

Fabri-Valve®

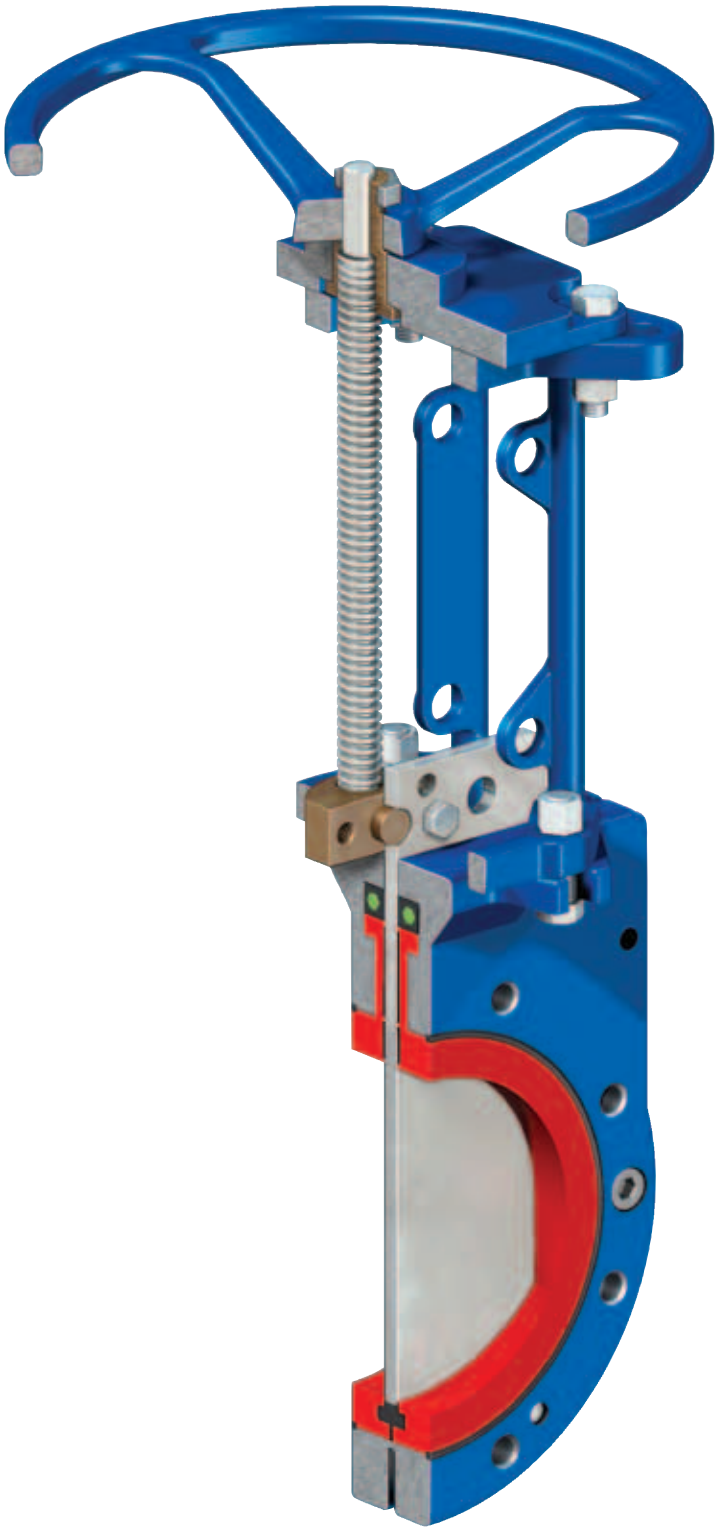
XS150-ULV Urethane Lined
Knife Gate Valve



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ENGINEERED FOR LIFE

XS150-ULV



XS150-ULV Urethane Lined Knife Gate Valve Zero Discharge Valve

The Fabri-Valve® XS150-ULV Urethane Lined Knife Gate Valve provides an economical solution for abrasive and corrosive applications. The XS150-ULV does not discharge process media to the environment. The design utilizes the same superior sealing techniques as the XS150, featuring a robust perimeter seal that provides bi-directional, bubble-tight shutoff. Replaceable FV8000™ urethane liners are added to protect the body from abrasion and corrosion.

The XS150 body halves are machined to accept the removable urethane liners (full port). A triple scraper design is incorporated into the FV8000 liners, which cleans the gate during operation and prevents media build up in chest area. The perimeter seal has shoulders, which mechanically retain (lock) the seal in the seal groove located in the FV8000 liners. The seal groove is specially designed to prevent seal pull-out but also allows the seal to move and prevent overcompression.

Advantages

FV8000 Liner* & Seat are Independent:

- Liner and slightly recessed seat work in harmony providing body protection and bubble-tight, bi-directional shutoff in abrasive and/or corrosive applications.
- Liner protects the perimeter seal from the abrasion of direct process flow.
- Liner material is harder for superior abrasion resistance since it is not used for sealing.
- Triple scraper design is incorporated into liners which cleans gate during operation and prevents media build-up in chest area.

Ease of Maintenance:

- Injectable packing allows easy packing adjustments to be made under line pressure without valve disassembly or removal of the valve from the pipeline.¹
- One-piece perimeter and chest seal design allows for quick and easy maintenance.
- Liners are easily replaced.

* Patented

¹ If the pipeline media is dangerous, lethal, harmful, active, scorching or under high pressure, special precautions must be taken before removing the packing bolts. Consult the XS150-ULV Installation & Maintenance manual for instructions.

² Valves with a bevel gear have a rising stem.

³ Consult factory for urethane-lined designs available in sizes 26" through 60".

Advantages (cont.)

One-Piece Perimeter & Chest Seal*:

- Bi-directional, repeatable shutoff.
- Zero Discharge. Zero leakage.
- Perimeter Seal:
 1. The perimeter seal has shoulders, which mechanically retain (lock) the seal in the seal groove even during the most demanding applications.
 2. The seal groove is specially designed to prevent seal pull-out but also allows the seal to move and prevent overcompression.
- Shut-off performance is unaffected by differential pressure. Excellent bi-directional shut-off even at very low pressures.
- Chest seal wraps around the entire gate eliminating leakage paths.
- Chest seal completely encloses injectable packing; therefore, contamination of the process fluid by “loose” packing is eliminated.

Design

- Standard MSS-SP81 Face-to-Face.
- Robust gate resists distortion due to effects of water hammer.
- A taper is added to the liner’s internal diameter to eliminate the possibility of material collecting at the bottom of the port and preventing proper closure. The taper ensures automatic “clean-out” and “flushing”.
- Minimized chest area and close tolerances prevents media packing.
- Flange O-rings seal against mating flange and prevent overcompression of the FV8000 urethane liners. No gaskets are required.
- Unrestricted straight-through flow design provides true full-port design.
- Non-Rising stem design minimizes space required for installation.²
- Universal yoke allows easy conversion between handwheel and cylinder operated.
- Dished handwheel keeps hands away from pinch points while operating.

Specifications

Size Range

2” – 24”

Pressure Rating

150 psi (10.3 bar) CWP (cold working pressure)

Temperature Rating

170°F (77°C) Standard

Higher temperatures available upon request.

Flange Drilling

ANSI 125/150 Drilling Standard.

Contact factory for alternate flange drilling.

Testing

Standard Shell test: Hydro test at 1.5 times the rated CWP (cold working pressure)

- Zero allowable leakage

Standard Resilient Seat test:

Hydro test at 15 psi (1 bar) and rated CWP.

- Zero allowable leakage

Shutoff Performance

Zero leakage for all sizes.

ANSI/FCI 70-2 establishes a series of six leakage classes for control valves and defines the test procedure. Class VI allows the least leakage. XS150-ULV’s are bubble tight, which exceeds Class VI requirements.

Available in a Wide Choice of Materials for a Broad Range of Applications

- To meet specific application requirements, a variety of seal materials and gate materials are offered. Contact Factory.

Installation Orientation

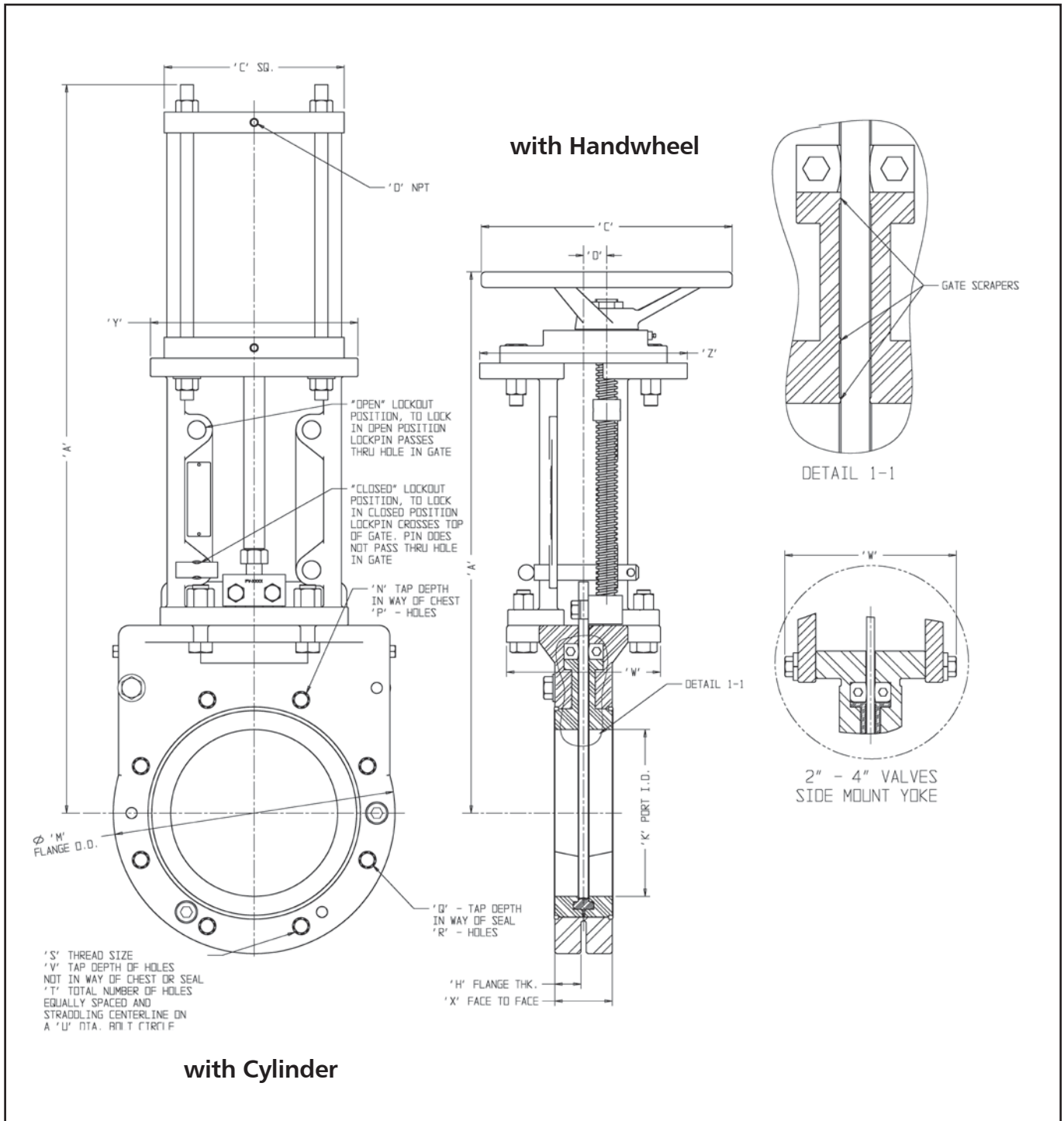
Do not mount sizes 14” – 24” in horizontal piping with horizontal stem travel

Dimensions: XS150-ULV with Handwheel or Cylinder

Valve Size		Dimensions Inches (mm) ULV w/ Handwheel or Cylinder																		
IN	DN	'A'						'C'						'D'						
2	50	HW	4Cyl					HW	4Cyl					HW	4Cyl					
		13.69 (348)	16.81 (427)					10.00 (254)	4.50 (114)					0.88 (22)	3/8-18					
3	80	HW	5Cyl	6Cyl				HW	5Cyl	6Cyl				HW	5Cyl	6Cyl				
		15.56 (395)	19.75 (502)	20.00 (508)				10.00 (254)	5.50 (140)	6.50 (165)				0.88 (22)	3/8-18	3/8-18				
4	100	HW	5Cyl	6Cyl				HW	5Cyl	6Cyl				HW	5Cyl	6Cyl				
		17.31 (440)	22.50 (572)	22.75 (578)				10.00 (254)	5.50 (140)	6.50 (165)				0.88 (22)	3/8-18	3/8-18				
5	125	HW	5Cyl	6Cyl	8Cyl			HW	5Cyl	6Cyl	8Cyl			HW	5Cyl	6Cyl	8Cyl			
		20.19 (513)	25.31 (643)	25.56 (649)	25.94 (649)			16.00 (406)	5.50 (140)	6.50 (165)	9.00 (229)			1.05 (27)	3/8-18	3/8-18	3/8-18			
6	150	HW	5Cyl	6Cyl	8Cyl			HW	5Cyl	6Cyl	8Cyl			HW	5Cyl	6Cyl	8Cyl			
		21.88 (556)	28.00 (711)	28.25 (718)	28.63 (727)			16.00 (406)	5.50 (140)	6.50 (165)	9.00 (229)			1.05 (27)	3/8-18	3/8-18	3/8-18			
8	200	HW	6Cyl	8Cyl	10Cyl			HW	6Cyl	8Cyl	10Cyl			HW	6Cyl	8Cyl	10Cyl			
		25.94 (659)	34.31 (871)	34.69 (881)	35.69 (907)			16.00 (406)	6.50 (165)	9.00 (229)	11.00 (279)			1.1 (28)	3/8-18	3/8-18	1/2-14			
10	250	HW	8Cyl	10Cyl	14Cyl			HW	8Cyl	10Cyl	14Cyl			HW	8Cyl	10Cyl	14Cyl			
		29.50 (749)	40.31 (1024)	41.31 (1049)	43.06 (1094)			16.00 (406)	9.00 (229)	11.00 (279)	14.75 (375)			1.16 (29)	3/8-18	1/2-14	3/4-14			
12	300	HW	8Cyl	10Cyl	14Cyl	16Cyl		HW	8Cyl	10Cyl	14Cyl	16Cyl		HW	8Cyl	10Cyl	14Cyl	16Cyl		
		34.38 (873)	46.69 (1186)	47.69 (1211)	49.69 (1262)	50.00 (1270)		20.00 (508)	9.00 (229)	11.00 (279)	14.75 (375)	17.00 (432)		1.23 (31)	3/8-18	1/2-14	3/4-14	3/4-14		
14	350	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	
		52.00 (1321)	53.00 (1346)	53.00 (1346)	53.88 (1369)	54.19 (1376)		9.00 (229)	11.00 (279)	12.75 (324)	14.75 (375)	17.00 (432)		3/8-18	1/2-14	1/2-14	3/4-14	3/4-14		
16	400	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	
		58.50 (1486)	59.50 (1511)	59.50 (1511)	60.38 (1534)	60.69 (1542)		9.00 (229)	11.00 (279)	12.75 (324)	14.75 (375)	17.00 (432)		3/8-18	1/2-14	1/2-14	3/4-14	3/4-14		
18	450	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	HW*	8Cyl	10Cyl	12Cyl	14Cyl	16Cyl	
		63.94 (1624)	64.94 (1649)	64.94 (1649)	65.82 (1672)	66.12 (1679)		9.00 (229)	11.00 (279)	12.75 (324)	14.75 (375)	17.00 (432)		3/8-18	1/2-14	1/2-14	3/4-14	3/4-14		
20	500	HW*	10Cyl	12Cyl	14Cyl	16Cyl	18Cyl	HW*	10Cyl	12Cyl	14Cyl	16Cyl	18Cyl	HW*	10Cyl	12Cyl	14Cyl	16Cyl	18Cyl	
		71.19 (1808)	71.19 (1808)	72.06 (1830)	72.38 (1838)	73.38 (1864)		11.00 (279)	12.75 (324)	14.75 (375)	17.00 (432)	19.00 (483)		1/2-14	1/2-14	3/4-14	3/4-14	3/4-14	3/4-14	
24	600	HW*	10Cyl	12Cyl	14Cyl	16Cyl	18Cyl	HW*	10Cyl	12Cyl	14Cyl	16Cyl	18Cyl	HW*	10Cyl	12Cyl	14Cyl	16Cyl	18Cyl	
		83.31 (2116)	83.31 (2116)	84.19 (2138)	84.50 (2146)	85.50 (2172)		11.00 (279)	12.75 (324)	14.75 (375)	17.00 (432)	19.00 (483)		1/2-14	50-14	3/4-14	3/4-14	3/4-14	3/4-14	

Valve Size		Dimensions Inches (mm) ULV w/ Handwheel or Cylinder															
IN	DN	'H'	'K'	'M'	'N'	'P'	'Q'	'R'	'S'	'T'	'U'	'V'	'W'	'X'	'Y'	'Z'	
2	50	0.81 (21)	2.00 (51)	6.00 (152)	0.38 (10)	2	N/A	N/A	5/8-11NC	4	4.75 (121)	.75 (19)	5.13 (130)	1.88 (48)	4.38 (111)	4.38 (111)	
		0.09 (2)	3.00 (76)	7.50 (191)	0.38 (10)	2	N/A	N/A	5/8-11NC	4	6.00 (152)	.75 (19)	5.75 (146)	2.00 (51)	6.13 (156)	6.13 (156)	
4	100	0.88 (22)	4.00 (102)	9.00 (229)	0.38 (10)	2	N/A	N/A	5/8-11HC	8	7.50 (191)	.75 (19)	5.75 (146)	2.00 (51)	6.13 (156)	6.13 (156)	
		1.00 (25)	5.00 (127)	10.00 (254)	0.38 (10)	2	N/A	N/A	3/4-10HC	8	8.50 (216)	.81 (21)	7.38 (187)	2.25 (57)	8.13 (207)	8.13 (207)	
6	150	0.94 (24)	6.00 (152)	11.00 (279)	0.38 (10)	2	N/A	N/A	3/4-10NC	8	9.50 (241)	.75 (19)	7.38 (187)	2.25 (57)	8.13 (207)	8.13 (207)	
		1.19 (30)	8.00 (203)	13.50 (343)	0.63 (16)	2	N/A	N/A	3/4-10NC	8	11.75 (298)	.75 (19)	7.38 (187)	2.75 (70)	9.94 (252)	9.94 (252)	
10	250	1.19 (30)	10.00 (254)	16.00 (406)	0.44 (11)	4	N/A	N/A	3/4-10NC	12	14.25 (362)	1.00 (25)	7.38 (187)	2.75 (70)	11.88 (302)	9.94 (252)	
		1.25 (32)	12.00 (305)	19.00 (483)	0.44 (11)	4	N/A	N/A	3/4-10NC	12	17.00 (432)	1.00 (25)	7.50 (191)	3.00 (78)	11.69 (297)	9.94 (252)	
14	350	1.50 (38)	13.25 (337)	21.00 (533)	0.56 (14)	4	N/A	N/A	1-8NC	12	18.75 (478)	1.00 (25)	10.38 (264)	3.00 (78)	15.50 (394)	15.50 (394)	
		1.75 (44)	15.25 (387)	23.50 (597)	0.50 (13)	6	N/A	N/A	1-8NC	16	21.25 (540)	1.25 (32)	10.63 (270)	3.50 (89)	15.50 (394)	15.50 (394)	
18	450	1.75 (44)	17.25 (438)	25.00 (635)	0.56 (14)	6	.50 (13)	6	1 1/8-7NC	16	22.75 (578)	1.06 (27)	12.25 (311)	3.50 (89)	15.75 (400)	15.50 (394)	
		2.25 (57)	19.25 (489)	27.50 (699)	0.75 (19)	8	0.88 (22)	2	1 1/8-7NC	20	25.00 (635)	1.25 (32)	13.50 (343)	4.50 (114)	17.25 (438)	17.14 (435)	
24	600	2.25 (57)	23.25 (591)	32.00 (813)	0.75 (19)	8	0.94 (24)	4	1 1/8-7NC	20	29.50 (749)	1.25 (32)	16.00 (408)	4.50 (114)	21.75 (552)	17.14 (435)	

XS150-ULV with Handwheel or Cylinder



Refer to table on page 4
 Note: Cylinders are sized to meet process conditions

Flow Coefficients

The Cv values below represent U.S. gallons per minute 60°F water through a 100% open valve at a pressure drop of 1 psi. The metric equivalent, Kv, is the flow of water at +16°C through the valve in cubic meters per hour at a pressure drop of 1 kg/cm². To convert Cv to Kv, multiply the Cv by 0.8569.

Valve Size	Cv
2	299
3	876
4	2,421
6	6,213
8	10,921
10	16,507
12	26,649
14	29,205
16	41,560
18	51,356
20	61,765
24	83,937

Available Options

- Duplex Stainless Steel Gates
- Hardened Gate Material
- Hard Chromed Gate
- Nickel-TFE Coated Gate
- Epoxy Coating
- Locking Devices
- Alternate Flange Drilling
- Bevel Gear
- Chainwheels
- Cylinder Actuators
- Electric Actuators
- Ratchet
- Extended Stems
- Rod Boots
- Limit Switches
- Positioner
- Solenoids
- Raised Face Flanges
- Heavy Duty Gate Clamp
- Stem Cover*

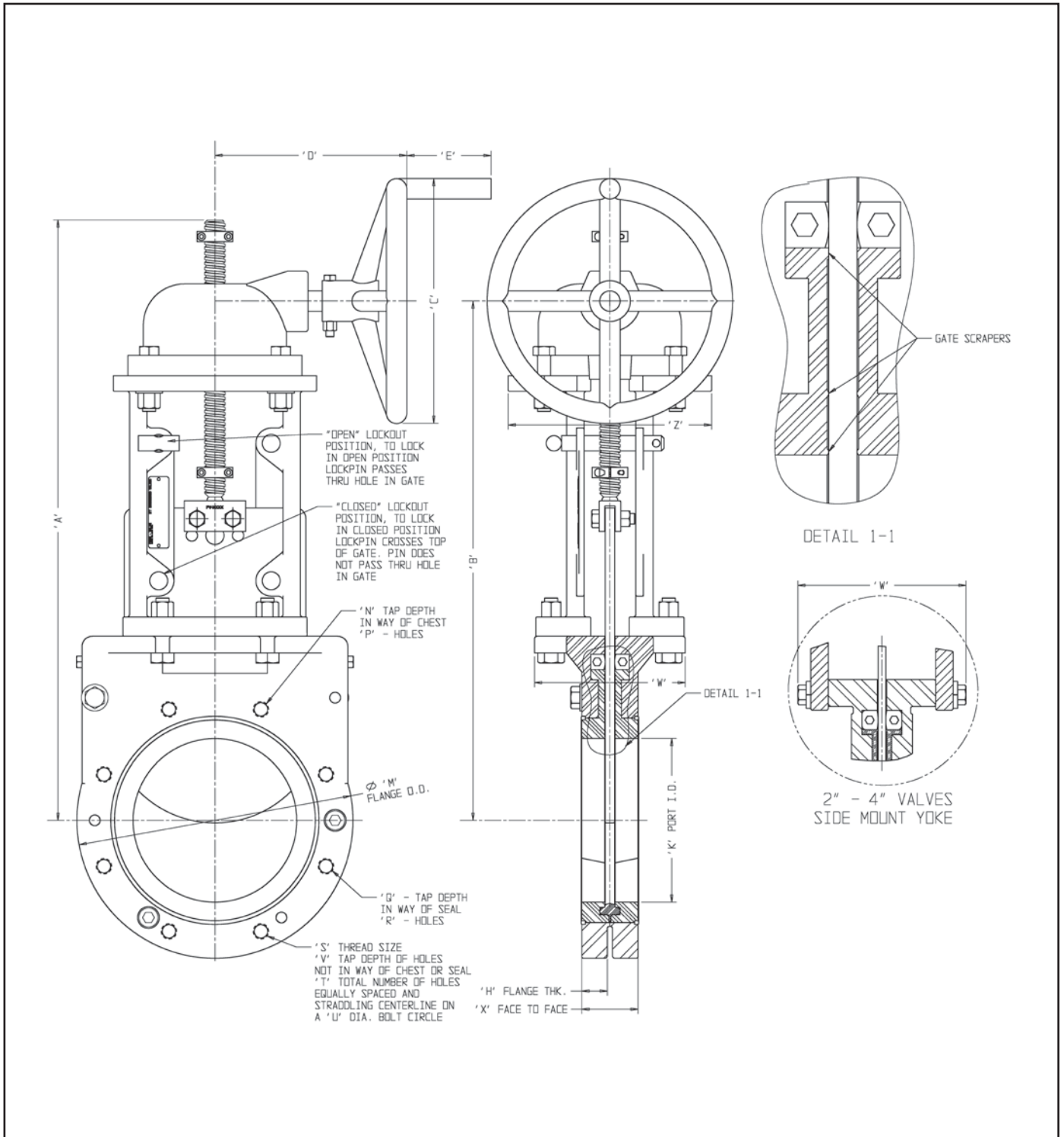
*Valves with this option have a rising stem

Dimensions: XS150-ULV with Bevel Gear

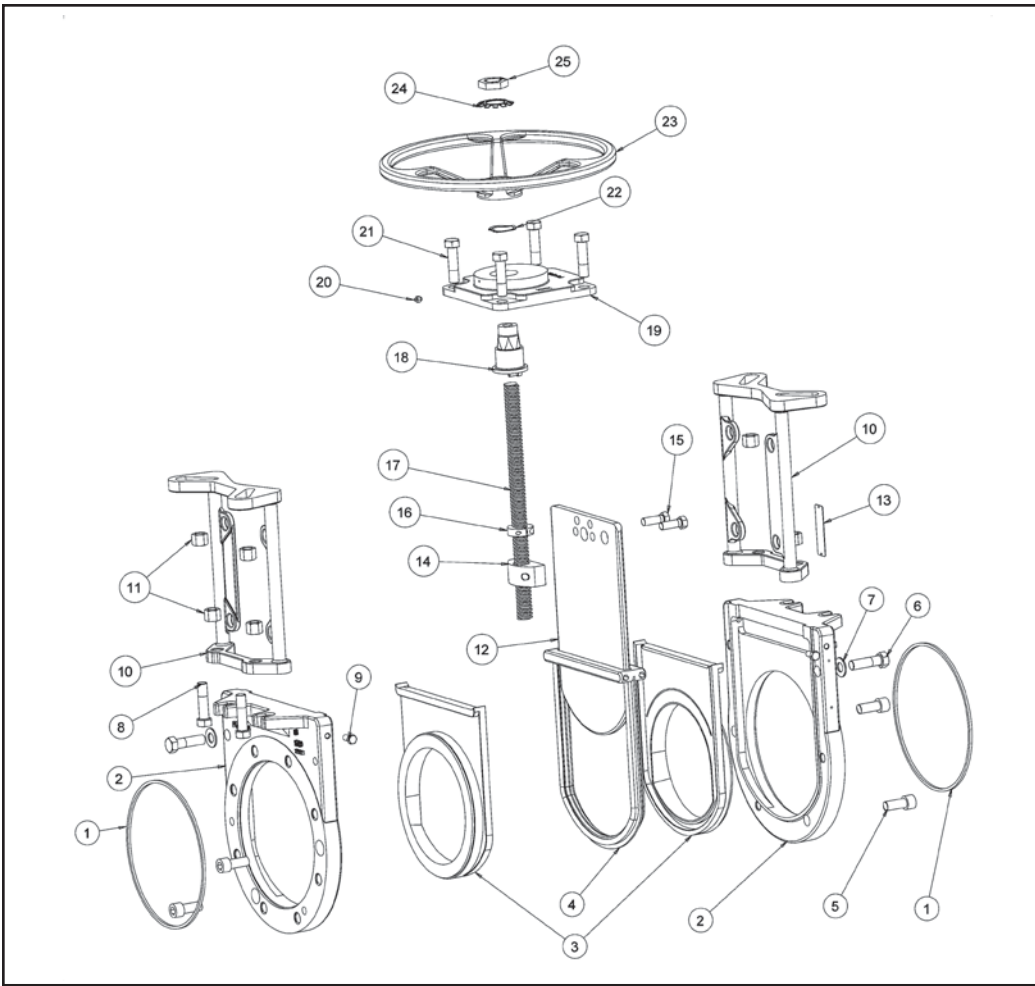
Valve Size	Dyna-torque Bevel Gear Model	150 CWP Dimensions Inches (mm) for 2" - 24" ULV with Bevel Gear																				
		'A'	'B'	'C'	'D'	'E'	'H'	'K'	'M'	'N'	'P'	'Q'	'R'	'S'	'T'	'U'	'V'	'W'	'X'	'Y'	'Z'	
2	50	BG-3	18.31	16.31	12.00	13.63	3.50	0.81	2.00	6.00	0.38	2	N/A	N/A	5/8-11NC	4	4.75	0.75	5.13	1.88	4.38	4.38
		BG-3	(465)	(414)	(305)	(346)	(89)	(21)	(51)	(152)	(10)	2	N/A	N/A	5/8-11NC	4	(121)	(19)	(130)	(48)	(111)	(111)
3	80	BG-3	21.19	18.19	12.00	13.63	3.50	0.88	3.00	7.50	0.38	2	N/A	N/A	5/8-11NC	4	6.00	0.75	5.75	2.00	6.13	6.13
		BG-3	(538)	(462)	(305)	(346)	(89)	(22)	(76)	(191)	(10)	2	N/A	N/A	5/8-11NC	4	(152)	(19)	(146)	(51)	(156)	(156)
4	100	BG-3	24.31	19.94	12.00	13.63	3.50	0.88	4.00	9.00	0.38	2	N/A	N/A	5/8-11NC	8	7.50	0.75	5.75	2.00	6.13	6.13
		BG-3	(617)	(506)	(305)	(346)	(89)	(22)	(102)	(229)	(10)	2	N/A	N/A	5/8-11NC	8	(191)	(19)	(146)	(51)	(156)	(156)
5	125	BG-3	24.75	19.50	12.00	13.59	3.50	1.00	5.00	10.00	0.38	2	N/A	N/A	3/4-10NC	8	8.50	.81	7.38	2.25	8.13	8.13
		BG-3	(629)	(495)	(305)	(345)	(89)	(25)	(127)	(254)	(10)	2	N/A	N/A	3/4-10NC	8	(216)	(21)	(187)	(57)	(207)	(207)
6	150	BG-3	27.44	21.19	12.00	13.63	3.50	0.94	6.00	11.00	0.44	2	N/A	N/A	3/4-10NC	8	9.50	0.81	7.38	2.25	8.13	8.13
		BG-3	(697)	(538)	(305)	(346)	(89)	(24)	(152)	(279)	(11)	2	N/A	N/A	3/4-10NC	8	(241)	(21)	(187)	(57)	(207)	(207)
8	200	BG-3	33.50	25.25	12.00	13.63	3.50	1.19	8.00	13.50	0.46	2	N/A	N/A	3/4-10NC	8	11.75	1.00	7.38	2.75	9.94	9.94
		BG-3	(851)	(641)	(305)	(346)	(89)	(30)	(203)	(343)	(12)	2	N/A	N/A	3/4-10NC	8	(298)	(25)	(187)	(70)	(252)	(252)
10	250	BG-3	39.13	28.81	12.00	13.63	3.50	1.19	10.00	16.00	0.44	4	N/A	N/A	7/8-9NC	12	14.25	1.06	7.38	2.75	11.88	9.94
		BG-3	(994)	(732)	(305)	(346)	(89)	(30)	(254)	(406)	(11)	4	N/A	N/A	7/8-9NC	12	(362)	(27)	(187)	(70)	(302)	(252)
12	300	BG-3	45.50	33.19	12.00	13.63	3.50	1.25	12.00	19.00	0.50	4	N/A	N/A	7/8-9NC	12	17.00	1.13	7.50	3.00	11.69	9.94
		BG-3	(1156)	(843)	(305)	(346)	(89)	(32)	(305)	(483)	(13)	4	N/A	N/A	7/8-9NC	12	(432)	(29)	(191)	(76)	(297)	(252)
14	350	BG-3	50.78	37.19	12.00	13.63	3.50	1.50	13.25	21.00	0.50	4	N/A	N/A	1-8NC	12	18.75	1.13	10.38	3.00	15.50	15.50
		BG-3	(1290)	(945)	(305)	(346)	(89)	(38)	(337)	(533)	(13)	6	N/A	N/A	1-8NC	12	(476)	(29)	(264)	(76)	(394)	(394)
16	400	BG-4	56.31	42.63	12.00	16.25	3.50	1.75	15.25	23.50	0.53	6	N/A	N/A	1-8NC	16	21.25	1.38	10.63	3.50	15.50	15.50
		BG-4	(1430)	(1083)	(305)	(413)	(89)	(44)	(387)	(597)	(13)	6	N/A	N/A	1-8NC	16	(540)	(35)	(270)	(89)	(394)	(394)
18	450	BG-4	61.75	46.04	18.00	16.36	7.00	1.75	17.25	25.00	0.81	6	.5	6	1-1/8-7NC	16	22.75	1.25	12.25	3.50	15.75	15.50
		BG-4	(1568)	(1169)	(457)	(416)	(178)	(44)	(438)	(635)	(21)	6	.5	6	1-1/8-7NC	16	(578)	(32)	(311)	(89)	(400)	(394)
20	500	BG-4	68.00	50.29	24.00	17.88	7.00	2.25	19.25	27.50	0.81	8	0.88	2	1-1/8-7NC	20	25.00	1.38	13.50	4.50	17.25	17.14
		BG-4	(1727)	(1271)	(610)	(454)	(178)	(57)	(489)	(699)	(21)	8	0.88	2	1-1/8-7NC	20	(635)	(35)	(343)	(114)	(438)	(435)
24	600	BG-34	80.13	58.44	12.00	18.00	3.50	2.25	23.25	32.00	0.81	8	0.94	4	1-1/4-7NC	20	29.50	1.44	16.00	4.50	21.75	17.14
		BG-34	(2035)	(1484)	(305)	(457)	(89)	(57)	(591)	(813)	(21)	8	0.94	4	1-1/4-7NC	20	(749)	(37)	(406)	(114)	(552)	(435)

Refer to Sketch on page 7
Reference Dimensions in (parentheses)

XS150-ULV



Refer to table on page 6
 Notes: Valves with bevel gear actuation have rising stems



Parts List					
Item	Description	Material	Item	Description	Material
1	O-Ring	EPDM, Viton, Aflas, Neoprene	14	Non Rising Stem Nut	Acid Resistant Bronze
2	Body	Carbon Steel	15	Stem Nut Bolts	Plated Steel
3	Liner	FV8000 Urethane Compound	16	Travel Stop	Stainless Steel
4	Seal	EPDM, Viton, Aflas, Neoprene	17	Non Rising Stem	304 SS
5	Socket Head Clamping Bolt	Stainless Steel	18	Drive Nut	Bronze
6	Capcrew Clamping Bolt	Stainless Steel	19	Yoke Hub	Carbon Steel
7	Clamp Bolt Washer	Stainless Steel	20	Grease Fitting	Plated Steel
8	Yoke to Body Bolt	Plated Steel	21	Yoke Hub Bolts	Plated Steel
9	Injection Port Bolt	Stainless Steel	22	Wave Spring	Stainless Steel
10	Yoke Half	Carbon Steel	23	Handwheel	Cast Iron
11	Yoke Retainer Nut	Carbon Steel	24	Retainer Washer	Stainless Steel
12	Gate	SS as Specified by Customer	25	Retainer Nut	Plated Steel
13	Serial Number Tag	Stainless Steel			



ENGINEERED FOR LIFE

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Form XS150-ULV