



# Installation Instructions

## BENDIX® AD-9® AIR DRYER INSTALLATION MODIFICATION KIT

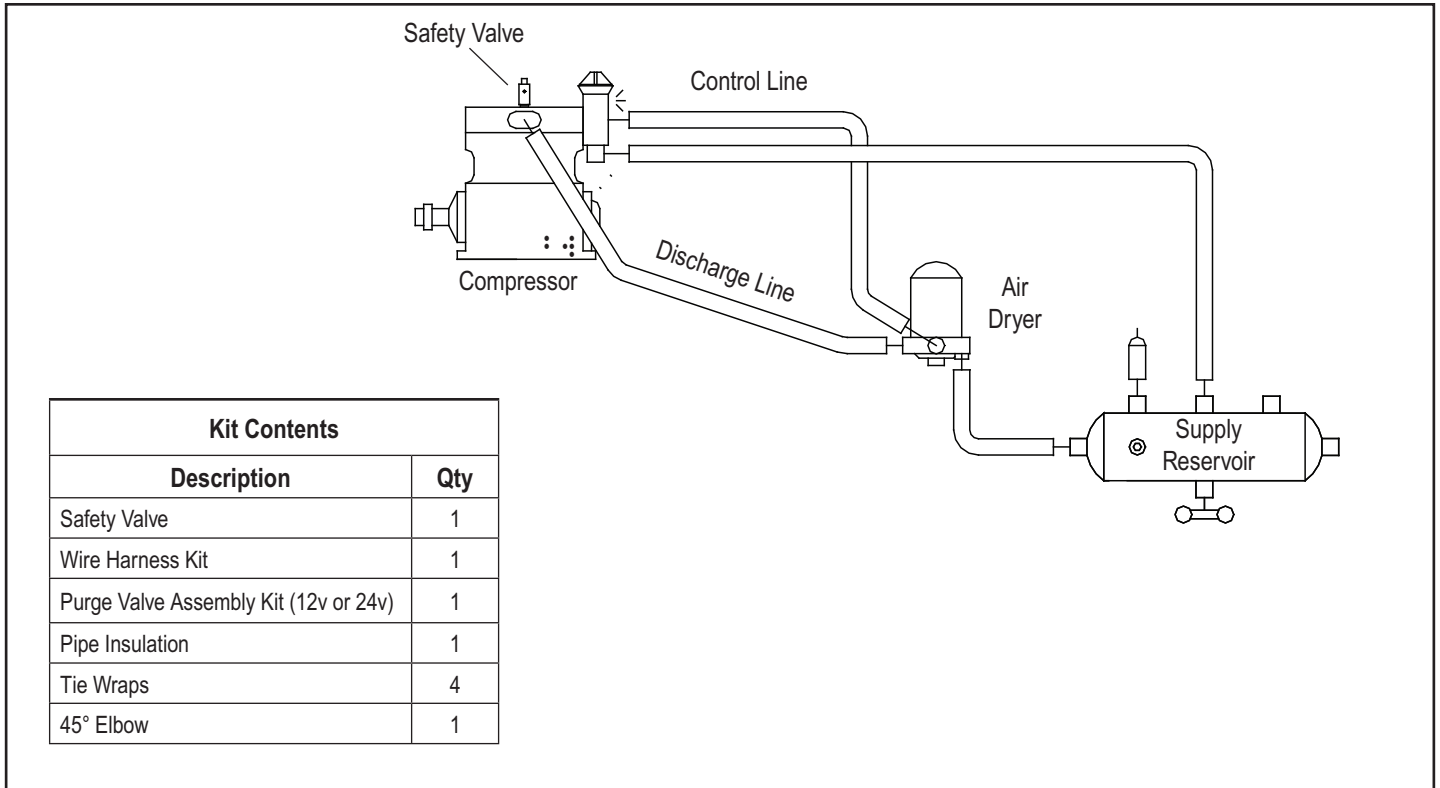


FIGURE 1 BENDIX® AD-9® AIR DRYER INSTALLATION MODIFICATION KIT

### GENERAL SAFETY GUIDELINES

#### **WARNING!**

#### **PLEASE READ AND FOLLOW THESE INSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:**

When working on or around a vehicle, the following general precautions should be observed at all times.

1. Park the vehicle on a level surface, apply the parking brakes, and always block the wheels. Always wear safety glasses.
2. Stop the engine and remove ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically charged components.
3. Do not attempt to install, remove, disassemble or assemble a component until you have read and thoroughly understand the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
4. If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning **ANY** work

on the vehicle. If the vehicle is equipped with a Bendix® AD-IS® air dryer system or a dryer reservoir module, be sure to drain the purge reservoir.

5. Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
6. Never exceed manufacturer's recommended pressures.
7. Never connect or disconnect a hose or line containing pressure; it may whip. Never remove a component or plug unless you are certain all system pressure has been depleted.
8. Use only genuine Bendix® brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
9. Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
10. Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
11. For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.

## GENERAL KIT INFORMATION

This kit is intended to help prevent discharge line freeze up and the resulting damage it can cause. IT IS IMPORTANT TO INSPECT THE INSTALLATION BEFORE INSTALLING any of the components contained in this kit. Inspection is necessary because installation of this kit alone will not compensate for poorly routed lines or incorrect line lengths.

## INSPECTING THE INSTALLATION

1. Measure the length of the discharge line. The discharge line should be no shorter than 6 feet and no longer than 16 feet. Ideally the discharge line should be between 6 feet and 9.5 feet.

- A. If the line is longer than 6 feet, but less than 16 feet, proceed to step 2.
- B. If the discharge line is greater than 16 feet, it **should be shortened**. Record the length here and proceed to step 2.

Discharge Line Length \_\_\_\_\_

**Note:** If the air dryer must be relocated to shorten the discharge line, make certain to mount it vertically, outside the engine compartment, on a rigid surface. Do not locate it closer than 12 inches to a heat source, and make certain a 12 inch clearance is available beneath the air dryer to allow cartridge removal.

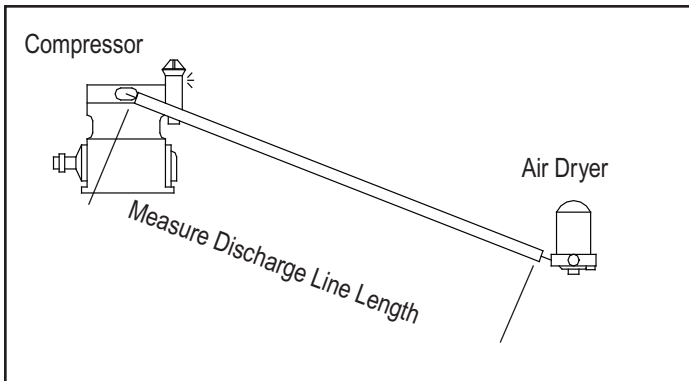


FIGURE 2 MEASURING THE DISCHARGE LINE LENGTH

2. Inspect the entire length of the discharge line between the compressor and the air dryer.
  - A. The discharge line must slope downward from the discharge port on the compressor to the inlet port of the air dryer.
  - B. There should not be any "dips" or "up hill" runs in the discharge line between the compressor and air dryer. Record here if any of these conditions exist.

\_\_\_\_\_
3. Inspect the fitting used to connect the discharge line to the inlet of the air dryer. Ideally, a straight fitting should be used. Alternatively, a 45° fitting can be installed. If a 90° fitting is in use, it should be replaced if possible. Multiple fittings (i.e. extension + 45°) must be replaced. Record the fitting currently installed.

Straight \_\_\_\_\_  
 45° \_\_\_\_\_  
 90° \_\_\_\_\_

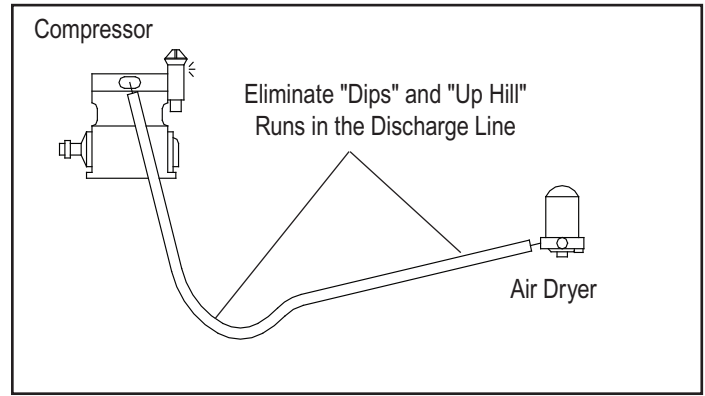


FIGURE 3 INSPECTING DISCHARGE LINE ROUTING

4. Inspect for electrical power to the air dryer Heater & Thermostat assembly. Check to be certain the fuse in the vehicle power lead, to the air dryer, is good and of the correct amperage (10 amp for 12 volt, and 5 amp for 24 volt).

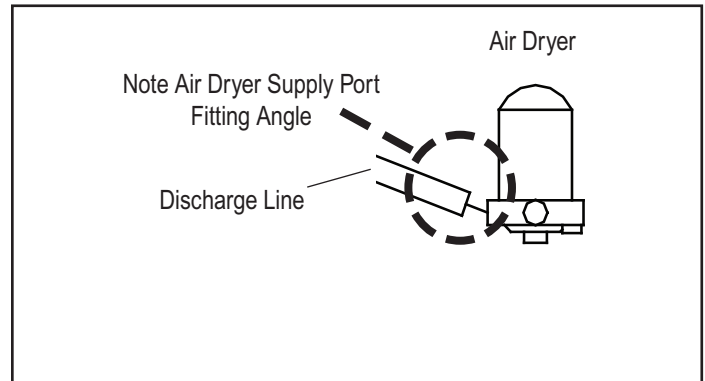


FIGURE 4 INSPECTING AIR DRYER SUPPLY PORT FITTING

## INSTALLING THE KIT

1. Modify the discharge line, as required, by noting the values recorded in steps 1, 2 and 3 of INSPECTING THE INSTALLATION. Shorten the discharge line if required, making certain the line slopes downward and all "dips" and "up hill" runs in the line are removed.
2. Refer to step 3 of INSPECTING THE INSTALLATION and note the fitting in use. If the fitting is
  - Straight - Proceed to step 3;
  - 45° - Proceed to step 3; or if
  - 90° - Install the 45° elbow included in this kit (if possible) making certain to position the fitting so that no "dips" or "up hill" runs in the line are created. Proceed to step 3.
3. If the discharge line is between 6 and 9.5 feet, discard the pipe insulation and tie wraps included in this kit and proceed to step 4.  
 If the discharge line is longer than 9.5 feet, wrap the last 3 feet (or the portion from the frame rail to the air dryer, **including the air dryer supply port fitting**) with the 1/2" pipe insulation included in this kit. Secure the insulation to the discharge line using the four (4) tie wraps provided.

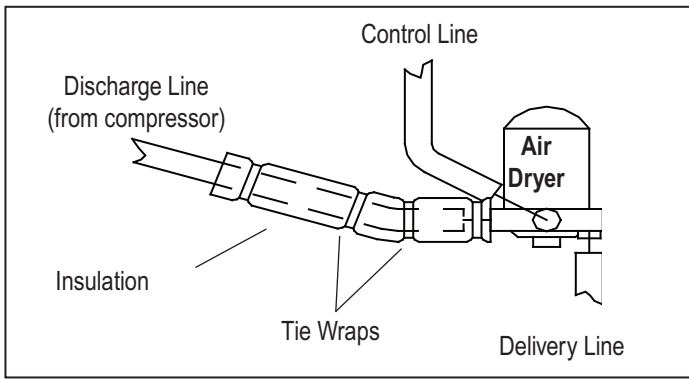


Figure 5 Discharge Line Insulation - (Straight & 45° Fitting)

**Note:** If the original supply port fitting in the air dryer was 90° and could not be changed, install the pipe insulation as shown in Figure 6. Extend the insulation approximately three (3) inches past the 90° fitting, then tie wrap immediately before and after the fitting as shown

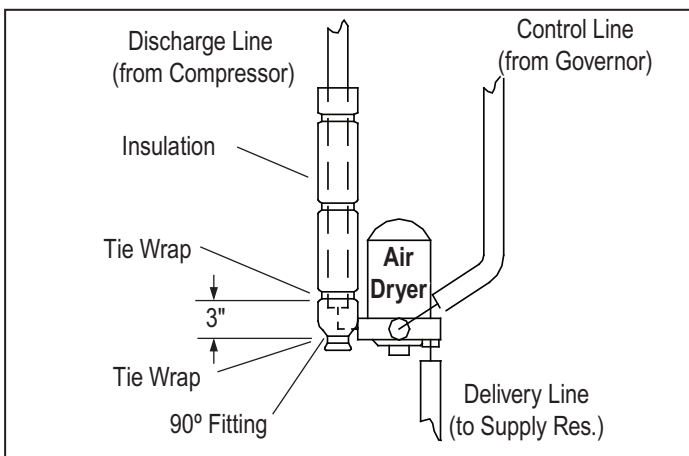


Figure 6 Installing Discharge Line Insulation - (90° Fitting)

in Figure 6.

4. The special safety valve included in this kit is a further precaution against damage caused by discharge line freeze up. Install the safety valve in the unused discharge port of the compressor.

**Note:** If the compressor does not permit the installation of the safety valve in the cylinder head, then install a tee fitting into the discharge port of the compressor or in the discharge line as close to the compressor as possible.

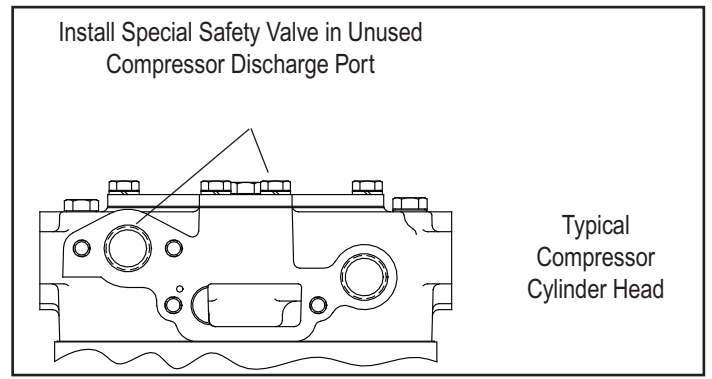


Figure 7 Installing Discharge Safety Valve

5. Install the components contained in the PURGE VALVE ASSEMBLY KIT. Follow the directions contained on its instruction sheet S-1168.
6. Install the components in the WIRE HARNESS KIT, following the directions contained on its instruction sheet S-1176.

