

| #  | Qty | Description & Part Number            |
|----|-----|--------------------------------------|
| 01 | 1   | <b>Air Dryer 432 413 *** 0</b>       |
| 02 | 1   | <b>Regeneration Valve 15 06 099W</b> |
| 03 | 1   | Air Cleaner                          |
| 04 | 1   | Governor                             |
| 05 | 1   | Compressor                           |
| 06 | 1   | Wet Tank / Air System                |

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ABS  
 WABCO

**Air Dryer Installation Kit. Holset E Type Compressors.**

| DATE     | DETAILS OF CHANGE       | BY   | CHKD |
|----------|-------------------------|------|------|
| 18/11/94 | Released as a sketch    | G.B. |      |
| 25/07/02 | Changed to Wabco dryer  | G.B. | Pl.  |
| 18/08/06 | Re-drawn on title block | G.B. | Pl.  |

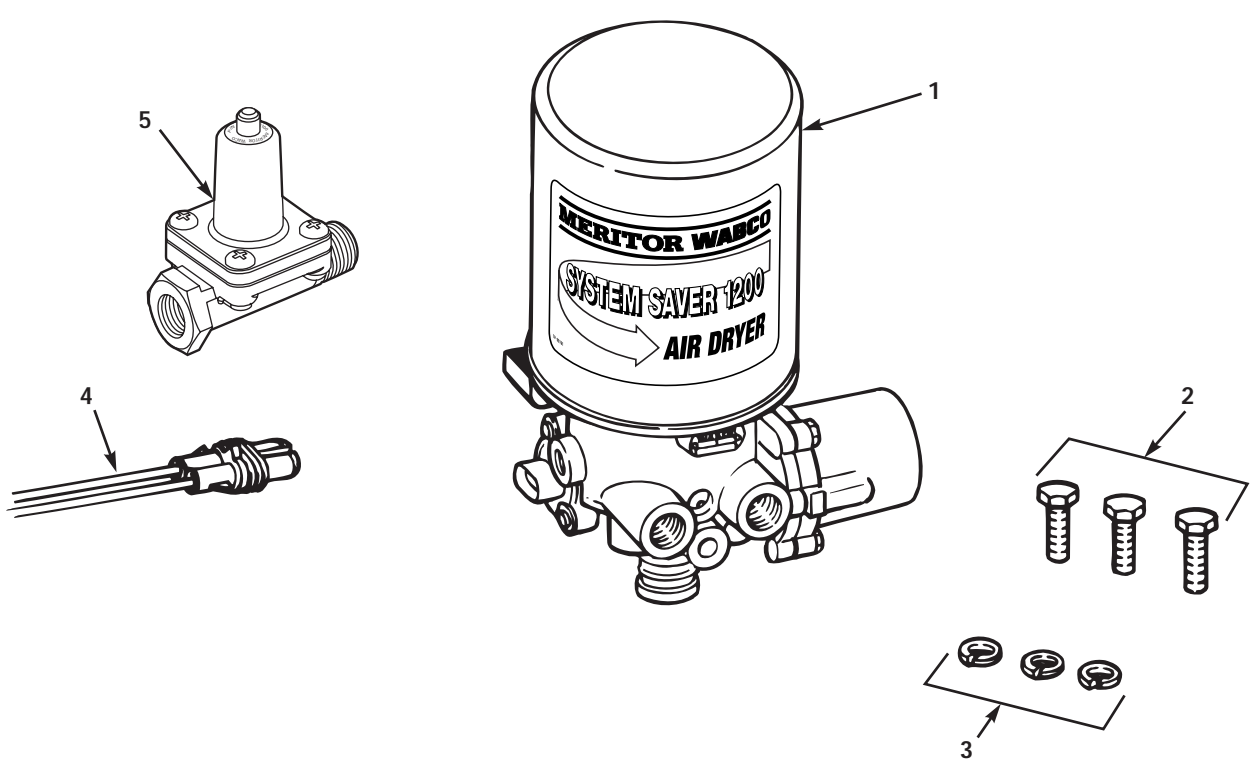
Do Not Scale    Sheet 1 of 1    Drawing Number    **RK AD 7**



# Installing the Meritor WABCO System Saver 1000 and 1200 Series Air Dryers

For Use on Tractors, Trucks  
and Buses with Air Brakes

## Installation Requirements



The diagram illustrates the components for installing a Meritor WABCO System Saver 1200 Air Dryer. It shows the main air dryer unit (1) with a label that reads "MERITOR WABCO SYSTEM SAVER 1200 AIR DRYER". To the left is a pressure-controlled check valve (5) with a central nipple. Below it is a heater power harness (4) with three wires. To the right are three capscrews (2) and three lock washers (3) arranged in two rows. Arrows point from the numbers 1 through 5 to their respective parts.

| Item | Qty. | Description                         |
|------|------|-------------------------------------|
| 1    | 1    | 12- or 24-Volt Air Dryer            |
| 2    | 3    | Capscrew (1/2"-13 UNC - 2A x 1.375) |
| 3    | 3    | Lock Washer (1/8" thick)            |
| 4    | 1    | Heater Power Harness                |
| 5    | 1    | Pressure-Controlled Check Valve     |

## Introduction

This installation manual contains basic installation instructions for standard air systems and includes special instructions for installing the Pressure-Controlled Check Valve (PCCV). It also includes System Saver 1000 and 1200 air dryer diagnostics. Read all instructions before proceeding with your installation.

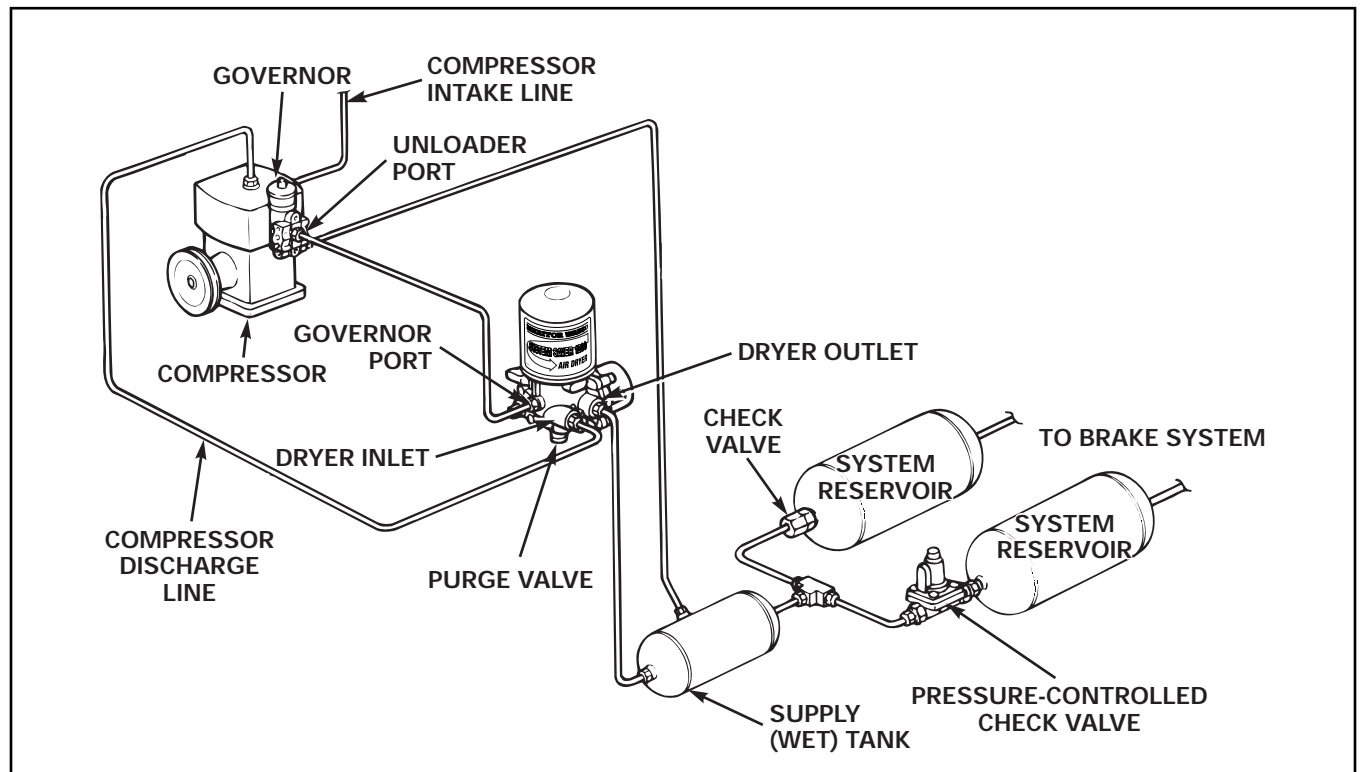
## Application Information:

|                                |                   |
|--------------------------------|-------------------|
| Cubic Feet per Minute (CFM)    | Less than 25 CFM  |
| Normal Duty Cycle              | Less than 30%     |
| Typical Compressor Loaded Time | 2 Minutes or Less |

## WARNINGS

- ⚠ *To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.*
- ⚠ *Do not work around or under the vehicle unless it is parked on a level surface. Use blocks to keep the vehicle from moving. A moving vehicle can cause serious personal injury and damage.*
- ⚠ *Remove all air from the air system before servicing any component in the air system. Pressurized air can cause serious personal injury.*

## Basic Installation Instructions

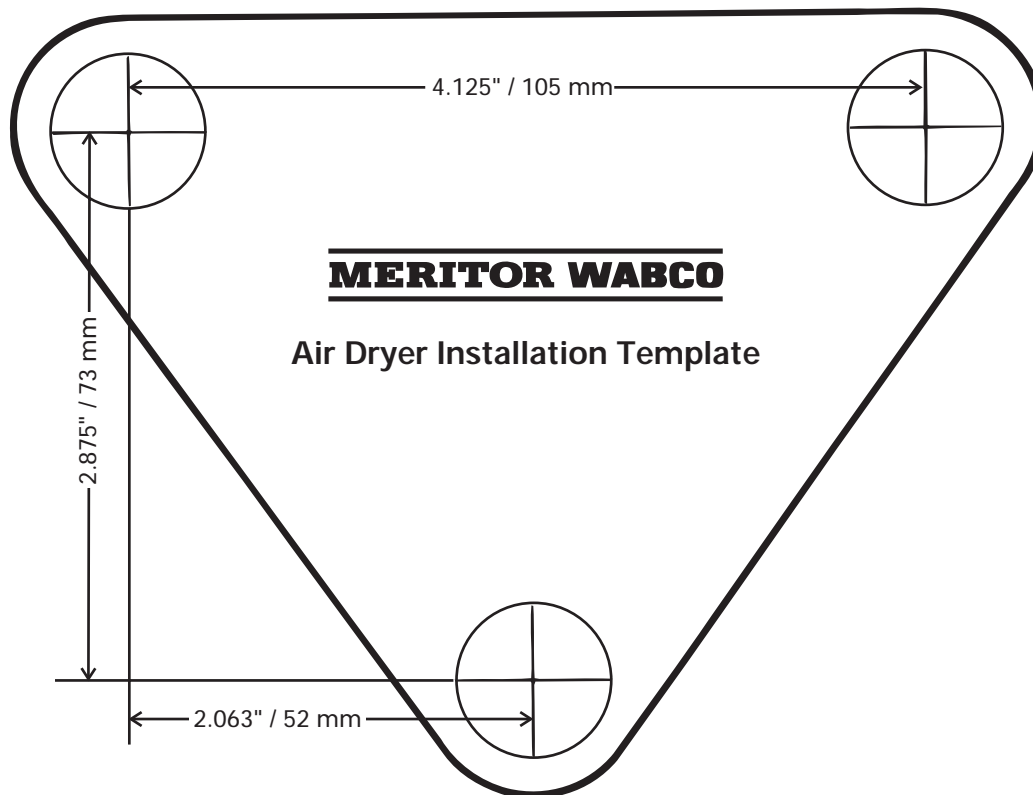


TYPICAL INSTALLATION FOR SYSTEM SAVER 1000 AND 1200 SERIES AIR DRYER

## Mounting the Air Dryer

1. Park the vehicle on a level surface, stop the engine, set the parking brake and block the wheels.
2. Drain pressurized air from **all reservoirs** to 0 psi (0 bar). Open **all** draincocks to expel collected water.
3. Inspect the vehicle for a suitable mounting location that meets the following criteria. The air dryer will operate most efficiently when you follow these guidelines.
  - a. Mount the air dryer where cool air can flow around it . . . but not directly in the vehicle wind stream . . . and at least 12 inches away from any heat source.
  - b. Mount the air dryer **LOWER** than the compressor so that water in the delivery line flows into the air dryer. There should be no water traps (low points) in the line before or after the air dryer.
  - c. Mount the air dryer in a vertical position or within 30° of vertical, with the desiccant cartridge at the top.
  - d. Allow at least two inches (51 mm) of clearance above the top of the air dryer for servicing the desiccant cartridge.
  - e. Mount the air dryer in a location where it is not subject to direct splash or spray from a wheel.
4. Apply the adhesive-backed template to the selected location. **Figure 1**.

Figure 1

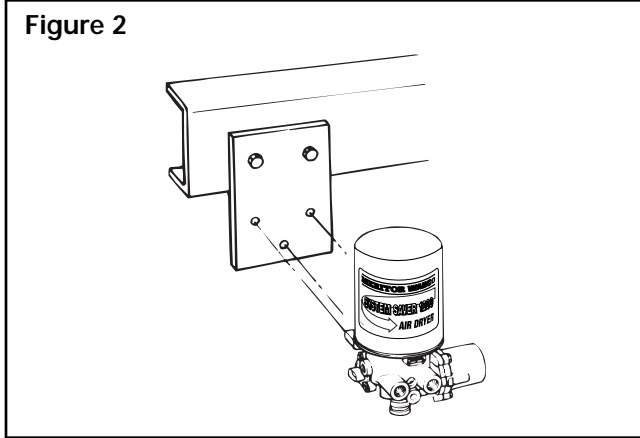


## NOTE

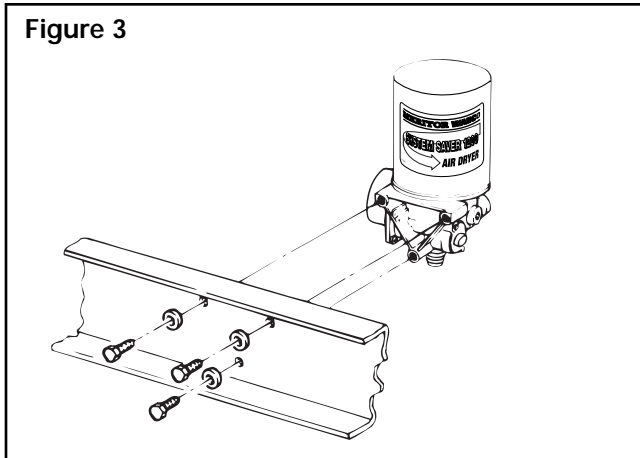
Check the vehicle manufacturer's specifications before drilling into the frame member.

5. Drill 9/16-inch holes at each cross mark. Use a mounting bracket, if necessary. **Figure 2** or **3**.
6. Mount the air dryer using the capscrews and lock washers provided.
7. Tighten each capscrew to 22-30 lb-ft (30-40 N•m). **T**

**Figure 2**



**Figure 3**



## Connecting the Air Lines

### NOTE

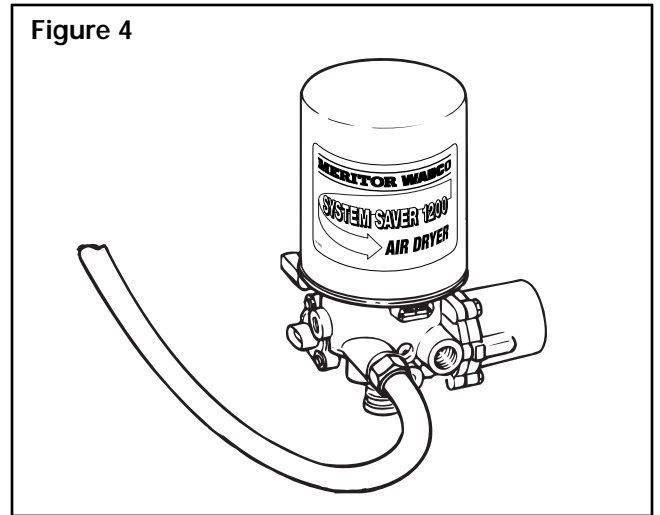
Use pipe sealant or teflon tape on all air fittings.

### NOTE

The reference to nylon tubing throughout this manual refers to SAE J844 air brake nylon tubing.

1. Connect the delivery line from the compressor to the air dryer inlet port (1/2" NPTF, marked "1") with 1/2-inch-ID minimum stainless-steel braided teflon hose. The air dryer will operate most efficiently when the following guidelines are used.
  - a. The delivery line should follow a **DOWNHILL** route to the inlet port (**Figure 4**), free of kinks and sags, which cause water traps.

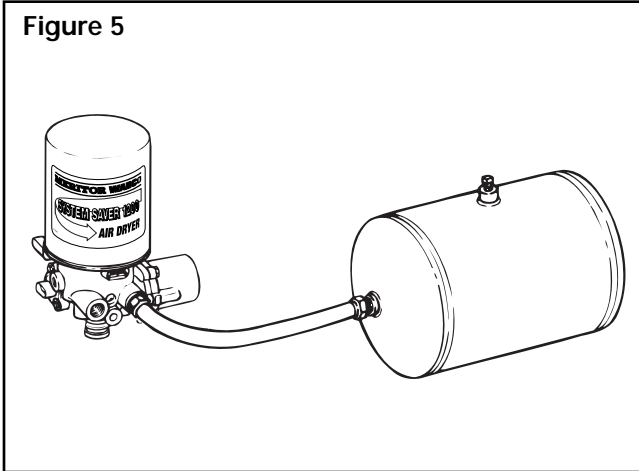
**Figure 4**



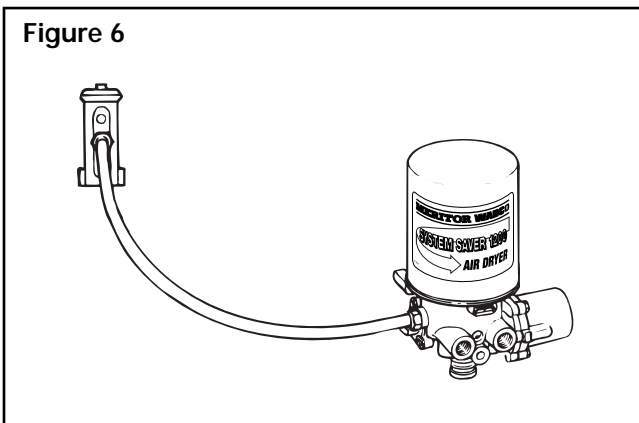
- b. Air temperature entering the dryer should be less than 175°F (79.5°C). The delivery line must be at least 6.0 feet (1.83 m), but most vehicles require a greater length to achieve this condition.
- c. The delivery line should not exceed 20 feet (6.1 m), or moisture within the line can freeze, blocking air passage.
- d. Insulate a delivery line with a length of over 10 feet (3.0 m).

2. Connect the air dryer outlet port (1/2-inch NPTF, marked "21") to the inlet of the supply (wet) tank with 1/2-inch or 5/8-inch nylon tubing. **Figure 5.**
3. Connect the air governor unloader port to the air dryer control port (1/4-inch NPTF, marked "4") with 1/4-inch or 3/8-inch nylon tubing. **Figure 6.**
4. Check all fittings for leaks before proceeding.

**Figure 5**



**Figure 6**

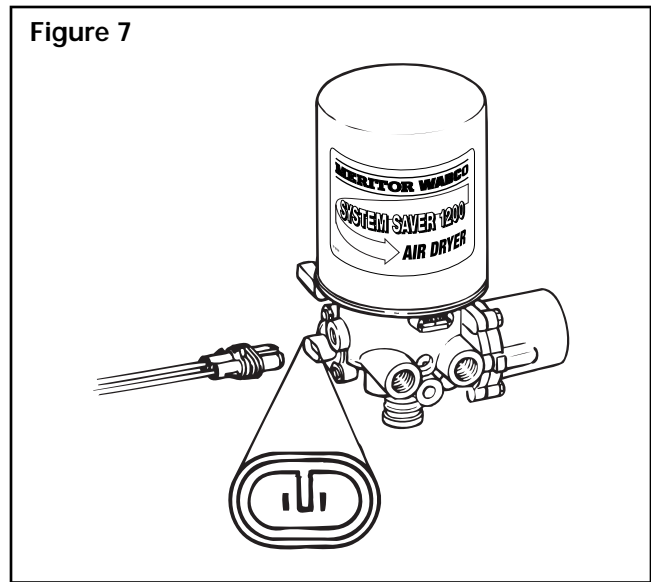


## Connecting the Heater

The System Saver 1000 and 1200 Series air dryers are available in 12- or 24-volt models; each has a 100-watt heater. Each kit contains a two-wire harness which supplies power to the unit. Be sure to select the correct power source for the air dryer model. Using the wrong voltage can cause malfunction and even damage the unit. Check vehicle manufacturer specifications for exact wiring information.

1. Connect one of the leads to a good vehicle ground. Attach the other lead to a line that is powered with the ignition in the run position, and not powered with the ignition off. A 15-amp fuse is recommended for this line for 12 volts and 7.5 amps for 24 volts.
2. Press the male plug on the end of the power cable into the receptacle on the side of the dryer. Plug must be inserted until the latch snaps over the tab on the mating connector. **Figure 7.**
3. Insulate and seal all electrical splices and properly secure the harness.

**Figure 7**



## Installing the Pressure-Controlled Check Valve (PCCV)

### NOTE

The pressure-controlled check valve replaces the one-way check valve on either the secondary or primary service reservoir. Use pipe sealant or teflon tape on all air fittings.

1. Identify the appropriate service reservoir (see above) and locate the one-way check valve at the inlet. This reservoir is fed by the supply (wet) tank and typically supplies air to the front brakes and air-operated accessories. For more information about the PCCV, please refer to TP-9672, *Air Dryer Application Guidelines*.

### NOTE

If the one-way check valve is internal or otherwise inaccessible, locate the check valve on the primary reservoir.

2. Remove and **discard** the one-way check valve from the reservoir.

### NOTE

The arrow located on the face plate of the PCCV must point **TOWARD** the reservoir. Figure 9.

3. Install the pressure-controlled check valve in place of the check valve you discarded. If space is limited, you can use a 45° or 90° pipe fitting.
4. Reconnect the supply line from the supply (wet) tank to the inlet of the PCCV. Reroute or shorten the air hose as necessary.

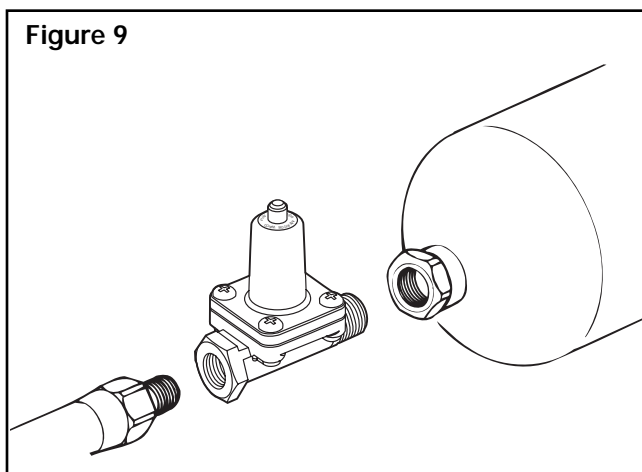


Figure 9

## Check the Vehicle's Air System for an Alcohol Evaporator

### NOTE

Typically, an alcohol evaporator will be installed in the line between the air dryer and the supply (wet) tank. Common installations are on the truck's firewall, on a frame rail and behind the cab. However, an alcohol evaporator can also be found at other locations.

1. Check the vehicle's air system to determine if an alcohol evaporator is installed.
2. If an alcohol evaporator is installed in the air system, check for a bypass line connected to the evaporator, as illustrated in Figure 10.

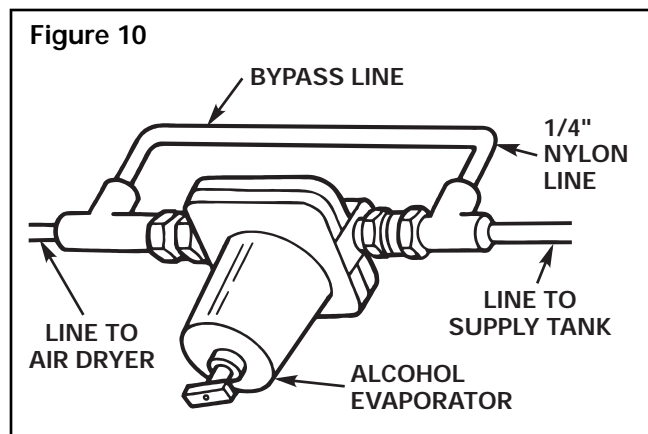


Figure 10

### CAUTION

If a check valve is installed in the bypass line, the air dryer will not function properly. Damage to the system can result.

3. If a bypass line is connected to the evaporator, check to see if a check valve is installed in the bypass line. If check valve is installed:
  - a. remove the check valve from the bypass line,
  - b. remove the bypass line and
  - c. replace the bypass line with 1/4-inch nylon line.
4. If there is no bypass line installed at the alcohol evaporator, install one using 1/4-inch nylon line. Figure 10.

## Testing the System Saver 1000 and 1200 Series Air Dryers

1. Close the drain cocks on all reservoirs.
2. Start the vehicle. Wait for the air system to reach full operating pressure.
3. If the air dryer exhausts air for 10-20 seconds after the governor cuts out, it is working correctly.
4. Apply vehicle brakes several times until the compressor cuts in.
5. If the air dryer exhausts air for 10-20 seconds after the compressor cuts out, it is working correctly.

### **NOTE**

*One of the air pressure gauges on the vehicle instrument panel will decrease by approximately 10 psi when the compressor cuts out and the air dryer purges. This decrease is normal for the System Saver 1000 and 1200 Series air dryers. If the gauge does not decrease, recheck the plumbing to ensure proper placement of the pressure-controlled check valve.*

## Final Checks

1. Start the vehicle. Wait for the air system to reach full operating pressure. When the compressor cuts out, listen to the air dryer. If either of the following conditions exist, refer to Meritor WABCO Maintenance Manual No. 34, *System Saver 1000 and 1200 Series Air Dryers*.
  - a. The air dryer continues to exhaust air for longer than 30 seconds.
  - b. The air dryer does not exhaust air after initial decompression.
2. Shut engine **OFF**. Apply a soap solution to each connection that contains pressurized air:
  - a. If soap bubbles do not appear, connections are sealed properly.
  - b. If soap bubbles appear:
    - Drain all reservoirs.
    - Remove leaking connection.
    - Inspect for damaged threads or cracks; replace as necessary.
    - Apply pipe sealant or teflon tape to the connection.
    - Repeat process.