



# Installation Instructions

## AD-SP AIR DRYER TURBO CUTOFF VALVE KIT

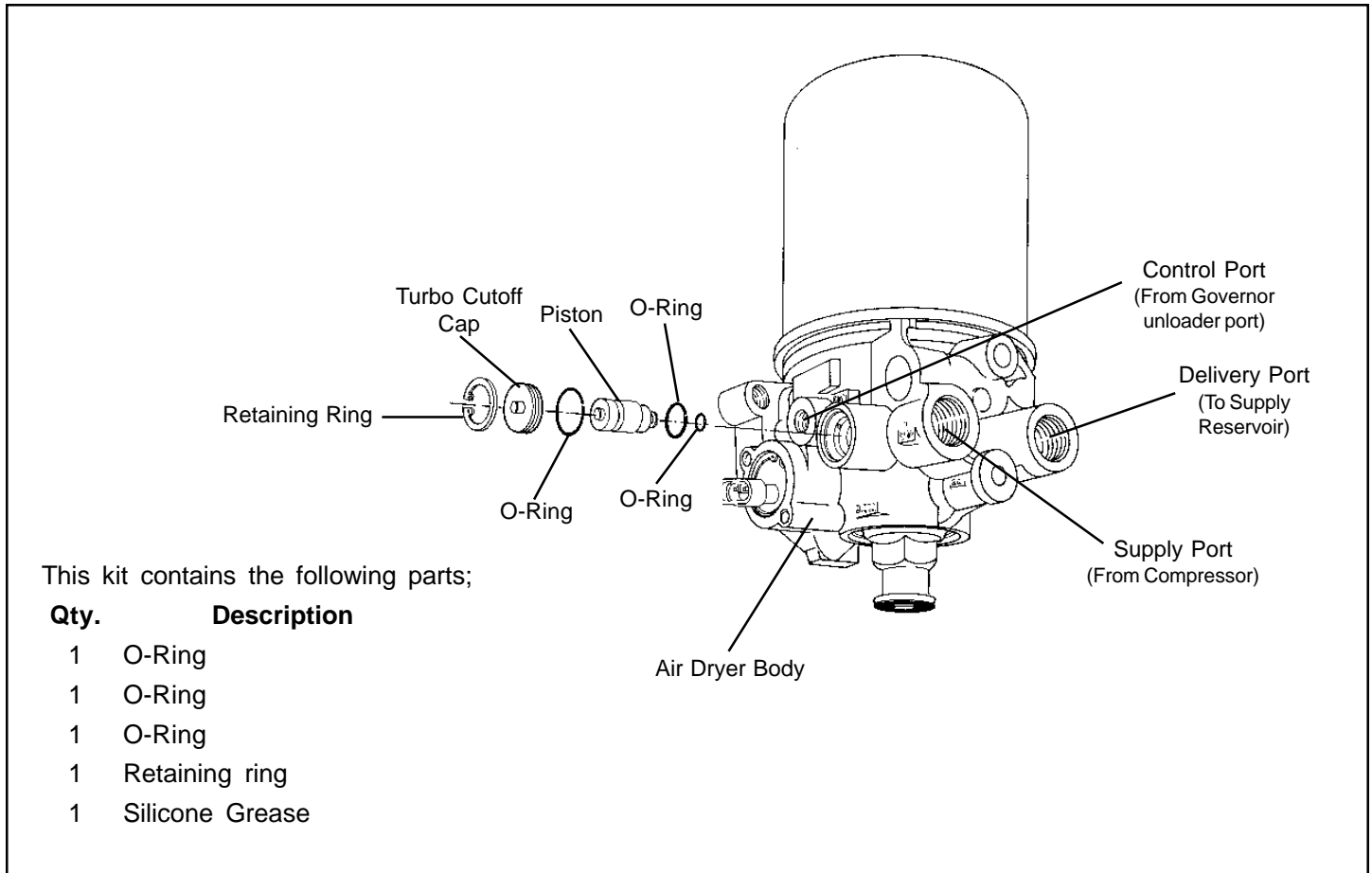


Figure 1 AD-SP Air Dryer Turbo Cutoff Valve Kit

### KIT DESCRIPTION

This kit is intended for use in servicing the turbo cutoff valve components in a Bendix AD-SP air dryer.

### **IMPORTANT! 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.
2. Stop the engine when working around the vehicle.
3. If the vehicle is equipped with air brakes, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle.
4. Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in manner that removes all electrical power from the vehicle.

5. 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.
6. 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.
7. Never exceed recommended pressures and always wear safety glasses.
8. 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.
9. 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 equipment and be designed specifically for such applications and systems.

10. **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.**
11. **Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.**

## VEHICLE PREPARATION

1. Park the vehicle on a level surface and prevent movement by means other than the brakes.
2. Drain all reservoirs to 0 p.s.i. (0 kPa).
3. Clean the exterior of the air dryer body.

## DISASSEMBLY

### General

This maintenance kit does not generally require removal of the AD-SP air dryer from the vehicle however if removal of the air dryer is necessary adhere to the following caution.

*Caution: While performing service on the AD-SP air dryer, it is not recommended that a clamping device (vise, C-clamp, etc.) be used to hold any die cast aluminum component as damage may result. To hold the body, install a pipe nipple in the supply port and clamp the nipple into a vise.*

1. Remove and discard the retaining ring from the air dryer body assembly, then remove the turbo cutoff cap from the body.
2. Remove and discard the turbo cutoff cap o-ring.
3. Remove the turbo cutoff piston from the body.
4. Remove and discard the large and small diameter o-rings from the piston.

## CLEANING & INSPECTION

1. Using a clean rag, wipe the body bores clean.
2. Inspect for physical damage to the body casting, broken and or missing parts.
3. Inspect the interior and exterior of the body for severe corrosion, pitting and cracks. Superficial corrosion and or pitting on the exterior portion is acceptable.
4. Inspect the bores, valve seating and o-ring contact areas for deep scuffing or gouges or nicks that would not permit an air tight seal.

5. If any of the conditions in steps 2 to 4 are noted replace the AD-SP air dryer.
6. Inspect all air line fittings for corrosion.

## ASSEMBLY

1. Lubricate the body bores, o-rings and o-ring grooves with the silicone grease packaged with this maintenance kit.  
*Note: Use only the silicone grease packaged with this kit.*
2. Install the large and small diameter o-rings on the turbo cutoff piston.
3. Install the turbo cutoff piston assembly in the body.
4. Install the o-ring on the turbo cutoff cap then install the cap in the body.
5. Install the retaining ring in the body, making certain that it is fully seated in its groove.
6. Before placing vehicle back into service, perform the TESTING stated below.

## TESTING

Before placing the vehicle in service, perform the following tests.

1. Close all reservoir drain cocks.
2. With the engine at 1800 rpm, build up system pressure to governor cutout while observing that both the front axle (secondary) and rear axle service reservoir dash gauges rise equally in pressure from 0 psi to governor cutout. If either gauge fails to display this condition, stop testing and check the installation of the SC-PR. Note that the AD-SP purges with an audible escape of air when governor cutout pressure is reached.
3. Note that the front axle (secondary) service reservoir pressure drops approximately 8-14 psi and that the rear axle service reservoir loses no air pressure.
4. "Fan" the service brakes to reduce system air pressure to governor cutin. Note that the system once again builds to full pressure and is followed by a purge at the AD-SP exhaust.
5. It is recommended that the following items be tested for leakage to assure that the AD-SP will not cycle excessively.
  - (A) Total air system leakage (See Bendix publication BW-5057 "Air Brake Handbook")
  - (B) Compressor unloader mechanism
  - (C) Governor
  - (D) Drain cock and safety valve in first (supply) reservoir.
  - (E) All air connections leading to and from the first (supply) reservoir.