

FIX-N-FAX #56

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

No. 56

Date: September 1991

AD-4 Bendix Air Dryer

Jerry Lawrimore, Heavy Equipment Mechanic at Sugar Pine Conservation Camp, reported an Air Dryer component failure. The purpose of this Fix-N-Fax is to identify that failure and provide the manufacturer's recommendation for alternative repair.

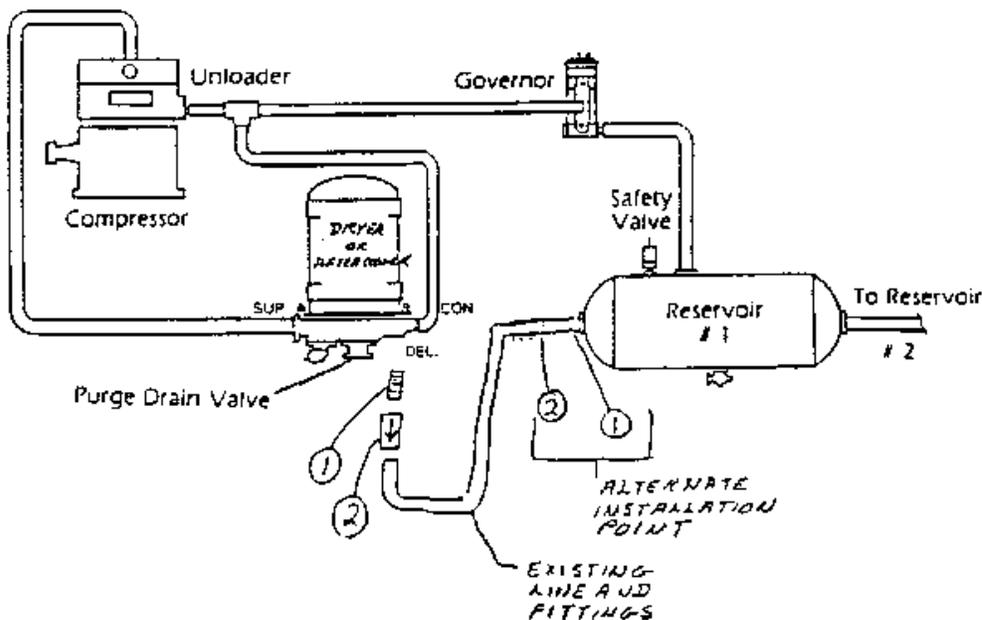
When the internal check valves fail in the AD-4 Air Dryer, the air compressor cycles every 15-20 seconds to refill the wet tank. This cycling places an extremely heavy load on the compressor and dryer.

This condition is not always easily recognized. The only indication of the component failure is the purge valve spitting every time the compressor cycles.

Bendix representative, Mr. Larry Fenicle (602) 943-4434, has provided the manufacturer's support for technical information and some replacement components.

REFERENCE THE FOLLOWING INSTRUCTIONS

INSTALLATION INSTRUCTIONS
EXTERNAL CHECK VALVE INSTALLATION KIT
KIT PC. NO.
BWS-1078



This kit contains the following parts:

| <u>Key</u> | <u>Description</u> | <u>Quantity</u> |
|------------|--------------------|-----------------|
| 1 | ½ Pipe Nipple | 1 |
| 2 | Check Valve | 1 |

KIT PURPOSE

This kit provides an alternative to the repair or replacement of the internal check valve incorporated in Bendix air dryers as well as several models of aftercoolers and does not require disassembly of the unit. Depending upon vehicle clearance requirements or line length restrictions, the check valve contained in this kit may be installed at the delivery (del) port of the air dryer or aftercooler or at the inlet of the first (supply) reservoir.

GENERAL PRECAUTIONS

IMPORTANT – PLEASE READ BEFORE PROCEEDING

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

1. Stop the engine when working around the vehicle.
2. Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that removes all electrical power from the vehicle.
3. When working in the engine compartment, the engine should be shut off. 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.
4. 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.
5. Never exceed recommended pressures and always wear safety glasses.
6. 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.
7. Use only genuine Bendix replacement parts, components, and kits. Replacement hardware, tubing, hose, fittings, etc. should be of equivalent size, type, and strength as original applications and systems.

8. Components with stripped threads or damaged parts should be replaced rather than repaired. Repairs requiring machining or welding should not be attempted unless specifically approved and stated by the vehicle or component manufacturer.
9. Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.

PREPARATION

1. Park the vehicle on a level surface and block the wheels and/or hold the vehicle by means other than the air brakes.
2. Drain the air pressure from all vehicle reservoirs.
3. Determine the best location for installation of the check valve based on whether adequate clearance exists and accessibility to lines and fittings.
4. Disconnect the air line at the appropriate location, either at the air dryer or aftercooler delivery (del) port or the reservoir.

AIR DRYER/AFTERCOOLER CHECK VALVE INSTALLATION

1. Install the pipe nipple contained in this kit in the check valve. Make certain the pipe nipple is installed in the inlet side of the check valve. An arrow stamped into the body of the check valve indicates the direction of air flow.
2. Install the assembled check valve and pipe nipple in the air dryer or aftercooler delivery port (del). Use a reducer bushing if necessary (not contained in kit).
3. Install the air line that was disconnected in step 3 of PREPARATION in the outlet or delivery side of the check valve.
4. Perform the operation and leakage test before returning the vehicle to service.

RESERVOIR CHECK VALVE INSTALLATION

1. Install the pipe nipple contained in this kit in the check valve. Make certain the pipe nipple is installed in the delivery side of the check valve. An arrow stamped into the body of the check valve indicates the direction of air flow.
2. Install the assembled check valve and pipe nipple in the reservoir. Use a reducer bushing if necessary (not contained in kit).
3. Install the air line that was disconnected in step 3 of PREPARATION in the inlet side of the check valve.
4. Perform the operation and leakage test before returning the vehicle to service.

OPERATION AND LEAKAGE TEST

1. Close the drain cocks on all reservoirs, start the engine and allow it to idle. If increasing air pressure is not immediately noted on the dash gauges, stop the engine and inspect the check valve installation. It may have been installed backwards. Correct and retest before proceeding.
2. With the engine idling and system air pressure slowly increasing, test all air connections made during the installation for leakage using a soap solution. Repair leaking connections before proceeding.
3. When vehicle air system pressure reaches governor cut out, note that the air dryer purges audibly.

(see [FIX-N-FAX INDEX](#))