

# 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™ 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.

**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 ■ 12 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<sup>(3)</sup>), optional Class VI  
Phoenix III Seal: Bidirectional bubble-tight  
Phoenix III Seal for Fire Tested Applications: Class VI shutoff. Contact your [Emerson Process Management sales office](#) 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**

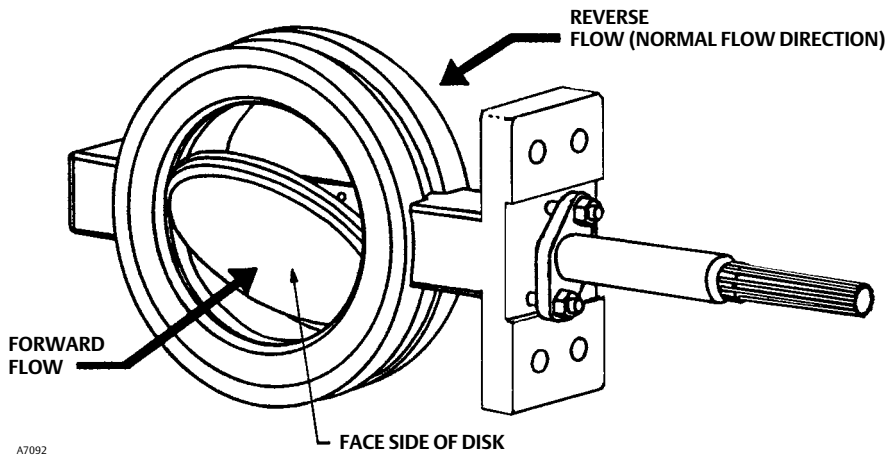
See figures 7, 8, 9, and 10

**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.

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

Figure 1. Flow Direction



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

VALVE SIZE, NPS	MAX $C_v$ , <sup>(2)</sup> VALVE 90° OPEN	
	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  $K_v$  in terms of cubic meters per hour at one kilogram force per square centimeter differential pressure across the valve, using the following multiplier:  $K_v = 0.856 C_v$ .  
 2. Measured in gallons per minutes at 1 psi differential pressure across the valve.  
 3. See Catalog T2 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

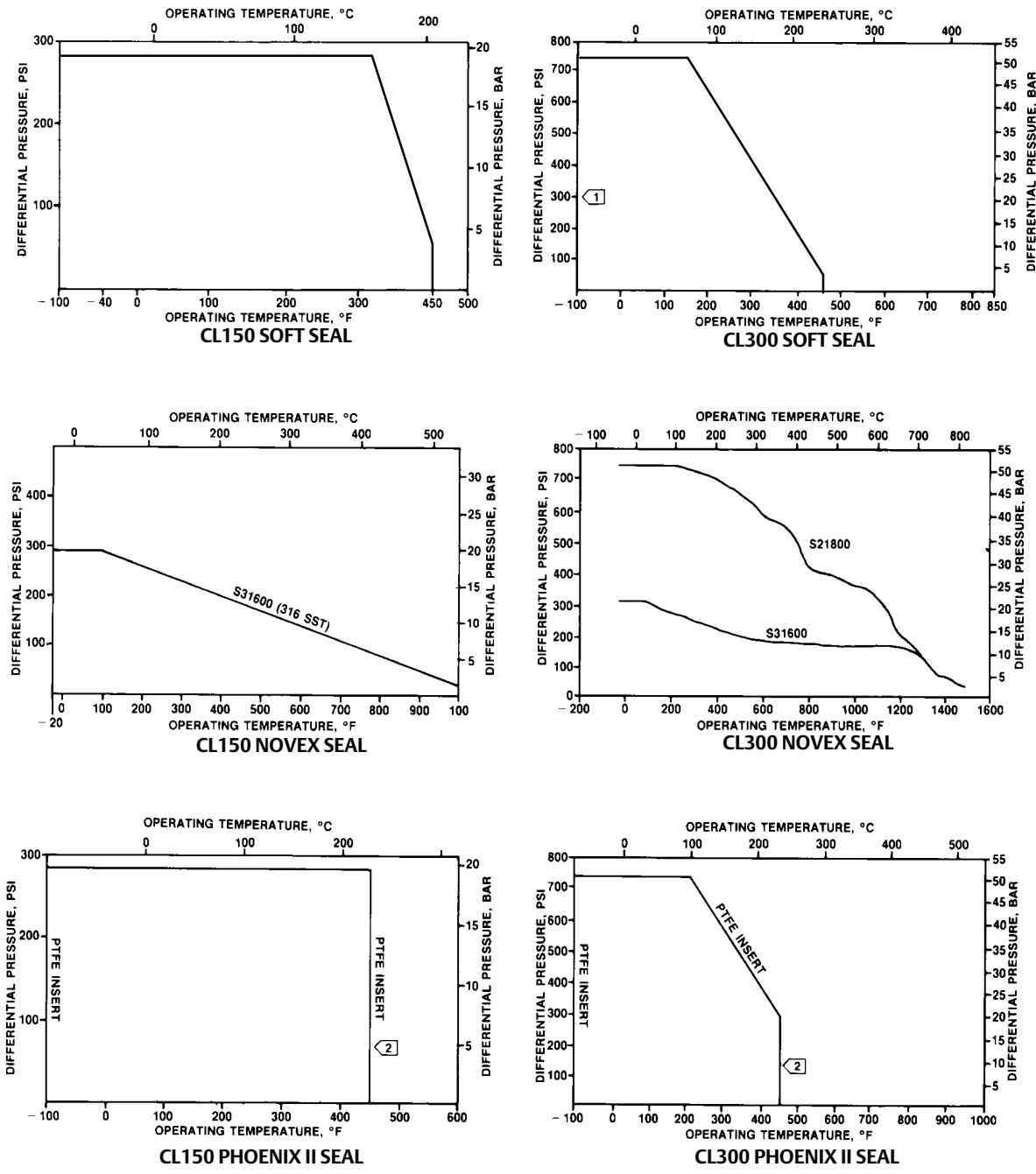
may be installed in either the forward or reverse flow direction.

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 [Emerson Process Management sales office](#).

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 II Seal, CL150 and CL300



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Note

- ① Because 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.
- ② 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

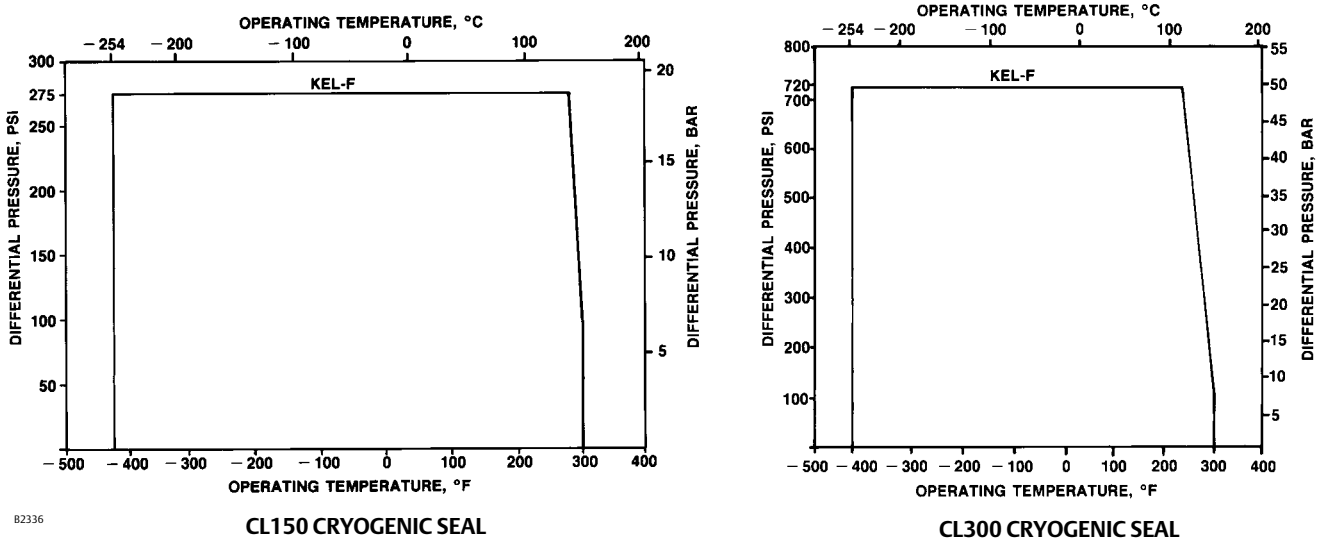


Figure 4. Available Seal Configurations

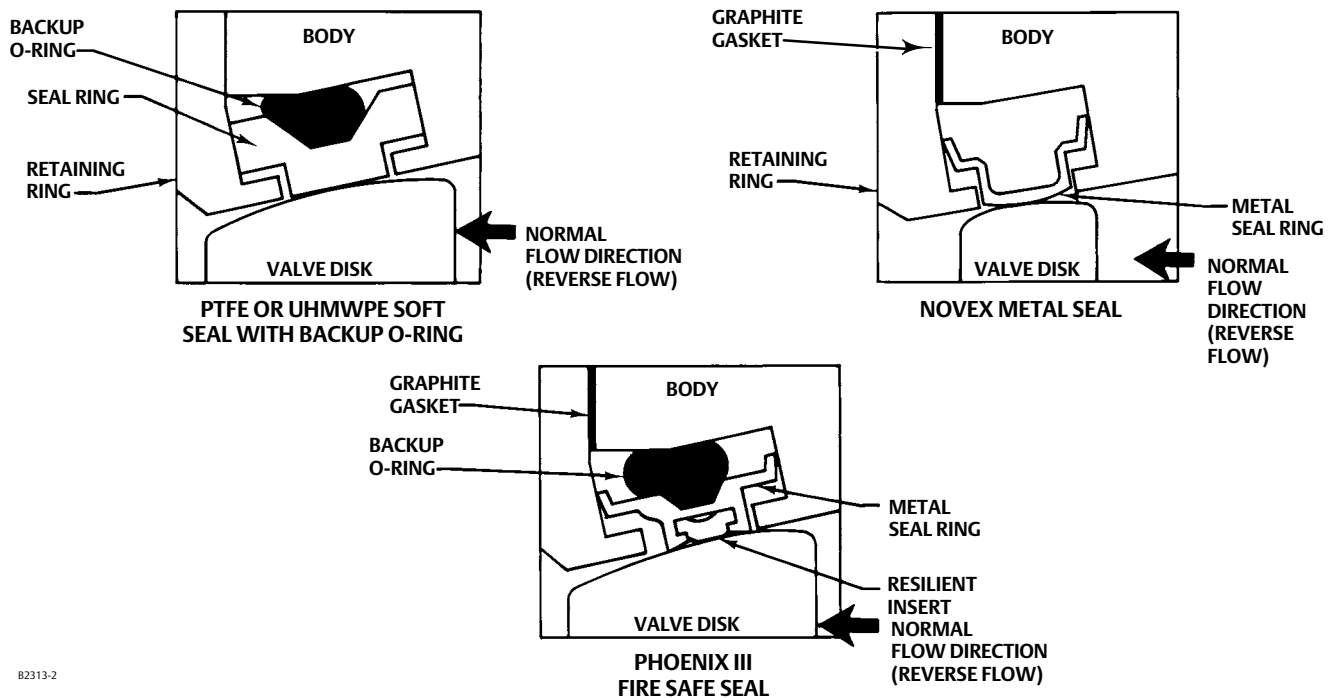


Figure 5. Typical Valve Assembly

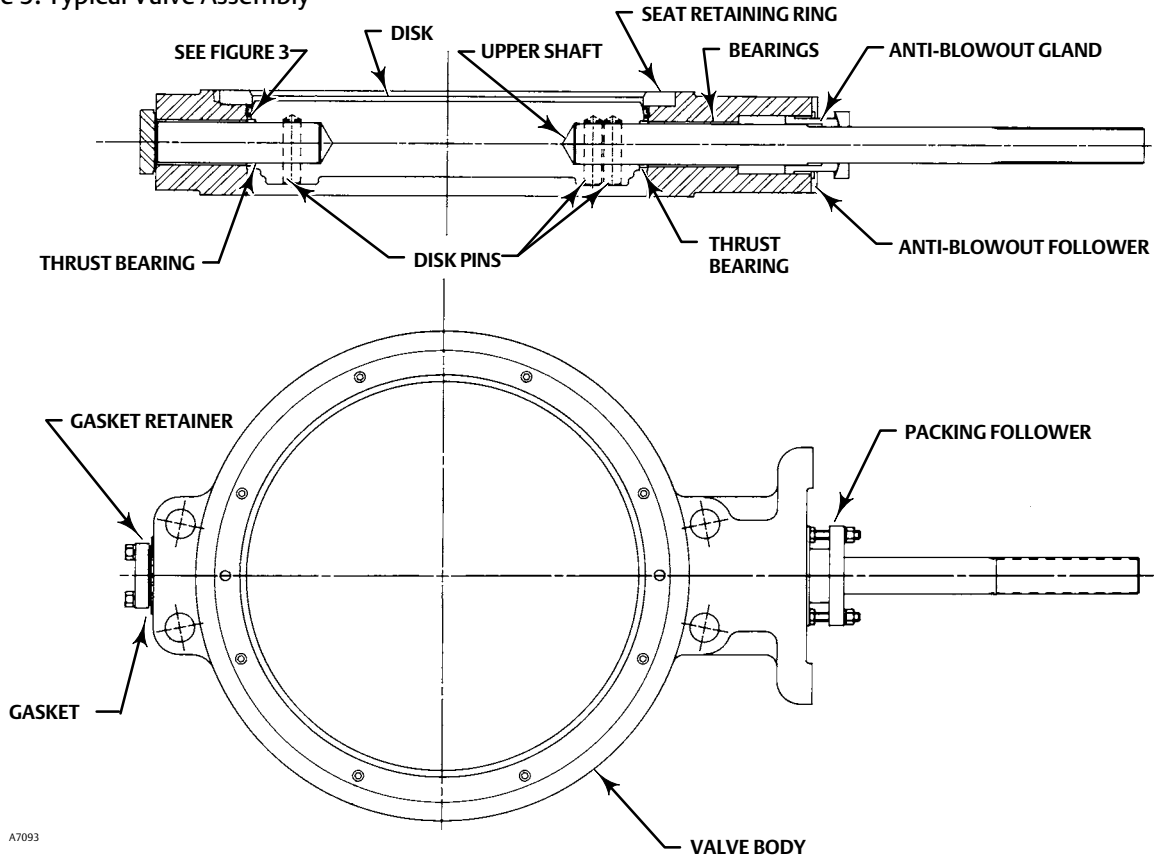


Figure 6. Blowout Protection

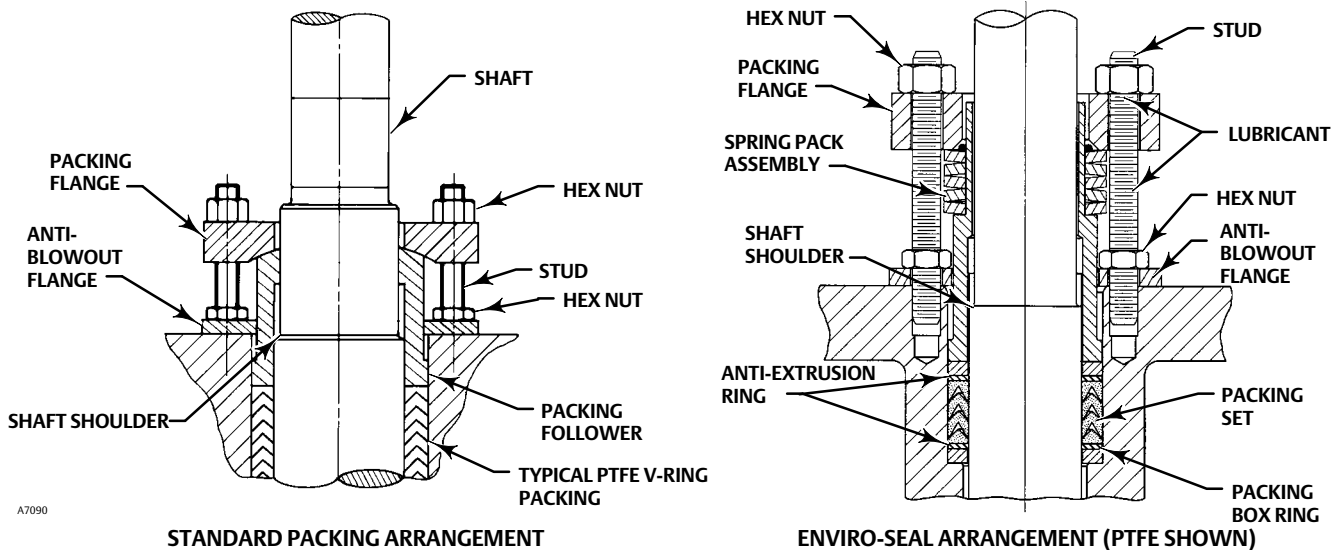


Table 2. Material Temperature Ratings

COMPONENT AND MATERIAL OF CONSTRUCTION <sup>(1)</sup>		TEMPERATURE RANGE	
		°C	°F
Valve Body <sup>(2)</sup> Carbon Steel (WCC or SA 516-70) <sup>(7)</sup> CF8M (316 SST) CF8M/CF10M (316/316H) <sup>(3)</sup> Dual-Certified		-29 to 427 -198 to 538 over 538 to 816	-20 to 800 -325 to 1000 over 1000 to 1500
Disk CF8M (316 SST) CF8M/CF10M (316/316H) <sup>(3)</sup> Dual-Certified		-198 to 538 over 538 to 816	-325 to 1000 over 1000 to 1500
Disk Coating Chromium Carbide Chrome Plating Chromium Coating		-198 to 916 -254 to 316 -254 to 593	-325 to 1500 -425 to 600 -425 to 1100
Shaft S20910 S17400 (17-4 pH 1025) N07718 N07750 N05500		-198 to 538 -73 to 427 -254 to 704 over 593 to 816 -198 to 482	-325 to 1000 -100 to 800 -425 to 1300 over 1100 to 1500 -325 to 900
Bearings <sup>(6)</sup> PEEK (standard) S31600 <sup>(4)</sup> R30006 (Alloy 6) Bronze		-73 to 260 -198 to 816 -198 to 816 -254 to 302	-100 to 500 -325 to 1500 -325 to 1500 -425 to 575
Packing PTFE Packing and PTFE ENVIRO-SEAL Packing Graphite packing Graphite packing with oxidizing media Graphite ENVIRO-SEAL Packing		-148 to 232 -198 to 916 -198 to 538 -148 to 315	-325 to 450 -325 to 1500 -325 to 1000 -325 to 600
Seal Ring and Backup Ring	PTFE Seal Ring Nitrile Backup O-Ring Chloroprene Backup O-Ring EPR Backup O-Ring Fluorocarbon Backup O-Ring PTFE Backup O-Ring	-29 to 93 -43 to 149 -54 to 182 -29 to 204 -73 to 204	-20 to 200 -45 to 300 -65 to 360 -20 to 400 -100 to 400
	UHMWPE <sup>(5)</sup> Seal Ring (CL150 Only) EPR Backup O-Ring Fluorocarbon Backup O-Ring	-54 to 93 -29 to 93	-65 to 200 -20 to 200
	Phoenix III and/or Fire Tested Construction S31600 and PTFE Seal Ring with Nitrile Backup O-Ring Chloroprene Backup O-Ring EPR Backup O-Ring Fluorocarbon Backup O-Ring	-40 to 149 -54 to 149 -62 to 204 -40 to 232	-40 to 300 -65 to 300 -80 to 400 -100 to 200
Seal Ring	NOVEX S31600 Seal <sup>(4)</sup> Ring (CL150) NOVEX S31600 Seal <sup>(4)</sup> Ring (CL300) NOVEX S21800 Seal <sup>(4)</sup> Ring (CL300)	-29 to 538 -29 to 816 -29 to 816	-20 to 1000 -20 to 1500 -40 to 1500
	Cryogenic Seal Ring	Contact your <a href="#">Emerson Process Management sales office</a>	

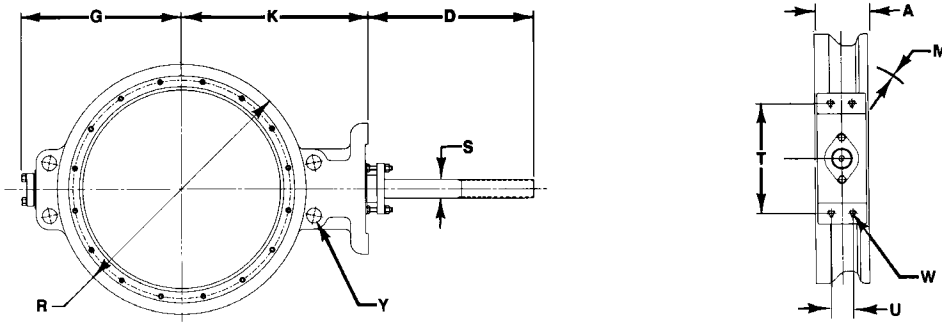
1. NACE trim constructions are available; consult your Emerson Process Management sales office.  
2. Special gasket retainer bolts are required for over 482°C (900°F)  
3. Special retaining ring screws for single flange valves over 538°C (1000°F)  
4. For a complete material description, contact your Emerson Process Management sales office.  
5. UHMWPE stands for ultra high molecular weight polyethylene.  
6. 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).  
7. Cast or wrought /plate grades used interchangeably, depending upon availability - unless requested by customer.

Table 3. Dimensions and Weights, Wafer Style Valves

Valve Size, NPS	Rating	A <sup>(1)</sup>	D	G	K	M <sup>(2)</sup>	R	S <sup>(3)</sup>	T	U	W	Y	Approx. Weight
		mm											kg
14	CL150	91.9	208	295	327	331	422	31.8	235	46.0	17.5	---(4)	72
	CL300	117	356	319	364	304	437	44.5	273	50.8	20.6	1-1/8 - 8 UNC	121
16	CL150	102	208	318	371	375	465	31.8	235	46.0	17.5	1 - 8 UNC	94
	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
	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
	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
	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
	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
16	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
	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
18	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
	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
	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
	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 dimensions are in compliance with MSS SP68 and API 609.  
 2. Minimum internal diameter of the mating pipe or flange required for full disk clearance.  
 3. For valves with spline shafts. Use this nominal shaft diameter for selecting Fisher actuators.  
 4. 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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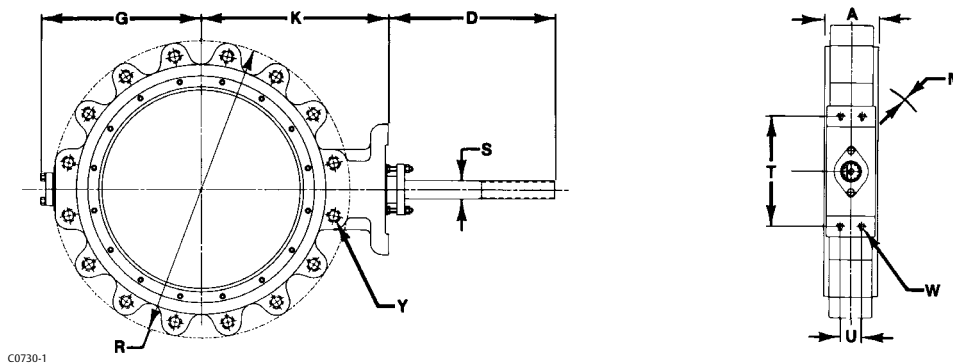


Table 4. Dimensions and Weights, Lugged Valves

Valve Size, NPS	Rating	A <sup>(1)</sup>	D	G	K	M <sup>(2)</sup>	R	S <sup>(3)</sup>	T	U	W	Y <sup>(4)</sup>	Approx-Weight
		mm											kg
14	CL150	91.9	208	295	327	331	531	31.8	235	46.0	17.5	1 - 8 UNC	95
	CL300	117	356	319	364	304	594	44.5	273	50.8	20.6	1-1/8 - 8 UNC	227
16	CL150	102	208	318	371	375	607	31.8	235	46.0	17.5	1 - 8 UNC	138
	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
	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
	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
	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
	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
16	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
	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
18	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
	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
	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
	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

1. Face-to-face dimensions are in compliance with MSS SP68 and API 609.  
 2. Minimum internal diameter of the mating pipe or flange required for full disk clearance.  
 3. For valves with spline shafts. Use this nominal shaft diameter for selecting Fisher actuators.  
 4. 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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**Table 5. Dimensions and Weights, Double Flange Valves**

Valve Size, NPS	Rating	A <sup>(1)</sup>	B	D	G	K	R	S <sup>(2)</sup>	T	U	W	X	Y	Approx-Weight
		mm												kg
14	CL150	191	95.3	208	295	327	533	31.8	235	46.0	17.5	28.4	--- <sup>(3)</sup>	152
	CL300	290	145	356	319	364	584	44.5	273	50.8	20.6	31.8	1-1/8 - 8 UNC	345
16	CL150	216	108	208	318	371	597	31.8	235	46.0	17.5	28.4	1 - 8 UNC	201
	CL300	310	155	356	353	397	648	44.5	273	50.8	20.6	34.8	1-1/4 - 8 UNC	563
18	CL150	222	111	356	349	400	635	39.6	273	50.8	20.1	31.8	1-1/8 - 8 UNC	243
	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
	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
	CL300	390	195	546	483	546	914	76.0	337	76.2	23.9	41.1	1-1/2 - 8 UNC	1307
Size	Rating	Inch												
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	--- <sup>(3)</sup>	335
	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
	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
18	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
	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
	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
	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 dimensions are in compliance with API 609 short series and ISO 5752. Contact factory for other face-to-face lengths.  
 2. For valves with spline shafts. Use this nominal shaft diameter for selecting Fisher actuators.  
 3. This size and class double-flange valve body has no tapped holes for mating pipe flange.

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

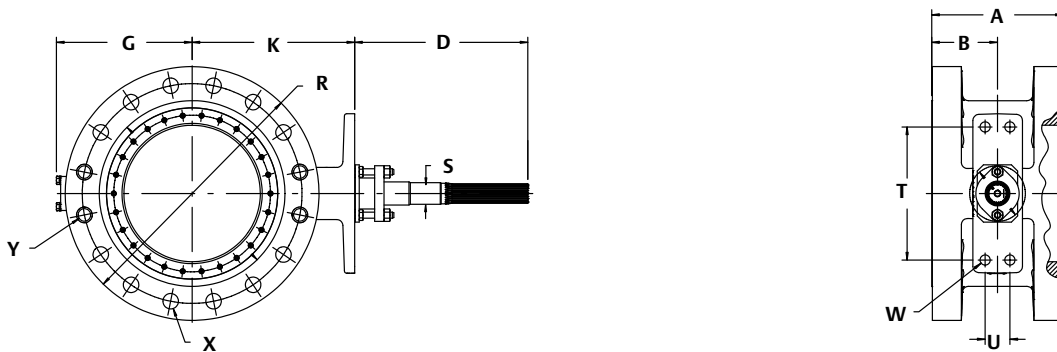
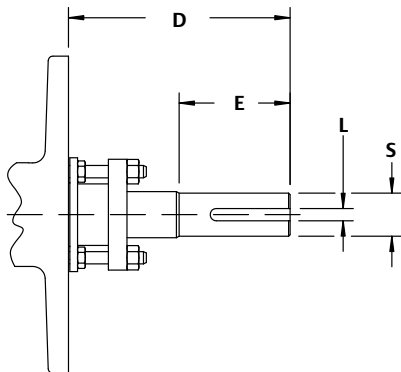


Table 6. Dimensions, Optional Keyed Shaft Valves

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

1. Nominal square key size.  
2. Nominal shaft diameter at the keyway.

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



**OPTIONAL KEYED DRIVE SHAFT**

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