PLAST-O-MATIC

PRODUCT DATA

MINIATURE AIR-OPERATED DIAPHRAGM VALVES FOR CORROSIVE AND ULTRA-PURE LIQUIDS

1/4" to 1 1/2" SIZES – PRESSURES TO 100 PSI



FEATURES:

- Unique PTFE wetted diaphragm provides the ultimate in purity and chemical resistance.
- Compact – light in weight.
- Can be mounted in any position.
- Normally-closed design provides bubble-tight shut off in the event of air or electrical failure.
- Patented Fail-Dry® safety design warns of seal failure; permits valve to continue operating.
- Million-cycle, non-sticking design.

APPLICATION:

Series BSDA/BSDAM: The miniature air-operated diaphragm valve that performs like a heavyweight. Designed for pressure and drain applications with highly corrosive or ultra-pure liquid systems when space is critical. The valve is ideal for a broad range of industrial applications, from electronic to chemical plants, commercial laundries, car wash operations, etc. For applications with ultra-pure water and concentrated etchants, such as in the semi-conductor industry, it provides the ultimate in non-leaching, contamination-free sealing. The standard valves are air pressure to open with spring return to close (0-100 PSI). There is no minimum inlet pressure required. Other options are available.

Not designed for vacuum service.

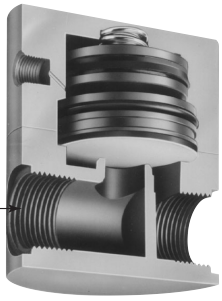
MATERIALS OF CONSTRUCTION:

Diaphragm: The standard diaphragm material is a combination of the PTFE on the wetted side backed-up with FKM for strength and flexibility. Consult factory for other options.

Body: Body material available in PVC, CPVC, Natural Polypro, PTFE, and PVDF. The upper air section is always PVC. There are no metal parts in the wetted areas. 1/2"and 1" BSDAM size in PVC, CPVC, Natural Polypro & Kynar PVDF have integral mounting lugs on the base of the body. BSDAM also available without mounting lugs; consult factory. All other sizes and materials have threaded mounting holes in the base.

NORMALLY-CLOSED OPERATION:

A 3-way air solenoid valve connected to the 1/8 NPT port is required to actuate the diaphragm valve. When air pressure (40 to 100 PSI or 2 to 7 Bars) is applied, the diaphragm valve opens and when removed spring force closes the valve. For normally-open operation or air by air operation consult factory.



DESIGNS FOR USER AND OEM APPLICATIONS:

The standard valves are precision machined from the highest quality brand thermoplastic bar stock with female NPT connections. 1/2" and 1" sizes in Geon PVC, Corzan CPVC, Natural Polypro and Kynar PVDF are molded and machined with a choice of FNPT or socket connections. Spigot connections and flare fittings are also available on all sizes. For orders of 25 or more valves, connections can be provided with male threads, sockets, unions, as well as various other modifications.

1/2" and 1" BSDAM size in PVC, CPVC, Natural Polypro and Kynar PVDF have option for gauge ports on the side of the body, on the same plane as piping connections. Gauge ports are not readily available on other sizes or on PTFE bodies; please consult factory for alternatives. BSDA & BSDAM are identical in all respects except for gauge port option and integral mounting lugs.

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MINIATURE AIR-OPERATED DIAPHRAGM VALVES

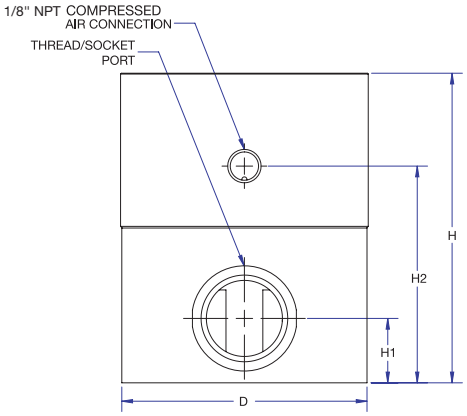
SERIES BSDA DIMENSIONS

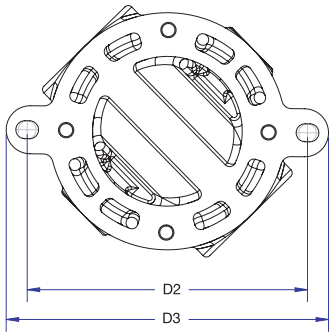
Size	D In.	D mm	H In.	H mm	H1 In.	H1 mm	H2 In.	H2 mm
1/4	2.00	50.8	2.37	60.2	0.470	11.9	1.86	47.2
1/2	2.50	63.5	3.03	76.9	0.69	17.5	2.38	60.3
1/2 (PTFE only)	2.50	63.5	2.96	75.8	0.69	17.5	2.38	60.3
3/4	3.00	76.2	3.75	95.3	0.78	19.8	2.62	66.5
1	3.50	88.9	5.07	129.2	1.19	30.2	3.48	88.4
1 (PTFE only)	3.50	88.9	5.12	130.0	1.19	30.2	3.56	90.4
1 1/2	5.00	127.0	8.00	203.2	1.75	44.5	5.44	138.2

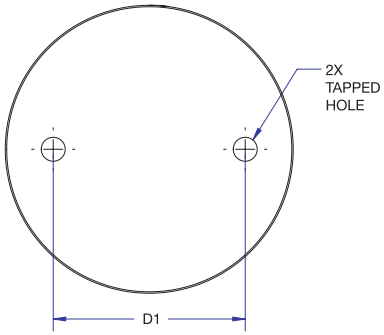
Note: 1/8" and 3/8" sizes are also available on special order. Consult factory for details.

BSDA MOUNTING HOLE DIMENSIONS

Pipe Size	D1 In.	D1 mm	D2 In.	D2 mm	D3 In.	D3 mm
1/4	1.63	41.3				
1/2 (BSDAM only)	2.97	75.4	2.97	75.44	3.36	85.3
1/2 (PTFE only)	1.63	41.3				
3/4	2.00	50.8				
1 (BSDAM only)	2.00	50.8	4.10	104.1	4.69	119.1
1 (PTFE only)	2.00	50.8				
1 1/2	3.00	76.2				







1/2" and 1" BSDAM also available without mounting lugs; consult factory.

MATERIALS / TEMPERATURES vs. PRESSURES

Material	Maximum Temperature Rating		Maximum Inlet Pressures and Temperatures													
			75°F PSI	24°C Bars	110°F PSI	43°C Bars	140°F PSI	82°C Bars	180°F PSI	82°C Bars	220°F PSI	105°C Bars	240°F PSI	116°C Bars	284°F PSI	140°C Bars
PVC	140°F	60°C	100	6,8	100	6,8	40	2,7	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.
CPVC	180°F	82°C	100	6,8	100	6,8	80	5,4	40	2,7	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.
PP	180°F	82°C	100	6,8	100	6,8	80	5,4	40	2,7	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.
PTFE or PVDF	284°F	140°C	100	6,8	100	6,8	100	6,8	100	6,8	60	4,1	30	2,0	10	0,7

See specification table below for valve pressure ratings.

N.R. = Not Recommended

SPECIFICATIONS AND MODEL NUMBERS

Valve	Pipe Size	Orifice Size	C_V	Inlet Pressure Maximum PSI	Inlet Pressure Maximum Bars	Inlet Pressure Minimum	Back Pressure Maximum PSI	Back Pressure Maximum Bars	Air Pressure Maximum PSI	Air Pressure Maximum Bars	Air Pressure Minimum PSI	Air Pressure Minimum Bars	PVC Body with PTFE Diaphragm Model Number***
BSDA/ BSDAM	1/4	5/16	1.1	100	6,90	No minimum inlet pressure required. Series BSDA/M is direct acting.	25	1,72	100	6,89	40	2,76	BSDA025T-NC-PV
	1/2	1/2	3.4	100	6,90		25	1,72	100	6,89	40	2,76	BSDAM050T-NC-PV
	3/4	5/8	5.8	100	6,90		25	1,72	100	6,89	40	2,76	BSDA075T-NC-PV
	1	3/4	6.3	100	6,90		25	1,72	100	6,89	40	2,76	BSDAM100T-NC-PV
	1 1/2	1 1/4	17.0	100	6,90		25	1,72	100	6,89	40	2,76	BSDA150T-NC-PV

***Other Material Bodies – Change the "PV" in the model number to "PP" for Natural Polypropylene; "CP for CPVC"; "TF" for PTFE; and "PF" for PVDF Kynar.

Note: 1/2" BSDAM is for PVC, PP, CPVC & PVDF only. For 1/2" PTFE, part number is BSDA050T-NC-TF.

Note: 1" BSDAM is for PVC, PP, CPVC and PVDF only. For 1" PTFE, part number is BSDA100T-NC-TF.

Photos are representative. Appearance may vary based on size/material.

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