



## Model 363 Control Valve



Figure 1 363 Control Valve

The Model 363 control valve is part of the 360 Series of control Valves.

The Model 363 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 363 valves with an option for soft seating.

The standard actuator for the Model 363 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 363 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 363 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.

#### Low Temperature Construction Standard

Model 363 valves use LCC body material, and internals rated to  $-50^{\circ}\text{F}$  ( $-46^{\circ}\text{C}$ ).

#### High Temperature Option

The standard temperature rating of  $450^{\circ}\text{F}$  ( $232^{\circ}\text{C}$ ) can be extended to  $850^{\circ}\text{F}$  ( $454^{\circ}\text{C}$ ), with options available for higher temperatures.

#### Cryogenic Service Option

Optional materials and trim details make the 363 control valve a standard solution for ultra low temperatures.

#### Full Pressure Drop Capabilities

363 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.

#### Shut Off Capability

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

#### Flow Characteristic Selections

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

#### Easy Maintenance

As with all 360 Series Valves, the 363 can be serviced in line with no special tools required.



## Model 363 Control Valve

### Specifications

#### Sizes and Connection Styles

Models 363

Size: 1", 1-1/2", 2"  
Rating: ASME 150 / 300 / 600  
Connections: RF / RTJ - All Sizes  
NPT - 1", 1-1/2" and 2"

#### 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. See Table 6.

#### Standard Shut-off Classifications

In accordance with ASME / FCI 70.2  
-Model 363 - Standard Class IV - Metal Seat  
-Model 363 - Optional Class V - Metal Seat  
-Model 363 - Optional Class VI - Metal Seat

See Table 1 for Optional Shut-off capability

#### Dimensions

##### Valve and Actuator Assembly Diagram

See Figure 2

##### Valve and Actuator Assembly Dimensions

See Table 3 - 6

#### Approximate Valve Body and Actuator Weights

See Table 17

#### Materials

The standard body material is LCC. The standard bonnet material is LF2 or LCC. CF8M (316 SST) is an option. See Table 7 for typical construction materials. See Tables 8 for trim selections.

#### Cross-Section of Model 363 Control Valves

See Figure 3

#### Flow Characteristics

Standard trim is equal percent. Other flow characteristics are available upon request. Model 363 valves normally 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 8 for packing diagrams.

#### Valve Sizing Coefficients

See Tables 10 - 16

#### Actuator Sizing

##### Fail Open Actuator

See Table 18

##### Fail Close Actuator

See Table 19

#### Trim Style Service Application

See Table 8



## Model 363 Control Valve

**Table 1**

### Valve Shut-off Configurations

Valve Model	Size (inch)	Shut Off Capabilities	Valve Plug	Guide	Seat
363	1, 1-1/2 & 2	Class IV	Unbalanced	Top	Metal
	1, 1-1/2 & 2	Optional Class V	Unbalanced	Top	Metal
	1, 1-1/2 & 2	Optional Class VI	Unbalanced	Top	Metal

**Table 2**

### Model 363 Port Diameters, Valve Plug Travel, Stem and Yoke Boss Diameter

Valve Size	Port Diameter		Max Valve Plug Travel	
	Inch	mm	Inch	mm
1", 1-1/2" & 2" Dyna-Form	1/4	6	3/4	19
1" Dyna-Form	3/8	10	3/4	19
1" Dyna-Form	1/2	13	3/4	19
1" Dyna-Form	3/4	19	3/4	19
1" Full Port	1	25	3/4	19
1-1/2" Full Port	1-1/2	38	3/4	19
1-1/2" Reduced Port	1	25	3/4	19
1-1/2" Dyna-Form	3/8	10	3/4	19
1-1/2" Dyna-Form	1/2	13	3/4	19
1-1/2" Dyna-Form	3/4	19	3/4	19
2" Full Port	2	51	1-1/8	29
2" Reduced Port	1	25	3/4	19
2" Dyna-Form	1/4	6	3/4	19
2" Dyna-Form	3/8	10	3/4	19
2" Dyna-Form	1/2	13	3/4	19
2" Dyna-Form	3/4	19	3/4	19



## Model 363 Control Valve

Table 3

### Model 363 Port Diameters, Valve Travel and Mounting Connection

Valve Size inch	Port Diameter inch (mm)			Max Valve Travel inch (mm)	Valve Stem and Mounting Connection Diameter inch (mm)			
	Equal Percentage <sup>1</sup>	Linear	Quick Open		Standard		Optional	
					Stem	Yoke Boss	Stem	Yoke Boss
1	3/16 (4.8)	1 (25.4)	1 (25.4)	3/4 (19.1)	3/8 (9.5)	2-1/8 (54)	1/2 (12.7)	2-13/16 (71)
	1/4 (6.4) <sup>2</sup>							
	3/8 (9.5)							
	1/2 (12.7)							
	3/4 (19.1)							
	1 (25.4)							
1-1/2	3/16 (4.8)	1-1/2 (38.1)	1-1/2 (38.1)	3/4 (19.1)	3/8 (9.6)	2-1/8 (54)	1/2 (12.7)	2-13/16 (71)
	1/4 (6.4) <sup>2</sup>							
	3/8 (9.5)							
	1/2 (12.7)							
	3/4 (19.1)							
	1 (25.4)							
1-1/2 (38.1)								
2	3/16 (4.8)	2 (50.8)	2 (50.8)	1-1/8 (29)	1/2 (12.7)	2-13/16 (71)	3/4 (19.1)	3-9/16 (90)
	1/4 (6.4) <sup>2</sup>							
	3/8 (9.5)							
	1/2 (12.7)							
	3/4 (19.1)							
	1 (25.4)							
	1-1/2 (38.1)							
	2 (50.8)							

1 - Port Diameters 1/4 - 3/4 inch (6.4 - 19.1 mm) use Dyna-Form valve plugs.

2 - Also available in 3-flute Dyna-Flute valve plugs.



# Model 363 Control Valve

**Table 4**

**1" to 2" Regular Bonnet Valve Assembly with Actuator Envelope Dimensions**

Inches (mm)  
(Refer to Figure 2)

Valve Size (inch)	End Connection	Actuator Size	A	B	C	D		E
						DFO	DFC	
1	ASME 150	1069	7.25 (184)	2.38 (60)	5.00 (127)	24.6 (625)	27.60 (700)	13.12 (333)
	ASME 300	1069	7.75 (197)	2.38 (60)	5.00 (127)	24.6 (625)	27.60 (700)	13.12 (333)
	ASME 600	1069	8.25 (210)	2.38 (60)	5.00 (127)	24.6 (625)	27.60 (700)	13.12 (333)
	NPT	1069	8.25 (210)	2.38 (60)	5.00 (127)	24.6 (625)	27.60 (700)	13.12 (333)
1-1/2	ASME 150	1069	8.75 (222)	2.81 (71)	4.88 (124)	24.48 (622)	27.48 (697)	13.12 (333)
	ASME 300	1069	9.25 (235)	2.81 (71)	4.88 (124)	24.48 (622)	27.48 (697)	13.12 (333)
	ASME 600	1069	9.88 (251)	2.81 (71)	4.88 (124)	24.48 (622)	27.48 (697)	13.12 (333)
	NPT	1069	9.88 (251)	2.81 (71)	4.88 (124)	24.48 (622)	27.48 (697)	13.12 (333)
2	ASME 150	2069	10.00 (254)	3.06 (78)	6.50 (165)	28.10 (714)	29.88 (759)	13.12 (333)
	ASME 150	2105	10.00 (254)	3.06 (78)	6.50 (165)	32.44 (824)	36.75 (933)	16.00 (406)
	ASME 300	2069	10.50 (267)	3.06 (78)	6.50 (165)	28.10 (714)	29.88 (759)	13.12 (333)
	ASME 300	2105	10.50 (267)	3.06 (78)	6.50 (165)	32.44 (824)	36.75 (933)	16.00 (406)
	ASME 600	2069	11.25 (286)	3.06 (78)	6.50 (165)	28.10 (714)	29.88 (759)	13.12 (333)
	ASME 600	2105	11.25 (286)	3.06 (78)	6.50 (165)	32.44 (824)	36.75 (933)	16.00 (406)
	ASME 600	2156	11.25 (286)	3.06 (78)	6.50 (165)	32.44 (824)	36.75 (933)	18.62 (473)
	NPT	2069	11.25 (286)	3.06 (78)	6.50 (165)	28.10 (714)	29.88 (759)	13.12 (333)
	NPT	2105	11.25 (286)	3.06 (78)	6.50 (165)	32.44 (824)	36.75 (933)	16.00 (406)
NPT	2156	11.25 (286)	3.06 (78)	6.50 (165)	32.44 (824)	36.75 (933)	18.62 (473)	

**Table 5**

**1" to 2" Extension Bonnet Dimensions (Styles 1 and 2)**

(Refer to Figure 2)

Valve Size (inch)	C			
	Style 1		Style 2	
	Stem Diameter inch (mm)			
	3/8 (9.5)	1/2 (12.7)	3/8 (9.5)	1/2 (12.7)
1	8.38 (213)	9.88 (251)	11.94 (303)	12.56 (319)
1.5	8.25 (210)	9.75 (248)	11.81 (300)	12.44 (316)
2	---	10.50 (267)	---	18.31 (465)

Valve Size & (Actuator Model)	D							
	Style 1				Style 2			
	Stem Diameter inch (mm)							
	3/8 (9.5)		1/2 (12.7)		3/8 (9.5)		1/2 (12.7)	
	DFC	DFO	DFC	DFO	DFC	DFO	DFC	DFO
1 inch (1069)	30.98(787)	27.98(711)	32.48(825)	29.48(749)	34.54(877)	31.54(801)	35.16(893)	32.16(817)
1.5 inch (1069)	30.85(784)	27.85(707)	32.35(822)	29.35(745)	34.41(874)	31.41(798)	35.04(890)	32.04(814)
2 inch (2069)	---	---	33.90(861)	32.10(815)	---	---	41.71(1059)	39.91(1014)
2 inch (2105)	---	---	40.80(1036)	36.40(925)	---	---	48.61(1235)	44.21(1123)
2 inch (2156)	---	---	39.90(1013)	36.30(922)	---	---	47.71(1212)	44.11(1120)



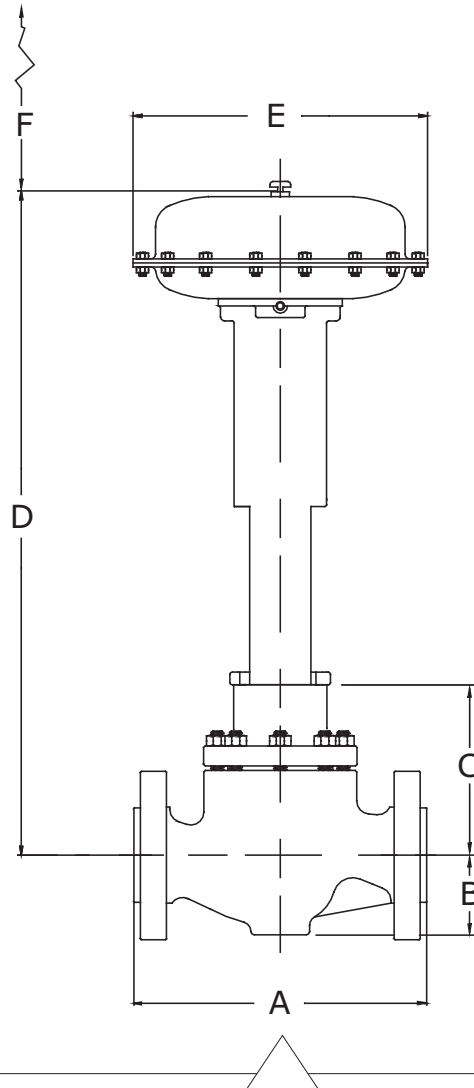
# Model 363 Control Valve

**Table 6**

**1" to 2" Bellows Bonnet Dimensions**

(Refer to Figure 2)

Valve Size & (Actuator Model)	C		D	
	Stem Diameter inch (mm)	DFC	DFO	DFO
	1/2 (12.7)	Inch (mm)		Inch (mm)
1 inch (2069)	12.62 (321)	36.02 (915)		34.22 (869)
1.5 inch (2069)	12.50 (317)	35.90 (912)		34.10 (866)
2 inch (2069)	15.12 (384)	38.52 (978)		36.72 (933)
2 inch (2105)	15.12 (384)	45.42 (1,154)		41.02 (1,042)
2 inch (2156)	15.12 (384)	44.52 (1,131)		40.92 (1,039)



**F Dimension:**  
 1", 1-1/2" Valve  
 5.00" (127 mm)  
 2"  
 6.88" (175 mm)

**Figure 2** Valve Assembly with DFC Actuator Outline Dimensions



## Model 363 Control Valve

Table 7

### Typical Construction Materials

Part Description	Standard Construction	NACE Construction
BODY	ASTM (A352 LCC), ASTM (A351 CF8M)	SA352 Gr LCC
BONNET	SA350 LF2 / A352 LCC	SA350 LF2 / A352 LCC
	SA351 Gr CF8M*	SA351 Gr CF8M
BAFFLE	S31600	S31600
BELLOWS BONNET	S31603 / N06625 (INCONEL 625)	S31600 / N06625 (INCONEL 625)
PACKING BOX RING	S31600	S31600
PACKING SPRING	S30400	N/A
SPRING WASHERS	N07718 (INCONEL 718)	N07718 (INCONEL 718)
O-RING	HNBR	HNBR
LANTERN RING	-	S31600
SPECIAL WASHER	S30400	N/A
GUIDE BUSHING	CARBON GRAPHITE	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
	S41600 PLUG / S20910 STEM	N/A
VALVE PLUG / STEM ASS'Y	S31600 PLUG / S20910 STEM	S31600 PLUG / S20910 STEM
	S31600-CoCr-A PLUG / S20910 STEM	S31600-CoCr-A PLUG / 20910 STEM
VALVE PLUG ADAPTER	S31600	S31600
PIN	STEEL	STEEL
	S41600	N/A
SEAT RING	S31600-CoCr-A	S31600-CoCr-A
	S31600	S31600
SEAT RING RETAINER	SA351 Gr CF8M*	SA351 Gr CF8M*
	S31600-CoCr-A	S31600-CoCr-A
RETAINER BUSHING	S17400 DH 1150	S17400 DH 1150
PACKING FLANGE	CARBON STEEL-PLATED	CARBON STEEL-PLATED
PACKING NUT	SA-194 2H	SA-194 2H
PACKING STUD	SA-193 B7	SA-193 B7
BONNET NUT	SA-194 2H	SA-194 2HM
	SA-193 B7	SA-193 B7M
BONNET STUD	S17400 DH 1150* (600 ASME Class)	S17400 DH 1150* (600 ASME Class)
GASKETS	GRAPHITE / S31600	GRAPHITE / S31600
SPIRAL WOUND GASKET	S30400 / GRAPHITE	S30400 / GRAPHITE
SHIM	S31600	S31600
STEM SET SCREW	SST	SST
STEM SCREW RETAINER	SST	SST

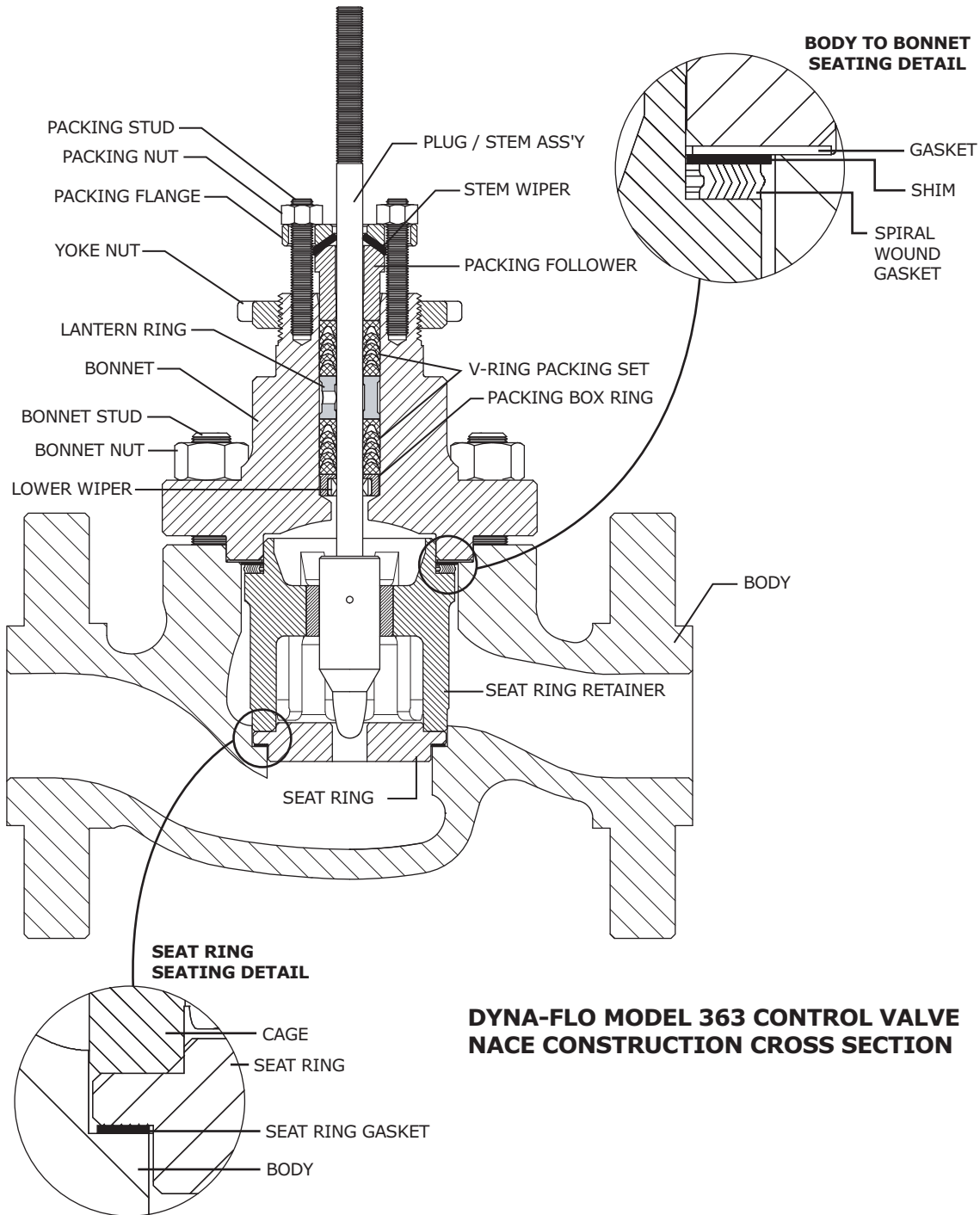
\* Optional construction material

See tables for service limits



# Model 363 Control Valve

**Figure 3** Cross-section of 363 Series Control Valve with Trim Details

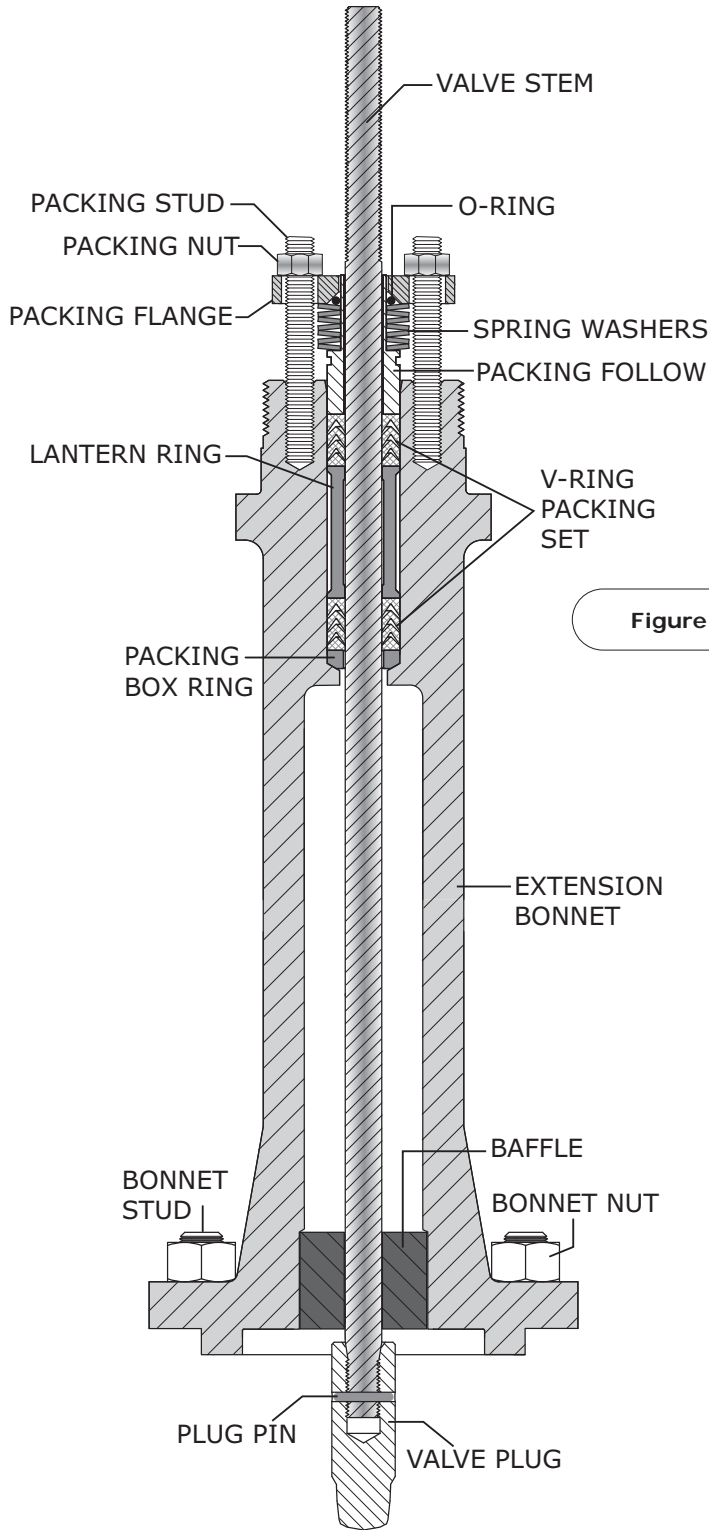


## DYNA-FLO MODEL 363 CONTROL VALVE NACE CONSTRUCTION CROSS SECTION





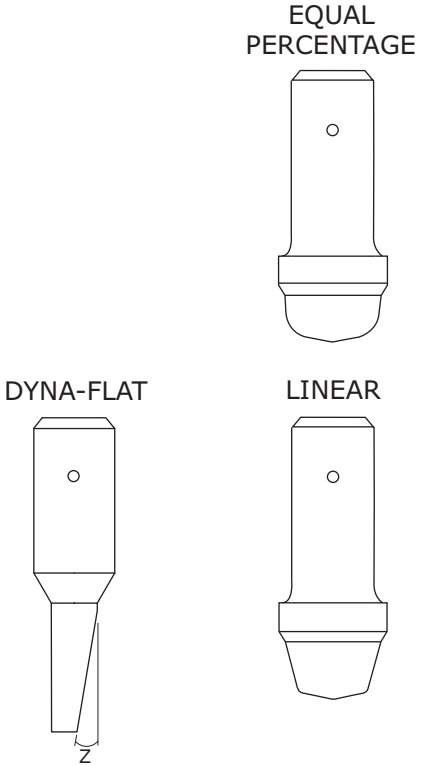
# Model 363 Control Valve



**Figure 4** Model 363 Extension Bonnet Cross Section

**Figure 5** Valve Plug Style Diagrams

\*NOTE - plug styles continued on Page 10.



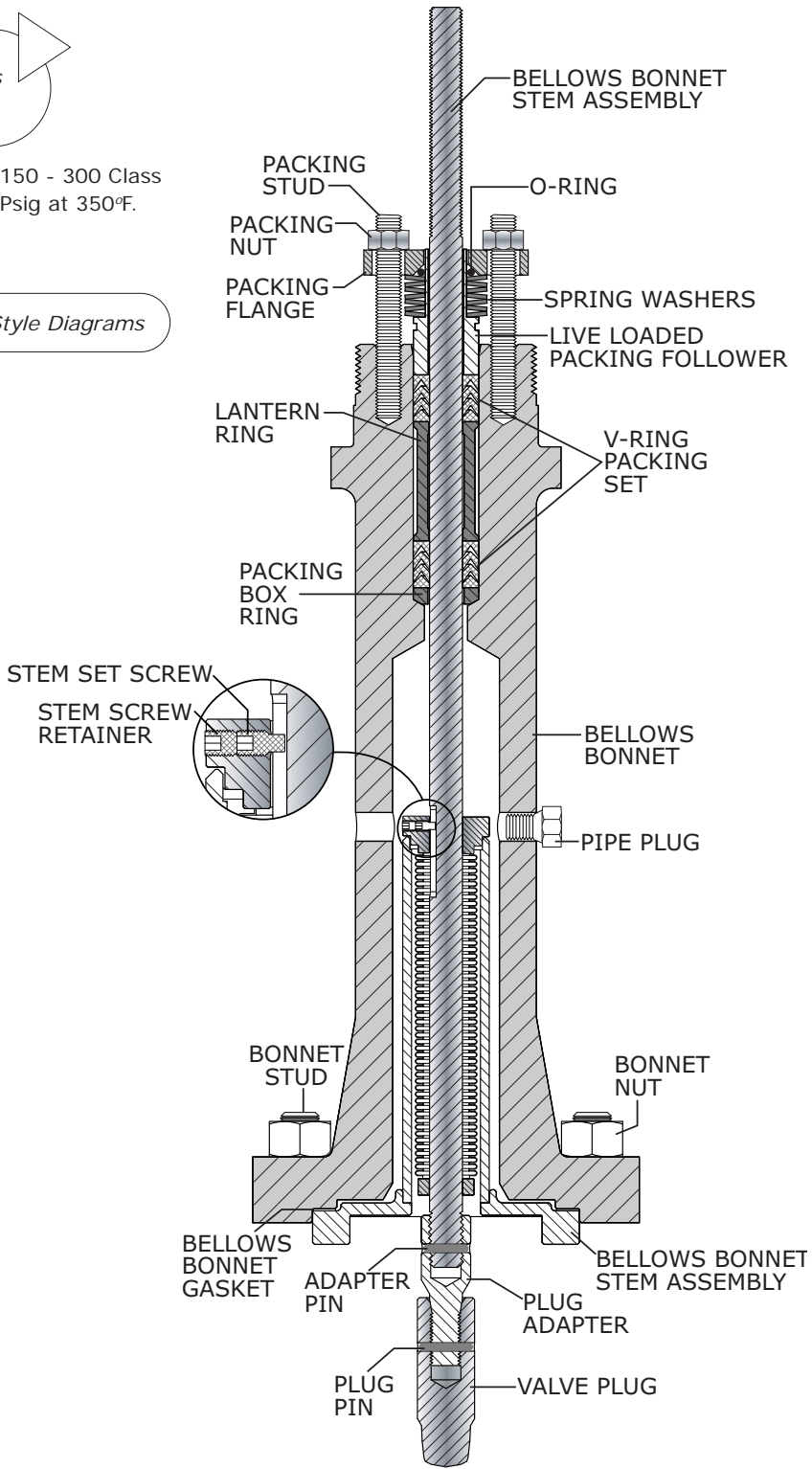
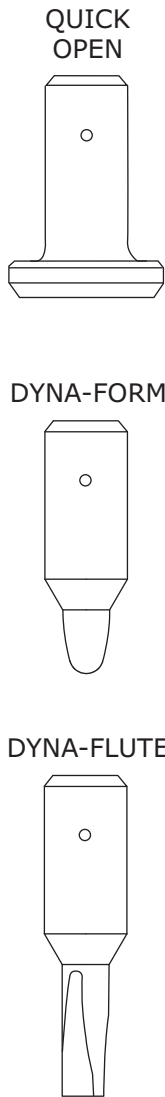


# Model 363 Control Valve

**Figure 6 Model 363 Bellows Bonnet Bonnet Cross Section**

For Bellows Bonnet valves 150 - 300 Class maximum pressure is 300 Psig at 350°F.

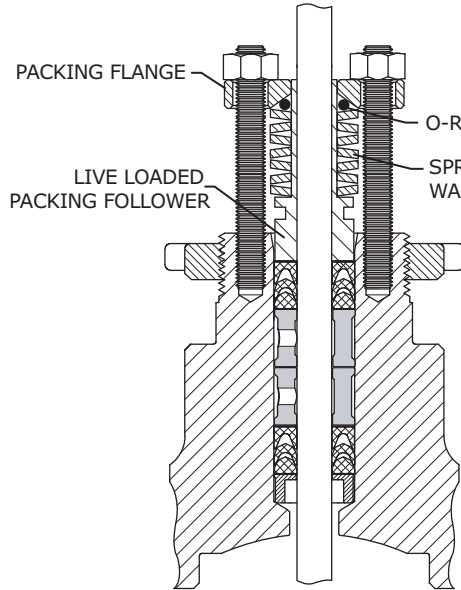
**Figure 7 Valve Plug Style Diagrams**



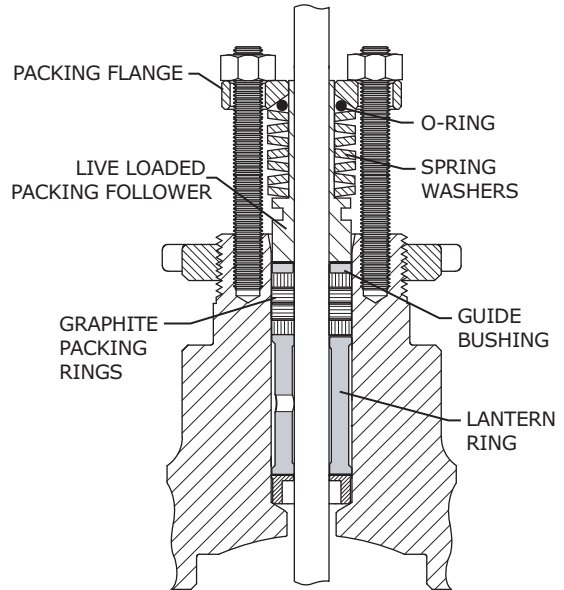


# Model 363 Control Valve

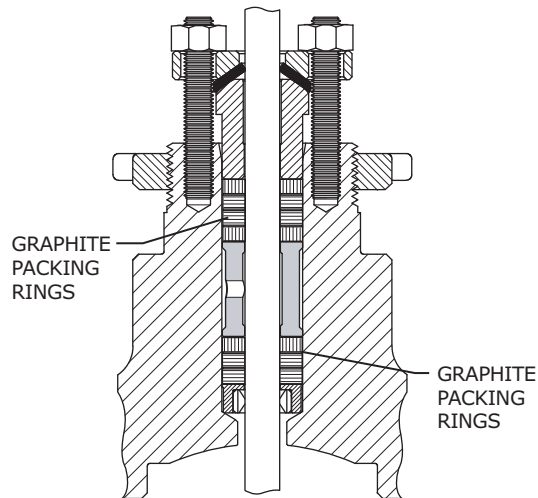
**Figure 8 Model 363 Packing Style Diagrams**



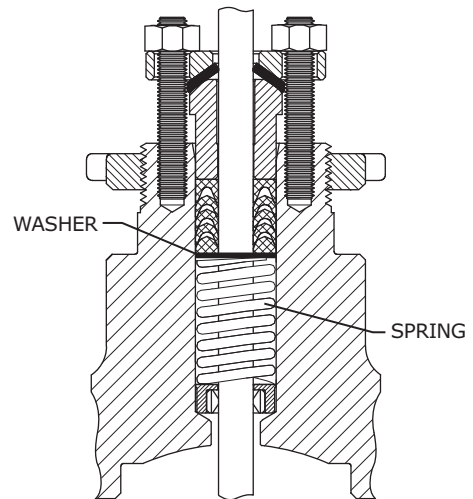
**TYPICAL LIVE LOADED PACKING WITH PTFE V-RING PACKING SETS**



**TYPICAL LIVE LOADED PACKING WITH GRAPHITE PACKING RINGS**



**STANDARD HIGH TEMPERATURE PACKING DIAGRAM**



**STANDARD SINGLE PTFE PACKING DIAGRAM**



## Model 363 Control Valve

**Table 8**

### Trim Options

Trim Spec	Valve Plug	Stem	Seat Ring Retainer	Seat Ring	Guide Bushing	Service
Z1	S41600 Hardened	S20910	CF8M	S41600	S17400 DH 1150	Standard
Z2	31600	S20910	CF8M	316 SST	S17400 DH 1150	NACE
Z3	S31600 w/ CoCr-A Hardfacing Seat	S20910	CF8M	316 SST w/Alloy 6 Hardfacing Seat	S17400 DH 1150	NACE / Errosive
Z4*	S31600 w/ CoCr-A Hardfacing Seat and Guide	S20910	CF8M	S31600 w/ CoCr-A Hardfacing Seat and Bore	CoCr-A	NACE / High Temperature / Errosive
Z5	S31600 / Tungsten Carbide	S20910	CF8M	S31600 w/ CoCr-A Hardfacing Seat and Bore	S17400 DH 1150	NACE

\* **NOTE:** Z4 Trim for 1-1/2" & 2" Bodies with 1", 1-1/2" & 2" Ports have a hard face seat only.

**Table 9**

### Trim Style Service Application

Trim Spec	Body Material	Shut Off Class	Maximum Shutoff Pressure Drop @ 100°F <sup>(1)</sup> Psig (kPag)	Minimum Temperature °F (°C)	Maximum Temperature °F (°C)
Z1	LCC	IV or V	1,500 (10,342)	-20 (-29)	650 (343)
	LCC	VI	1,500 (10,342)	-20 (-29)	450 (232)
Z2	LCC	IV or V	1,500 (10,342)	-50 (-45)	650 (343)
	LCC	VI	1,500 (10,342)	-50 (-45)	450 (232)
	CF8M	IV or V	1,500 (10,342)	-150 (-101)	700 (371)
Z3 / Z4	LCC	IV or V	1,500 (10,342)	-50 (-45)	700 (371)
	CF8M	IV or V	1,500 (10,342)	-150 (-101)	700 (371)

<sup>(1)</sup> Actuator sizing is also a contributing factor for Maximum Shutoff.

NOTE: For Bellows Bonnet valves 150 - 300 Class maximum pressure is 300 Psig at 350°F.



# Model 363 Control Valve

**Table 10**

**Models 363 Valve Sizing Coefficients, Equal Percentage Trim**

Valve Size	Port	Travel	Co-efficient	Percentage of Valve Travel									
Inches	Inches (mm)	Inches (mm)		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
<b>Equal Percentage</b>													
<b>1</b>	<b>1</b> (25.4)	<b>3/4</b> (19.1)	$C_v$	0.80	1.25	1.80	2.50	3.61	5.26	7.60	10.5	12.5	13.1
			$X_T$	0.642	0.635	0.598	0.581	0.582	0.594	0.647	0.676	0.755	0.885
			$F_L$	0.95									
<b>1-1/2</b>	<b>1-1/2</b> (38.1)	<b>3/4</b> (19.1)	$C_v$	0.793	1.22	1.90	2.95	4.26	6.44	9.82	16.3	22.0	28.0
			$X_T$	0.725	0.674	0.732	0.644	0.587	0.556	0.598	0.652	0.775	0.839
			$F_L$	0.96									
<b>1-1/2</b>	<b>1</b> (25.4)	<b>3/4</b> (19.1)	$C_v$	0.766	1.21	1.76	2.56	3.65	5.52	8.28	12.0	15.0	17.1
			$X_T$	0.652	0.617	0.600	0.603	0.560	0.533	0.516	0.574	0.701	0.860
			$F_L$	0.98									
<b>2</b>	<b>2</b> (50.8)	<b>1-1/8</b> (28.6)	$C_v$	1.64	2.60	4.28	6.60	11.0	20.5	32.7	44.5	49.8	53.5
			$X_T$	0.653	0.580	0.521	0.557	0.550	0.527	0.652	0.798	0.901	0.898
			$F_L$	0.95									
<b>2</b>	<b>1</b> (25.4)	<b>3/4</b> (19.1)	$C_v$	1.01	1.49	2.03	2.76	3.88	5.56	8.15	11.5	14.1	15.7
			$X_T$	0.597	0.613	0.600	0.576	0.569	0.552	0.521	0.543	0.669	0.902
			$F_L$	0.91									

Relationships of note:  $C_1 = 39.76 \sqrt{X_T}$        $C_G = C_v C_1$        $K_M = F_L^2$

**Table 11**

**Models 363 Valve Sizing Coefficients, Quick Opening Trim**

Valve Size	Port	Travel	Co-efficient	Percentage of Valve Travel									
Inches	Inches (mm)	Inches (mm)		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
<b>Quick Opening Plug</b>													
<b>1</b>	<b>1</b> (25.4)	<b>3/4</b> (19.1)	$C_v$	4.35	10.1	13.9	15.5	16.0	16.6	16.7	16.8	16.9	16.9
			$X_T$	0.400	0.450	0.522	0.537	0.535	0.510	0.500	0.500	0.490	0.494
			$F_L$	0.93									
<b>1-1/2</b>	<b>1-1/2</b> (38.1)	<b>3/4</b> (19.1)	$C_v$	5.62	11.8	20.5	27.2	30.5	32.2	33.1	33.5	34.0	34.1
			$X_T$	0.621	0.734	0.726	0.812	0.841	0.855	0.860	0.860	0.853	0.848
			$F_L$	0.95									
<b>1-1/2</b>	<b>1</b> (25.4)	<b>3/4</b> (19.1)	$C_v$	4.15	8.93	14.5	17.2	18.1	18.6	18.8	19.0	19.1	19.3
			$X_T$	0.615	0.790	0.792	0.904	0.925	0.925	0.922	0.915	0.905	0.879
			$F_L$	0.90									
<b>2</b>	<b>2</b> (50.8)	<b>1-1/8</b> (29)	$C_v$	13.0	30.2	44.2	52.3	56.1	57.6	58.4	58.4	58.6	58.6
			$X_T$	0.546	0.662	0.765	0.811	0.816	0.831	0.831	0.835	0.832	0.832
			$F_L$	0.93									
<b>2</b>	<b>1</b> (25.4)	<b>3/4</b> (19.1)	$C_v$	4.35	9.76	14.7	16.5	17.2	17.5	17.5	17.5	17.8	17.8
			$X_T$	0.522	0.595	0.695	0.876	0.935	0.942	0.958	0.958	0.941	0.941
			$F_L$	0.85									

Relationships of note:  $C_1 = 39.76 \sqrt{X_T}$        $C_G = C_v C_1$        $K_M = F_L^2$



# Model 363 Control Valve

**Table 12**

**Models 363 Valve Sizing Coefficients, Linear Trim**

Valve Size	Port	Travel	Co-efficient	Percentage of Valve Travel												
				10%	20%	30%	40%	50%	60%	70%	80%	90%	100%			
Inches	Inches (mm)	Inches (mm)														
<b>Linear Plug</b>																
1	1 (25.4)	3/4 (19.1)	C <sub>v</sub>	2.20	3.86	5.27	6.55	8.21	9.80	11.1	12.0	13.1	13.5			
			X <sub>T</sub>	0.636	0.600	0.636	0.632	0.636	0.630	0.635	0.680	0.768	0.832			
			F <sub>L</sub>											0.95		
1-1/2	1-1/2 (38.1)	3/4 (19.1)	C <sub>v</sub>	4.00	7.52	11.1	14.6	18.6	22.5	25.6	29.0	31.1	31.9			
			X <sub>T</sub>	0.634	0.650	0.656	0.690	0.672	0.672	0.695	0.702	0.756	0.817			
			F <sub>L</sub>											0.95		
1-1/2	1 (25.4)	3/4 (19.1)	C <sub>v</sub>	1.95	3.40	4.95	6.10	7.7	9.2	10.8	13.0	15.0	16.6			
			X <sub>T</sub>	0.497	0.577	0.600	0.690	0.651	0.654	0.636	0.624	0.718	0.795			
			F <sub>L</sub>											0.95		
2	2 (50.8)	1-1/4 (29)	C <sub>v</sub>	6.06	11.7	18.0	24.0	30.0	36.2	42.7	49.7	52.0	52.2			
			X <sub>T</sub>	0.560	0.642	0.655	0.674	0.700	0.723	0.776	0.771	0.860	0.922			
			F <sub>L</sub>											0.94		
2	1 (25.4)	3/4 (19.1)	C <sub>v</sub>	1.87	3.40	4.95	6.47	8.04	9.65	11.22	12.76	14.34	15.5			
			X <sub>T</sub>	0.607	0.592	0.596	0.622	0.620	0.625	0.641	0.632	0.750	0.909			
			F <sub>L</sub>											0.94		

Relationships of note:  $C_1 = 39.76\sqrt{X_T}$        $C_G = C_V C_1$        $K_M = F_L^2$

**Table 13**

**Models 363 Valve Sizing Coefficients, Dyna-Flute Trim**

Valve Size	Port	Travel	Co-efficient	Percentage of Valve Travel												
				10%	20%	30%	40%	50%	60%	70%	80%	90%	100%			
Inches	Inches (mm)	Inches (mm)														
<b>Dyna-Flute Plug - 1 Flute</b>																
1, 1-1/2 & 2	1/4 (6.4)	3/4 (19.1)	C <sub>v</sub>	0.038	0.046	0.055	0.072	0.094	0.122	0.160	0.210	0.277	0.354			
			X <sub>T</sub>	0.776	0.732	0.688	0.651	0.640	0.633	0.635	0.632	0.630	0.656			
			F <sub>L</sub>											0.86		
<b>Dyna-Flute Plug - 3 Flutes</b>																
1, 1-1/2 & 2	1/4 (6.4)	3/4 (19.1)	C <sub>v</sub>	0.056	0.073	0.100	0.145	0.215	0.310	0.432	0.586	0.800	1.06			
			X <sub>T</sub>	0.690	0.646	0.638	0.625	0.600	0.585	0.595	0.612	0.620	0.622			
			F <sub>L</sub>											0.90		

Relationships of note:  $C_1 = 39.76\sqrt{X_T}$        $C_G = C_V C_1$        $K_M = F_L^2$



# Model 363 Control Valve

**Table 14**

**Models 363 Valve Sizing Coefficients, Dyna-Form Trim**

Valve Size	Port	Travel	Co-efficient	Percentage of Valve Travel									
Inches	Inches (mm)	Inches (mm)		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
<b>Dyna-Form Plug</b>													
<b>1, 1-1/2 or 2</b>	1/4 (6)	3/4 (19)	$C_v$	0.088	0.124	0.175	0.236	0.327	0.464	0.641	0.881	1.22	1.52
			$X_T$	0.771	0.717	0.658	0.645	0.620	0.585	0.596	0.596	0.603	0.647
			$F_L$	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
<b>1</b>	3/8 (10)	3/4 (19)	$C_v$	0.129	0.199	0.308	0.448	0.62	0.882	1.29	1.8	2.43	3.07
			$X_T$	0.747	0.663	0.641	0.593	0.569	0.568	0.560	0.571	0.624	0.662
			$F_L$	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
<b>1</b>	1/2 (13)	3/4 (19)	$C_v$	0.189	0.319	0.492	0.735	1.08	1.53	2.12	2.99	4.17	4.91
			$X_T$	0.728	0.639	0.628	0.591	0.573	0.585	0.600	0.618	0.645	0.803
			$F_L$	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
<b>1</b>	3/4 (19)	3/4 (19)	$C_v$	0.374	0.622	0.965	1.47	2.17	3.15	4.57	6.52	8.17	8.84
			$X_T$	0.687	0.614	0.588	0.560	0.571	0.596	0.603	0.624	0.750	0.919
			$F_L$	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
<b>1-1/2 &amp; 2</b>	3/8 (10)	3/4 (19)	$C_v$	0.121	0.19	0.302	0.435	0.600	0.864	1.26	1.80	2.56	3.20
			$X_T$	0.915	0.763	0.699	0.657	0.640	0.624	0.608	0.596	0.594	0.648
			$F_L$	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
<b>1-1/2 &amp; 2</b>	1/2 (13)	3/4 (19)	$C_v$	0.199	0.323	0.503	0.735	1.07	1.54	2.14	3.08	4.36	5.18
			$X_T$	0.748	0.686	0.640	0.617	0.627	0.602	0.607	0.607	0.573	0.705
			$F_L$	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
<b>1-1/2 &amp; 2</b>	3/4 (19)	3/4 (19)	$C_v$	0.434	0.683	1.00	1.49	2.21	3.18	4.61	6.73	8.88	10.2
			$X_T$	0.747	0.625	0.636	0.596	0.578	0.603	0.593	0.591	0.680	0.796
			$F_L$	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92

Relationships of note:  $C_1 = 39.76\sqrt{X_T}$        $C_6 = C_v C_1$        $K_M = F_L^2$

**Table 15**

**Models 363 Valve Sizing Coefficients, Dyna-Flat Trim**

Valve Size	Port	Travel	Co-efficient	Percentage of Valve Travel									
Inches	Inches (mm)	Inches (mm)		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
<b>Dyna-Flute Plug - Flat Angle 1°55' (Refer to Figure 5 Angle Z)</b>													
<b>1, 1-1/2 &amp; 2</b>	3/16 (4.8)	3/4 (19.1)	$C_v$	0.038	0.046	0.055	0.072	0.094	0.122	0.160	0.210	0.277	0.354
			$X_T$	0.776	0.732	0.688	0.651	0.640	0.633	0.635	0.632	0.630	0.656
			$F_L$										
<b>Dyna-Flute Plug - Flat Angle 3°25' (Refer to Figure 5 Angle Z)</b>													
<b>1, 1-1/2 &amp; 2</b>	3/16 (4.8)	3/4 (19.1)	$C_v$	0.056	0.073	0.100	0.145	0.215	0.310	0.432	0.586	0.800	1.06
			$X_T$	0.690	0.646	0.638	0.625	0.600	0.585	0.595	0.612	0.620	0.622
			$F_L$										

Relationships of note:  $C_1 = 39.76\sqrt{X_T}$        $C_6 = C_v C_1$        $K_M = F_L^2$



## Model 363 Control Valve

**Table 16**

**Models 363 Valve Sizing Coefficients (C<sub>v</sub>), Bellows Bonnet with Live Loaded Packing**

Valve Size	Bellows Travel Inch (mm)	Full Size Trim			Restricted Trim		
		Equal Percentage	Linear	Quick Open	Equal Percentage	Linear	Quick Open
1	0.56 (14.2)	9.15	11.6	16.8	---	---	---
1-1/2	0.56 (14.2)	13.1	27.5	33.6	10.0	12.0	19.0
2	0.88 (22.2)*	38.8	46.2	58.5	15.9	15.7	17.9

\* - Travel for Restricted Trim 0.75 inch (19.1 mm)

Relationships of note:  $C_1 = 39.76 \sqrt{X_T}$        $C_G = C_V C_1$        $K_M = F_L^2$

NOTE: For Bellows Bonnet valves 150 - 300 Class maximum pressure is 300 Psig at 350°F.

**Table 17**

**Valve Body and Actuator Assembly Approximate Weights**

Valve Size (inch)	Body Only (lb (Kg))	With Fail Open Actuator Size	Assembly Weight (lb (Kg))	With Fail Closed Actuator Size	Assembly Weight (lb (Kg))
1	30 (14)	DFO - 1069	70 (32)	DFC - 1069	78 (26)
1-1/2	45 (20)	DFO - 1069	85 (39)	DFC - 1069	93 (42)
2	85 (39)	DFO - 2069	136 (62)	DFC - 2069	135 (61)
		DFO - 2105	167 (76)	DFC - 2105	165 (75)
		DFO - 2156	192 (87)	DFC - 2156	206 (94)

***Our Commitment of Quality***

Dyna-Flo is committed to continuous improvement. All efforts have been taken to maximize the accuracy of this information. Without notification, product specifications and designs may be modified at any time. The issue of this document is for information only, and does not imply suitability, a warranty, or guarantee for a specific service.





## Model 363 Control Valve

**Table 18**

**Model 363 Fail Open Actuator Maximums**

6 to 30 psig signal, 35 psig supply  
 Metal Seat, Single PTFE Packing  
 Class IV Shut Off

Valve Size (inch)	Port Size Inch (mm)	Actuator Sizes			
		DFO - 1069	DFO - 2069	DFO - 2105	DFO - 2156
<b>Pressure Drop Psig (kPag)</b>					
<b>1</b>	1/4 (6.4)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	3/8 (9.5)	1,500 (10,342) <sup>2</sup>	N/A	N/A	N/A
	1/2 (12.7)	1,500 (10,342) <sup>2</sup>	N/A	N/A	N/A
	3/4 (19.1)	1,500 (10,342) <sup>3</sup>	N/A	N/A	N/A
	1 (25.4)	1,440 (9,928) <sup>4</sup>	N/A	N/A	N/A
<b>1-1/2</b>	1/4 (6.4)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	3/8 (9.5)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	1/2 (12.7)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	3/4 (19.1)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	1 (25.4)	1,440 (9,928) <sup>4</sup>	N/A	N/A	N/A
	1 1/2 (38.1)	613 (4,226) <sup>4</sup>	N/A	N/A	N/A
<b>2</b>	1/4 (6.4)	N/A	1,500 (10,342) <sup>1</sup>	N/A	N/A
	3/8 (9.5)	N/A	1,500 (10,342) <sup>2</sup>	N/A	N/A
	1/2 (12.7)	N/A	1,500 (10,342) <sup>2</sup>	N/A	N/A
	3/4 (19.1)	N/A	1,500 (10,342) <sup>3</sup>	N/A	N/A
	1 (24.4)	N/A	750 (5,171) <sup>3</sup>	1,500 (10,342) <sup>5</sup>	N/A
	2 (50.8)	N/A	290 (1,999) <sup>6</sup>	N/A	845 (5,826) <sup>4</sup>

Bench Set	Psig (kPag)
1	6-30 (41-207)
2	6-26 (41-179)
3	6-20 (41-138)
4	6-14 (41-97)
5	6-18 (41-124)
6	6-15 (41-103)

Please contact Dyna-Flo for higher shut off class, PTFE seating, or graphite packing.



## Model 363 Control Valve

Table 19

### Model 363 Fail Close Actuator Maximums

6 to 30 Psig signal, 35 Psig supply  
 Metal Seat, Single PTFE Packing  
 Class IV Shut Off

Valve Size (inch)	Port Size Inch (mm)	Actuator Sizes			
		DFC - 1069	DFC - 2069	DFC - 2105	DFC - 2156
<b>Pressure Drop Psig (kPag)</b>					
<b>1</b>	1/4 (6.4)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	3/8 (9.5)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	1/2 (12.7)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	3/4 (19.1)	1,500 (10,342) <sup>2</sup>	N/A	N/A	N/A
	1 (25.4)	1,328 (9,156) <sup>3</sup>	N/A	N/A	N/A
<b>1 1/2</b>	1/4 (6.4)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	3/8 (9.5)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	1/2 (12.7)	1,500 (10,342) <sup>1</sup>	N/A	N/A	N/A
	3/4 (19.1)	1,500 (10,342) <sup>2</sup>	N/A	N/A	N/A
	1 (25.4)	1,328 (9,156) <sup>3</sup>	N/A	N/A	N/A
	1 1/2 (38.1)	552 (3,806) <sup>3</sup>	N/A	N/A	N/A
<b>2</b>	1/4 (6.4)	N/A	1,500 (10,342) <sup>1</sup>	N/A	N/A
	3/8 (9.5)	N/A	1,500 (10,342) <sup>1</sup>	N/A	N/A
	1/2 (12.7)	N/A	1,500 (10,342) <sup>1</sup>	N/A	N/A
	3/4 (19.1)	N/A	1,500 (10,342) <sup>3</sup>	N/A	N/A
	1 (25.4)	N/A	750 (5,171) <sup>3</sup>	1,500 (10,342) <sup>3</sup>	N/A
	2 (50.8)	N/A	N/A	290 (1,999) <sup>5</sup>	642 (4,426) <sup>4</sup>

### Bench Set

#### Psig (kPag)

- 1 6-30 (41-207)
- 2 18-30 (124-207)
- 3 14-30 (97-207)
- 4 15-30 (103-207)
- 5 12-30 (82-207)

Please contact Dyna-Flo for higher shut off class, PTFE seating, or graphite packing.



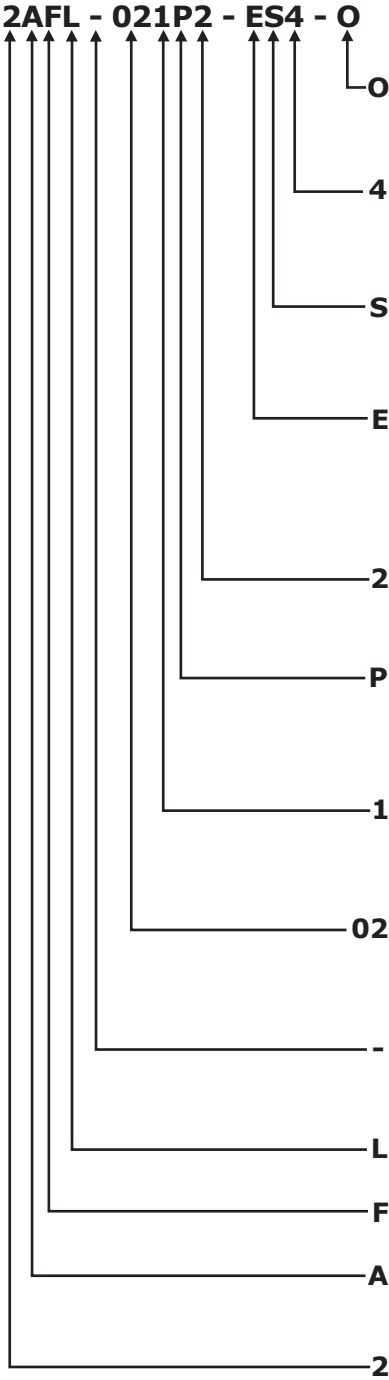
# Model 363 Control Valve

Ordering Guide

## Dyna-Flo Model 363 Control Valve | Model Numbering System

Sample Part Number

**363 - 2AFL - 021P2 - ES4 - O**

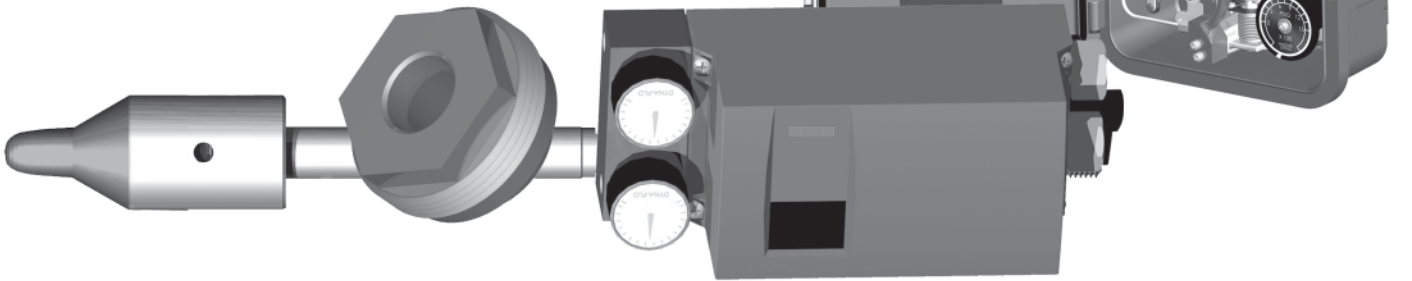


Code	Description				
<b>O</b>	Cleaned and Package for O <sub>2</sub> service				
<b>Shut-off Class</b>					
<b>4</b>	Class IV - Standard Metal Seat				
<b>5</b>	Class V - Optional Metal Seat				
<b>6</b>	Class VI - Optional Metal Seat				
<b>Bonnet Style</b>					
<b>S</b>	Standard	<b>E</b>	Extension		
<b>B</b>	Bellows	<b>X</b>	Special		
<b>Characteristic</b>					
<b>E</b>	Equal Percentage	<b>L</b>	Linear		
<b>Q</b>	Quick Open	<b>F</b>	3 Flute Dyna-Flute		
<b>M</b>	Dyna-Form	<b>G</b>	1 Flute Dyna-Flute		
<b>D</b>	Dyna-Flat	<b>X</b>	Special		
<b>Valve Mounting Connection</b>					
<b>1</b>	2-1/8" (3/8" stem)	<b>2</b>	2-13/16" (1/2" stem)		
<b>3</b>	3-9/16" (3/4" stem)				
<b>Packing Style</b>					
<b>P</b>	Spring Loaded PTFE V-ring	<b>J</b>	Jam Style PTFE V-ring		
<b>G</b>	Graphite High Temp	<b>T</b>	Live Loaded (PTFE)		
<b>L</b>	Live Loaded (Graphite)				
<b>Trim Number</b>					
<b>1</b>	Z1	<b>3</b>	Z3	<b>5</b>	Z5
<b>2</b>	Z2	<b>4</b>	Z4		
<b>Port Size</b>					
<b>01</b>	3/16"	<b>02</b>	1/4"	<b>03</b>	3/8"
<b>04</b>	1/2"	<b>06</b>	3/4"	<b>08</b>	1"
<b>12</b>	1-1/2"	<b>16</b>	2"		
<b>Bolting</b>					
<b>-</b>	B7 / 2H	<b>A</b>	B7M / 2HM		
<b>B</b>	B8M / 8M	<b>C</b>	17-4 DH 1150		
<b>Body Material</b>					
<b>L</b>	LCC	<b>W</b>	WCC	<b>M</b>	CF8M
<b>Connection Style</b>					
<b>F</b>	RF	<b>J</b>	RTJ	<b>N</b>	NPT
<b>ASME Rating</b>					
<b>A</b>	150	<b>B</b>	300	<b>C</b>	600
<b>Valve Size</b>					
<b>1</b>	1 inch	<b>5</b>	1-1/2 inch		
<b>2</b>	2 inch				

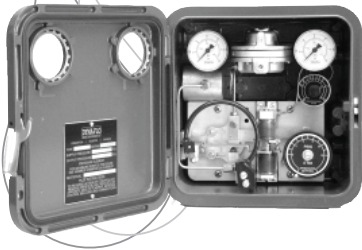


# PRODUCT PREVIEW

## Have you seen what else Dyna-Flo has to offer?



### 4000 Pressure Controller

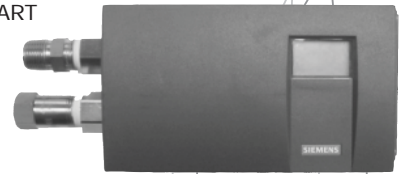


The Dyna-Flo 4000 Series pneumatic pressure controllers are the "brains" of a self contained, local pneumatic PID control loops.

The pressure controller detects the process pressure using a Bourdon tube. The process pressure is then compared to an operator manually adjusted set point, which in turn modulates the controller output. The controller pneumatic output is connected to a final control device, typically a control valve, that changes the process pressure.

### Siemens PS2 Positioner

The PS2 is a digital smart valve positioner with onboard programming and HART ready. It has a visual LCD screen for visual programming and diagnostics, which means the PS2 does not require a handheld.



### DF2410 Tungsten Carbide Trim



A Tungsten Carbide trim option is available for the DF2410 control valve. Be sure to remember 'Tungsten Carbide' for the DF2410 in a severe service application.

### Siemens 760 Positioner

The 760 is a pneumatic positioner and can be used with linear motion or rotary valves. Additional components can be added, such as a 4 - 20 mA module, internal limit switches, high flow CV module, or position indicator windows.



Visit [www.dynaflo.com](http://www.dynaflo.com)  
for more product information

Dyna-Flo Control Valve Services Ltd.  
Edmonton, Alberta, CANADA  
Website: [www.dynaflo.com](http://www.dynaflo.com)

Phone: 780 • 469 • 4000  
Toll Free: 1 • 866 • 396 • 2356  
Fax: 780 • 469 • 4035

