



Model DF269 Control Valve



Figure 1 DF269 Control Valve

The Dyna-Flo Model DF269 Control Valve is a rugged globe style control valve intended for demanding applications in process control. It is suitable for a wide range of applications, especially high pressure and severe service. The compact design makes installation and maintenance more convenient than traditional valve and actuator assemblies while still offering the same functionality. The Model DF269 is designed to accept instrumentation requiring valve stem linkages making it an excellent control valve.

The Model DF269 is available in 1 inch and 2 inch sizes, either in a globe or angle style valve body with threaded FNPT or flanged connections.

The Dyna-Flo DF269 control valve is manufactured to a high level of quality to ensure superior performance and customer satisfaction.

Features

NACE Service Ready

Standard construction for the DF269 control valve features NACE trim. The valve bonnet and body also conform to NACE MR0175 (National Association of Corrosion Engineers) recommendations.

ASME Class 1500

The DF269 is designed and rated for ASME B16.34 Class 150 - 1500 service.

Live Loaded Packing

Packing for the DF269 control valve is designed to provide a quality stem seal and to prevent the loss of hazardous gases or fluids. The live loaded feature provides for reduced maintenance and positive sealing in temperature and pressure cycling conditions.

Field-Reversible Actuator

Field conversion of the DF269 actuator is designed to be quick and easy. Switch the DF269 from a spring-close to spring-open actuator without any additional parts.

Easily Maintained

The hammer union body to bonnet connection allows for easy removal of the bonnet/actuator for access to trim and packing. Trim removal requires no special tools and is quick and simple. The two piece cage seat allows replacement of the seat ring while using the existing cage making port changes and maintenance more economical.

Low Temperature Materials

The DF269 valve body is constructed with materials that are capable of functioning in temperatures of -40°C.

Open Yoke

The DF269 features an open yoke that allows for the mounting of a feedback arm to facilitate positioners and indicators.

Versatile Trim Material Options

Plug and seat ring materials are available in Carbide, Alloy 6, 440C and soft seat.



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Specifications

Port Diameters

1/4", 3/8", 1/2", 3/4", and 1"
See Table 1.

Sizes and Connection Styles

Size: NPS 1 & 2 inch
Rating: ASME 150 / 300 / 600 / 900 / 1500
Connections: NPT / RF / RTJ
See Table 1 for details and Port Diameters.

Maximum Pressure Drops

See Tables 6 & 7

Standard Shut-off Classifications

Class IV Shut-off
In accordance with ASME / FCI 70.2

Dimensions

Fail Closed Valve Configuration Dimensions

See Figure 4

Fail Open Valve Configuration Dimensions

See Figure 5

Flow Characteristics

Equal Percentage

Flow Direction

Preferred Up (Optional Down)(See Tables 6 & 7)

Valve Plug Travel

3/4 inch (19 mm)

Approximate Valve Body and Actuator Weights

See Table 1

Body Style

Globe body style and Angle body style

Materials

See Table 4 for typical construction materials.

Material Temperature Capabilities

Body Assembly

-46 to 150°C (-50 to 300°F)

Actuator Assembly

-40 to 82°C (-40 to 180°F)

Valve Cross Section

See Figures 2 & 3

Packing Type

PTFE V-ring
Live-loaded low emission.

Actuator Configurations

Fail Closed
Fail Open

Actuator Pressure Connections

NPS 1/4 inch NPT

Maximum Actuator Casing Pressure

50 Psig (345 kPag)

Effective Actuator Diaphragm Area

69 inches² (452 cm²)

Valve Sizing Coefficients

See Table 2 & 3

Maximum Pressures and Temperatures ¹	200°F (93°C)	300°F (150°C)
	NPS 1-2 inch NPT	2,250 Psig (15,513 kPag)
NPS 1-2 inch Class 600	1,500 Psig (10,342 kPag)	1,454 Psig (10,024 kPag)
NPS 1-2 inch Class 1500	3,750 Psig (25,855 kPag)	3,637 Psig (25,076 kPag)

¹ - The limitations shown are as per ASME B16.34. Refer to the pressure temperature ratings in this standard for all other flange ratings. Do not exceed these ratings.



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Table 1

Available Valve Sizes, Connection Styles and Approximate Weights

Port Diameter inch (mm)	Connection Style						
	Threaded lb (kg)	Raised Face (RF) Flanged lb (kg)				Ring Type Joint (RTJ) Flanged lb (kg)	
1 Inch Valve 1/4 (6.40) 3/8 (9.50) 1/2 (12.7) 3/4 (19.1) 1 (25.4)	NPT 40 (18)	Class 150	Class 300	Class 600	Class 900 and 1500	Class 600	Class 900 and 1500
		44 (20)	50 (23)	50 (23)	79 (32)	50 (23)	79 (36)
2 Inch Valve 1/4 (6.40) 3/8 (9.50) 1/2 (12.7) 3/4 (19.1) 1 (25.4)	NPT 46 (21)	Class 150	Class 300	Class 600	Class 900 and 1500	Class 600	Class 900 and 1500
		50 (23)	70 (32)	70 (32)	110 (32)	70 (32)	110 (50)

Table 2

Model DF269 Valve Sizing Coefficients, for Equal Percentage Trim

1 Inch Valve

		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1/4 Inch (6.40 mm)	C _V	0.06	0.08	0.11	0.16	0.22	0.34	0.54	0.77	1.07	1.37
	X _T	0.793	0.736	0.731	0.710	0.668	0.644	0.640	0.628	0.608	0.569
	F _L	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
3/8 Inch (9.50 mm)	C _V	0.12	0.22	0.31	0.41	0.52	0.72	1.05	1.70	2.50	3.30
	X _T	0.706	0.689	0.685	0.652	0.648	0.624	0.616	0.608	0.596	0.584
	F _L	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
1/2 Inch (12.7 mm)	C _V	0.21	0.34	0.51	0.80	1.22	1.71	2.40	3.30	4.43	5.50
	X _T	0.577	0.588	0.616	0.640	0.685	0.664	0.624	0.730	0.740	0.819
	F _L	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
3/4 Inch (19.1 mm)	C _V	0.39	0.65	0.91	1.35	2.05	3.15	4.72	6.45	8.29	10.4
	X _T	0.599	0.612	0.624	0.643	0.626	0.648	0.669	0.737	0.730	0.826
	F _L	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
1 Inch (25.4 mm)	C _V	0.70	1.10	1.80	2.20	2.70	3.70	5.80	8.10	10.5	13.0
	X _T	0.540	0.562	0.610	0.702	0.618	0.602	0.645	0.881	0.710	0.810
	F _L	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89

Relationships of Note: $C_1 = 39.76 \sqrt{X_T}$

$C_6 = C_V C_1$

$K_M = F_L^2$



Model DF269 Control Valve

Table 3

Model DF269 Valve Sizing Coefficients, for Equal Percentage Trim

2 Inch Valve

	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
C_v	0.06	0.08	0.11	0.16	0.22	0.34	0.54	0.77	1.07	1.37

1/4 Inch (6.40 mm)

X_T	0.793	0.736	0.731	0.710	0.668	0.644	0.640	0.628	0.608	0.569
F_L	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90

3/8 Inch (9.50 mm)

C_v	0.12	0.22	0.31	0.41	0.52	0.72	1.05	1.70	2.50	3.30
X_T	0.706	0.689	0.685	0.652	0.648	0.624	0.616	0.608	0.596	0.584
F_L	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92

1/2 Inch (12.7 mm)

C_v	0.21	0.34	0.51	0.80	1.22	1.71	2.40	3.30	4.43	5.50
X_T	0.577	0.588	0.616	0.640	0.685	0.664	0.624	0.730	0.740	0.819
F_L	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93

3/4 Inch (19.1 mm)

C_v	0.42	0.71	0.99	1.47	2.22	3.41	5.35	7.50	9.71	12.2
X_T	0.655	0.582	0.654	0.662	0.653	0.622	0.685	0.615	0.748	0.880
F_L	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89

1 Inch (25.4 mm)

C_v	0.82	0.94	1.32	1.93	2.94	4.50	7.03	9.85	12.8	16.1
X_T	0.586	0.574	0.607	0.683	0.654	0.608	0.694	0.882	0.734	0.805
F_L	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88

Relationships of Note: $C_1 = 39.76 \sqrt{X_T}$

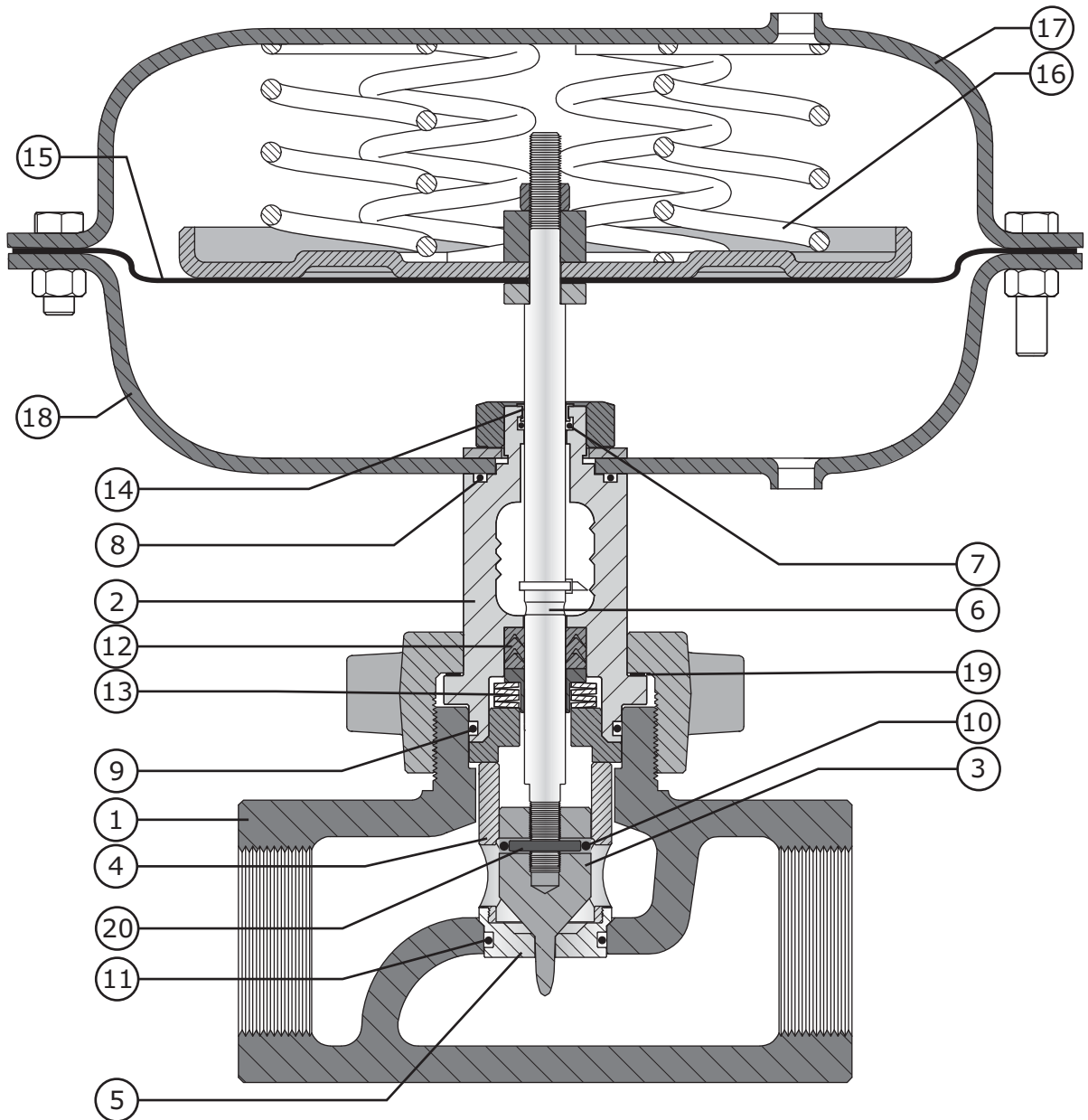
$C_G = C_v C_1$

$K_M = F_L^2$



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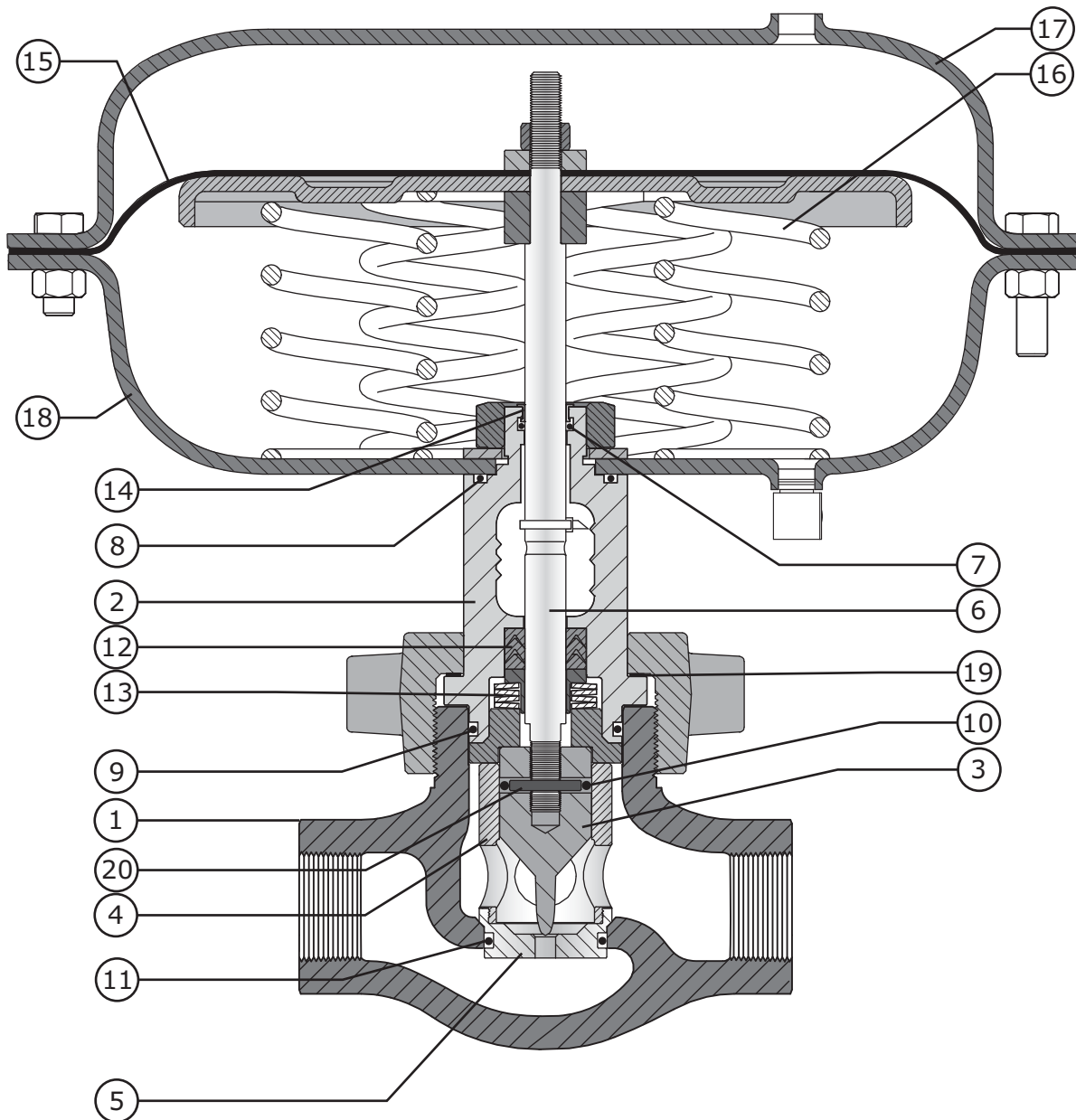
Figure 2 DF269 Fail Closed
NPS 2 NPT Valve Cross Section





Model DF269 Control Valve

Figure 3 DF269 Fail Open
NPS 1 NPT Valve Cross Section



Model
DF269 Control Valve**Standard Construction Materials****Table 4**

Key	Part Description	Standard Construction
1	Valve Body	ASME SA352 LCC, CF8M (optional)
2	Bonnet	ASME SA352 LCC, CF8M (optional)
3	Valve Plug	S17400 (17-4 DH 1150) (NACE), Tungsten Carbide (optional), CoCr-A (Alloy 6) (optional), S44004 (440C) (optional)
4	Cage	CF8M (S31600)
5	Seat Ring	S17400 (17-4 DH1150) (NACE) Tungsten Carbide (optional), CoCr-A (Alloy 6) (optional), S44004 (440C) (optional)
6	Valve Stem	S20910 (Nitronic 50)
7, 8, 9, 10, 11	O-Ring	HNBR
12	Packing	PTFE / Carbon Filled PTFE
13	Spring Washers	N07718
14	Valve Stem Bushing	Nylon
15	Actuator Diaphragm	Nitrile / Nylon
16	Actuator Springs	Steel / Zinc
17	Upper Casing	Steel / Zinc
18	Lower Casing	Steel / Zinc
19	Washer	S30200 (302 SST)
20	Pin	S31600 (316 SST)



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Table 5

DF269 NPT, RF, and RTJ Valve Dimensions Inches (mm)

Valve Size	Connection Style	A	B
1"	NPT	6.25 (159)	1.77 (45)
	ASME 150 RF	7.25 (184)	3.63 (92)
	ASME 300 RF	7.75 (197)	3.88 (99)
	ASME 600 RF	8.25 (210)	4.13 (105)
	ASME 900 / 1500 RF	9.38 (238)	4.69 (119)
	ASME 150 RTJ	7.75 (197)	3.88 (99)
	ASME 300 RTJ	8.25 (210)	4.13 (105)
	ASME 600 RTJ	8.25 (210)	4.13 (105)
	ASME 900 / 1500 RTJ	9.38 (238)	4.69 (119)
2"	NPT	7.50 (191)	1.73 (44)
	ASME 150 RF	10.00 (254)	5.00 (127)
	ASME 300 RF	10.50 (267)	5.25 (134)
	ASME 600 RF	11.25 (286)	5.63 (143)
	ASME 900 / 1500 RF	12.88 (327)	6.44 (164)
	ASME 150 RTJ	10.50 (267)	5.25 (134)
	ASME 300 RTJ	11.12 (282)	5.60 (141)
	ASME 600 RTJ	11.38 (289)	5.69 (145)
	ASME 900 / 1500 RTJ	12.88 (327)	6.44 (164)

NOTE: Refer to Figures 4 & 5



Model DF269 Control Valve

Figure 4 DF269 1 inch Control Valve Dimensions inch (mm)

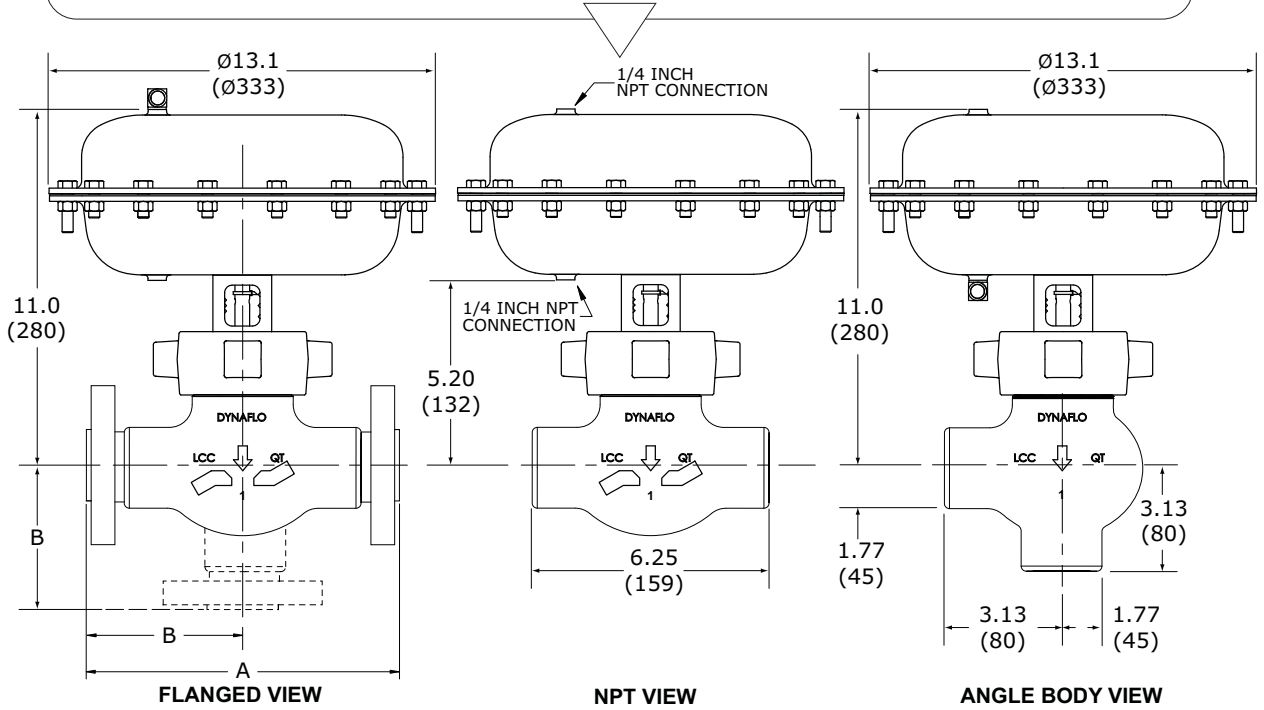
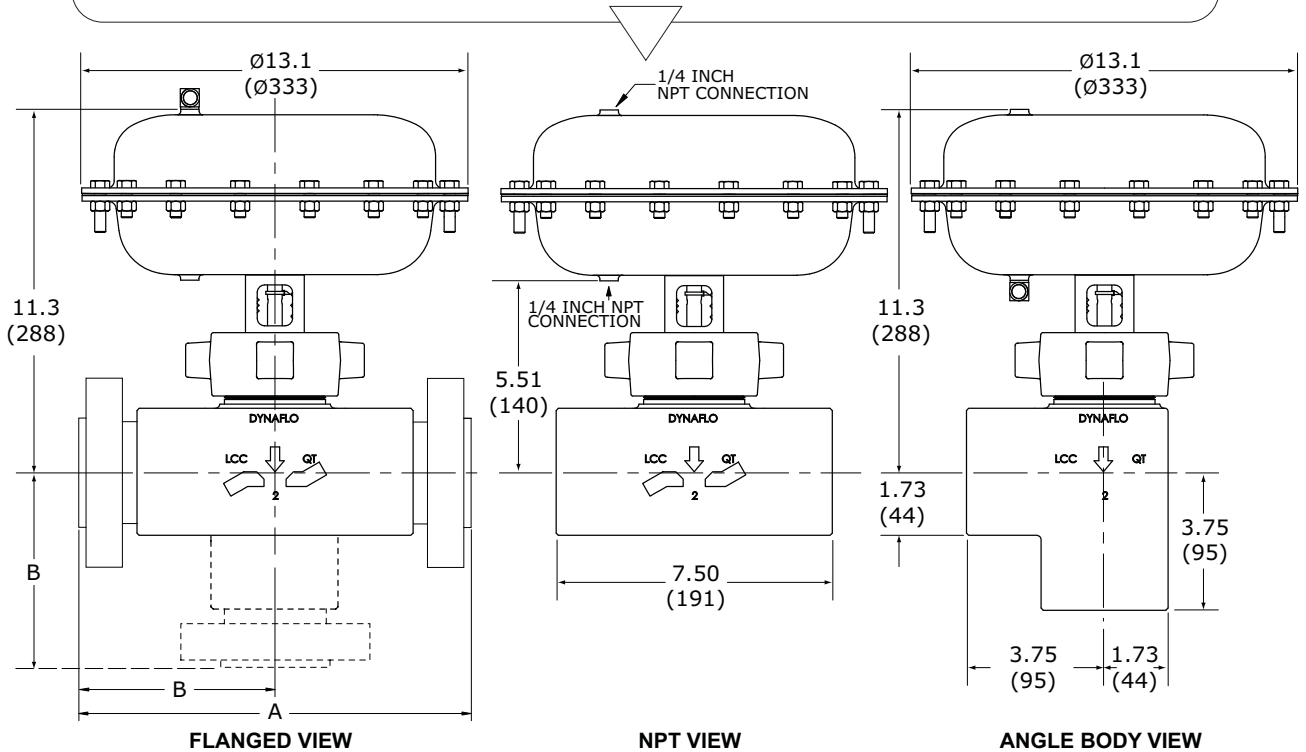


Figure 5 DF269 2 inch Control Valve Dimensions inch (mm)





Model
DF269 Control Valve

Table 6

FAIL CLOSED
Maximum Shut-off Pressure Drops¹ for a Flow Up Model DF269 Control Valve

Port Diameter inch (mm)	Input Signal 0 - 20 Psig (0 - 138 kPag) 3 Springs	Input Signal 0 - 35 Psig (0 - 241 kPag) 6 Springs
1/4 (6.40)	3,750 (25,855)	3,750 (25,855)
3/8 (9.50)	3,746 (25,828)	3,750 (25,855)
1/2 (12.7)	2,007 (13,838)	3,750 (25,855)
3/4 (19.1)	803 (5,536)	1,873 (12,914)
1 (25.4)	402 (2,772)	1,004 (6,922)

Notes: 1 - Do not exceed the Pressure Temperature Limitations as per ASME B16.34.

For Flow Down Pressure Drops Consult Dyna-Flo.

Table 7

FAIL OPEN
Maximum Shut-off Pressure Drops¹ for a Flow Up Model DF269 Control Valve

Port Diameter inch (mm)	Input Signal 0 - 20 Psig (0 - 138 kPag) 3 Springs	Input Signal 0 - 35 Psig (0 - 241 kPag) 6 Springs
1/4 (6.40)	3,750 (25,855)	3,750 (25,855)
3/8 (9.50)	3,750 (25,855)	3,750 (25,855)
1/2 (12.7)	3,378 (23,290)	3,750 (25,855)
3/4 (19.1)	1,412 (9,735)	2,310 (15,927)
1 (25.4)	744 (5,130)	1,250 (8,618)

Notes: 1 - Do not exceed the Pressure Temperature Limitations as per ASME B16.34.

For Flow Down Pressure Drops Consult Dyna-Flo.



Model DF269 Control Valve

Ordering Guide

Dyna-Flo DF269 Control Valve | Model Numbering System

Sample Part Number

DF269-1GC3-6BN-14S-X

Code	Description
X	Special
Trim Material	
S	S17400 DH 1150
T	Tungsten Carbide
N	S44004 (440C)
A	CoCr-A (Alloy 6)
Trim Size	
14	1/4" 38 3/8" 10 1"
12	1/2" 34 3/4"
Connection Style	
N	NPT
F	RF
J	RTJ
ASME Rating	
A	150
B	300
E	1500
C	600
D	900
F	900 NPT
Number of Springs	
3	3 Springs
6	6 Springs
Spring Range	
3	Size 69 Actuator with 0-20 Psig Operating Signal
6	Size 69 Actuator with 0-35 Psig Operating Signal
Actuator Style	
C	Fail Closed
O	Fail Open
Body Style	
G	Globe Style
T	Angle Style
Body Size	
1	1 Inch Valve
2	2 Inch Valve

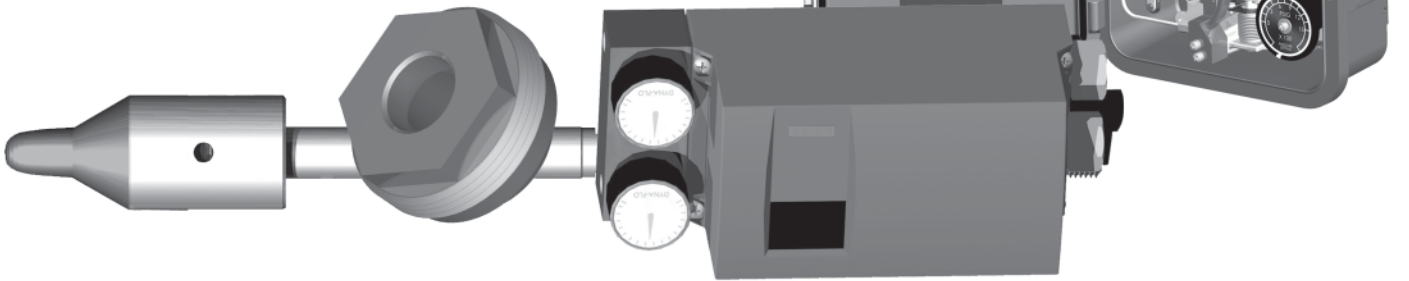
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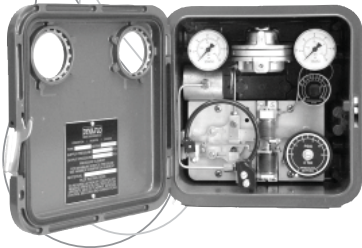


PRODUCT PREVIEW

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



4000 Pressure Controller

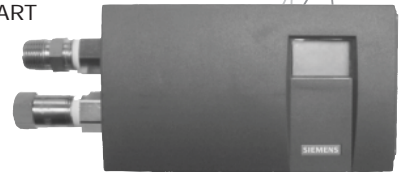


The Dyna-Flo 4000 Series pneumatic pressure controllers are the “brains” of a self contained, local pneumatic PID control loops.

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
for more product information

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