# 8532 Valve D101552X012

# Fisher™ 8532 High-Performance Butterfly Valve

The Fisher 8532 high-performance butterfly valve provides outstanding performance under extreme pressure and temperature conditions. The 8532 valve maintains tight shutoff, is available in a fire-tested version, and can be specified for cryogenic applications.

The 8532 valve is available as either a flangeless, wafer-style design or as a single-flange (lugged) design. A splined drive shaft combines with a variety of spring-and-diaphragm or pneumatic piston actuators to make the 8532 a reliable, high-performance butterfly valve for a variety of throttling and on-off applications in the various process industries.

The 8532 valve can be supplied with one of several dynamic seals (figure 4) that can be used in a variety of demanding applications. With the appropriate seal selection and materials of construction, the pressure-assisted seal provides excellent shutoff against the full CL150 or CL300 pressure ratings.

# Features

- Economical Tight Shutoff-- The pressure-assisted seal design provides tight shutoff against the full pressure rating of the specified valve.
- Safety-- Shaft blowout protection is designed into the 8532 valve (figure 6). The anti-blowout gland fits securely over the valve shaft which has been turned down to form a circumferential shoulder that contacts the anti-blowout gland.
- Excellent Flow Control-- With a modified equal percentage flow characteristic, the 8532 can be used for throttling applications through 90 degrees of disk rotation. Rangeability is 100 to 1.
- Economically Designed for Minimal Deadband-- A splined end connection on the drive shaft allows lever clamping by most Fisher rotary actuators.



- Application Versatility-- Optional keyed shaft is ideal for on/off applications and allows actuator selection flexibility. Standard construction materials and seal assemblies provide long life and outstanding performance in a broad range of liquid and gas applications.
- Ease of Maintenance-- Interchangeability of all parts including shafts and disks simplifies service and reduces maintenance costs.
- Improved Environmental Capabilities-- The optional ENVIRO-SEAL<sup>™</sup> packing system is designed with very smooth stem surfaces and live-loading provides improved sealing, guiding, and loading force transmission. The ENVIRO-SEAL packing system can control emissions below the EPA (Environmental Protection Agency) limit of 100 ppm (parts per million).
- Easy Installation-- The valve body self-centers on the line flange bolts as a fast, accurate means of centering the valve in the pipeline.
- Reliable Flange Gasketing Surface-- Seal retainer screws are located so there is no interference with the sealing function of either flat sheet or spiral wound line flange gaskets.





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#### Specifications

#### **Available Valve Configurations**

■ Wafer (Flangeless), ■ Lugged (Single Flange), or Double Flanged valve bodies

#### Valve Body Sizes

NPS ■ 14, ■ 16, ■ 18, ■ 20, and ■ 24

#### **End Connection Style**

Valve body is designed to fit between raised-face mating flanges per ASME B16.5 CL150 or CL300

#### Maximum Inlet Pressure/Temperature<sup>(1)</sup>

Consistent with ■ CL150 and ■ CL300 pressure/temperature ratings per ASME B16.34. Also, see figures 2 and 3 for additional information

#### **Available Seal Configurations**

Standard Constructions See figure 4 and table 2

#### **Standard Construction Materials**

Valve Body and Disk: ASTM grades of carbon steel or stainless steel

#### Disk Coating:

Hardfacing options are available. Chrome plate is standard with NOVEX, Phoenix III, or Cryogenic seals

Shaft: ASTM grade of ■ S17400 (17-4PH H1025 SST), or S20910

#### Shaft Extension Lengths:

High Temperature None required for temperatures less than 343°C (650°F),

■ 6 inches for temperatures from 343 to 538°C (650 to 1000°F), or **1**2 inches for temperatures above 538°C (1000°F)

Cryogenic 914mm (36 inches)

Seal Ring: ■ PTFE, ■ S31600 (316 SST), ■ S21800, ■ S31600/PTFE, ■ UHMWPE<sup>(4)</sup>, or ■ CTFE<sup>(5).</sup>

Backup ring: ■ Nitrile, ■ Chloroprene, ■ PTFE, ■ Fluorocarbon--for a broad range of hydrocarbon and chemical process applications<sup>(1)</sup> or EPR--for process applications including steam and water<sup>(1)</sup>. A backup ring is not used with the NOVEX seal

**Packing:** PTFE V-ring (standard packing), Graphite (optional), or ■ ENVIRO-SEAL packing (optional)

**Bearings:** PEEK<sup>(2)</sup> (standard material), and ■ S31600, ■ PTFE Composition, or ■ CoCr-A (Alloy 6) (optional)

#### Valve Body Classification

Wafer and Lugged face-to-face dimensions are in compliance with MSS SP68 and API 609 standards. Double Flange valve bodies comply with API 609 short face-to-face dimensions. Valve bodies are designed for installation between ASME B16.5 CL150 or CL300 raised-face flanges

#### Shutoff Classification. Per ANSI/FCI 70-2 and IEC 60534-4

Standard Soft Seal: Bidirectional bubble-tight shutoff NOVEX Seal: Unidirectional shutoff Class IV (preferred flow direction  $only^{(3)}$ ), optional Class VI Phoenix III Seal: Bidirectional bubble-tight Phoenix III Seal for Fire Tested Applications: Class VI shutoff. Contact your Emerson sales office or Local Business Partner for more information.

#### Flow Characteristic

Modified equal percentage

#### **Flow Coefficients**

See table 1 and Fisher Catalog 12

#### Noise Levels

See Catalog 12 for sound pressure level prediction

#### **Disk Rotation**

Clockwise to close

#### Valve Dimensions and Approximate Weights

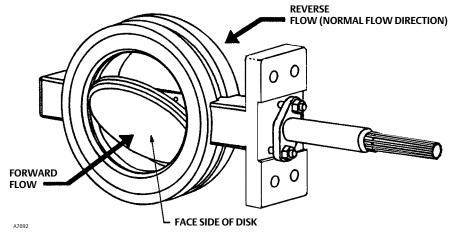
See figures 7, 8, 9, and 10

#### **ENVIRO-SEAL Packing**

This optional ■ PTFE or ■ graphite packing system provides improved sealing, guiding, and transmission of loading force to control liquid and gas emissions. See Bulletin 59.3:041 ENVIRO-SEAL Packing Systems for Rotary Valves (D101638X012) for more information.

- The pressure/temperature limits in this bulletin (figures 2 and 3), and any application code or standard limitation, should not be exceeded.
  PEEK stands for poly-ether-ether-ketone.
  For optimum seal performance, the preferred valve orientation at shutoff is with the retaining ring downstream from the high pressure side of the valve.
  UHMWPE stands for ultra high molecular weight polyethylene.
  CTFE not recommended for fast cycling, less than 2 seconds. Contact your Emerson sales office or Local Business Partner for other seals available for fast cycling or tighter shutoff.

## Figure 1. Flow Direction



#### Table 1. Flow Coefficients<sup>(1)(3)</sup>

VALVE SIZE,	MAX C <sub>v</sub> <sup>(2)</sup> , VALVE 90° OPEN						
NPS	CL150	CL300					
14	6320	4550					
16	8600	5630					
18	11,050	8230					
20	13,850	9530					
24	21,500	12,510					
1. To obtain the flow coefficient K <sub>v</sub> in terms of cubic meters per hour at one kilogram force per square centimeter differential pressure across the valve, using the following multiplier: K <sub>v</sub> = 0.856 C <sub>v</sub> . 2. Measured in gallons per minutes at 1 psi differential pressure across the valve. 3. See Catalog 12 for a complete listing of flow coefficients.							

# Installation

Recommended installation for the 8532 valve is with the shaft horizontal in a normal-flow direction. Horizontal installation will enhance valve performance because process fluid flow will sweep entrained solids from valve surfaces. This sweeping action prevents particle buildup on seal surfaces. However, the valve may be installed in either the forward or reverse flow direction.

The standard soft seal offers bubble-tight, bidirectional shutoff. To meet the performance requirements of many of today's fire-tested requirements, a Phoenix III valve must be installed in the preferred valve orientation. Both the NOVEX and cryogenic seals are uni-directional and should be installed with the shaft upstream of the seal.

Unique operating conditions may require a specific combination of actuator motion. To satisfy unique operating requirements, the valve and actuator can be assembled in eight ways, providing for actuator motion and open disk position. For assistance in selecting the appropriate combination of actuator action and open valve position, consult your <u>Emerson sales office</u> or Local Business Partner.

Dimensions and weights are shown in figures 7, 8, 9, and 10.

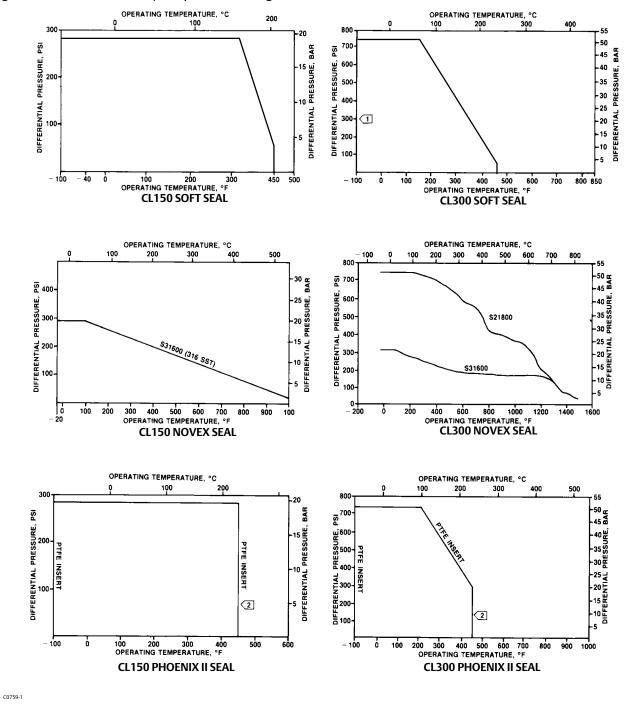
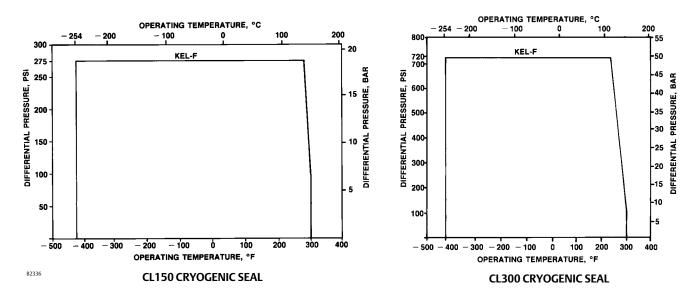


Figure 2. Maximum Pressure/Temperature Ratings for Soft Seal, NOVEX Seal and Phoenix III Seal, CL150 and CL300

Note

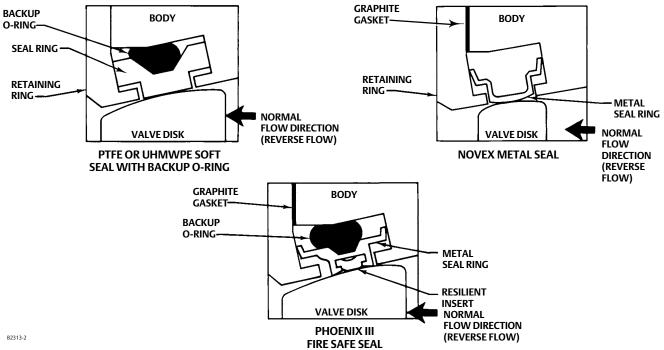
Ecause of potential erosive effects and premature seal failure that can occur, throttling PTFE seals at differential pressures greater than 300 psid at disk angles less than 20 degrees open is not recommended.

Temperature limitations do not account for the additional limitations imposed by the backup O-ring used with this seal. To determine the effective temperature limitation of the appropriate seal backup O-ring combination, refer to table 1.



#### Figure 3. Maximum Pressure/Temperature Ratings for Cryogenic Seal, CL150 and CL300

Figure 4. Available Seal Configurations



#### **Product Bulletin** 51.6:8532 February 2018

#### Figure 5. Typical Valve Assembly

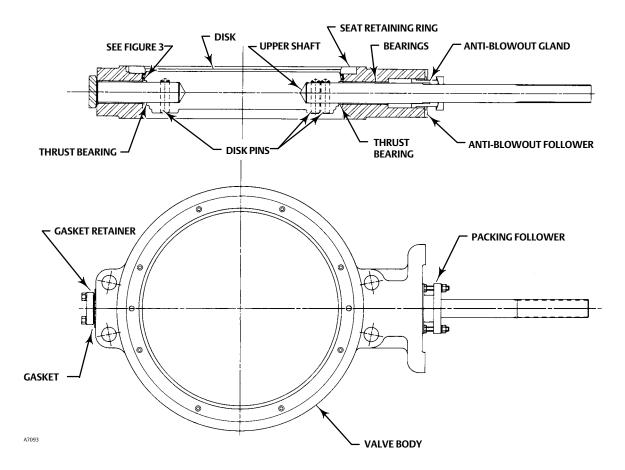
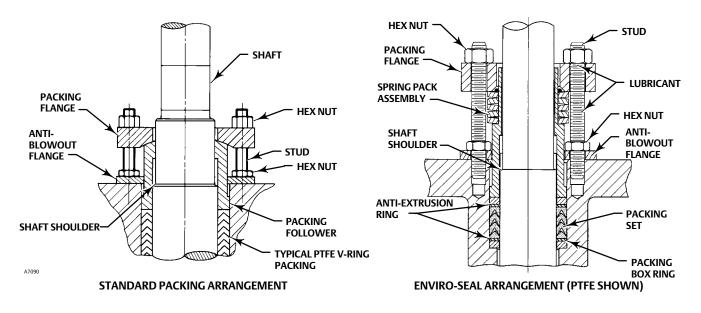


Figure 6. Blowout Protection



#### Table 2. Material Temperature Ratings

COMPO	NENT AND MATERIAL OF CONSTRUCTION <sup>(1)</sup>		URE RANGE
COMPO		°C	°F
	Valve Body <sup>(2)</sup>		
	Carbon Steel (WCC or SA 516-70) <sup>(7)</sup>	-29 to 427	-20 to 800
	CF8M (316 SST)	-198 to 538	-325 to 1000
CF	8M/CF10M (316/316H) <sup>(3)</sup> Dual-Certified	over 538 to 816	over 1000 to 150
	Disk		
	CF8M (316 SST)	-198 to 538	-325 to 1000
CF	8M/CF10M (316/316H) <sup>(3)</sup> Dual-Certified	over 538 to 816	over 1000 to 150
	Disk Coating		
	Chromium Carbide	-198 to 816	-325 to 1500
	Chrome Plating	-254 to 427	-425 to 800
	Chromium Coating	-254 to 593	-425 to 1100
	Shaft		
	S20910	-198 to 538	-325 to 1000
	S17400 (17-4 pH 1025)	-73 to 427	-100 to 800
	N07718	-254 to 704	-425 to 1300
	N07750	over 593 to 816	over 1100 to 150
	N05500	-198 to 482	-325 to 900
	Bearings <sup>(6)</sup>		
	PEEK (standard)	-73 to 260	-100 to 500
	S31600 <sup>(4)</sup>	-198 to 816	-325 to 1500
	R30006 (Alloy 6)	-198 to 816	-325 to 1500
	Bronze	-254 to 302	-425 to 575
	Packing		
PTF	E Packing and PTFE ENVIRO-SEAL Packing	-148 to 232	-325 to 450
	Graphite packing	-198 to 816	-325 to 1500
	Graphite packing with oxidizing media	-198 to 538	-325 to 1000
	Graphite ENVIRO-SEAL Packing	-148 to 315	-325 to 600
	PTFE Seal Ring	20 to 02	20 to 200
	Nitrile Backup O-Ring	-29 to 93	-20 to 200
	Chloroprene Backup O-Ring	-43 to 149	-45 to 300
	EPR Backup O-Ring	-54 to 149	-65 to 300
	Fluorocarbon Backup O-Ring	-29 to 204	-20 to 400
	PTFE Backup O-Ring	-73 to 204	-100 to 400
Seal Ring and	UHMWPE <sup>(5)</sup> Seal Ring (CL150 Only)		
Backup Ring	EPR Backup O-Ring	-54 to 93	-65 to 200
	Fluorocarbon Backup O-Ring	-29 to 93	-20 to 200
	Phoenix III and/or Fire Tested Construction		
	S31600 and PTFE Seal Ring with Nitrile Backup O-Ring	-40 to 149	-40 to 300
	Chloroprene Backup O-Ring	-54 to 149	-65 to 300
	EPR Backup O-Ring	-62 to 204	-80 to 400
	Fluorocarbon Backup O-Ring	-40 to 232	-100 to 200
	NOVEX S31600 Seal <sup>(4)</sup> Ring (CL150)	-29 to 538	-20 to 1000
6 I.D.	NOVEX S31600 Seal <sup>(4)</sup> Ring (CL300)	-29 to 816	-20 to 1500
Seal Ring	NOVEX S21800 Seal <sup>(4)</sup> Ring (CL300)	-29 to 816	-40 to 1500
	Cryogenic Seal Ring	Contact your Emerson sales	office or Local Business Pa

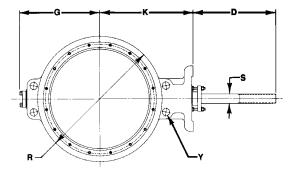
Special gasket retainer bolts are required for over 482°C (800°F)
 Special retaining ring screws for single flange valves over 538°C (1000°F)
 For a complete material description, contact your Emerson sales office.
 UHMWPE stands for ultra high molecular weight polyethylene.
 Special thrust bearings are required for high temp, applications over 343°C (650°F) (with 6- and 12-inch shaft extensions). Constructions with carbon steel valves and SST disks may require special thrust bearings at temperatures less than 343°C (650°F).
 Cast or wrought /plate grades used interchangeably, depending upon availability - unless requested by customer.

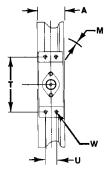
Valve Size,	Rating	A(1)	D	G	к	M(2)	R	S(3)	т	U	w	Y	Approx. Weight
NPS							mm						kg
14	CL150	91.9	208	295	327	331	422	31.8	235	46.0	17.5	(4)	72
14	CL300	117	356	319	364	304	437	44.5	273	50.8	20.6	1-1/8 - 8 UNC	121
10	CL150	102	208	318	371	375	465	31.8	235	46.0	17.5	1 - 8 UNC	94
16	CL300	133	356	353	397	346	498	44.5	273	50.8	20.6	1-1/4 - 8 UNC	183
18	CL150	114	356	349	400	419	529	39.6	273	50.8	20.1	1-1/8 - 8 UNC	139
18	CL300	149	356	384	419	389	556	57.2	337	76.2	23.9	1-1/4 - 8 UNC	227
20	CL150	127	356	381	432	464	584	44.5	273	50.8	20.1	1-1/8 - 8 UNC	167
20	CL300	159	265	416	483	442	605	76.0	337	76.2	23.9	1-1/4 - 8 UNC	364
24	CL150	154	356	438	292	581	692	57.2	337	76.2	23.9	1-1/4 - 8 UNC	255
24	CL300	181	546	483	546	523	716	76.0	337	76.2	23.9	1-1/2 - 8 UNC	469
Size	Rating						Inch						lb
14	CL150	3.62	8.19	11.62	12.88	13.04	16.62	1-1/4	9.25	1.81	0.69	(4)	158
14	CL300	4.62	14.00	12.56	14.31	12.00	17.19	1-3/4	10.75	2.00	0.81	1-1/8 - 8 UNC	266
10	CL150	4.00	8.19	12.50	14.62	14.77	18.31	1-1/4	9.25	1.81	0.69	1 - 8 UNC	207
16	CL300	5.25	14.00	13.88	15.62	13.60	19.62	1-3/4	10.75	2.00	0.81	1-1/4 - 8 UNC	403
10	CL150	4.50	14.00	13.75	15.75	16.49	20.81	1-9/16	10.75	2.00	0.81	1-1/8 - 8 UNC	307
18	CL300	5.88	14.00	15.12	16.50	15.30	21.88	2-1/4	13.25	3.00	0.94	1-1/4 - 8 UNC	500
20	CL150	5.00	14.00	15.00	17.00	18.27	23.00	1-3/4	10.75	2.00	0.81	1-1/8 - 8 UNC	368
20	CL300	6.25	10.44	16.38	19.00	17.40	23.81	3	13.25	3.00	0.94	1-1/4 - 8 UNC	802
24	CL150	6.06	14.00	17.25	19.38	22.87	27.25	2-1/4	13.25	3.00	0.94	1-1/4 - 8 UNC	563
24	CL300	7.12	21.50	19.00	21.50	20.60	28.19	3	13.25	3.00	0.94	1-1/2 - 8 UNC	1035
1. Face-to-face 2. Minimum in	ternal diame	ter of the m	ating pipe o	r flange regu	ired for full	disk clearance. Fisher actuator	-5						

## Table 3. Dimensions and Weights, Wafer Style Valves

For valves with spline shafts. Use this nominal shaft diameter for selecting Fisher actuators
 This size and class wafer body has no tapped holes for mating pipe flange.

# Figure 7. Dimensions and Weights, Wafer Style Valves (also see table 3)





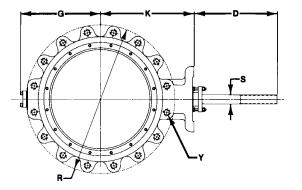
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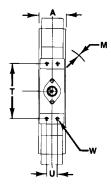
Valve Size,	Rating	A <sup>(1)</sup>	D	G	к	M(2)	R	S(3)	т	U	w	Y(4)	Approx- Weight
NPS	<u> </u>				-(-/	kg							
14	CL150	91.9	208	295	327	331	531	31.8	235	46.0	17.5	1 - 8 UNC	95
14	CL300	117	356	319	364	304	594	44.5	273	50.8	20.6	1-1/8 - 8 UNC	227
10	CL150	102	208	318	371	375	607	31.8	235	46.0	17.5	1 - 8 UNC	138
16	CL300	133	356	353	397	346	657	44.5	273	50.8	20.6	1-1/4 - 8 UNC	294
18	CL150	114	356	349	400	419	645	39.6	273	50.8	20.1	1-1/8 - 8 UNC	178
10	CL300	149	356	384	419	389	721	57.2	337	76.2	23.9	1-1/4 - 8 UNC	402
20	CL150	127	356	381	432	464	696	44.5	273	50.8	20.1	1-1/8 - 8 UNC	224
20	CL300	159	265	416	483	442	784	76.0	337	76.2	23.9	1-1/4 - 8 UNC	544
24	CL150	154	356	438	292	581	822	57.2	337	76.2	23.9	1-1/4 - 8 UNC	315
24	CL300	181	546	483	546	523	924	76.0	337	76.2	23.9	1-1/2 - 8 UNC	821
Size	Rating						Inch						lb
14	CL150	3.62	8.19	11.62	12.88	13.04	20.88	1-1/4	9.25	1.81	0.69	1 - 8 UNC	209
14	CL300	4.62	14.00	12.56	14.31	12.00	23.38	1-3/4	10.75	2.00	0.81	1-1/8 - 8 UNC	500
10	CL150	4.00	8.19	12.50	14.62	14.77	23.88	1-1/4	9.25	1.81	0.69	1 - 8 UNC	304
16	CL300	5.25	14.00	13.88	15.62	13.60	25.88	1-3/4	10.75	2.00	0.81	1-1/4 - 8 UNC	649
10	CL150	4.50	14.00	13.75	15.75	16.49	25.38	1-9/16	10.75	2.00	0.81	1-1/8 - 8 UNC	393
18	CL300	5.88	14.00	15.12	16.50	15.30	28.38	2-1/4	13.25	3.00	0.94	1-1/4 - 8 UNC	886
20	CL150	5.00	14.00	15.00	17.00	18.27	27.38	1-3/4	10.75	2.00	0.81	1-1/8 - 8 UNC	493
20	CL300	6.25	10.44	16.38	19.00	17.40	30.88	3	13.25	3.00	0.94	1-1/4 - 8 UNC	1200
24	CL150	6.06	14.00	17.25	19.38	22.87	32.38	2-1/4	13.25	3.00	0.94	1-1/4 - 8 UNC	773
24	CL300	7.12	21.50	19.00	21.50	20.60	36.38	3	13.25	3.00	0.94	1-1/2 - 8 UNC	1810

## Table 4. Dimensions and Weights, Lugged Valves

Prace to frace dimensions are in compliance with MSS SP68 and AP1609.
 Minimum internal diameter of the mating pipe or flange required for full disk clearance.
 For valves with spline shafts. Use this nominal shaft diameter for selecting Fisher actuators.
 Bolt hole quantity and bolt circle diameter to mate with B16.5 flanges for CL150 and CL300. Valve bodies also available with drilled-thru, clearance holes.

## Figure 8. Dimensions and Weights, Lugged Valves (also see table 4)



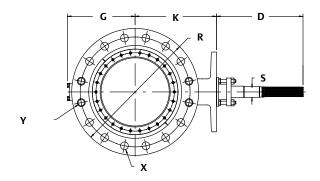


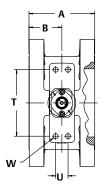
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Valve Size, NPS	Rating	A <sup>(1)</sup>	В	D	G	К	R	S <sup>(2)</sup>	т	U	w	х	Y	Approx- Weight
INP3							kg							
14	CL150	191	95.3	208	295	327	533	31.8	235	46.0	17.5	28.4	(3)	152
14	CL300	290	145	356	319	364	584	44.5	273	50.8	20.6	31.8	1-1/8 - 8 UNC	345
10	CL150	216	108	208	318	371	597	31.8	235	46.0	17.5	28.4	1 - 8 UNC	201
16	CL300	310	155	356	353	397	648	44.5	273	50.8	20.6	34.8	1-1/4 - 8 UNC	563
10	CL150	222	111	356	349	400	635	39.6	273	50.8	20.1	31.8	1-1/8 - 8 UNC	243
18	CL300	330	165	356	384	419	711	57.2	337	76.2	23.9	34.8	1-1/4 - 8 UNC	591
20	CL150	229	114	356	381	432	699	44.5	273	50.8	20.1	31.8	1-1/8 - 8 UNC	277
20	CL300	350	175	265	416	483	767	76.0	337	76.2	23.9	34.8	1-1/4 - 8 UNC	706
24	CL150	267	133	356	438	292	813	57.2	337	76.2	23.9	35.0	1-1/4 - 8 UNC	434
24	CL300	390	195	546	483	546	914	76.0	337	76.2	23.9	41.1	1-1/2 - 8 UNC	1307
Size	Rating						In	ch						
14	CL150	7.50	3.75	8.19	11.62	12.88	21.00	1-1/4	9.25	1.81	0.69	1.13	(3)	335
14	CL300	11.41	5.70	14.00	12.56	14.31	23.00	1-3/4	10.75	2.00	0.81	1.25	1-1/8 - 8 UNC	760
16	CL150	8.50	4.25	8.19	12.50	14.62	23.50	1-1/4	9.25	1.81	0.69	1.13	1 - 8 UNC	443
16	CL300	12.20	6.10	14.00	13.88	15.62	25.50	1-3/4	10.75	2.00	0.81	1.38	1-1/4 - 8 UNC	1240
10	CL150	8.75	4.38	14.00	13.75	15.75	25.00	1-9/16	10.75	2.00	0.81	1.25	1-1/8 - 8 UNC	535
18	CL300	13.00	6.50	14.00	15.12	16.50	28.00	2-1/4	13.25	3.00	0.94	1.38	1-1/4 - 8 UNC	1303
20	CL150	9.00	4.50	14.00	15.00	17.00	27.50	1-3/4	10.75	2.00	0.81	1.25	1-1/8 - 8 UNC	611
20	CL300	13.78	6.89	10.44	16.38	19.00	30.20	3	13.25	3.00	0.94	1.38	1-1/4 - 8 UNC	1556
24	CL150	10.50	5.25	14.00	17.25	19.38	32.00	2-1/4	13.25	3.00	0.94	1.38	1-1/4 - 8 UNC	956
24	CL300	15.35	7.67	21.50	19.00	21.50	36.00	3	13.25	3.00	0.94	1.62	1-1/2 - 8 UNC	2881
1. Face-to-face 2. For valves w 3. This size and	rith spline sh	nafts. Use	this nomir	ial shaft dia	ameter for	selecting F	isher actua	ntact your Emerson s ators. e.	ales office	for other f	ace-to-face	e lengths.		

# Table 5. Dimensions and Weights, Double Flange Valves

Figure 9. Dimensions and Weights, Double Flange Valves (also see table 5)

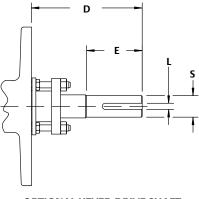




	Dating	D	E	L(1)	S(2)				
Valve Size, NPS	Rating	mm							
14	CL150	146	63.5	6.4	30.2				
14	CL300	229	79.5	9.5	44.5				
16	CL150	146	63.5	6.4	31.8				
10	CL300	229	79.5	9.5	44.5				
18	CL150	229	79.5	9.5	38.1				
18	CL300	254	105	12.7	57.2				
20	CL150	229	79.5	9.5	44.5				
20	CL300	273	124	15.9	69.9				
24	CL150	254	105	12.7	57.2				
	CL300	273	124	15.9	69.9				
Size	Rating	Inch							
14	CL150	5.75	2.50	0.25	1.19				
14	CL300	9.00	3.13	0.38	1.75				
10	CL150	5.75	2.50	0.25	1.25				
16	CL300	9.00	3.13	0.38	1.75				
10	CL150	9.00	3.13	0.38	1.50				
18	CL300	10.00	4.13	0.50	2.25				
20	CL150	9.00	3.13	0.38	1.75				
20	CL300	10.75	4.88	0.63	2.75				
	CL150	10.00	4.13	0.50	2.25				
24			4.88	0.63	2.75				

# Table 6. Dimensions, Optional Keyed Shaft Valves

Figure 10. Dimensions, Optional Keyed Shaft Valves (also see table 6)





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