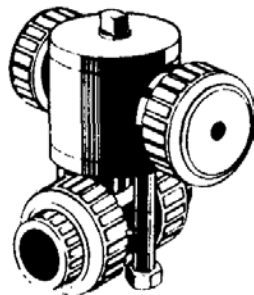


ASSEMBLY, INSTALLATION & OPERATING INSTRUCTIONS FOR PLAST-O-MATIC SERIES ABV AIR ACTUATORS

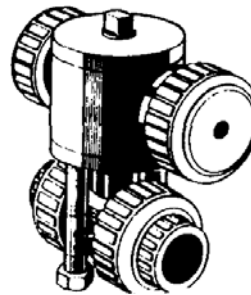
A. Parallel Mounting of Air Actuator to Ball Valve

Note: "Parallel" (in line with valve) mounting is recommended; however, where space limitations dictate the actuator may be "Perpendicular" mounted (across the valve). See perpendicular mounting section B.

1. Close the ball valve and hand tighten the union nuts. Remove the handle.
2. Install the handle at the top of the actuator and rotate the handle (if necessary) so that the recess on the bottom of the actuator is aligned with the ball valve shaft.
3. Position the actuator over the ball valve so that the ball valve shaft slides into the recess.
4. Slide the two spacers between the base of the actuator and the ball valve mounting lugs and spacers. Thread the mounting bolts snugly into the base of the actuator. It is recommended to use a couple of drops of Loctite® thread sealant on the threads to avoid loosening due to vibration or continued cycling.
5. The position of the handle will always indicate the position of the ball valve. If the handle is parallel with the piping, the valve is open. If the handle is perpendicular to the piping, the valve is closed.



Perpendicular Mounting



Parallel Mounting

B. Perpendicular Mounting

Note: If space limitations prevent the preferred "Parallel" mounting method, the actuator can be mounted perpendicular to the valve. When the actuator is to be perpendicular-mounted, the base of the actuator must be rotated.

1. Remove the 4 assembly screws which hold the base to the actuator body.
2. Rotate the base ¼ turn (90°).
3. Make sure the gasket is properly aligned to accept the screws, then replace the 4 assembly screws.
4. The actuator is now ready for mounting to the ball valve as in steps 1-4 in section A above except that it is aligned perpendicular.
5. When the actuator is perpendicular-mounted all labeling concerning the position of the valve will be backwards. (If the labeling indicates the valve is open, it is actually closed). Please also note that the direction of rotation of the handle will be backwards.

C. Installing a Spring Return Kit

1. For parallel-mounted normally closed valves:
 - a. Remove the union nut and air cap from the left side of the actuator. Make sure the ball valve is in the closed position.
 - b. Unscrew the adjusting cap from the spring housing and slide the union nut over the spring housing.
 - c. Thread the union nut with the spring housing back onto the actuator.
 - d. Insert spring into the spring housing and screw the spring adjusting cap into the housing until it cannot go any farther.
2. For parallel-mounted normally open valves:
 - a. Remove the union nut and air cap from the right side of the actuator. Make sure the ball valve is in the open position. b., c., and d. are the same as above.
3. For perpendicular-mounted normally closed valves:
 - a. Remove the union nut and air cap from the right side of the actuator. Make sure the ball is in closed position. b., c., and d. are the same as above.
4. For perpendicular-mounted normally open valves:
 - a. Remove the union nut and air cap from the left side of the actuator. Make sure the ball is in open position. b., c., and d. are the same as above.

D. Installation of Actuator & Ball Valve Assembly into Piping System

1. Flow Direction: Due to the Trunnion design, these valves are capable of handling flow and pressure in either direction.
2. Threaded connections: Use Teflon® tape or a suitable pipe sealant on the threaded connections. Use a strap wrench to tighten only ¼ turn more than hand tight. Do not use metal pipe wrenches.
3. Socket connections: (PVC and CPVC only). Pipe ends must be cut off square and deburred. Clean pipe and valve end connector socket with proper cleaning solvent. After cleaning, apply solvent cement with a brush to both the pipe and socket. Immediately insert pipe into socket rotating the socket about ½ turn during insertion.

Caution: It is best to do this with socket end connector disassembled from valve to avoid getting solvent cement inside the valve. If you are not familiar with solvent cementing, contact your Plast-O-Matic distributor for further information.
4. To maximize cycle-life of ball valve, turn the unions nuts onto the ball valve hand tight only. Approximately 1,000 cycles later tighten again by hand or with a strap wrench and the valve will never again need adjusting or tightening.
5. Supporting the ball valve & actuator assembly:

Tapped holes (1/4-20 for ABV 1.2 & 1.6, 3/8-16 for ABV 2.5) have been provided on the bottom of the two mounting nuts. These tapped holes insure quick, easy mounting to a bracket or support.
6. Disassembly of downstream piping: The Trunnion design of this valve enables you to disassemble the downstream piping from the valve by unscrewing the valve's downstream union without leakage from the upstream pressure. The valve must be in the closed position before doing this. Use extreme caution with dangerous fluids.
7. Valve removal from piping: The True Union design enables you to simply unscrew the two valve union nuts and slide the valve body away from the piping. Pressure or liquid head must be removed from both sides of valve before doing this. Use extreme caution with dangerous fluids.

E. Connecting Actuator to Compressed Air System (or water pressure system)

1. Plast-O-Matic Air Actuators require a solenoid valve to control the air pressure that powers the actuator. The solenoid valve must be a 3-way or a 4-way depending on the mode of operation of the actuator. Actuators using air pressure in combination with a spring require a 3-way solenoid valve.

To insure maximum actuator life, compressed air should be filtered & lubricated. No solvents or vapors should be in the air supply. Refer to the label on the actuator body for recommended operating pressures.

2. Water Actuation – In situations where air pressure is not available water pressure can be used so long as the pressure available is sufficient to operate the actuator. A brass solenoid valve (3-way or 4-way) will handle air or water. If the water is not clean, a filter should be used.

F. Manual Override Operation

1. Air by Air Actuators

In order to override an air by air actuator, the air supply pressure must be shut off with no residual pressure in the actuator. The override shaft on top of the actuator can then be turned in the direction indicated on the label (remember that for perpendicular mounted actuators, the directions and positions on the labeling are backwards).

2. Air by Spring Actuators

In order to override an air by spring actuator, the air supply pressure must first be shut off with no residual pressure in the actuator, and then the spring adjusting cap must be removed to relieve the spring force. The override shaft on top of the actuator can then be turned in the direction indicated on the label (remember that for perpendicular mounted actuators, the directions and positions on the labeling are backwards).



Parts List for Plast-O-Matic ABV Air Actuators

STANDARD "ABVA" MODEL

PLAST-O-MATIC VALVES, INC.
1384 Pompton Avenue, Cedar Grove, NJ 07009-1095
(973) 256-3000 • Fax (973) 256-4745 • www.plastomatic.com

ITEM NUMBER	ABV 1.2	ABV 1.5	ABV 2.5	PART NAME	NO. PER ASSEMBLY
1	4387-TF	4386-TF	4364-TF	COVER BEARING	1
2	0017B	0021B	0123B	UPPER SHAFT O-RING SEAL	1
3	3032	4790-BL/-OR	4896-BL/-OR	HANDLE (SUPPLIED WITH BALL VALVE)	1
4	4508-VA	4516-VA	4512-VA	COVER	1
5	4176-VA	4178-VA	4224-VA	SOCKET	2
6	4121-VA	4123-VA	4218-VA	SOCKET	2
7	3040-VA	4519-VA	4510-VA	UNION NUT	2
8	0026B	0030B	0039B	AIR CAP O-RING SEAL	2
9	4232B	U-53B	U-308B	U-CUP SEAL	2
10	4526-VA	4521-VA	4522-VA	AIR CAP	2
11	4235-VA	4286-VA	4384-VA	PISTON	2
12	4235-VA	4236-VA	4237-VA	PISTON	2
13	0015B	0022B	0029B	LOWER SHAFT O-RING SEAL	1
14	4509-VA	4511-VA	4513-VA	BASE	1
15	F-STFH100610-S	F-STFH100610-S	F-STFH25062-S	ASSEMBLY SCREW	6
16	4372-TF	4375-TF	4010-TF	BASE BEARING	1
17	4552-01-VA	4752-02-VA	4553-02-VA	SHANKING BOLT	1
18	5415-SS	5415-SS	5262-SS	SHANKING BOLT	2
19				SPRING-RETURN KIT	OPTIONAL
20	4251-SS	4278-SS	4389-SS	SPRING	1
21	4515-VA	4517-VA	4519-VA	SPRING HOUSING	1
22	4514-VA	4516-VA	4518-VA	ADJUSTING CAP	1
23				ADJUSTING CAP KIT	OPTIONAL
24	4860-01-CAD	4860-03-CAD	4860-05-CAD	ADJUSTING NUT	1
25	F-RFH37C-2	F-RFH37C-2	F-RFH50C-2	ADJUSTING BOLT	1
26	F-T5037C-B	F-T5037C-B	F-T4850C-B	THREAD SEAL	1
27	4861-PV	4865-PV	4869-VA	LIMIT-STOP AIR CAP	1
28	0028B	0030B	0039B	AIR CAP O-RING SEAL	1
29	4862-PV	4866-PV	4870-PV	SPRING GUIDE LIMIT-STOP KIT	OPTIONAL
30				SPRING GUIDE LIMIT-STOP KIT	OPTIONAL
31	4864-PV	4868-PV	4872-PV	SPRING GUIDE LIMIT-STOP KIT	OPTIONAL
32	4863-VA	4867-VA	4871-VA	LIMIT-STOP ADJUSTING CAP	1
33	4860-02-CAD	4860-04-CAD	4860-06-CAD	ADJUSTING BOLT	1
34	F-RFH37C-2	F-RFH37C-2	F-RFH50C-2	LOCKING NUT	1
35				SEAL KIT (INCLUDES ITEM #2,5,8,9,413)	OPTIONAL