



Model DF100 Control Valve



Patents Pending

Figure 1 *DF100 Control Valve*

The Model Model DF100 control valve is primarily designed for on/off control of a variety of fluids, but may also be adapted for throttle control. These tough, compact valves are ideal for use in oil and gas separators, treaters, scrubbers or as dump valves. The DF100 is well suited for many other high pressure fluid applications up to 2250 Psig (15,513 kPag). The DF1 Series control valve is available in 1 inch size, either in a globe or tee style valve body with threaded, RF and RTJ end connections.

The Dyna-Flo Model DF100 control valve is manufactured to a high level of quality specifications to ensure superior performance and customer satisfaction.

Features

NACE Service Ready

Standard construction for the DF100 control valve features NACE trim. The valve bonnet and body also conform to NACE MR0175 (National Association of Corrosion Engineers) recommendations.

ASME Class 900

The DF100 is designed and rated for ASME B16.34 Class 150 - 900 service. FNPT connection only available in Class 900.

Live Loaded Packing

Packing for the DF100 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 DF100 actuator is designed to be quick and easy. Switch the DF100 from a spring-close to spring-open actuator without any additional parts.

Simple Installation

The DF100 control valves compact design allows for easy installation in tight areas where space is limited.

Easily Maintained

Maintenance is made quick and easy, no special tools required. Valve can be repaired without removing the valve body from the pipe line.

Low Temperature Materials

The DF100 valve and actuator are constructed with materials that are capable of functioning in temperatures of -46°C.



Model **DF100** Control Valve

Specifications

Port Diameter

1/4", 3/8", 1/2", 3/4"

Valve Pressure Class / End Connection

1" FNPT (standard) ASME B16.34 Class 900
ASME 150 - 900 RF or RTJ (options)

Maximum Pressure Drop

2,250 Psig (15,513 kPag)

Maximum Inlet Temperature and Pressures

2,250 Psig (15,513 kPag) from -46 to 93°C (-50 to 200°F)
2,185 Psig (15,065 kPag) at 149°C (300°F)

Standard Shut-off Classification

ANSI Class IV ANSI/FCI 70-2

Dimensions

See Figure 3 & 4

Flow Characteristics

Quick Opening

Flow Direction

Up or down (flow up recommended, see Figure 2)

Approximate Weight

20 lb (9 kg)

Maximum Travel

3/8 inch (10 mm)

Material Temperature Capabilities

Body Assembly

-46 to 149°C (-50 to 300°F)

Actuator Assembly

-46 to 93°C (-50 to 200°F)

Body Style

Available in Globe or Tee body style

Bonnet/Body Connection

Threaded

Actuator Configuration

The DF100 utilizes a on/off style spring and diaphragm actuator. Fail closed is field-reversible.

Maximum Actuator Casing Pressure

50 Psig (345 kPag)

Effective Actuator Diaphragm Area

33 inches² (213 cm²)

Actuator Pressure Connections

1/4 inch FNPT



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Maximum Allowable Shutoff Pressure Drops

Table 1

Actuator Action	Flow Direction (pressure tends to)	Port Diameter	Number of Springs 0-20 Psig Operating Signal		Number of Springs 0-35 Psig Operating Signal	
			2	6	2	6
			Psi / kPa	Psi / kPa	Psi / kPa	Psi / kPa
Fail Closed	Flow Up (open valve)	1/4"	2200/15,168	2250/15,513	2250/15,513	2250/15,513
		3/8"	1600/11,032	2250/15,513	600/4,137	2250/15,513
		1/2"	*valve will not shut off	1480/10,204	*valve will not shut off	1480/10,204
		3/4"	*valve will not shut off	200/1,379	*valve will not shut off	200/1,379
	Flow Down (close valve)	1/4"	700/4,826	2250/15,513	700/4,826	2250/15,513
		3/8"	1100/7,584	2250/15,513	1100/7,584	2250/15,513
		1/2"	2250/15,513	2250/15,513	2250/15,513	2250/15,513
		3/4"	2250/15,513	2250/15,513	2250/15,513	2250/15,513
Fail Open	Flow Up (open valve)	1/4"	2250/15,513	1400/9,653	2250/15,513	2250/15,513
		3/8"	2250/15,513	600/4,137	2250/15,513	2250/15,513
		1/2"	1250/8,618	*valve will not shut off	2250/15,513	2250/15,513
		3/4"	225/1,551	*valve will not shut off	1000/6,895	*valve will not shut off
	Flow Down (close valve)	1/4"	2250/15,513	100/689	2250/15,513	2250/15,513
		3/8"	2250/15,513	1000/6,895	2250/15,513	2250/15,513
		1/2"	2250/15,513	2250/15,513	2250/15,513	2250/15,513
		3/4"	1000/6,895	2250/15,513	1000/6,895	2250/15,513

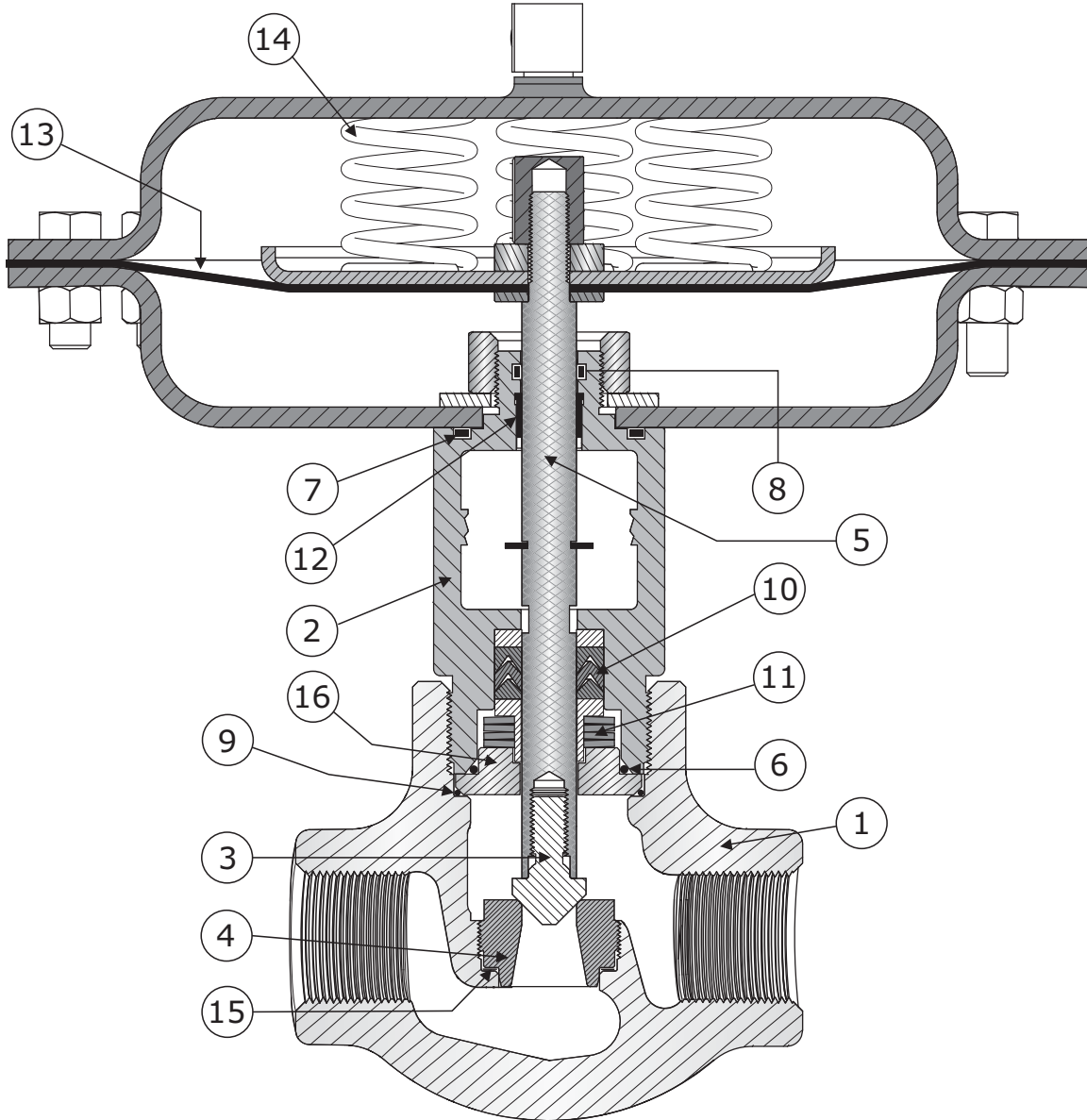
DF100 C_v Values

Table 2

Body	Port Size Inch (mm)	C _v Value (100%)
Flow Up	1/4" (6.4)	1.7
	3/8" (9.5)	3.2
	1/2" (12.7)	4.8
	3/4" (19.1)	8.0
Flow Down	1/4" (6.4)	1.8
	3/8" (9.5)	3.7
	1/2" (12.7)	5.2
	3/4" (19.1)	8.32



Model DF100 Control Valve



* Arrow indicates recommended flow direction (flow up).

Figure 2 Cross-section of DF100 Control Valve (FNPT)



Model DF100 Control Valve

Table 3

Standard Construction Materials

Key	Part Description	Standard Construction
1	Valve Body	ASME SA 352 LCC
2	Bonnet	ASME SA 352 LCC
3	Valve Plug	S17400 DH 1150
4	Valve Seat	S17400 DH 1150
5	Valve Stem	S20910 (Nitronic 50)
6, 7, 8, 9	O-Ring	Hydrogenated Nitrile (HNBR)
10	Packing	PTFE/Carbon PTFE
11	Belleville Washers	N0778
12	Stem Bushing	PPS (Ryton)
13	Actuator Diaphragm	Nitrile/Polyester
14	Actuator Springs	Zinc-plated Steel
15	Seat Ring Gasket	S30400
16	Bushing	S17400 DH 1150

Table 4

DF100 RF and RTJ Valve Dimensions

Inches (mm)
(Refer to Figure 3)

Connection	Class	A	B
RF	ASME 150	6.75 (171)	3.38 (86)
	ASME 300	7.25 (184)	3.63 (92)
	ASME 600	7.75 (197)	3.88 (99)
	ASME 900	8.63 (219)	4.32 (110)
RTJ	ASME 150	—	—
	ASME 300	7.63 (194)	3.82 (97)
	ASME 600	7.75 (197)	3.88 (99)
	ASME 900	8.63 (219)	4.32 (110)

NOTE: FNPT valves dimensions are available in Figure 3



Model
DF100 Control Valve

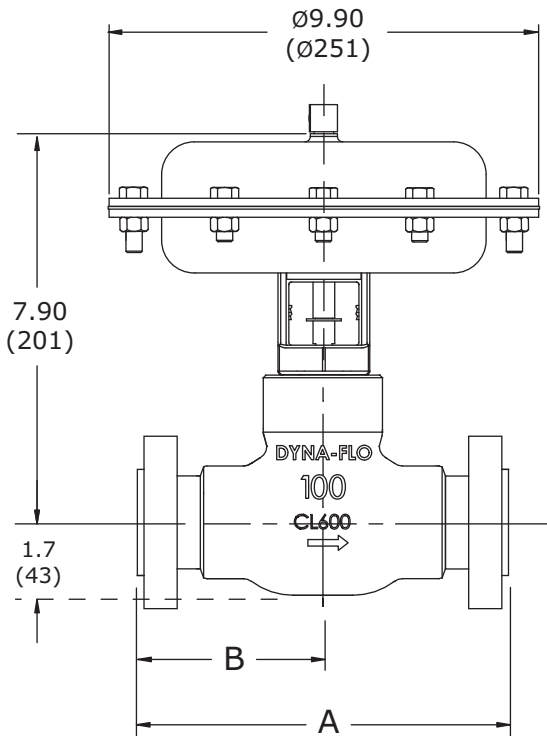
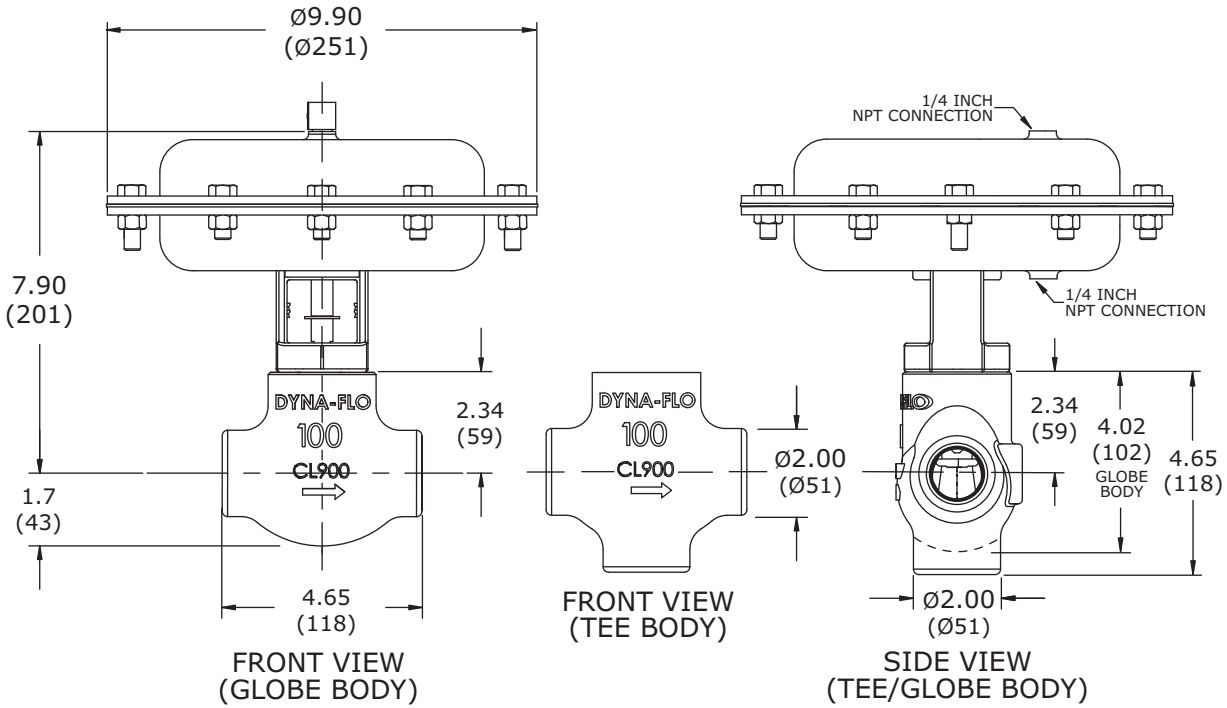


Figure 3 FNPT Style Valve Dimensions (900 Cl. only)

Figure 4 Flanged Style Valve Dimensions (table 4)



Model DF100 Control Valve

Ordering Guide

Dyna-Flo DF100 Control Valve | Model Numbering System

Sample Part Number

DF100-GC3-6BF-14S-X

Code	Description
X	Special
Trim Material	
S	S17400 DH 1150
T	Tungsten Carbide
N	S17400 Nitrided
A	S17400 CoCr-A
Trim Size	
14	1/4"
12	1/2"
38	3/8"
34	3/4"
Connection Style	
F	RF
N	NPT
J	RTJ
ASME Rating	
A	150
C	600
B	300
D	900 (Standard for FNPT)
Number of Springs	
2	2 Springs
6	6 Springs
Spring Range	
3	Size 25 Actuator with 3-15 Spring
6	Size 25 Actuator with 6-30 Spring
Actuator Style	
C	Fail Closed
O	Fail Open
Body Style	
G	Globe Style
T	Tee Style

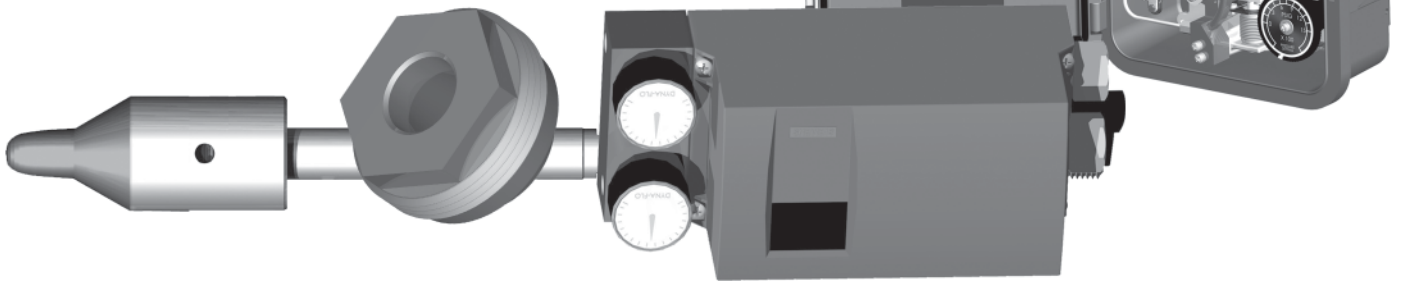
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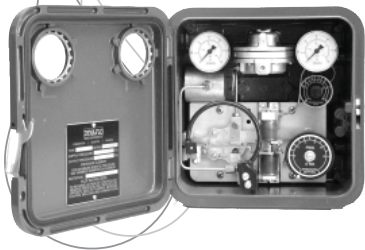


PRODUCT PREVIEW

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



4000 Pressure Controller

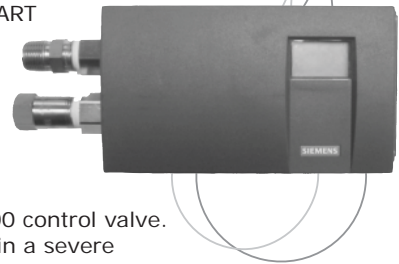


The Dyna-Flo 4000 Series pneumatic pressure controllers are the "brains" of a self contained, local pneumatic PID control loops.

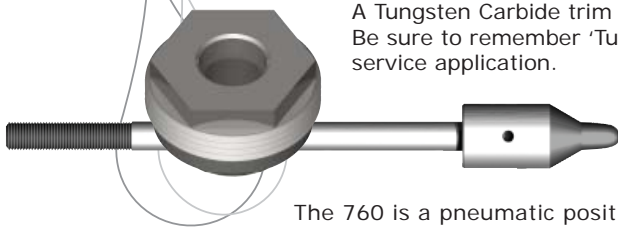
The pressure controller detects the process pressure using a Bourdon tube. The process pressure is then compared to an operator manually adjusted set point, which in turn modulates the controller output. The controller pneumatic output is connected to a final control device, typically a control valve,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



DF2400 Tungsten Carbide Trim



A Tungsten Carbide trim option is available for the DF2400 control valve. Be sure to remember 'Tungsten Carbide' for the DF2400 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

Dyna-Flo Control Valve Services Ltd.
Edmonton, Alberta, CANADA
Website: www.dynaflo.com

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