

The Model 5300 control valve is designed to withstand the severe service applications common to the oil and gas industry. It can be installed in converging (blender) or diverging (diverter) flow configurations. The ease of maintenance and rugged steel construction make the Model 5300 a perfect choice for a wide variety of 3-way valve applications.

### Features:

- **Variety of End Connections** - The Model 5300 is available with female NPT threaded connections, or flanged connections from ANSI 150 to ANSI 1500. ANSI ratings above class 600 are available in either raised-face (RF) or ring joint (RTJ) style flange facing.
- **Simple Maintenance** - Valve trim or the complete actuator assembly can be quickly changed by simply removing the hammer nut and lifting the actuator assembly off the valve body. Disassembly of the actuator or removing the valve from the line is not required. No special tools are required.
- **SST Trim** - Valve trim is available in solid 316 SST or 316 SST with TFE plug inserts for positive shut-off.
- **Actuation** - Comes complete with a spring opposed diaphragm actuator which can be set up to fail to the lower port or fail to the upper port.



**Specifications**

**Body Styles**

1" and 2"

**End Connections / Pressure Ratings**

FNPT:

4000 psig from -20 to 200°F (276 bar from -29 to 93°C)

Flanged<sup>1</sup>:

- 150# RF 275 psig (19 bar)
- 300#RF 740 psig (51 bar)
- 600# RF 1480 psig (102 bar)
- 600# RTJ 1480 psig (102 bar)
- 900# RF 2220 psig (152 bar)
- 900# RTJ 2220 psig (152 bar)
- 1500# RF 3750 psig (259 bar)
- 1500# RTJ 3750 psig (259 bar)

**Available Trim Sizes**

1" Valve:

- 1" Full Port
- 3/4" x 3/8" Blow Case

2" Valve:

- 1 1/2" Reduced Port
- 2" Full Port

**Flow Characteristic**

Quick Opening (On/Off)

**Flow Coefficients**

Body Size	Trim Size	Flow Direction	CV
1"	1"	C-U	9.0
		C-L	12.5
	3/4" x 3/8"	C-U	7.7
		C-L	3.2
2"	1 1/2"	C-U	38.0
		C-L	51.0
	2"	C-U	46.0
		C-L	66.0

1. Pressure ratings at 100°F (38°C).  
 2. Pressure drop values shown are based on 30 psig supply pressure to actuator.

**Actuator Size (Diaphragm Effective Area)**

Size 35 (35 in<sup>2</sup>)  
 Size 70 (70 in<sup>2</sup>)

**Actuator Housing Maximum Pressure**

Size 35: 50 psig  
 Size 70: 35 psig

**Maximum Allowable Shutoff Pressure Drops<sup>2</sup>**

Body Size	Trim Size	Actuator	Maximum Pressure Drop, psid	
			Diverting	Blending
1"	1"	Size 35	800	400
	3/4" x 3/8"		1300	1300
	1"	Size 70	1000	800
1 1/2"	600		190	
2"	2"		400	90

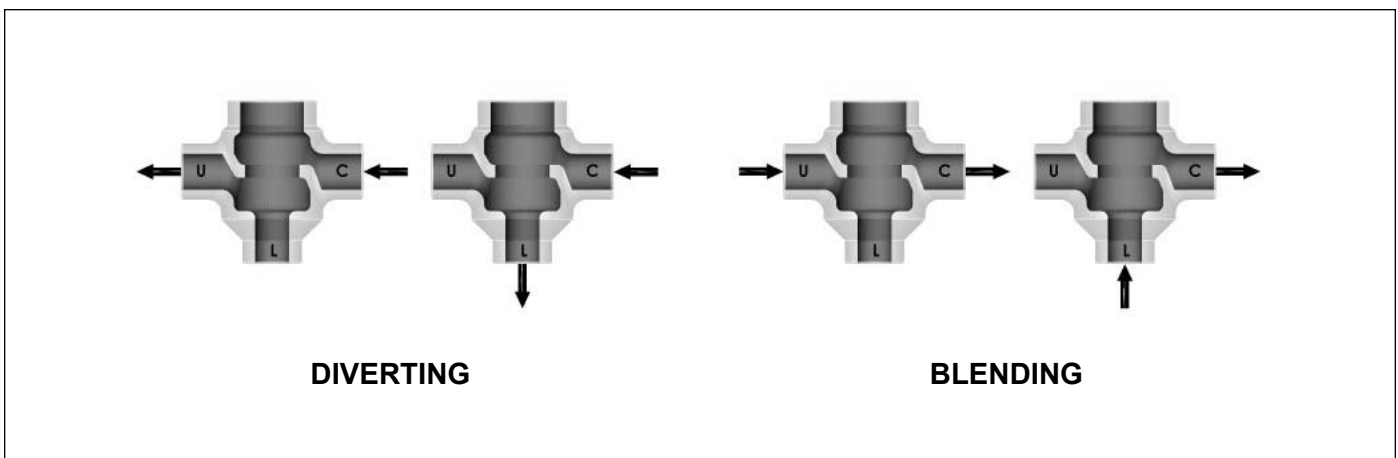
**Assembled Valve Temperature Limits**

WCC body with Buna-N seals: -20 to 180°F (-29 to 82°C)  
 WCC body with Viton seals: -20 to 200°F (-29 to 93°C)

**Materials of Construction**

- Valve Body: WCC Carbon Steel
- Bonnet: WCC Carbon Steel
- Hammer Nut: WCC Carbon Steel
- Seat / Cage: 316 SST
- Plug: Solid 316 SST or 316 SST with TFE soft-seat insert
- Valve Stem: 303 SST
- Packing: PTFE V-Ring
- Seals: Buna-N or Viton
- Actuator Housing: Steel
- Diaphragm: Nylon-reinforced Nitrile
- Actuator Spring: Steel

**Flow Configurations**



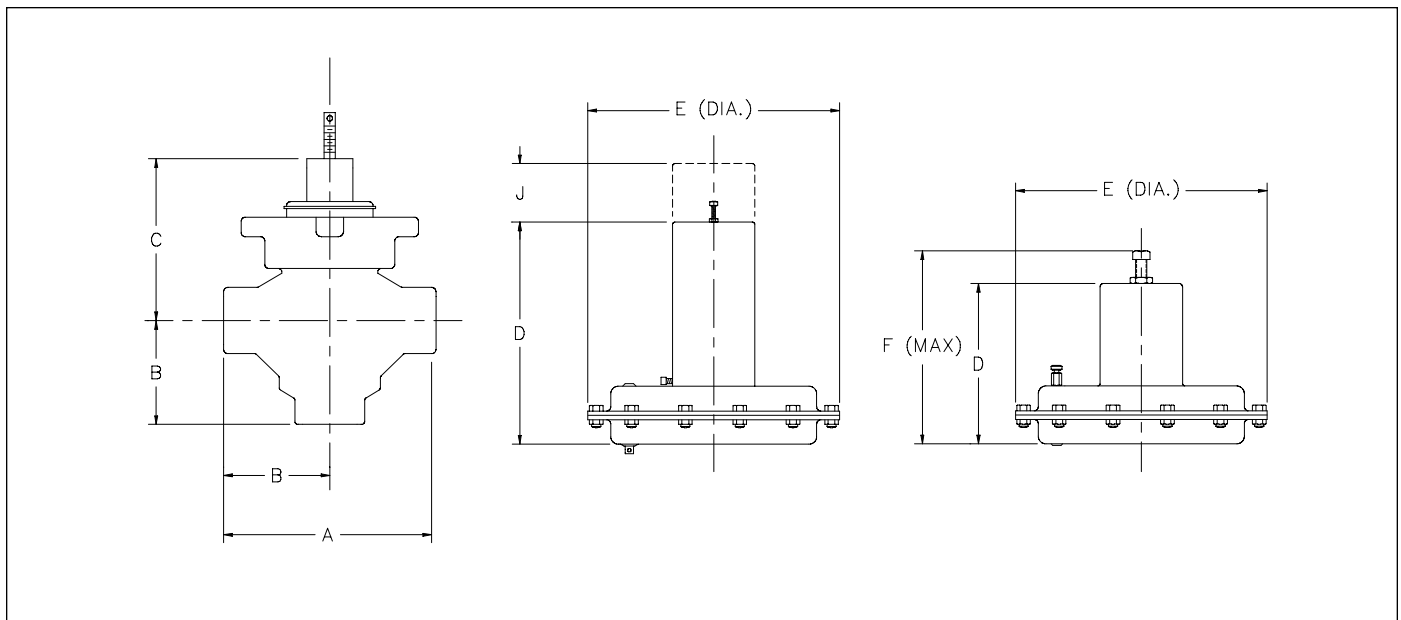
### Valve Assembly Dimensions (Inches)

End Connection Style	1" Valve Body			2" Valve Body		
	A	B	C	A	B	C
NPT	6.25	3.12	4.62	10.50	5.25	7.00
150# RF	7.25	3.62	4.62	13.00	6.50	7.00
300# RF	7.75	3.88	4.62	13.00	6.50	7.00
600# RF	8.25	4.12	4.62	15.50	7.75	7.00
600# RTJ	8.25	4.12	4.62	15.62	7.81	7.00
900# RF	9.38	4.69	4.62	15.50	7.75	7.00
900# RTJ	9.38	4.69	4.62	15.62	7.81	7.00
1500# RF	9.38	4.69	4.62	15.50	7.75	7.00
1500 RTJ	9.38	4.69	4.62	15.62	7.81	7.00

### Actuator Assembly Dimensions (Inches)

Actuator Size	Direct			Reverse		
	D	E	J <sup>1</sup>	D	E	F
Size 35	11.25	9.50	5.50	9.25	9.50	11.25
Size 70	13.75	12.50	7.00	11.50	12.50	13.50

1. Clearance required for spring cover removal.



### Model Number Information

Sample Model Number: 5300 - 2 S 5 - W 70 R B - 3 A Q

BODY SIZE		CODE
1"		1
2"		2
END CONNECTIONS		CODE
Female NPT		S
Raised Face (RF) Flange		F
Ring Type Joint (RTJ) Flange		J
Other		(special)
ANSI CLASS (PRESSURE RATING)		CODE
150 ( 275 psig @ 100°F)		1
300 ( 740 psig @ 100°F)		3
600 (1480 psig @ 100°F)		6
900 (2220 psig @ 100°F)		9
1500 (3750 psig @ 100°F)		5
FNPT Ends (4000 psig @ 200°F)		
MATERIALS OF CONSTRUCTION		CODE
WCC Steel - Standard Service		-
WCC Steel - NACE MR-01-75		N
BODY STYLE		CODE
3-Way		W
ACTUATOR SELECTION		CODE
Size 35		35
Size 70		70
ACTUATOR TYPE		CODE
Direct Acting (fails to lower port)		D
Reverse Acting (fails to upper port)		R
SEAL MATERIAL		CODE
Buna-N		B
Viton		V
TRIM MATERIAL		CODE
Solid 316 SST		3
316 SST with TFE Soft-Seat Insert		8
TRIM SIZE		CODE
Full Port		A
Reduced Port		B
3/4" x 3/8" Blow Case Trim (1" Valve only)		C
TRIM CHARACTERISTIC		CODE
Quick Opening (On/Off)		Q

While this information is presented in good faith and believed to be accurate, Mallard Control Company does not guarantee results based upon such information. Mallard Control Company reserves the right to change the design or specifications of these products without notice.

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