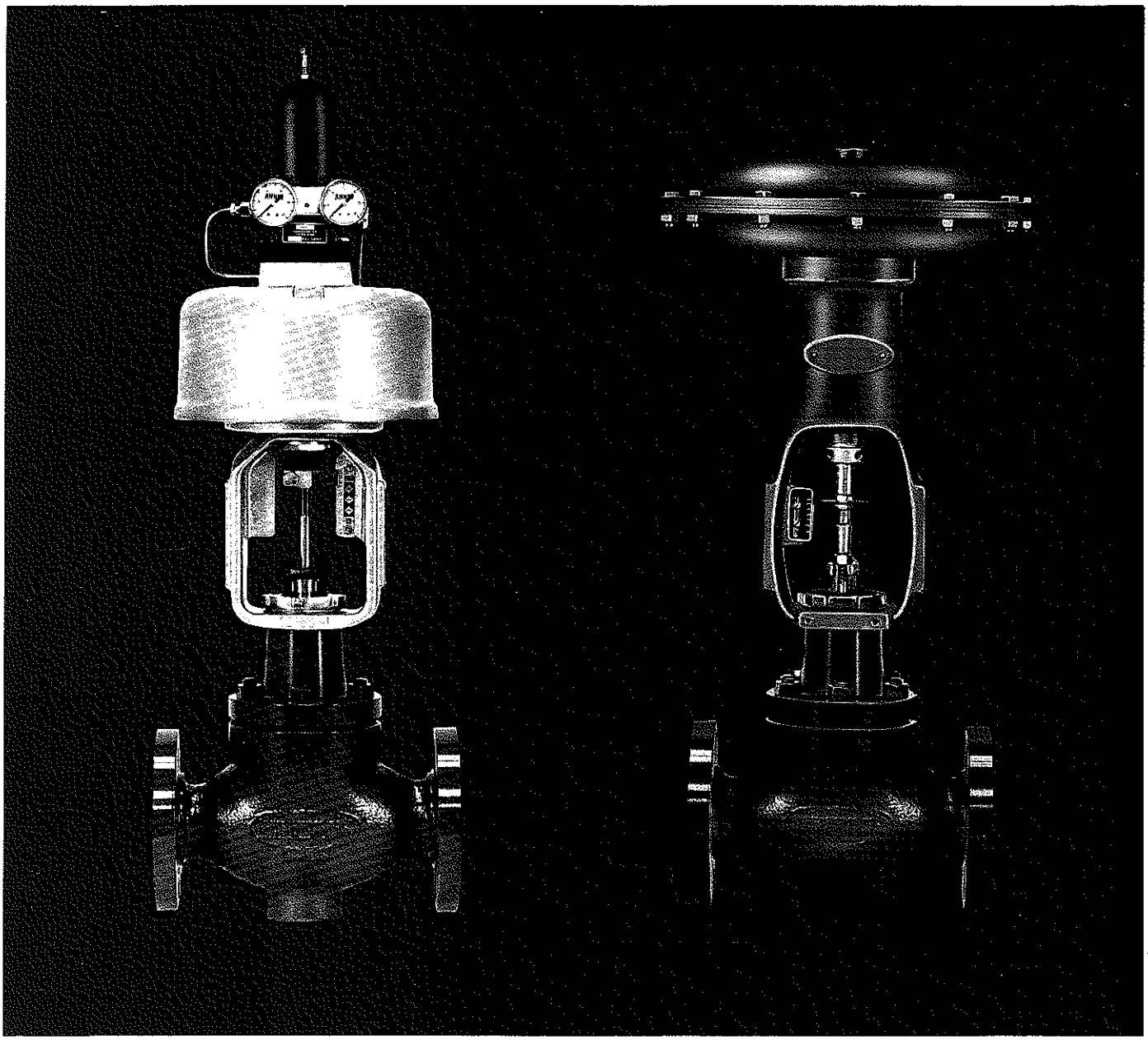
Masoneilan 20000 Series Control Valves



A superior line of top-guided, single-port valves for modern process requirements.

MASONEILAN

MASONEILAN INTERNATIONAL

BULLETIN NO. 334

Masoneilan 20000 Series Control Valves

The Masoneilan 20000 Series single-ported, globe type valves are designed to cover a wide range of applications. Their versatility makes them well suited for large-capacity requirements, for the higher process pressures often encountered, and equally capable of handling viscous fluids, as well as far less demanding applications.

Their small orifice areas result in low unbalanced forces, allowing these valves to be used in systems handling high pressure drops, sometimes without an increase in actuator size. The high capacity body design allows the user in many cases to specify smaller less expensive valve sizes.

Trim replacement . . . particularly with quick-change-trim . . . can be quickly and easily accomplished and body parts are kept to a minimum precluding the need for large inventories of spare parts.

Several interchangeable actuators provide fast, accurate, reliable control for the 20000 Series.

More specifically, the Masoneilan 20000 Series Valves offer you the following advantages:

Tight shutoff

Tight shutoff, one of the basic requirements of modern processes, is inherent in the design of Masoneilan top-guided, single port valves. However, the 20000 Series is also available with inexpensive soft seat trim for bubble-tight shutoff.

Minimum body parts

Where a system's downtime is a factor, and proper functioning is dependent upon simple reassembly of the valves, the 20000 Series inexpensive trim replacement is important. Since the plug is guided at the top only, body parts are held to a minimum, necessitating a small spare parts inventory.

High capacities

In many cases a smaller, less expensive valve size can be used to meet the system's flow requirements, because of the high capacity body design of the 20000 Series.

High allowable pressure drops

The need for oversize actuators with their extra expense is minimized in handling high pressure drop applications, because the small orifice areas of the 20000 Series (compared to top and bottom guided single seat valves) result in relatively low unbalanced forces.

Solid cast body

For applications requiring trim replacement with the body in line, the 20000 Series solid cast body with removable bonnet is ideal. The solid cast body design permits weld ends, welded seat rings, and jacketed construction.

Free flow body passages

Suitable viscous fluids, as well as for far less demanding service, the wide range of applications is the result of the carefully designed, large, free-flow passages with smooth body and plug contours.

7-day shipment

Many 20000 Series valves are available on our P. S. Program. P. S. (Programmed Service) is Masoneilan International's name for an automated order processing system that assures you of shipment within 7 days (or when you specify) of the time the order is received, and at No Extra Charge. For complete details, consult your Masoneilan International Representative or District Sales Office.

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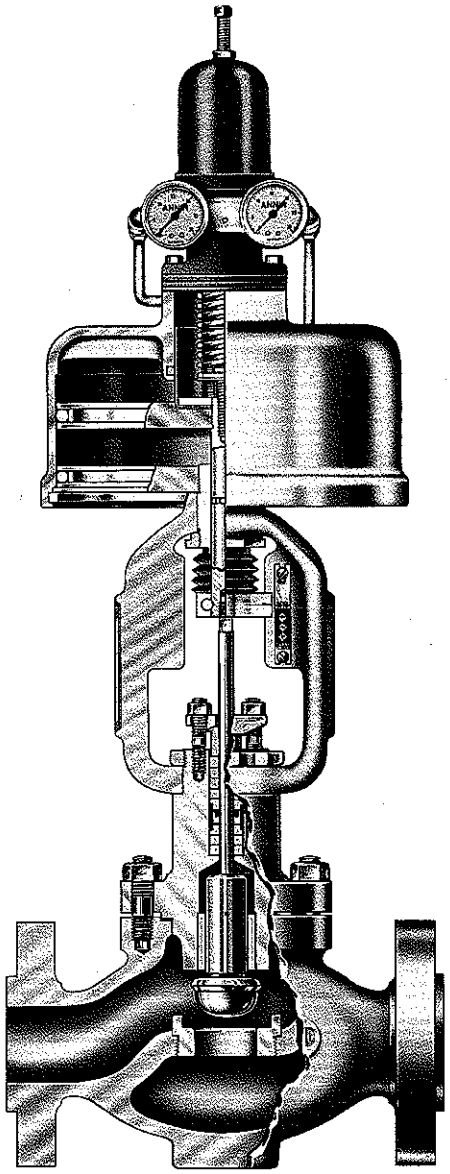
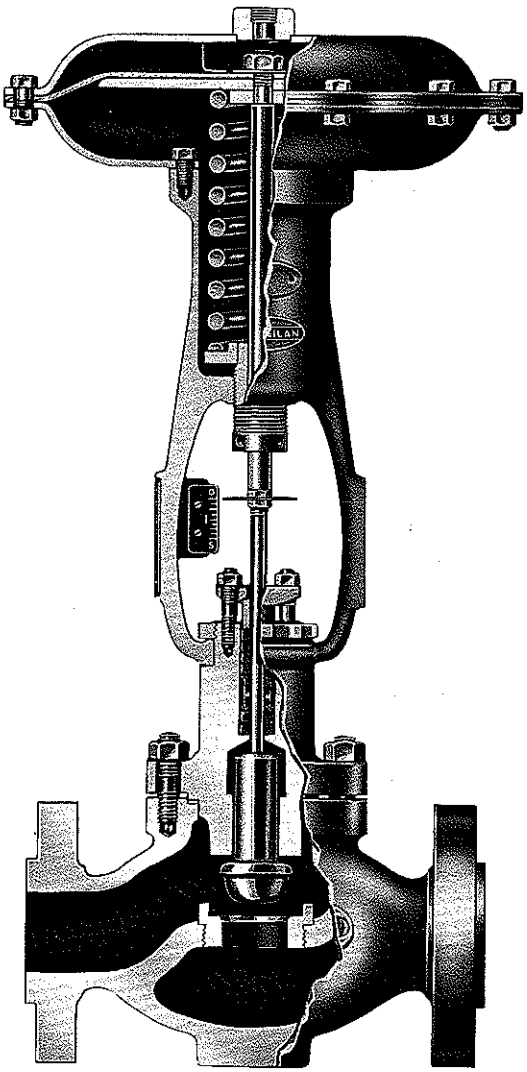


20000 Series Control Valve
with Domotor Actuator



20000 Series Control Valve
with Spring Diaphragm Actuator

valve trim

Reduced trim

The ability of these valves to accept reduced trim makes them ideal where flow requirements are subject to change and it is desirable to change capacities without altering body size. Reduced trim also permits larger outlet-to-orifice area relationships.

Plug types

On the standard Masoneilan 20000 Series valves, two top guided plug types are available:

Percentage contoured

These plugs are heavily guided and are suitable for high pressure service and where erosive conditions exist. They have equal percentage characteristics, and are available in full or nominal reduced sizes. Full capacity plugs may be supplied with soft seats in sizes 1"-10" for ratings through 600 lb. USAS.

Linear contoured

These top guided plugs are similar to the percentage contoured plugs except that they are straight tapered "needle" plugs.

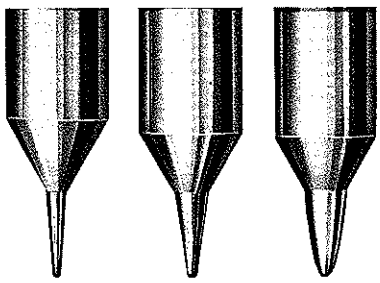
Quick-change-trim

The addition of quick-change-trim is a logical extension of the Masoneilan 20000 Series Valve line. The 20000 Series was the first full line of top-guided single port control valves available. It is also the first to offer quick-change-trim in both standard and balanced plug types, in a rugged, field proven control valve.

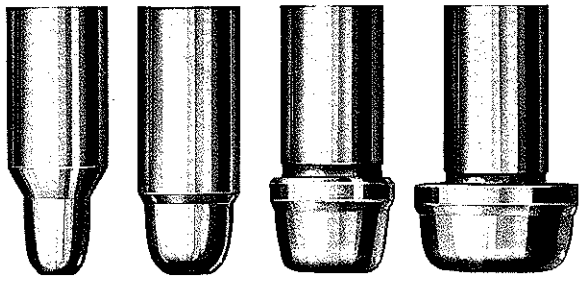
Standard quick-change-trim

The 20000 Series with quick-change-trim utilizes a slip-in seat ring and matching slip-in cylinder. The retaining cylinder and seat ring are held in place by the bonnet.

All that is required to replace the seat ring is to remove the bonnet, withdraw the retaining cylinder, and slip the seat ring out of the body. The entire operation can be performed with the valve in the line. Since the seat ring is not screwed into the body, most of the difficulties encountered in the seat ring replacement are eliminated.



No. 571 — Linear Contoured
¼" ⅜" ½"



No. 521 — Percentage Contoured
¾" 1" 1½" 2"

Typical Selection — Plugs for 2" 20000 Series Valve

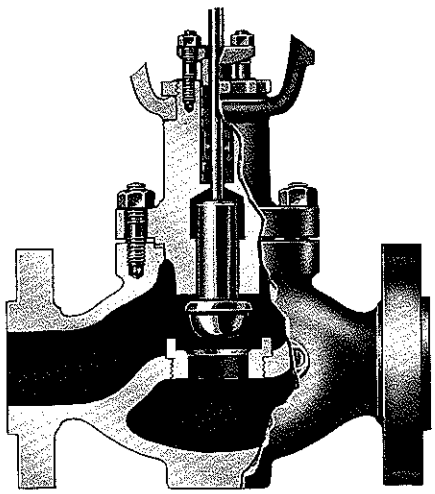
Balanced-quick-change-trim

Balanced quick-change-trim has a unitized trim cartridge which incorporates an integral seating surface and plug guide. To replace it, the bonnet is removed, and the trim cartridge is slipped out of the body. Similar to the standard plug version the trim can be replaced with the valve in the line.

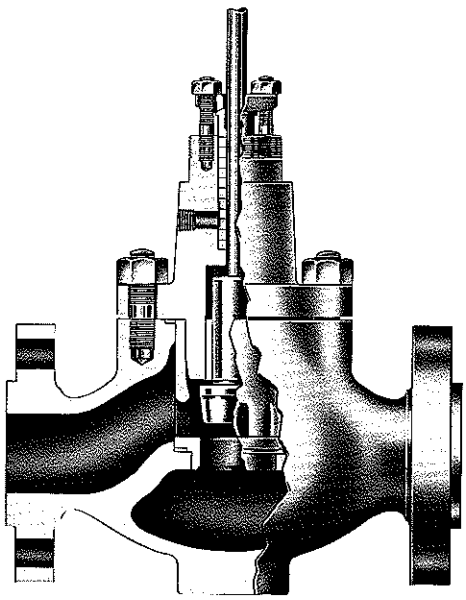
Percentage flow characteristics are achieved by characterized ports in the trim cartridge. The balanced plug is internally ported to allow the pressure to equalize above and below the plug. This results in a nearly balanced plug, which may allow the use of smaller, less costly actuators for a given pressure drop.

The balanced plug version offers high capacity, ease of maintenance, and uniform flow pattern advantages similar to those of the standard plug type.

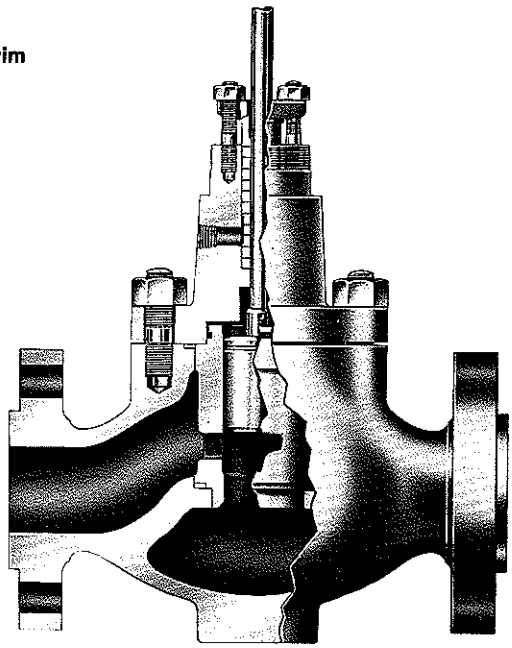
Leakage in this valve is the same as a double seat valve. A split sealing ring, backed up by a stainless steel expansion ring on the plug minimizes leakage between the plug and cylinder wall.



Standard Trim



Standard Quick-Change-Trim



Balanced Quick-Change-Trim

actuators

spring diaphragm actuators

direct

The direct spring diaphragm actuator is so designed that an increase in operating air pressure above the initial spring setting (3 psi for 3-15 psi range, 6 psi for 6-30 psi range) on top of the diaphragm produces a downward motion of the actuator stem. This motion or force is opposed by the compression of the spring. An adjusting screw provides for external setting of the initial spring compression.

The resulting valve action is described as air-to-close when the plug is moved toward the seat. Where air-to-open action is necessary, the reverse actuator (see below) is used.

reverse

In the reverse actuator, the spring, diaphragm and diaphragm plate are inverted so that an increase in operating air pressure (above the initial spring setting) in the lower diaphragm case produces an upward motion of the actuator stem. A gasket at the junction of the lower diaphragm case and yoke, and a packing box around the actuator stem, prevent operating air leakage. The adjusting screw is located at the top of the spring case and provided with a protective cap. A stop is provided on the actuator stem to establish correct initial diaphragm position. They are available in the same sizes as the direct actuators.

Domotor

The Domotor features speed, high thrust, long strokes, stability and accuracy within .001 inch per inch of stroke. It is a powerful, pneumatic positioning cylinder that positions the plug accurately in response to a 3-15 psi controller signal. An integral regulator is utilized to provide constant air load pressure on top of the piston. An integral "direct" positioner (increasing air signal raises stem) applies actuating pressure under the piston.

The piston and cylinder are of aluminum construction with Buna N static and moving seals. Lubrication is provided by a stable, non-oxidizing silicone grease.

Handwheels

Handwheels provide a means of manually operating control valves in an emergency, during startup, and in the event of air failure. Some types are used to provide adjustable stops to limit the extent of stem travel.

Side-mounted types

Side-mounted, continuously connected handwheels for spring diaphragm actuators are operated without the use of clutches. Handwheel position indicators, and latches to retain wheel position when not in use are provided. Five sizes are available, combining compactness with adequate power to operate the valve sizes for which each is designed. They are not available on valves with bellows seal bonnets.

The side mounted auxiliary handwheel is available with the Domotor. It provides fully manual operation by direct declutchable connection to the actuator stem. A bypass valve is installed with the handwheel on the Domotor to equalize pressure on either side of the piston. The handwheel is designed to handle with ease, high plug, off-balance force plus the force applied by fail safe springs in the actuator. The handwheel unit operates independently of the actuator and therefore all normal maintenance of the Domotor may be performed with the valve in service.

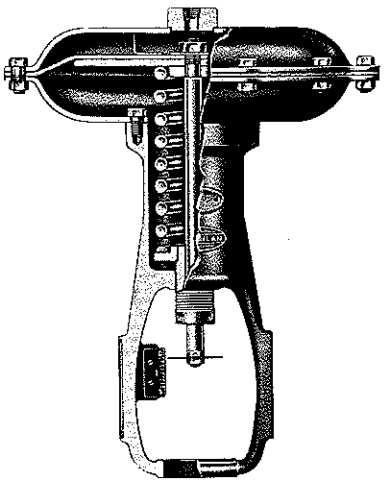
Case-mounted types

Case-mounted handwheels are available for manual operation of spring diaphragm actuators. In addition, on direct actuators, the handwheel may be used as stops to limit upward travel of the stem; on reverse actuators, as stops to limit stem travel either upward or downward, but not both.

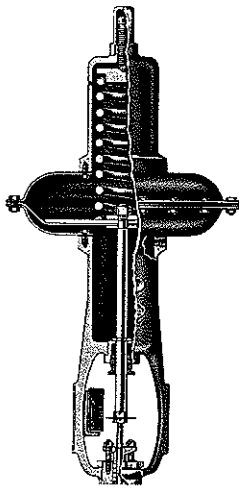
Hand operated

The Masoneilan 20000 Series valves can be used for bypass service, or as a hand-operated throttling valve, in applications where operating conditions and cost do not warrant instrument operation.

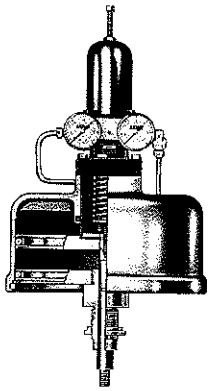
The handwheel is a non-rising type which requires a minimum of effort to operate. Stem threads are precision formed to assure precise positioning of the plug. The travel indicator scale is graduated to show the number of turns of the wheel. All critical parts are precision fitted in order to hold backlash to an absolute minimum. Other construction features, which add to the life of the valve, include a rugged yoke, lubricated bearings and stem, close guiding, heavy threads, and a protective stem cap.



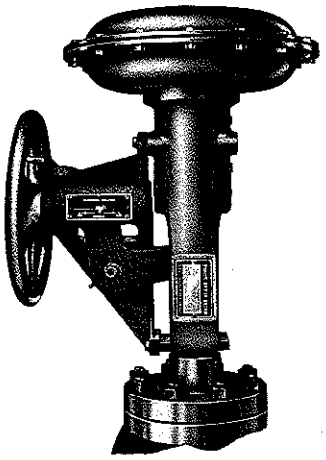
Direct Spring Diaphragm Actuator



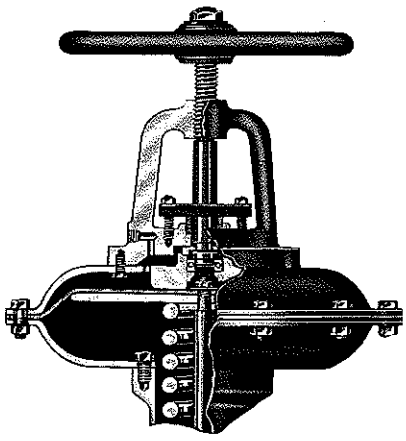
Reverse Spring Diaphragm Actuator



Domotor



Side-Mounted Handwheel



Case-Mounted Handwheel

extension bonnets

Finned Bonnet

A finned bonnet is available to reduce packing box temperature where fluid temperature exceeds 450F. The effective cooling rate of the fins allows the use of standard packing material with service temperatures up to 800F.

Extension Bonnet

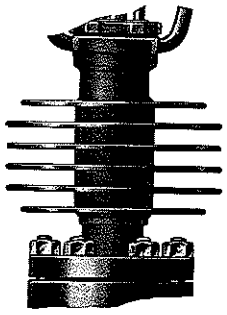
A plain extension bonnet is available for low temperature service, usually below 32F. This type extension allows the packing box to be moved upward from the valve body into higher ambient temperature conditions.

Bellows Seal

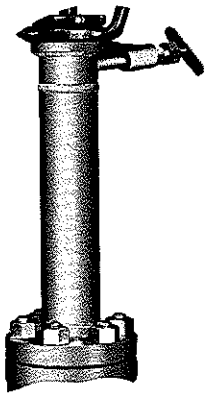
In addition to the packing box, a bellows seal can be supplied to provide a positive seal for the plug stem. Typical installations requiring such a seal are those handling flammable, toxic or explosive fluids where leakage would cause unsafe conditions or the loss of costly process media.

Two types of bellows seals are available. Type 1 (fluid sealed outside the bellows), usually requires a corrosion-resistant housing, but has the advantage of giving the bellows stability. Type 2 (fluid sealed inside the bellows) is illustrated at right. This type eliminates the need for a corrosion-resistant housing and is more commonly used because of lower cost.

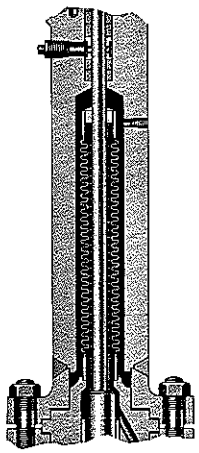
Bellows material is Type 316 stainless steel. Other available alloys can be supplied, but these must be engineered to each specific application.



Finned Bonnet



Extension Bonnet



Bellows Seal

auxiliary equipment

pneumatic positioner

Masoneilan 7000 Series positioners normally operate on a controller output pressure of 3-15 psi and provide a positioner output equal to the regulated supply pressure. Pilot action may be direct or reverse and positioner is adjustable for valve strokes between ⅜″ and 3″, or 3″ and 4″.

electropneumatic positioner

Model 8012 positioner is a force-balance electropneumatic device which, by comparing valve stem position with controller dc output signal, provides dynamic response and very high positioning accuracy. For valve strokes of ⅜″ to 3″, or 2″ to 4″.

electropneumatic transducer

The Masoneilan Transducer is a force balance electropneumatic device which provides an accurate means of converting a low power dc electrical control signal into a proportional pneumatic output signal of 3-15 or 6-30 psi (6-30 psi is available in the Model 8006 only).

Model 8005 is equipped with a manifold for transmission of this pneumatic signal to a valve positioner or relay.

Model 8006 has an integrally mounted high capacity relay to operate the pneumatic actuator directly. The transducer may be mounted on the valve or remotely located.

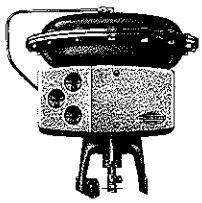
Both models are available for either direct action (increase in electrical signal increases output pressure) or reverse action (increase in electrical signal decreases output pressure).

electric switches

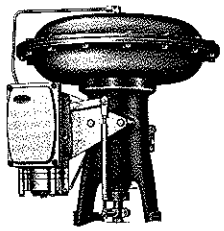
Series 495 valve mounted multiple rotary switches are used for remote indication of up to eight positions of a control valve plug. They may be used in conjunction with computer control or connected to audible alarms or signal lights for warning of valve or system malfunctions. These switches may also be used to actuate solenoids, relays and other electrical devices.

solenoid valves

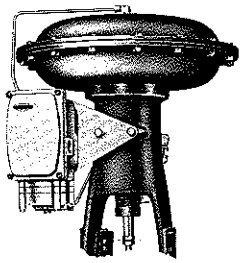
Three-way, two-wire, on-off (two position), packless type, solenoid valves can be supplied where it is desirable to have remote electrical control of air pressure to diaphragm actuators. Available in standard or odd voltage for ac or dc. Explosion-proof housings are also available.



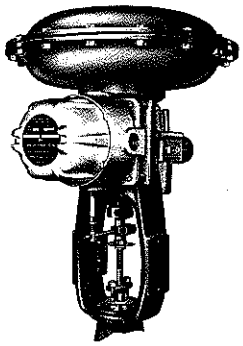
Pneumatic Positioner



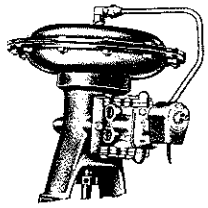
Electropneumatic Positioner



Electropneumatic Transducer



Electric Switch



Solenoid Valve

specifications

body

20000 Series globe type

materials: iron, carbon steel, bronze, or alloys

sizes: ¾", 1", 1½", 2", 3", 4", 6", 8", 10"
(900 - 2500 lb. USAS in ¾" - 6" sizes only)
(bronze in ¾" - 6" sizes only)

connections: ¾" - 2" screwed ends
¾" - 10" flanged
weld ends also available

ratings: standard trim
iron — screwed ends — 250 lb USAS
iron — flanged — 125 or 250 lb USAS
carbon or alloy steel — screwed ends — 600 lb USAS
carbon or alloy steel — flanged — 150 through 2500 lb USAS
standard quick change trim
screwed ends — 600 lb USAS
flanged — 150 through 1500 lb USAS
balanced quick change trim
screwed and flanged — 600 lb. USAS

bonnet*

joint: stud-bolted

packing box: bolted

packing: Teflon-asbestos — other available

lubricator: available where packing requires lubrication; includes isolating valve

*finned and extension types are also available

standard trim

materials: plug and seat ring — Type 316 stainless steel. Other alloys and hard facings available.
No. 521 plug available with Teflon or Buna N soft seat in full capacity sizes 1" - 10" for ratings through 600 lb USAS.
guide bushing — hardened Type 440C stainless steel
other trim parts — Type 303 stainless steel

nominal plug sizes: linear contoured
No. 571 — ¼", ⅜", ½"
percentage contoured
No. 521 — ¾", 1", 1½", 2", 3", 4", 6", 8", 10"

quick-change trim*

materials: standard
plug and seat ring — Type 316 stainless steel. Other alloys and hard facings available.
No. 721 plug available with Teflon or Buna N soft seat in full capacity sizes 1" - 4".
retaining cylinder — 17-4PH standard. Other alloys available.
guide bushing — hardened Type 440C stainless steel
balanced
plug — Type 416 stainless steel. Other alloys and hard facings available.
trim cartridge — 17-4PH standard. Other alloys available.
valve plug seal rings — glass filled Teflon, Temperatures to 450F.
Graphite, temperature to 1000F.

*Note: standard and balanced quick-change trim are not interchangeable.

nominal plug sizes: standard — linear contoured
No. 771 — ¼", ⅜" ½"
standard — percentage contoured
No. 721 — ¾", 1", 1½", 2", 3", 4"
balanced
1", 1½", 2", 3", 4", 6", 8", 10" — full capacity only — percentage characterized

approximate shipping weights (pounds)

Valve Size (inches)	150 or 300 lb	400 or 600 lb	900 or 1500 lb	Extra for Finned Bonnet
with spring-diaphragm actuator				
¾	80	90	130	26
1	85	100	140	26
1½	100	110	185	26
2	125	140	280	27
3	220	230	413	27
4	270	310	560	27
6	455	535	1090	37
8	710	865	—	43
10	1200	1350	—	43
with Domotor				
¾	55	65	105	26
1	60	75	115	26
1½	75	85	150	26
2	90	105	230	27
3	170	180	360	27
4	220	260	495	27
6	390	470	960	37
8	650	805	—	43
10	1140	1290	—	43
hand-operated				
¾	40	48	70	26
1	50	55	90	26
1½	65	75	140	26
2	80	90	190	27
3	130	140	300	27
4	180	200	430	27
6	325	385	920	37
8	495	625	—	43
10	940	1060	—	43

Actuators

spring diaphragm actuator

type: Spring opposed diaphragm pneumatic actuator.

action: Increasing air extends stem

spring ranges: 3-15 or 6-30 psi

inst. supply: 20 psi (for 3-15 signal) or 35 psi (for 6-30 signal).

connections: ¼" NPT

Standard Actuator Size	Effective Diaphragm Area (Sq. In.)	Maximum Stroke (In.)
9	45	2
13	105	2
15	145	2
18	200	2½
18L	200	4

Domotor

type: Positioning pneumatic cylinder with integral positioner and loading regulator.

material: Cast aluminum

action: Increasing air retracts stem (direct positioner)

inst. signal: 3-15 psi

supply: Up to 100 psi

loading pressure: ½ supply pressure

accuracy: .001" per inch of stroke

connections: ¼" NPT

Domotor Size	Maximum Stroke (in.)	Nominal Effective Area (sq. in.)
B	1½	50
C	2½	100
D	6	200

Handwheels

Available Sizes — Side Mounted

Type	Actuator Size	Maximum Stroke (inches)
6A1	9	¾
	11	1
6A2	13	1½
6A3	15	2
	18	2½
7A1	18L	4
7A2	24	4

Available Types — Case Mounted

Type	Actuator Size	Maximum Stroke (inches)	Turns for Rated Stroke
Direct Actuator			
2-9	9	¾	12
2-11	11	1	14
2-13	13	2	28
3-9	9	2	32
3-15	15	2	16
3-18	18	2½	20
4-18	18	2½	20
5-18	18L	4	32
6-18	18L	4	32
7-24	24	4	32
Reverse Actuator			
9-9	9	¾	12
9-11	11	1	16
9-13	13	1½	24
9-15	15	2	28
9-18	18	2½	35

specifications

model numbers — 20000 Series

Description	with spring diaphragm actuator		with Domotor	hand operated	plug no.
	direct air-to-close	reverse air-to-open			
Percentage Contoured	37-20521	38-20521	71-20521	20-20521	521
Linear Contoured	37-20571	38-20571	71-20571	20-20571	571
With Standard	37-20721	38-20721	71-20721	—	721
Quick-Change Trim	37-20771	38-20771	71-20721	—	771
With Balanced Quick-Change Trim	37-20821	38-20821	38-20821	—	821

Note: For finned bonnet, add suffix AB
For extension bonnet, add suffix EB
For bellows seal, add suffix BS

standard actuator sizes

Valve Size (inches)	spring diaphragm actuator †		Domotor		stem travel (inches)
	standard size	effective diaphragm area (square inches)	standard size	effective piston area (square inches)	
***Body Ratings through 600 lb. USAS**					
¾, 1, 1½	9	45	A	25	¾
2	11	71	B	50	1
3, 4	13	105	B	50	1 or 1½
6	15	145	C	100	1, 1½ or 2
8, 10	18	200	D	200	1½ or 2
	18 long yoke	200	—	—	4
***Body Ratings 900, 1500 lb. USAS**					
¾, 1	9	45	A	25	¾
1½	11	71	B	50	1
2, 3	13	105	B	50	1 or 1½
4	15	145	C	100	1, 1½ or 2
6	18	200	C	100	1½, 2 or 2½

† Direct: Air-to-close action
Reverse: Air-to-open action
* Specifications on USAS 2500 lb on request

flow coefficients

Rated C_V — USAS 150 through 600 lb. (pipe schedule 40)

Nominal Trim Size			¼	⅜	½	¾	1	1½	2	3	4	6	8	10
Orifice Diameter			.250	.375	.500	.750	.812	1.250	1.625	2.625	3.500	5.000	6.250	8.000
Valve Size (inches)	Standard Actuator Size	Stroke (inches)	Reduced Trim			Full Capacity Trim								
¾	9	¾	1.7	3.7	6.4	11								
1	9	¾	1.7	3.7	6.4	11	12							
1½	9	¾	1.7	3.8	6.6	12	13	25						
2	11	1	1.7	3.8	6.7	13	19*	26	46					
3	13	1				14		31	47					
		1½								110				
4	13	1						32	49					
		1½								113	195			
6	15	1							53					
		1½								126	208			
		2										400		
8	18	1½								133	224			
		2										415		
	18L	4											640	
10	18	1½									233			
		2										442		
		2½												1000
	18L	4											648	1000

* Orifice Diameter .994

Rated C_V — USAS 900 through 1500 lb. (pipe schedule 80)

Nominal Trim Size			¼	⅜	½	¾	1	1½	2	3	4	6
Orifice Diameter			.250	.375	.500	.750	.812	1.250	1.625	2.625	3.500	5.000
Valve Size (inches)	Standard Actuator Size	Stroke (inches)	Reduced Trim			Full Capacity Trim						
¾	9	¾	1.7	3.7	6.4	11						
1	9	¾	1.7	3.7	6.4	11	12					
1½	11	1	1.7	3.8	6.6	12	16*	25				
2	13	1	1.7	3.8	6.7	13	19*	26				
		1½							46			
3	13	1				14		31				
		1½							47	110		
4	15	1						32				
		1½							49	113		
		2									195	
6	18	1½							53	126		
		2									208	
		2½										400

* Orifice Diameter .994

Rated C_V — USAS 2500 lb. (pipe schedule 160)

Orifice Diameter			.250	.375	.500	.750	.994	1.250	1.375	1.625	2.000	2.500	2.625	3.500	3.750
Valve Size (inches)	Standard Actuator Size	Stroke (inches)	Reduced Trim			Full Capacity Trim									
1	11	¾	1.7	3.7	6.3	11									
1½	13	1	1.7	3.8	6.4	11	16								
2	15	1	1.7	3.8	6.7	13	18								
		1½							29						
3	15	1				14		31							
		1½								46	64				
4	18	1						32							
		1½								49					
		2										103			
6	18	1½								53			121		
		2												198	
		2½													222

pressure drop limitations with spring diaphragm actuators standard trim and standard quick-change trim

To assure satisfactory operation under all conditions, the pressure drop must be taken as inlet to 0. The following tables are based on this fact.

For each valve size, the first actuator size shown is the standard actuator; the second is an oversize actuator.

The pressure drops given are independent of USAS pressure-temperature ratings. Where allowable pressure drops exceed USAS ratings, the USAS limitations must govern.

For services involving pressure drop in excess of those shown, or for balanced plug pressure drops, submit full details for engineering review and recommendations.

150-600 lb.

*flow tending to close
air-to-close or air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Actuator Size	Spring Range (psi)	Throttling	On-Off
¼, ⅜, ½	¾, 1, 1½	¾	9	6-30	1000	1000
	2	1	11	6-30	1000	1000
¾	¾, 1, 1½	¾	9 11	6-30 6-30	615 970	920 1000
	2	1	11	6-30	970	1000
	3	1	13	6-30	1000	1000
1	1, 1½	¾	9 11 13	6-30 6-30 6-30	520 820 1000	780 1000 1000
	2	1	11 13 15	6-30 6-30 6-30	540 800 1000	810 1000 1000
1½	1½	¾	9 11 13	6-30 6-30 6-30	220 345 510	330 515 765
	2	1	11 13 15	6-30 6-30 6-30	345 510 705	515 765 1000
	3, 4	1	13 15 18	6-30 6-30 6-30	510 705 975	765 1000 1000
2	2	1	11 13 15	6-30 6-30 6-30	205 300 420	310 450 630
	3, 4	1	13 15 18	6-30 6-30 6-30	300 420 580	450 630 870
	6	1	15 18	6-30 6-30	420 580	630 870
3	3, 4	1½	13 15 18	6-30 6-30 6-30	115 160 220	170 240 330
	6	1½	15 18	6-30 6-30	160 220	240 330
	8	1½	18	6-30	220	330
4	4	1½	13 15 18	6-30 6-30 6-30	65 90 125	97 135 190
	6	1½	15 18	6-30 6-30	90 125	135 190
	8, 10	1½	18	6-30	125	190
6	6	2	15 18	6-30 6-30	44 61	66 91
	8, 10	2	18	6-30	61	91
8	8, 10	2½ 4	18 18L	6-30 6-30	39 39	58 58
10	10	2½ 4	18 18L	6-30 6-30	24 24	36 36

* For 3-15 psi spring range, use ½ of pressure drops shown.

150-600 lb.

flow tending to open
air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Actuator Size	Spring Range* (psi)	Throttling or On-Off
¼, ⅜, ½	¾, 1, 1½	¾	9	6-30	1000
	2	1	11	6-30	1000
¾	¾, 1, 1½	¾	9 11 11	6-30 6-30 11-30	470 780 1000
	2	1	11 13	6-30 6-30	780 1000
	3	1	13	6-30	1000
1	1, 1½	¾	9 11	6-30 11-30	400 1000
	2	1	11 13	6-30 12-30	440 1000
1½	1½	¾	9 11 13	6-30 11-30 16-30	170 630 1000
	2	1	11 13	6-30 12-30	280 995
	3, 4	1	13 13	6-30 12-30	400 995
2	2	1	11 13 15	6-30 12-30 15-30	165 590 1000
	3, 4	1	13 13 15	6-30 12-30 15-30	235 590 1000
	6	1	15 15	6-30 15-30	340 1000
3	3, 4	1½	13 15 18	6-30 11-30 12-30	90 300 520
	6	1½	15 15 18	6-30 11-30 12-30	130 300 520
	8	1½	18 18 18(20″)	6-30 12-30 18-30	210 520 830
4	4	1½	13 15 15 18 18(20″)	6-30 6-30 11-30 12-30 18-30	50 75 160 290 465
	6	1½	15 15 18 18(20″)	6-30 11-30 12-30 18-30	75 160 290 465
	8, 10	1½	18 18 18(20″)	6-30 12-30 18-30	115 290 465
6	6	2	15 18 18 18(20″)	6-30 9-30 9-30 17-30	36 57 100 210
	8, 10	2	18 18 18(20″)	6-30 9-30 17-30	57 100 210
8	8, 10	2½	18 18	6-30 10-30	36 72
		4	18L(16″) 18L(20″)	6-30 9-33	36 63
10	10	2½	18 18	6-30 10-30	22 44
		4	18L(16″) 18L(20″)	6-30 9-33	22 39

* When air supply is limited to 20 psi, use 5-17 psi range actuator; allowable pressure drops are then .75 of those shown for 6-30 psi range.

150-600 lb.

Flow tending to open

air-to-close action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Actuator Size	Spring Range (psi)	Throttling or On-Off		
					20 psi Supply	30 psi Supply	35 psi Supply
¼, ⅜	¾, 1, 1½	¾	9	3-15	1000	1000	1000
	2	1	11	3-15	1000	1000	1000
½	¾, 1, 1½	¾	9 9	3-15 3-9	650 1000	1000 1000	1000 1000
	2	1	11	3-15	1000	1000	1000
¾	¾, 1, 1½	¾	9 9 11 11	3-15 3-9 3-15 3-12	290 875 475 950	1000 1000 1000 1000	1000 1000 1000 1000
	2	1	11 11	3-15 3-11	450 1000	1000 1000	1000 1000
	3	1	13 13	3-15 3-11	685 1000	1000 1000	1000 1000
1	1, 1½	¾	9 9 11 11	3-15 3-9 3-12 3-9	250 750 810 1000	1000 1000 1000 1000	1000 1000 1000 1000
	2	1	11 11 13	3-15 3-11 3-11	250 585 900	1000 1000 1000	1000 1000 1000
1½	1½	¾	9 9 11 11 13	3-15 3-9 3-12 3-9 3-9	105 315 340 510 760	455 660 910 1000 1000	630 840 1000 1000 1000
	2	1	11 11 13 15	3-15 3-11 3-11 3-9	160 375 575 1000	700 910 1000 1000	970 1000 1000 1000
	3, 4	1	13 13 15	3-15 3-11 3-9	245 575 1000	1000 1000 1000	1000 1000 1000
2	2	1	11 11 13 15	3-15 3-11 3-11 3-9	95 220 340 615	415 540 830 1000	575 700 1000 1000
	3, 4	1	13 13 15 18	3-15 3-11 3-9 3-8	145 340 615 1000	635 830 1000 1000	880 1000 1000 1000
	6	1	15 15 18	3-15 3-9 3-8	200 615 1000	890 1000 1000	1000 1000 1000
3	3, 4	1½	13 13 15 18	3-15 3-9 3-12 3-8	54 165 150 380	235 340 405 760	325 430 530 950
	6	1½	15 15 18	3-15 3-12 3-8	76 150 380	330 405 760	450 530 950
	8	1½	18 18	3-15 3-8	115 380	495 760	685 950
4	4	1½	13 13 15 18	3-15 3-9 3-12 3-8	30 91 85 215	130 190 225 430	180 240 300 540
	6	1½	15 15 18	3-15 3-12 3-8	43 85 215	185 225 430	255 300 540
	8, 10	1½	18 18	3-15 3-8	62 215	280 430	385 540
6	6	2	15 15 18 18	3-15 3-9 3-15 3-10	20 60 30 83	87 125 135 185	120 160 185 240
	8, 10	2	18 18	3-15 3-10	30 83	135 185	185 240
8	8, 10	2½	18	3-15	19	84	116
		4	18L	3-15	16	70	97
10	10	2½	18	3-15	11	51	71
		4	18L	3-15	10	43	59

900-1500 lb.

Flow tending to close

air-to-close or air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Actuator Size	Spring Range (psi)	Throt-tling	On-Off
¼, ⅜	¾, 1	¾	9	6-30	1500	1500
	1½	1	11	6-30	1500	1500
	2	1	13	6-30	1500	1500
½	¾, 1	¾	9 11	6-30 6-30	1380 1500	1500 1500
	1½	1	11	6-30	1500	1500
	2	1	13	6-30	1500	1500
¾	¾	¾	9 11 13	6-30 6-30 6-30	615 970 1430	920 1450 1500
	1½	1	11 13	6-30 6-30	970 1430	1450 1500
	2, 3	1	13	6-30	1430	1500
1	1	¾	9 11 13	6-30 6-30 6-30	520 820 1220	800 1230 1500
	1½	1	11 13 15	6-30 6-30 6-30	540 800 1110	810 1200 1500
	2	1	13 15 18	6-30 6-30 6-30	800 1110 1500	1200 1500 1500
1½	1½	1	11 13 15	6-30 6-30 6-30	345 510 705	515 765 1090
	2, 3	1	13 15 18	6-30 6-30 6-30	510 705 975	765 1090 1460
	4	1	15 18	6-30 6-30	705 975	1090 1460
2	2, 3	1½	13 15 18	6-30 6-30 6-30	300 420 580	450 630 870
	4	1½	15 18	6-30 6-30	420 580	630 870
	6	1½	18	6-30	580	870
3	3	1½	13 15 18	6-30 6-30 6-30	115 160 220	170 240 330
	4	1½	15 18	6-30 6-30	115 220	170 330
	6	1½	18	6-30	220	330
4	4	2	15 18	6-30 6-30	90 125	135 190
	6	2	18	6-30	125	190
6	6	2½	18	6-30	60	90

* For 3-15 psi spring range, use ½ of pressure drops shown.

pressure drop limitations with spring diaphragm actuators standard trim and standard quick-change trim

900-1500 lb.

Flow tending to open air-to-close action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Actuator Size	Spring Range (psi)	Throttling or On-Off		
					20 psi Supply	30 psi Supply	35 psi Supply
¼, ⅜	¾, 1	¾	9 9	3-15 3-9	1170 1500	1500 1500	1500 1500
	1½	1	11	3-15	1500	1500	1500
	2	1	13	3-15	1500	1500	1500
½	¾, 1	¾	9 9	3-15 3-9	650 1500	1500 1500	1500 1500
	1½	1	11 11	3-15 3-11	1000 1500	1500 1500	1500 1500
	2	1	13	3-15	1500	1500	1500
¾	¾, 1	¾	9 9 11 13	3-15 3-9 3-12 3-9	290 875 950 1500	1270 1500 1500 1500	1500 1500 1500 1500
	1½	1	11 11 13	3-15 3-11 3-11	450 1050 1500	1500 1500 1500	1500 1500 1500
	2, 3	1	13 13 15	3-15 3-11 3-9	685 1500 1500	1500 1500 1500	1500 1500 1500
1	1	¾	9 9 11 13	3-15 3-9 3-12 3-9	250 750 810 1500	1080 1500 1500 1500	1490 1500 1500 1500
	1½	1	11 11 13 15	3-15 3-11 3-11 3-9	250 585 900 1500	1080 1450 1500 1500	1490 1500 1500 1500
	2	1	13 13 15	3-15 3-11 3-9	385 900 1500	1500 1500 1500	1500 1500 1500
1½	1½	1	11 11 13 15	3-15 3-11 3-11 3-9	160 375 575 1030	700 910 1400 1500	970 1180 1500 1500
	2, 3	1	13 13 15	3-15 3-11 3-9	245 575 1030	1070 1400 1500	1480 1500 1500
	4	1	15 15	3-15 3-9	345 1030	1490 1500	1500 1500
2	2, 3	1½	13 13 15 18	3-15 3-9 3-12 3-8	140 420 395 945	610 890 1060 1500	845 1140 1380 1500
	4	1½	15 15 18 18	3-15 3-12 3-8 3-11	200 395 995 700	860 1060 1500 1500	1180 1380 1500 1500
	6	1½	18 18	3-15 3-8	300 995	1290 1500	1500 1500
3	3	1½	13 13 15 18	3-15 3-9 3-12 3-8	54 165 150 380	235 340 405 760	325 430 530 950
	4	1½	15 15	3-15 3-12	75 150	330 405	455 530
	6	1½	18 18	3-15 3-8	115 380	495 760	665 950
4	4	2	15 15 18 18L	3-15 3-9 3-10 3-8	41 125 170 210	175 260 380 420	245 325 480 525
	6	2	18 18 18L	3-15 3-10 3-8	63 170 210	270 380 420	380 480 525
6	6	2½	18 18 18L	3-15 3-11 3-8	30 71 100	130 170 205	180 220 255

Flow tending to open air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Actuator Size	Spring Range (psi)	Throttling or On-Off
¼, ⅜	¾, 1	¾	9	6-30	1500
	1½	1	11 13	6-30 12-30	1500 1500
	2	1	13	6-30	1500
½	¾, 1	¾	9 11	6-30 6-30	1060 1500
	1½	1	11	6-30	1500
	2	1	13	6-30	1500
¾	¾, 1	¾	9 11 11	6-30 6-30 11-30	470 780 1500
	1½	1	11 13	6-30 12-30	780 1500
	2, 3	1	13 13	6-30 12-30	1110 1500
1	1	¾	9 11 11	6-30 6-30 11-30	400 665 1500
	1½	1	11 13 13	6-30 6-30 12-30	440 620 1500
	2	1	13 13	6-30 12-30	620 1500
1½	1½	1	11 13 15	6-30 12-30 15-30	280 990 1500
	2, 3	1	13 13 15	6-30 12-30 15-30	395 990 1500
	4	1	15 15	6-30 15-30	580 1500
2	2, 3	1½	13 15 18 18(16″)	6-30 11-30 12-30 14-30	235 775 1340 1500
	4	1½	15 15 18 18(16″)	6-30 11-30 12-30 14-30	340 775 1340 1500
	6	1½	18 18 18(16″)	6-30 12-30 14-30	540 1340 1500
3	3	1½	13 15 18 18(20″)	6-30 11-30 12-30 18-30	90 295 515 820
	4	1½	15 15 18 18(20″)	6-30 11-30 12-30 18-30	130 295 515 820
	6	1½	18 18 18(20″)	6-30 12-30 18-30	205 515 820
4	4	2	15 18 18(20″)	6-30 9-30 17-30	74 200 430
	6	2	18 18 18(20″)	6-30 9-30 17-30	115 200 430
6	6	2½	18 18(16″) 18(20″)	6-30 10-30 15-30	57 115 185

shut-off pressure drop limitations with spring diaphragm actuator balanced quick-change trim.

For each valve size, the first actuator size shown is the standard actuator; the second is an oversize actuator.

Where allowable pressure drops exceed USAS ratings, the USAS limitations must govern.

150-600 lb.
Flow tending to close air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Actuator Size	Spring Range (psi)	Allowable Pressure Drop	
					20 psi Supply	30 psi Supply
1	1	¾	9	3-15 3-9	710 1440	1440 1440
1½	1½	¾	9 11	3-15 3-9 3-12	460 1380 1440	1440 1440 1440
2	2	1	11	3-15 3-11	900 1440	1440 1440
3	3	1½	13	3-15 3-9	740 1440	1440 1440
4	4	1½	13	3-15 3-9	560 1440	1440 1440

150-600 lb.
Flow tending to close air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Actuator Size	Spring* Range (psi)	Allowable Pressure Drop (psi)
1	1	¾	9	6-30	1150
			11	6-30	1440
1½	1½	¾	9 11	6-30 6-30 11-30	740 1230 1440
2	2	1	11 13	6-30 6-30	1230 1440
3	3	1½	13 15	6-30 6-30	1250 1440
4	4	1½	13	6-30	930
			15	6-30 11-30	1370 1440

* For 3-15 psi spring range, use ½ at pressure drops shown for 6-30 spring range.

For pressure drop limitation for 900 and 1500 lb. ratings submit full details for engineering review and recommendations.

pressure drop limitations with Domotor standard trim and standard quick-change trim.

To assure satisfactory operation under all conditions, the pressure drop must be taken as inlet to 0. The following tables are based on this fact.

For each valve size, the first actuator size shown is the standard actuator; the second is an oversize actuator.

When allowable pressure drops exceed USAS ratings, the USAS limitations must govern.

For services requiring combinations of flow direction, and actuator action, other than those shown, or specific air failure action, submit full details for engineering review and recommendations.

150-600 lb.

Flow tending to open air-to-close action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Domotor Size	Throttling		
				Supply 30 psi Preload 15 psi	Supply 50 psi Preload 25 psi	Supply 75 psi preload 40 psi
¼, ⅜,	¾, 1, 1½	¾	A	1000	1000	1000
½	2	1	B	1000	1000	1000
¾	¾, 1, 1½	¾	A	490	1000	1000
	2, 3	1	B	1000	1000	1000
1	1, 1½	¾	A B	415 940	870 1000	1000 1000
	2	1	B	610	1000	1000
1½	1½	¾	A B	175 400	360 710	645 1000
	2, 3, 4	1	B C	385 825	700 1000	1000 1000
2	2, 3, 4	1	B C	225 490	415 835	695 1000
	6	1	C	490	835	1000
3	3, 4	1½	B C	80 180	150 315	310 520
	6, 8	1½	C D	180 370	315 630	520 1000
4	4	1½	B C	45 100	85 175	145 290
	6, 8, 10	1½	C D	100 205	175 350	290 575
6	6, 8, 10	2	C D	45 100	85 170	140 280
8	8, 10	4	D	70	115	185
10	10	4	D	40	70	110

Note: 17-4PH stem construction is required for 40 psi preload when used with B Domotors on valves sizes ¾" to 1½"; C Domotors on valve sizes 2" to 4"; and D Domotors on valve sizes 4" to 6".

150-600 lb.

Flow tending to close air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Domotor Size	Throttling		
				Supply 30 psi *Preload 15 psi	Supply 60 psi Preload 25 psi	Supply 100 psi Preload 35 psi
¼, ⅜	¾, 1, 1½	¾	A	1000	1000	1000
½	2	1	B	1000	1000	1000
¾	¾, 1, 1½	¾	A	1000	1000	1000
	2, 3	1	B	1000	1000	1000
1	1, 1½	¾	A	1000	1000	1000
	2	1	B	1000	1000	1000
1½	1½	¾	A B	570 735	1000 1000	1000 1000
	2, 3, 4	1	B C	735 1000	1000 1000	1000 1000
2	2, 3, 4	1	B C	420 780	955 1000	1000 1000
	6	1	C	780	1000	1000
3	3, 4	1½	B C	155 280	355 640	650 1000
	6, 8	1½	C D	280 545	640 1000	1000 1000
4	4	1½	B C	85 155	200 355	360 750
	6, 8, 10	1½	C D	155 300	355 690	750 965
6	6, 8, 10	2	C D	75 145	170 335	360 470
8	8, 10	4	D	90	210	300
10	10	4	D	55	130	185

* Preload pressure for A Domotor in 10 psi when supply pressure is 30 psi.

900-1500 lb.
Flow tending to open air-to-close action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Domotor Size	Throttling		
				Supply 30 psi Preload 15 psi	Supply 50 psi Preload 25 psi	Supply 75 psi Preload 40 psi
¼, ⅜ ½	¾, 1 1½, 2	¾ 1	A B	1100 1500	1500 1500	1500 1500
¾	¾, 1 1½, 2, 3	¾ 1	A B	490 1070	1010 1500	1500 1500
1	1 1½, 2	¾ 1	A B B	415 940 610	870 1500 1500	1500 1500 1500
1½	1½, 2, 3 4	1 1	B C C	385 825 825	700 1420 1420	1170 1500 1500
2	2, 3 4, 6	1½ 1½	B C C D	215 470 470 965	400 805 805 1500	680 1360 1360 1500
3	3 4, 6	1½ 1½	B C C D	80 180 180 370	150 315 315 630	310 520 520 1025
4	4, 6	2	C D	95 205	170 350	285 570
6	6	2	C D	45 100	85 170	140 280

Note: 17-4PH stem construction is required for 40 psi preload when used with B Domotors on valves sizes ¾" to 1½"; C Domotors on valve sizes 2" to 4"; and D Domotors on valve sizes 4" to 6".

900-1500 lb.
Flow tending to close air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Domotor Size	Throttling		
				Supply 30 psi *Preload 15 psi	Supply 60 psi Preload 25 psi	Supply 100 psi Preload 35 psi
¼, ⅜ ½	¾, 1 1½, 2	¾ 1	A B	1500 1500	1500 1500	1500 1500
¾	¾, 1 1½, 2, 3	¾ 1	A B	1500 1500	1500 1500	1500 1500
1	1 1½, 2	¾ 1	A B B C	1460 1500 1230 1500	1500 1500 1500 1500	1500 1500 1500 1500
1½	1½, 2, 3 4	1 1	B C C D	735 1430 1430 1500	1500 1500 1500 1500	1500 1500 1500 1500
2	2, 3 4, 6	1½ 1½	B C C D	420 780 780 1500	955 1500 1500 1500	1500 1500 1500 1500
3	3 4, 6	1½ 1½	B C C D	155 280 280 545	355 640 640 1250	650 1350 1350 1500
4	4, 6	2	C D	155 300	355 690	750 965
6	6	2½	C D	75 145	170 335	360 470

* Preload pressure for A Domotor in 10 psi when supply pressure is 30 psi.

shut-off pressure drop limitations with Domotor balanced quick-change trim.

For each valve size, the first actuator size shown is the standard actuator; the second is an oversize actuator.

When allowable pressure drops exceed USAS ratings, the USAS ratings, the USAS limitation must govern.

150-600 lb.
Flow tending to close air-to-open action

Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Domotor Size	Throttling		
				Supply 30 psi *Preload 15 psi	Supply 60 psi Preload 25 psi	Supply 100 psi Preload 35 psi
1	1	¾	A B	980 1440	1440 1440	1440 1440
1½	1½	¾	A B	530 1320	1320 1440	1440 1440
2	2	1	B C	1090 1440	1440 1440	1440 1440
3	3	1½	C D	905 1440	1440 1440	1440 1440
4	4	1½	C D	545 1040	905 1440	1270 1440

* Preload pressure for A Domotor in 10 psi when supply pressure is 30 psi.

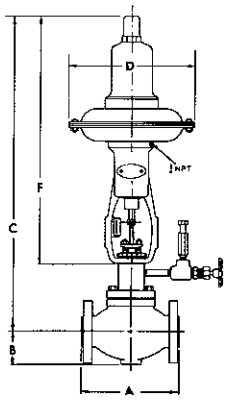
150-600 lb.
Flow tending to close air-to-close action

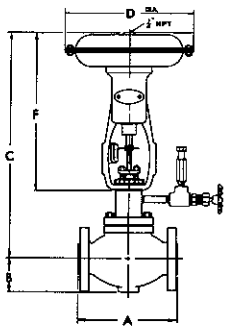
Nominal Trim Size (inches)	Valve Size (inches)	Stroke (inches)	Domotor Size	Throttling		
				Supply 30 psi Preload 15 psi	Supply 50 psi Preload 25 psi	Supply 75 psi Preload 40 psi
1	1	¾	A B	425 1440	1440 1440	1440 1440
1½	1½	¾	A B	230 1170	445 1440	1440 1440
2	2	1	B C	895 1440	1440 1440	1440 1440
3	3	1½	C D	795 1440	1390 1440	1440 1440
4	4	1½	C D	480 985	840 1440	1380 1440

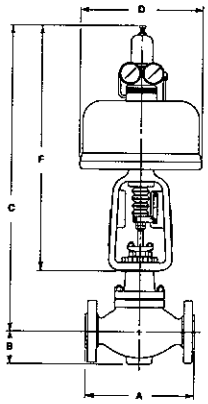
Note: 17-4PH stem construction is required for 40 psi preload when used with B Domotors on valve sizes 1" to 1½"; C Domotors on valve sizes 2" to 4"; and D Domotors on valve size 4".

For pressure drop limitations for 900 and 1500 lb. ratings submit full details for engineering review and recommendations.

dimensions







all dimensions are in inches

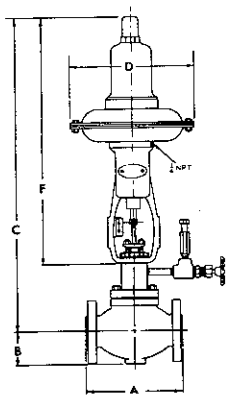
VALVE SIZE	Body and Connections	A		B	D		C*			F		
		Raised Face	Ring Joint		Spring Diaphragm Actuator	Domotor	Direct Actuator	Reverse Actuator	Domotor	Direct Actuator	Reverse Actuator	Domotor
¾	Iron – Screwed 250 lb	8¼		2⅝	11	7⅝	21⅝	29¼	21¼	16⅛	23¾	15¾
	Steel – Screwed 600 lb	8¼		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Steel – Flanged 150 lb	7¼										
	Steel – Flanged 300 lb	7⅝	8⅛									
	Steel – Flanged 400 lb	8⅛	8⅛									
	Steel – Flanged 600 lb	8⅛	8⅛									
	Steel – Flanged 900 lb	9½	9½				22⅞	30½	22½			
	Steel – Flanged 1500 lb	9½	9½				22⅞	30½	22½			
	*For Finned Bonnet add: Ratings through 600 lb, 4¼; 900 and 1500 lb, 4											
1	Iron – Screwed 250 lb	8¼		2⅝	11	7⅝	21⅝	29¼	21¼	16⅛	23¾	15¾
	Iron – Flanged 125 lb	7¼		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Iron – Flanged 250 lb	7¾										
	Steel – Screwed 600 lb	8¼										
	Steel – Flanged 150 lb	7¼	7¾									
	Steel – Flanged 300 lb	7¾	8¼									
	Steel – Flanged 400 lb	8¼	8¼									
	Steel – Flanged 600 lb	8¼	8¼									
	Steel – Flanged 900 lb	9¾	9¾				22⅞	30½	22½			
	Steel – Flanged 1500 lb	9¾	9¾				22⅞	30½	22½			
	*For Finned Bonnet add: Ratings through 600 lb, 4¼; 900 and 1500 lb, 4¼											
1½	Iron – Screwed 250 lb	9⅞		3⅛	11	7⅝	21⅞	29½	21½	16⅛	23¾	15¾
	Iron – Flanged 125 lb	8¾		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Iron – Flanged 250 lb	9¼										
	Steel – Screwed 600 lb	9⅞										
	Steel – Flanged 150 lb	8¾	9¼									
	Steel – Flanged 300 lb	9¼	9¾									
	Steel – Flanged 400 lb	9⅞	9⅞									
	Steel – Flanged 600 lb	9⅞	9⅞									
	Steel – Flanged 900 lb	10⅝	10⅝	3¼	13	9¼	23¾	31½	25⅜	16⅜	24⅛	18
	Steel – Flanged 1500 lb	10⅝	10⅝	3¼	13	9¼	23¾	31½	25⅜	16⅜	24⅛	18
	*For Finned Bonnet add: Ratings through 600 lb, 4⅝; 900 and 1500 lb, 3¾											
2	Iron – Screwed 250 lb	11¼		3½	13	9¼	23	30¾	24⅝	16⅜	24⅛	18
	Iron – Flanged 125 lb	10		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Iron – Flanged 250 lb	10½										
	Steel – Screwed 600 lb	11¼										
	Steel – Flanged 150 lb	10	10½									
	Steel – Flanged 300 lb	10½	11⅛									
	Steel – Flanged 400 lb	11¼	11⅜									
	Steel – Flanged 600 lb	11¼	11⅜									
	Steel – Flanged 900 lb	12¼	12⅜	3¾	15		28½	38	26⅜	20⅛	29⅝	
	Steel – Flanged 1500 lb	12¼	12⅜	3¾	15		28½	38	26⅜	20⅛	29⅝	
	*For Finned Bonnet add: Ratings through 600 lb, 4⅛; 900 and 1500 lb, 3											

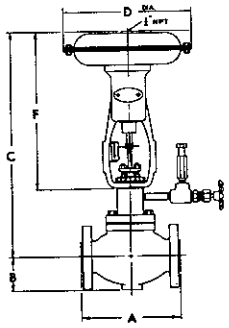
Notes: Socket Weld Connections: Available in ASA 600 lb valves. Use dimensions of comparable screwed end valves.

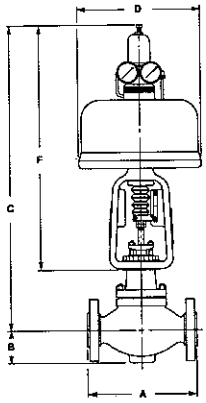
Butt Weld Connections: Available through ASA 1500 lb valves. Use dimensions of ASA 600 lb valves for ratings through 600 lb; ASA 1500 lb valves for 900 lb and 1500 lb ratings.

† Dimensions include only those valves with 1½" or 2" strokes. Dimensions for 4" stroke on request.

dimensions







all dimensions are in inches

VALVE SIZE	Body and Connections	A		B	D		C*			F		
		Raised Face	Ring Joint		Spring Diaphragm Actuator	Domotor	Direct Actuator	Reverse Actuator	Domotor	Direct Actuator	Reverse Actuator	Domotor
3	Iron – Flanged 125 lb	11¾		4½	15	9¼	28¼	37¾	26⅛	20⅛	29⅝	18
	Iron – Flanged 250 lb	12½		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Steel – Flanged 150 lb	11¾	12¼									
	Steel – Flanged 300 lb	12½	13⅛									
	Steel – Flanged 400 lb	13¼	13⅜									
	Steel – Flanged 600 lb	13¼	13⅜									
	Steel – Flanged 900 lb	15¼	15⅜	4⅝	15	↓	29¾	39¼	27⅝	↓	↓	↓
	Steel – Flanged 1500 lb	16	16⅛	4⅞	15		29¾	39¼	27⅝			
*For Finned Bonnet add: Ratings through 600 lb, 3¾; 900 and 1500 lb, 3⅜												
4	Iron – Flanged 125 lb	13⅞		5½	15	9¼	28¾	38¼	26⅝	20⅛	29⅝	18
	Iron – Flanged 250 lb	14½		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Steel – Flanged 150 lb	13⅞	14⅜									
	Steel – Flanged 300 lb	14½	15⅛									
	Steel – Flanged 400 lb	15¼	15⅜									
	Steel – Flanged 600 lb	15½	15⅝									
	Steel – Flanged 900 lb	18¼	18⅜	5⅞	17½	12½	37⅞	47¾	35¾	25⅝	35½	23½
	Steel – Flanged 1500 lb	19	19⅛	6⅛	17½	12½	37⅞	47¾	35¾	25⅝	35½	23½
*For Finned Bonnet add: Ratings through 600 lb, 4¼; 900 and 1500 lb, 3¼												
6	Iron – Flanged 125 lb	17¾		7⅜	17½	12½	37	46⅞	34⅞	25⅝	35½	23½
	Iron – Flanged 250 lb	18⅝		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Steel – Flanged 150 lb	17¾	18⅜									
	Steel – Flanged 300 lb	18⅝	19¼									
	Steel – Flanged 400 lb	19½	19⅝									
	Steel – Flanged 600 lb	20	20⅛									
	Steel – Flanged 900 lb	21⅞	22¼	7¾	20¾	↓	41⅜	51¼	↓	26⅞	36¾	↓
	Steel – Flanged 1500 lb	24	24¼	8⅛	20¾		41⅜	51¼		26⅞	36¾	
*For Finned Bonnet add: Ratings through 600 lb, 5½; 900 and 1500 lb, 5¼												
8	Iron – Flanged 125 lb	21⅜		8½	20¾	17⅛	50½	59¼	†50⅝	33⅜	42⅛	†32½
	Iron – Flanged 250 lb	22⅜		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Steel – Flanged 150 lb	21⅜	21⅞									
	Steel – Flanged 300 lb	22⅜	23									
	Steel – Flanged 400 lb	23⅜	23½									
	Steel – Flanged 600 lb	24	24⅛									
*For Finned Bonnet add: 5½												
10	Iron – Flanged 125 lb	24⅝		10⅜	20¾	17⅛	51¼	60	†51⅜	33⅜	42⅛	†32½
	Iron – Flanged 250 lb	26		↓	↓	↓	↓	↓	↓	↓	↓	↓
	Steel – Flanged 150 lb	24⅝	25⅛									
	Steel – Flanged 300 lb	26	26⅝									
	Steel – Flanged 400 lb	27	27⅛									
	Steel – Flanged 600 lb	27¾	27⅞									
*For Finned Bonnet add: 4½												

Notes: Socket Weld Connections: Available in ASA 600 lb valves. Use dimensions of comparable screwed end valves.

Butt Weld Connections: Available through ASA 1500 lb valves. Use dimensions of ASA 600 lb valves for ratings through 600 lb; ASA 1500 lb valves for 900 lb and 1500 lb ratings.

† Dimensions include only those valves with 1½" or 2" strokes. Dimensions for 4" stroke on request.

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