

# High Pressure and Severe Service Valve

## U.S. Type 1711 (Includes RC300)

### DESCRIPTION

The U.S. Type 1711 globe control valve is designed for modulating flow or pressure control in industrial and research applications at temperatures of 850° F (454° C) or less (400° F, 204° C) maximum for TFE chevron packing and standard bonnet). The unit features an oversized stem and extra heavy guided innervalve for added strength and longevity. The stem packing is designed for tight sealing, long life and quick, easy maintenance. The union bonnet with a graphite gasket provides excellent sealing without having bonnet threads in contact with the process fluid. The multi-spring, 35-square-inch, diaphragm actuator can be either ATO or ATC action. Maximum corrosion protection on all non-stainless actuator components is standard. The spring preload is fully adjustable.

### APPLICATION

The valve is suited for many applications in chemical, petroleum and other industries requiring a rugged, compact, heavy duty valve.

### MATERIALS

<b>Body – Bonnet</b>	
Standard	316 stainless steel
Optional	Exotic alloys
<b>Body Gasket</b>	Grafoil® Gr GTA
<b>Innervalve</b>	
Standard	316 stainless steel or Stellite® inlaid seat and plug
Optional	Titanium nitride coating, exotic alloys
<b>Packing</b>	
Standard	TFE chevron rings
Optional	Reduced Emissions Kalrez® (REK), Grafoil, others; consult factory

### ACTUATOR OPTIONS

<b>Standard</b>	Air-to-open, fail close Air-to-close, fail open
<b>Optional</b>	Side-mounted positioner
<b>Standard Signals</b>	3-15#, 3-27#, 6-30#
<b>Optional Signals</b>	3-9#, 9-15# with positioner
<b>Accessories</b>	Filter regulator, gauges, I/P converter, limit switches, solenoids



Type 1711 Valve

### STANDARD FEATURES

- 1/2 in. (12 mm), 3/4 in. (19 mm) and 1 in. (25 mm) models
- Interchangeable trim sets
- Heavy duty union bonnet
- Trim characteristics: Linear, equal percent, quick open or double taper
- TFE chevron packing
- Stellite inlaid innervalves
- ANSI Class IV shutoff
- High pressure and temperature rating
- Encapsulated graphite body bonnet gasket
- Dual IEC 534 (NAMUR) accessory mounts
- Adjustable spring preload and up-travel stop

### OPTIONAL FEATURES

- Butt and socket weld ends, BSPP, tube connection and others
- Bonnet extensions for temperature extremes
- Bellows packing solutions
- Reduced Emissions Kalrez (REK), graphite, spring-loaded chevron and others
- Exotic alloys for complete valves or trims
- Stellite trims and soft seats (PTFE & Kel-F)
- TiN coating of innervalve stem and seat
- Purge or leak ports

## SPECIFICATIONS

### Pressure vs Temperature Rating for Valve Superstructure Excluding Packing or End Fittings

Temp (° F)	1/2 in. (12.7 mm) (psig)	3/4 in. (19.1 mm) (psig)	1 in. (25.4 mm) (psig)	Temp (° C)	1/2 in. (12.7 mm) (bar)	3/4 in. (19.1 mm) (bar)	1 in. (25.4 mm) (bar)
75	7500	5000	5000	24	517	345	345
100	7475	4980	4980	38	515	343	343
200	6625	4415	4415	93	457	304	304
300	6000	4000	4000	149	414	276	276
400	5375	3580	3580	204	371	247	247
500	5075	3380	3380	260	350	233	233
600	4825	3215	3215	316	333	222	222
700	4600	3065	3065	371	317	211	211
800	4560	3015	3015	427	314	204	204
850	4525	2965	2965	454	312	208	208

Consult factory for high temperatures.

## INNERVALVE CHART

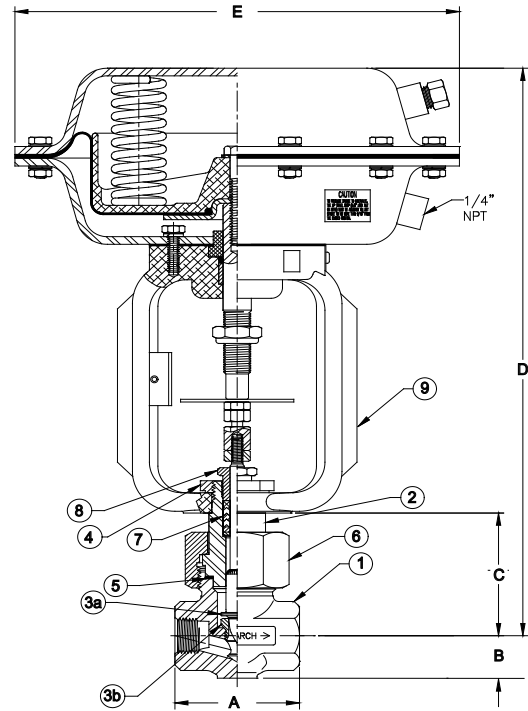
Valve Size in. (mm)	Trim	Nominal Cv	Theoretical Turbulent Cv	Orifice Dia. in. (mm)	Orifice Area in. <sup>2</sup> (mm <sup>2</sup> )	Maximum Rangeability	
						Linear	Equal %
1 (25.4)	6.0	6.0	6.0	0.625 (15.9)	0.307 (198.1)	50:1	60:1
	5.0	5.0	5.0	0.625 (15.9)	0.307 (198.1)	50:1	60:1
	4.5	4.5	4.5	0.500 (12.7)	0.197 (12.71)	50:1	60:1
3/4 (19.1) and 1 (25.4)	4.0	4.0	4.0	0.500 (12.7)	0.197 (12.71)	50:1	60:1
	3.5	3.5	3.5	0.500 (12.7)	0.197 (12.71)	50:1	60:1
1/2 (12.7), 3/4 (19.1), and 1 (25.4)	A	2.5	2.5	0.375 (9.5)	0.1105 (71.3)	50:1	50:1
	B	2.0	2.0	0.375 (9.5)	0.1105 (71.3)	40:1	50:1
	C	1.25	1.25	0.281 (7.1)	0.0621 (40.1)	40:1	50:1
	D	0.8	0.8	0.250 (6.4)	0.0491 (31.7)	40:1	50:1
	E	0.5	0.5	0.250 (6.4)	0.0491 (31.7)	40:1	50:1
	F	0.32	0.32	0.156 (4.0)	0.0191 (12.3)	30:1	40:1
	G	0.2	0.2	0.156 (4.0)	0.0191 (12.3)	30:1	40:1
	H	0.13	0.13	0.156 (4.0)	0.0191 (12.3)	30:1	40:1
	I	0.08	0.08	0.156 (4.0)	0.0191 (12.3)	30:1	40:1
	J	0.05	0.05	0.156 (4.0)	0.0191 (12.3)	30:1	40:1

## Maximum Shutoff

Valve Size in. (mm)	Trim	Maximum Shutoff	
		1/2 in. (12.7 mm) psig (bar)	3/4 in. (19.1 mm), 1 in. (25.4 mm) psig (bar)
1 (25.4)	6.0	—	1700 (117)
	5.0	—	1700 (117)
	4.5	—	2650 (183)
3/4 (19.1) and 1 (25.4)	4.0	—	2650 (183)
	3.5	—	2650 (183)
1/2 (12.7), 3/4 (19.1), and 1 (25.4)	A	4700 (324)	4700 (324)
	B	4700 (324)	4700 (324)
	C	7500 (517)*	5000 (345)*
	D	7500 (517)*	5000 (345)*
	E	7500 (517)*	5000 (345)*
	F	7500 (517)*	5000 (345)*
	G	7500 (517)*	5000 (345)*
	H	7500 (517)*	5000 (345)*
	I	7500 (517)*	5000 (345)*
	J	7500 (517)*	5000 (345)*

\* Maximum allowable shutoff is determined by the maximum force that can be preloaded using six springs loaded to 525 psig (36 bar). Although the unit will close the valve, this is no guarantee that the metal will not erode. Life of the innervalve is related to the fluid, temperature, nature of the media and the pressure.

## DIMENSIONS



1. Body	4. Locknut	9. Actuator* (shown ATO; refer to CD-951593 & CD-951594 for details)
2. Bonnet	5. Gasket	
3. Innervalve set a. Innervalve b. Seat	6. Union nut	
	7. Packing kit	
	8. Gland	

\*Without positioner: 4 springs must be used.  
With positioner: 3, 4, or 6 springs may be used.

PS	A	B	C	D	Stroke
0.50 in. (12.7 mm)	2.75 in. (70.0 mm)	1.00 in. (25.4 mm)	2.89 in. (73.4 mm)	13.37 in. (339.6 mm)	0.562 in. (14.3 mm)
0.75 in. (19.1 mm)	3.38 in. (85.9 mm)	1.19 in. (30.2 mm)	3.08 in. (78.2 mm)	13.56 in. (344.4 mm)	
1 in. (25.4 mm)	4 in. (101.6 mm)	1.50 in. (38.1 mm)	3.72 in. (94.5 mm)	14.20 in. (360.7 mm)	
Removal clearance:	1.75 in. (44.4 mm)				
Valve stem travel:	0.563 in. (14.3 mm)				

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