

DANIEL[®] SPRING LOADED BACK PRESSURE VALVE PRODUCT GUIDE

SERIES 700 - MODEL V707



DANIEL[®]
Decades Proven. Field Chosen.[™]

DANIEL® SERIES 700 – MODEL V707

DESCRIPTION

The V707 Spring Loaded Back Pressure Valve offers an innovative way to maintain back pressure and provides an integrated check functionality combining two valves in one, requiring no pilots or external actuation. The V707 is an addition to the Daniel® 700 Series Control Valve family of products, applying the well-known and trusted Daniel® Control Valves technology to maintain back pressure.

It is a pilotless control valve that employs a balanced piston design and pre-set spring pressure on the backside of the piston to maintain back pressure and open at a pre-determined set point. The valve design includes a Check Valve function as an option.

FIGURE 1: DANIEL® SERIES 700 – MODEL V707 SPRING LOADED BACK PRESSURE VALVE



RECOMMENDED APPLICATIONS

Lease Automated Custody Transfer (LACT) Skids and Pipeline Injection back pressure control.

FEATURES

- No power required
- No diaphragms or stuffing boxes
- Modular construction: all internal parts, including seat ring, can be removed with the cylinder assembly without disturbing line connections
- 45° body design assures high capacity
- Positive shut-off, ANSI Leakage Class VI (ANSI B16.105 – 1976)
- Inherently prevents reverse flow
- Full working pressure (ANSI 150, 300 and 600)
- Pilotless
- Tamper-proof set point locking capable

STANDARD SPECIFICATIONS

Please consult a Daniel® technical specialist if requirements are outside of the listed specifications. Other product and material offerings may be available depending on the application.

FLANGE CONNECTIONS

Valve size: 2" to 6"

Maximum working pressure at 100 °F

ANSI 150	285 psi (1,964 kPa)
ANSI 300:	740 psi (5,099 kPa)
ANSI 600:	1,480 psi (10,197 kPa)

Temperature Range: -20°F to 150 °F (-29°C to 66°C)

MATERIALS OF CONSTRUCTION

Valve body:	Standard – Carbon Steel ASTM-A352-GR-LCC
Cylinder:	Standard – 17-4 PH stainless steel
Piston:	Standard – 304 stainless steel
Seat Ring:	Standard – 303 stainless steel
Elastomers:	Standard – Viton®
Other Internal	
Parts:	Chromium Silicon (877 Grade A) springs – non-wetted
Tubing and	
Fittings:	Standard – 316 stainless steel*

SPRING RANGES

Field adjustable, valve differential pressure range

Range #1:	5 - 40 psi (single light spring)
Range #2:	30 - 80 psi (single heavy spring)
Range #3:	30 - 120 psi (light and heavy, nested springs)

*Pressure Sense Tubing Line to perform check valve functionality.

Note: This is not a pilot line.

RECOMMENDED SPARE PARTS

TABLE 1: RECOMMENDED SPARE PARTS

NPS	ANSI	Viton® O-Ring Kit
2	150-300	W520155-692
	600	W526160-692
3	150-300	W530155-692
	600	W536160-692
4	150-300	W540155-692
	600	W546160-692
6	150-300	W560155-692
	600	W566160-692

SELECTION REQUIREMENTS

1. Line Size
2. Pressure
3. Temperature
4. Set Point Pressure*
5. Flange Connections

NOTE

Set point is used to determine spring range. Customer will need to adjust set point in the field.

ORDERING INFORMATION

Size	ANSI	Spring Range (psi)	Part Number
2	150	5 - 40	521090-692
		30-80	521090-693
		30-120	521090-694
	300	5 - 40	523090-692
		30-80	523090-693
		30-120	523090-694
	600	5 - 40	526090-692
		30-80	526090-693
		30-120	526090-694
3	150	5 - 40	531093-692
		30-80	531093-693
		30-120	531093-694
	300	5 - 40	533093-692
		30-80	533093-693
		30-120	533093-694
	600	5 - 40	536093-692
		30-80	536093-693
		30-120	536093-694

Size	ANSI	Spring Range (psi)	Part Number
4	150	5 - 40	541090-692
		30-80	541090-693
		30-120	541090-694
	300	5 - 40	543093-692
		30-80	543093-693
		30-120	543093-694
	600	5 - 40	546090-692
		30-80	546090-693
		30-120	546090-694
6	150	5 - 40	561090-692
		30-80	561090-693
		30-120	561090-694
	300	5 - 40	563090-692
		30-80	563090-693
		30-120	563090-694
	600	5 - 40	566090-692
		30-80	566090-693
		30-120	566090-694

WEIGHTS AND DIMENSIONS

TABLE 3: APPROXIMATE SHIPPING WEIGHT

Line Size	ANSI 150-300 Class flange		ANSI 600 Class flange	
Inches	lbs	kg	lbs	kg
2	60	27	100	45
3	105	48	150	68
4	140	63	205	93
6	250	114	400	181

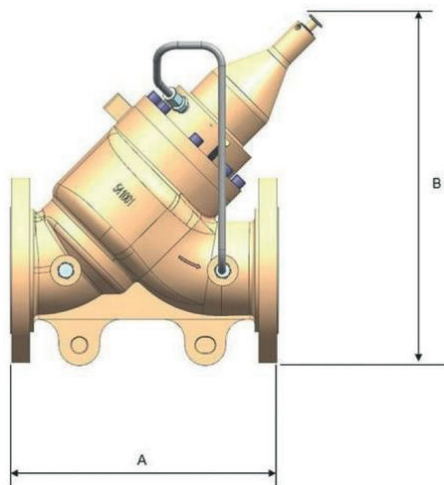


TABLE 4: DIMENSIONS

Valve Size (in)	A						B			
	ANSI 150		ANSI 300		ANSI 600		ANSI 150-300		ANSI 600	
	in	mm	in	mm	in	mm	in	mm	in	mm
2	10-1/4	260	10-1/2	267	10-1/2	292	9-5/8	244	244	248
3	11	279	13-1/8	333	14	356	10-3/8	264	11-1/4	286
4	13	330	14-1/2	368	17	432	12-1/4	311	13	330
6	17	432	17-7/8	454	22	559	23	584	25	634

With over 90 years of experience, Daniel is the only manufacturer that has the knowledge and experience to engineer and offer superior products that are trusted to provide the most reliable and accurate measurements in the global oil and gas industry.

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