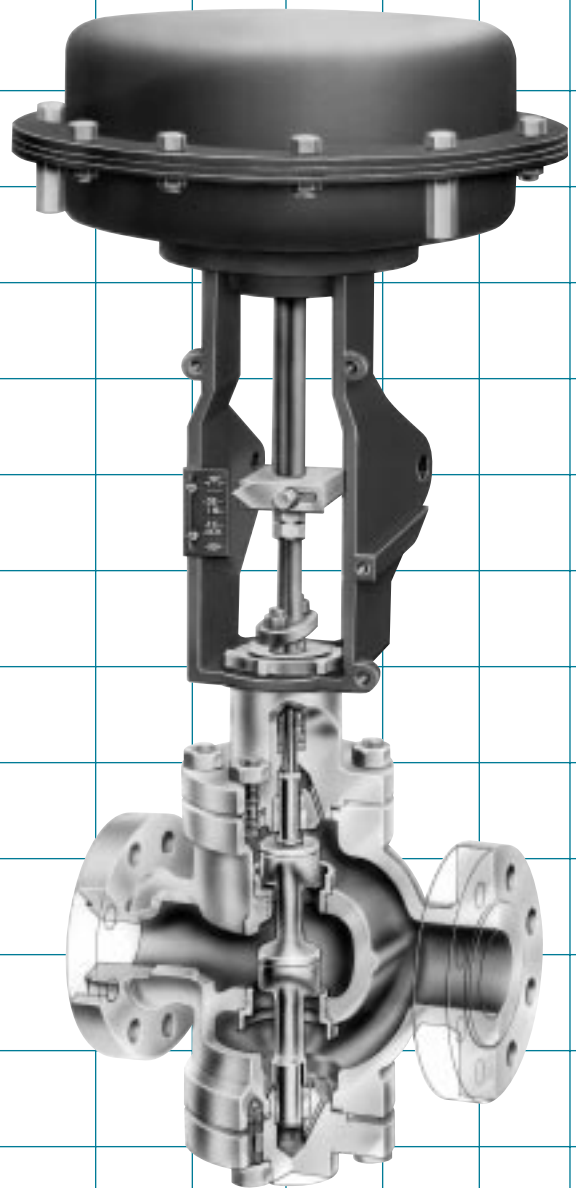


10000 Series Control Valves

A Complete Line of Rugged Top and Bottom
Guided Double Ported Globe Valves



Masoneilan **DRESSER**

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Foreword

The 10000 Series double ported control valves are designed to handle a wide variety of process applications. Construction features have been carefully selected to provide optimum performance. Standard features include:

Top and Bottom Guiding

A well accepted industry standard particularly suited for double ported plugs to provide adequate support against side loads.

High Allowable Pressure Drops

Incorporates the simplest form of balanced construction and provides high pressure drop capability with standard actuators.

Allowable pressure drop shown on all tables reflect actuator capability for the leakage class.

Proper application requires consideration with regards to cavitation, noise, velocity, etc. Refer to Masoneilan sizing and noise manuals.

High Capacity with Low Recovery

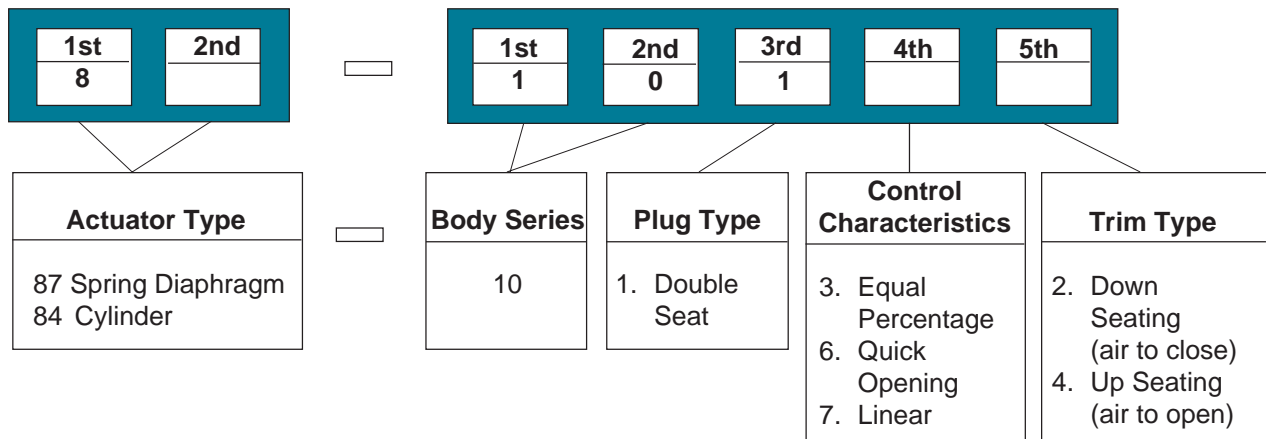
Flow capacity is at top levels for contemporary double ported control valves and is attained with little pressure recovery as indicated by its high critical flow factors.

Invertible Bodies and Plugs

All 10000 Series bodies and plugs are invertible, so either air to open or air to close action can be obtained with the same actuator.

The following pages provide the necessary technical information required to specify a 10000 Series control valve with Masoneilan 87 spring diaphragm actuators and 84 cylinder actuators. For additional information, contact your local Masoneilan Representative.

Numbering System



General Data

- **Flow Direction**

all trims: inlet between the ports

- **Body**

type: double seat globe

- **Bonnet and Blind Flange**

type: bolted

- **Body, Bonnet and Blind Flange**

materials: carbon steel
316 stainless steel
chrome-molybdenum steel

- **Trim**

plug type: double seat, V-Port or contoured

leakage: ANSI/FCI 70.2, Class II

seat ring: threaded

guide: top and bottom

capacity: full area and 0.4 factor all sizes

C_v ratio: 50:1

flow characteristics: equal percentage, linear and quick opening

- **Actuators**

type: spring diaphragm
handwheel: optional

type: spring return cylinder
handjack: optional

Flow Coefficients - Rated C_v

Equal Percentage (V-Port) and Linear (Contoured)

Nominal Trim Size	Full Area			2		3	4		6		8	10	12	14	16
	Reduced Area	2	3		4		6	8	10	12					
Orifice Dia. (inches)	Upper	1.438	1.876	2.000	2.376	2.625	3.500	4.626	4.250	6.375	7.000	8.750	10.500	12.251	14.000
	Lower	1.355	1.782	1.906	2.282	2.531	3.406	4.531	5.156	6.250	6.875	8.625	10.375	12.126	13.860
Valve Size (inches)	Travel (inches)	Rated C_v													
2	0.8	19		48											
3	1.5		44			110									
4	1.5				78		195								
6	2.0						180		450						
8	2.5							300		750					
10	2.5								460			1160			
12	3.5									650			1620		
14	4.0													2000 ^①	
16	4.0														2560 ^①

^① Available with equal percentage plug only.

Note: Rated C_v for quick opening valves multiply times 1.3.

Ratings/Connections

- Socket Weld
- Butt Weld
- △ RT Joint
- Threaded
- RF Flanged

Valve Size ^① (inches)	ANSI Class				
	150	300	600	900	1500
2	□ △	□ △	○ □ △ ●	□ △ ●	□ △ ●
3 - 12	□ △ ■	□ △ ■	□ △ ■	□ △ ■	□ △ ■
14 & 16	□ △ ■	□ △ ■	□ △ ■		
20 & 24	□ ■	□ ■	□ ■ ^①		

^① ANSI Class 400

Denotes no product offering

C_v and F_L Versus Travel**V-Port Trim**

ANSI Class: 150 through 1500

Sizes: 2" through 16"

Flow Characteristics: **EQUAL PERCENTAGE**

Percent of Plug Travel			10	20	30	40	50	60	70	80	90	100
F _L	Full Area		.96	.96	.96	.96	.95	.94	.94	.93	.91	.90
	Reduced Area		.96	.96	.95	.94	.93	.92	.91	.90	.89	.88
Valve Size (inches)	Orifice Diameter (inches) Upper/Lower	Travel (inches)	Rated C _v									
2	1.438/1.355	0.8	0.6	1.1	1.5	2.0	2.8	4.2	5.5	8.5	12.3	19
	2.000/1.906	0.8	1.4	2.8	3.8	5.3	7.2	10.5	13.9	21.6	31.2	48
3	1.876/1.782	1.5	1.3	2.6	3.5	4.8	6.6	9.7	12.8	19.8	28.6	44
	2.625/2.531	1.5	3.3	6.6	8.8	12.1	16.5	24.2	31.9	49.5	71.5	110
4	2.376/2.282	1.5	2.3	4.7	6.2	8.6	11.7	17.2	22.6	35.1	50.7	78
	3.500/3.406	1.5	5.8	11.7	15.6	21.4	29.2	42.9	56.5	87.7	126	195
6	3.500/3.406	2.0	5	11	14	20	27	40	52	81	117	180
	5.250/5.156	2.0	14	27	36	50	68	99	130	202	292	450
8	4.626/4.531	2.5	9	18	24	33	45	66	87	135	195	300
	7.000/6.875	2.5	23	45	60	83	112	165	217	337	487	750
10	5.250/5.156	2.5	14	28	37	51	69	101	133	207	299	460
	8.750/8.625	2.5	35	70	93	127	174	255	336	522	754	1160
12	6.375/6.250	3.5	20	39	52	72	98	143	189	293	423	650
	10.500/10.375	3.5	49	97	130	178	243	356	469	729	1053	1620
14	12.251/12.126	4	60	120	160	220	300	440	580	900	1300	2000
16	14.000/13.860	4	77	153	207	281	384	563	742	1152	1664	2560

Contoured Trim

ANSI Class: 150 through 1500

Sizes: 2" through 12"

Flow Characteristics: **LINEAR**

Percent of Plug Travel			10	20	30	40	50	60	70	80	90	100
F _L	Full Area		.63	.64	.65	.70	.77	.85	.90	.90	.89	.88
	Reduced Area		.63	.64	.65	.70	.75	.80	.82	.82	.81	.80
Valve Size (inches)	Orifice Diameter (inches) Upper/Lower	Travel (inches)	Rated C _v									
2	1.438/1.355	0.8	1.9	3.8	5.7	7.6	9.5	11.4	13.3	15.2	17.1	19
	2.000/1.906	0.8	4.8	9.6	14.4	19.2	24	28.8	33.6	38.4	43.2	48
3	1.876/1.782	1.5	4.4	8.8	13.2	17.6	22	26.4	30.8	35.2	39.6	44
	2.625/2.531	1.5	11	22	33	44	55	66	77	88	99	110
4	2.376/2.282	1.5	7.8	15.6	23.4	31.2	39	46.8	54.6	62.4	70.2	78
	3.500/3.406	1.5	19.5	39	58.5	78	97.5	117	136	156	175	195
6	3.500/3.406	2.0	18	36	54	72	90	108	126	144	162	180
	5.250/5.156	2.0	45	90	135	180	225	270	315	360	405	450
8	4.626/4.531	2.5	30	60	90	120	150	180	210	240	270	300
	7.000/6.875	2.5	75	150	225	300	375	450	525	600	675	750
10	5.250/5.156	2.5	46	92	138	184	230	276	322	368	414	460
	8.750/8.625	2.5	116	232	348	464	580	696	812	928	1044	1160
12	6.375/6.250	3.5	65	130	195	260	325	390	455	520	585	650
	10.500/10.375	3.5	162	324	486	648	810	972	1134	1296	1458	1620

Materials of Construction

Ref. No.	Temperature Range	-20°F ▽	+450°F ▽	+800°F ▽	+850°F ▽
	Description	Standard Materials (<i>Optional Materials</i>)			
1	Valve Plug Stem	316 St. St. ASTM A479 TY 316			
2	Packing Flange Nut	304 St. St. ASTM A194 Gr 8			
3	Packing Flange	Carbon Steel ASTM A668 CL B Zinc Plated			
4	Packing Flange Stud	304 St. St. ASTM A193 Gr B8			
5	Drive Nut	SAE 1117			
6	Bonnet	Carbon Steel ASTM A216			
7	Body	316 St. St. ASTM A351 Gr CF8M			
10	Blind Flange	Chrome-Moly Steel ASTM A217			
8	Plug Pin	316 St. St. ASTM A479 TY 316			
9	Valve Plug	316 St. St. ASTM A479 TY 316 or ASTM A351 Gr CF8M or ASTM A182 Gr F316 <i>316 St. St. ASTM A479 TY 316 w/Hardfacing Seat and Post or Solid Stellite</i>			
11	Valve Body Stud Nuts	Alloy Steel ASTM A194 Gr 2H			
12	Valve Body Studs	Alloy Steel ASTM A193 Gr B7			
13	Valve Body Gasket	304 St. St. w/Grafoil Filler (Spiral Wound)			
14	Guide Bushing	440C St. St. ASTM A276 TY 440C <i>Stellite No. 6 (standard with St. St. body materials)</i>			
15	Lower Seat Ring	316 St. St. ASTM A351 Gr CF8M or ASTM A182 Gr F316 or ASTM A479 TY316			
16	Upper Seat Ring	<i>316 St. St. w/Hardfacing</i>			
17	Packing	Crane 285K <i>Braided TFE Chesterton 324</i> <i>Grafoil</i>			
18	Packing Spacer	303 St. St. ASTM A582 TY 303			
19	Packing Follower	303 St. St. ASTM A582 TY 303			
	Temperature Range	-20°F △	+450°F △	+800°F △	+850°F △

Allowable Pressure Drops (psig)

Air To Close

**Model 10132
Equal Percentage - V-Port**

Flow Direction: Flow Passing into the Seats
Leakage: Per ANSI/FCI 70.2, Class II

Temperature: -20°F to +850°F

Valve Size (inches)	Travel (inches)	Rated C _v	Actuator Size	Bench Range (psig)	Supply Pressure (psig)	Compressible Flow		Incompressible Flow	
						Closed	Open	Closed	Open
2	0.8	48	6	3-15	20	640	640	640	640
				11-23	35	2200	2200	2200	2200
			10	3-15	20	1050	1050	1050	1050
				11-23	35	3650	3650	3650	3650
		19	6	3-15	20	1020	1020	1030	1030
				11-23	35	3510	3510	3550	3550
			10	3-15	20	1690	1690	1700	1700
				11-23	35	3750	3750	3750	3750
3	1.5	110	10	3-15	20	810	810	810	680
				11-23	35	2780	2780	2780	2440
			16	3-15	20	1280	1280	1280	1100
				11-23	35	3750	3750	3750	3750
		44	10	3-15	20	1490	1490	1170	1170
				11-23	35	3750	3750	3750	3750
			16	3-15	20	2360	2360	1850	1850
				11-23	35	3750	3750	3750	3750
4	1.5	195	10	3-15	20	610	610	610	340
				11-23	35	2080	2080	2080	1240
			16	3-15	20	970	970	970	550
				11-23	35	3320	3320	3320	2000
		78	10	3-15	20	920	920	930	930
				11-23	35	3130	3130	3160	3160
			16	3-15	20	1450	1450	1460	1460
				11-23	35	3750	3750	3750	3750
6	2.0	450	16	3-15	20	660	570	660	220
				11-23	35	2220	2100	2220	840
			23	3-15	20	930	840	930	330
				11-23	35	3170	3040	2930	2680
		180	16	3-15	20	980	980	1030	1030
				11-23	35	3290	3290	3460	3460
			23	3-15	20	1380	1380	1460	1460
				11-23	35	3290	3290	3460	3460

NOTE: INLET PRESSURE MUST NOT EXCEED THE ANSI RATING FOR THE SELECTED PRESSURE CLASS

Allowable Pressure Drops (psig)

Air To Close

Model 10132
Equal Percentage - V-Port

Flow Direction: Flow Passing into the Seats

Leakage: Per ANSI/FCI 70.2, Class II

Temperature: -20°F to +850°F

Valve Size (inches)	Travel (inches)	Rated C _v	Actuator Size	Bench Range (psig)	Supply Pressure (psig)	Compressible Flow		Incompressible Flow	
						Closed	Open	Closed	Open
8	2.5	750	16	3-15	20	420	280	450	120
				11-23	35	1350	1110	1440	470
			23	3-15	20	580	430	620	180
				11-23	35	1920	1620	2040	680
		300	16	3-15	20	820	820	840	630
				11-23	35	2630	2630	2690	2470
23	3-15	20	1140	1140	1160	950			
	10	2.5	1160	16	3-15	20	390	130	420
11-23					35	1150	640	1240	280
23				3-15	20	520	220	570	90
				11-23	35	1610	950	1740	410
460			16	3-15	20	830	830	850	380
				11-23	35	2430	2430	2480	1800
23	3-15	20	1110	1110	1140	630			
12	3.5	1620	154	10-47	55	510	370	570	130
				25-40	55	440	440	490	360
			314	10-47	55	920	840	1040	290
				25-40	55	1060	1060	1060	990
		650	154	10-47	55	920	920	920	920
				25-40	55	920	920	920	920
14	4.0	2000	154	10-36	45	460	240	530	70
				25-42	55	730	730	840	220
			314	10-36	45	820	590	930	180
16	4.0	2560	154	10-36	45	380	160	440	40
				25-42	55	590	520	680	150
			314	10-36	45	660	410	760	120

NOTE: INLET PRESSURE MUST NOT EXCEED THE ANSI RATING FOR THE SELECTED PRESSURE CLASS

Allowable Pressure Drops (psig)

Air To Close

**Models 10162 and 10172
Linear and Quick Opening**

Flow Direction: Flow Passing into the Seats
Leakage: Per ANSI/FCI 70.2, Class II

Temperature: -20°F to +850°F

Valve Size (inches)	Travel (inches)	Rated C _v	Actuator Size	Bench Range (psig)	Supply Pressure (psig)	Compressible Flow		Incompressible Flow			
						Closed	Open	Closed	Open		
2	0.8	48	6	3-15	20	640	640	640	360		
				11-23	35	2200	2200	2190	1310		
			10	3-15	20	1050	1050	1050	610		
				11-23	35	3650	3650	3640	2190		
			19	6	3-15	20	1030	1030	1020	1020	
					11-23	35	3550	3550	3490	3490	
		10		3-15	20	1700	1700	1610	1610		
				11-23	35	3750	3750	3750	3750		
		3	1.5	110	10	3-15	20	810	680	810	310
						11-23	35	2780	2440	2780	1110
					16	3-15	20	1280	1100	1280	500
						11-23	35	3750	3750	3750	1790
44	10				3-15	20	1170	1170	1150	1150	
					11-23	35	3750	3750	3750	3750	
	16			3-15	20	1850	1850	1820	1820		
				11-23	35	3750	3750	3750	3750		
4	1.5			195	10	3-15	20	610	340	610	160
						11-23	35	2080	1240	2080	580
					16	3-15	20	970	550	970	260
						11-23	35	3320	2000	3320	940
		78	10		3-15	20	930	930	910	910	
					11-23	35	3160	3160	3090	3090	
			16	3-15	20	1460	1460	1430	1430		
				11-23	35	3750	3750	3750	3750		
		6	2.0	450	16	3-15	20	660	220	660	100
						11-23	35	2220	840	2220	390
					23	3-15	20	930	330	930	150
						11-23	35	2930	2680	3170	570
180	16				3-15	20	1030	1030	1000	730	
					11-23	35	3460	3460	3350	2710	
	23			3-15	20	1460	1460	1410	1080		

NOTE: INLET PRESSURE MUST NOT EXCEED THE ANSI RATING FOR THE SELECTED PRESSURE CLASS

Allowable Pressure Drops (psig)

Air To Close

Models 10162 and 10172
Linear and Quick OpeningFlow Direction: Flow Passing into the Seats
Leakage: Per ANSI/FCI 70.2, Class II

Temperature: -20°F to +850°F

Valve Size (inches)	Travel (inches)	Rated C _v	Actuator Size	Bench Range (psig)	Supply Pressure (psig)	Compressible Flow		Incompressible Flow	
						Closed	Open	Closed	Open
8	2.5	750	16	3-15	20	450	120	400	50
				11-23	35	1440	470	1280	220
			23	3-15	20	620	180	550	80
				11-23	35	2040	680	1820	330
		300	16	3-15	20	840	630	810	390
				11-23	35	2690	2470	2580	1540
		23	3-15	20	1160	950	1120	590	
10	2.5	1160	16	3-15	20	420	60	370	20
				11-23	35	1240	280	1070	130
			23	3-15	20	570	90	490	40
				11-23	35	1740	410	1500	200
		460	16	3-15	20	850	380	820	230
				11-23	35	2480	1800	2380	1100
			23	3-15	20	1140	630	1090	390
12	3.5	1620	154	10-47	55	570	130	430	70
				25-40	55	490	360	370	210
			314	10-47	55	1040	290	770	170
		650	154	10-47	55	1060	990	1000	610
				25-40	55	920	920	860	860
14	4.0	2000	154	10-36	45	530	70	340	40
				25-42	55	840	220	540	140
			314	10-36	45	930	180	600	110
16	4.0	2560	154	10-36	45	440	40	250	30
				25-42	55	680	150	390	100
			314	10-36	45	760	120	435	80

NOTE: INLET PRESSURE MUST NOT EXCEED THE ANSI RATING FOR THE SELECTED PRESSURE CLASS

Allowable Pressure Drops (psig)

Air To Open

Model 10134 Equal Percentage - V-Port

Flow Direction: Flow Passing into the Seats

Leakage: Per ANSI/FCI 70.2, Class II

Temperature: -20°F to +850°F

Valve Size (inches)	Travel (inches)	Rated C _v	Actuator Size	Bench Range (psig)	Supply Pressure (psig)	Compressible Flow		Incompressible Flow			
						Closed	Open	Closed	Open		
2	0.8	48	6	6-30	35	800	800	800	790		
				11-23	35	1740	1740	1740	1740		
			10	6-30	35	1360	2200	1360	1310		
				11-23	35	2920	2920	2920	2920		
			19	6	6-30	35	1300	1300	1300	1300	
					11-23	35	2800	2800	2810	2810	
		10		6-30	35	2180	2180	2200	2200		
				11-23	35	3750	3750	3750	3750		
		3	1.5	110	10	6-30	35	1020	1020	1020	820
						11-23	35	2210	2210	2210	2030
					16	6-30	35	1650	1650	1650	1300
						11-23	35	3550	3550	3550	3240
44	10				6-30	35	1460	1460	1470	1470	
					11-23	35	3140	3140	3160	3160	
	16			6-30	35	2350	2350	2370	2370		
				11-23	35	3750	3750	3750	3750		
4	1.5			195	10	6-30	35	750	750	750	500
						11-23	35	1630	1630	1630	1240
					16	6-30	35	1220	1540	1220	790
						11-23	35	2630	2630	2630	1970
		78	10		6-30	35	1120	1120	1130	1130	
					11-23	35	2440	2440	2460	2460	
			16	6-30	35	1820	1820	1840	1840		
				11-23	35	3750	3750	3750	3750		
		6	2.0	450	16	6-30	35	780	680	780	340
						11-23	35	1720	1660	1720	840
					23	6-30	35	1150	960	1150	490
						11-23	35	2490	2380	2490	1210
180	16				6-30	35	1210	1210	1230	1230	
					11-23	35	2640	2640	2680	2680	
	23			6-30	35	1760	1760	1790	1790		
				6-30	35	1760	1760	1790	1790		

NOTE: INLET PRESSURE MUST NOT EXCEED THE ANSI RATING FOR THE SELECTED PRESSURE CLASS

Allowable Pressure Drops (psig)**Air To Open****Model 10134
Equal Percentage - V-Port**

Flow Direction: Flow Passing into the Seats

Leakage: Per ANSI/FCI 70.2, Class II

Temperature: -20°F to +850°F

Valve Size (inches)	Travel (inches)	Rated C _v	Actuator Size	Bench Range (psig)	Supply Pressure (psig)	Compressible Flow		Incompressible Flow	
						Closed	Open	Closed	Open
8	2.5	750	16	6-30	35	440	460	470	220
				11-23	35	1000	1000	1060	530
			23	6-30	35	650	640	700	310
				11-23	35	1460	1460	1550	760
		300	16	6-30	35	870	870	870	870
				11-23	35	1960	1960	1980	1980
23	6-30	35	1290	1290	1300	1300			
10	2.5	1160	16	6-30	35	300	330	330	160
				11-23	35	760	760	820	360
			23	6-30	35	480	460	520	220
				11-23	35	1130	1070	1220	510
		460	16	6-30	35	650	650	660	660
				11-23	35	1600	1600	1640	1640
			23	6-30	35	1020	1020	1040	1040
				11-23	35	1020	1020	1040	1040
12	3.5	1620	154	10-47	55	440	350	500	120
				25-40	55	1490	310	1680	110
			314	10-47	55	1020	660	1160	230
				25-40	55	1020	660	1160	230
		650	154	10-47	55	930	930	930	930
				25-40	55	3130	1340	3130	850

NOTE: INLET PRESSURE MUST NOT EXCEED THE ANSI RATING FOR THE SELECTED PRESSURE CLASS

Allowable Pressure Drops (psig)

Air To Open

Models 10164 and 10174 Linear and Quick Opening

Flow Direction: Flow Passing into the Seats

Leakage: Per ANSI/FCI 70.2, Class II

Temperature: -20°F to +850°F

Valve Size (inches)	Travel (inches)	Rated C _v	Actuator Size	Bench Range (psig)	Supply Pressure (psig)	Compressible Flow		Incompressible Flow	
						Closed	Open	Closed	Open
2	0.8	48	6	6-30	35	800	790	800	450
				11-23	35	1740	1740	1740	1120
			10	6-30	35	1360	1310	1360	750
				11-23	35	2920	2920	2920	1870
		19	6	6-30	35	1300	1300	1280	1280
				11-23	35	2810	2810	2760	2760
			10	6-30	35	2200	2200	2160	2160
				11-23	35	3750	3750	3750	3750
3	1.5	110	10	6-30	35	1020	820	1020	450
				11-23	35	2210	2030	2210	1120
			16	6-30	35	1650	1300	1650	720
				11-23	35	3550	3240	3550	1790
		44	10	6-30	35	1470	1470	1440	1440
				11-23	35	3160	3160	3110	3110
			16	6-30	35	2370	2370	2330	2330
				11-23	35	3750	3750	3750	3750
4	1.5	195	10	6-30	35	750	500	750	260
				11-23	35	1630	1240	1630	640
			16	6-30	35	1220	790	1220	410
				11-23	35	2630	1970	2630	1020
		78	10	6-30	35	1130	1130	1110	1110
				11-23	35	2460	2460	2410	2410
			16	6-30	35	1840	1840	1800	1800
				11-23	35	3750	3750	3750	3750
6	2.0	450	16	6-30	35	780	340	780	180
				11-23	35	1720	840	1720	440
			23	6-30	35	1150	490	1150	250
				11-23	35	2490	1210	2490	630
		180	16	6-30	35	1230	1230	1190	910
				11-23	35	2680	2680	2600	2220
			23	6-30	35	1790	1790	1740	1290

NOTE: INLET PRESSURE MUST NOT EXCEED THE ANSI RATING FOR THE SELECTED PRESSURE CLASS

Allowable Pressure Drops (psig)

Air To Open

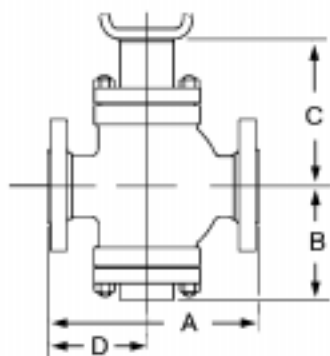
Models 10164 and 10174
Linear and Quick OpeningFlow Direction: Flow Passing into the Seats
Leakage: Per ANSI/FCI 70.2, Class II

Temperature: -20°F to +850°F

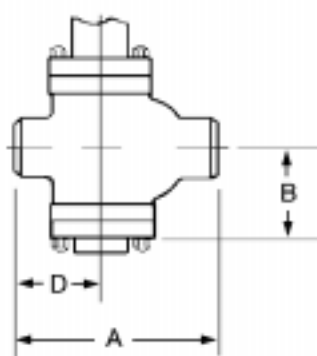
Valve Size (inches)	Travel (inches)	Rated C _v	Actuator Size	Bench Range (psig)	Supply Pressure (psig)	Compressible Flow		Incompressible Flow	
						Closed	Open	Closed	Open
8	2.5	750	16	6-30	35	470	220	410	110
				11-23	35	1060	530	940	270
			23	6-30	35	700	310	620	160
				11-23	35	1550	760	1380	390
		300	16	6-30	35	870	870	840	580
				11-23	35	1980	1980	1900	1390
23	6-30	35	1300	1300	1250	820			
10	2.5	1160	16	6-30	35	330	160	280	80
				11-23	35	820	360	710	180
			23	6-30	35	520	220	450	110
				11-23	35	1220	510	1060	260
		460	16	6-30	35	660	660	640	520
				11-23	35	1640	1640	1590	1180
			23	6-30	35	1040	1040	1010	710
12	3.5	1620	154	10-47	55	500	120	370	80
				25-40	55	1680	110	1260	70
			314	10-47	55	1160	230	860	150
				25-40	55	3130	850	3130	490
		650	154	10-47	55	930	930	930	550
				25-40	55	3130	850	3130	490

NOTE: INLET PRESSURE MUST NOT EXCEED THE ANSI RATING FOR THE SELECTED PRESSURE CLASS

Dimensions (inches)



Flanged Ends



Socket Weld
or Threaded Ends

Body S/A

Valve Size (in.)	ANSI Class													
	150-600 Butt Weld or Socket Weld		150				300				600			
			RF		RTJ		RF		RTJ		R F		RTJ	
	A	D	A	D	A	D	A	D	A	D	A	D	A	D
2	9.25	4.12	10.00	4.62	10.50	4.88	10.50	4.88	11.12	5.19	11.25	5.25	11.38	5.31
3	13.25	6.25	11.75	5.50	12.25	5.75	12.50	5.88	13.12	6.19	13.25	6.25	13.38	6.31
4	15.50	7.38	13.88	6.56	14.38	6.81	14.50	6.88	15.12	7.19	15.50	7.38	15.62	7.44
6	20.00	8.75	17.75	7.62	18.25	7.88	18.62	8.06	19.25	8.38	20.00	8.75	20.12	8.81
8	24.00	9.88	21.38	8.56	21.88	8.81	22.38	9.06	23.00	9.38	24.00	9.88	24.12	9.94
10	27.75	11.50	24.62	9.94	25.12	10.19	26.00	10.62	26.62	10.94	27.75	11.50	27.88	11.56
12	32.00	12.88	28.75	11.25	29.25	11.50	30.25	12.00	30.88	12.31	32.00	12.88	32.12	12.94
14	36.75	14.62	33.50	13.00	34.00	13.25	35.00	13.75	35.62	14.06	36.75	14.62	36.88	14.68
16	38.63	17.25	35.38	15.69	35.88	15.94	36.88	16.50	37.50	16.81	38.63	17.25	38.75	17.31

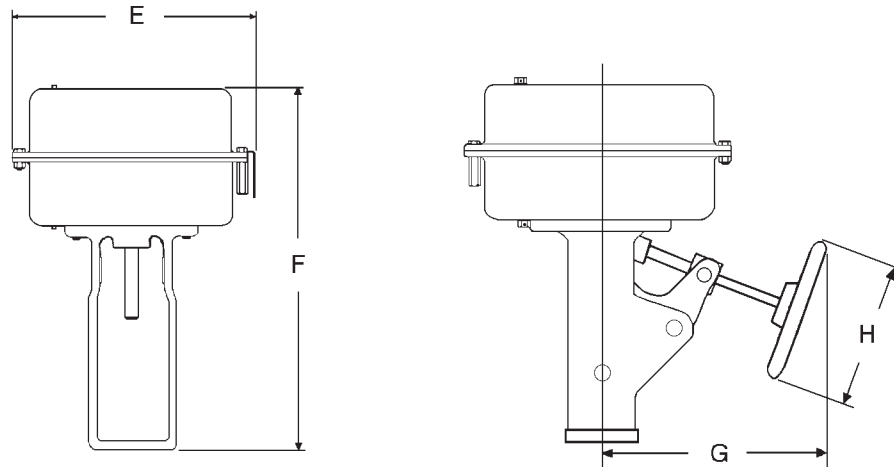
Valve Size (in.)	ANSI Class									
	900				1500				900 & 1500 Butt Weld or Socket Weld	
	RF		RTJ		RF		RTJ			
	A	D	A	D	A	D	A	D	A	D
2	12.25	5.88	12.38	5.94	12.25	5.88	12.38	5.94	12.25	5.88
3	15.25	7.12	15.38	7.19	16.00	7.50	16.12	7.56	16.00	7.50
4	18.25	8.62	18.38	8.69	19.00	9.00	19.12	9.06	19.00	9.00
6	20.88	9.44	21.00	9.50	24.00	11.00	24.25	11.12	24.00	11.00
8	27.88	12.75	28.00	12.81	30.12	13.88	30.50	14.06	30.12	13.88
10	32.62	15.12	32.75	15.19	35.62	16.62	36.00	16.81	35.62	16.62
12	35.25	15.62	35.38	15.69	40.38	17.69	41.00	18.00	40.38	17.69

ANSI Class 150-1500

Valve Size (inches)	B (Max)	C (Max)
2	6.0	7.2
3	7.8	9.3
4	8.1	9.5
6	11.2	12.6
8	13.4	14.7
10	14.8	16.4
12	17.8	19.8
14 ^①	21.5	24.1
16 ^①	22.3	26.1

① ANSI 150-600 only

Dimensions (inches)

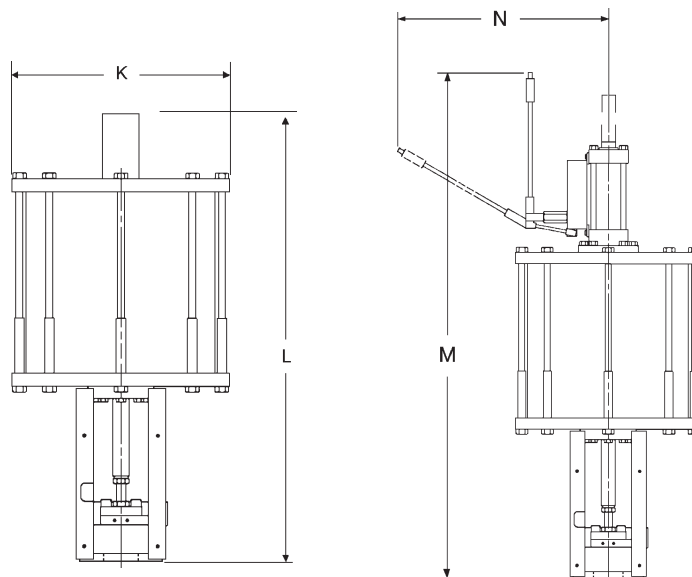


Shown with optional handwheel

Model 87 Actuator

Actuator Size	E	F	G	H
6	11.50	15.54	10.00	9.00
10	14.50	19.58	10.90	12.00
16	18.75	28.22	13.00	18.00
23	21.63	30.71	15.00	18.00

Actuator removal clearance = 6 inches



Shown with optional handjack

Model 84 Actuator

Actuator Size	K	L	M	N
154 (sq. in.)	18.1	47.8	60.5	26.7
314 (sq. in.)	23.9	49.8	62.5	27.0

Weights (lbs)

Body S/A

Valve Size (inches)	Socket, Butt Weld & Threaded Ends up to 600 lbs.	Flanged				
		ANSI 150	ANSI 300	ANSI 600	ANSI 900	ANSI 1500
2	50	150	160	175	297	297
3	110	245	255	270	397	408
4	192	305	310	335	492	505
6	364	515	530	595	892	910
8	669	800	825	960	1440	1460
10	1168	1350	1380	1500	2250	2250
12	1452	1700	1740	1900	2850	2850

Model 87 Spring Diaphragm Actuator

Size (in.)	Standard	w/Handwheel
6	45	60
10	85	105
16	210	245
23	265	340

Model 84 Cylinder Actuator

Size (sq. in.)	Base Weight	Small Spring	Medium Spring	Large Spring	Handjack
154	266	60	---	82	100
314	709	60	84	142	100

Accessories and Options

Accessories

Side Mounted Handwheels
For 87 Actuators
(See Specification Data CR8788)

4600A Series Positioner
(See Specification Data CS2002)
Instrument Signals 3-15 and 6-30 psig

8012 Electropneumatic Valve Positioner
(See Specification Data CS5000)
Instrument Signals 10-50 mA, 104 ohms
4-20 mA, 173 ohms

IPEX 9000 Electropneumatic Transducer
(See Specification Data CS9000)
Input Range 4-20 mA
Split range up to 3 times
Output (Direct or Reverse)
3-15 psi, adjustable to 0-20

Model 6000 Electropneumatic Transducer
(See Specification Data CS6600)
Input Range 4-20 mA
Output 3-15 psi

Internal Regulator
Integral Universal Mounting Bracket

8005A/8006A Electropneumatic Transducer
(See Specification Data CS6000)
Instrument Signals 10-50 mA, 104 ohms
4-20 mA, 173 ohms
Output Signals (Direct or Reverse)
Model 8005A: 3-15 psi
Model 8006A: 3-15, 6-30, 0-20, or 0-35 psi

80-4 or 80-40 Airset
(See Specification Data CY7800)
77-6 or 77-60 Lockup Valve
(See Specification Data CY7700)
2" Gauge 0-30 psi

496 Rotary Electric Switches
496-1 (1-Switch SPDT)
496-2 (2-Switches SPDT)
496-3 Positioner Transmitter
496-6 (1-Switch DPDT)
496-7 (2-Switches DPDT)
(See Specification Data CS7000)

ASCO Solenoid Valves

NAMCO Limit Switches

Options

Environmental Capabilities (LE Packing)
Body Drain Plug
Other Materials
Other Flange Facings
NACE Compliance
Custom Trim Materials
Non-Destructive Examination
Electric Actuators
Limit Stops
Extension Bonnets
Lubricator & Isolation Valve
U.O.P. Trim Materials
Oxygen Cleaning
TFE V-ring Packing
Reducer and Nipple Connections

**For additional Accessories and Options
consult the Masoneilan Factory**

USEFUL EQUIVALENTS

U.S. CUSTOMARY UNITS

Specific gravity of air G = 1 (reference for gases)

U.S. gallon of water = 8.33 lbs @ std. cond.
 1 cubic foot of water = 7.48 gallons
 Air specific volume = 1/density = 13.1 cubic feet/lb
 G of any gas = density of gas/0.076

Specific gravity of water = 1 (reference for liquids)

1 cubic foot of water = 62.34 lbs @ std. cond. (= density)
 1 cubic foot of air = 0.076 lbs @ std. cond. (= air density)
 Air molecular weight M = 29
 G of any gas = molecular wt. of gas/29

$$G \text{ of gas at flowing temp.} = \frac{G \times 520}{T + 460}$$

Standard conditions (U.S. customary) are at 14.69 psia and 60°F.

Flow conversion of gas

$$\text{SCFH} = \frac{\text{Lbs/hr}}{\text{density}} \quad \text{SCFH} = \frac{\text{Lbs/hr} \times 379}{M} \quad \text{SCFH} = \frac{\text{Lbs/hr} \times 13.1}{G}$$

Flow conversion of liquid

$$\text{GPM} = \frac{\text{Lbs/hr}}{500 \times G}$$

Temperature Conversion

$$F \text{ (Fahrenheit)} = C \text{ (9/5)} + 32$$

$$C \text{ (Celsius)} = (F - 32) \text{ 5/9}$$

METRIC CONVERSION TABLES

Multiply	By	To Obtain
LENGTH		
millimeters	0.039	inches
centimeters	0.394	inches
inches	2.54	centimeters
feet	30.48	centimeters
feet	0.304	meters
AREA		
sq. centimeters	0.155	sq. inches
sq. centimeters	0.001076	sq. feet
sq. inches	6.452	sq. centimeters
sq. inches	0.00694	sq. feet
sq. feet	929	sq. centimeters
FLOW RATES		
gallons US/minute (GPM)	3.785	liters/min
gallons US/minute	0.133	ft ³ /min
gallons US/minute	0.227	m ³ /hr
cubic feet/minute	7.481	GPM
cubic feet/hour	0.1247	GPM
cubic feet/hour	0.01667	ft ³ /min
cubic meters/hour	4.403	GPM
cubic meters/hour	35.31	ft ³ /hr
VELOCITY		
feet per second	0.3048	meters/second
feet per second	1.097	km/hr
feet per second	0.6818	miles/hr

Multiply	By	To Obtain
VOLUME AND CAPACITY		
cubic feet	28.32	liters
cubic feet	7.4805	gallons
liters	61.02	cubic inches
liters	0.03531	cubic feet
liters	0.264	gallons
gallons	3785.0	cubic cm
gallons	231.0	cubic inches
gallons	0.1337	cubic feet
WEIGHT		
pounds	0.453	kilogram
kilogram	2.205	pounds
PRESSURE AND HEAD		
pounds/sq. inch	0.06895	bar
pounds/sq. inch	0.06804	atmosphere
pounds/sq. inch	0.0703	kg/cm ²
pounds/sq. inch	2.307	ft. of H ₂ O (4°C)
pounds/sq. inch	0.703	m of H ₂ O (4°C)
pounds/sq. inch	5.171	cm of Hg (0°C)
pounds/sq. inch	2.036	in. of Hg (0°C)
atmosphere	14.69	psi
atmosphere	1.013	bar
atmosphere	1.033	kg/cm ²
atmosphere	101.3	kPa
bar	14.50	psi
kilogram/sq. cm	14.22	psi
kiloPascal	0.145	psi

Facilities: Brazil, Canada, France, Germany, Italy, Japan, Mexico, Netherlands, Singapore, Spain, United Kingdom, United States



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