

# INSTALLATION, MAINTENANCE & OPERATING INSTRUCTIONS

## SERIES BSD/BSDA AIR-OPERATED DIAPHRAGM SHUT-OFF VALVES

### 1. IMPORTANT - BEFORE INSTALLING

Plast-O-Matic BSD and BSDA valves may be built as normally open or normally closed. They will shift to the opposite position when actuated by air pressure and when properly installed and used within the recommended ranges of pressure, temperature, and chemical compatibility.

**Series BSD 1/4" size** requires 20 PSI inlet pressure to open.

**Series BSD 1/2" to 1 1/2"** requires 10 PSI inlet pressure to open.

**Series BSDA** has no minimum pressure requirement.

#### MAXIMUM INLET PRESSURES for WATER\*

BODY MAT'L COLOR	at 77°F (25°C)	at 105°F (40°C)	at MAXIMUM TEMPERATURE
PVC DARK GREY	100 PSI 7 Bar	100 PSI 7 Bar	40 PSI @ 140°F 3 Bar @ 60° C
Polypropylene TRANSLUCENT WHITE	100 PSI 7 Bar	100 PSI 7 Bar	80 PSI @ 140°F 6 Bar @ 60° C
Kynar PVDF TRANSL. OFF-WHITE	100 PSI 7 Bar	100 PSI 7 Bar	100 PSI @140°F 7 Bar @ 60° C
Teflon PTFE OPAQUE WHITE	100 PSI 7 Bar	100 PSI 7 Bar	100 PSI @140°F 7 Bar @ 60°C

\* or compatible chemical — ratings reduced for some applications. Temperatures up to 280° F (140° C) available on special orders. Minimum temperature 40° F (5° C). Outlet 25 PSI maximum. Not designed for vacuum service.

**AIR PRESSURE REQUIRED** - 40 to 100 PSI (3 TO 7 Bar) to operate. Refer to Catalog or consult our Tech staff for more information.

### 2. INSTALLATION

**A. Install the valve in the proper flow direction as indicated by the flow label.** The process inlet is the large hole directly below the 1/8 NPT air inlet, as shown in the illustration. In case of disassembly, the inlet is deeper than the outlet. Valves can be installed horizontally or vertically, in any orientation.

**Caution:** Plastic materials will degrade in ultraviolet (UV) light or sunlight.

**Caution:** Polypropylene and PVDF (Kynar) often look similar. Do not install in your system if you are not sure.

**Threaded Connections:** A suitable thread sealant (ex. Teflon tape) should be applied to male tapered threads to assure a "leak-tight" seal. Assemble "hand-tight" followed by a quarter (1/4) turn with a strap wrench. Do not over tighten or use pipe wrenches on plastic pipe and components.

**Caution:** Teflon® tape will "string" as pipe threads are joined. Loose "strings" could lay across the seating surface and prevent the valve from completely closing. To avoid this problem, clean out old tape, and do not apply tape to the first thread.

**Caution:** Connect to plastic pipe and fittings only; metal pipe should only be installed with an intervening plastic nipple. Metal pipe and straight threaded pipe tend to cut, stretch, and distort the plastic bodies, which could result in cracking or leaking over time.

**Non-Threaded Connections:** For solvent cementing or heat fusion, follow instructions supplied with the cement or fusion equipment, or contact your distributor.

**B. Air Connection:** Recommended air pressure for actuation is 40 to 100 PSIG (3 to 7 bar). The air should be filtered, regulated, and lubricated, with no solvent vapors or detergents, for longer service life.

**C. Mounting:** These valves are designed to be supported by the piping. The piping must be properly supported, taking into account the weight of the valve, piping, and process liquid. Two screw holes are provided for mounting the valve to a panel when required.

### 3. MAINTENANCE

Plast-O-Matic recommends keeping a spare seal kit available for repairs. Seal life will vary in applications due to cycles, temperatures, pressures, chemicals, and concentration. Based on the application, a periodic inspection and maintenance plan should be established. Seal kit part numbers are "SK" plus the part number less the material suffix. For example, the seal kit for BSDA050T-NC-PV is SKBSDA050T-NC. The seal kit consists of items 5, 6, 7, 8 and 9.

(10) NOT SHOWN

Shown as "NC" (Normally Closed). Spring will be under the piston and air will be directed over the piston for "NO" (Normally Open) valves.

#	Qty	Description	Material
1	1	VALVE BODY	***
2	1	AIR HEAD	PVC
3	1	PISTON	PVC
4	1	SEAL RING	PVC
5	1	DIAPHRAGM	TFE/Viton
6	2*	SPRING(S)	Steel
7	1	U-CUP	rubber
8	1	U-CUP	rubber
9	1	O-RING	rubber
10	4*	SCREWS	Stainless Steel

\* Quantity may vary.  
 \*\* Used on BSDA only, not used on BSD  
 \*\*\* Per material suffix in product number: PV for PVC, PP for Polypropylene, TF for PTFE/Teflon, PF for PVDF/Kynar.



**PLAST-O-MATIC VALVES, INC.**

1384 Pompton Ave • Cedar Grove, NJ 07009 • 973-256-3000 • FAX: 973-256-4745 • www.plastomatic.com

