







# Air Maintenance/Compressor Assembly

SERIES 7C7

**⚠ WARNING**

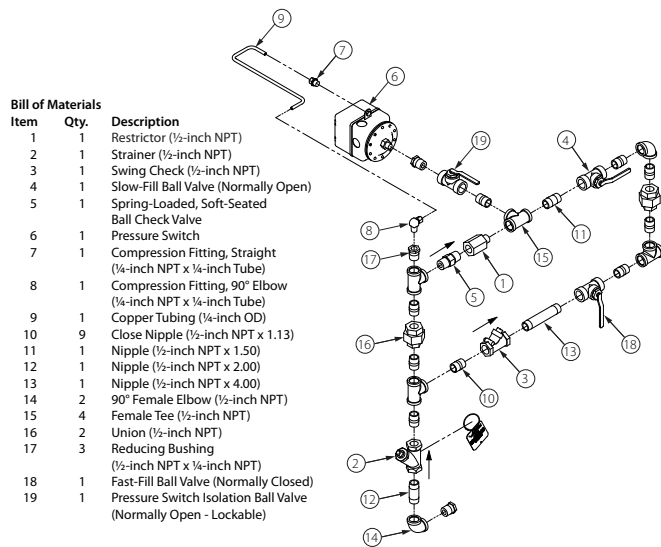
- Read and understand all instructions before attempting to install any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or perform maintenance on any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection when working with Victaulic piping products.
- Any activities that require taking the valve out of service may eliminate the fire protection provided by the system. Before removing the valve from service, notify the authority having jurisdiction. Consideration of a fire patrol should be given for the affected areas.

**Failure to follow these instructions could result in serious personal injury and/or property damage.**

## EXPLODED VIEW DRAWING AND DESCRIPTION – AIR MAINTENANCE TRIM OF THE SERIES 7C7 AIR MAINTENANCE/COMPRESSOR ASSEMBLY

The Series 7C7 Air Maintenance/Compressor Assembly is comprised of air maintenance trim and a 1/8-hp or 1/3-hp air compressor. This assembly is designed to control system air pressure for Series 768 FireLock NXT™ Dry Valves, Series 764 FireLock NXT Alternate Wet/Dry Valves, and Series 769 FireLock NXT Deluge and Preaction Valves (pneumatic systems).

A decrease in air pressure will close the pressure switch. When the pressure switch closes, the air compressor turns on to restore air pressure. When air pressure is restored, the air compressor turns off, and pressure in the compressor automatically bleeds off through the release valve of the pressure switch. The release valve protects the air compressor from startup overload.



Item	Qty.	Description
1	1	Restrictor (1/2-inch NPT)
2	1	Strainer (1/2-inch NPT)
3	1	Swing Check (1/2-inch NPT)
4	1	Slow-Fill Ball Valve (Normally Open)
5	1	Spring-Loaded, Soft-Seated Ball Check Valve
6	1	Pressure Switch
7	1	Compression Fitting, Straight (1/4-inch NPT x 1/4-inch Tube)
8	1	Compression Fitting, 90° Elbow (1/4-inch NPT x 1/4-inch Tube)
9	1	Copper Tubing (1/4-inch OD)
10	9	Close Nipple (1/2-inch NPT x 1.13)
11	1	Nipple (1/2-inch NPT x 1.50)
12	1	Nipple (1/2-inch NPT x 2.00)
13	1	Nipple (1/2-inch NPT x 4.00)
14	2	90° Female Elbow (1/2-inch NPT)
15	4	Female Tee (1/2-inch NPT)
16	2	Union (1/2-inch NPT)
17	3	Reducing Bushing (1/2-inch NPT x 1/4-inch NPT)
18	1	Fast-Fill Ball Valve (Normally Closed)
19	1	Pressure Switch Isolation Ball Valve (Normally Open - Lockable)

Exaggerated for Clarity

## AIR SUPPLY REQUIREMENTS

**NOTICE**

- ONLY ONE SYSTEM IS ALLOWED PER SERIES 7C7 AIR MAINTENANCE/COMPRESSOR ASSEMBLY.**

The required air pressure for Series 768 FireLock NXT Dry Valves, Series 764 FireLock NXT Alternate Wet/Dry Valves, and Series 769 FireLock NXT Deluge and Preaction Valves is 13 psi/0.9 Bar minimum, regardless of the system supply water pressure. Normal air pressure should not exceed 18 psi/1.2 Bar. Victaulic presets the Series 7C7 Air Maintenance/Compressor Assembly to the recommended air pressure of 13 psi/0.9 Bar as the “on” or “low” pressure setting for the compressor and 18 psi/1.2 Bar as the “off” or “high” pressure setting. Air pressure higher than the required system air pressure could reduce system operation response time. **The Series 7C7 Air Maintenance/Compressor Assembly MUST NOT be used on a Series 768 or Series 769 FireLock NXT Valve installed with a Series 746 or Series 746-LPA Dry Accelerator, unless a tank and air regulator are added.**

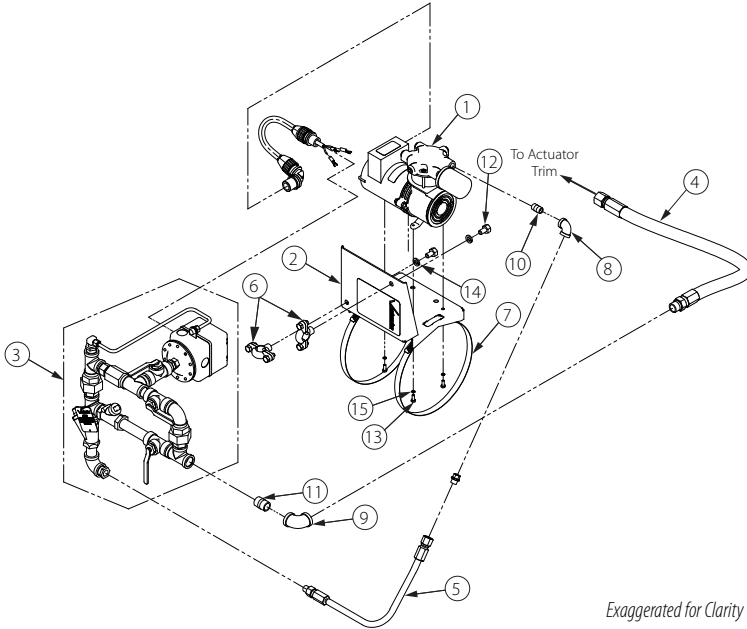
The engineer/system designer is responsible for sizing the compressor so that the entire system is charged to the required air pressure within NFPA guidelines (30 minutes). DO NOT oversize the compressor to provide more airflow. An oversized compressor will slow down or possibly prevent valve operation. **NOTE:** The Series 7C7 Air Maintenance/Compressor Assembly with the 1/8-hp option allows the valve to be set and the system operational within 30 minutes to 750 gallons. The Series 7C7 Air Maintenance/Compressor Assembly with the 1/3-hp option allows the valve to be set and the system operational within 30 minutes to 400 gallons. However, the cut-off pressure may take longer than 30 minutes.

For European applications, the 1/3-hp, 50-Hz version allows the valve to be set and the system operational within 30 minutes to 1.5 m<sup>3</sup>. The 1/3-hp, 60-Hz version allows the valve to be set and the system operational within 30 minutes to 2.1 m<sup>3</sup>. However, the cut-off pressure may take longer than 30 minutes.

# Air Maintenance/Compressor Assembly

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## EXPLODED VIEW DRAWING - SERIES 7C7 AIR MAINTENANCE COMPRESSOR ASSEMBLY WITH 1/6-HP COMPRESSOR

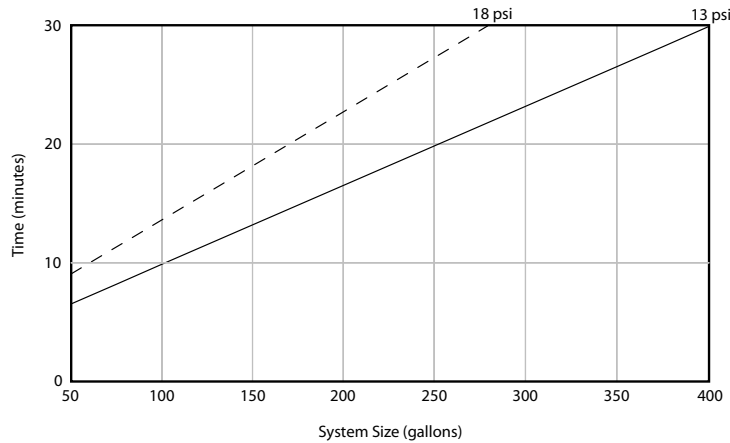


**Bill of Materials**

Item	Qty.	Description
1	1	Compressor
2	1	Mounting Bracket
3	1	Series 757P Air Maintenance Trim Assembly with Pressure Switch
4	1	Stainless Steel Braided Flex Hose (1/2-inch NPT Male x Female)
5	1	Stainless Steel Braided Flex Hose (1/4-inch NPT Male x Female)
6	2	Split Hanger for 1/2-inch Pipe
7	2	Hose Clamp
8	1	90° Female Elbow (1/4-inch NPT)
9	1	90° Female Elbow (1/2-inch NPT)
10	1	Close Nipple (1/4-inch NPT)
11	1	Close Nipple (1/2-inch NPT)
12	2	Hex-Head Bolt (3/8 - 16 x 3/8-inch Long)
13	3	Hex-Head Bolt (#10 - 32 x 1/2-inch Long)
14	2	Lock Washer (3/8 inch)
15	3	Lock Washer (#10)

Exaggerated for Clarity

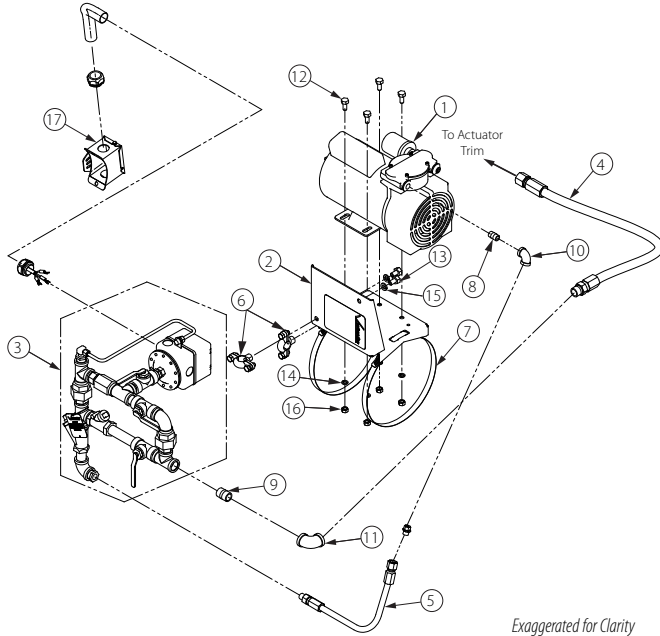
Estimated Time to Reach Various Pressures -  
Series 7C7 with 1/6-hp (110 VAC) Compressor



# Air Maintenance/Compressor Assembly

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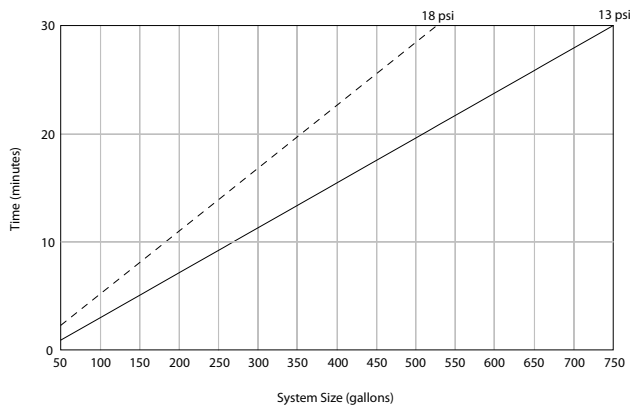
## EXPLODED VIEW DRAWING - SERIES 7C7 AIR MAINTENANCE COMPRESSOR ASSEMBLY WITH 1/3-HP COMPRESSOR



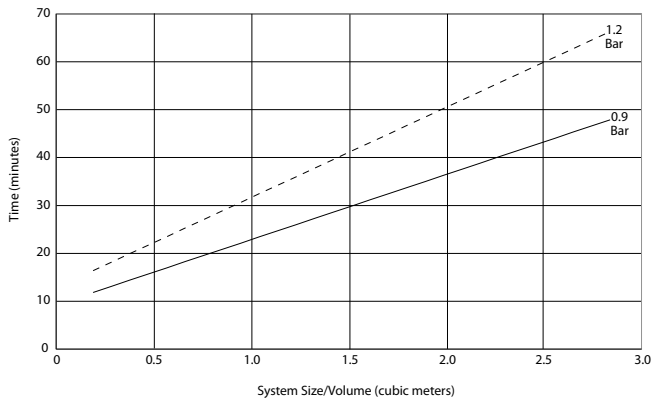
**Bill of Materials**

Item	Qty.	Description
1	1	Compressor
2	1	Mounting Bracket
3	1	Series 757P Air Maintenance Trim Assembly with Pressure Switch
4	1	Stainless Steel Braided Flex Hose (1/2-inch NPT Male x Female)
5	1	Stainless Steel Braided Flex Hose (1/4-inch NPT Male x Female)
6	2	Split Hanger for 1/2-inch Pipe
7	2	Hose Clamp
8	1	Close Nipple (1/4-inch NPT)
9	1	Close Nipple (1/2-inch NPT)
10	1	90° Female Elbow (1/4-inch NPT)
11	1	90° Female Elbow (1/2-inch NPT)
12	4	Hex-Head Bolt (3/8 - 18 x 3/4-inch Long)
13	2	Hex-Head Bolt (3/8 - 16 x 3/8-inch Long)
14	4	Lock Washer (3/8 inch)
15	2	Lock Washer (3/8 inch)
16	4	Hex Nut (3/8 - 18)
17	1	Conduit Box

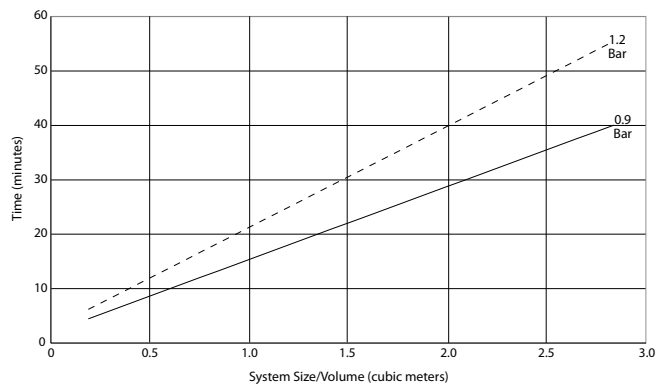
Estimated Time to Reach Various Pressures -  
Series 7C7 with 1/3-hp (110 VAC) Compressor



Estimated Time to Reach Various Pressures - European Option  
Series 7C7 with 1/3-hp (220 - 240 VAC, 50 Hz) Compressor



Estimated Time to Reach Various Pressures - European Option  
Series 7C7 with 1/3-hp (220 - 240 VAC, 60 Hz) Compressor



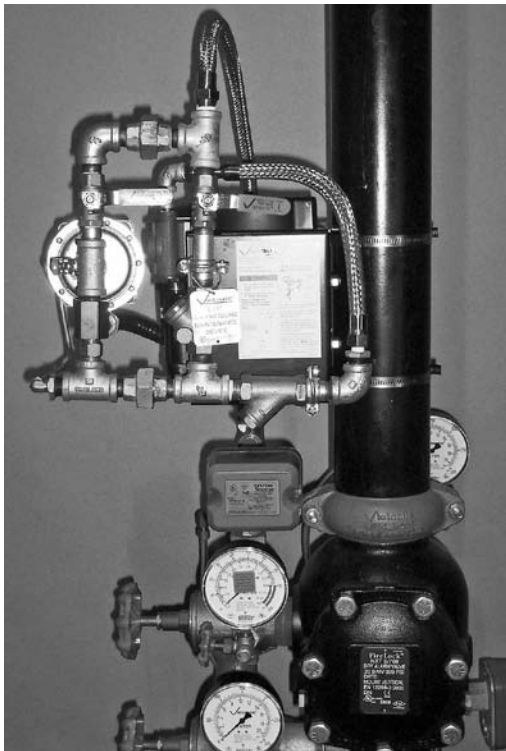
## Air Maintenance/Compressor Assembly

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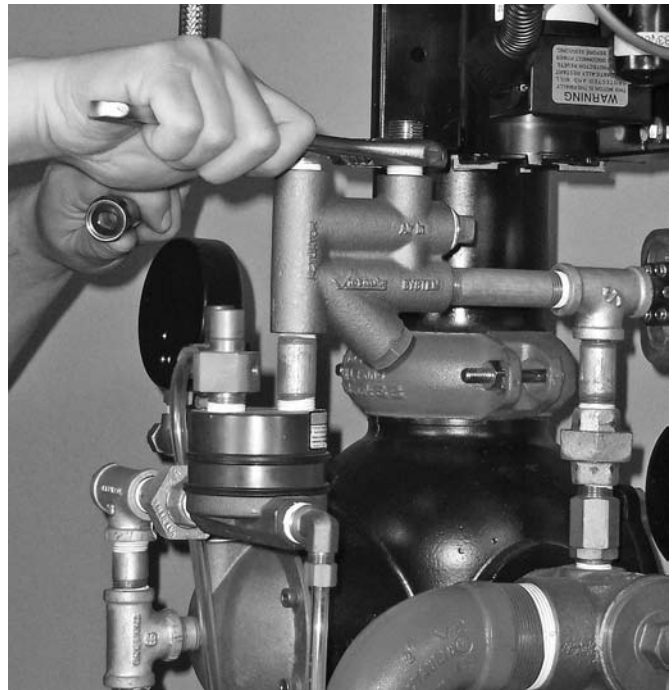
### INSTALLATION OF THE SERIES 7C7 AIR MAINTENANCE/COMPRESSOR ASSEMBLY



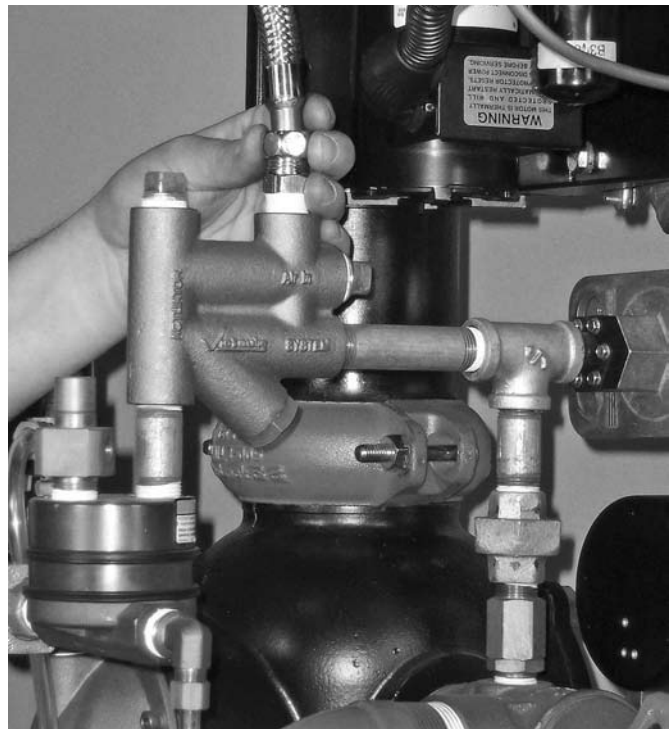
1. Mount the Series 7C7 Air Maintenance/Compressor Assembly onto the riser with the hose clamps provided. When placing the assembly onto the riser, take into account the 26-inch/660-mm length of stainless steel braided flex hose that will be installed from the elbow in the air maintenance trim into the air manifold in the actuator trim. Make sure the hardware is tightened completely. **NOTE:** Two people are required to install the assembly properly and safely.



**NOTE:** Make sure the Series 7C7 is mounted in the correct orientation. Due to the swing check valve in the air maintenance trim, the compressor can be mounted vertically or horizontally.



2. Install the fitting from the ½-inch/13-mm stainless steel braided flex hose into the air manifold in the actuator trim, as shown above.



3. Connect the ½-inch/13-mm stainless steel braided flex hose to the fitting in the air manifold, as indicated in the trim drawings.

# Air Maintenance/Compressor Assembly

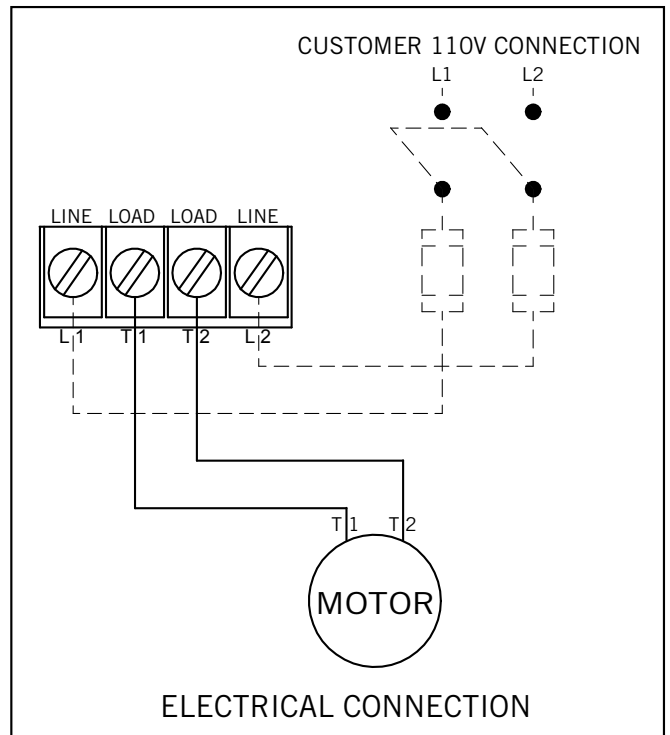
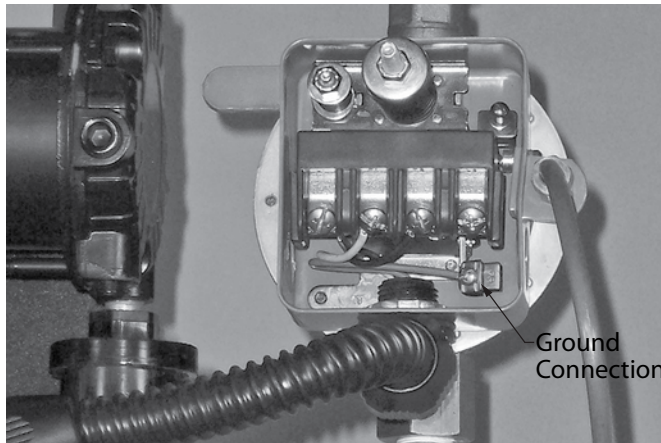
SERIES 7C7

## ELECTRICAL INFORMATION

⚠ DANGER

- Only qualified electricians should connect incoming power to the Series 7C7 Air Maintenance/Compressor Assembly.
- To reduce the risk of electric shock, check the electrical source for proper grounding.

Failure to follow these instructions could result in death or serious personal injury.



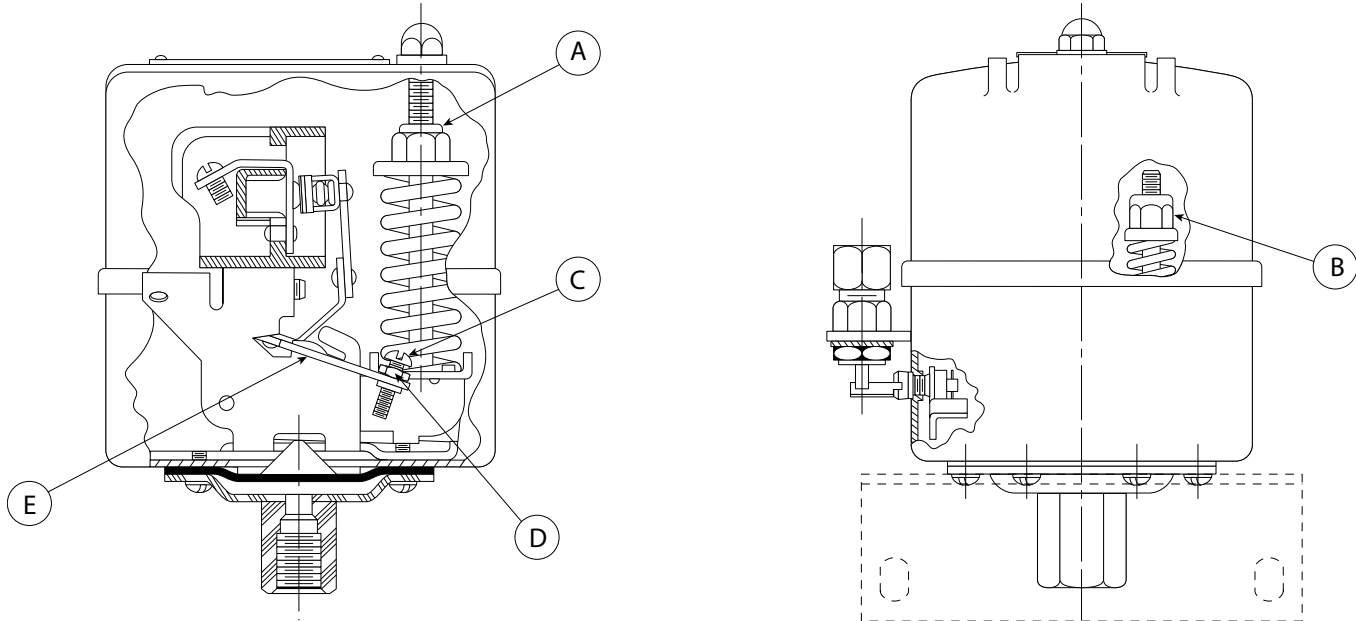
**NOTE:** NEMA 1 Enclosure - intended only for indoor use  
 Only qualified electricians should make the 110-volt connection in accordance with requirements of the local authority having jurisdiction and any applicable electrical codes.



# Air Maintenance/Compressor Assembly

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## CUTAWAY DRAWING - PRESSURE SWITCH

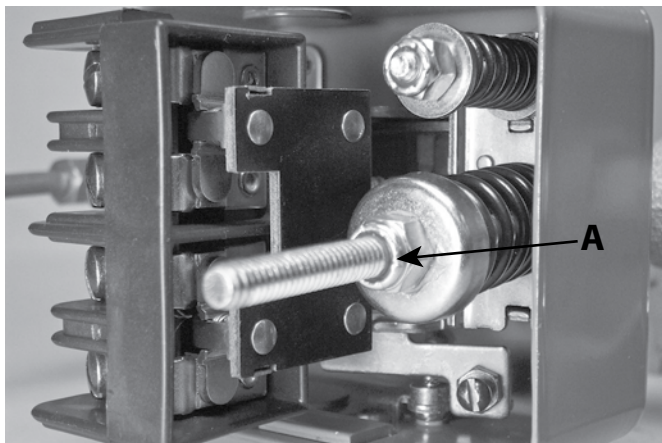


Exaggerated for clarity

## PRESSURE SWITCH ADJUSTMENT

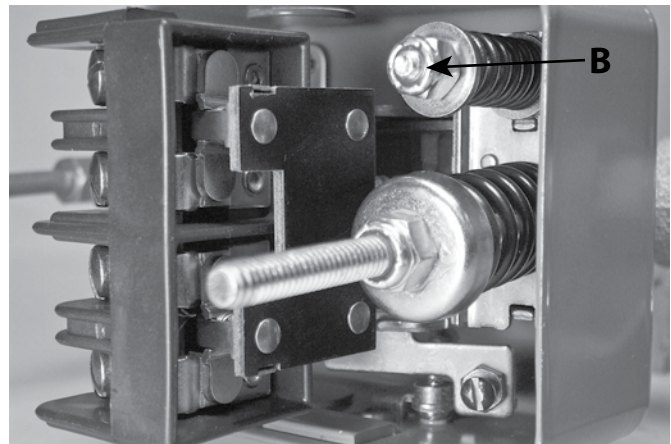
The pressure switch is factory set for typical system air pressures (13 - 18 psi/0.9 - 1.2 Bar). **NOTE:** Any adjustment made may affect correct operation and increase the cut-off time. Higher air pressure may slow down the system response time. Refer to the system air pressure gauge when making any adjustments.

### RANGE



1. Adjust the range spring nut (A) first, until the desired operating point on the falling pressure is obtained. **NOTE:** Turning the range spring nut clockwise will increase the setting. This adjustment changes both the cut-in and cut-out operating points but should be adjusted only for the cut-in point.

### DIFFERENTIAL

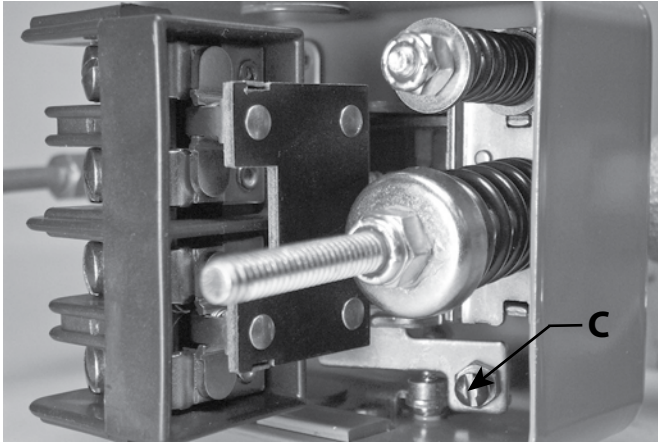


1. Set the operating point on the rising pressure by adjusting the differential spring nut (B). **NOTE:** Turning the differential spring nut clockwise will increase the pressure difference between the cut-in and cut-out operating points by increasing the cut-out point only.

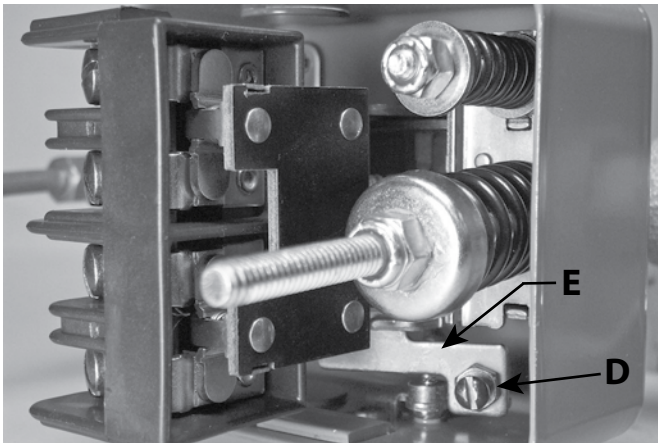
# Air Maintenance/Compressor Assembly

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## RELEASE VALVE



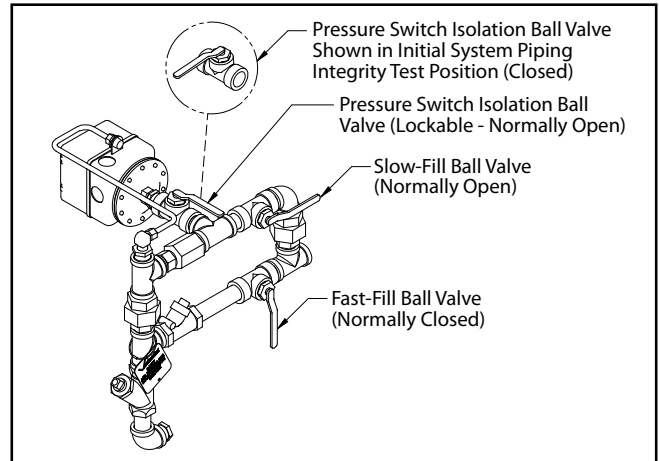
1. The release valve is factory installed. If the release valve is replaced or the release valve screw (C) requires adjustment, complete the following steps:
  - 1a. With air pressure applied to the valve and the switch contacts open, turn the release valve screw (C) clockwise until the release valve just begins to release air.
  - 1b. Turn the release valve screw (C) clockwise an additional 1½ turns.



- 1c. Lock the jam nut (D) against the bearing-plate lever (E).

## FAST-FILL BALL VALVE, SLOW-FILL BALL VALVE, AND PRESSURE SWITCH ISOLATION BALL VALVE INFORMATION

The following information describes the function of the fast-fill ball valve, the slow-fill ball valve, and the pressure switch isolation ball valve of the air maintenance trim. Always refer to the installation, maintenance, and testing manual for the FireLock NXT valve for complete setup information.



1. Close the slow-fill ball valve on the air maintenance trim.
2. Charge the system by opening the fast-fill ball valve on the air maintenance trim. Confirm that the system is charging by observing the air pressure gauge. If the gauge is not showing an increase in air pressure, there is a leak or an opening in the line. Repair any leaks or openings and restart the setup procedures.
3. When system air pressure is established, close the fast-fill ball valve on the air maintenance trim. The fast-fill ball valve will remain “normally closed.”
4. Open the slow-fill ball valve on the air maintenance trim. The slow-fill ball valve will remain “normally open.” **NOTE:** Failure to leave the slow-fill ball valve open may allow system pressure to drop, resulting in valve operation in the event of a system leak.
5. To perform the one-time initial system piping integrity test (per NFPA requirements), close the pressure switch isolation ball valve to allow the compressor to charge the system pressure above the cut-out pressure. Upon completion of the test, open the pressure switch isolation ball valve. Manually bleed the system pressure down to 18 psi/1.2 Bar by opening the system main drain valve. Lock the pressure switch isolation ball valve in the “normally open” position.

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## TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
The valve operates without sprinkler activation.	There is a loss of air pressure in the system or trim.	Check for any leaks in the system and trim. Confirm that the air maintenance trim is operating properly. Consider installing a low-air supervisory switch.
	The pressure switch is set too low, or the compressor is not operating properly.	Increase the "ON" setting of the pressure switch, and check the air compressor for proper operation.



WCAS-7B6RAH

For complete contact information, visit [www.victaulic.com](http://www.victaulic.com)

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