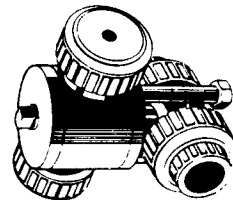


ASSEMBLY, INSTALLATION & OPERATING INSTRUCTIONS FOR TRUE-BLUE™ AIR ACTUATORS

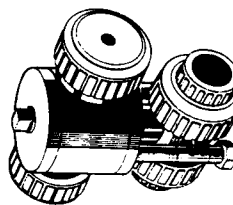
A. Parallel Mounting of Air Actuator to Ball Valve

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 then insert the mounting bolts through the 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 1/4 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.

PLAST-O-MATIC

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PARTS LIST TRUE BLUE™ AIR ACTUATOR

NOTE: WHEN ORDERING PARTS, SPECIFY PART NAME AND ACTUATOR MODEL NUMBER.

ITEM	PART NAME	NO. PER ASSEMBLY
1	COVER SCREWS	4
2	UPPER SHAFT O-RING SEAL	1
3	HANDLE (SUPPLIED WITH BALL VALVE)	1
4	COVER	1
5	GASKET	1
6	BODY	1
7	UNION NUT	2
8	AIR CAP O-RING SEAL	2
9	II-CUP SEAL	2
10	AIR CAP	2
11	PISTON	1
12	SHAFT	1
13	LOWER SHAFT O-RING SEAL	1
14	BASE	1
15	ASSEMBLY SCREW	6
16	BASE BEARING	1
17	SPACER	2
18	MOUNTING BOLT	2
19	SPRING-RETURN KIT	OPTIONAL
20	SPRING	OPTIONAL
21	SPRING HOUSING	1
22	ADJUSTING CAP	1
23	AIR SIDE LIMIT-STOP KIT	OPTIONAL
24	ADJUSTING BOLT	1
25	LOCKING NUT	1
26	THREAD SEAL	1
27	LIMIT-STOP AIR CAP	1
28	AIR CAP O-RING SEAL	1
29	END NUT	1
30	SPRING SIDE LIMIT-STOP KIT	OPTIONAL
31	SPRING GUIDE	1
32	LIMIT-STOP ADJUSTING CAP	1
33	END NUT	1
34	ADJUSTING BOLT	1
35	LOCKING NUT	1
36	SEAL KIT (INCLUDES ITEM NO. 2, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35)	OPTIONAL

STANDARD ACTUATOR MODEL ABVA, AIR x AIR OPERATION

(23) OPTIONAL LIMIT-STOP KIT FOR AIR SIDE OF ACTUATOR

(30) OPTIONAL LIMIT-STOP KIT FOR SPRING SIDE OF ACTUATOR

MODEL ABVS, AIR x SPRING, REQUIRES OPTIONAL SPRING-RETURN KIT

Model	ABVA
Part No.	9-392
Part Name	Parts List For Model 12, 16 & 25
Quantity	1
As Specified	Yes
Material	Steel
Finish	Black
Notes	1. See Part 1 for details.
Manufacturer	Plant-O-Matic Valves, Inc.
Address	1000 North Main Street, Suite 100, Orem, UT 84057
Phone	(801) 225-1111

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 1/4 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 1/2 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 union 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 for both opening and closing require a 4-way solenoid valve. Actuators using air pressure in combination with a spring require a 3-way solenoid valve. These solenoid valves may be purchased from Plast-O-Matic.

Solenoid Valves	3-Way	4-Way
General Purpose	#8320G13	#8345G1
Explosion Proof	#EF8320G13	#EF 8345G1

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 actuators, 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).