

IMPORTANT INFORMATION



⚠ WARNING

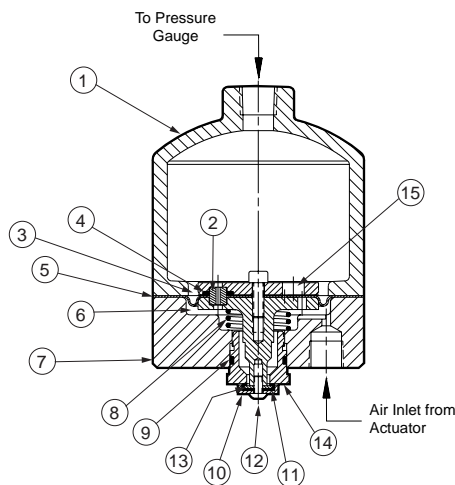


- Read and understand all instructions before attempting to install this Series 746 Dry Accelerator.
 - Wear hardhat, safety glasses, and foot protection.
- Failure to follow these instructions could result in serious personal injury, property damage, and/or improper system operation.

The following procedures are a guide for proper installation of the Victaulic Series 746 Dry Accelerator.

The installation, maintenance, and testing manual for the appropriate system valve **MUST** be consulted to ensure proper system setup and operation.

SECTION VIEW DRAWING AND DESCRIPTION – SERIES 746 DRY ACCELERATOR



The Series 746 Dry Accelerator exhausts air from the actuator to speed the operation of the valve.

A diaphragm separates the Series 746 Dry Accelerator into two chambers. The closing chamber contains a compression spring, which maintains this chamber in the closed position. This closed position is maintained as long as the pressure differential between the opening and closing chambers is less than 3 psi (21 kPa).

When the system introduces air pressure into the dry accelerator, the air goes into the closing chamber and passes through a built-in check valve to the opening chamber. The built-in check valve, which allows flow into the opening chamber, prevents pressure from escaping the opening chamber. Therefore, air can escape only through the restrictor.

When a rapid loss of system air pressure occurs, such as an open sprinkler head, air escapes from the closing chamber faster than it does from the opening chamber. As the sprinkler system's pressure continues to decay, a differential pressure develops across the diaphragm. When this differential pressure reaches 3 – 5 psi (21 – 34 kPa), the opening chamber's pressure overcomes the compression spring's closing force, causing the closing chamber to open to the atmosphere. The closing chamber opens immediately and releases pressure from the actuator, resulting in valve operation.

BILL OF MATERIALS

Item	Description	Item	Description
1	Opening Chamber	9	O-ring
2	Restrictor	10	Seal Support
3	Piston	11	Closing Chamber Seal
4	O-ring	12	Button Head Cap Screw
5	Diaphragm	13	Washer
6	Actuator Shaft	14	Adjustable Seat
7	Closing Chamber	15	Built-In Check Valve
8	Compression Spring		

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Installation Instructions

INSTALLATION

⚠ WARNING



• An experienced, trained installer must install this product in accordance with all instructions and trim drawings. Failure to follow this instruction could result in serious personal injury, property damage, and/or improper system operation. If you need additional copies of any literature, or if you have any questions concerning the safe installation and use of this product, contact Victaulic Company, P.O. Box 31, Easton, PA 18044-0031, Telephone: 610-559-3300.

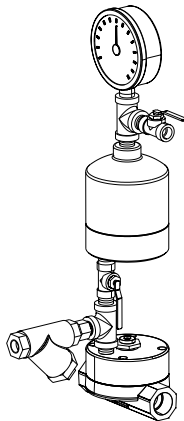
For proper operation and approval, the Series 746 must be installed in accordance with the proper Victaulic trim drawings for Series 756 and Series 758 actuated system valves. Specific trim drawings are available for all installations.

1. Make sure all required drawings and installation information, provided with the product, are readily available.
2. Apply Teflon* tape to the external threads of all threaded pipe connections. NOTE: DO NOT allow any loose tape to get into the trim. If pipe joint compound is used, make sure no material gets into the trim.

⚠ CAUTION

• Make sure no foreign material gets into the trim. Failure to follow this instruction could result in improper valve operation.

3. Assemble the Series 746 per the drawing provided (Z014746001).
4. Thread the Series 746 into the tee that comes from the upper chamber of the actuator (refer to the sketch below). **NOTE: Make sure the Series 746 is installed so that the button is facing toward the actuator. Refer to the sticker on the Series 746 body for the proper orientation.**

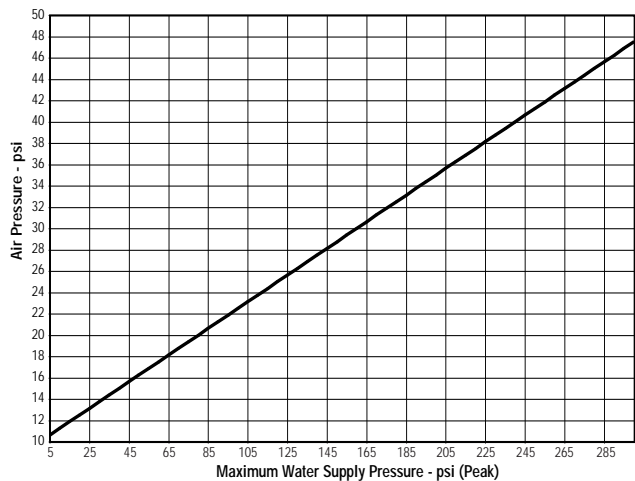


NOTE: A Series 753-A Dry Actuator/Anti-Flood Device is shown above.

5. Install the pressure gauge per the drawing provided (Z014746001).

*Teflon is a registered trademark of I. E. Dupont de Nemours.

RECOMMENDED AIR PRESSURES FOR SYSTEMS CONTAINING SERIES 753-A DRY ACTUATORS AND SERIES 746 DRY ACCELERATORS



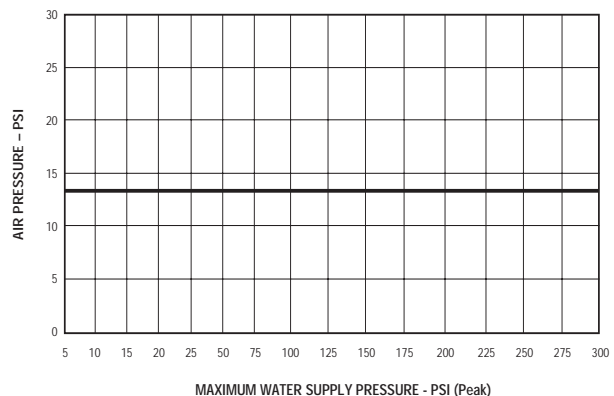
NOTES FOR ABOVE CHART:

- 1) The Victaulic air regulator is a relief-type design. Any pressure in the system that is above the set point of the regulator will be released. Therefore, charging the regulator above the set point could cause premature operation of a valve installed with a Series 746 Dry Accelerator.
- 2) For base or riser-mounted compressors, the recommended air pressures are the "on" or "low" pressure settings for the compressor.
- 3) For tank-mounted compressors, the recommended air pressures are the set point for the air regulator. The "on" pressure of the compressor should be at least 5 psi (34 kPa) above the set point of the regulator.
- 4) These pressures involve an 8-to-1 water-to-air ratio, plus a 10-pound safety factor.

EXAMPLE: For a system with an underground pressure of 80 psi (552 kPa):

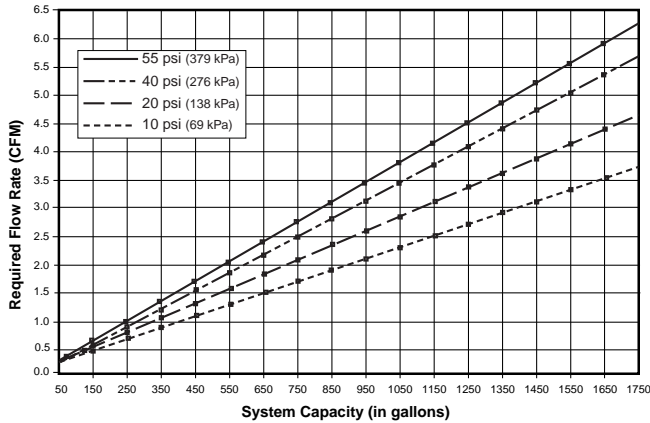
Per the chart above, the pressure should be set at 20. In addition, this pressure could be calculated by dividing the system's maximum water pressure by 8 and then adding 10 psi (69 kPa).

RECOMMENDED AIR PRESSURES FOR SYSTEMS CONTAINING SERIES 798 DOUBLE-PNEUMATIC OR SERIES 776 LOW-PRESSURE ACTUATORS AND SERIES 746 DRY ACCELERATORS

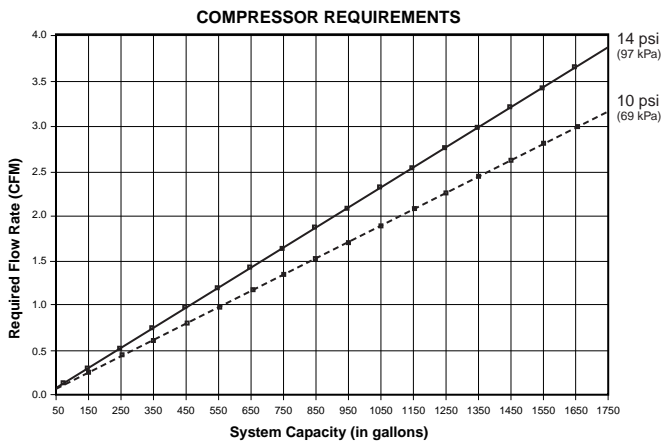


Installation Instructions

COMPRESSOR REQUIREMENTS FOR SERIES 756 DRY SYSTEMS



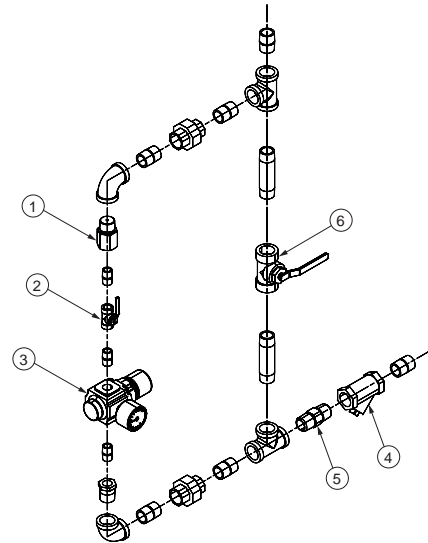
COMPRESSOR REQUIREMENTS FOR SYSTEMS CONTAINING SERIES 776 LOW-PRESSURE ACTUATORS OR SERIES 798 DOUBLE-PNEUMATIC ACTUATORS



PROPER AIR SUPPLIES FOR SYSTEMS CONTAINING SERIES 746 DRY ACCELERATORS:

1. When a Series 746 Dry Accelerator is used, the air maintenance trim assembly **MUST** be used with the air regulator.
2. A properly sized tank-mounted air compressor provides the greatest protection for systems that use a Series 746 Dry Accelerator. Air can be supplied continuously to the sprinkler system for an extended time period.

AIR MAINTENANCE TRIM ASSEMBLY (AMTA)



BILL OF MATERIALS

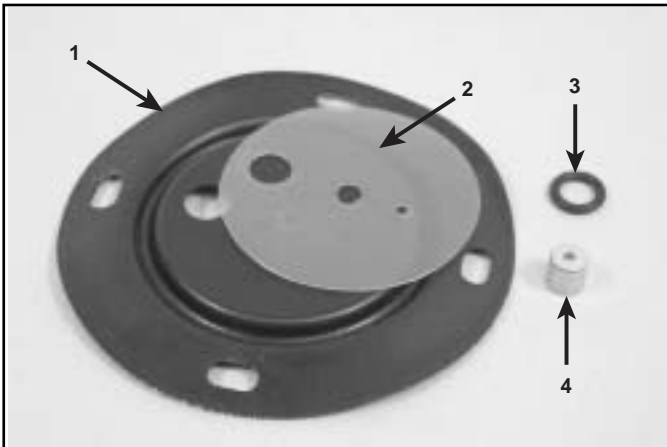
Item	Description
1	1/16-inch (3,2-mm) Restrictor
2	Slow Fill Ball Valve (Normally Open)
3	Air Regulator
4	Strainer (100 Mesh)
5	Spring-Loaded, Soft-Seated Check Valve
6	Fast Fill Ball Valve (Normally Closed)

PLACING THE SYSTEM IN SERVICE

When the system is ready to be placed in service, refer to the appropriate system valve manual for complete instructions.

Installation Instructions

REPAIR KIT INSTRUCTIONS

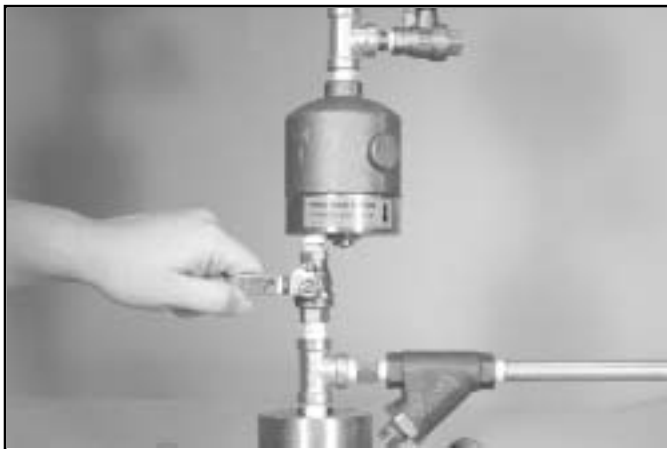


BILL OF MATERIALS

Item	Quantity	Item Description
1	1	Diaphragm
2	1	Shield
3	1	O-ring
4	1	Restrictor

! CAUTION

- Notify the authority having jurisdiction that the Series 746 Dry Accelerator will be taken out of service.
Taking the Series 746 out of service may delay trip times, resulting in property damage.



1. Close the isolation ball valve on the Series 746 Dry Accelerator.

! CAUTION

- Make sure the isolation ball valve remains closed while removing the Series 746. Failure to follow this instruction could cause premature valve operation, resulting in property damage.



2. Open the 1/4-turn vent ball valve on the accelerator. Confirm that the gauge reads 0 psi (0 bar).



3. Remove the Series 746 from the nipple above the isolation ball valve, as shown above.

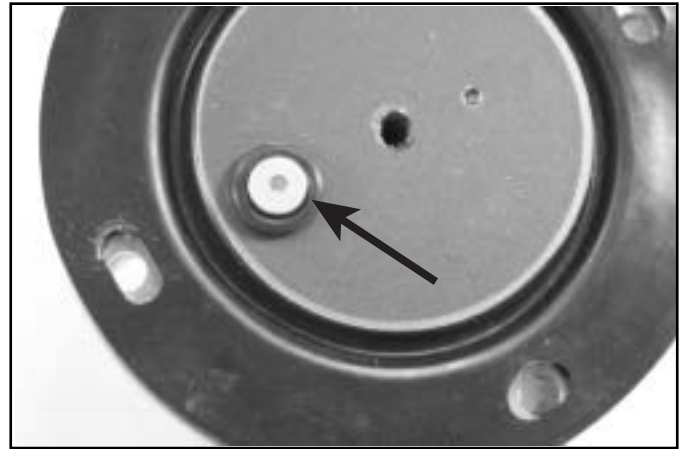


4. Using a 3/16" hex wrench, remove the four cap screws from the lower housing.

Installation Instructions



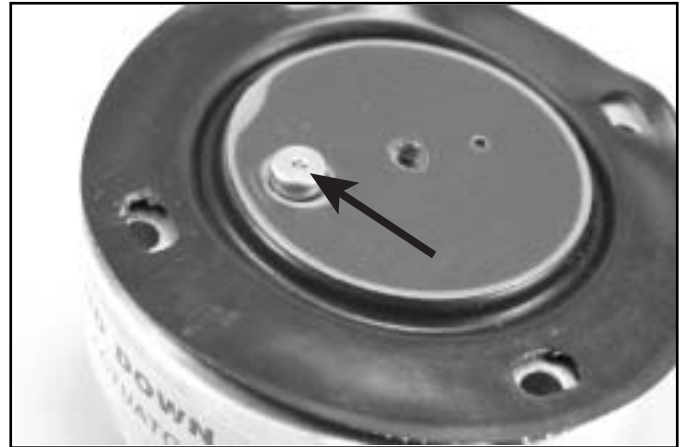
5. Separate the lower housing from the upper housing.



8. Remove the o-ring from around the restrictor.



6. Using a $\frac{9}{16}$ " hex wrench, remove the cap screw that retains the diaphragm assembly.



9. Remove the restrictor.



7. Remove the diaphragm retaining plate.



10. Remove the shield.

Installation Instructions



11. Remove the diaphragm.



13. Install the NEW shield. Make sure the three holes in the shield align properly with the three holes in the diaphragm, as shown above.



11a. Remove any debris or residue from the sealing areas of the lower housing with a non-abrasive cleaner.



14. Install the NEW restrictor into the largest hole of the shield/diaphragm.



12. Install the NEW diaphragm onto the lower housing. Make sure the raised portion of the diaphragm is installed toward the lower housing. Make sure the largest hole in the center portion of the diaphragm aligns with the hole where the restrictor is normally installed, as shown above.



15. Install the NEW o-ring around the restrictor.

Installation Instructions



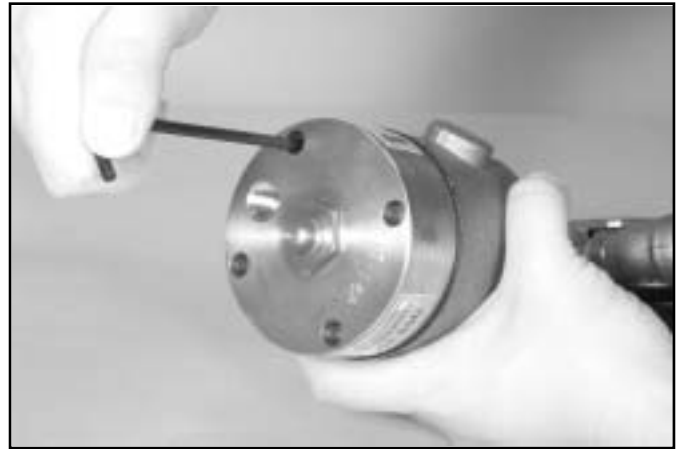
16. Align the holes in the diaphragm retaining plate with the holes in the shield/diaphragm. NOTE: The counterbore of the diaphragm retaining plate must align with the restrictor, as shown above.



17. Insert the cap screw that retains the diaphragm assembly. Using a $\frac{9}{16}$ " hex wrench, fully tighten the cap screw.



18. Align the lower/upper chambers' and diaphragm's bolt holes, as shown above. NOTE: One set of holes is offset, which allows for only one assembly orientation. Insert the four cap screws.



19. Using a $\frac{9}{16}$ " hex wrench, fully tighten the four cap screws.



20. Re-apply Teflon* tape to the nipple above the isolation ball valve.



21. Install the repaired Series 746 onto the nipple above the isolation ball valve.

*Teflon is a registered trademark of I. E. Dupont de Nemours.

Installation Instructions



22. Open the isolation ball valve on the accelerator. Charge the Series 746 to the system air pressure, and verify that the gauge is showing system requirements.



23. Close the ¼-turn vent ball valve on the accelerator.

24. Check the system for leaks.

25. Notify the authority having jurisdiction that the valve has been placed back in service.

TROUBLESHOOTING – SERIES 746 DRY ACCELERATOR

Problem	Possible Cause	Solution
The system valve operates without sprinkler activation.	Loss of air pressure in the lower inlet chamber.	Check for air loss at the lower chamber seal. If a leak is present, turn the adjustment nut counterclockwise to seal. Check for any leaks in the system and the trim. Confirm the proper operation of the air maintenance device.
The Series 746 does not operate within a 5-psi (34 kPa) pressure drop in system air pressure.	Loss of air pressure in the upper air chamber of the Series 746. Air decay rate of the system is too slow.	Apply soapy water to all Series 746 joints, and check for leaks. Repair any leaks and re-test. If this procedure does not work, refer to the "Repair Kit Instructions" section, starting on page 4. Make sure there are no restrictions in the inspector's test connection. If the above procedures do not work, contact Victaulic.
The Series 746 does not set up properly (cannot get pressure on upper gauge, and button pops up immediately when pressure is introduced).	The Series 746 is installed upside down.	Remove the Series 746 from the trim, and turn the unit around so that the button is facing down (toward the actuator).