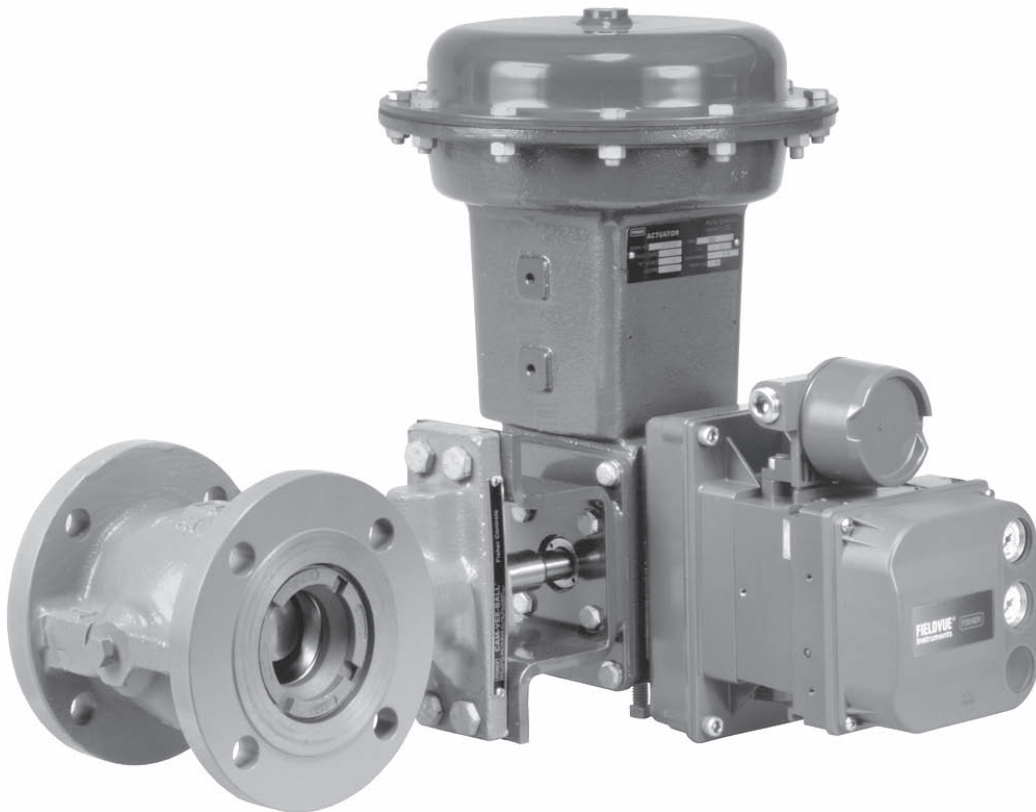


Fisher[®] eplug complete Rotary Control Valve and Actuator Package

...your complete control valve solution...

- simple....easy to select and install
- reliable....engineered to last
- flexible....broad application coverage



W8258

*Figure 1. Fisher eplug complete
Flanged Rotary Control Valve and DVC6020 Digital Valve Controller*



eplug complete

Contents

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The eplug complete package is a preconfigured valve and actuator system, providing excellent throttling control to a broad range of industrial applications. The flanged valve (figure 1) features streamlined flow passages, rugged metal trim components, and a self-centering seat ring to allow the eplug complete design to deliver globe valve ruggedness with efficiency of a rotary valve. Matched with a reliable spring and diaphragm throttling actuator, the eplug complete rotary control valve efficiently controls fluids in many process industries.

Features

- **Long Seat Life**— The path of the eccentric plug minimizes contact with the seat ring when opening, reducing seat wear and friction. When the valve plug rotates into the seat ring, a self-lapping action occurs, improving the fit between shutoff surfaces. Full-port seat rings have two shutoff surfaces and can be easily reversed.

- **Application Flexibility**— Spring and diaphragm rotary actuators are available with fail-open or fail-closed construction and can be mounted in any of four actuator-valve mounting positions.

- **Minimal Deadband**— Single joint linkage with splined and clamped lever minimizes lost motion and improves control accuracy.

- **Safety**— Actuator-valve linkage is completely enclosed, yet the valve packing adjustment remains accessible without removing any parts. The actuator housing and spring barrels are cast iron.

- **Enhanced Packing System**— The shaft sealing system utilizes PTFE V-ring packing along with an O-ring sealed packing follower. This system will provide reliable shaft sealing without compromising control performance.

- **Simple Sizing and Selection Process**— The preconfigured package eases the user's effort to size and match the correctness of the valve to actuator constructions.

- **Easy Installation**— Integral valve body flanges mate with CL150 and 300 rated flanges. Flanges eliminate exposed line flange bolting, shorten alignment and installation time, and promote secure valve installations and piping integrity.

- **Rugged Construction**— Durable, solid metal seat ring and valve plug shut off tightly without deforming plug arms or employing thin ball seals. Oversized shaft diameters and rugged trim parts allow high pressure drops.

- **Simple Assembly and Maintenance**— No special orientation, precision clamping or repetitive centering of the valve plug and seat ring is required when tightening the retainer, promoting accurate alignment and easy assembly.

- **Sour Service Capability**— Valve body and trim materials are available for applications handling sour fluids and gases.

Specifications

Available Configuration

Flanged valve assembly with spring and diaphragm actuator

Valve Size, End Connection and Rating

NPS ■ 1, ■ 1-1/2, ■ 2, ■ 3, ■ 4, ■ 6, and ■ 8, raised-face (RF) flange per ASME B16.5 in CL150 and 300 ratings. Face-to-face dimensions conform to ISA 75.08.02

Maximum Inlet Pressure⁽¹⁾

Consistent with applicable ASME flange rating, but do not exceed the pressure or temperature ratings in table 4 or 5

Maximum Pressure Drops

See tables 3, 4, and 5

Shutoff Classification

Metal Seat: Class IV per ANSI/FCI 70-2 and IEC 60534-4, (0.01% of valve capacity at full travel) for reverse flow direction

Construction Materials

See tables 1, 2, and 6

Valve Temperature Capability⁽¹⁾

Process temperature range: -46 to 260°C (-50 to 500°F)
See tables 4, 5, and 6 for construction specifics

Flow Characteristic

Modified Linear

Valve/Actuator Action

The eplug complete rotary control valve package is available for use with pneumatic spring return diaphragm actuators, sizes 20 through 60 only. Actuators can be field-reversible between air-to-close (extending actuator rod closes valve) and air-to-open (extending actuator rod opens

valve). See Catalog 14 section C for eplug complete actuator sizing details.

Flow Direction

Reverse flow: Past valve plug and through seat ring; tends to close the valve; required flow direction.

Flow Coefficients

See the Coefficient section in this bulletin

Flow Coefficient Ratio

100 to 1

Maximum Diaphragm Casing Pressure⁽¹⁾

Size 20: 4.1 bar (60 psig)
Size 33: 4.5 bar (65 psig)
Size 40: 5.2 bar (75 psig)
Size 60: 3.4 bar (50 psig)

Actuator Operating Pressure Ranges

Sizes 20 through 60: 0 to 2.3 bar (0 to 33 psig)

Actuator Temperature Limits⁽¹⁾

-40 to 82°C (-40 to 180°F)

Actuator Mounting

Right-hand or left-hand as viewed from the upstream side of the valve. See figure 4

Valve Plug Rotation

Counterclockwise to close (when viewed from the actuator side of the valve) through 60 degrees of plug rotation

Packing Box Construction⁽¹⁾

Single PTFE V-Ring (with one carbon-filled PTFE conductive packing ring): -45 to 260°C (-50 to 500°F)

Dimensions and Approximate Weights

See tables 8, 9, and 10 and figures 5 and 6

Options

■ Top mounted handwheel, ■ reduced capacity trim, ■ Pneumatic and electro-pneumatic positioners, ■ FIELDVUE™ digital valve controllers

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

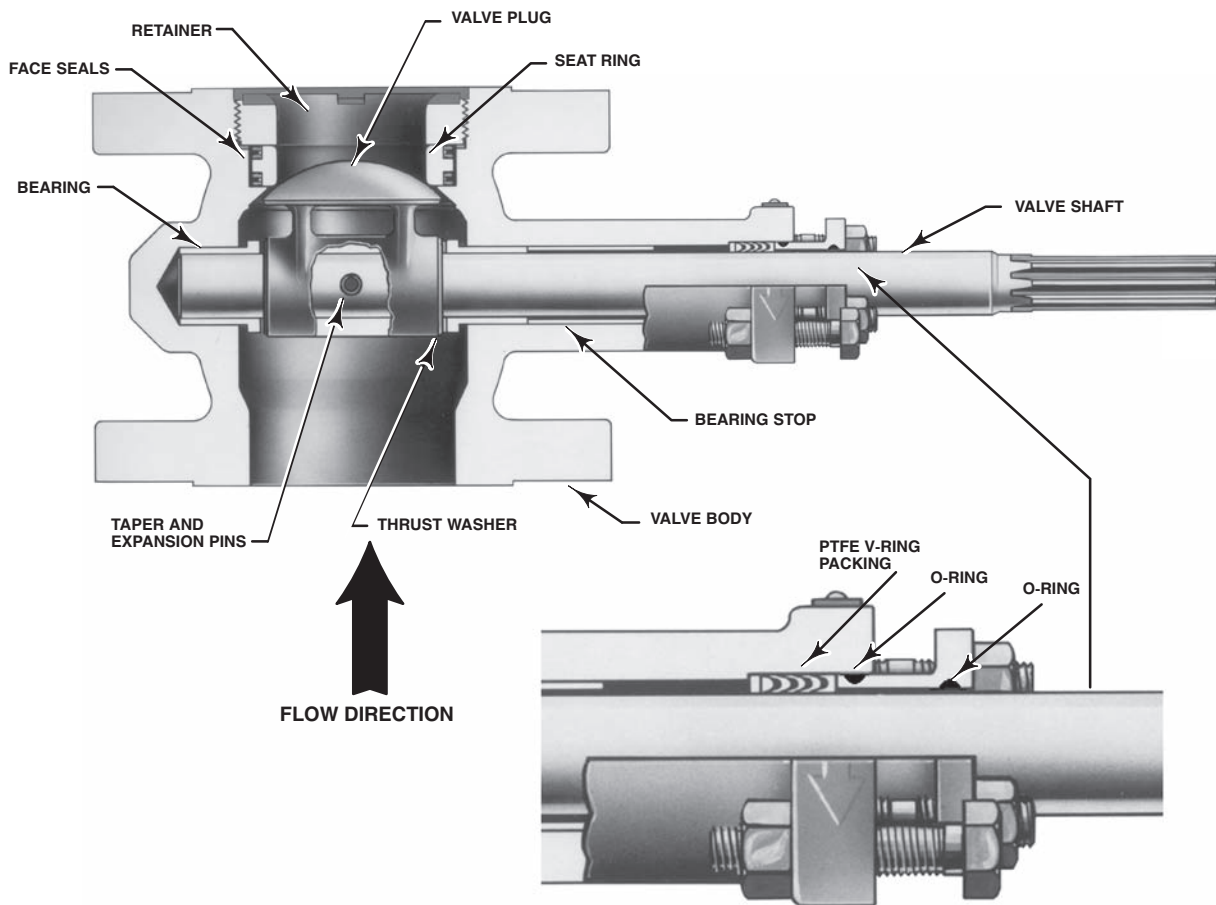
Valve Construction

See table 1 and figure 2.

Table 1. Valve Body and Trim Combinations

TRIM COMPONENT	WCC - CARBON STEEL VALVE BODY		CF8M - STAINLESS STEEL VALVE BODY
	Standard	Optional	Standard
Plug	R30006 (Solid Alloy 6)	---	R30006
Seat Ring	NPS 1 to 4: R30006 NPS 6 to 8: CF8M CoCr-A (Alloy 6 hardfaced)	---	NPS 1 to 4: R30006 NPS 6 to 8: CF8M CoCr-A
Retainer	CF8M	---	CF8M
Shaft	S17400 (17-4 PH SST)	S20910 ⁽¹⁾	S20910
Bearings	440C SST	S31603 ⁽¹⁾ (316L SST) - PTFE/composition	Alloy 6

1. Required for applications handling sour fluids and gases.



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Figure 2. Sectional of Fisher eplug Valve Body Construction

Actuator Details

See figure 3.

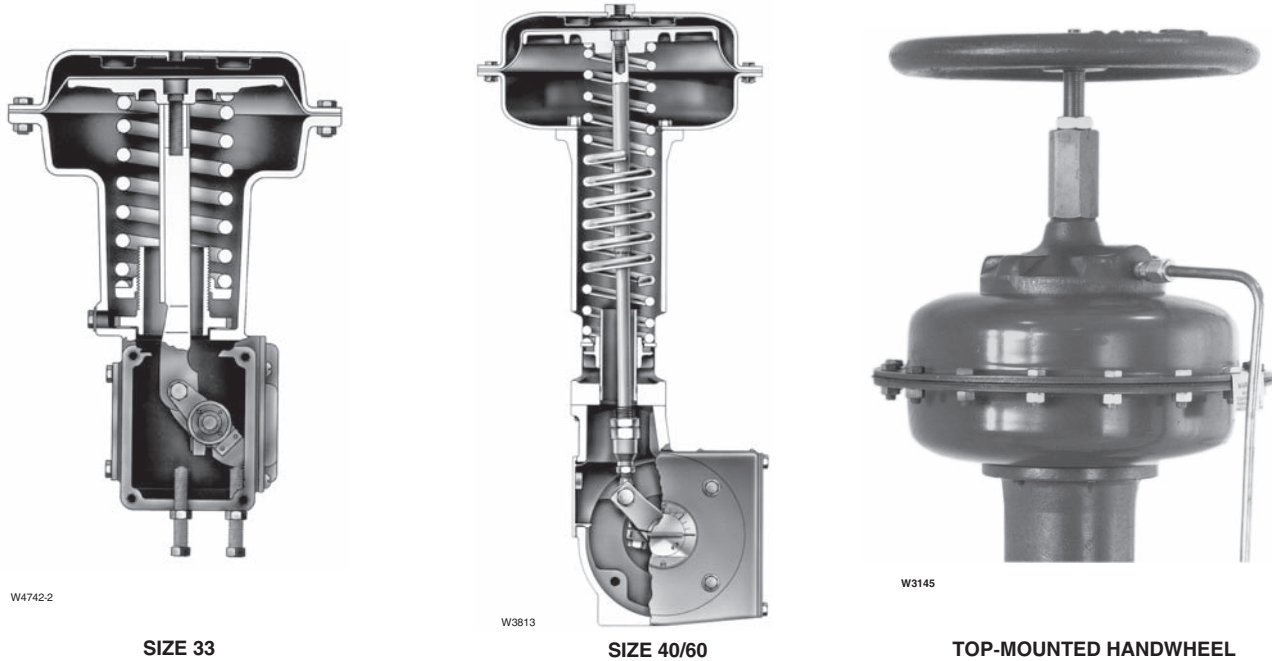


Figure 3. Sectional of Spring and Diaphragm Actuator

Table 2. Standard Spring Diaphragm Actuator Materials

Description	Material
Actuator Housing and Spring Barrel ⁽¹⁾	Cast Iron
Diaphragm	Nitrile on nylon
Diaphragm Head	Aluminum
Diaphragm Rod	Steel
Housing Cover	Size 20: Steel All others: Aluminum
Lever	Size 20: Steel All others: Ductile iron
Finish	Powder coat polyester
Top-mounted handwheel assembly (optional)	Handwheel and body: Aluminum Handwheel stem: Bronze O-rings: Nitrile Pusher plate: Steel
1. Housing lower diaphragm casing and spring barrel are an integral casting for sizes 20 and 33.	

Table 3. Actuator Selection and Maximum Allowable Shutoff Pressure Drops^(1, 2, 3, 4, 5)

VALVE SIZE	ACTUATOR SIZE	SUPPLY PRESSURE (38 psig)			
		Air-to-Open		Air-to-Close	
		Bar	psi	Bar	psi
1	20	51	740	51	740
1-1/2	33	51	740	51	740
2	33	51	740	51	740
3	40	51	740	51	740
4	40	41.4	600	41.4	600
6	60	34.5	500	34.5	500
8	60	20.7	300	20.7	300
1. Actuator travel for all sizes is 60 degrees maximum. 2. Selections are based on 0-33 psig operating pressure range. 3. See Catalog 14 section C for details of actuator sizing for eplug complete. 4. See figure 4 for mounting styles. 5. Supply pressure when using a positioner is recommended to be 0.3 bar (5 psig) above actuator requirements.					

The eplug complete spring and diaphragm actuators feature single-joint linkage with clamped and splined levers for minimum lost motion and high control accuracy. The actuator linkage is completely enclosed for safety, yet the packing adjustment is accessible without removing any parts.

Table 4. Fisher eplug complete Maximum Shutoff Pressure Drops and Maximum Temperature: WCC and SST Valve Bodies, bar⁽¹⁾

VALVE BODY MATERIAL	BEARING MATERIAL	TEMPERATURE	VALVE BODY SIZE, NPS						
		°C	1	1-1/2	2	3	4	6	8
WCC steel ⁽²⁾	S44004 (440C SST)	-29 to 260	51.0	51.0	51.0	51.0	41.4	34.5	20.7
	S31603-PTFE composition	-29 to 232	51.0	51.0	51.0	51.0	41.4	34.5	20.7
CF8M (316 SST) ⁽³⁾	R30006 (Alloy 6)	-46 to 260	51.0	51.0	41.4	41.4	41.4	20.7	15.2

1. Do not exceed pressure/temperature for applicable flange ratings.
2. 17-4PH SST or S20910 shaft.
3. S20910 shaft only.

Table 5 Fisher eplug complete Maximum Shutoff Pressure Drops and Maximum Temperature: WCC and SST Valve Bodies, PSI⁽¹⁾

VALVE BODY MATERIAL	BEARING MATERIAL	TEMPERATURE	VALVE BODY SIZE, NPS						
		°F	1	1-1/2	2	3	4	6	8
WCC steel ⁽²⁾	S44004 (440C SST)	-20 to 500	740	740	740	740	600	500	300
	S31603-PTFE composition	-20 to 450	740	740	740	740	600	500	300
CF8M (316 SST) ⁽³⁾	R30006 (Alloy 6)	-50 to 500	740	740	600	600	600	300	220

1. Do not exceed pressure/temperature for applicable flange ratings.
2. 17-4PH SST or S20910 shaft.
3. S20910 shaft only.

Table 6. Material Temperature Capabilities

PART NAME	MATERIAL		MINIMUM TO MAXIMUM TEMPERATURE	
			°C	°F
Valve body and retainer NPS 1 and 1-1/2	WCC Steel Body	316 SST Retainer	-29 to 427	-20 to 800
	CF8M (316 SST) Body		-198 to 538	-325 to 1000
Valve body and retainer NPS 2 through 8	WCC Steel Body	316 SST Retainer	-29 to 260	-20 to 500
	CF8M (316 SST) Body		-198 to 427	-325 to 800
Seat Ring	R30006 (Solid Alloy 6) for NPS 1 to 4 316 CoCrA for NPS 6 to 8		-46 to 538	-50 to 1000
Valve Plug	R30006		-46 to 538	-50 to 1000
Valve Shaft	S17400 (17-4 PH SST)		-62 to 427	-80 to 800
	S20910		-198 to 538	-325 to 1000
O-rings for follower	FKM (fluorocarbon)		-18 to 204	0 to 400
Taper and Expansion Pins	S20910		-198 to 538	-325 to 1000
Bearings	R30006		-198 to 538	-325 to 1000
	S44004 (440C SST)		-29 to 427	-20 to 800
	S31603 (316L SST) - PTFE/composition		-46 to 232	-50 to 450
Bearing Stop	CF8M		-198 to 538	-325 to 1000
Thrust Washer	S17700 (17-7 PH SST) for S17400 Shaft		-198 to 427	-325 to 800
	R30006 (Alloy 6) for S20910 shaft		-46 to 538	-50 to 1000
Face Seals	N07718		-198 to 538	-325 to 1000
Retainer Gasket	Graphite Laminate for NPS 1 and 1-1/2 valves or S31600 (316 SST) for NPS 2 through 8 valves		-198 to 538	-325 to 1000
Packing Rings	PTFE V-Ring		-46 to 260	-50 to 500
Packing Follower	CF8M		-198 to 538	-325 to 1000
Studs and Nuts	316 SST (B8M) studs and 316 SST (8M) nuts		-198 to 538	-325 to 1000
Packing Box Ring	CF8M		-198 to 538	-325 to 1000

Mounting Styles and Positions

See table 7 and figure 4.

Table 7. Mounting Styles and Positions

MOUNTING	ACTION	OPEN PLUG POSITION	
		Reverse Flow	Style
Right-Hand	Air-to-Close	Below Shaft	A
	Air-to-Open	Below Shaft	B
Left-Hand (standard)	Air-to-Open	Above Shaft	C
	Air-to-Close	Above Shaft	D

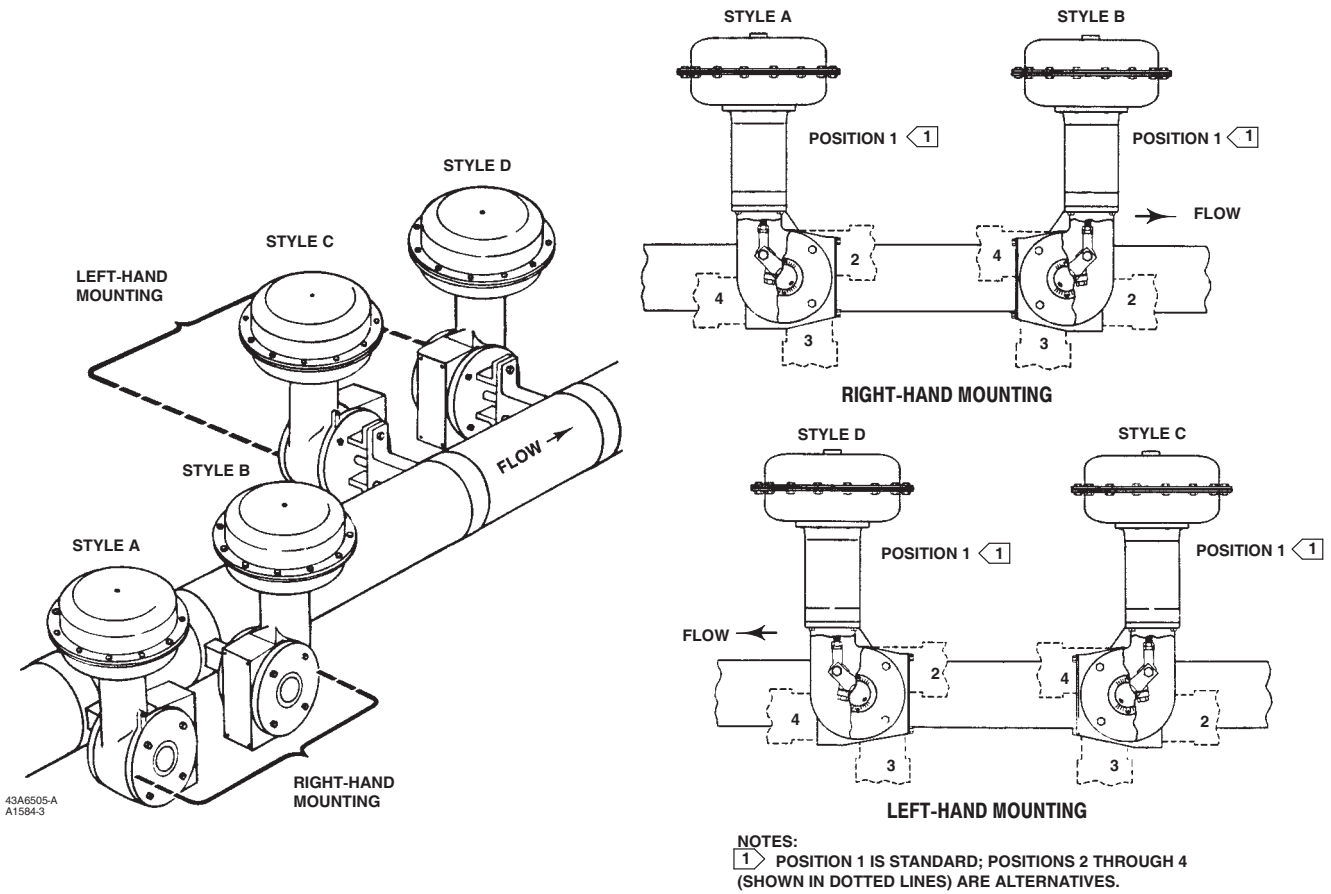


Figure 4. Actuator Mounting Styles and Positions (also see table 7)

Dimensions and Weights

See tables 8, 9, and 10 and figures 5 and 6.

Table 8. Dimensions⁽¹⁾ for Fisher eplug complete Valve and Actuator

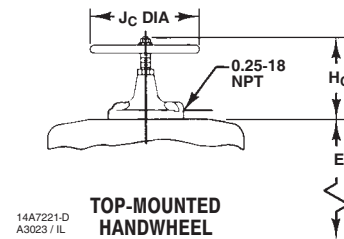
VALVE SIZE, NPS	ACTUATOR SIZE	VALVE BODY		ACTUATOR					
		A	Shaft Diameter	C	E	H	X	Y	XX
		mm	Inch	mm					
1	20	102	1/2	251	256	56.9	262.6	73.9	54
1-1/2	33	114	5/8	289	338	116	272	73.7	84
2	33	124	5/8	289	338	116	288	73.7	83
3	40	165	1	333	606	108	336.5	80.8	105
4	40	194	1-1/4	333	606	108	352.3	80.8	127
6	60	229	1-1/2	473	875	124	417.6	86.6	145
8	60	243	1-1/2	473	875	124	465	86.6	167

VALVE SIZE, NPS	ACTUATOR SIZE	VALVE BODY		ACTUATOR					
		A	Shaft Diameter	C	E	H	X	Y	XX
		Inches							
1	20	4.00	1/2	9.88	10.06	2.24	10.34	2.91	2.13
1-1/2	33	4.50	5/8	11.38	13.31	4.56	10.71	2.90	3.31
2	33	4.88	5/8	11.38	13.31	4.56	11.34	2.90	3.25
3	40	6.50	1	13.12	23.85	4.25	13.25	3.18	4.13
4	40	7.63	1-1/4	13.12	23.85	4.25	13.87	3.18	5.0
6	60	9.00	1-1/2	18.62	34.44	4.88	16.44	3.41	5.69
8	60	9.56	1-1/2	18.62	34.50	4.88	18.31	3.41	6.56

1. Valve body - raised face construction only.

Table 9. Top-Mounted Handwheel Dimensions

ACTUATOR SIZE	H _c	J _c
	mm	
20	184	171
33	191	222
40	281	356
60	333	356
	Inches	
20	7.25	6.75
33	7.50	8.75
40	11.06	14.00
60	13.12	14.00



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TOP-MOUNTED HANDWHEEL
Figure 5. Dimensions

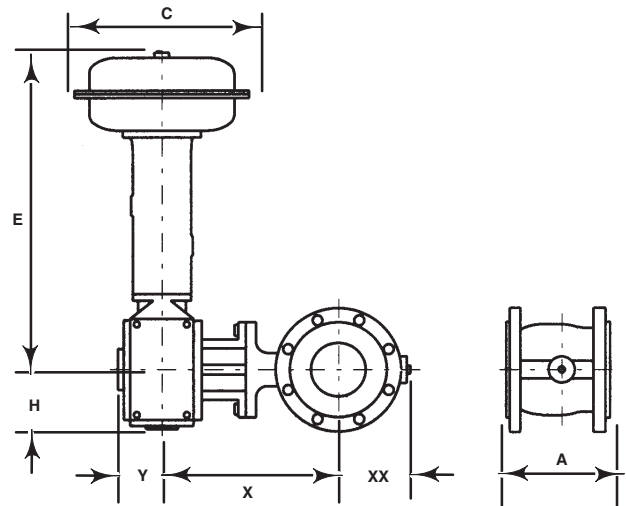


Figure 6. Dimensions

Table 10. Weights

VALVE SIZE, NPS	ACTUATOR SIZE	ACTUATOR	HANDWHEEL	VALVE BODY	
				CL150	CL300
				Pounds	
1	20	30	11	12	13
1-1/2	33	46	11	19	21
2	33	46	11	21	25
3	40	99	16	42	52
4	40	99	16	79	93
6	60	203	24	120	152
8	60	203	24	175	217

Positioner/Controller Selection

See table 11.

Table 11. Positioner/Controller Selection Guidelines for the Fisher eplug complete Rotary Control Valve and Actuator Package

Type	Digital I/P ⁽¹⁾	Analog I/P ⁽²⁾	Pneumatic P/P ⁽³⁾	Hazardous Area Approvals	HART® Communications	Fieldbus	Input Signal
3610J	---	---	X	---	---	---	3-15 or 6-30 psi
3620J	---	X	---	FM and CSA Explosion Proof, Intrinsically Safe, Division 2. ⁽⁴⁾	---	---	4-20 mA
FIELDVUE	X	---	---		X	X	HART 4-20 mA Fieldbus Communication

1. Digital I/P - microprocessor based electro-pneumatic.
2. I/P - electro-pneumatic.
3. P/P - pneumatic.
4. See product bulletins under the 9.2 Safety tab in Catalog 88 for additional details.



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Figure 7. DVC6020 Digital Valve Controller

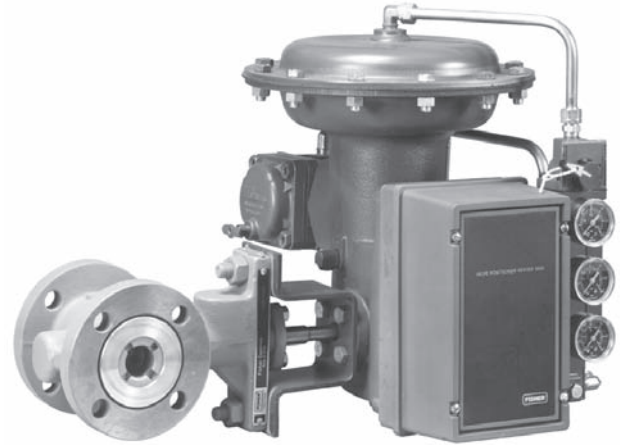
Choose Your Control Valve and Positioners to Fit the Control Situation

FIELDVUE Digital Valve Controllers – Capabilities That Extend Beyond Traditional Valve Control

While a traditional valve positioner serves a single purpose, which is to maintain a valve in its intended control position, FIELDVUE digital valve controllers provide much more. FIELDVUE instrumentation collects real-time data about valve performance, which proves crucial not only to reducing process variability but also to enhancing plant operations.

FIELDVUE Digital Valve Controller

The FIELDVUE digital valve controller is a communicating, microprocessor-based instrument. Using HART or FOUNDATION® fieldbus communication protocol, access to critical instrument, valve, and process conditions is



W5030

Figure 8. Fisher 3610J Pneumatic Positioner

provided. When used with AMS ValveLink™ Software, valve diagnostic tests can be run while the valve is in service to advise you of the performance of the entire control valve assembly. This digital valve controller offers maximum functionality to improve your process performance. See figure 7.

3610J/3620J Valve Positioner

The 3610J pneumatic and the 3620J electro-pneumatic positioners are accurate and efficient. They offer a robust design that demonstrates fast response to input signal changes. These positioners prove highly-resistant to the vibration that is prevalent throughout most process plants. These positioners combine simple functionality with high performance. See figure 8.

Note

C_v values shown are for Flow-to-Close

Note

The eplug complete package is set up to rotate 60 degrees.

Coefficients

Table 12 Fisher eplug complete^(1,2)

Reverse Flow, Full Port Trim											MODIFIED LINEAR CHARACTERISTIC
Coefficients	Valve Size, NPS	Valve Rotation, in Percent									
		10	20	30	40	50	60	70	80	90	100
C _v	1	0.55	1.42	2.44	3.63	5.26	7.48	9.83	11.80	13.5	14.7
K _v		0.48	1.25	2.11	3.13	4.55	6.46	8.49	10.2	11.66	12.7
F _d		0.49	0.52	0.61	0.68	0.73	0.78	0.82	0.86	0.89	0.92
F _L		0.80	0.80	0.79	0.77	0.73	0.67	0.62	0.59	0.57	0.55
X _T		0.69	0.19	0.26	0.35	0.41	0.39	0.36	0.35	0.34	0.32
C _v	1-1/2	0.70	2.38	4.40	7.56	11.3	15.6	19.8	23.5	26.7	28.6
K _v		0.61	2.06	3.80	6.54	9.77	13.5	17.1	20.3	23.1	24.7
F _d		0.48	0.51	0.60	0.67	0.73	0.78	0.82	0.86	0.89	0.92
F _L		0.75	0.75	0.74	0.72	0.70	0.68	0.66	0.64	0.64	0.63
X _T		0.36	0.38	0.44	0.44	0.43	0.40	0.39	0.37	0.36	0.36
C _v	2	2.04	3.79	6.20	10.4	15.6	22.4	30.5	39.1	47.1	52.9
K _v		1.76	3.27	5.36	9.0	13.5	19.4	26.3	33.7	40.7	45.8
F _d		0.49	0.52	0.60	0.67	0.73	0.78	0.82	0.86	0.89	0.92
F _L		0.92	0.91	0.90	0.86	0.81	0.73	0.66	0.61	0.59	0.58
X _T		0.44	0.47	0.44	0.46	0.46	0.45	0.40	0.35	0.44	0.27
C _v	3	4.61	9.7	17.2	31.2	47.0	64.3	80.6	98.4	115	122
K _v		3.98	8.37	14.9	26.9	40.7	55.6	69.7	85.0	99.4	106
F _d		0.46	0.49	0.59	0.66	0.73	0.78	0.82	0.86	0.89	0.92
F _L		0.80	0.80	0.80	0.79	0.77	0.73	0.70	0.67	0.66	0.65
X _T		0.36	0.38	0.44	0.49	0.49	0.45	0.43	0.39	0.36	0.38
C _v	4	8.3	16.9	31.0	54.6	79.9	105	134	162	186	202
K _v		7.2	14.6	26.8	47.2	69.1	90.7	116	140	161	175
F _d		0.45	0.48	0.58	0.65	0.72	0.77	0.82	0.86	0.89	0.92
F _L		0.90	0.90	0.89	0.86	0.81	0.76	0.73	0.71	0.71	0.70
X _T		0.45	0.53	0.54	0.52	0.49	0.48	0.44	0.41	0.40	0.41
C _v	6	6.69	26.0	58.8	104	156	212	272	332	389	438
K _v		5.78	22.5	50.8	90.0	135	183	235	287	336	379
F _d		0.44	0.47	0.57	0.65	0.72	0.77	0.82	0.86	0.89	0.92
F _L		0.85	0.85	0.85	0.84	0.82	0.79	0.76	0.71	0.68	0.66
X _T		0.26	0.46	0.59	0.56	0.52	0.51	0.51	0.46	0.42	0.39
C _v	8	9.53	53.4	113	202	302	408	522	629	724	798
K _v		8.24	46.1	97.6	175	261	353	451	543	626	690
F _d		0.43	0.46	0.56	0.64	0.72	0.77	0.81	0.86	0.89	0.92
F _L		0.81	0.81	0.81	0.80	0.79	0.78	0.74	0.70	0.66	0.66
X _T		0.56	0.68	0.62	0.55	0.48	0.44	0.40	0.36	0.35	0.34

1. C_v values shown are for Flow-to-Close.
2. The eplug complete package is set up to rotate 60 degrees.

Table 13. Fisher eplug complete^(1,2)

Reverse Flow, Reduced Port Trim											MODIFIED LINEAR CHARACTERISTIC
Coefficients	Valve Size, NPS	Valve Rotation, in Percent									
		10	20	30	40	50	60	70	80	90	100
C _v	1	0.192	0.928	1.81	2.60	3.34	3.50	4.20	4.95	5.52	5.64
K _v		0.166	0.802	1.56	2.25	2.89	3.02	3.63	4.28	4.77	4.88
F _d		0.49	0.56	0.64	0.70	0.75	0.79	0.83	0.87	0.90	0.92
F _L		0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
X _T		0.260	0.230	0.230	0.209	0.207	0.334	0.410	0.386	0.348	0.348
C _v	1-1/2	0.333	0.683	1.34	2.78	4.21	6.15	8.51	10.4	11.7	12.1
K _v		0.288	0.590	0.158	2.40	3.64	5.31	7.35	9.01	10.1	10.5
F _d		0.48	0.56	0.63	0.70	0.75	0.79	0.83	0.87	0.91	0.92
F _L		0.93	0.93	0.93	0.86	0.75	0.72	0.72	0.70	0.70	0.70
X _T		0.960	0.832	0.416	0.453	0.501	0.483	0.457	0.426	0.416	0.416
C _v	2	0.530	1.32	2.37	3.33	4.82	8.88	13.3	16.7	18.3	18.7
K _v		0.458	1.14	2.05	2.88	4.17	7.67	11.5	14.4	15.8	16.2
F _d		0.49	0.56	0.64	0.70	0.75	0.79	0.83	0.87	0.90	0.92
F _L		0.96	0.96	0.96	0.88	0.77	0.70	0.65	0.63	0.62	0.62
X _T		0.620	0.515	0.504	0.525	0.559	0.406	0.354	0.352	0.360	0.360
C _v	3	4.20	6.86	9.58	12.1	14.7	22.5	33.5	44.9	54.3	56.0
K _v		3.63	5.93	8.28	10.5	12.7	19.4	28.9	38.8	46.9	48.4
F _d		0.48	0.56	0.63	0.70	0.75	0.79	0.83	0.87	0.90	0.92
F _L		0.70	0.73	0.80	0.77	0.73	0.67	0.63	0.60	0.56	0.58
X _T		0.323	0.438	0.466	0.475	0.487	0.372	0.335	0.299	0.276	0.286
C _v	4	4.55	9.29	14.1	18.1	22.7	34.4	47.8	67.2	90.6	98.0
K _v		3.93	8.03	12.2	15.6	19.6	29.7	41.3	58.1	78.3	84.8
F _d		0.47	0.55	0.62	0.69	0.74	0.79	0.83	0.87	0.90	0.92
F _L		0.83	0.84	0.86	0.82	0.81	0.79	0.74	0.64	0.59	0.59
X _T		0.445	0.507	0.515	0.557	0.555	0.487	0.509	0.417	0.316	0.322
C _v	6	2.24	8.40	18.3	25.0	34.6	52.4	81.9	113	143	170
K _v		1.94	7.26	15.8	21.6	29.9	45.3	70.8	97.3	124	147
F _d		0.47	0.55	0.62	0.69	0.74	0.79	0.83	0.87	0.90	0.92
F _L		0.97	0.97	0.95	0.93	0.90	0.88	0.80	0.75	0.75	0.65
X _T		0.429	0.875	0.529	0.560	0.566	0.605	0.505	0.444	0.429	0.397
C _v	8	22.0	36.2	63.3	98.7	140	191	253	319	389	457
K _v		19.0	31.2	54.7	85.3	121	165	219	276	336	395
F _d		0.40	0.51	0.60	0.67	0.73	0.78	0.82	0.86	0.89	0.92
F _L		0.92	0.92	0.92	0.90	0.88	0.79	0.75	0.71	0.69	0.66
X _T		0.580	0.608	0.522	0.498	0.494	0.508	0.480	0.452	0.423	0.388

1. Cv values shown are for Flow-to-Close.
2. The eplug complete package is set up to rotate 60 degrees.

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