

# Fisher™ V270 Full-Bore Ball Control Valve

The Fisher V270 is a three piece, trunnion mounted, full-bore control valve designed from the ground up with features for optimized pressure, flow and process control.

The V270 full-bore ball valve is designed for automated control in bypass, batch, monitor, and emergency shutoff service applications, and it presents little or no restriction to flow.

The V270 full-bore ball valve is available with composition seals, and process type live-loaded shaft packing for improved service life and lower emissions.

Unless otherwise noted, all NACE references are to NACE MR0175/ ISO 15156.



X1454

FISHER V270 VALVE

## Features

- **Excellent Flow Control**—Shaft and trunnion guiding provides improved dynamic control.
- **Sour Service and Sour Crude Oil Capability**—Standard construction materials comply with NACE Standard MR0175 / ISO 15156.
- **Tight Shutoff**—Self-adjusting seals that are pressure assisted provide Class VI shutoff for long reliable service. The design incorporates a heavy duty S31600 stainless steel carrier that retains the composition seal.
- **Free Standing Design**—Comes standard with a base bracket allowing the valve to sit upright.
- **Heavy Duty Trunnions**—The ball trunnions are designed for demanding applications requiring long service life, with a reduction in maintenance time and costs.
- **Double Block and Bleed**—Design comes standard with a dual seal arrangement.
- **Optional Fire-Tested Construction**—Certified for API 607 and 6FA.

**Specifications**

**Valve Body Sizes and End Connection Styles**

NPS ■ 6, ■ 8, ■ 10, ■ 12, ■ 14, ■ 16, ■ 20, and ■ 24 flanged valves with CL150, CL300, or CL600 raised-face flanges compatible with ASME B16.5-2013

Designed in accordance with API 6D

**Maximum Inlet Pressures and Temperatures<sup>(1)</sup>**

Consistent with CL150, CL300, or CL600 pressure-temperature ratings per ASME B16.34-2013

Allowable Temperature Range: -40 to 82°C (-40 to 180°F)

**Flow Characteristic**

Modified equal percentage

**Flow and Shutoff Direction**

**Dual Seal Construction:** The V270 may be used for unidirectional or bidirectional flow

**Flow Coefficients**

See Fisher Catalog 12

**Shutoff Classification**

ANSI/FCI 70-2 Class VI

**Seal Material**

Standard: POM (Polyoxymethylene)

**Maximum Ball Rotation**

90°

**Packing Arrangements**

Standard: Live-Loaded Packing

This packing system provides improved sealing, guiding, and transmission of loading force to control liquid and gas emissions

**Dimensions**

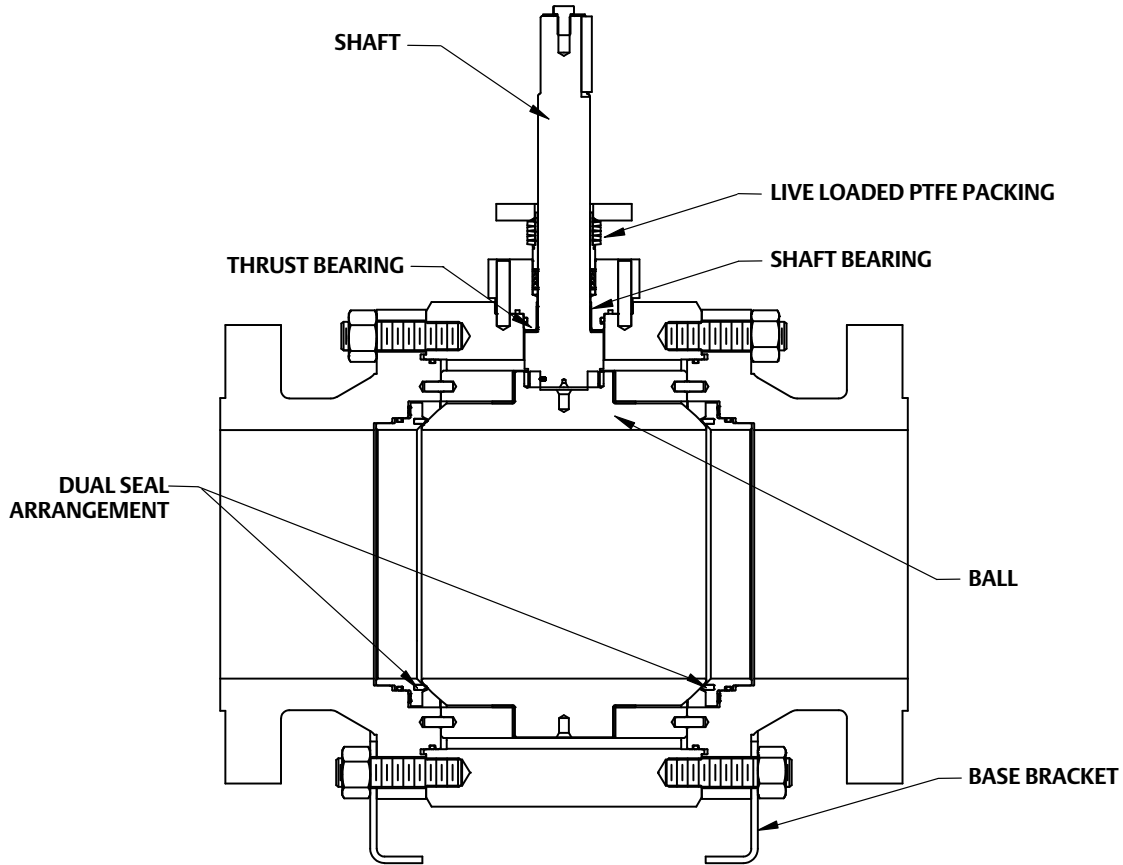
See figure 2 through 7

1. The pressure/temperature limits in this bulletin and any applicable standard or code limitation for this valve should not be exceeded.

**Table 1. Standard Materials of Construction**

Part	Material
Valve Body	LF2 Carbon Steel
Ball	LF2 Carbon Steel / ENP
Seal	POM with S31600 SST Seal Carrier
Drive Shaft	S17400 H1150D
Spring	N07750
Tailpiece	LF2 Carbon Steel
Tailpiece Mounting and Packing Box Bolting	L7M Steel
Bearing Plate	LF2 Carbon Steel
Trunnion Bushings	Carbon Steel, Bronze, PTFE
Thrust Washer	Glass filled PTFE
Shaft Bushing	N04400 / Comp
Packing Box Housing	Carbon Steel
Packing	Live-Loaded PTFE
Packing Bolting	B7M Steel
Packing Follower, Packing Box Ring	S31600 SST
Straight Pins	S17400 H1150D
O-Rings, Backup Rings	Nitrile
Actuator Mounting Bolting	Steel Grade 5

Figure 1. Sectional View of V270 Valve



E1652

Figure 2. Envelope Dimensions (see table 2)

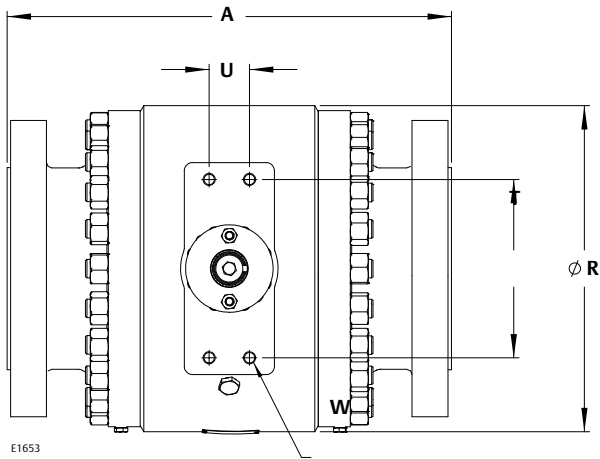


Figure 4. NPS 24 CL600 Packing Box Housing Mounting Pad Dimensions (see table 2)

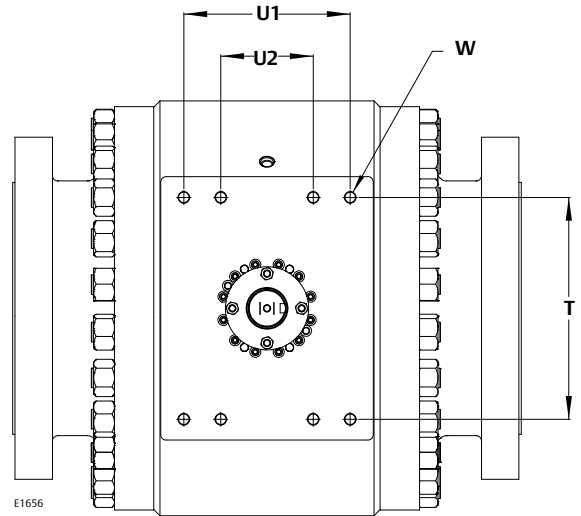


Figure 3. Envelope Dimensions (see table 2 and 3)

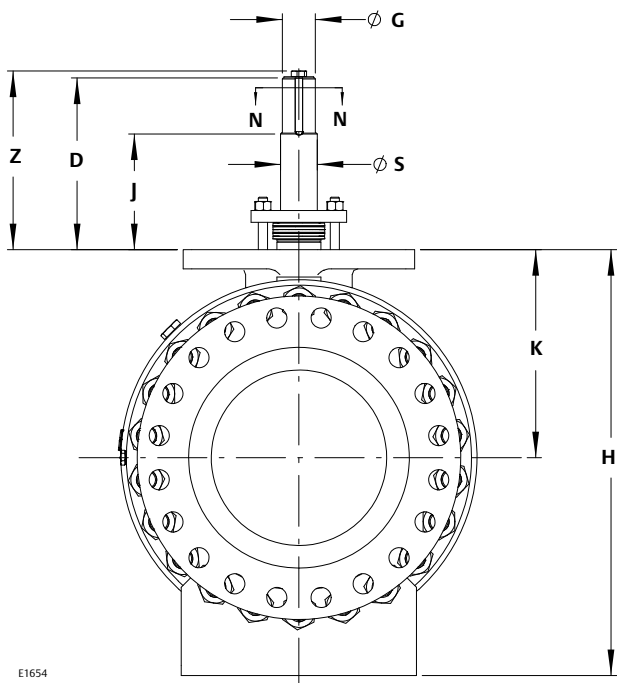


Figure 5. Shaft Detail (see table 3)

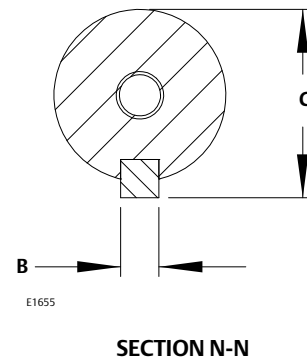


Figure 6. NPS 6 CL600 thru NPS 14 CL300 Base Bracket Dimensions (see table 3)

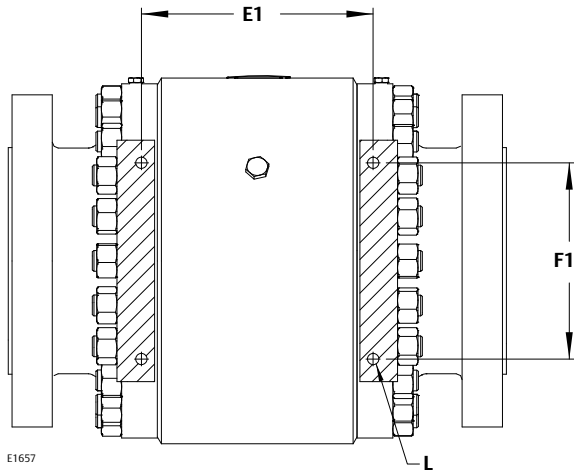


Figure 7. NPS 14 CL600 thru NPS 24 CL600 Base Bracket Dimensions (see table 3)

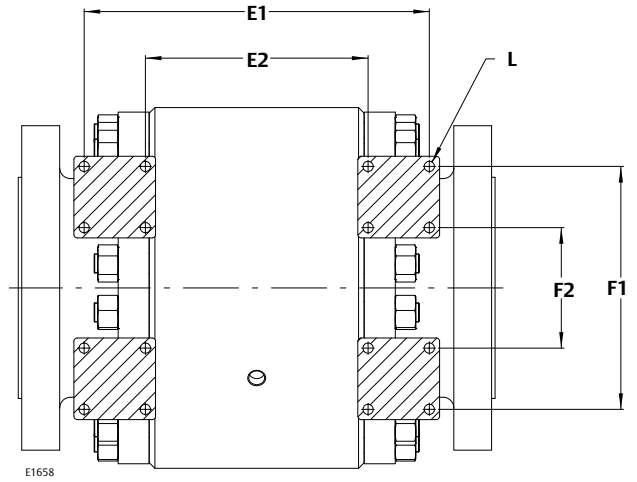
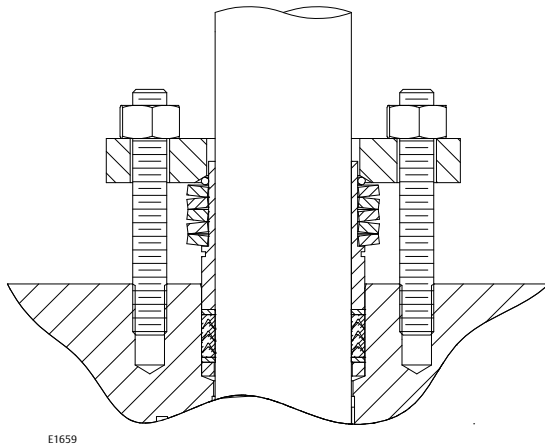


Figure 8. Live-Loaded Packing Arrangement Details



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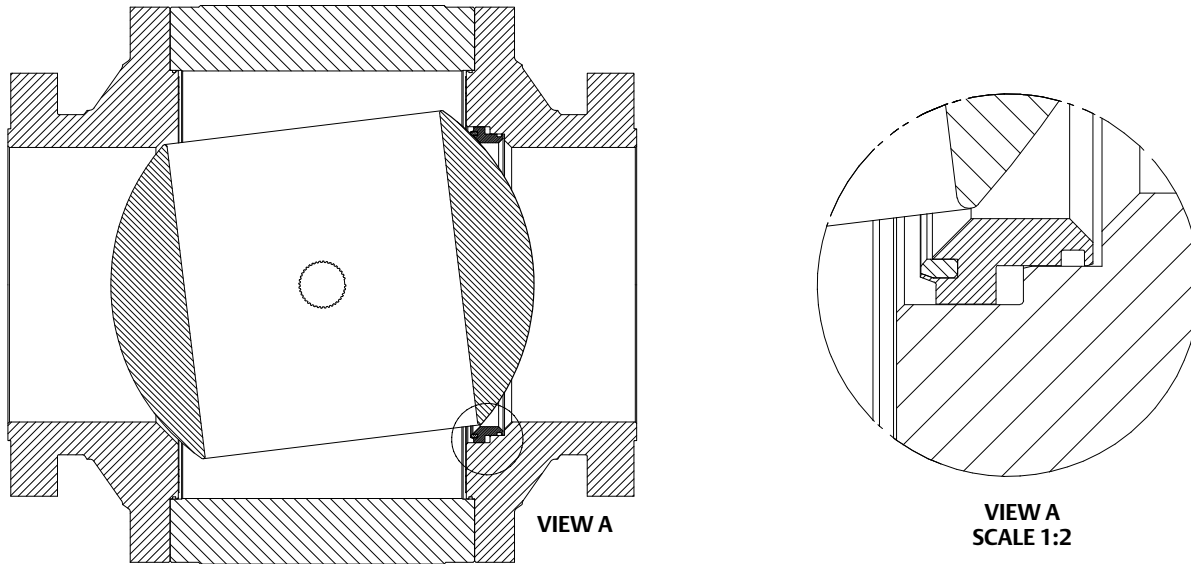
**Table 2. Envelope Dimensions**

VALVE SIZE, NPS	PRESSURE CLASS	A	K	H	RØ	SØ	GØ	T	U	W (THREADED)	APPROXIMATE WEIGHT				
						Shaft Dia.	Keyway Dia.								
<b>mm</b>											<b>kg</b>				
6	150	394	210.2	388.2	330	44.4	41.3	237.1	50.8	See Below	170				
	300	403	216.4	387.9	343						190				
	600	559	220.4	470.5	351						280				
8	150	457	259.4	521.1	424						305				
	300	502	259.4	526.1	426						350				
	600	660	265.7	565.6	440						465				
10	150	533	295.3	616.3	482	63.5	57.1	336.6	76.2		430				
	300	568	301.3	622.3	492						495				
	600	787	313.8	645.4	525						745				
12	150	610	338.8	704.5	569						76.2	57.1	336.6	76.2	645
	300	648	345.8	716.6	587										770
	600	838	359.5	736.0	615										1050
14	150	686	369.0	821.0	628	76.2	69.8	533.4	127.0	1045					
	300	762	401.8	827.2	630					1065					
	600	889	419.0	866.8	673					1365					
16	150	762	435.2	936.9	701					88.9	82.5	609.6	475.2 (U1) 254.0 (U2)	1275	
	300	838	440.7	878.9	713									1455	
	600	991	464.5	923.1	762									1925	
20	150	914	522.9	1074.9	875	101.6	69.8	609.6	475.2 (U1) 254.0 (U2)					2245	
	300	991	530.0	1110.2	895									2580	
	600	1194	555.5	1129.2	947									3450	
24	150	1067	600.0	1287.9	1029					101.6	88.8	609.6	475.2 (U1) 254.0 (U2)	3380	
	300	1143	615.0	1312.2	1066									4280	
	600	1397	649.0	1280.4	1140									5775	
<b>Inches</b>														<b>Pounds</b>	
6	150	15.50	8.27	15.28	12.99	1 3/4	1 5/8	10.75	2.00					3/4-10	370
	300	15.88	8.52	15.27	13.50										415
	600	22.00	8.68	18.52	13.82					620					
8	150	18.00	10.21	20.52	16.70					2 1/2	2 1/4	13.25	3.00		670
	300	19.75	10.21	20.71	16.77										775
	600	26.00	10.46	22.27	17.32										1020
10	150	21.00	11.62	24.26	18.98	3	2 3/4	21.00	5.00						950
	300	22.38	11.86	24.50	19.37										1095
	600	31.00	12.35	25.41	20.67										1640
12	150	24.00	13.34	27.74	22.40					3 1/2	3 1/4	24.00	18.00 (U1) 10.00 (U2)		1425
	300	25.50	13.61	28.21	23.11										1695
	600	33.00	14.15	28.97	24.21										2320
14	150	27.00	15.59	32.32	24.70	4	4	24.00	18.00 (U1) 10.00 (U2)					2305	
	300	30.00	15.82	32.57	24.80									2350	
	600	35.00	16.50	34.13	26.50									3015	
16	150	30.00	17.13	36.89	27.61					1-1/4-8	2 3/4	21.00	5.00	2810	
	300	33.00	17.35	34.60	28.05									3210	
	600	39.00	18.29	36.34	29.98									4250	
20	150	36.00	20.59	42.32	34.45	4	4	24.00	18.00 (U1) 10.00 (U2)					4945	
	300	39.00	20.87	43.71	35.24									5685	
	600	47.00	21.87	44.46	37.28									7610	
24	150	42.00	23.62	50.71	40.51					4	4	24.00	18.00 (U1) 10.00 (U2)	7450	
	300	45.00	24.21	51.66	41.97									9435	
	600	55.00	25.55	50.41	44.88									12740	

Table 3. Additional Envelope Dimensions

VALVE SIZE, NPS	PRESSURE CLASS	D	Z	J	C	B	E1	E2	F1	F2	L	
					Shaft & Key Height	Key Width						
<b>mm</b>												
6	150	228.6	239.8	149.1	45.3	9.5	N/A	N/A	N/A	N/A	N/A	
	300						242.4		200.1			
	600						250.4		273.1			
8	150						269.4		231.4			
	300						302.4		292.1			
	600						328.9		297.0			
10	150	297.0	309.4	201.7	62.6	12.7	278.1	N/A	251.8	N/A	19.1	
	300						282.4		307.6			
	600						328.9		279.9			
12	150						318.0		330.2			
	300						328.2		330.2			
	600						389.4		482.5			
14	150	394.0	408.3	279.7	76.7	15.9	422.5	N/A	396.8	N/A	19.1	
	300						428.5		415.4			224.7
	600						644.0		453.3			222.6
16	150						706.1		489.3			312.0
	300						678.0		487.5			502.5
	600						677.1		486.6			568.2
20	150	381.0	409.0	260.6	90.7	19.1	823.2	N/A	598.7	N/A	19.1	
	300						813.5		556.5			338.3
	600						871.2		559.5			598.7
24	150						944.6		627.1			634.6
	300						1001.3		658.4			657.3
	600						1009.5		704.7			853.4
<b>Inches</b>												
6	150	9.00	9.44	5.87	1.78	0.38	N/A	N/A	N/A	N/A	N/A	
	300						9.54		7.88			
	600						9.86		10.75			
8	150						10.61		9.11			
	300						11.91		11.50			
	600						10.95		11.69			
10	150	11.69	12.18	7.94	2.46	0.50	11.12	N/A	9.92	N/A	0.75	
	300						12.95		12.11			
	600						12.52		11.02			
12	150						12.92		13.00			
	300						15.33		13.00			
	600						16.63		19.00			
14	150	15.51	16.07	11.01	3.02	0.63	16.87	N/A	15.62	N/A	0.75	
	300						25.35		16.35			8.85
	600						27.80		17.30			19.26
16	150						26.69		19.19			12.28
	300						26.66		19.16			22.37
	600						32.41		21.91			23.57
20	150	15.00	16.10	10.26	3.57	0.75	32.03	N/A	24.37	N/A	0.75	
	300						34.30		23.80			17.39
	600						37.19		24.69			24.99
24	150						39.42		25.92			12.38
	300						39.74		27.74			33.60
	600						39.74		27.74			33.60

Figure 9. Dead Angle (also see table 4)



**THE AMOUNT THE BALL ROTATES FROM CLOSED,  
AT WHICH, CONTROLLABLE FLOW BEGINS**

GH08473

Table 4. Dead Angle Degrees

VALVE SIZE, NPS	DEAD ANGLE, DEGREES
6	12
8	11
10	8
12	9
14	8
16	7
20	7
24	7

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