



MODEL 520

TOTAL TFE, ANGLE-PATTERN CONTROL VALVE



**1" – Model "520" Control Valve
with Air-to-Open, Fail Close
Model 30R Actuator.**

The Cashco Model 520 is a sliding stem, angle style, bellows sealed, pneumatically actuated control valve designed to provide superior long-term performance and maximum corrosion resistance in pure chemical service.

The design allows for all wetted internal parts to be machined from a solid block of isostatically compacted, virgin TFE, thus assuring maximum density and the lowest possible permeability. An additional design benefit is that the wall thickness integrity is assured as a result of the TFE body being internally machined after it is secured in a cast 304 SST body shell, thus preventing distortion problems related to the plastic stability of TFE. There is simply no better design or materials available when consideration is given to corrosion resistance and thermal stability.

DESIGN FEATURES

The Model 520 combines the TFE corrosion resistance with superior design and construction for the Chemical Process Industry:

- Unibody TFE construction minimizes potential leak paths.
- Dual stem seal design: 100,000 full-cycle bellows primary seal plus V-ring secondary stem seal.
- Anti-stem rotation device to prevent bellows damage.
- 304 SST body jacket resists external corrosion.
- Quick change trim with easily replaceable plug-tip.
- Three body sizes - 1/2", 1" and 2"; (DN 15, 25 and 50).
- Wide selection of trim sizes and forms.
- 150# RF, flanged body with "gasketless" pipe-to-valve joint.
- Class VI shutoff.
- Spring-loaded bonnet seal.
- All wetted parts are machined from isostatically compacted TFE.
- May be applied in full vacuum service.

APPLICATIONS

Designed specifically for corrosive chemical use, including most hazardous or toxic fluids. Ultimate performance when handling chlorine (wet or dry); bromine; hydrochloric, sulphuric, nitric, and hydrofluoric acids; and most industrial reagents. Also performs well in alkaline or strong basic fluids and most organics.

Refer to technical bulletin 521-TB, Section "Chemical Resistance" on pages 8 and 9 for additional application information.

REFERENCE

Reference to technical bulletin 521-TB is made at various points in this technical bulletin. 521-TB is the literature covering the companion Model 521 globe style product.

GENERAL SPECIFICATIONS

Body Sub-Assembly

Body Form:	Angle body pattern.															
Body Sizes:	1/2", 1" and 2"; (DN 15, 25 and 50).															
Maximum Pressure & Working Temperature:	Pressure Vs. Temperature application zone indicated in Graph No. 1: Pressure: Up to 275 psig (19.0 Barg). Full Vacuum: Down to 0 psia (-14.7 psig, -29.92 "Hg); 0 BarA (-1.01 Barg, -760 mm Hg). Temperature Range: 0° to +310°F (-17.4° to +155°C).	Maximum Pressure Drop: Up to 275 psid (19.0 Bard). Dependent on actuator size and bench set selection. See Table 4.														
End Connections:	<u>Standard</u> – 150# RF flanged; gasketless design. Flange bolt circle per ANSI B16.5. Bolt holes drilled and tapped to receive flange bolting.	Seat Design: Integral TFE seat. Replaceable TFE plug-tip.														
Stem Seal:	Dual design — <u>Primary Seal:</u> TFE bellows with 100,000 full stroke cycle design life. <u>Secondary Seal:</u> TFE "V-ring" packing.	Flow Capacity Range:														
Seat Leakage:	ANSI/FCI 70-2 (Rev. 1982), Class VI.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Body Size in. (mm)</th> <th colspan="2">Capacity (Cv) Range</th> </tr> <tr> <th>Smallest Trim Size</th> <th>Largest Trim Size</th> </tr> </thead> <tbody> <tr> <td>1/2" (15)</td> <td>.10</td> <td>4.0</td> </tr> <tr> <td>1" (25)</td> <td>.10</td> <td>16.0</td> </tr> <tr> <td>2" (50)</td> <td>10.00</td> <td>50.0</td> </tr> </tbody> </table>	Body Size in. (mm)	Capacity (Cv) Range		Smallest Trim Size	Largest Trim Size	1/2" (15)	.10	4.0	1" (25)	.10	16.0	2" (50)	10.00	50.0
Body Size in. (mm)	Capacity (Cv) Range															
	Smallest Trim Size	Largest Trim Size														
1/2" (15)	.10	4.0														
1" (25)	.10	16.0														
2" (50)	10.00	50.0														
Flow Direction:	Standard is Flow-to-Open (FTO).	See Tables 1 and 2 for theoretical Cv @ % travel. <u>Equal % and Linear Characteristics</u> - available in all trim sizes. See Table 3. <u>Q.O. Characteristic</u> - available only in largest orifice per line size.														
Inherent Flow Characteristic:	Standard – Equal Percentage (Equal %). Optional – Linear or Quick Opening (Q.O.)	Rangeability: Standard – 50:1, except 1/4" (6 mm) orifice. Minimum – 25:1 for 1/4" (6mm) orifice. See Tables 1 and 2.														

Actuator Sub-Assembly

Design:	Spring-diaphragm type.	Ambient Temp. Range: Actuator or Actuator with positioner: -20 to +175°F (-29 to +80°C).
		Bench Set: See Table 4.
		Supply Pressure: See Table 4.
		Stroke: See Tables 4 and 5.
		Supply Connection: 1/4" female NPT.
		Mounting Position: <u>Model 30</u> – Horizontal-to-vertically up, and all angles in between. <u>Models 55, 75 or 115</u> – Vertical ONLY.
		Exterior Corrosion Resistance: <u>Model 30</u> – Polyurethane paint per Cashco Specification # S-1569. <u>Models 55, 75 or 115</u> – Vinyl paint per Cashco Specification #S-1546.
		Sizes, Strokes & Volumes: See Table 5.

Action	Basic Model No.	Body Sizes Utilized Upon in. (DN)
<u>Direct; ATC-FO.</u> <u>Reverse; ATO-FC</u> Field reversible.	30	All
<u>Direct; ATC-FO</u> Non-field reversible.	55D	1", 2" (25, 50)
	75D	2" (50)
	115D	2" (50)
<u>Reverse; ATO-FC</u> Non-field reversible.	55R	1", 2" (25, 50)
	75R	2" (50)
	115R	2" (50)

Direct: Increase in air "LOAD" extends actuator stem.
Reverse: Increase in air "LOAD" retracts actuator stem.
ATC-FO: Air-to-Close, Fail Open; Direct-acting.
ATO-FC: Air-to-Open, Fail Closed; Reverse-acting.

See Table 4 for proper selection of required bench setting range spring and full actuator Model No.

See Figure 2,
page 9, for
exploded view of
internals

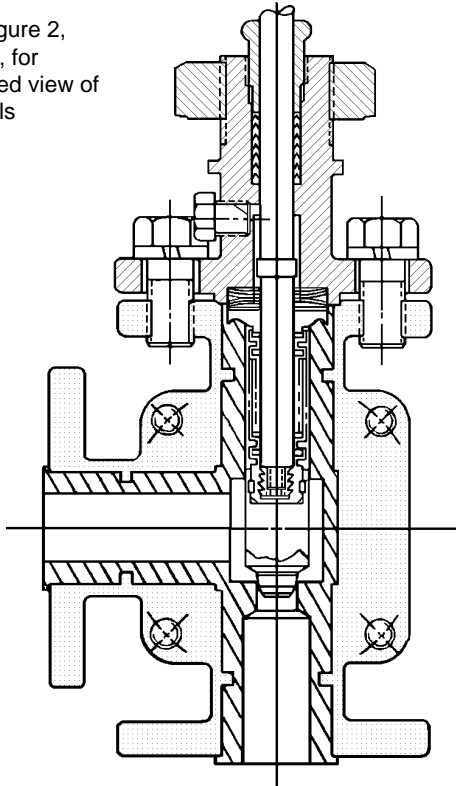
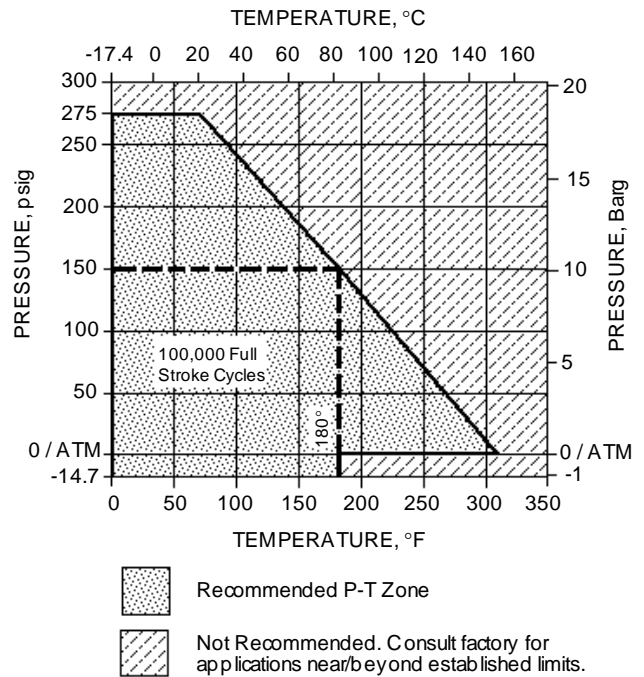


Figure 1
Model "520" Control Valve
Cross-Section



MATERIALS SPECIFICATIONS

Body Sub-Assembly

Body, Plug Head & Bellows: Isostatically compacted, high density TFE - tetrafluoroethylene; i.e. PTFE - polytetrafluoroethylene. Precision machined. (Note: TFE or PTFE are used as abbreviations; they are the same material.)

Body Shell and Bonnet: Investment castings. Cast 304 SST per ASTM A351-CF8.

Body & Bonnet Bolting: 18-8 SST.

Bonnet Gasket: TFE.

Secondary Packing: TFE - "V-ring".

Bellefonte Spring Washers: 18-8 SST.

Stem Assembly: Standard: 316 SST stem and anti-rotational stop; 420 SST pin (body sizes 1/2" (DN 15) and 1" (DN 25)), silver soldered (body sizes 1-1/2" (DN 40) and 2" (DN 50)). Embedded stem-to-bellows connection nut of 316 SST.

Optional: Two optional stem constructions available:

Option "D" - Hastelloy C-22 stem, anti-rotational stop and pin, and embed stem-to-bellows connector nut.

Option "F" - Hastelloy C-22 stem only. Stop and pin of standard materials.

NOTE: Alternate stem materials should be considered when the fluid is known to permeate TFE and is corrosive to 316 SST in the presence of moisture. Refer to technical bulletin 521-TB, Section "Chemical Resistance" and Options "D" and "F" above.

Packing Follower: 18-8 SST.

Actuator Sub-Assembly

Parts	<u>Model 30</u>	<u>Models 55R & 115R</u> <u>Models 55D & 115D</u>	<u>Models 75D & 75R</u>
Diaphragm Casings:	Cast aluminum, including cap	Pressed carbon steel	Pressed carbon steel
Spring Housing:	Integral with diaphragm casing; cast aluminum	Integral with yoke; cast iron	Integral with yoke; cast iron
Yoke:	Cast aluminum	Cast iron	Cast iron
Yoke Nut:	SST	SST	SST
Diaphragm:	Reinforced Neoprene	Reinforced Neoprene	Reinforced Neoprene
Diaphragm Plate:	Cast aluminum	Cast iron	Cast iron
Spring:	Plated steel	Plated steel	Plated steel
Spring Button:	Aluminum	Cast iron	Cast iron
Bolting – Diaphragm Casing, Yoke-to-Diaphragm Casing:	SST	Plated steel	Plated steel
Travel Indicator, Indicator Plate, & Screws:	SST	SST	SST
Spring Adjustor & Jam Nuts:	SST	SST	SST
Stem:	316 SST	416 SST	416 SST

TECHNICAL SPECIFICATIONS

TABLE 1
MODEL 520
THEORETICAL CAPACITY

EQUAL % CHARACTERISTIC

F_L Factor = 0.90

Valve Size inch (DN)	Orifice Size inch (mm)	Range-ability	Minimum Controllable Cv	Cv @ 10% Travel Increments									
				10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1/2" (15)	0.250" (6.35)	25:1	0.004	.006	.008	.011	.014	.020	.028	.038	.053	.072	0.10
			0.006	.009	.012	.017	.023	.032	.044	.061	.084	.12	0.16
			0.010	.014	.019	.026	.036	.050	.069	.095	.13	.18	0.25
			0.016	.022	.030	.042	.058	.080	.11	.15	.21	.29	0.40
			0.025	.035	.048	.066	.091	.13	.17	.24	.33	.46	0.63
	0.438" (11.12)	40:1	0.020	.030	.044	.065	.096	.14	.21	.31	.46	.68	1.00
			0.032	.047	.070	.10	.15	.23	.33	.49	.73	1.08	1.60
			0.050	.074	.11	.16	.24	.35	.52	.77	1.14	1.69	2.50
			0.080	.12	.17	.26	.38	.57	.84	1.24	1.83	2.70	4.00
1" (25)	0.250" (6.35)	25:1	0.004	.006	.008	.011	.014	.020	.028	.038	.053	.072	0.10
			0.006	.009	.012	.017	.023	.032	.044	.061	.084	.12	0.16
			0.010	.014	.019	.026	.036	.050	.069	.095	.13	.18	0.25
			0.016	.022	.030	.042	.058	.080	.11	.15	.21	.29	0.40
			0.025	.035	.048	.066	.091	.13	.17	.24	.33	.46	0.63
	0.562" (14.27)	40:1	0.020	.030	.044	.065	.096	.14	.21	.31	.46	.68	1.00
			0.032	.047	.070	.10	.15	.23	.33	.49	.73	1.08	1.60
			0.050	.07	.11	.16	.24	.35	.52	.77	1.14	1.69	2.50
			0.080	.12	.17	.26	.38	.57	.84	1.24	1.83	2.70	4.00
			0.100	.15	.22	.32	.48	.71	1.05	1.55	2.29	3.38	5.00
	0.938" (23.82)	50:1	0.126	.19	.28	.41	.60	.89	1.32	1.95	2.88	4.26	6.30
			0.150	.22	.33	.49	.72	1.06	1.57	2.32	3.43	5.07	7.50
			0.200	.30	.44	.65	.96	1.41	2.09	3.09	4.57	6.76	10.0
			0.320	.47	.70	1.03	1.53	2.26	3.35	4.95	7.32	10.8	16.0
2" (50)	1.500" (38.10)	50:1	0.320	.44	.66	.97	1.43	2.12	3.14	4.64	6.86	10.1	16.0
			0.500	.74	1.09	1.62	2.39	3.54	5.23	7.73	11.4	16.9	25.0
	2.000" (50.80)	50:1	0.700	1.04	1.53	2.26	3.35	4.95	7.32	10.8	16.0	23.7	35.0
			1.000	1.48	2.19	3.23	4.78	7.07	10.5	15.5	22.9	33.8	50.0

TABLE 2
MODEL 520
THEORETICAL CAPACITY

LINEAR CHARACTERISTIC

F_L Factor = 0.90

Valve Size in/(DN)	Orifice Size in/(mm)	Range-ability	Minimum Controllable Cv	Cv @ 10% Travel Increments									
				10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1/2" (15)	0.250" (6.35)	25:1	0.004	.010	.020	.030	.040	.050	.060	.070	.080	.090	0.10
			0.006	.016	.032	.048	.064	.080	.10	.11	.13	.14	0.16
			0.010	.025	.050	.075	.10	.13	.15	.18	.20	.23	0.25
			0.016	.040	.080	.12	.16	.20	.24	.28	.32	.36	0.40
	0.025	.063	.13	.19	.25	.32	.38	.44	.50	.57	0.63		
	0.438" (11.12)	40:1	0.020	.10	.20	.30	.40	.50	.60	.70	.80	.90	1.00
			0.032	.16	.32	.48	.64	.80	.96	1.12	1.28	1.44	1.60
			0.050	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
0.080			.40	.80	1.20	1.60	2.00	2.40	2.80	3.20	3.60	4.00	
1" (25)	0.250" (6.35)	25:1	0.004	.010	.020	.030	.040	.050	.060	.070	.080	.090	0.10
			0.006	.016	.032	.048	.064	.080	.10	.11	.13	.14	0.16
			0.010	.025	.050	.075	.10	.13	.15	.18	.20	.23	0.25
			0.016	.040	.080	.12	.16	.20	.24	.28	.32	.36	0.40
	0.025	.063	.13	.19	.25	.32	.38	.44	.50	.57	0.63		
	0.562" (14.27)	40:1	0.020	.10	.20	.30	.40	.50	.60	.70	.80	.90	1.00
			0.032	.16	.32	.48	.64	.80	.96	1.12	1.28	1.44	1.60
			0.050	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
			0.080	.40	.80	1.20	1.60	2.00	2.40	2.80	3.20	3.60	4.00
	0.100	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00		
	0.938" (23.82)	50:1	0.126	.63	1.26	1.89	2.52	3.15	3.78	4.41	5.04	5.67	6.30
			0.150	.75	1.50	2.25	3.00	3.75	4.50	5.25	6.00	6.75	7.50
0.200			1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.0	
0.320			1.60	3.20	4.80	6.40	8.00	9.60	11.2	12.8	14.4	16.0	
2" (50)	1.500" (38.10)	50:1	0.320	1.50	3.00	4.50	6.00	7.50	9.00	10.5	12.0	13.5	16.0
			0.500	2.50	5.00	7.50	10.0	12.5	15.0	17.5	20.0	22.5	25.0
	2.000" (50.80)	50:1	0.700	3.50	7.00	10.5	14.0	17.5	21.0	24.5	28.0	31.5	35.0
			1.000	5.00	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0

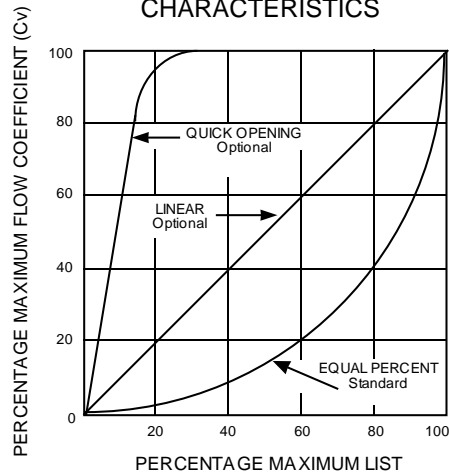
TABLE 3
CAPACITY – Cv

QUICK OPENING CHARACTERISTIC

F_L Factor = 0.90

Valve Size inch (DN)	Orifice Size inch (mm)	Cv @ 100% Travel
1/2" (15)	.438" (11.12)	4.00
1" (25)	.938" (23.82)	16.0
2" (50)	2.000" (50.80)	50.0

TYPES OF FLOW CHARACTERISTICS



GRAPH NO. 2

TABLE 4
MAXIMUM PRESSURE DROP – psid (Bard)
ATO-FC; REVERSE ACTION
ATC-FO; DIRECT ACTION
FTO DIRECTION

Body Size Inch (DN)	Port-Orifice		Maximum Operating Pressure Drop psid (Bard)	Actuator			Air Supply Pressure psig (Barg)
	Description	Size Inch (mm)		Bench Settings psig (Barg)	Model No.		
					Reverse Action	Direct Action	
1/2" (15)	Full	.438" (11.12)	275 (19.0)	3-15 (.21-1.03)	30R-00	30D-00	20 (1.4)
	1-Step Reduced	.250" (6.35)					
1" (25)	Full	.938" (23.82)	50 (3.4)	4-15 (.28-1.03)	30R-01	30D-01	20 (1.4)
			100 (6.9)	7-28 (.48-1.93)	30R-02	30D-02	35 (2.4)
			165 (11.4)	5-15 (.34-1.03)	55R-01	55D-01	20 (1.4)
	1-Step Reduced	.562" (14.27)	240 (16.5)	4-15 (.28-1.03)	30R-01	30D-01	
	2-Step Reduced	.250" (6.35)	275 (19.0)	3-15 (.21-1.03)	55R-00	55D-00	
2" (50)	Full	2.000" (50.80)	10 (0.7)	4-15 (.28-1.03)	55R-03	55D-03	20 (1.4)
			40 (2.7)	4-15 (.28-1.03)	75R-00	75D-00	
			70 (4.8)	4-15 (.28-1.03)	115R-00	115D-00	
			20 (1.4)	7-28 (.48-1.93)	30R-04	30D-04	35 (2.4)
			30 (2.1)	6-30 (.41-2.07)	55R-04	55D-04	20 (1.4)
	1-Step Reduced	1.500" (38.10)	40 (2.7)	4-15 (.28-1.03)	55R-03	55D-03	
	90 (6.2)		4-15 (.28-1.03)	75R-00	75D-00		
	125 (8.6)		4-15 (.28-1.03)	115R-00	115D-00		
	35 (2.4)		7-28 (.48-1.93)	30R-04	30D-04	35 (2.4)	
	90 (6.2)		6-30 (.41-2.07)	55R-04	55D-04		

 Field Reversible.

APPLICATION NOTE: Consult Factory for applying these valves with an I/P Transducer (1–17 psig output) without a positioner. Pressure drop levels may be reduced. DO NOT apply ATC-FO arrangement with I/P transducer.

TABLE 5
Actuator Size, Stroke & Volumes

Body Size in (DN)	Actuator Model No.	Nominal Diaphragm Area in ² (cm ²)	Stroke in (mm)	Volumes	
				Clearance in ³ (cm ³)	Displacement in ³ (cm ³)
1/2" (15)	30	30 (200)	.438 (11.13)	20 (325)	15 (250)
1" (25)	30	30 (200)	.625" (15.88)	15 (250)	20 (325)
	55	50 (325)		35 (575)	30 (500)
2" (50)	30	30 (200)	.875" (22.22)	15 (250)	30 (500)
	55	50 (325)		20 (325)	45 (725)
	75	75 (500)		75 (1225)	65 (1075)
	115	110 (700)		80 (1300)	100 (1650)

OPTION AND ACCESSORIES SPECIFICATIONS

Alternate Stem Construction:	See Page 3, "Stem Assembly".	Airset:	Model 5100P is bracket mounted to the actuator diaphragm case. 1-1/2" (40 mm) output pressure gauge included when unit supplied with 9520L I/P positioner. 1/4") NPT female connections. Use with positioners or solenoids.
Manual Hand-wheel:	Handwheel overrides the actuator spring force to allow manual stroking of the valve. Single acting design, top-mounted, enclosed handwheel. For <u>ATO-FC</u> action, handwheel operator "opens" the valve against spring force; may be utilized as a travel stop to prevent full closure. For <u>ATC-FO</u> action, handwheel operator "closes" the valve against spring force; may be utilized as a travel stop to prevent full opening.	3-Way Solenoid Valve:	<u>Standard Brass:</u> Available in standard NEMA 3, 4 and 6 weatherproof model, or NEMA 4 & 7 explosion-proof model. Brass body, 1/4" female NPT connections. Nipple mounted to actuator casing. 120 VAC, 60 Hz power supply. Class F coil, continuous duty. 0.125" (3 mm) orifice. <u>Gen. Purpose:</u> ASCO #8320G176. <u>X-Proof:</u> ASCO #EF8320G176. <u>Alternate SST:</u> Similar to standard unit, <u>except</u> with .094" (2.38 mm) orifice, and 303 SST body. <u>Gen. Purpose:</u> ASCO #8320G201. <u>X-Proof:</u> ASCO #EF8320G201.
Positioners:	<u>General:</u> Yoke mounted to unit. All feedback linkage exposed to elements of SST materials. Aluminum housing with corrosion resistant polyurethane paint. Standard with 2-gauge cluster. Pneumatic output load as required by actuator bench range. Adjustable zero, stroke, gain and damping settings. Field reversible action. <u>P/P Pneumatic.</u> Model 9540L. Accepts 3-15 psig (0.2-1.0 Barg); 2-way split ranges 3-9 or 9-15 psig (0.2-0.6 or 0.6-1.0 Barg); or 3-way split ranges 3-7, 7-11 and 11-15 psig (0.2-0.5, 0.5-0.8 and 0.8-1.0 Barg) input signals. Plastic cover with see-thru panel to view internal gauges. <u>I/P Electro-Pneumatic.</u> Model 9520L. Accepts 4-20 mA; 2-way split ranges 4-12 or 12-20 mA; 3-way split ranges 4-9.3, 9.3-14.7 or 14.7-20 mA input signals. NEMA 3 enclosure, intrinsically safe. FM approved. Gauges mounted on external gauge block.	Position Indicating Switches:	Standard installation vents actuator and drives valve to failsafe position upon loss of electrical power. <u>Standard:</u> Yoke mounted, rotary trip switch; contains 1-SPDT switch. Switch rating is 15A @ 125 or 250 VAC. UL/CSA rating L96. Up to two switch units may be mounted per valve. <u>Gen. Purpose:</u> Microswitch #OP-AR. NEMA 4 enclosure. <u>X-Proof:</u> Microswitch #EX-AR. For "hazardous locations" NEMA 7, Class 1, Groups C & D; NEMA 9, Class II, Groups E, F & G. <u>Alternate:</u> Proximity Controls Model #12ALO, 2-SPDT switches. Switch rating is 15A @ 125 or 250 VAC; proximity-type. UL and CSA listed for Class I, Groups A, B, C, D; Class II, Groups E, F, G; Div. 1 and 2. Enclosure per NEMA 1, 2, 3, 3R, 3S, 4, 4X, 6, 7, 9, 12 and 13. <u>Alternate:</u> Proximity Controls Model #12GLOB, 2-SPDT switches. Switch rating is 1A @ 24 VDC, 1A @ 125 VAC. BASEFA certified EX dIIC T6 per BS4683 Part 2, IP68. CENELEC certified EEX dIIC T6 per BS5501: Parts 1 & 5.
Instrument Air Tubing:	<u>Standard:</u> Tubing and fittings are Imperial-Eastman "Impolene" thermoplastic tubing and brass fittings, rated to 250 psig (17 Barg) and -20 to +200°F (-29 to +93°C). <u>Optional:</u> Copper tubing with brass fittings, or SST fittings and tubing are available.		

CHEMICAL RESISTANCE

Refer to technical bulletin 521-TB for information concerning the chemical resistance of Model 520 internals, including information as to when alternate stem materials are recommended.

APPLICATION AND SELECTION

Refer to technical bulletin 521-TB for a comparable step by step procedure in selection of the proper Model 520.

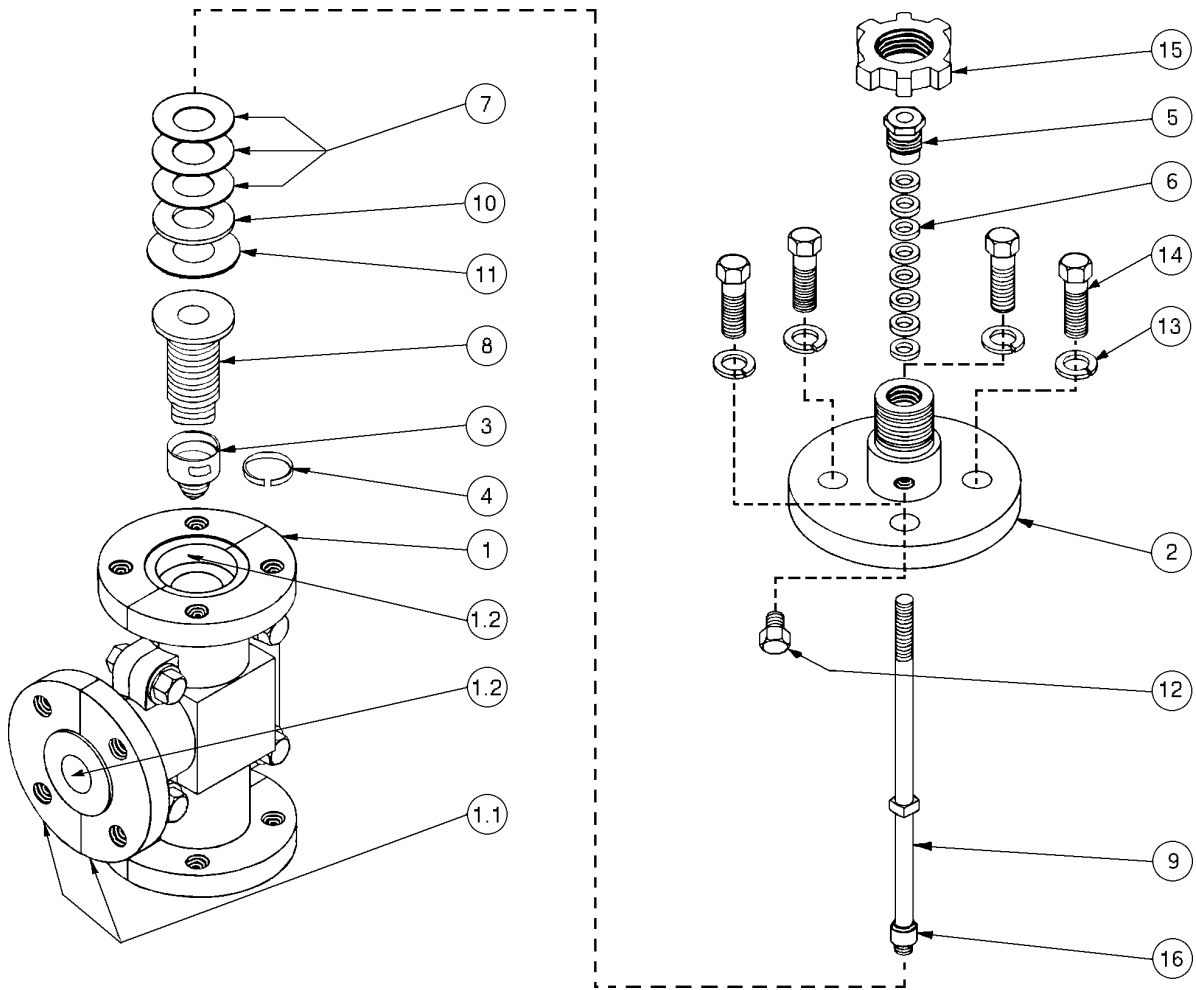


Figure 2
Model "520" Control Valve
Internals

ITEM NO.	DESCRIPTION
1	Body Sub-Assembly
1.1	* Half Shell
1.2	* TFE Core
2	Bonnet
3	Plug Head
4	Plug Retainer Strip
5	Packing Gland
6	Packing Set
7	Belleville Spring Washer
8	Bellows Sub-Assembly
9	Stem Sub-Assembly
10	Spacer Washer
11	Bonnet Gasket
12	Vented Pipe Plug
13	Lockwasher
14	Hex Hd. Cap Screw
15	Yoke Nut
16	Adapter (2" size only)

* Sub-level parts that make up the body sub-assembly;
 these parts are not field replaceable individually.

TABLE 7
Flange Stud Bolting Size/Thread Guide

Body Size in. (DN)	End Connection Flange	Recommended
	150# – Dim. "F"	Stud Length
1/2" (15)	1/2"-13 UNC-2B	2.00" (50 mm)
1" (25)	1/2"-13 UNC-2B	2.25" (56 mm)
2" (50)	5/8"-11 UNC-2B	3.00" (70 mm)
"L" - # Bolt Holes	4	--

NOTE: All flange bolt holes straddle centerlines.

TABLE 8
Dimensions and Weights
English Units – Inch and Lbs.

End Conn.	Dimension	BODY SIZE										
		1/2"	1"				2"					
		ACTUATOR MODEL #										
		30D/R	30D/R	55D	55R	30D/R	55D	55R	75D	75R	115D	115R
150# Flgd. Only	A	2.56	3.69	3.69		5.20	5.20		5.20		5.20	
	B	4.13	5.38	5.38		7.00	7.00		7.00		7.00	
	C	3.53	4.88	4.88		6.38	6.38		6.38		6.38	
	D	20.00	21.25	18.94	21.06	22.88	20.56	22.69	25.00	27.97	26.18	28.88
	E	9.00	9.00	10.50		9.00	10.50		13.81		15.50	
	H	27.18	28.44	26.06	30.38	30.06	27.67	32.05	32.94	37.59	33.36	39.18
	G	2.38	3.12	3.12		4.75	4.75		4.75		4.75	
WT. #	—	26	30	44	50	53	67	73	87	97	116	150

TABLE 9
Dimensions and Weights
Metric Units – mm and kg

End Conn.	Dimension	BODY SIZE										
		DN15	DN25				DN50					
		ACTUATOR MODEL #										
		30D/R	30D/R	55D	55R	30D/R	55D	55R	75D	75R	115D	115R
150# Flgd. Only	A	65	94	94		132	132		132		132	
	B	105	137	137		178	178		178		178	
	C	90	124	124		162	162		162		162	
	D	508	540	481	535	581	522	576	635	710	589	657
	E	229	229	267		229	267		351		394	
	H	691	722	662	772	764	703	814	837	955	847	995
	G	60	79	79		121	121		121		121	
WT. kg	—	12	14	20	23	24	31	34	40	44	52	68

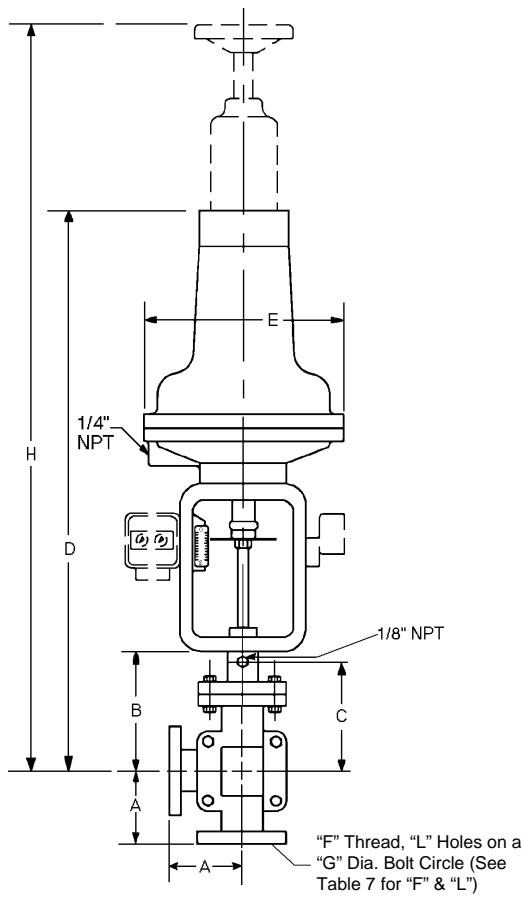


Figure 3
Model 520 with 30R Actuator

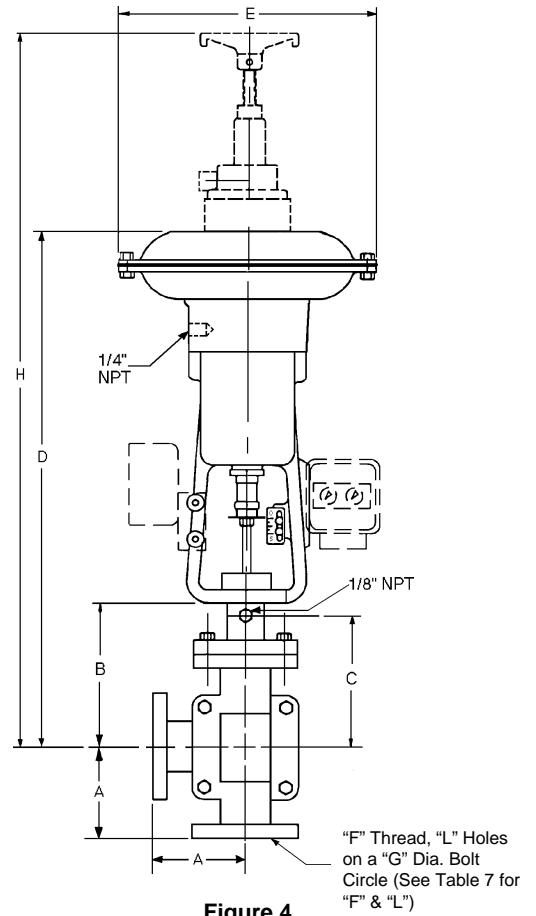


Figure 4
Model 520 with 55R, 75R & 115R Actuators

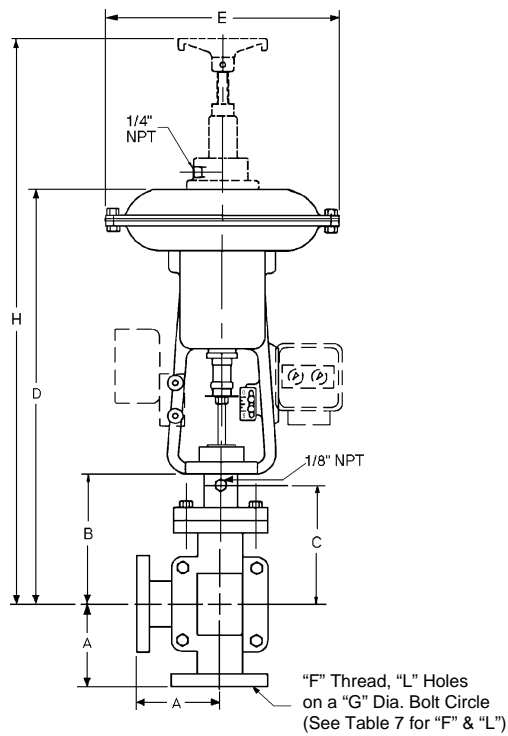


Figure 5
Model 520 with 55D, 75D & 115D Actuators

