



Diaphragm Operated Control Valves are ideal for controlling steam and water as well as other process fluids by means of an air or hydraulic signal pressure. In addition to the standard materials and forms of construction described in the following pages, we are able to supply valves manufactured from other materials and with end connections and pressure ratings to user's specifications.

VARIATIONS WHICH CAN BE SUPPLIED INCLUDE:

1. Synthetic valve discs
2. Vee-port and parabolic plugs
3. High temperature elastomer packings and diaphragms.
4. Oil resistant diaphragms
5. Position indicators
6. Solenoid control for remote operation.
7. Limit switches, top and / or bottom, for remote indication.
8. Standard Max. signal 170kPa (25 psi). High-pressure diaphragm housings for up to 410kPa (60 psi) signal on request.
9. Double acting diaphragm housings.

Standard diaphragms are suitable for a maximum signal pressure of 170kPa (25 psi) and return springs are designed for use with the usual 20-100kPa (3-15 psi) pneumatic signal. Enquiries concerning diaphragm operated control valves for special application are always welcome. Correct selection of the most suitable materials and operating characteristics is essential for satisfactory service. Our engineering staff are always available to advise in this regard.

BACK PRESSURE REGULATORS

Standard Diaphragm Valves can be used in lieu of Reducing Valves, when a low secondary pressure is required e.g. 20-70kPa (3-10 psi) a normally open Valves is used for this service.

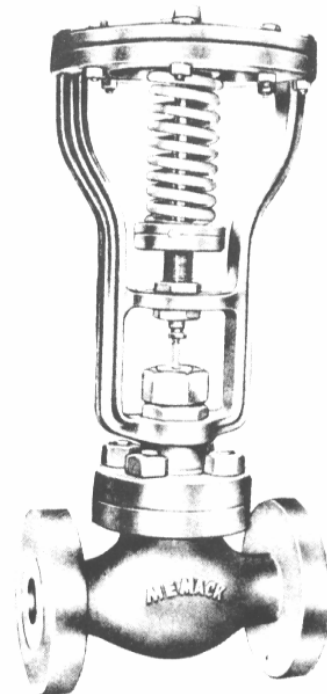
RELIEF VALVE OR SURPLUS VALVE

A normally closed Diaphragm Valve can be used to maintain a constant initial pressure and discharge excess pressure. (e.g. Ring mains, etc.) Recommended control pressure 20-70kPa (3-10 psi) for higher pressures refer to Surplus Valve Section.

VACUUM REGULATING VALVE

Modified Diaphragm Valves can be supplied for this service.

Diaphragm Actuated Valve Section





Diaphragm Actuated Valves

G.M. Gun Metal **C.I.** Cast Iron (Meehanite)
S.S. Stainless Steel **C.S.** Cast Steel
M.B. Manganese Bronze

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INDEX OF ILLUSTRATED VALVES & EQUIVALENTS IN VARIOUS MATERIALS

DIAPHRAGM ACTUATED VALVES	End Connections	Body & Bonnet	Screwed Bonnet	Bolted Bonnet	Seat	Disc	Diaphragm	Normally Open Direct acting	Normally closed Reverse acting	Three Way	Rating			Dimensions page
											Steam	Temp	Water Oil Gas	
											Pressure KPa psi			
8132 – GUN METAL (Illustrated Page G4) 8161 – Equivalent CAST IRON 8172 – Equivalent CAST STEEL 8192 – Equivalent STAINLESS STEEL	B.S.T H	GM	15-50 mm	65-200 mm	SS	SS	Neoprene	√			1720 250	260 500	1720 250	G 6
	B.S.T F	CI		65-200 mm	SS	SS		√			1100 160	205 400	1720 250	
	B.S.T H	CS	15-50 mm	65-200 mm	SS	SS		√			1720 250	260 500	1720 250	
	B.S.T H	SS	15-50 mm	65-200 mm	SS	SS		√			1720 250	260 500	1720 250	
8138 – GUN METAL (Illustrated Page G4) 8198 – Equivalent STAINLESS STEEL	Screwed BSP Female	GM	√		SS	SS	Neoprene	√			1720 250	260 500	1720 250	G 6
	Screwed BSP Female	SS	√		SS	SS		√			1720 250	260 500	1720 250	
8232 – GUN METAL (Illustrated Page G4) 8261 – Equivalent CAST IRON 8272 – Equivalent CAST STEEL 8292 – Equivalent STAINLESS STEEL	B.S.T H	GM	15-50 mm	65-200 mm	SS	SS	Neoprene		√		1720 250	260 500	1720 250	G 6
	B.S.T F	CI		65-200 mm	SS	SS			√		1100 160	205 400	1720 250	
	B.S.T H	CS	15-50 mm	65-200 mm	SS	SS			√		1720 250	260 500	1720 250	
	B.S.T H	SS	15-50 mm	65-200 mm	SS	SS			√		1720 250	260 500	1720 250	
8238 – GUN METAL (Illustrated Page G4) 8298 – Equivalent STAINLESS STEEL	Screwed BSP Female	GM	√		SS	SS	Neoprene		√		1720 250	260 500	1720 250	G 6
	Screwed BSP Female	SS	√		SS	SS			√		1720 250	260 500	1720 250	
8338 – GUN METAL (Illustrated Page G4)	Screwed BSP Female	GM	√		SS	SS			√		70 10	260 500	1030 150	

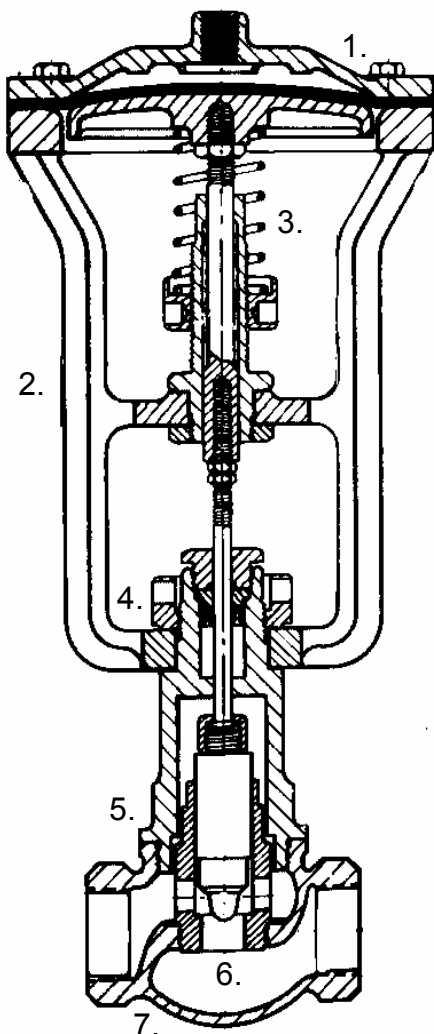
Diaphragm Actuated Valves



DIAPHRAGM ACTUATED VALVES MINIATURE TYPE	End Connections	Body & Bonnet	Screwed Bonnet	Bolted Bonnet	Seat	Disc	Diaphragm	Normally Open Direct acting	Normally closed Reverse acting	RATING			Dimensions Page
										Steam	Temp	Water Oil Gas	
										Pressure KPa psi	°C °F	KPa psi	
8128 – GUN METAL (Illustrated Page G4)	Screwed B.S.P Female	GM	✓		Integral	Synthetic Rubber	Neoprene	✓		NIL	81 180	1380 200	G6
8228 – GUN METAL (Illustrated Page G4)	Screwed B.S.P Female	GM	✓		Integral	Synthetic Rubber	Neoprene		✓	NIL	80 180	1380 200	G6

NOTE: ON – OFF Pressure ratings have been stated for all Valves listed. If variations to stated pressures are required, please enquire, as larger Diameter Diaphragm Actuators are available together with High Pressure Actuators. If proportional control is required, valves can be sized correctly and fitted with Teflon Vee port or Parabolic Valve Disc and Positional Indicators.

* Signal Pressure is applied to diaphragm from auxiliary supply e.g. Pneumatic indicating controller. Selection of Spring Range is essential particularly where used in conjunction with Pneumatic controller.



FEATURES OF STANDARD TYPE

- (1) Large single acting diaphragm designed for moderate actuating pressure and long life.
- (2) Cast aluminium housing and cradle of sturdy construction for protection in corrosive atmospheres.
- (3) Cadmium plated control spring adjustable and suitable for 3-15psi-signal pressure.
- (4) Floating U-Ring and stationary O-Ring valve stem seals to eliminate leakage.
- (5) Rated capacities to assist correct selection for proper controls.
- (6) 18-8 stainless steel valve seat and plug with guide of generous proportions for accurate leak tight seating.
- (7) Body materials to users specifications, in flanged and screwed patterns to suit the majority of applications.
- (8) Direct acting design using signal pressure to open and three-way are also standard.
- (9) Valves for high-pressure drops and all valves over 50mm size incorporate balanced main valves and pilot operation.
- (10) Refer Page G5 for other types of applications.

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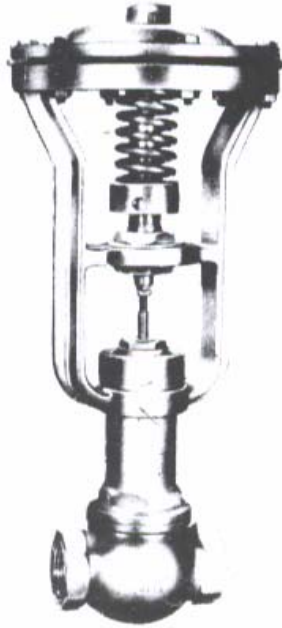
Cv RATINGS												
SIZE	½	¾	1	1 ¼	1 ½	2	2 ½	3	4	5	6	8
DIRECT ACTING	2.7	4.5	8	11	17	27	49	70	125	196	282	502
REVERSE ACTING	2.2	3.6	7.8	11	17	27	49	70	125	196	282	502
THREE WAY	2.1	3.4	7	10	16	25	-	-	-	-	-	-

CV RATINGS ARE BASED ON IMPERIAL GALLONS PER MINUTE



Diaphragm Actuated Valves

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No. 8138 15 – 50mm Direct Acting Normally Open
No. 8238 15 – 50mm Reverse Acting Normally Closed

Screwed B.S.P. Female

Bronze Body & Bonnet. Renewable Stainless Steel seta, disc & spindle. Teflon U-Ring & Silicone O-Ring packing. Aluminium Diaphragm housing. Neoprene Diaphragm.



No. 8132 15 – 200mm Direct Acting Normally Open
No. 8232 15 – 200mm Reverse Acting Normally Closed

Flanged B.S.T. "H"

Bronze Body & Bonnet. Renewable Stainless Steel seat, disc & spindle. Teflon U-Ring & Silicone O-Ring packing. Aluminium Diaphragm housing. Neoprene Diaphragm.

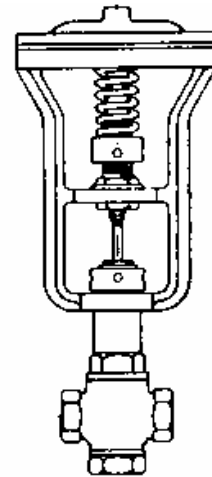
NOTE: 65 – 200mm Valves are BOLTED bonnet type & Diaphragm housing is Cast Iron.



No. 8128 15 – 25mm Direct Acting Normally Open
No. 8238 15 – 25mm Reverse Acting Normally Closed

Screwed B.S.P. Female

Bronze Body, Integral seat, Synthetic rubber valve disc. Silicone O-Ring. Gun Diaphragm housing. Neoprene Diaphragm.



No. 8338 15 – 50mm

Screwed B.S.P. Female

Bronze Body & Bonnet. Renewable Stainless Steel seat, disc & spindle. Teflon U-Ring & Silicone O-Ring packing. Aluminium Diaphragm housing. Neoprene Diaphragm.

NOTE: Normally open to discharge. Power to close discharge = straight through flow.

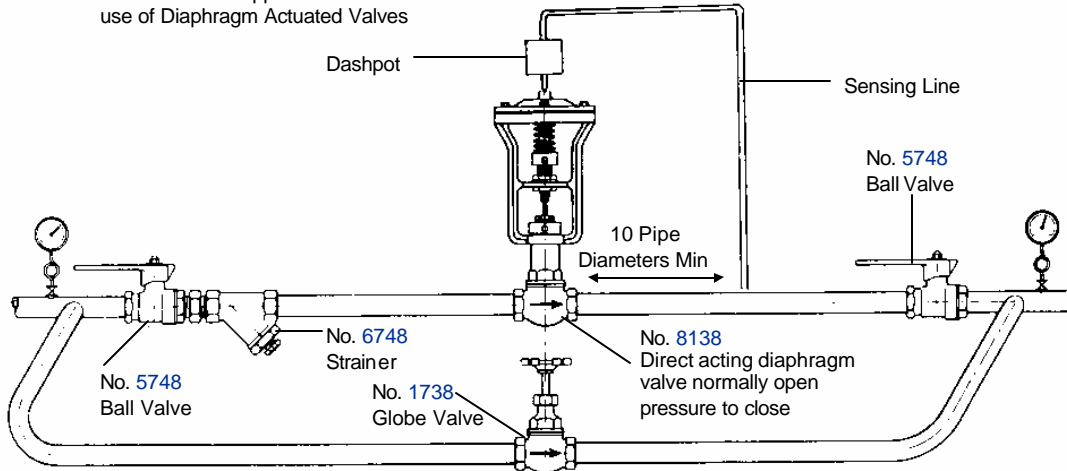
Diaphragm Actuated Valves



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DIAPHRAGM CONTROL VALVE AS A BACK PRESSURE REGULATOR OR REDUCING VALVE

* Alternative – Recommended applications for the use of Diaphragm Actuated Valves

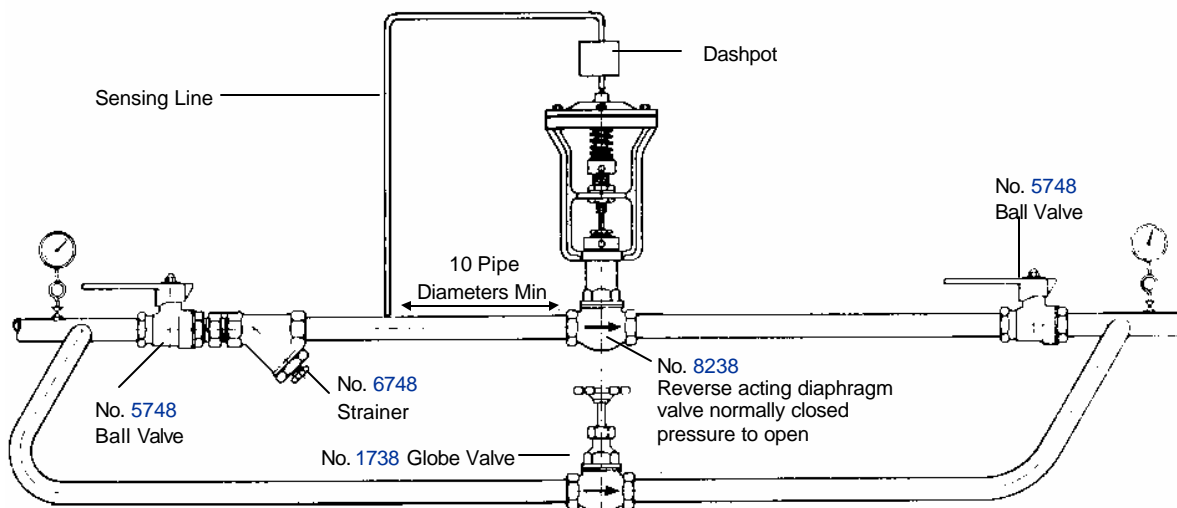


Ideal arrangement when close control is required for reduced pressures between 70kPa (10 psi) and 20 kPa (3 psi). Sensing pipe can also be connected direct to Pressure Vessel. Maximum pressure permissible on Diaphragm 170kPa (25 psi) (Recommended Pressure Range 70-20kPa – 10 – 3 psi).

NOTE: For reduced pressure above 70kPa (10 psi) refer to Reducing Valve Section. If equipment on reduced pressure side is designed for low pressure protect same with a Safety Valve.

Modified Diaphragm Valves can be used as Vacuum Regulating Valves when installed as shown above.

*DIAPHRAGM CONTROL VALVE AS A CONSTANT PRESSURE REGULATOR OR RELIEF VALVE



Typical arrangement when a constant pressure is required (constant Pressure Regulator or Relief Valve). Ideal arrangement for Ring Mains, etc. Recommended Pressure Range 70 – 25kPa (10 – 4 psi)

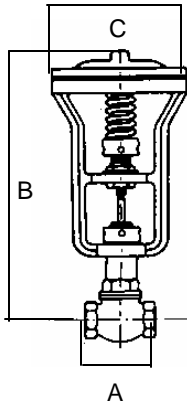
Maximum pressure permissible on Diaphragm 170kPa (25 psi)

NOTE: For pressure above 70kPa (10 psi) refer to Surplus Valve Section.

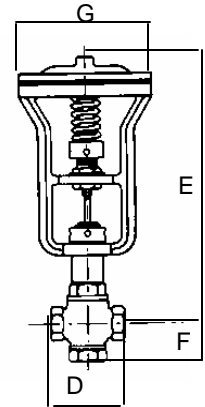


Diaphragm Actuated Valves

NOTE: All dimensions are in millimetres and are subject to alteration without notification



SCREWED PATTERN							
SIZE	A	B	C	D	E	F	G
15	70	308	156	73	308	51	156
20	86	321	156	86	321	48	156
25	98	337	156	114	337	60	156
32	108	330	156	114	330	70	156
40	127	340	156	140	340	73	156
50	152	359	156	165	359	89	156

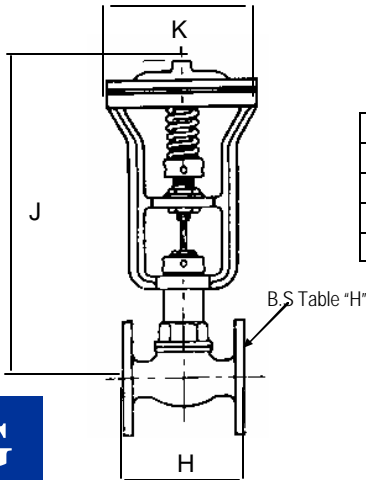


THREE-WAY
Fig. 8338

TWO-WAY
DIRECT & REVERSE
ACTING

Figs. 8138 & 8238
8198 & 8298

Standard diaphragms are designed for 170kPa (25 psi) air or water, maximum pressure and 85°C (180°F) maximum temperature. Alternative materials and pressure rating to 410kPa (60 psi) supplied on order.



TWO-WAY
DIRECT & REVERSE
ACTING

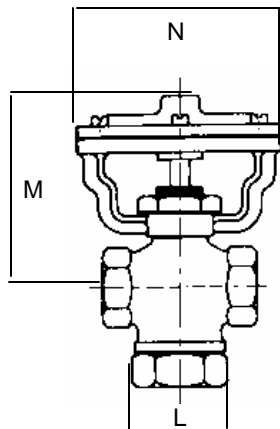
Figs. 8132 & 8232

SIZE	FLANGED PATTERN											
	15	20	25	32	40	50	65	80	100	125	150	200
H	95	114	127	140	152	178	229	254	324	410	483	584
J	308	305	333	330	340	359	533	546	825	864	889	946
K	156	156	156	156	156	156	305	305	457	457	457	457

Consult factory for pressure drops and ratings.
Full materials specifications and certified dimensions supplied upon request.
Other materials of construction can be supplied to suit special requirements.
Selection and application guidance available free of obligation.

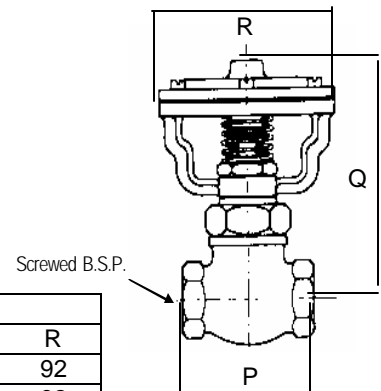
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SIZE	FLANGED PATTERN											
	15	20	25	32	40	50	65	80	100	125	150	200
H	95	114	127	140	152	178	229	254	324	410	483	584
J	308	305	333	330	340	359	533	546	825	864	889	946
K	156	156	156	156	156	156	305	305	457	457	457	457



REVERSE ACTING
Fig. 8228

MINIATURE SERIES						
SIZE	L	M	N	P	Q	R
8	51	89	92	51	98	92
10	51	95	92	51	102	92
15	70	95	92	70	105	92
20	86	108	92	86	108	92
25	98	114	92	98	108	92



DIRECT ACTING
Fig. 8128