

MIL 41000 Heavy Duty Cage Guided Control Valves



41000 series heavy duty cage guided control valves are engineered for the most demanding applications in process industries, ranging from power generation to integrated petroleum and chemical processing plants and a host of other modern process industries. The rugged cage guiding, optional pressure balancing and a host of custom-engineered trim designs makes these valves suitable for higher pressure drops and other severe service applications, where conventionally designed Control valves fail to perform satisfactorily.

MIL 41000 SERIES

A COMPREHENSIVE RANGE OF HEAVY DUTY CAGE GUIDED CONTROL VALVES AVAILABLE WITH:

- ◆ Unbalanced Tight Shut-off construction
- ◆ Pressure Balanced Tight Shut-off construction
- ◆ Low Noise design for compressible fluids
- ◆ Anti-cavitation design for In-compressible fluids
- ◆ Multi-stage Low Noise & Anti-cavitation designs



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INTRODUCTION

Hallmarks of exceptional service requirements of control valves are four fold: high pressure drop capability, high capacity, tight shut-off and high temperature capability. 41000 series exhibits these characteristics in all valve sizes. Key design features are:

HIGHER ALLOWABLE PRESSURE DROPS

41000 series control valves provide exceptional and dependable performance over a wide range of pressure drops typical of severe services. Just as important, it handles a vast majority of all shut-off pressures with standard pneumatic spring-diaphragm actuators.

GREATER CAPACITY WITH LOW RECOVERY

Rated capacity for each 41000 series valve is at top levels established for contemporary cage guided valves. These unusually high capacities are attained with minimum pressure recovery, as indicated by the high critical flow factors, which minimises possibility of cavitation in liquid service.

TIGHT SHUT-OFF

41000 series valves can provide single-seat leak tightness of Class IV in accordance with ANSI/FCI 70.2, or the exceptional leak tightness of Class V.

WIDE TEMPERATURE RANGE

Standard 41000 series valves handle temperatures from -30°C to 566°C. Standard bonnet is designed with a moderately finned extension, so no bonnet change is necessary in this temperature range. Optional bonnet design makes 41000 series control valves suitable for operations upto -196°C.

HIGH PERFORMANCE MATERIAL IS STANDARD

Without exception, the material specified as standard for 41000 series valves have been tested and selected

to provide trouble free operation in services with high pressures and extreme temperatures. The superior trim material employed ensures durability of the valve for any severe application.

SIMPLE, HIGH PERFORMANCE TRIM DESIGN

Every valve is available with standard and reduced Cv cages. For balanced design, common plug and seat result in reduced spare parts inventory. For applications where cavitation or high noise is anticipated, standard cage is replaced with multi-hole cage. Clamped seat and cage facilitate easy trim removal and valve maintenance.

VARIETY OF SPECIALLY ENGINEERED TRIM PACKAGES

Lo-dB / Anti-Cavitation Single Stage Trim: Provides excellent noise attenuation for compressible fluids and cavitation protection for liquid service.

Lo-dB / Anti-Cavitation Multi-Stage Trim: Designed for noise control on gas or steam at high pressure drop ratios and high pressure drops for liquid service.

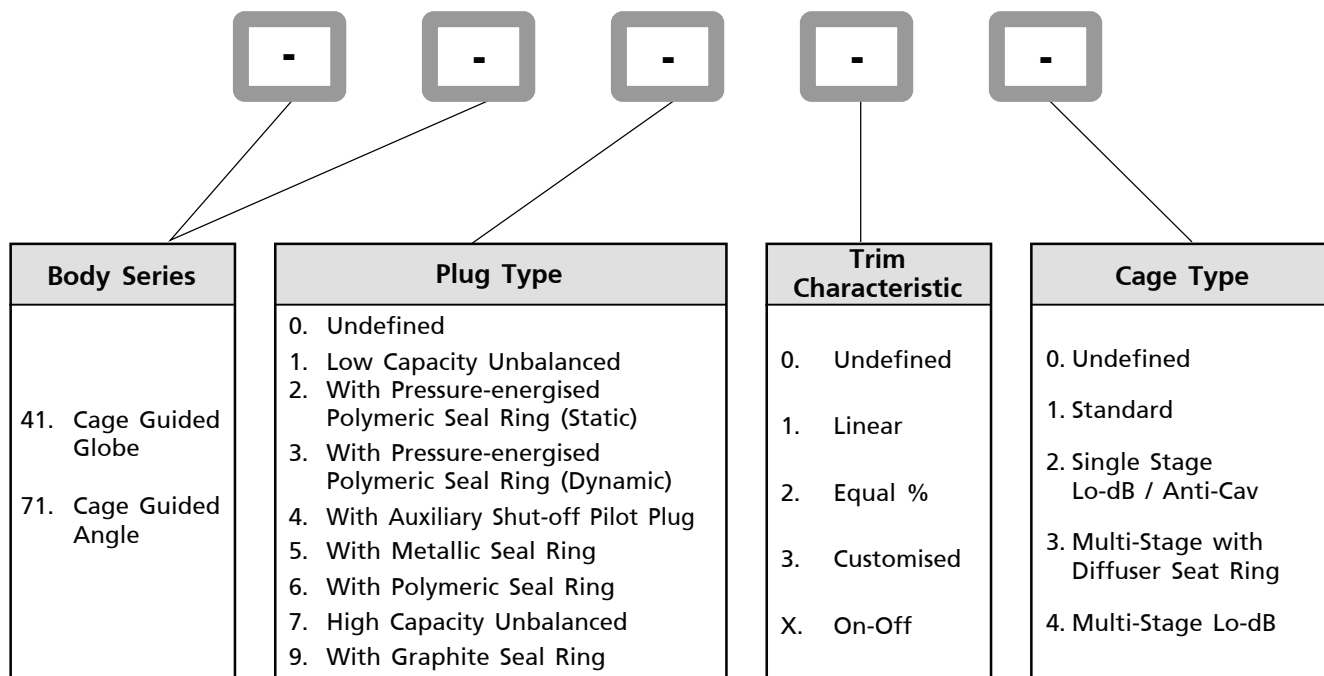
Auxiliary Shut-off Pilot Plug: Used for tight shut-off requirements, with a pilot plug closing the balancing holes in shut-off condition.

Tec Seal Ring: Tight shut off attained by arresting the leakage past the seal ring by means of a pressure energised polymeric seal ring located in the plug pressing against the walls of the cage.

Static Seal Ring: Designed for high pressure tight shut-off and continuous throttling applications. The special seal ring with a longer heel located in the cage imparts excellent dynamic stability while throttling.



NUMBERING SYSTEM



STANDARD SIZES / RATINGS

RATING (ANSI) ⁽²⁾	VALVE SIZE ⁽¹⁾ (Inch)														
	0.75, 1	1.5	2	2.5	3	4	6	8	10	12	14	16	18	20	24
150#-600#	U	U B	U B	U	U S B	U S B	U B	U B	B	B	B	B	B	B	B
900#-1500#	U	U S	U S B	U S	S B	S B	S B	B	B	B	B	-	-	-	-
2500#	U	U S	U S B	U S	S B	S B	B	B	B	B	B	-	-	-	-

U: Unbalanced - 41100/41700

B: Balanced - 41300/41400/41500/41600/41900

S: Static Seal - 41200

STANDARD END CONNECTIONS ⁽²⁾

VALVE SIZE ⁽¹⁾ (Inch)	ANSI CLASS ⁽²⁾		
	150# to 600#	900# to 1500#	2500#
0.75 to 2	F S B	F S B	F S B
2.5	F B	F B	F B
3 to 14	F B	F B	F B
16 to 24	F B	-	-

F : Flanged (RF, RTJ, T&G, FF) S : Socket Weld B : Butt Weld

⁽¹⁾ : For details refer Cv charts⁽²⁾ : DIN, JIS, BS or other ratings and end connections can usually be supplied, consult MIL.

GENERAL DATA

BODY

Type: High Capacity Globe or Angle

Standard Flow Directions:

- Unbalanced Valves (411/700): FTO ⁽³⁾ / FTC ⁽⁴⁾
- Pressure-energised Seal Rings (412/300): FTO
- Auxiliary Shut-off Pilot Plug (41400) : FTC
- Balanced Valves (415/6/900)(Liquid): FTC
- Balanced Valves (415/6/900)(Gas/Steam): FTO
- Single Stage Low Noise Valves (41002): FTO
- Single Stage Anti-Cavitation Valves (41002): FTC
- Anti-Cav / Lo-dB Valves with Diffuser(41003): FTC
- Multi-Stage LodB Valves (41004): FTO

BONNET

- 30°C to 566°C : Stud bolted with moderately finned extension
- 30°C to -100°C : Extended Bonnet (AB)
- 100°C to -196°C : Cryogenic Bonnet (CB)

GLAND PACKING

Type: With Teflon (<180° C) or Graphite (>180° C) moulded split rings.

Option: Eco-Lock Gland Sealing System.

TRIMS

CAGE: Single stage(Cylindrical Ported or Lo-dB/Anti-Cav) or Multi-Stage (Lo-dB/Anti-Cav)

Characteristic :

- Standard – Linear,Equal% or On-off
- Lo-dB/Anti-Cav – Linear, Mod. Equal% (on request)
- Special Application – Customised

PLUG: Balanced or Unbalanced

- ☐ Pressure Balanced with Spring-energised, Metallic, Polymeric or Graphite Seal Rings.
- ☐ Unbalanced without Seal Rings.

ACTUATOR

Type: MIL 37/38 Pneumatic Spring Diaphragm Actuators with optional Hand Wheels. (Ref. Page 14 to 28 for Actuator Selection)

MIL 67/68 Pneumatic Piston Cylinder Actuators with optional Hand Wheels.(For Actuator Selection, consult MIL) Options: Electrical, Hand Operated.

LEAKAGE CLASS / TEMPERATURE RANGE

MODEL	TEMPERATURE RANGE(°C) ⁽⁵⁾		VALVE SIZE (Inch)	MAXIMUM SEAT LEAKAGE CLASS (AS PER ANSI/FCI 70.2)	
	Min.	Max.		Standard	Optional ⁽⁹⁾
41100	-196	566	0.75 to 3	IV	V
41200 ⁽⁶⁾	-46	315	1.5 to 6	IV	V
41300 ⁽⁷⁾	-46	315	1.5 to 20	IV	V
41400	-196	566	3 to 20	IV	V
41500	-196	566	1.5 to 4	II	-
			6 to 20	III	
41600 ⁽⁸⁾	-30	150	1.5 to 20	IV	
41700	-27	427	0.75 to 8	IV	V
41900	-196	566	1.5 to 4	III	-
			6 to 20	IV	

Class II : 0.5% of maximum rated capacity at 50 psig to atmosphere

Class III : 0.1% of maximum rated capacity at 50 psig to atmosphere

Class IV : 0.01% of maximum rated capacity at 50 psig to atmosphere

Class V : 5 x 10⁻⁴ ml per minute of water per inch of orifice diameter per psi differential ⁽⁹⁾

⁽³⁾ : Flow to open ⁽⁴⁾ : Flow to close

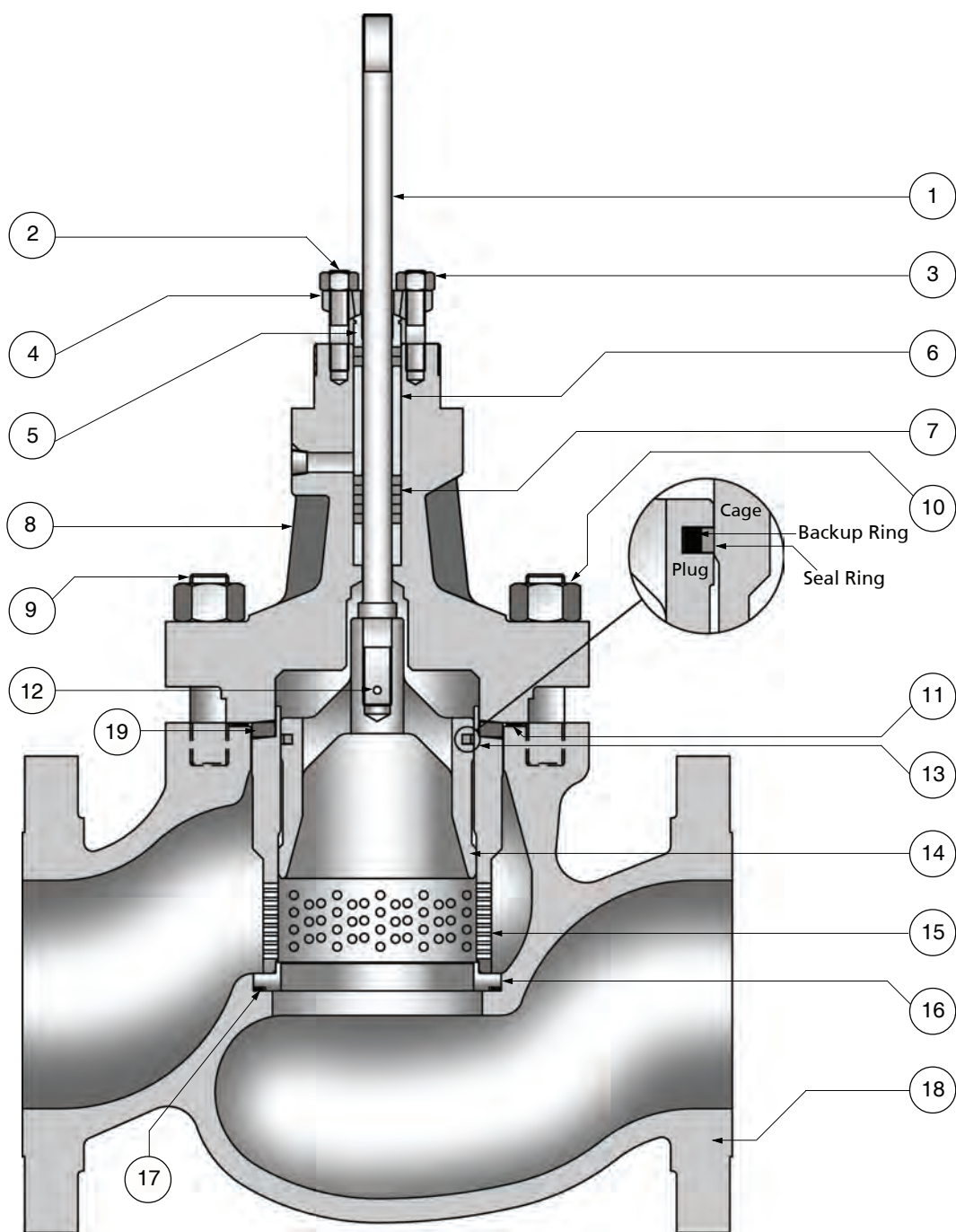
⁽⁵⁾ : Special designs available for applications outside the given temperature range, consult MIL.

⁽⁶⁾ : For 41200, max. working pressure : 400 bar

⁽⁷⁾ :For 41300, max. working pressure: 200 bar

⁽⁸⁾ : Special designs available upto 305° C, consult MIL

⁽⁹⁾ : This class is usually specified for critical applications where the control valve may be required to be closed for long periods of time with high differential pressure across the seating surfaces. Test media shall be water at the maximum operating differential pressure.



**MIL 41500 / 41600 / 41900
BALANCED CONSTRUCTION**

Typical Cage Designs

(a) Equal %

(b) Linear

(c) Lo-dB/Anti-Cav Linear



(a)



(b)



(c)

MATERIAL OF CONSTRUCTION⁽¹⁰⁾

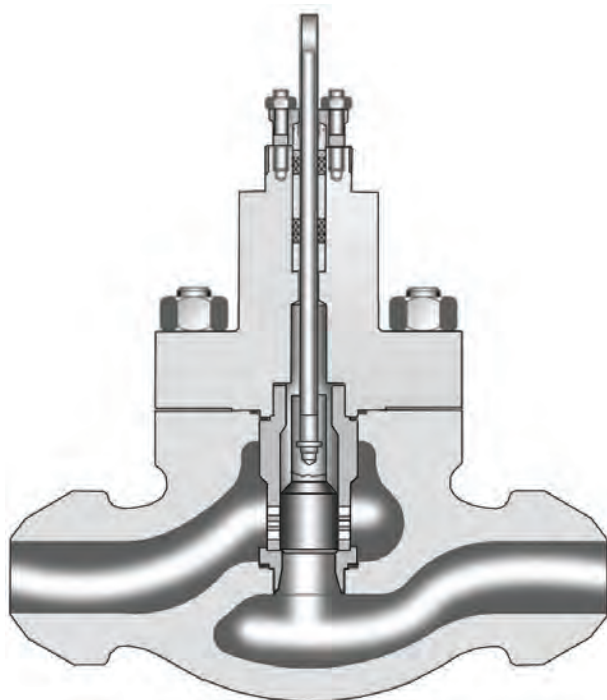
REF. NO.	PART NAME		MAX. TEMP	STANDARD MATERIAL
1	Valve Plug Stem		<343°C	17.4 PH (ASTM A 564 Gr 630, H 1075)
			>343°C	SUPER ALLOY (ASTM A 638 Gr 660)
2	Packing Flange Stud			ASTM A 193 Gr B8
3	Packing Flange Nut			ASTM A 194 Gr 8
4	Packing Flange			ASTM A 105
5	Packing Follower			ASTM A 479 Ty 304
6	Packing Spacer/Lantern Ring			ASTM A 479 Ty 304
7	Gland Packing		<180°C	PTFE
			>180°C	GRAPHITE
8, 18	Bonnet, Body		<427°C	ASTM A 216 Gr WCC
			<425°C	ASTM A 351 Gr CF3
			<455°C	ASTM A 351 Gr CF3M
			<538°C	ASTM A 351 Gr CF8/CF8M/CF8C
			<595°C ⁽¹¹⁾	ASTM A 217 Gr WC6
				ASTM A 217 Gr WC9
9	Body Stud		<650°C ⁽¹¹⁾	ASTM A 217 Gr C5/C12/C12A
			<454°C	ASTM A 193 Gr B7
			>454°C	ASTM A 193 Gr B16
10	Body Nut		>538°C	ASTM A 453 Gr 660
			<454°C	ASTM A 194 Gr 2H
			>454°C	ASTM A 194 Gr 7
11	Body Gasket		>538°C	ASTM A 194 Gr 8C
				SS 316L + Graphite (spiral wound)
12	Plug Pin			ASTM A 479 Ty 316
13	Seal Ring	41200	<315°C	Spring energised Ekonol+PTFE
		41300	<315°C	Spring energised Ekonol+PTFE
		414/500	<600°C	Ni Resist D3 (ASTM A 439 Ty D3)
		41600	<150°C	PTFE
		41900	<600°C	Graphite
14	Valve Plug		<343°C	17.4 PH (H 1075)
			>343°C	ASTM A 743 Gr CA6NM, Nitrided
15	Cage			ASTM A 743 Gr CA6NM Chrome plated or Nitrided
16	Seat Ring Diffuser Seat Ring		<343°C	SS 410
			>343°C	316 + Stellite
17	Seat Ring Gasket			SS 316L + Graphite (spiral wound)
19	Flat Spring ⁽¹²⁾		<343°C	17.4 PH (H 1075)
			>343°C	Inconel X 750
20	Pilot Plug (For MIL 41400, ref. page 9)		<343°C	ASTM A 743 Gr CA6NM+Stellite No.6, Chrome plated
			>343°C	ASTM A 743 Gr CA6NM+Stellite No.6, Nitrided
21, 22	Circlip / Pilot Spring (For MIL 41400, ref. page 9)		<343°C	Spring Steel
			>343°C	Inconel X 750

⁽¹⁰⁾ : For other material consult MIL, MIL reserves right to provide superior material, owing to constant product upgradation.

⁽¹¹⁾ : For Flanged ends, temperature upto 538°C. For temp beyond 566°C, consult MIL.
Valves with operating temperature >566°C are specially engineered. Consult MIL.

⁽¹²⁾ : Used for sizes 6" and above to account for thermal expansion

Note : Material in accordance with requirements of NACE Specifications MR0175 & MR0103 latest editions are available. Consult MIL.



**MIL 41100 CONSTRUCTION
(LOW CAPACITY, UNBALANCED)**

MIL 41100 SINGLE STAGE LOW CAPACITY UNBALANCED VALVES (LINEAR,=%, ON-OFF)

Critical Flow Factor (C_f or F_L) at full open position: 0.90

VALVE SIZE (Inch)	STROKE (Inch)	ANSI RATING	ORIFICE DIAMETER (Inch) Vs RATED Cv						
			0.375	0.5	0.625	0.812	1	1.25	1.375
0.75 & 1	0.75	150# - 2500#	1.7, 2.5	3.8	6, 8	10	-	-	-
1.5	0.75 ⁽¹³⁾	150# - 2500#	1.7, 2.5	3.8	6, 8	10	12, 16	20 ⁽¹³⁾	-
2	0.75 ⁽¹³⁾	150# - 2500#	1.7, 2.5	3.8	6, 8	10	12, 16	20 ⁽¹³⁾	25 ⁽¹³⁾ , 30 ⁽¹³⁾
2.5	0.75 ⁽¹³⁾	150# - 2500#	-	-	8	10	12, 16	20 ⁽¹³⁾	25 ⁽¹³⁾ , 30 ⁽¹³⁾
3	1.5	150# - 600#	-	-	-	-	-	-	25, 30

⁽¹³⁾ : Cv 20, 25, 30 with 1.5" stroke

Other Cv's on request

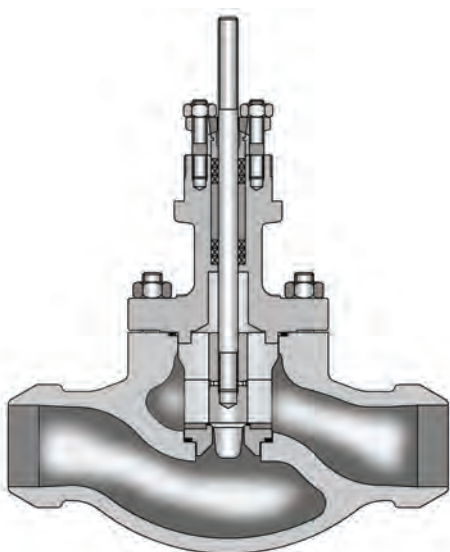
MIL 41100 SINGLE STAGE LOW CAPACITY LO-DB / ANTI-CAVITATION VALVES

Critical Flow Factor (C_f or F_L) at full open position: 0.94

VALVE SIZE (Inch)	STROKE (Inch)	ANSI RATING	ORIFICE DIAMETER (Inch) Vs RATED Cv						
			0.5	0.625	0.812	1	1.25	1.375	1.625
0.75 & 1	0.75	150# - 2500#	1.7, 2.5, 3.8	6	8	10	-	-	-
1.5	0.75 ⁽¹⁴⁾	150# - 2500#	1.7, 2.5, 3.8	6	8	10	12, 16	20 ⁽¹⁴⁾	-
2	0.75 ⁽¹⁴⁾	150# - 2500#	1.7, 2.5, 3.8	6	8	10	12, 16	20 ⁽¹⁴⁾	25 ⁽¹⁴⁾ , 30 ⁽¹⁴⁾
2.5	0.75 ⁽¹⁴⁾	150# - 2500#	-	6	8	10	12, 16	20 ⁽¹⁴⁾	25 ⁽¹⁴⁾ , 30 ⁽¹⁴⁾
3	1.5	150#-600#	-	-	-	-	-	-	25, 30

⁽¹⁴⁾: Cv 20, 25, 30 with 1.5" stroke

Other Cv's on request



**MIL 41700 CONSTRUCTION
(HIGH CAPACITY, UNBALANCED)**

MIL 41700 SINGLE STAGE HIGH CAPACITY UNBALANCED VALVES (LINEAR, =%, ON - OFF)

Critical Flow Factor (C_f or F_L) at full open position: 0.90

VALVE SIZE (Inch)	STROKE (Inch)	ANSI RATING	ORIFICE DIAMETER (Inch) Vs RATED Cv										
			0.25	0.375	0.5	0.812	1.25	1.625	2	2.625	3.5	5	6.25
0.75 & 1	0.75	150# - 600#	1.7	2.5, 3.8	6	9, 12	16 ⁽¹⁵⁾	-	-	-	-	-	-
1.5	0.75	150# - 600#	1.7	2.5, 3.8	6	10, 13	20, 25	35	-	-	-	-	-
2	0.75	150# - 600#	1.7	2.5, 3.8	6	11, 15	21, 26	46	-	-	-	-	-
3	1.5	150# - 600#	-	-	-	-	31	47	65	80, 110	-	-	-
4	1.5	150# - 600#	-	-	-	-	-	49	66	113	140, 195	-	-
6	2	150# - 600#	-	-	-	-	-	-	68	126	208	275 ⁽¹⁶⁾ , 400	-
8	2	150# - 600#	-	-	-	-	-	-	-	-	224	415	640

⁽¹⁵⁾ Cv available for 1" valve only.

⁽¹⁶⁾ Cv 275 with 4" orifice diameter

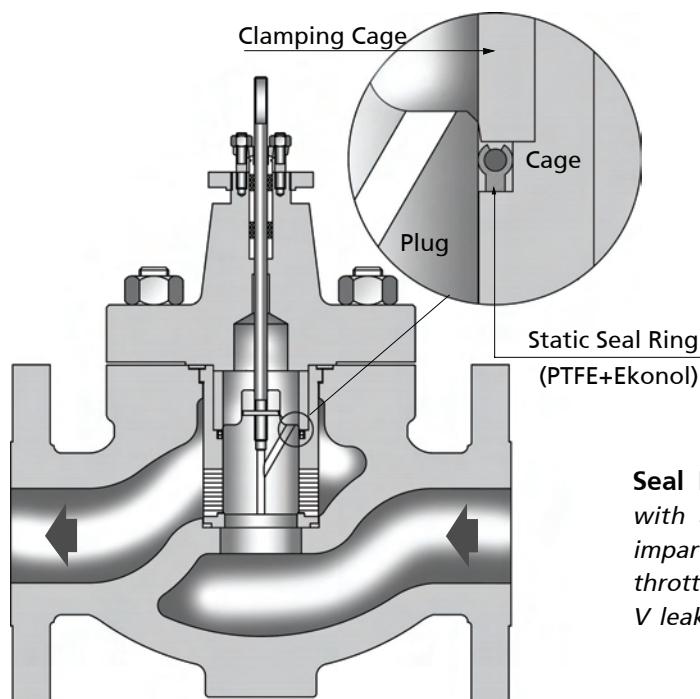
Other Cv's on request

MIL 41700 SINGLE STAGE HIGH CAPACITY LO-DB / ANTI-CAVITATION VALVES

Critical Flow Factor (C_f or F_L) at full open position: 0.94

VALVE SIZE (Inch)	STROKE (Inch)	ANSI RATING	ORIFICE DIAMETER (Inch) Vs RATED Cv						
			1.25	1.625	2	2.625	3.5	5	6.25
0.75 & 1	0.75	150# - 600#	2.5, 4, 6, 8	-	-	-	-	-	-
1.5 & 2	0.75	150# - 600#	2.5, 4, 6, 8, 15	20, 25	-	-	-	-	-
3	1.5	150# - 600#	-	-	30	40, 60, 75	-	-	-
4	1.5	150# - 600#	-	-	30	45, 65, 75	100	-	-
6	2	150# - 600#	-	-	-	-	100	200	-
8	2	150# - 600#	-	-	-	-	-	-	300, 415

Other Cv's on request

**MIL 41200 CONSTRUCTION
(TIGHT SHUT-OFF, WITH STATIC SEAL RING)**


Seal Ring(Static) : The special seal ring with a longer heel located in the cage imparts excellent dynamic stability during throttling, while proceeding FCI 70.2 Class V leak tightness in the closed position.

MIL 41200 STATIC SEAL RING VALVES (LINEAR, =%, ON-OFF)

Critical Flow Factor (C_f or F_L) at full open position: 0.90

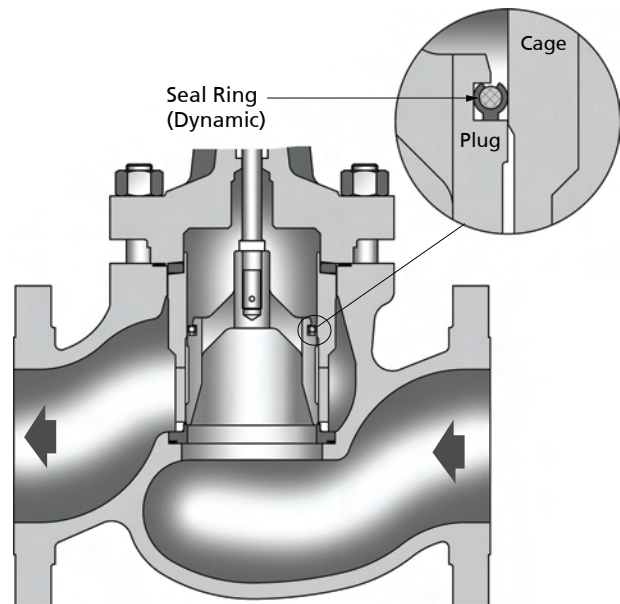
VALVE SIZE (Inch)	STROKE (Inch)	ANSI RATING	ORIFICE DIAMETER (Inch) Vs RATED Cv						
			1.25	1.375	2.68	2.28	3.62	2.75	4.93
1.5	0.75	900#-2500#	20	-	-	-	-	-	-
2	0.75	900#-1500#	-	16, 20, 25, 30, 40 ⁽¹⁷⁾	-	-	-	-	-
	1.5	2500#							
2.5	1.5	900#-2500#	-	20, 25, 30, 35, 40 ⁽¹⁷⁾ , 54 ⁽¹⁷⁾	-	-	-	-	-
3	1.5	150#-600#	-	-	30,47,65, 75 ⁽¹⁷⁾	-	-	-	-
	2		-	-	120	-	-	-	-
	1.5	900#-1500#	-	-	25, 30,47, 65, 75 ⁽¹⁷⁾	-	-	-	-
	2		-	-	95	-	-	-	-
	0.75	2500#	-	-	-	25, 50 ⁽¹⁷⁾ , 60 ⁽¹⁷⁾	-	-	-
	1.5		-	-	-	30, 75 ⁽¹⁷⁾	-	-	-
4	2	150#-600#	-	-	-	-	95,120, 140, 170	-	-
		900#-1500#	-	-	-	-	-	-	-
		2500#	-	-	-	-	-	90, 120, 140, 155 ⁽¹⁷⁾	-
6	2	900#-1500#	-	-	-	-	-	-	225

⁽¹⁷⁾ Cv applicable for On - Off Valves only

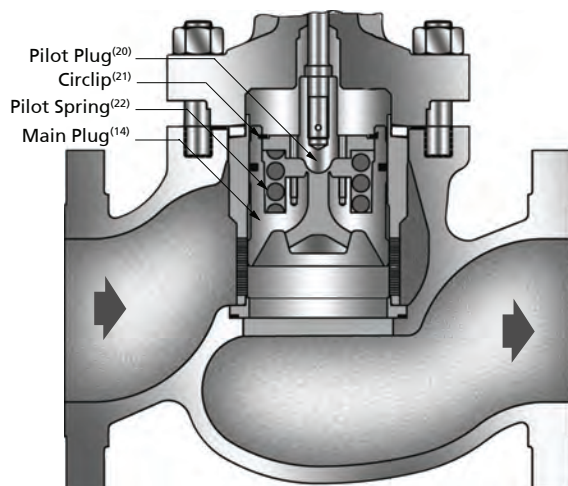
Other Cv's on request

MIL 41300 CONSTRUCTION
(TIGHT SHUT-OFF, WITH DYNAMIC SEAL RING)

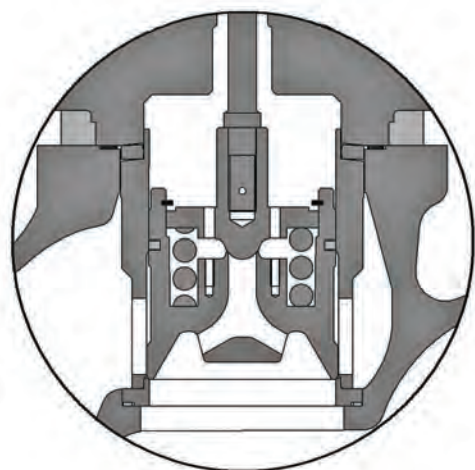
Seal Ring(Dynamic) : *Tight shut off achieved by arresting the seal ring leakage to FCI 70.2, Class-V limits, by using a special pressure energised polymeric seal ring.*



MIL 41400 CONSTRUCTION
(TIGHT SHUT-OFF, WITH AUXILIARY SHUT-OFF PILOT PLUG)



VALVE IN OPEN POSITION



VALVE IN CLOSED POSITION

Auxiliary Shut-off Pilot Plug: *Used for applications, where tight shut-off is required in high temperature service, beyond capabilities of seal rings. The pilot plug closes the balancing holes in shut-off condition. No 'Soft' Parts are used for sealing and FCI 70.2, Class V tight shut-off can be ensured even beyond 566 deg C.*

MIL 41300/41400/41500/41600/41900 SINGLE STAGE VALVES

Critical Flow Factor (C_v or F_L) for Linear / Equal % at full open position: 0.90Critical Flow Factor (C_v or F_L) for Lo-dB/Anti-cav at full open position: 0.94

VALVE SIZE (Inch)			ORIFICE DIAMETER (Inch)	STROKE (Inch)	STANDARD RATED Cv's		
150#-600#	900#-1500#	2500#			Linear / On - Off	Equal %	Lo-dB / Anti-Cav
1.5	2	-	1.84	0.75	12,16,30,40	14,35	8,12,16,25,30
-	-	2	1.84	1.5	12,16,40	14,35	12,25,30
2	-	-	2.5	1.5	26,30,65	16,26,35,50,65	15,25,50,65
3x2	-	-	2.5	1.5	26,30,75	16,26,35,50,65	15,25,50,65
-	-	3	2.5	1.5	26,30,65	16,26,35,50,65	15,25,50,65
-	3	-	3.25	2	30, 45, 60,75,95,130	35,56,90,110,120	30,45,95,120
3	-	-	3.25	2	30, 45, 60,75,95,140	35,56,90,110,140	30,45,95,120
4x3	4x3	-	3.25	2	30, 45, 60,75,95,155	35,56,90,110,140	30,45,95,120
-	-	4	3.25	2	30, 45, 60,75,95,155	35,56,90,110,140	30,45,95,120
-	6x3	6x4	3.25	2	30, 45, 60,75,95,155,190	35,56,90,110,140	30,45,95,120
-	4	-	4.375	2	95, 160, 205	45, 90,140,170	45,70,95,120,145,180
4	-	-	4.375	2	30, 45, 60, 95, 160, 205	45, 90,140,170,225	45,70,95,120,145,195
6x4	6x4	-	4.375	2	95,160,205,240	45, 90,140,170,225	45,70,95,120,145,195
-	-	6	4.475	2.5	205, 240 260 ⁽¹⁸⁾	170,225	145,195
-	6	-	5.125	2	160, 205, 300, 250,360	144,255,300,360	130, 145
-	-	-	5.125	2.5	-	-	105, 210, 255, 300
6	-	-	5.125	2	160, 205, 300, 350, 400	144,255,300,360	130,145
-	-	-	5.125	2.5	-	400	105, 210, 255, 300
-	-	8	6.5	2	160, 204, 300, 350, 400	144,255,360	130,145
-	-	-	6.5	2.5	425	300, 400, 425	105, 210, 255, 300
-	8	-	6.5	2.5	260, 380, 500,575	230,300,400	105,210,255,300
-	-	-	6.5	3	-	575	155, 175, 315, 400,450
8	-	-	6.5	2.5	260,380,500,640	230,300,400	105,210,255,300
-	-	-	6.5	3	-	575,640	155,175,315,400,500
10x8	-	-	6.5	2.5	260,380,500,640	230,300,400	105,210,255,300
-	-	-	6.5	3	-	575,640	155,175,315,400,500
-	-	12x8	6.5	2.5	260,380,500,640	230,300,400	105,210,255,300
-	-	-	6.5	3	-	575,640	155,175,315,400,500
-	-	10	6.9	3	400,750	360,650	300,650
-	-	-	6.9	3.5	-	750	250,500,750
-	10	-	8	3	400,750	360,650	300,650
-	-	-	8	3.5	900	800,900	250, 500, 750, 900
10	-	-	8	3	400,750	360,650	250,300, 500, 650
-	-	-	8	3.5	900, 1000	800, 900, 1000	750, 1000
-	-	12x10	6.9	3	400,750	360,650	300,650
-	-	-	6.9	3.5	-	750	250,500,750
-	-	14x10	8	3	400,750	360,650,900	250, 500, 650
-	-	-	8	3.5	900, 1000	800, 1000	750, 1000
-	-	12	8	3.5	860	820	820
-	12	-	9.75	4	700, 1050, 1260	500, 750, 900, 1150	580, 725, 1100, 1260
12	-	-	9.75	4	700, 1050, 1400	500, 750, 900, 1250	580, 725, 1100, 1400
-	-	14	9.75	4	1100	1000	1050
-	14	-	12	4	1950	1760	1600
14	-	-	12	4	1600, 2150	1600, 1960	725, 1400, 1800
16	-	-	13	4	2500	2250	725, 1100, 1800, 2000, 2200
18	-	-	13	4	2500, 2750	2450	1800, 2200
20	-	-	17	4	2500, 3100	1960, 2750	2100, 2500, 3000
24	-	-	22	8	5700	5300	5300

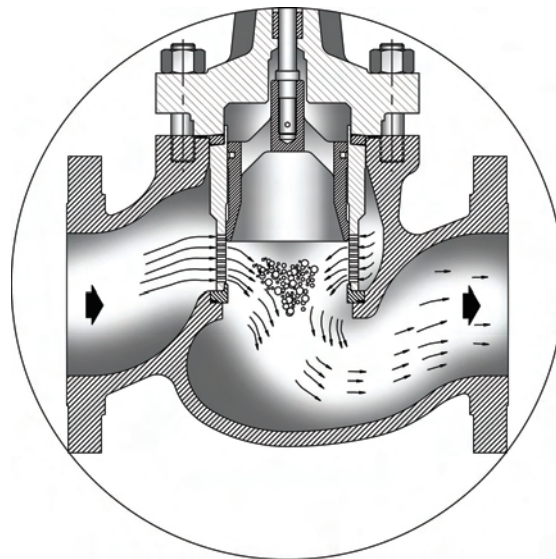
⁽¹⁸⁾ Cv applicable for On - Off Valves only

Other Cv's on request



ANTI-CAVITATION DESIGN PRINCIPLES

ILLUSTRATION OF WORKING PRINCIPLE OF MIL 41002 SINGLE STAGE ANTI-CAVITATION VALVES

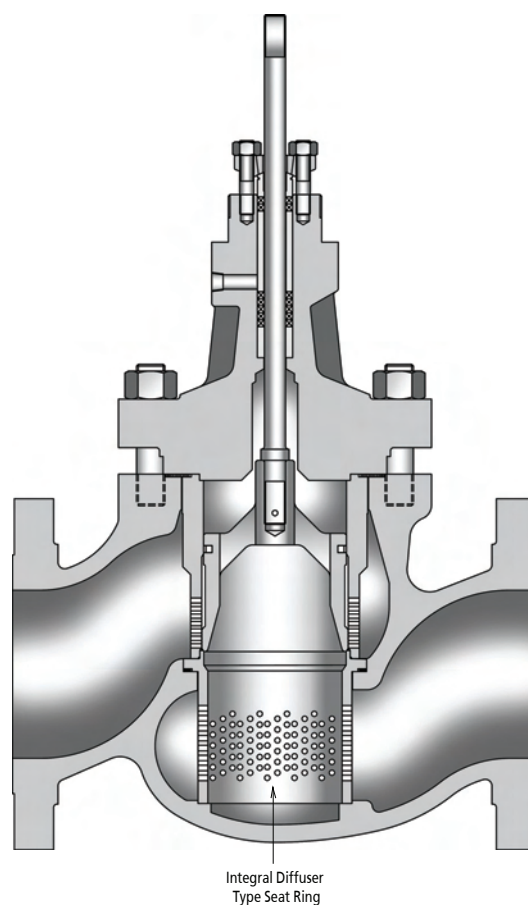


MIL 41003 - MULTI STAGE Lo-dB / ANTI-CAVITATION VALVES WITH DIFFUSER SEAT

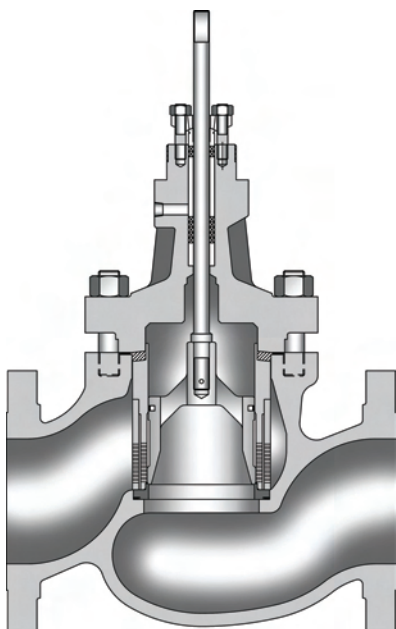
Critical Flow Factor (C_f or F_c) at full open position: 0.95

VALVE SIZE (Inch)	ANSI RATING	STROKE (Inch)	STANDARD RATED Cv's
3	150#-600#	2	35,45,65, 75
	900#-1500#	2	35, 45, 65,75,100
4	150#-600#	2	30, 42,55, 70, 85, 100,120
	900#-1500#	2	30, 42, 45, 55, 65, 70, 100, 120
	2500#	2	45,60,75,90
4x3	150#-600#	2	45
	900#-1500#	2	42,95
6	150#-1500#	2	55, 95, 145, 195
	2500#	2	95
		2.5	120
6x4	150#-1500#	2	45, 75
	2500#	2	45,65
		2.5	120
8	150#-600#	3	155, 195, 290
	900#-1500#	2.5	155, 195,300
	2500#	2.5	155
		3	215, 300
10	150#-600#	3.5	250, 430, 500
	900#-1500#	3	250, 430, 500
10x8	900#-1500#	3	400
12	150#-600#	4	650, 725
20	150#-600#	4	2000

Other Cv's on request



Lo-dB / Anti-Cavitation Multi-Stage Trim with Diffuser: Designed to provide additional noise and cavitation attenuation properties in Flow-to-Close Applications.



MIL 41004 CONSTRUCTION (MULTI-STAGE LOW NOISE VALVES)

Multi-Stage Lo-dB Trim: Designed to provide noise attenuation for gas or steam applications at high pressure drop ratios.

MIL 41104 UNBALANCED MULTI-STAGE Lo-dB VALVES

Critical Flow Factor (C_f or F_L) at full open position: 0.95

VALVE SIZE (Inch)	STROKE (Inch)	ANSI RATING	ORIFICE DIAMETER (Inch) Vs RATED Cv					
			0.625	0.812	1	1.25	1.375	1.625
1.5	1.5	900# - 2500#	2 ⁽¹⁹⁾ , 3.8 ⁽¹⁹⁾ , 6 ⁽¹⁹⁾	8 ⁽¹⁹⁾	10	12, 16	20	-
2.0	1.5	900# - 2500#	2 ⁽¹⁹⁾ , 3.8 ⁽¹⁹⁾ , 6 ⁽¹⁹⁾	8 ⁽¹⁹⁾	10	12, 16	20	25
2.5	1.5	900# - 2500#	-	8 ⁽¹⁹⁾	10	12, 16	20	25
3.0	1.5	900# - 2500#	-	-	10	16	20	25, 30

⁽¹⁹⁾: Cv 2, 3.8, 6, 8 with 0.75" stroke

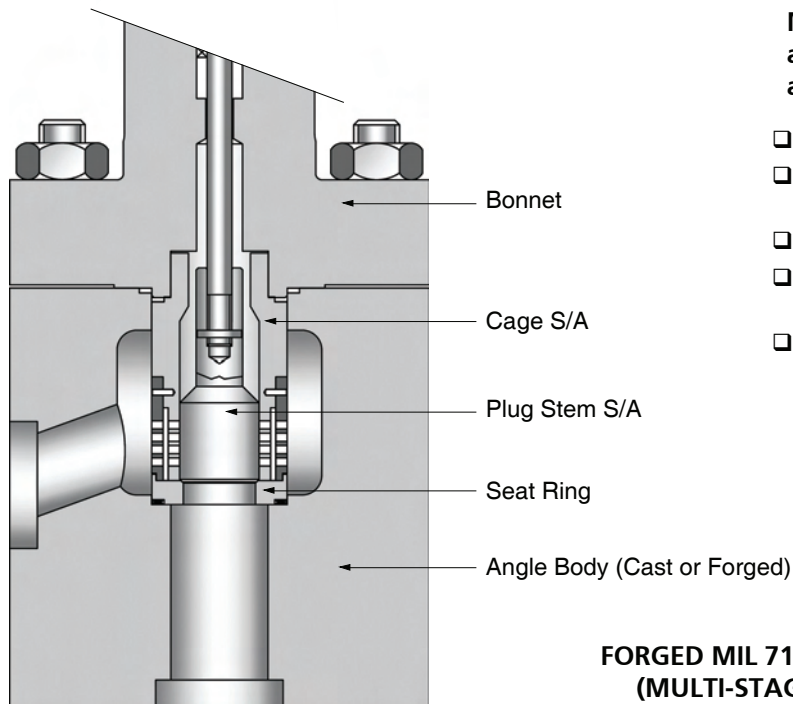
Other Cv's on request

MIL 41004 BALANCED MULTI-STAGE Lo-dB VALVES

Critical Flow Factor (C_f or F_L) at full open position: 0.95

VALVE SIZE* (Inch)	ANSI RATING	ORIFICE DIAMETER (Inch)	STROKE (Inch)	STANDARD RATED Cv's
2	150#-1500#	2.5	1.5	12, 16
3	150#-1500#	3.25	2	12, 16, 20, 70
4	150#-1500#	4.375	2	25, 45, 95, 105
	2500#	3.25	2	45, 80
6	150#-1500#	5.125	2	105
	2500#	4.375	2.5	120, 160
8	150#-1500#	6.46	2.5	210
			3	290
10	150#-1500#	8	3	300, 375, 500
12	150#-1500#	9.75	4	520, 625
14	150#-1500#	12	4	720

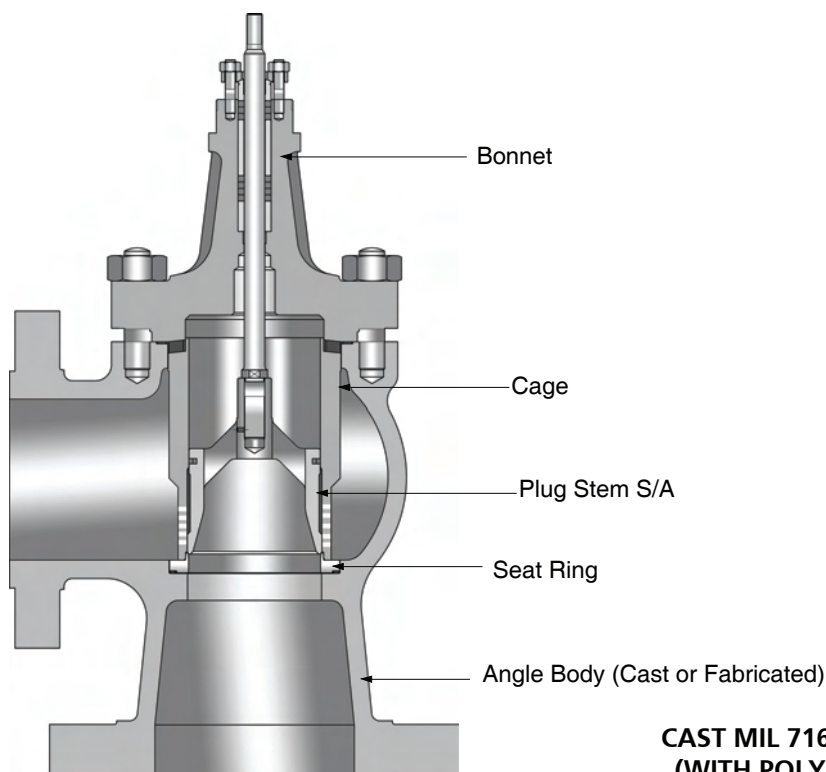
Other Cv's on request



MIL 71000 Angle Body valves are tailored for following applications..

- ☐ Hydrocarbons to Flare
- ☐ Gas Gathering and Metering Stations
- ☐ Compressor Recycle
- ☐ Compressor Bypass or Anti-surge
- ☐ Any other applications where piping configuration require an Angle Body.

**FORGED MIL 71104 CONSTRUCTION
(MULTI-STAGE ANGLE VALVE)**



**CAST MIL 71600 CONSTRUCTION
(WITH POLYMERIC SEAL RING)**

Note: MIL 71000 being a custom engineered control valve, the data furnished here is representative rather than inclusive of complete product offering. MIL can specifically design 71000 series to meet any specific application requirements with all possible combinations of Inlet and Outlet sizes. For compressible fluids, generally angle valves have expanding outlets. The trim variants available in 41000 series described hitherto can be provided for 71000 series also.

MIL 41100 - Actuator Selection

MIL 41100, FLOW TO OPEN - 37 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)	
					IV	V
0.375	0.75	11	3-15	35	280	280
0.5	0.75	13	3-15	35	280	280
		11	3-15	35	280	250
		11	6-30	55	-	280
		13	3-15	35	280	280
0.625	0.75	11	3-15	35	205	145
		11	6-30	55	280	221
		13	3-15	35	-	245
		13	6-30	55	-	280
		13	3-15	35	280	228
		13	6-30	55	-	280
0.812	0.75	11	3-15	35	115	70
		11	6-30	55	166	120
		13	3-15	35	180	130
		13	6-30	55	249	202
		15	3-15	35	268	222
		15	6-30	55	280	280
1	0.75	11	3-15	35	75	40
		11	6-30	55	108	70
		13	3-15	35	115	80
		13	6-30	55	163	124
		15	3-15	35	176	138
		15	6-30	55	240	202
		18	3-15	35	280	264
		18	6-30	55	-	280
	1.5	13	3-15	35	110	70
		13	6-30	55	153	108
		15	3-15	35	165	120
		15	6-30	55	228	185
		18	3-15	35	280	240
		18	6-30	55	-	280
1.25	0.75	11	3-15	35	47	17
		11	6-30	55	68	38
		13	3-15	35	74	44
		13	6-30	55	102	73
		15	3-15	35	111	81
		15	6-30	55	152	122
		18	3-15	35	192	162
		18	6-30	55	260	230
	1.5	13	3-15	35	68	36
		13	6-30	55	95	62
		15	3-15	35	105	70
		15	6-30	55	142	110
		18	3-15	35	180	145
		18	6-30	55	245	205
1.375	0.75	11	3-15	35	38	11
		11	6-30	55	56	28
		13	3-15	35	60	33
		13	6-30	55	84	57
		15	3-15	35	91	64
		15	6-30	55	125	98
		18	3-15	35	158	130
		18	6-30	55	214	187
	1.5	13	3-15	35	56	25
		13	6-30	55	78	48
		15	3-15	35	85	55
		15	6-30	55	118	88
		18	3-15	35	148	115
		18	6-30	55	200	170



MIL 41100, FLOW TO OPEN - 37 SERIESContinued

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)	
					IV	V
1.625	0.75	11	3-15	35	27	10
		11	6-30	55	39	16
		13	3-15	35	43	19
		13	6-30	55	60	36
		15	3-15	35	65	41
		15	6-30	55	89	65
		18	3-15	35	112	88
		18	6-30	55	150	128
	1.5	13	3-15	35	40	16
		13	6-30	55	55	30
		15	3-15	35	60	36
		15	6-30	55	84	60
		18	3-15	35	105	80
		18	6-30	55	140	118

MIL 41100, FLOW TO OPEN - 38 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)	
					IV	V
0.375	0.75	11	6-30	35	144	62
		11	15-35	40	280	280
0.5	0.75	11	6-30	35	85	22
		11	15-35	40	280	280
0.625	0.75	11	6-30	35	55	4
		11	15-35	40	240	180
		13	19-31	40	280	280
0.812	0.75	11	6-30	35	25	-
		11	15-35	40	140	92
		13	6-30	35	36	4
		13	19-31	40	260	221
		15	21-30	35	280	280
1	0.75	11	6-30	35	22	-
		11	15-35	40	90	55
		13	6-30	35	36	4
		13	19-31	40	180	135
		15	21-30	35	280	255
	1.5	15	24-32	40	-	280
		13	12-31	40	85	50
		15	6-30	35	60	28
		15	14-31	40	160	130
		18	6-30	35	105	70
1.25	0.75	18	20-30	35	280	280
		11	15-35	40	55	26
		13	6-30	35	24	-
		13	19-31	40	114	83
		15	6-30	35	40	12
		15	21-30	35	200	155
		15	24-32	40	230	195
		18	18-30	35	260	225

MIL 41100 - Actuator Selection

MIL 41100, FLOW TO OPEN - 38 SERIESContinued

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)	
					IV	V
1.25	1.5	13	12-31	40	62	23
		15	6-30	35	40	12
		15	14-31	40	120	85
		18	6-30	35	70	42
		18	20-30	35	280	245
1.375	0.75	11	15-35	40	45	18
		13	6-30	35	18	-
		13	19-31	40	92	62
		15	6-30	35	32	8
		15	21-30	35	160	130
		15	24-32	40	185	152
		18	6-30	35	55	30
		18	18-30	35	221	186
	1.5	13	12-31	40	50	20
		15	6-30	35	32	8
		15	14-31	40	100	64
		18	6-30	35	32	8
		18	20-30	35	240	200
		18	20-30	35	240	200
1.625	0.75	11	15-35	40	32	9
		13	19-31	40	66	40
		15	6-30	35	24	2.5
		15	21-30	35	115	90
		15	24-32	40	135	108
		18	6-30	35	42	20
		18	18-30	35	158	130
	1.5	13	12-31	40	38	11
		15	14-31	40	75	45
		18	6-30	35	42	20
		18	20-30	35	175	140
		18	20-30	35	175	140
		18	20-30	35	175	140

MIL 41100, FLOW TO CLOSE - 37/38 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)		SHUT-OFF PRESSURE (Kg/cm ²)	
				38 SERIES	37 SERIES	IV	V
0.375	0.75	11	6-30	35	45	280	280
0.5	0.75	11	6-30	35	45	280	280
0.625	0.75	11	6-30	35	45	280	280
0.812	0.75	11	6-30	35	45	215	170
		13	6-30	35	45	280	270
		15	6-30	35	45	-	280
1	0.75	11	6-30	35	45	140	100
		13	6-30	35	45	210	170
		15	6-30	35	45	280	275
	1.5	13	6-30	35	45	200	100
		15	6-30	35	45	280	170
		18	6-30	35	45	-	275
1.25	0.75	11	6-30	35	45	90	55
		13	6-30	35	45	130	95
		15	6-30	35	45	200	165
		18	6-30	35	45	280	280



MIL 41100, FLOW TO CLOSE - 37/38 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)		SHUT-OFF PRESSURE (Kg/cm ²)	
				38 SERIES	37 SERIES	IV	V
1.25	1.5	13	6-30	35	45	125	92
		15	6-30	35	45	195	160
		18	6-30	35	45	280	280
1.375	0.75	11	6-30	35	45	75	40
		13	6-30	35	45	110	72
		15	6-30	35	45	170	135
		18	6-30	35	45	275	240
	1.5	13	6-30	35	45	100	75
		15	6-30	35	45	165	130
		18	6-30	35	45	265	235
1.625	0.75	11	6-30	35	45	53	25
		13	6-30	35	45	78	50
		15	6-30	35	45	120	90
		18	6-30	35	45	195	170
	1.5	13	6-30	35	45	75	50
		15	6-30	35	45	115	90
		18	6-30	35	45	180	160

MIL 41700, FLOW TO OPEN - 37 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)	
				IV	V
0.25	0.75	11	20	100	100
0.375	0.75	11	20	100	17
			30	100	100
0.5	0.75	11	20	62	-
			30	100	100
0.812	0.75	11	20	20	-
			30	72	26
			40	100	100
		13	20	39	-
			30	100	67
			40	100	100
1.25	0.75	11	20	7	-
			30	29	-
			40	69	38
		13	20	14	-
			30	46	16
			40	100	73
	1.5	13	45	100	100
			20	13	-
			30	43	13
		15	40	97	67
			45	100	94
			20	24	-
		15	30	67	36
			40	100	100

37 series actuators are with 3-15 psig spring ranges

MIL 41700, FLOW TO OPEN - 37 SERIESContinued

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm²)	
				IV	V
1.625	0.75	11	20	3	-
			30	16	-
			40	40	16
		13	20	8	-
			30	26	3
			40	60	37
			45	77	54
	1.5	13	20	7	-
			30	24	-
			40	56	33
			45	72	49
		15	20	13	-
			30	38	15
			40	85	61
			45	100	84
2	1.5	13	20	4	-
			30	15	-
			40	37	18
			45	47	28
		15	20	8	-
			30	25	6
			40	55	36
			45	70	52
	2	15	20	6	-
			30	22	3
			40	52	33
			45	67	48
		18	20	14	-
			30	42	23
			40	92	73
			45	100	98
			55	100	100
2.625	1.5	13	30	8	-
			40	21	6
			45	27	12
		15	20	4	-
			30	14	-
			40	31	17
			45	40	26
			18	20	9
		30		25	11
		40		54	40
		45		69	54
		55		98	84
		65		100	100
		2	15	20	3
	30			12	-
	40			30	15
	45			38	24

37 series actuators are with 3-15 psig spring ranges



MIL 41700, FLOW TO OPEN - 37 SERIESContinued

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)	
				IV	V
2.625	2	18	20	8	-
			30	24	9
			40	53	38
			45	67	53
			55	96	82
			65	100	100
3.5	1.5	13	30	4	-
			40	11	-
			45	15	4
		15	30	7	-
			40	17	6
			45	22	11
		18	20	5	-
			30	14	3
			40	30	19
			45	38	27
			55	55	44
			65	71	60
	2	15	30	6	-
			40	16	5
			45	21	10
		18	20	4	-
			30	13	-
			40	29	18
			45	37	27
			55	54	43
4 & 5	2	15	65	70	59
			30	3	-
			40	7	-
		18	45	10	-
			30	6	-
			40	14	6
			45	18	10
			55	26	18
			65	34	26
		24	20	3	-
			30	9	-
			40	20	13
6.25	2	18	45	26	18
			55	37	30
			30	4	-
			40	9	3
			45	11	5
			55	16	10
			65	21	15
		24	30	6	-
			40	13	7
			45	16	10
			55	24	18

37 series actuators are with 3-15 psig spring ranges

MIL 41700 - Actuator Selection

MIL 41700, FLOW TO OPEN - 38 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	SHUT-OFF PRESSURE (Kg/cm ²)		SPRING RANGE (psig)	SHUT-OFF PRESSURE (Kg/cm ²)		SPRING RANGE (psig)	SHUT-OFF PRESSURE (Kg/cm ²)	
				IV	V		IV	V		IV	V
0.25	0.75	11	3-15	100	30	6-30	100	100	11-30	100	100
0.375	0.75	11	3-15	74	-	6-30	100	100	11-30	100	100
0.5	0.75	11	3-15	38	-	6-30	100	51	11-30	100	100
0.812	0.75	11	3-15	11	-	6-30	45	-	11-30	100	54
		13	3-15	25	-	6-30	72	25	19-31	100	100
1.25	0.75	11	3-15	3	-	6-30	17	-	11-30	40	10
		13	3-15	8	-	6-30	28	-	19-31	100	84
	1.5	13	3-15	8	-	6-30	28	-	12-31	68	38
		15	3-15	19	-	6-30	49	19	14-31	100	100
1.625	0.75	11	3-15	-	-	6-30	9	-	11-30	23	-
		13	3-15	4	-	12-30	39	16	19-31	66	43
	1.5	13	3-15	4	-	6-30	16	-	12-31	39	16
		15	3-15	10	-	6-30	28	5	14-31	76	53
2	1.5	13	3-15	-	-	6-30	10	-	12-31	25	6
		15	3-15	6	-	6-30	18	-	14-31	49	31
	2	15	3-15	4	-	6-30	16	-	10-31	31	13
		18	6-30	29	10	18-30	100	83	20-45	100	95
2.625	1.5	13	3-15	-	-	6-30	5	-	12-31	14	-
		15	3-15	3	-	6-30	10	-	14-31	28	14
		18	6-30	17	3	12-30	38	24	20-30	67	52
	2	15	3-15	-	-	6-30	8	-	10-31	18	3
		18	6-30	16	-	18-30	58	44	20-45	65	51
3.5	1.5	13	3-15	-	-	6-30	-	-	12-31	7	-
		15	6-30	5	-	12-30	13	-	14-31	15	4
		18	6-30	9	-	12-30	21	10	20-30	37	26
	2	15	3-15	-	-	6-30	4	-	10-31	9	-
		18	6-30	8	-	18-30	32	22	20-45	36	26
4 & 5	2	15	3-15	-	-	6-30	-	-	10-31	4	-
		18	6-30	4	-	18-30	15	8	20-45	17	10
		24	12-30	14	6	18-30	22	14	24-40	30	22
6.25	2	18	12-30	6	-	18-30	10	4	20-45	11	5
		24	12-30	9	3	18-30	14	8	24-40	19	13

To get the required supply pressure, add 5 psig to the final spring tension



MIL 41700, FLOW TO CLOSE - 37/38 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

ORIFICE DIAMETER (Inch)	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY 37 SERIES (psig)	AIR SUPPLY 38 SERIES (psig)	SHUT-OFF PRESSURE (Kg/cm ²)	
						IV	V
0.25	0.75	11	6-30	45	35	280	280
0.375	0.75	11	6-30	45	35	280	280
0.5	0.75	11	6-30	45	35	280	280
0.812	0.75	11	6-30	45	35	200	155
		13	6-30	45	35	280	270
1.25	0.75	11	6-30	45	35	85	55
		13	6-30	45	35	130	95
		15	6-30	45	35	195	165
	1.5	13	6-30	45	35	125	95
		15	6-30	45	35	190	160
		18	6-30	45	35	280	280
1.625	0.75	11	6-30	45	35	50	25
		13	6-30	45	35	75	48
		15	6-30	45	35	115	85
	1.5	13	6-30	45	35	75	48
		15	6-30	45	35	110	80
		18	6-30	45	35	185	160
2	1.5	13	6-30	45	35	45	25
		15	6-30	45	35	70	50
		18	6-30	45	35	120	100
	2	15	6-30	45	35	70	50
		18	6-30	45	35	120	100
2.625	1.5	13	6-30	45	35	25	12
		15	6-30	45	35	42	27
		18	6-30	45	35	70	55
	2	15	6-30	45	35	40	26
		18	6-30	45	35	70	55
3.5	1.5	13	6-30	45	35	15	4
		15	6-30	45	35	24	13
		18	6-30	45	35	40	28
	2	15	6-30	45	35	23	12
		18	6-30	45	35	38	27
4 & 5	2	15	6-30	45	35	11	3
		18	6-30	45	35	18	11
6.25	2	15	6-30	45	35	6	-
		18	6-30	45	35	11	5

MIL 41200, FLOW TO OPEN - 37 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

VALVE SIZE (Inch)	ANSI RATING	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)
1.5	900#-2500#	0.75	11	3-15	35	55
			11	6-30	55	125
			13	3-15	35	145
			13	6-30	55	240
2	900#-1500#	0.75	11	3-15	35	55
			11	6-30	55	130
			13	3-15	35	160
			13	6-30	55	240
	2500#	1.5	13	3-15	35	160
			13	6-30	55	280
2.5	900#-2500#	1.5	13	3-15	35	115
			13	6-30	55	205
			15	3-15	35	235
			15	6-30	55	280
3	150#-600#	1.5	13	6-30	55	65
			15	3-15	35	92
			15	6-30	55	205
			18	3-15	35	280
		2	15	3-15	35	85
			15	3-15	35	195
			18	3-15	35	280
			18	3-15	35	280
	900#-1500#	1.5	13	6-30	55	65
			15	3-15	35	92
			15	6-30	55	205
			18	3-15	35	280
		2	15	3-15	35	85
			15	3-15	35	195
			18	3-15	35	280
			18	3-15	35	280
	2500#	0.75	11	6-30	55	15
			13	3-15	35	30
			13	6-30	55	95
			15	3-15	35	112
			15	6-30	55	205
		1.5	13	3-15	35	18
			13	6-30	55	80
			15	3-15	35	100
			15	6-30	55	180
			18	3-15	35	260
			18	3-15	35	260
4	150#-600#	2	15	6-30	55	105
			18	3-15	35	200
			18	6-30	55	280
	900#-1500#	2	15	6-30	55	105
			18	3-15	35	200
			18	6-30	55	280
	2500#	2	15	3-15	35	60

MIL 41200, FLOW TO OPEN - 37 SERIES.....Continued

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

VALVE SIZE (Inch)	ANSI RATING	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)
4	2500#	2	15	6-30	55	145
			18	3-15	35	225
			18	6-30	55	280
6	900#-1500#	2	18	3-15	35	75
			18	6-30	55	185
			24	3-15	35	220
			24	6-30	55	280

MIL 41200, FLOW TO OPEN - 38 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

VALVE SIZE (Inch)	ANSI RATING	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE (psig)	AIR SUPPLY (psig)	SHUT-OFF PRESSURE (Kg/cm ²)
1.5	900#-2500#	0.75	11	15-35	40	75
			13	19-31	40	280
2	900#-1500#	0.75	11	15-35	40	80
			13	19-31	40	280
	2500#	1.5	13	12-31	40	140
2.5	900#-2500#	1.5	13	12-31	40	100
			15	14-31	40	265
3	150#-600#	1.5	15	14-31	40	100
			18	9-30	35	120
			18	20-30	35	280
		2	15	10-31	40	40
			18	9-30	35	120
			18	20-45	55	280
	900#-1500#	1.5	15	14-31	40	120
			18	20-30	35	280
		2	15	10-31	40	40
			18	9-30	35	120
			18	20-45	55	280
			18	20-45	55	280
	2500#	0.75	13	19-31	40	115
			15	24-32	40	240
		1.5	13	12-31	40	12
			15	14-31	40	120
			18	20-30	35	280
			18	20-30	35	280
4	150#-600#	2	18	9-30	35	60
			18	20-45	55	280
			18	9-30	35	60
			18	20-45	55	280
	900#-1500#	2	18	9-30	35	60
			18	20-45	55	280
			15	10-31	40	25
			18	9-30	35	90
	2500#	2	18	20-45	55	280
			18	20-45	55	280
6	900#-1500#	2	18	20-45	55	280

MIL 41300, FLOW TO OPEN - 37/38 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

VALVE SIZE (Inch)	STROKE (Inch)	ACTUATOR SIZE	37 SERIES			38 SERIES		
150# - 600#			SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)	SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)
1.5	0.75	11	3-15	30	14	-	-	-
		11	3-15	40	51	11-30	35	7
		13	-	-	-	16-30	35	71
		13	3-15	40	92	19-31	35	94
		15	3-15	40	100	18-30	35	100
2, 3*2	1.5	13	3-15	30	17	-	-	-
		13	3-15	40	59	12-31	35	19
		15	-	-	-	11-30	35	50
		15	3-15	45	100	14-31	35	79
		18	-	-	-	12-30	35	100
3,4*3,6*3	2.0	15	3-15	30	23	-	-	-
		15	3-15	45	90	10-31	35	16
		18	3-15	35	100	12-30	35	92
		18	-	-	-	20-45	50	100
4, 6*4	2.0	15	3-15	30	7	-	-	-
		15	3-15	45	69	-	-	-
		18	3-15	35	82	12-30	35	57
		18	3-15	50	100	20-45	50	100
6	2.0	15	3-15	45	42	-	-	-
		18	3-15	30	45	-	-	-
		18	3-15	35	52	12-30	35	31
		18	3-15	55	100	20-45	50	92
		24	-	-	-	18-30	35	100
	2.5	18	3-15	30	26	-	-	-
		18	3-15	35	51	13-27	35	39
		18	3-15	55	100	20-50	55	92
		24	-	-	-	25-45	50	100
8, 10*8	2.5	18	3-15	30	10	-	-	-
		18	3-15	35	26	13-27	35	16
		18	3-15	55	93	20-50	55	52
		18	3-15	60	96	-	-	-
		24	3-15	55	100	25-45	50	100
	3.0	18	3-13	30	9	-	-	-
		18	3-13	35	25	12-30	35	11
		18	3-13	55	91	15-50	55	26
		18	3-13	60	95	-	-	-
		24	-	-	-	12-30	35	33
10	3.0	24	3-13	55	100	25-50	55	100
		18	3-13	45	35	-	-	-
		18	3-13	55	59	15-50	55	11
		18	3-13	60	70	-	-	-
		24	-	-	-	12-30	35	15
	3.5	24	3-13	55	88	25-50	55	80
		18	3-15	45	33	-	-	-
		18	3-15	55	57	-	-	-
		18	3-15	60	68	-	-	-

MIL 41300, FLOW TO OPEN - 37/38 SERIESContinued

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

VALVE SIZE (Inch)			37 SERIES			38 SERIES		
150# - 600#	STROKE (Inch)	ACTUATOR SIZE	SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)	SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)
10	3.5	24	-	-	-	18-46	50	45
		24	3-15	55	77	22-50	55	65
12	4.0	18	3-15	45	16	-	-	-
		18	3-15	55	31	-	-	-
		18	3-15	60	39	-	-	-
		24	3-15	55	42	18-50	55	26
14	4.0	18	3-15	50	11	-	-	-
		18	3-15	55	18	-	-	-
		18	3-15	60	24	-	-	-
		24	3-15	55	26	18-50	55	12
16	4.0	18	3-15	50	9	-	-	-
		18	3-15	55	14	-	-	-
		18	3-15	60	19	-	-	-
		24	3-15	55	21	18-50	55	9
18	4.0	18	3-15	50	7	-	-	-
		18	3-15	55	12	-	-	-
		18	3-15	60	15	-	-	-
		24	3-15	55	17	18-50	55	7
20	4.0	18	3-15	55	3	-	-	-
		18	3-15	60	6	-	-	-
		24	3-15	55	7	-	-	-

MIL 41400, FLOW TO CLOSE - 37/38 SERIES

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

VALVE SIZE (Inch)			STROKE (Inch)	ACTUATOR SIZE	37 SERIES			38 SERIES		
150# - 600#	900# - 1500#	2500#			SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)	SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)
-	2	-	0.75	11	3-15	40	50	15-35	40	60
					6-30	55	80	-	-	-
				13	3-15	40	95	19-31	40	150
					6-30	55	145	-	-	-
				15	3-15	40	160	21-30	40	250
					6-30	55	230	-	-	-
-	-	2	1.5	13	3-15	40	80	12-31	40	65
					6-30	55	120	-	-	-
				15	3-15	40	142	11-30	40	115
					6-30	55	205	14-31	40	165
				18	3-15	40	255	12-30	40	220
					6-30	55	280	20-30	40	280
2, 3x2	-	3	1.5	13	3-15	40	80	12-31	40	65
					6-30	55	120	-	-	-
				15	3-15	40	142	11-30	40	115

MIL 41400, 41500, 41600, 41900 - Actuator Selection

MIL 41400, FLOW TO CLOSE - 37/38 SERIES.....Continued

(LEAKAGE : CLASS IV & V AS PER FCI 70.2)

VALVE SIZE (Inch)			STROKE (Inch)	ACTUATOR SIZE	37 SERIES			38 SERIES		
	150#-600#				SPRING RANGE	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)	SPRING RANGE	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)
2,3x2	-	3	1.5	15	6-30	55	205	14-31	40	165
				18	3-15	40	255	12-30	40	220
					6-30	55	280	20-30	40	280
3,4x3	3,4x3,6x3	4,6x4	2	15	3-15	40	85	10-31	40	55
				18	6-30	55	130	-	-	-
					3-15	40	180	9-30	40	100
4,6x4	4,6x4	-	2	15	6-30	55	250	20-45	55	280
				18	3-15	40	85	10-31	40	50
					6-30	55	130	-	-	-
-	-	6	2	15	3-15	40	180	9-30	40	95
				18	6-30	55	250	20-45	55	280
					3-15	40	85	10-31	40	55
-	-	6	2.5	15	6-30	55	130	-	-	-
				18	3-15	40	180	9-30	40	100
					6-30	55	250	20-45	55	280
6	6	-	2	15	3-15	40	170	10-30	40	110
				18	6-30	55	255	17-46	55	260
					3-15	40	280	20-40	50	280
6	6	-	2.5	15	6-30	55	35	-	-	-
				18	3-15	40	70	9-30	40	15
					6-30	55	130	20-45	55	180
8,10x8	8	8,12x8	2.5	18	3-15	40	65	10-30	40	18
				24	6-30	55	125	17-46	55	130
					3-15	40	150	20-40	50	240
10	10	14x10	3	18	3-13	40	20	15-50	55	45
				18	8-30	55	55	-	-	-
					3-13	40	10	15-50	55	22
12	12	-	4	18	6-30	55	9	10-30	45	5
				24	3-15	40	52	22-50	55	100
					6-30	55	11	10-34	45	4
12	12	-	4	18	6-30	55	22	18-50	55	45
				24	3-15	40	22	18-50	55	45
					6-30	55	22	18-50	55	45

MIL 41500, 41600, 41900, FLOW TO OPEN - 37/38 SERIES

(LEAKAGE : CLASS II, III, IV AS PER FCI 70.2)

VALVE SIZE (Inch)			STROKE (Inch)	ACTUATOR SIZE	37 SERIES			38 SERIES		
150#-600#	900#-1500#	2500#			SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)	SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)
1.5	2	-	0.75	11	3-15	40	62	15-35	40	50
				13	3-15	40	94	19-31	40	103
				15	3-15	45	180	21-30	40	180
-	-	2	1.5	13	3-15	40	88	12-31	40	60
				15	3-15	50	200	14-31	40	120
				18	3-15	55	250	20-30	35	270
2,3x2	-	3	1.5	13	3-15	40	85	12-31	40	58
				15	3-15	50	195	14-31	40	116
				18	3-15	55	250	20-30	35	270



MIL 41500, 41600, 41900, FLOW TO OPEN - 37/38 SERIES.....Continued

(LEAKAGE : CLASS II, III, IV AS PER FCI 70.2)

VALVE SIZE (Inch)			STROKE (Inch)	ACTUATOR SIZE	37 SERIES			38 SERIES		
150#-600#	900#-1500#	2500#			SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)	SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)
3,4x3	3,4x3,6X3	4,6x4	2	15	3-15	40	125	10-31	40	75
				18	3-15	35	160	9-30	35	112
4, 6x4	4, 6x4	-	2		3-15	55	250	20-45	55	270
				15	3-15	40	90	10-31	40	54
				18	3-15	35	155	9-30	35	82
					3-15	55	250	20-45	55	206
-	-	6	2	24	-	-	-	24-40	55	280
				15	3-15	40	125	10-31	40	75
			2.5	18	3-15	35	160	9-30	35	112
					3-15	55	250	20-45	55	270
				18	3-15	35	115	10-30	35	93
					3-15	55	250	17-46	55	172
6	6	-	2	15	3-15	40	60	10-31	40	36
				18	3-15	35	80	9-30	35	57
			2.5		3-15	55	210	20-45	55	144
				24	3-15	55	260	24-40	55	244
				18	3-15	35	80	10-30	35	64
					3-15	55	206	17-46	55	120
-	-	8	2	24	3-15	55	250	-	-	-
				15	3-15	40	28	10-31	40	23
			2.5	18	3-15	35	55	9-30	35	36
					3-15	55	145	20-45	55	97
				24	3-15	55	208	24-40	55	165
				18	3-15	35	52	10-30	35	42
8, 10x8	8	12x8	2.5		3-15	55	142	17-46	55	80
				24	3-15	55	200	-	-	-
			3	18	3-15	35	52	10-30	35	42
					3-15	55	142	17-46	55	80
				24	3-15	55	200	-	-	-
				18	3-13	55	140	13-30	40	50
10	10	10 12x10 14x10	3		3-13	65	180	15-50	55	69
				24	-	-	-	25-50	55	172
			3.5	18	3-13	40	50	13-30	40	38
					3-13	55	98	15-50	55	48
				24	-	-	-	-	-	-
					3-13	65	129	-	-	-
12	12	-	4	18	3-15	40	48	10-30	40	42
					3-15	55	96	-	-	-
			4	24	3-15	55	120	22-50	55	105
					3-15	40	32	10-34	45	18
				18	3-15	55	62	-	-	-
					3-15	65	70	-	-	-
14	-	-	4	24	3-15	55	79	18-50	55	58
					3-15	40	28	10-34	45	16
			4	18	3-15	55	57	-	-	-
					3-15	65	65	-	-	-
				24	3-15	55	68	18-50	55	53
					3-15	40	20	10-34	45	10
16	-	-	4	18	3-15	55	39	-	-	-
					3-15	65	42	-	-	-
			4	24	3-15	55	47	18-50	55	36
					3-15	40	20	10-34	45	10
				18	3-15	55	39	-	-	-
					3-15	65	42	-	-	-
18	-	-	4	24	3-15	55	47	18-50	55	36
					3-15	40	8	10-34	45	5
			4	18	3-15	55	14	-	-	-
					3-15	65	18	-	-	-
				24	3-15	55	29	18-50	55	22
					3-15	40	8	10-34	45	5
20	-	-	4	18	3-15	55	14	-	-	-
					3-15	65	18	-	-	-
			4	24	3-15	55	29	18-50	55	22
					3-15	40	8	10-34	45	5
				18	3-15	55	14	-	-	-
					3-15	65	18	-	-	-

MIL 41500, 41600, 41900 - Actuator Selection

MIL 41500, 41600, 41900, FLOW TO CLOSE - 37/38 SERIES

(LEAKAGE : CLASS II, III, IV AS PER FCI 70.2)

VALVE SIZE (Inch)			STROKE (Inch)	ACTUATOR SIZE	37 SERIES			38 SERIES		
150#-600#	900#-1500#	2500#			SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)	SPRING RANGE(psig)	AIR SUPPLY (psig)	SHUT-OFF PR. (Kg/cm ²)
1.5	2	-	0.75	11	3-15	40	101	15-35	40	96
				13	3-15	40	144	19-31	40	160
				15	3-15	40	234	21-30	35	224
-	-	2	1.5	13	3-15	40	144	12-31	40	100
				15	3-15	40	234	14-31	40	224
2,3x2	2	3	1.5	13	3-15	35	77	12-31	40	75
				15	3-15	35	125	14-31	40	120
				18	3-15	35	250	12-30	35	250
3,4x3	3,4x3,6x3	4,6x4	2	15	3-15	35	101	10-31	40	90
				18	3-15	35	250	20-45	55	250
4, 6x4	4, 6x4	-	2	15	3-15	35	102	10-31	40	85
				18	3-15	35	172	9-30	35	150
					6-30	55	221	20-45	55	250
-	-	6	2	15	3-15	35	101	10-31	40	90
				18	3-15	35	250	20-45	55	250
			2.5	18	3-15	35	172	10-30	35	85
					6-30	55	221	17-46	55	250
6	6	-	2	15	3-15	35	56	10-31	45	50
				18	3-15	35	97	9-30	35	85
					6-30	55	190	20-45	55	240
			2.5	18	3-15	35	90	10-30	35	50
					6-30	55	190	17-46	55	240
-	-	8	2	15	3-15	35	50	10-31	40	40
				18	3-15	35	90	9-30	35	80
					6-30	55	120	20-45	55	240
			2.5	18	3-15	35	75	10-30	35	40
					6-30	55	90	17-46	55	240
8, 10x8	8	12x8	2.5	18	3-15	35	75	10-30	35	35
					6-30	55	90	17-46	55	250
			3	18	3-13	30	31	13-30	40	95
					8-30	55	77	15-50	55	120
10	10	10, 12x10, 14x10	3	18	3-13	30	25	13-30	40	90
					8-30	55	65	15-50	55	110
			3.5	24	-	-	-	25-50	55	270
				18	6-30	55	60	10-30	40	45
				24	-	-	-	22-50	55	225
12	12	-	4	18	3-15	30	17	10-34	45	32
					6-30	55	40	-	-	-
				24	-	-	-	18-50	55	100
14	-	-	4	18	3-15	30	14	10-34	45	30
					6-30	55	31	-	-	-
				24	-	-	-	18-50	55	90
16	-	-	4	18	3-15	30	12	10-34	45	18
					6-30	55	27	-	-	-
				24	-	-	-	18-50	55	70
18	-	-	4	18	3-15	30	10	10-34	45	18
					6-30	55	23	-	-	-
				24	-	-	-	18-50	55	70
20	-	-	4	18	3-15	30	6	10-34	45	10
					6-30	55	16	-	-	-
				24	-	-	-	18-50	55	44

APPROXIMATE DIMENSIONS (mm) & SHIPPING WEIGHTS (Kg) FOR MIL 41000 BODY SUBASSEMBLY⁽²⁴⁾

VALVE SIZE (Inch)	ANSI 150# FLANGED (RF)				ANSI 300# FLANGED (RF)				ANSI 600# FLANGED (RF)			
	A	B	H	W ₁	A	B	H	W ₁	A	B	H	W ₁
1.5	222	62.5	216	38	235	78	216	39	251	78	216	39
2	266.5	76	254	43	266.5	82	249	45	285.5	82	249	45
3x2	298	105	287	98	318	105	287	98	337	105	287	98
3	298	105	300	100	318	105	300	100	336.5	105	300	100
4x3	352	125	321	162	368.5	130	321	162	394	135	321	162
4	352	114	331	165	368.5	127	331	165	393.5	136	331	165
6x4	451	150	330	240	473	160	330	240	508	178	330	255
6	451	152	394	245	473	158	394	245	508	178	394	260
8	543	186	498	418	569	186	498	418	610	210	498	439
10x8	752	232	534	617	752	232	534	617	752	254	534	650
10	673	225	567	629	708	225	567	629	752	254	567	677
12x8	-	-	-	-	-	-	-	-	-	-	-	-
12	737	323	618	980	775	323	618	980	819	332	618	1015
14x10	-	-	-	-	-	-	-	-	-	-	-	-
14	889	375.5	656	1170	927	375.5	656	1170	972	375.5	656	1490
16	1016	450	696	1455	1057	450	696	1455	1108	343	673	1506
18	-	-	-	-	-	-	-	-	-	-	-	-
20	1420	525	784	2765	1420	525	784	2765	1484	645	784	3100
18x16	1120	435	770	1590	-	-	-	-	1220	455	770	1740

VALVE SIZE (Inch)	ANSI 900# FLANGED (RTJ)				ANSI 1500# FLANGED (RTJ)				ANSI 2500# WELD END (BW)			
	A	B	H	W ₁	A	B	H	W ₁	A	B	H	W ₁
1.5 ⁽²⁵⁾	333	88.9	194	45	333	88.9	194	45	292	55	194	45
2	378	108	223	55	378	108	223	55	394	61	214	70
2.5 ⁽²⁵⁾	-	-	-	-	-	-	-	-	394	111	219	125
3x2	394	120	251	105	406	134	251	105	-	-	-	-
3	444	120	308	114	463.5	135	308	114	530	140	275	140
4x3	514	146	322	175	532.5	156	322	175	-	-	-	-
4	514	146	331	185	532.5	156	331	185	575	121	405	250
6x4	717	190	330	380	774	196	330	380	760	160	402	455
6	717	190	390	395	774	196	390	395	760	171	420	473
8	917.5	191	521	703	981	240	521	703	1022	232	640	848
10x8	-	-	-	-	-	-	-	-	-	-	-	-
10	1095	272	570	800	1179	293	615	805	-	-	-	-
12x8	-	-	-	-	-	-	-	-	1022	268	650	1800
12	1133	340	626	-	1235	361	608	-	-	-	-	-
14x10	-	-	-	-	-	-	-	-	1200	316	690	2300

⁽²⁴⁾ : Dimensions furnished are for reference only. Dimensional Drawings shall be furnished along with quotation/ after order (as applicable). Tabulated 41000 series data does not include 41100, 41200 & 41700 series (unless specified). For 41100, 41200 & 41700 dimensions, please contact MIL.

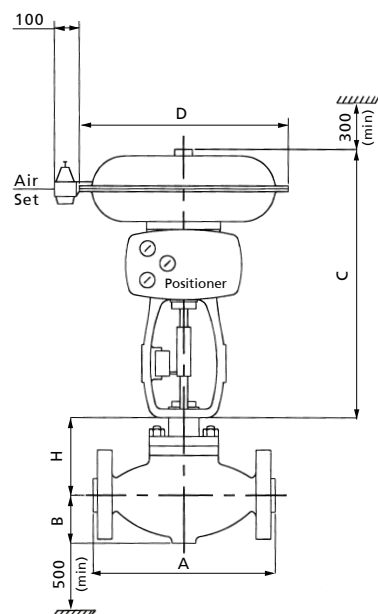
⁽²⁵⁾ : Corresponds to MIL 41100

APPROXIMATE DIMENSIONS (mm) & SHIPPING WEIGHTS (Kg) FOR MIL 41000 BODY SUBASSEMBLY⁽²⁴⁾

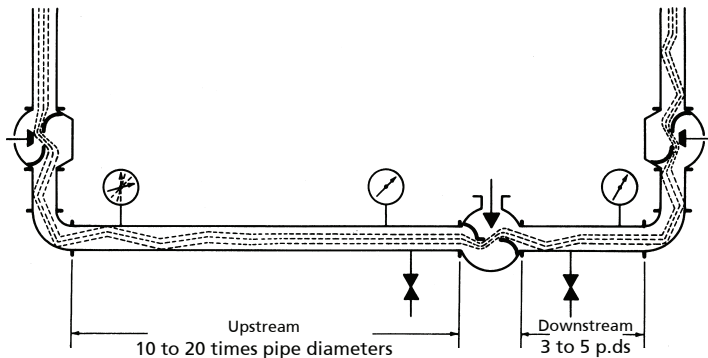
VALVE SIZE (Inch)	ANSI 150/300# WELD END (BW)				ANSI 600# WELD END (BW)				ANSI 900/1500# WELD END (BW)			
	A	B	H	W ₁	A	B	H	W ₁	A	B	H	W ₁
1.5	251	44	216	30	251	44	216	30	-	-	-	-
2	285	57	249	36	285	57	249	36	375	69	214	40
3x2	440	105	287	80	440	105	287	80	406	120	251	105
3	440	105	300	85	440	105	300	85	460	120	300	114
4x3	444	110	321	115	444	110	321	115	530	115	322	175
4	444	114	331	128	444	114	331	128	530	118	331	185
6x4	560	160	330	215	560	160	330	215	680	165	330	380
6	560	152	394	235	560	152	394	235	680	155	394	395
8	656	186	498	355	656	186	498	355	860	206	501	703
10	802	225	567	550	802	232	567	550	892	249	582	595
12	822	323	618	950	822	332	618	956	1040	340	608	-
14	1029	375.5	656	-	-	-	-	-	-	-	-	-
16	1108	450	696	1415	1108	450	719	1415	-	-	-	-
20	1484	525	784	-	-	-	-	-	-	-	-	-

APPROXIMATE DIMENSIONS (mm) & SHIPPING WEIGHTS (Kg) FOR 37 / 38 ACTUATORS

Actuator Size	37 (Air to Close)			38 (Air to Open)		
	C	D	W ₂	C	D	W ₂
11	417	331	21	613	331	25
13	511	381	32	752	381	40
15	646	445	55	897	445	64
18	681	527	82	935	527	114
18(SPL.)	844	527	90	1070	527	168
24	881	699	109	1156	699	109


REFERENCE DIMENSIONS

INLET & EXIT PIPING - STRAIGHT LENGTH REQUIREMENTS

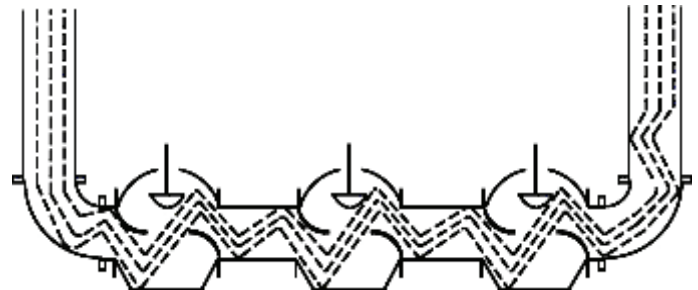


TYPICAL SATISFACTORY ARRANGEMENT OF UPSTREAM AND DOWNSTREAM PIPING

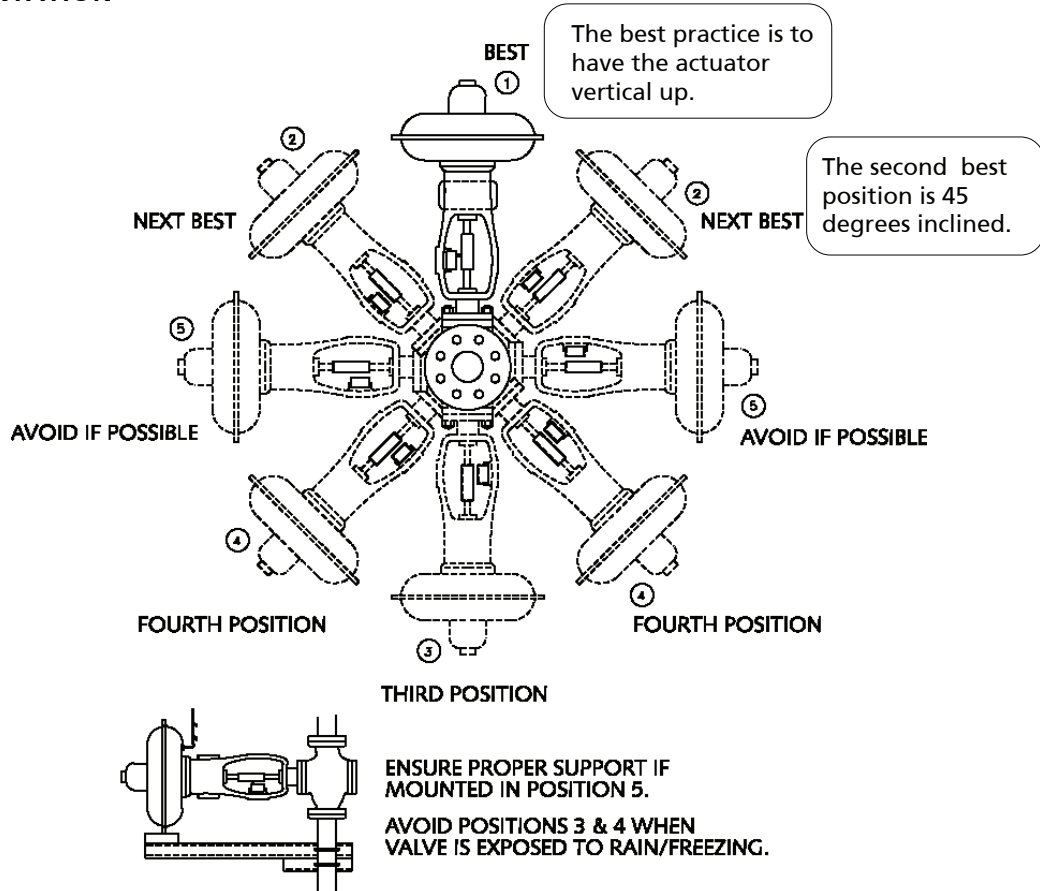
- It is best to have 10-20 times pipe dia upstream straight piping and 3-5 dia of downstream straight piping.

LESS SATISFACTORY ARRANGEMENT OF UPSTREAM AND DOWNSTREAM PIPING

- Elbow and bends can cause fluid swirl patterns that can adversely affect control valve functioning.



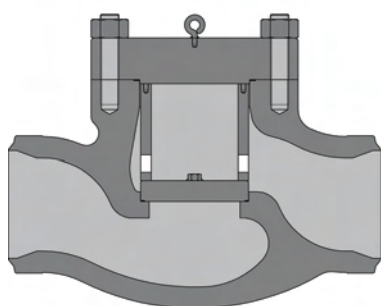
VALVE ORIENTATION



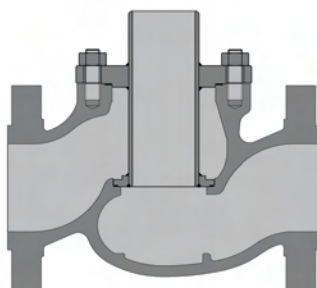
VALVE ORIENTATION.....Continued

- When large valves are mounted horizontally, proper support has to be provided.
- Large size valves in horizontal position makes removal of actuator and internals difficult. The overhanging weight of the plug can cause non-uniform wear of the trim parts and gland packing
- Valves on smaller piping and tubing may need to be mounted in Brackets.
- Piping should be flushed before installing the valve. If additional flushing is done after installation, it may be necessary to remove the internals, particularly if anti-cavitation or low noise trim is in place.
- If presence of debris is suspected, even after flushing, a strainer should be installed upstream of the valve (far enough to allow non-swirl flow at the valve inlet).

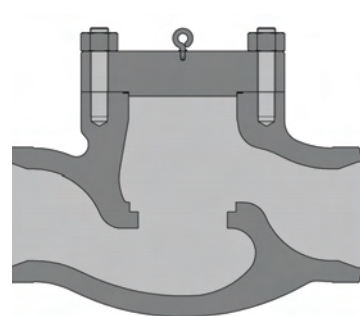
TYPICAL HYDROTEST & CLEANING TOOLS



DUMMY OR HYDRO TEST KIT



STEAM BLOW OUT TOOL



BLIND FLANGE

FLOW DIRECTION

- Most control valves have a preferred or mandatory flow through direction. It is indicated by an arrow cast, or stamped on the body. Installing the valve in a different direction can have a major impact on performance.

INSTRUMENT AIR QUALITY

- Instrument air piping connected to the control valves should be blown clean before they are attached. The air used should be free of oil and moisture.
- It may also be noted that accessories like Smart Valve Positioners are highly sensitive to the quality of Instrument Air. Generally manufacturers recommend Instrument Air to be free of oil, water and dust to DIN/ISO 8573-1, pollution and oil contents according to Class 3 and Dew point 10 K below operating temperature.

COMPRESSED AIR QUALITY CLASSES TO DIN/ISO 8573-1

Class	Max. Residual Particle size (µm)	Max. Particle density (mg/m³)	Max. Residual Water Content		Max. Residual oil content (mg/m³)
			Pressure dew point (°C)	Residual Water (mg/m³)	
1	0.1	0.1	-70	3	0.01
2	1	1	-40	120	0.1
3	5	5	-20	880	1
4	15	8	3	6000	5
5	40	10	7	7800	25
6	-	-	10	9400	-

MIL 41000 series control valves provide complete solution for all application needs in core sectors. Few of the critical applications for which these valves are employed includes:

Utility/ Captive Power Plants & Power Houses

- ◆ Condensate Pump Recirculation
- ◆ Boiler Feed Water Start-up Control
- ◆ Boiler Main Feed Water Control
- ◆ Spray Water Control and Block
- ◆ Deaerator Pegging Steam Control
- ◆ Soot Blower Pressure Reduction
- ◆ Heater Drain etc.

Hydrocarbon Processing

- ◆ Compressor Anti-Surge
- ◆ Separator Letdown
- ◆ Gas Gathering and Metering Stations
- ◆ Make-up Hydrogen & Hydrogen Quench
- ◆ Cold & Hot Recycle Gas Control
- ◆ Reactor Feed & Stripping Steam
- ◆ Reformed Gas Vent, Hydrocarbons to Flare etc.



14", 2500# ANSI
Control valve
for Feed water/Super
Heated Steam Service
in Power Plants



20", 600# ANSI
Control valve
for Amine Service
in Fertilizer Plant



20", 300# ANSI
Control valve
for Compressor
Anti-surge service
in Refineries



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A KSB Company



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