



AquaMatic® Metal Diaphragm Valves

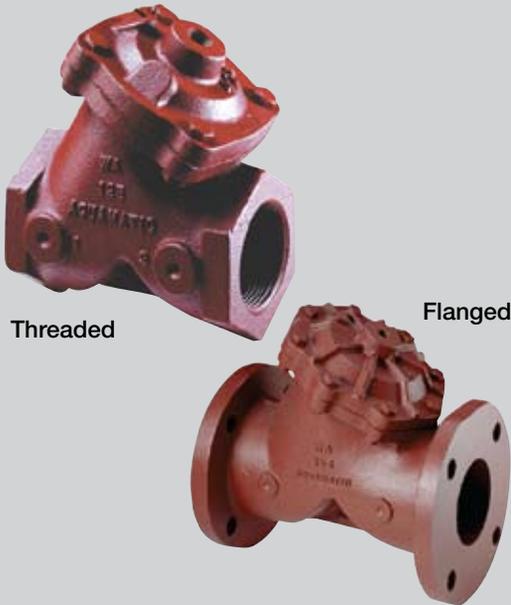
In addition to the water treatment process systems, AquaMatic Metal Diaphragm Valves are used in a wide variety of applications.

Typical Applications

- Agricultural Irrigation
- Turf Irrigation
- Air Dryers
- Pump Controls
- Fuel Handling
- Cooling Towers
- Level Control Systems
- Sand Blasting
- Car Wash Systems
- Process Water Systems
- Laundry Equipment
- Conveyor Systems
- Air Control Systems
- Dust Suppression
- Plastic Molding
- Machinery
- Nitrogen Handling
- Vacuum Control
- Systems
- Machine Hydraulic
- Cooling Control
- Street Cleaning Vehicles
- Centrifugal Separators
- HVAC Systems



AquaMatic® Metal Diaphragm Valves



Options

- Adjustable flow rate control
- Seal and diaphragm materials for special applications
- Spring-assist
- Position indication

Features and Benefits

- **Low Pressure Loss** – Y-pattern diaphragm valve features a large seat opening and high lift-disc for higher flow rates at a lower pressure loss than other comparable valves.
- **Positive Control** – Separate valve flow and control chambers permits positive sealing without springs. The optional spring-assist open feature is available for low pressure and self-draining applications.
- **Long Diaphragm Life** – Separate diaphragm chambers protects the diaphragm from the flow stream, while allowing the valve to be serviced in-line.
- **Cost Effective** – In initial cost as well as lifetime maintenance expenses.
- **Durable Construction** – Cast iron, brass, stainless steel and nitrile elastomer components, giving an unparalleled service life of 3 years or longer depending on the application's environment.
- **Design and Application Engineering Service**
- **Handles Liquid and Gases**
- **Adaptable to a Wide Variety of Control Devices**

Series 420 Valves

Standard valves are normally open. Body and cap are of cast iron. Preformed stress-relieved diaphragm of nitrile (Buna N) on polyamide, and static seals are nitrile, stainless steel and brass internal parts.

Pipe sizes are 3/4- to 3-inch threaded (NPT or BSP); 3- through 6-inch flanged drilled in accordance with ASA16.1 class 125, or BSP4504.

Options

Normally closed, spring-assist closed, spring-assist open, limit stop, position indicator, high temperature service, brass body and cap (3/4- to 3-inch only), optional seal and diaphragm materials for special application.

Operating Specifications

Working Pressure:
125 psi (8.6 bar)
Maximum Temperature:
150°F (65°C)
250°F (120°C) – Optional

Series VAV Air Valves

Standard valves are normally open. Body and cap are of cast iron. Preformed stress-relieved diaphragm of nitrile (Buna N) on nylon, and static seals are FKM and Hycar®, stainless steel and brass internal parts.

Pipe sizes are 3/4- to 3-inch threaded (NPT or BSP); 3- to 4-inch flanged drilled in accordance with ASA16.1 class 125, or BSP4504.

Options

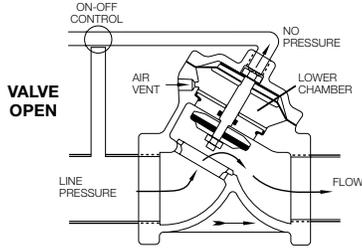
Normally closed, spring-assist closed, spring-assist open, FKM diaphragm for high temperature service.

Operating Specifications

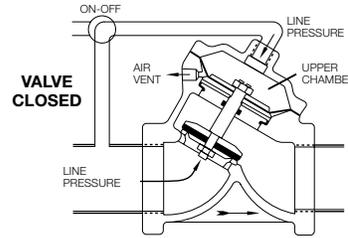
Working Pressure:
125 psi (8.6 bar)
Maximum Temperature:
150°F (65°C)
250°F (120°C) – Optional



Principles of Operation



Full Open Operation:
When closing pressure in upper chamber is relieved by venting the pilot line, the valve opens, positively, by line pressure on the disc.



Drip-Tight Closing:
Closure is obtained by directing line pressure or equivalent independent pressure into the upper chamber. This pressure on the large diaphragm area causes the valve disc to seal against the seat. (Ratio of diaphragm to disc area is 1.3 or greater.)

Dimensions for Flow-Thru Metal Diaphragm Valves

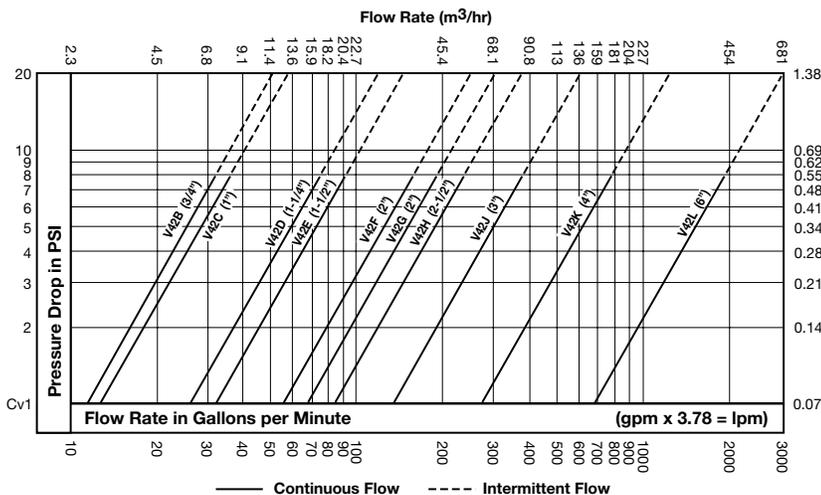
	Model Number		Pipe Size	Cv ³	Unit	Dimensions (Approximate)					
	420 Series	VAV Series				A	B	C	D	E ¹	F ²
Threaded	V42B	VAVB	3/4"	11.4	inches	3.69	4.25	3.75	2.75	-	-
	V42C	VAVC	1"	12.8	mm	94	108	95	70	-	-
	V42D	N/A	1-1/4"	26.5	inches	4.75	5.37	4.00	3.50	-	-
	V42E	VAVE	1-1/2"	32.5	mm	121	137	102	89	-	-
	V42F	VAVF	2"	56	inches mm	6.62 168	7.25 184	5.37 137	4.87 124	-	-
	V42G	VAVG	2"	68	inches	7.37	8.00	5.75	5.50	-	-
	V42H	VAVH	2-1/2"	84	mm	187	203	146	140	-	-
	V42J	VAVJ	3"	134	inches mm	9.00 229	9.75 248	6.75 171	7.25 184	-	-
Flanged	V42J	VAVJ	3"	134	inches mm	10.62 270	10.75 273	7.00 178	7.25 184	6.00 152	0.75 19
	V42K	VAVK	4"	275	inches mm	11.75 298	14.75 375	10.00 254	8.75 222	7.50 191	0.75 19
	V42L	N/A	6"	680	inches mm	17.00 432	19.00 483	13.50 343	15.75 402	9.50 241	0.87 2

¹ Bolt circle diameter

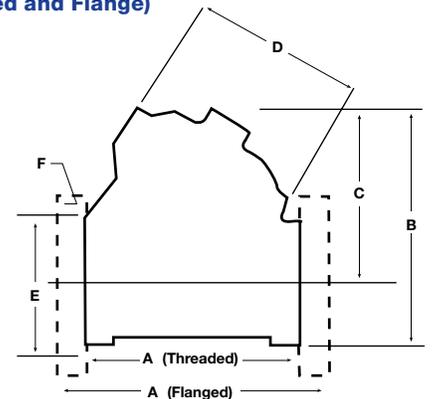
² Bolt hole diameter

³ Cv = Flow rate in gpm of water at 60°F @ 1psi pressure drop

Performance - Flow Rate Characteristics



Metal Diaphragm Valves (Threaded and Flange)



AquaMatic
Pentair Water



**Pentair
Water**

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