

Model 362 Control Valves

Technical Sales Bulletin



Figure 1 362 Control Valve

The Model 362 control valve is part of the 360 Series of control Valves.

The Model 362 is a top guided, unbalanced, single port valve that is suitable for either throttling or on off control of either liquids or gases. Metal to metal seating is standard on Model 362 valves with an option for soft seating.

The standard actuator for the Model 362 control valve is a Dyna-Flo model DFC or DFO linear actuator. These heavy-duty actuators are spring return diaphragm style, and can be used for throttling or on-off service, with or without a valve positioner.

The Model 362 control valves are manufactured to a high level of quality specifications to ensure superior performance and customer satisfaction.

Features

Versatility

Multiple port sizes make the 362 an easy valve to reconfigure when process applications change.

Rugged Design

Available severe service trim and high temperature configurations are well suited to more demanding applications.

High Temperature Option

The standard temperature rating of 450°F (232°C) can be extended to 850°F (454°C), with options available for higher temperatures.

Emissions Reducing Packing

Help prevent the loss of process media and reduce packing maintenance with the use of Dyna-Flo's Live Loaded PTFE packing systems.

Full Pressure Drop Capabilities

362 control valves can shut off against inlet pressures equal to the ASME B16.34 rating.

Sour Gas Service Capability

There are standard construction materials that comply with the recommendations of the National Association of Corrosion Engineers (NACE) MR0175-2002.

Shut Off Capability

Shut off options are available from ASME / FCI Class IV to Class VI.

Flow Characteristic Selections

Equal percentage, linear and quick-opening flow characteristics available.

Easy Maintenance

As with all 360 Series Valves, the 362 can be serviced in line with no special tools required.



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SPECIFICATIONS

Sizes and Connection Styles

Models 362

Size: 3/4", 1", 1-1/2", 2", 3", 4", 6", & 8"

Rating: ASME 150 / 300 / 600

Connections: RF / RTJ - 1" to 8" Only
NPT - 3/4", 1", 1-1/2", & 2" Only

Maximum Inlet Temperature and Pressures

Flanged valves consistent with ASME B16.34 Class rating, unless limited by either material. pressure or temperature limitations.

Maximum Pressure Drops

Maximum pressure drop is the same as maximum inlet pressure unless otherwise rated by a specific trim construction.

Standard Shut-off Classifications

In accordance with ASME / FCI 70.2

- Model 362 - Standard Class IV - Metal Seat
- Model 362 - Optional Class V - Metal Seat
- Model 362 - Class VI - PTFE Seat

Dimensions

Valve Dimension Diagram

See Figure 2.

Valve Dimensions

See Table 3 - 8.

Approximate Valve Body Weights

See Table 19.

Materials

Body and bonnet material options include LCC, WCC, and CF8M. See Table 9 for typical construction materials. See Table 14 for trim selections.

Cross-Section of Model 362 Control Valves

See Figure 3 - 6.

Flow Characteristics

Standard trim is equal percent. Other flow characteristics are available upon request. Model 362 valves normally flow up. Low-noise trim always flow up.

Port Diameters and Maximum Valve Plug Travel

See Table 2.

Packing Type

The Standard packing is PTFE V-ring. Live-loaded low emission, graphite and other packing arrangements are available. See Figure 4 for packing diagrams.

Valve Sizing Coefficients

See Tables 15 - 18.

Trim Style Service Application

See Table 14.

For more information and other options contact your Dyna-Flo sales office.

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Table 1

Valve Shut-off Configurations

Valve Model	Size (inch)	Shut Off Capabilities	Valve Plug	Guide	Seat
362	1 - 8	Class IV	Unbalanced	Top	Metal
	1 - 8	Optional Class V	Unbalanced	Top	Metal
	1 - 8	Optional Class VI	Unbalanced	Top	PTFE

Table 2

Models 362 Port Diameters, Valve Plug Travel, Stem and Yoke Boss Diameters

Valve Size (inch)	Port Diameter		Max Valve Plug Travel		Yoke Boss Diameter (YBD)			
					Standard		YBD	
					Stem			
FULL PORT	Inch	mm	Inch	mm	Inch	mm	Inch	mm
3/4	1-5/16	33	3/4	19	3/8	9.5	2-1/8	54
1	1-5/16	33	3/4	19	3/8	9.5	2-1/8	54
1-1/2	1-7/8	48	3/4	19	3/8	9.5	2-1/8	54
2	2-5/16	59	1-1/8	29	1/2	12.7	2-13/16	71
3	3-7/16	87	1-1/2	38	1/2	12.7	2-13/16	71
4	4-3/8	111	2	51	1/2	12.7	2-13/16	71
6	7	178	2	51	3/4	19	3-9/16	91
8	8	203	2	51	3/4	19	3-9/16	91
8	8	203	3	76	3/4	19	3-9/16	91
REDUCED PORT	Inch	mm	Inch	mm	Inch	mm	Inch	mm
1-1/2	1-5/16	33	3/4	19	3/8	9.5	2-1/8	54
2	1-5/16	33	3/4	19	1/2	12.7	2-13/16	71
3	2-5/16	59	1-1/8	29	1/2	12.7	2-13/16	71
4	2-7/8	73	1-1/2	38	1/2	12.7	2-13/16	71



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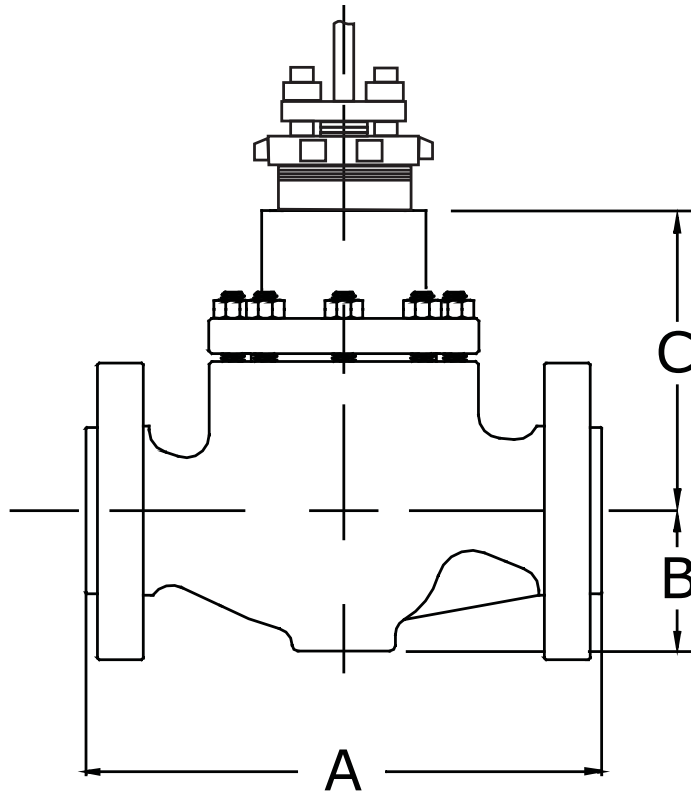


Figure 2 Valve Assembly Dimensions

Table 3				
Valve Assembly (NPT End Connection) with Standard Actuator Envelope Dimensions				
(with common stem diameter) Inches (mm) (Refer to Figure 2)				
Valve Size (inch)	End Connection	A	B	C*
3/4	NPT	6.50 (165)	2.12 (54)	5.00 (127)
1	NPT	8.25 (210)	2.38 (60)	5.00 (127)
1-1/2	NPT	9.88 (251)	2.81 (71)	4.88 (124)
2	NPT	11.25 (286)	3.06 (78)	6.50 (165)
	NPT	11.25 (286)	3.06 (78)	6.50 (165)
	NPT	11.25 (286)	3.06 (78)	6.50 (165)

***NOTE:** 'C' dimensions will vary depending on valve stem diameter, refer to Tables 6 & 7.

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Table 4

Valve Assembly (RF End Connection) with Standard Actuator Envelope Dimensions
(with common stem diameter) Inches (mm) (Refer to Figure 2)

Valve Size (inch)	End Connection	A	B	C*
1	150	7.25 (184)	2.38 (60)	5.00 (127)
	300	7.75 (197)	2.38 (60)	5.00 (127)
	600	8.25 (210)	2.38 (60)	5.00 (127)
1-1/2	150	8.75 (222)	2.81 (71)	4.88 (124)
	300	9.25 (235)	2.81 (71)	4.88 (124)
	600	9.88 (251)	2.81 (71)	4.88 (124)
2	150	10.00 (254)	3.06 (78)	6.50 (165)
	150	10.00 (254)	3.06 (78)	6.50 (165)
	300	10.50 (267)	3.06 (78)	6.50 (165)
	300	10.50 (267)	3.06 (78)	6.50 (165)
	600	11.25 (286)	3.06 (78)	6.50 (165)
	600	11.25 (286)	3.06 (78)	6.50 (165)
3	150	11.75 (299)	3.81 (97)	7.50 (191)
	150	11.75 (299)	3.81 (97)	7.50 (191)
	300	12.50 (318)	3.81 (97)	7.50 (191)
	300	12.50 (318)	3.81 (97)	7.50 (191)
	600	13.25 (337)	3.81 (97)	7.50 (191)
	600	13.25 (337)	3.81 (97)	7.50 (191)
4	150	13.88 (353)	5.06 (129)	8.69 (221)
	150	13.88 (353)	5.06 (129)	8.69 (221)
	300	14.50 (368)	5.06 (129)	8.69 (221)
	300	14.50 (368)	5.06 (129)	8.69 (221)
	600	15.50 (394)	5.06 (129)	8.69 (221)
	600	15.50 (394)	5.06 (129)	8.69 (221)
6	150	17.75 (451)	5.50 (140)	9.88 (311)
	150	17.75 (451)	5.50 (140)	9.88 (311)
	300	18.62 (473)	5.50 (140)	9.88 (311)
	300	18.62 (473)	5.50 (140)	9.88 (311)
	600	20.00 (508)	5.50 (140)	9.88 (311)
	600	20.00 (508)	5.50 (140)	9.88 (311)
8	150	21.38 (543)	7.50 (191)	*
	300	22.38 (556)	7.50 (191)	*
	600	24.00 (610)	7.50 (191)	*

*NOTE: 'C' dimensions will vary depending on valve stem diameter, refer to Tables 6 & 7.



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Table 5

Valve Assembly (RTJ End Connection) with Standard Actuator Envelope Dimensions

(with common stem diameter) Inches (mm) (Refer to Figure 2)

Valve Size (inch)	End Connection	A	B	C*
1	150	7.75 (197)	2.38 (60)	5.00 (127)
	300	8.25 (210)	2.38 (60)	5.00 (127)
	600	8.25 (210)	2.38 (60)	5.00 (127)
1-1/2	150	9.25 (235)	2.81 (71)	4.88 (124)
	300	9.75 (248)	2.81 (71)	4.88 (124)
	600	9.88 (251)	2.81 (71)	4.88 (124)
2	150	10.50 (267)	3.06 (78)	6.50 (165)
	150	10.50 (267)	3.06 (78)	6.50 (165)
	300	11.12 (282)	3.06 (78)	6.50 (165)
	300	11.12 (282)	3.06 (78)	6.50 (165)
	600	11.38 (289)	3.06 (78)	6.50 (165)
	600	11.38 (289)	3.06 (78)	6.50 (165)
3	150	12.25 (311)	3.81 (97)	7.50 (191)
	150	12.25 (311)	3.81 (97)	7.50 (191)
	300	13.12 (333)	3.81 (97)	7.50 (191)
	300	13.12 (333)	3.81 (97)	7.50 (191)
	600	13.38 (340)	3.81 (97)	7.50 (191)
	600	13.38 (340)	3.81 (97)	7.50 (191)
4	150	14.38 (365)	5.06 (129)	8.69 (221)
	150	14.38 (365)	5.06 (129)	8.69 (221)
	300	15.12 (384)	5.06 (129)	8.69 (221)
	300	15.12 (384)	5.06 (129)	8.69 (221)
	600	15.62 (397)	5.06 (129)	8.69 (221)
	600	15.62 (397)	5.06 (129)	8.69 (221)
6	150	18.25 (464)	5.50 (140)	9.88 (311)
	150	18.25 (464)	5.50 (140)	9.88 (311)
	300	19.25 (489)	5.50 (140)	9.88 (311)
	300	19.25 (489)	5.50 (140)	9.88 (311)
	600	20.12 (511)	5.50 (140)	9.88 (311)
	600	20.12 (511)	5.50 (140)	9.88 (311)
8	150	21.88 (556)	7.50 (191)	*
	300	23.00 (584)	7.50 (191)	*
	600	24.12 (613)	7.50 (191)	*

*NOTE: 'C' dimensions will vary depending on valve stem diameter, refer to Tables 6 & 7.

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Table 6

Valve Dimensions for Standard Bonnet Assembly - Inches (mm) (Refer to Figure 2)

Valve Size (Inch)	C			
	3/8 (9.5) Stem Diameter	1/2 (12.7) Stem Diameter	3/4 (19.1) Stem Diameter	1 (25.4) Stem Diameter
1	5.00 (127)	5.88 (149)	—	—
1-1/2	4.88 (124)	5.75 (146)	—	—
2	—	6.50 (165)	6.38 (162)	—
3	—	7.50 (191)	7.38 (187)	—
4	—	8.69 (221)	8.56 (217)	9.38 (238)
6	—	—	9.88 (251)	10.62 (270)
8 ²	—	—	14.75 (375) ¹	16.75 (426)

NOTE: 1 - Available in WCC Body Material Only.
2 - Extension Bonnets are the standard bonnet used for 8 inch valve construction.

Table 7

Extension Bonnet Valve Dimensions - Inches (mm) (Refer to Figure 2)

Valve Size (Inch)	C			
	3/8 (9.5) Stem Diameter	1/2 (12.7) Stem Diameter	3/4 (19.1) Stem Diameter	1 (25.4) Stem Diameter
1	8.38 (213)	9.88 (251)	—	—
1-1/2	8.25 (210)	9.75 (248)	—	—
2	—	10.50 (267)	—	—
3	—	11.50 (292)	11.69 (297)	—
4	—	12.69 (322)	12.88 (327)	14.56 (370)
6	—	—	14.06 (357)	15.81 (402)
8 (Standard)	—	—	16.56 (421)	17.75 (450)

Table 8

Extension Bonnet Valve Dimensions - Inches (mm) (Refer to Figure 2)

Valve Size (Inch)	C		
	3/8 (9.5) Stem Diameter	1/2 (12.7) Stem Diameter	3/4 (19.1) Stem Diameter
1	11.94 (303)	12.56 (319)	—
1-1/2	11.81 (300)	12.44 (316)	—
2	—	18.31 (465)	—
3	—	19.50 (495)	19.19 (487)
4	—	20.69 (526)	20.38 (518)
6	—	—	21.38 (543)
8	—	—	24.44 (621)



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Table 9

Typical Construction Materials

Part Description	Standard Construction	NACE Construction
BODY	LCC	LCC
	WCC	WCC
	CF8M	CF8M
BONNET	LCC	LCC
	WCC	WCC
	CF8M	CF8M
PACKING BOX RING	S31600	S31600
PACKING SPRING	S30400	N/A
SPRING WASHERS	N07718	N07718
O-RING	HNBR	HNBR
LANTERN RING	-	S31600
SPECIAL WASHER	S30400	N/A
V-RING PACKING SET	PTFE	PTFE (Double)
PACKING RIBBON	GRAPHITE	GRAPHITE
PACKING FILAMENT	GRAPHITE	GRAPHITE
PACKING FOLLOWER	S31600	S31600
PACKING FLANGE	1020 / ZINC	1020 / ZINC
UPPER WIPER	FELT	FELT
LOWER WIPER	TEFLON	TEFLON
VALVE PLUG - STEM ASSEMBLY	S41600 HT PLUG - S20910 STEM	N/A
	S31600 PLUG - S20910 STEM	S31600 PLUG - S20910 STEM
	S31600 / ALLOY 6 PLUG - S20910 STEM	S31600 / ALLOY 6 PLUG - 20910 STEM
PIN	STEEL	STEEL
SEAT RING	S41600 HT	N/A
	S31600 / ALLOY 6	S31600 / ALLOY 6
	S31600	S31600
PACKING FLANGE	CARBON STEEL (PLATED)	CARBON STEEL (PLATED)
PACKING NUT	2H	2H
PACKING STUD	B7	B7
BONNET NUT	2H	2HM
BONNET STUD	B7	B7M
	S17400 DH1150* (600 ASME Class)	S17400 DH1150* (600 ASME Class)
GASKETS	GRAPHITE / S31600	GRAPHITE / S31600
SPIRAL WOUND GASKET	S30400 / GRAPHITE	S30400 / GRAPHITE
SHIM	S31600	S31600

See Tables 10 - 14 for service limits.

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Table 10

Maximum Pressure / Temperature Ratings - Psig (Bar)

Valve Body Material	ASME Class	Material Pressure Temperature Limitations		
		-50°F (-46°C)	-20°F (-29°C)	450°F (232°C)
LCC	150	290 (19.99)	290 (19.99)	185 (12.76)
	300	750 (51.71)	750 (51.71)	685 (47.23)
	600	1,500 (103.42)	1,500 (103.42)	1,367 (94.25)
CF8M	150	275 (18.96)	—	183 (12.62)
	300	720 (49.64)	—	498 (34.34)
	600	1,440 (99.28)	—	990 (68.26)
WCC	150	—	290 (19.99)	185 (12.76)
	300	—	750 (51.71)	685 (47.23)
	600	—	1,500 (103.42)	1,367 (94.25)

Table 11

PTFE Seat Ring Temperature Limitations

Part Description	Temperature Limitation
PTFE Seat Ring	-100°F to 450°F (-73°C TO 232°C)

Table 12

Model 360 Bonnet and Packing Selection

Bonnet Style	Packing Material	In-Body Process Temperature Limitations
Standard Bonnet: Standard for all valve sizes 1 through 6.	PTFE V-Ring	0°F to 450°F (-18°C to 232°C)
	Graphite (Ribbon/Filament)	0°F to 600°F (-18°C to 316°C) ²
Extension Bonnet Style 1: Standard for all 8 inch valves, optional for valves 1 through 6 inch.	PTFE V-Ring	-50°F to 600°F (-46°C to 316°C) ²
	Graphite (Ribbon/Filament)	
Extension Bonnet Style 2: Optional for 1 through 8 inch valve sizes.	PTFE V-Ring	-150°F to 600°F (-101°C to 316°C) ²
	Graphite (Ribbon/Filament)	

1 The above temperatures assume the presence of an ambient temperature outside the valve body of 70°F (21°C) with no bonnet insulation. An extension bonnet may be required when operating valves in low temperatures to prevent damage that could occur from the formation of valve stem frost. Other limiting factors, such as trim material components, will have to be considered.

2 Consult Dyna-Flo for temperatures above 450°F (232°C).

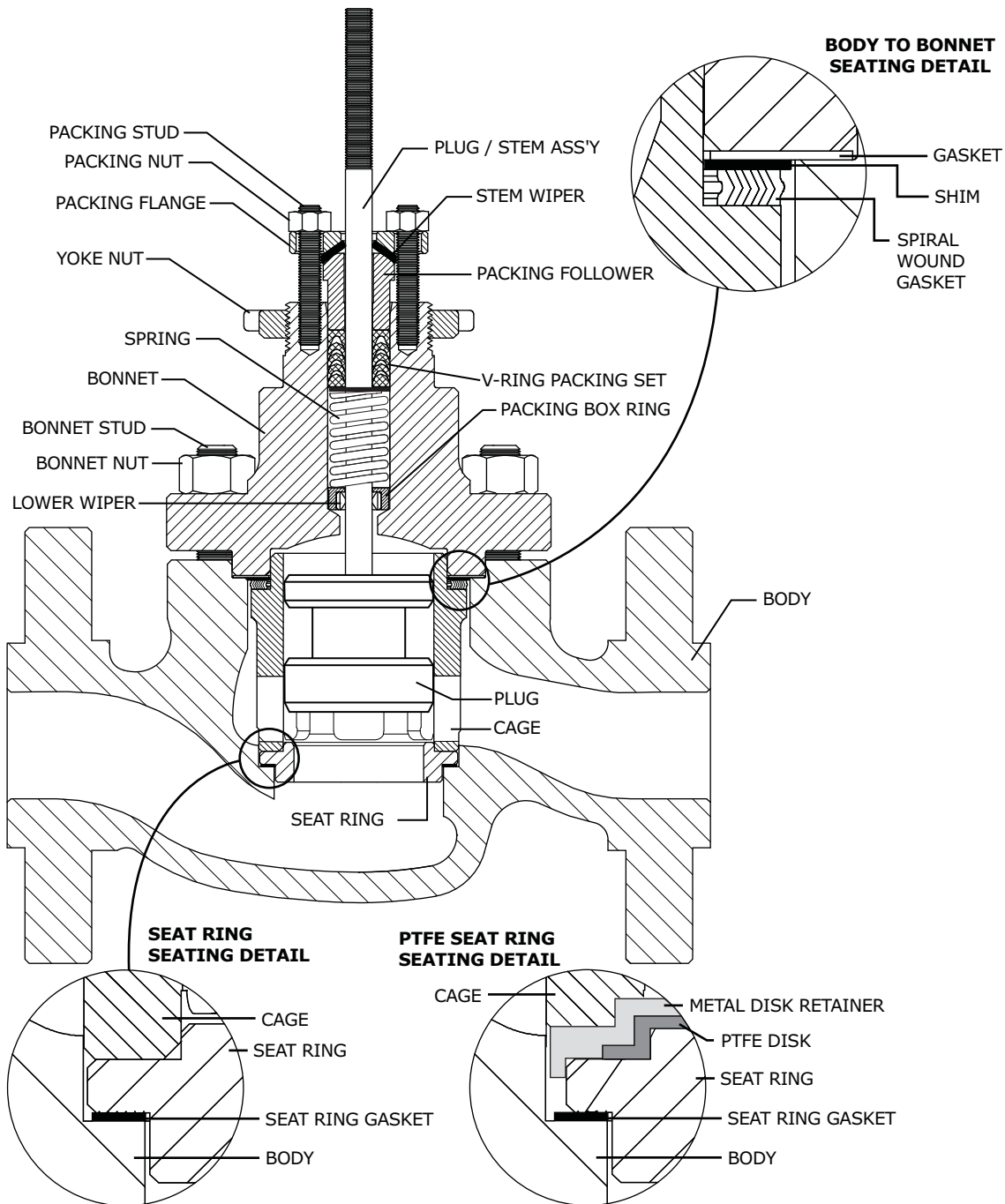
NOTE: For temperatures above or below these standard temperatures consult Dyna-Flo.



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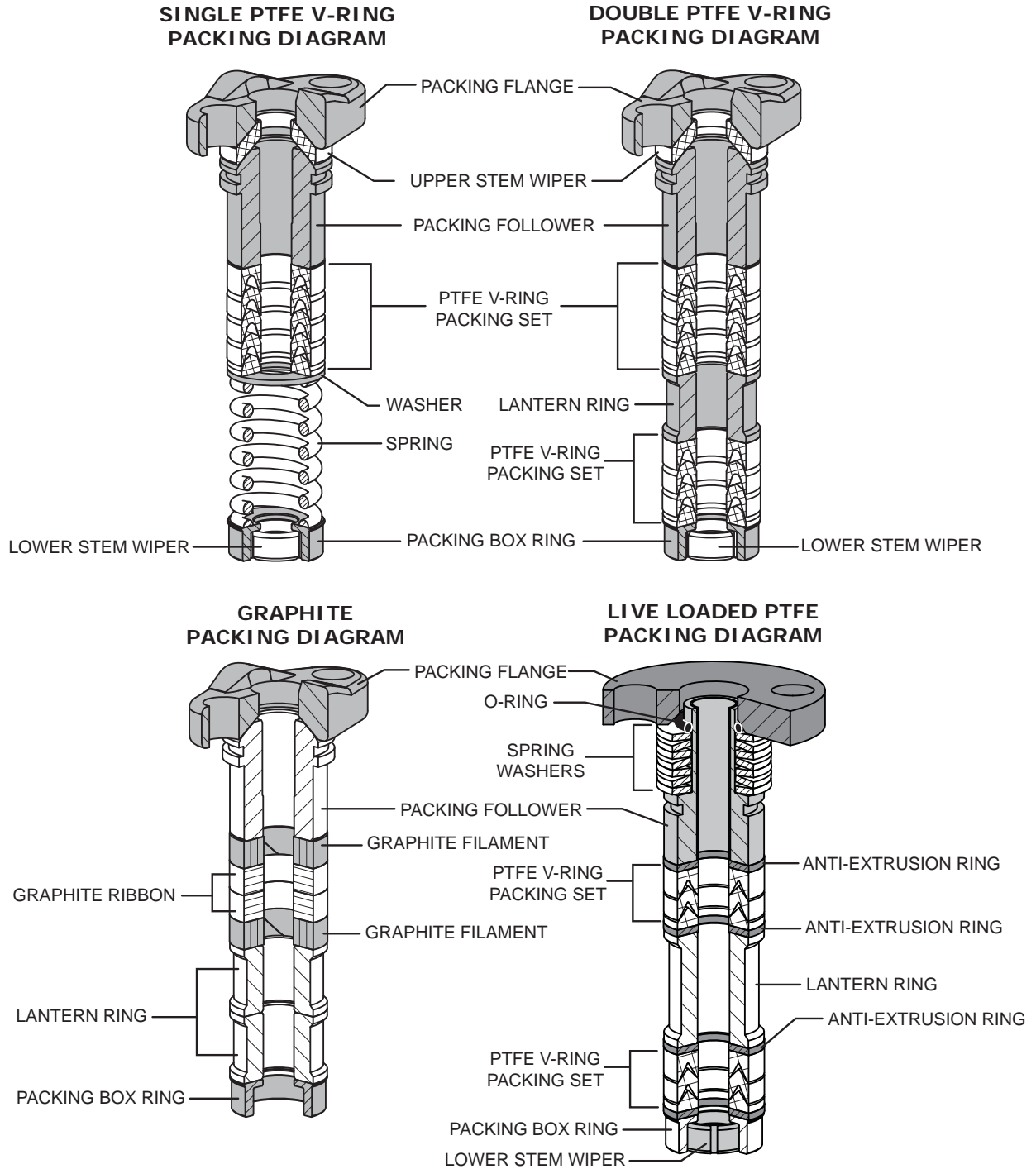
Figure 3 Cross-section of 362 Series Control Valve with Trim Details



DYNA-FLO MODEL 362 CONTROL VALVE STANDARD 1 THROUGH 6 INCH CONSTRUCTION

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Figure 4 Model 362 Packing Style Diagrams



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Figure 5 Model 362 Extension Bonnet Cross Section

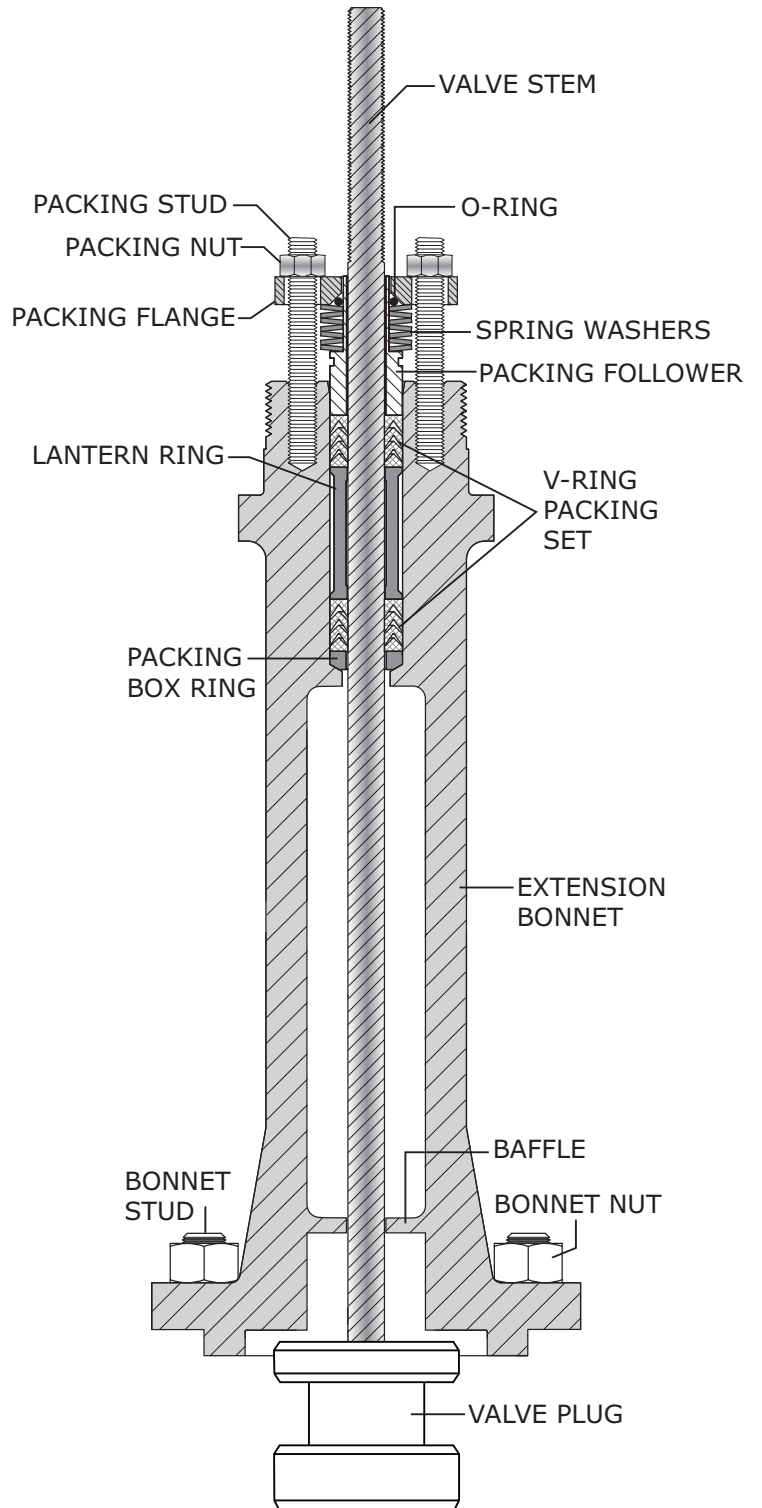
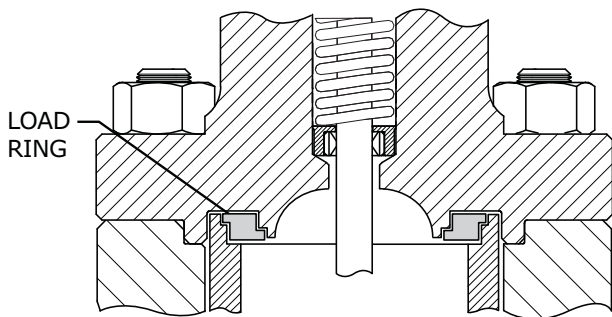


Figure 6

DYNA-FLO MODEL 362 CONTROL VALVE 8 INCH CONSTRUCTION DETAIL



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Table 13

Valve Bolting Temperature Limitations

Stud Material	Temperature Limitation
B7 (Standard)	-50°F to 900°F (-46°C TO 482°C)
B7M (NACE 150-300 ASME Class)	-50°F TO 900°F (-46°C TO 482°C)
B8M (Stainless Steel Option)	-325°F TO 1500°F (-198°C TO 816°C)
S17400 DH1150 (NACE 600 ASME Class)	-50°F TO 650°F (-46°C TO 343°C)
Nut Material	Temperature Limitation
2H, 2HM & 8M	Not Limiting Factors

Table 14

Trim Options

Trim Spec	Valve Plug	Stem	Cage	Seat Ring	Service
DA	S31600 / Tungsten Carbide	S20910	S17400 DH1150	S31600 / Tungsten Carbide	Corrosive / High Temp / NACE / Erosive
	Temperature Limitation: -80°F to 600°F (-62°C TO 316°C)				
D1	S41600 HT	S20910	S17400 H900	S41600 HT	Standard / Non-corrosive / High Temp
	Temperature Limitation: -20°F to 800°F (-29°C TO 427°C)				
D2	S31600 / Alloy 6 Seat	S20910	S17400 DH1150 ¹	S31600 / Alloy 6 Hard Facing	Corrosive / NACE High Temperature
	Temperature Limitation: -80°F to 600°F (-62°C TO 316°C)				
D3	S31600 / Alloy 6 Seat & Guide	S20910	S31600 / Alloy 6	S31600 / Alloy 6 Hard Facing	Corrosive / High Temperature / Erosive
	Temperature Limitation: -325°F to 600°F (-198°C TO 316°C)				
D5	S41600 HT	S20910	S17400 H900	S31600 / PTFE	Standard / Non-corrosive / Tight Shut off
	Temperature Limitation: -20°F to 450°F (-29°C TO 232°C)				
D6	S31600 / Alloy 6 Seat & Guide	S20910	S17400 H900	S31600 / Alloy 6 Hard Facing	Standard / Mild Corrosive / Mild Erosive
	Temperature Limitation: -80°F to 600°F (-62°C TO 316°C)				
D7	S31600 / Alloy 6 Seat & Guide	S20910	S17400 DH1150 ¹	S31600 / Alloy 6 Hard Facing	Corrosive / High Temp / NACE / Mild Erosive
	Temperature Limitation: -80°F to 600°F (-62°C TO 316°C)				
D8	S31600	S20910	S17400 DH1150 ¹	S31600	NACE / Corrosive
	Temperature Limitation: -80°F to 600°F (-62°C TO 316°C)				

NOTE:

1 - S31600 (ENC)* available by special request (*Electroless Nickel Coating).



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Table 15

Models 362 Valve Sizing Coefficients, Quick Open Characteristic

Valve Size	Port	Travel	Coefficient	Percentage of Valve Travel									
				10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Inches	Inches (mm)	Inches (mm)											
3/4	1-5/16 (33.3)	3/4 (19.1)	C _V	4.94	8.80	11.8	13.1	13.8	14.1	14.2	14.2	14.2	14.2
			X _T	0.576	0.688	0.605	0.571	0.552	0.539	0.534	0.534	0.534	0.534
			F _L										
1	1-5/16 (33.3)	3/4 (19.1)	C _V	5.24	10.0	15.0	18.4	20.3	21.0	21.1	21.3	21.4	21.4
			X _T	0.540	0.664	0.656	0.660	0.641	0.650	0.663	0.654	0.648	0.650
			F _L										
1-1/2	1-7/8 (47.6)	3/4 (19.1)	C _V	7.60	15.1	22.3	28.2	33.4	37.0	38.0	38.0	38.0	38.0
			X _T	0.577	0.613	0.639	0.684	0.702	0.713	0.743	0.777	0.789	0.789
			F _L										
1-1/2 ⁽¹⁾	1 (25.4)	3/4 (19.1)	C _V	4.83	10.4	16.2	21.4	25.6	28.2	29.8	30.2	30.3	30.4
			X _T	0.611	0.607	0.588	0.598	0.610	0.651	0.665	0.699	0.708	0.717
			F _L										
2	2 (50.8)	1-1/8 (28.6)	C _V	14.3	31.1	48.6	59.3	65.2	67.2	67.2	67.2	67.2	67.2
			X _T	0.633	0.627	0.619	0.732	0.758	0.771	0.797	0.810	0.810	0.810
			F _L										
2 ⁽¹⁾	1 (25.4)	3/4 (19.1)	C _V	5.12	10.5	16.7	22.2	26.9	30.9	33.9	36.3	38.1	39.4
			X _T	0.588	0.617	0.565	0.571	0.640	0.722	0.796	0.826	0.785	0.734
			F _L										
3	3-7/16 (87.3)	1-1/2 (38)	C _V	23.3	45.5	78.3	106	120	130	136	143	146	150
			X _T	0.585	0.592	0.602	0.685	0.740	0.726	0.737	0.731	0.733	0.720
			F _L										
3 ⁽¹⁾	2-5/16 (58.7)	1-1/8 (29)	C _V	14.7	32.4	51.2	68.8	83.1	94.3	103	108	112	115
			X _T	0.609	0.565	0.565	0.593	0.679	0.729	0.751	0.774	0.785	0.752
			F _L										
4	4-3/8 (111)	2 (51)	C _V	39.0	77.3	132	174	198	215	225	230	234	235
			X _T	0.642	0.691	0.714	0.763	0.768	0.763	0.769	0.775	0.783	0.780
			F _L										
4 ⁽¹⁾	2-7/8 (73)	1-1/2 (38)	C _V	26.9	47.2	76.4	108	135	156	169	178	181	183
			X _T	0.524	0.683	0.669	0.664	0.688	0.741	0.783	0.763	0.752	0.736
			F _L										
6	7 (178)	2 (51)	C _V	89.9	162	255	322	365	395	418	436	455	469
			X _T	0.572	0.612	0.601	0.652	0.664	0.677	0.681	0.701	0.698	0.700
			F _L										
6 ⁽¹⁾	4-3/8 (111)	2 (51)	C _V	49.8	108	164	217	255	274	282	290	291	302
			X _T	0.711	0.630	0.619	0.650	0.724	0.814	0.883	0.883	0.908	0.860
			F _L										
8	8 (203)	2 (51)	C _V	94.4	205	323	441	539	622	677	720	759	787
			X _T	0.683	0.607	0.575	0.603	0.682	0.726	0.772	0.809	0.814	0.814
			F _L										
8	8 (203)	3 (76)	C _V	156	337	490	612	700	759	796	827	844	875
			X _T	0.520	0.561	0.654	0.757	0.804	0.814	0.818	0.801	0.810	0.774
			F _L										

NOTES: (1) - Restricted Trim. Relationships of note: $C_1 = 39.76\sqrt{X_T}$ $C_G = C_V C_1$ $K_M = F_L^2$

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Table 16

Models 362 Valve Sizing Coefficients, Linear Characteristic

Valve Size	Port	Travel	Coefficient	Percentage of Valve Travel									
				10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Inches	Inches (mm)	Inches (mm)											
1	1-5/16 (33.3)	3/4 (19.1)	C _v	2.27	4.12	6.23	8.54	11.0	13.4	15.8	17.8	19.3	20.1
			X _T	0.691	0.691	0.690	0.696	0.696	0.708	0.709	0.705	0.702	0.690
			F _L										
1-1/2	1-7/8 (47.6)	3/4 (19.1)	C _v	3.56	7.01	11.1	15.1	19.0	22.9	26.7	30.0	33.1	34.9
			X _T	0.628	0.582	0.604	0.647	0.683	0.699	0.715	0.737	0.741	0.764
			F _L										
1-1/2 ⁽¹⁾	1-5/16 (33.3)	3/4 (19.1)	C _v	2.42	4.30	6.40	8.77	11.5	14.6	17.8	21.1	24.3	26.9
			X _T	0.648	0.682	0.712	0.693	0.664	0.678	0.701	0.732	0.756	0.799
			F _L										
2	2-5/16 (58.7)	1-1/8 (28.6)	C _v	8.49	17.1	25.9	35.3	44.4	52.9	59.2	62.0	63.9	65.3
			X _T	0.618	0.635	0.689	0.710	0.723	0.732	0.742	0.759	0.761	0.762
			F _L										
2 ⁽¹⁾	1-5/16 (33.3)	3/4 (19.1)	C _v	2.22	4.11	6.06	8.25	11.0	14.3	18.0	21.8	26.0	30.9
			X _T	0.725	0.694	0.729	0.746	0.688	0.675	0.667	0.686	0.711	0.722
			F _L										
3	3-7/16 (87.3)	1-1/2 (38)	C _v	15.3	34.3	52.8	71.4	87.8	101	112	121	129	135
			X _T	0.607	0.631	0.663	0.694	0.720	0.742	0.762	0.786	0.771	0.751
			F _L										
3 ⁽¹⁾	2-5/16 (58.7)	1-1/8 (29)	C _v	6.39	13.0	20.7	29.1	38.2	47.9	58.0	68.4	79.3	88.8
			X _T	0.662	0.677	0.704	0.677	0.648	0.646	0.643	0.658	0.714	0.742
			F _L										
4	4-3/8 (111)	2 (51)	C _v	23.7	46.4	72.9	98.2	122	145	165	183	199	212
			X _T	0.553	0.619	0.644	0.680	0.713	0.737	0.743	0.823	0.816	0.791
			F _L										
4 ⁽¹⁾	2-7/8 (73)	1-1/2 (38)	C _v	10.6	22.5	35.0	47.5	60.2	73.1	88.0	103	120	139
			X _T	0.613	0.671	0.698	0.718	0.718	0.731	0.722	0.751	0.769	0.780
			F _L										
6	7 (178)	2 (51)	C _v	55.0	118	180	235	280	312	341	368	390	417
			X _T	0.597	0.683	0.701	0.687	0.767	0.791	0.787	0.792	0.794	0.745
			F _L										
6 ⁽¹⁾	4-3/8 (111)	2 (51)	C _v	15.7	35.8	60.2	86.2	115	146	179	215	247	271
			X _T	0.678	0.668	0.676	0.683	0.668	0.645	0.668	0.695	0.759	0.817
			F _L										
8	8 (203)	2 (51)	C _v	66.6	147	221	292	375	450	522	592	652	701
			X _T	0.758	0.588	0.597	0.637	0.640	0.676	0.702	0.720	0.738	0.757
			F _L										
8	8 (203)	3 (76)	C _v	100	213	330	451	553	648	719	773	809	836
			X _T	0.616	0.624	0.669	0.691	0.738	0.747	0.762	0.780	0.787	0.799
			F _L										

NOTES: (1) - Restricted Trim. Relationships of note: $C_1 = 39.76 \sqrt{X_T}$ $C_G = C_V C_1$ $K_M = F_L^2$



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Table 17

Models 362 Valve Sizing Coefficients, Equal Percentage Characteristic

Valve Size	Port	Travel	Coefficient	Percentage of Valve Travel																			
				10%	20%	30%	40%	50%	60%	70%	80%	90%	100%										
	Inches	Inches (mm)	Inches (mm)																				
1	1-5/16 (33.3)	3/4 (19.1)	C _v	0.783	1.29	1.86	2.71	4.18	6.44	9.54	13.1	15.7	17.4										
			X _T	0.754	0.794	0.763	0.670	0.652	0.621	0.630	0.677	0.718	0.721										
			F _L																				0.95
1-1/2	1-7/8 (47.6)	3/4 (19.1)	C _v	1.54	2.52	3.57	4.94	7.41	11.6	17.2	23.5	28.7	33.4										
			X _T	0.674	0.670	0.694	0.731	0.706	0.681	0.698	0.692	0.789	0.793										
			F _L																				
1-1/2 ⁽¹⁾	1-5/16 (33.3)	3/4 (19.1)	C _v	0.882	1.35	1.89	2.52	3.68	5.52	8.13	12.0	16.6	21.0										
			X _T	0.858	0.845	0.867	0.810	0.833	0.755	0.776	0.766	0.766	0.766										
			F _L																				
2	2-5/16 (58.7)	1-1/8 (28.6)	C _v	1.74	3.15	4.72	6.91	10.6	16.3	25.0	36.7	47.8	56.2										
			X _T	0.863	0.848	0.849	0.805	0.782	0.778	0.792	0.772	0.847	0.848										
			F _L																				
2 ⁽¹⁾	1-5/16 (33.3)	3/4 (19.1)	C _v	0.849	1.34	1.83	2.39	3.43	5.12	7.49	11.2	15.8	20.8										
			X _T	0.844	0.778	0.803	0.767	0.791	0.764	0.764	0.764	0.755	0.728										
			F _L																				
3	3-7/16 (87.3)	1-1/2 (38)	C _v	4.05	6.84	10.0	15.0	23.8	37.8	59.0	87.1	110	121										
			X _T	0.768	0.757	0.761	0.757	0.758	0.571	0.754	0.756	0.758	0.757										
			F _L																				
3 ⁽¹⁾	2-5/16 (58.7)	1-1/8 (29)	C _v	2.74	3.44	4.86	6.95	10.6	16.5	25.0	37.7	52.7	67.5										
			X _T	0.753	0.748	0.756	0.783	0.786	0.741	0.736	0.732	0.737	0.738										
			F _L																				
4	4-3/8 (111)	2 (51)	C _v	6.56	11.4	17.3	27.0	42.2	66.4	103	146	184	203										
			X _T	0.722	0.717	0.739	0.772	0.738	0.718	0.718	0.736	0.792	0.822										
			F _L																				
4 ⁽¹⁾	2-7/8 (73)	1-1/2 (38)	C _v	3.96	7.14	10.6	14.5	21.1	31.7	48.0	69.7	95.6	121										
			X _T	0.792	0.803	0.770	0.767	0.760	0.725	0.703	0.717	0.763	0.764										
			F _L																				
6	7 (178)	2 (51)	C _v	13.2	24.6	41.1	62.5	97.1	155	223	286	326	357										
			X _T	0.723	0.737	0.767	0.846	0.803	0.781	0.808	0.826	0.847	0.816										
			F _L																				
6 ⁽¹⁾	4-3/8 (111)	2 (51)	C _v	4.96	9.02	14.0	24.2	39.4	60.8	94.6	144	199	233										
			X _T	0.842	0.792	0.778	0.709	0.723	0.739	0.729	0.706	0.719	0.806										
			F _L																				
8	8 (203)	2 (51)	C _v	18.8	33.6	53.6	79.8	114	168	242	345	467	570										
			X _T	0.874	0.865	0.769	0.748	0.731	0.697	0.712	0.707	0.697	0.694										
			F _L																				
8	8 (203)	3 (76)	C _v	25.9	53.3	97.8	178	299	461	618	727	768	808										
			X _T	0.825	0.728	0.681	0.616	0.678	0.716	0.735	0.793	0.825	0.827										
			F _L																				

NOTES: (1) - Restricted Trim.

Relationships of note:

$$C_1 = 39.76 \sqrt{X_T}$$

$$C_G = C_V C_1$$

$$K_M = F_L^2$$

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Table 18

Models 362 Valve Sizing Coefficients, Equal Percentage Low Noise Trim with Linear Characteristic

Valve Size	Port	Travel	Coefficient	Percentage of Valve Travel									
				10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Inches	Inches (mm)	Inches (mm)											
1	1-5/16 (33.3)	3/4 (19.1)	C_v	3.16	6.97	11.8	15.1	16.5	17.2	17.3	17.4	17.4	18.4
			X_T	0.828	0.747	0.553	0.570	0.645	0.667	0.686	0.694	0.709	0.678
1-1/2	1-7/8 (47.6)	3/4 (19.1)	C_v	3.42	8.78	14.6	22.2	27.7	31.6	34.0	35.1	36.0	37.2
			X_T	0.635	0.649	0.594	0.455	0.457	0.504	0.563	0.625	0.648	0.640
1-1/2 ⁽¹⁾	1-5/16 (33.3)	3/4 (19.1)	C_v	2.84	6.74	11.3	17.4	22.1	25.6	27.7	28.7	29.1	29.3
			X_T	0.669	0.709	0.563	0.424	0.401	0.428	0.487	0.569	0.661	0.711
2	2-5/16 (58.7)	1-1/8 (28.6)	C_v	8.27	21.8	35.3	47.3	55.1	60.2	63.2	65.3	66.8	67.8
			X_T	0.647	0.411	0.347	0.352	0.409	0.499	0.577	0.622	0.647	0.656
2 ⁽¹⁾	1-5/16 (33.3)	3/4 (19.1)	C_v	3.62	7.07	12.2	18.4	23.3	27.6	31.1	34.0	35.8	37.0
			X_T	0.620	0.769	0.559	0.420	0.390	0.396	0.408	0.440	0.475	0.494
3	3-7/16 (87.3)	1-1/2 (38)	C_v	11.1	36.0	60.3	81.9	99.6	111	119	124	128	131
			X_T	0.766	0.649	0.451	0.415	0.416	0.469	0.522	0.566	0.595	0.603
3 ⁽¹⁾	2-5/16 (58.7)	1-1/8 (29)	C_v	6.63	18.1	30.8	43.4	56.1	67.1	77.8	87.2	95.9	102
			X_T	0.766	0.662	0.483	0.424	0.395	0.387	0.385	0.387	0.395	0.397
4	4-3/8 (111)	2 (51)	C_v	25.1	56.5	85.6	111	128	139	147	151	208	211
			X_T	1.222	0.807	0.683	0.680	0.786	0.909	1.017	1.109	0.635	0.645
4 ⁽¹⁾	2-7/8 (73)	1-1/2 (38)	C_v	12.8	33.9	56.6	76.4	96.3	114	130	143	156	164
			X_T	0.766	0.471	0.350	0.332	0.317	0.325	0.331	0.349	0.361	0.377
6	7 (178)	2 (51)	C_v	54.1	114	174	231	281	319	349	369	387	401
			X_T	0.407	0.453	0.409	0.367	0.383	0.419	0.450	0.487	0.514	0.532
8	8 (203)	3 (76)	C_v	84.6	229	360	462	531	607	660	695	712	735
			X_T	0.729	0.409	0.346	0.354	0.410	0.451	0.507	0.560	0.602	0.633

NOTES: (1) - Restricted Trim. Relationships of note: $C_1 = 39.76 \sqrt{X_T}$ $C_G = C_V C_1$ $K_M = F_L^2$

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Table 19

Approximate Valve Weights

Valve Size (inch)	lb	Kg
3/4	20	9
1	30	14
1-1/2	45	20
2	85	39
3	125	57
4	170	77
6	350	159
8	900	408

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Model 362 Control Valves

MODEL NUMBERING SYSTEM

SAMPLE PART NUMBER: 362-2AFL-1FP2-ES-O

VALVE SIZE						2		
7	3/4 INCH	1	1 INCH	5	1-1/2 INCH		2	2 INCH
3	3 INCH	4	4 INCH	6	INCH		8	8 INCH
ASME RATING						A		
A	150	B	300	C	600			
END CONNECTION						F		
F	RF	J	RTJ	N	NPT			
BODY MATERIAL						L		
L	LCC	W	WCC	M	CF8M			
TRIM						1		
1	D1	2	D2	3	D3		6	D6
7	D7	8	D8	A	DA			
PORT SIZE						F		
F	FULL PORT	R	REDUCED PORT					
PACKING STYLE						P		
P	SINGLE PTFE V-RING			J	DOUBLE PTFE V-RING			
G	SINGLE GRAPHITE			L	LIVE LOADED PTFE			
YOKE BOSS SIZE						2		
1	2-1/8" (3/8" STEM)	2	2-13/16" (1/2" STEM)	3	3-9/16" (3/4" STEM)		5	5" (1" STEM)
BOLTING						-		
-	B7 / 2H	A	B7M / 2HM	B	B8M / 8M		C	S17400 DH1150
CHARACTERISTIC						E		
E	EQUAL PERCENT	L	LINEAR	Q	QUICK OPEN		N	LOW-NOISE 1
X	SPECIAL							
BONNET STYLE						S		
S	STANDARD (1" TO 6" VALVES)			E	EXTENSION (STANDARD FOR 8" VALVES)			
X	SPECIAL							
SPECIAL						O		
	NONE			O	CLEANED AND PACKAGED FOR O ₂ SERVICE			