193 **According to ASTM A320

Sleeve Material

A	PFA	G	GF2P
P	PTFE	R	RTFE
U	UHMWPE	Z	Hi-Temp Teflon®

Special (A combination of Specials can be used)

CL	Prepared for Chlorine Service
DBB	Double Block & Bleed
FE	Severe Service
HF	UOP-Approved HF-Alkylation Configuration
HOX	Prepared for Hydrogen Peroxide
ISY	Prepared for Isocyanate Service
OXY	Prepared for Oxygen Service
PHOS	Prepared for Phosgene Service

Options (A combination of Options can be used)

CCV	Cage Control Valve	EZ	EZ-SEAL®
FJ	Full Jacket	FS	Fire Safe
PJ	Partial Jacket	V6	V-Port 60°
S	Special — Description required		
VN(X,Y,Ø)	Vented Plug (Specify Location (X,Y) and Diameter(Ø)) Special venting available on request		

X:	Y:	Ø:
U: Upstream	T: Top	1/8
D: Downstream	M: Middle	1/4
	B: Bottom	

Note: HF, FS, CL are vented by default, specify NV if no venting is required for these options.

BODY & PLUG MATERIAL TABLE

CODE	DESCRIPTION	ASTM DESIGNATION	DIN
WCB	Carbon Steel	A216 Gr. WCB	1.0619
LCB	Low Temp. Ferritic Alloy Steel	A352 Gr. LCB	1.6220
LCC	Low Temp. Ferritic Alloy Steel	A352 Gr. LCC	1.7219
304	304 Austenitic Stainless Steel	A351 Gr. CF8	1.4308
304L	304L Austenitic Stainless Steel	A351 Gr. CF3	1.4309
316	316 Austenitic Stainless Steel	A351 Gr. CF8M	1.4408
316L	316L Austenitic Stainless Steel	A351 Gr. CF3M	1.4409
317	317 Austenitic Stainless Steel	A351 Gr. CG8M	
317L	317L Austenitic Stainless Steel	A351 Gr. CG3M	
A20	Alloy 20	A351 Gr. CN7M	1.4500
904L	904L Stainless Steel	Cast Grade	1.4584
CD4N	Ferinox® 255 Super-Duplex S.S.	A995 Gr. 1B (CD4MCuN)	1.4517
CD3	2205 Super-Duplex S.S.	A995 Gr. 4A (CD3MN)	1.4470
CE3	2507 Super-Duplex S.S.	A995 Gr. 5A (CE3MN)	1.4417
CK3	254 SMO Super-Austenitic S.S.	A351 Gr. CK3MCuN	
CN3	AL-6XN Super-Austenitic S.S.	A351 Gr. CN3MN	
HB	HASTELLOY® B*	A494 Gr. N12MV	2.4685
HB2	HASTELLOY® B 2*	A494 Gr. N7M	2.4882
HC	HASTELLOY® C*	A494 Gr. CW6M	2.4883
HC2	HASTELLOY® C 276*	A494 Gr. CW12MW	2.4686
I600	INCONEL® 600*	A494 Gr. CY40	2.4816
I625	INCONEL® 625*	A494 Gr. CW6MC	2.4856
MO	MONEL® 400	A494 Gr. M35-1	2.4365
NI	Nickel	A494 Gr. CZ-100	2.4170
TC2	Titanium (Comm. Pure)*	B367 Gr. C2	3.7035
TC3	Titanium (Comm. Pure)*	B367 Gr. C3	3.7031
TC5	Titanium Alloy 6Al-4V*	B367 Gr. C5	
ZR2	Zirconium*	B752 Gr. 702C	
ZR5	Zirconium*	B752 Gr. 705C	

Other and Special Alloys Available on Request
* Drilled and tapped flange actuation-mounting pads independent of cover and top seal assembly are optional on lever-operated valves (1/2" thru 4") in HASTELLOY®, INCONEL®, Titanium, and Zirconium alloys.

TERMS & CONDITIONS

CONTROLLING PROVISIONS

These terms and conditions shall control with respect to any purchase order or sale of FluoroSeal Inc.'s products. No waiver, alteration or modification of these terms and conditions whether on Buyer's purchase order or otherwise, shall be valid unless the waiver, alteration or modification is specifically accepted in writing and signed by an authorized representative of FluoroSeal Inc.

DELIVERY FluoroSeal Inc. will make every effort to complete delivery of products as indicated on its acceptance of an order, but FluoroSeal Inc. assumes no responsibility or liability, and will accept no back charge, for loss or damage due to delay or inability to deliver caused by acts of God, war, labor difficulties, accident, delays of carriers, by contractors or suppliers, inability to obtain materials, shortages of fuel and energy, or any other causes of any kind whatever beyond the control of FluoroSeal Inc. FluoroSeal Inc. may terminate any contract of sale of its products without liability of any nature, by written notice to Buyer, in the event that the delay in delivery or performance resulting from any of the aforesaid causes shall continue for a period of sixty (60) days. Under no circumstances shall FluoroSeal Inc. be liable for any special or consequential damages or for loss, damage, or expense (whether or not based on negligence) directly or indirectly arising from delays or failure to give notice of delay.

WARRANTY FluoroSeal Inc. warrants for one year from the date of shipment of its manufactured products to the extent that FluoroSeal Inc. will replace those having defects in material or workmanship when used for the purpose and in the manner which FluoroSeal Inc. recommends. If FluoroSeal Inc.'s examination shall disclose to its satisfaction that the products are defective, and an adjustment is required, the amount of such adjustment shall not exceed the net sale price of the defective product(s) only and no allowance will be made for labor or expense for repairing or replacing defective products or workmanship or damage resulting from the same. FluoroSeal Inc. warrants the products which it sells of other manufacturers to the extent of the warranties of their respective makers. Where engineering design or fabrication work is supplied, Buyer's acceptance of FluoroSeal Inc.'s design or of delivery of work shall relieve FluoroSeal Inc. of all further obligation, other than expressed in FluoroSeal Inc.'s product warranty.

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FluoroSeal Inc. neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or products. This warranty shall not apply to any products or parts of products which (a) have been repaired or altered outside of FluoroSeal Inc.'s factory, in any manner; (b) have been subjected to misuse, negligence or accidents; (c) have been used in a manner contrary to FluoroSeal Inc.'s instructions or recommendations. FluoroSeal Inc. shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives.

LIABILITY FluoroSeal Inc. will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by FluoroSeal Inc. under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer. Any litigation will be interpreted in accordance with the laws of the Province of Québec, Canada and any suit, action or proceeding relating to these terms and conditions may be instituted in any competent court sitting in the district of Montréal, Québec, Canada.

RETURNS FluoroSeal Inc. cannot accept return of any product(s) unless its written permission has been first obtained, in which case same will be credited subject to the following: (a) all material returned must, on its arrival at FluoroSeal Inc.'s plant, be found to be in first-class condition; if not, cost of putting in saleable condition will be deducted from credit memoranda; (b) a restocking charge will apply based on the nature of the product returned, and will be deducted from all credit memoranda issued for material returned; (c) transportation charges, if not prepaid, will be deducted from credit memoranda.

SHIPMENTS All products sent out will be carefully examined, counted and packed. The cost of any special packing or special handling caused by Buyer's requirements or requests shall be added to the amount of the order. No claim for shortages will be allowed unless made in writing within ten (10) days of receipt of a shipment. Claims for products damaged or lost in transit should be made to the carrier, as FluoroSeal Inc.'s responsibility ceases, and title passes, on delivery to the carrier.

SPECIAL PRODUCTS Orders covering special or non-standard products are not subject to cancellation except on such terms as FluoroSeal Inc. may specify on application.

PRICES AND DESIGNS Prices and designs are subject to change without notice. All prices are F.O.B. Point of Shipment, unless otherwise stated.

TAXES The amount of any sales, excise or other taxes, if any, applicable to the products, shall be added to the purchase price and shall be paid by Buyer unless Buyer provides FluoroSeal Inc. with an exemption certificate acceptable to the taxing authorities.

NUCLEAR PLANTS Where the products, engineering design or fabrication is for nuclear plant applications, Buyer agrees (a) to take all necessary steps to add FluoroSeal Inc. as an insured under the American Nuclear Insurers (ANI) pool and under the Mutual Atomic Energy Reinsurance Pool (MAERP) for property damage and liability insurance and if necessary steps could have been taken, but are not taken, Buyer shall hold FluoroSeal Inc. harmless against all such losses which could have been thus covered; (b) Buyer agrees to hold FluoroSeal Inc. harmless with respect to any personal injury or death, property damage or any other loss in a nuclear incident which is caused directly or indirectly by defective design, material, or workmanship, furnished by FluoroSeal Inc. and which is covered by insurance maintained by Buyer (or which could be so covered but with respect to which Buyer has elected to self-insure), and further agrees to waive subrogation by its carriers of such insurance against FluoroSeal Inc.; (c) as to nuclear hazards for which Buyer cannot obtain insurance coverage, the liability of FluoroSeal Inc. for any personal injury or death, property damage or any other loss directly caused by defective design, material, or workmanship furnished by FluoroSeal Inc. shall not exceed the value of the material furnished by FluoroSeal Inc. at the time of the loss occurrence.

MINIMUM INVOICE $250 plus shipping.

TERMS Cash, net 30 days unless otherwise specified.

Most recent terms and conditions are available in the Downloads section of our website.

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