Installation Instructions



BENDIX[®] AD-HFi[™] SOLENOID GOVERNOR AND DELIVERY CHECK VALVE (DCV) REPLACEMENT KIT



Figure 1 – Bendix[®] AD-HFi[™] Solenoid Governor and Delivery Check Valve (DCV) Kit

KIT COMPONENTS

See Figure 1. The following components are in the Bendix[®] AD-HFi[™] Solenoid Governor and Delivery Check Valve (DCV) kit.

ITEM #	DESCRIPTION	QTY
1	Solenoid Governor	1
2	Face Seal O-ring	1
3	Screw	2
4	DVC Port O-ring	1
5	Spring	1
6	Check Valve Body	1
7	Check Valve O-ring	1
Not Shown	Grease	1

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 guidelines should be observed AT ALL TIMES:

- ▲ Park the vehicle on a level surface, apply the parking brakes and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the 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.
- ▲ 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.
- ▲ 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, a Bendix[®] DRM[™] dryer reservoir module, a Bendix[®] AD-9si[®], AD-HF[®], or AD-HFi[™] air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix[®] brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
- ▲ 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.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ 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.
- ▲ The power MUST be temporarily disconnected from the radar sensor whenever any tests USING A DYNAMOMETER are conducted on a vehicle equipped with a Bendix[®] Wingman[®] system.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.

DESCRIPTION

This kit services the solenoid governor and Delivery Check Valve (DCV) of a Bendix[®] AD-HFi[™] air dryer.

VEHICLE PREPARATION

- 1. Park the vehicle on a level surface and chock the vehicle to prevent movement by means other than the brakes.
- 2. Drain all reservoirs to 0 psi (0 kPa).
- 3. Clean the exterior of the AD-HFi air dryer.

DISASSEMBLY

This kit does not require removal of the AD-HFi air dryer from the vehicle.

- 1. Remove the connector from the solenoid governor.
- 2. Remove and discard the screws attaching the solenoid governor to the AD-HFi air dryer.
- 3. Remove and discard the solenoid governor, face seal o-ring, and DCV port o-ring.
- 4. The spring, check valve body, and check valve o-ring can now be removed and discarded.

CLEANING AND INSPECTION

1. Use a suitable solvent to clean all metal parts and use a cotton swab to clean the bore and the solenoid governor mounting pad.

NOTE: Do not use abrasives or tools to clean the bore and solenoid governor mounting pad. Any scratches caused may necessitate replacing the AD-HFi air dryer. Superficial external corrosion and/or pitting is acceptable.

- 2. Inspect for physical damage to the bore, the check valve seat, and the solenoid governor mounting pad.
- 3. Inspect all air line fittings for corrosion and replace them as necessary.

ASSEMBLY

1. Lubricate the check valve o-ring and the check valve body with the supplied grease.

NOTE: Use only the grease packaged with this kit.

- 2. Install the check valve o-ring on the check valve body by sliding the o-ring over the set of four (4) tapered guide lands. The o-ring groove holds the o-ring in its correct location.
- 3. At the other end of the check valve body, the supplied spring is installed over the set of four (4) straight guide lands. When the spring has been pushed to the correct location, the check valve body is designed to hold the end of the spring in position.

NOTE: Ensure the spring is not loose before continuing with this installation.

- 4. Install the assembled check valve body/o-ring/spring in the Delivery Check Valve (DCV) bore so the o-ring rests on its seat and the free end of the spring is visible.
- 5. Grease the DCV port o-ring and install it in the groove of the DCV boss protruding from the mounting face of the solenoid governor.
- 6. Grease the face seal o-ring and install the o-ring into the recess in the mounting face of the solenoid governor.
- 7. Install the solenoid governor by inserting the DCV boss on the solenoid governor into the DCV bore of the Bendix[®] AD-HFi[™] air dryer. Insert the solenoid governor until the face seal o-ring of the solenoid governor contacts the AD-HFi solenoid governor mounting face. Align the mounting holes of the solenoid governor with the mounting holes in the AD-HFi solenoid governor mounting face. Ensure the face seal o-ring remains in place.
- 8. Insert the screws provided with this kit and tighten to 125 in-lbs.
- 9. Reattach the connector to the solenoid governor.
- 10. Before placing the vehicle back into service, *perform the Operational Tests.*

OPERATIONAL TESTS

- Install an accurate pressure gauge in the remote fill port of the AD-HFi air dryer.
- Close all drain valves and test the DCV assembly by building the air system to governor cut-out.
- Shut off the engine.
- Check all lines and fittings leading to and from the AD-HFi air dryer for leakage and integrity. Note the pressure on the air gauge. After the governor cut-out pressure is reached, a rapid loss of pressure could indicate a leaking DCV. To troubleshoot for DCV leakage, allow the system to reach the governor cut-out pressure and the governor will start the purge cycle (listen for the release of air as the AD-HFi air dryer purges). NOTE: The AD-HFi air dryer may purge prior to reaching governor cut-out pressure. Ensure the pressure on the air gauge in the remote fill port reaches the governor cut-out pressure before proceeding. After 60 seconds, the purge cycle will be completed.
- Locate the lanyard drain valve installed in the integrated purge reservoir of the Bendix AD-HFi air dryer (*See Figure 2*). Secure the lanyard drain valve in the open position. After 10 seconds, carefully remove the AD-HFi air dryer desiccant cartridge according to the procedure in *Figure 3*. Test for air leaks by applying a soap solution into the center cavity of the threaded desiccant cartridge mounting boss. Repair the Delivery Check Valve (DCV) if there is excessive leakage exceeding a 1-in. bubble in five (5) seconds. Reinstall the cartridge by following the procedure titled *Reassembly of the Desiccant Cartridge*. Be sure to close the lanyard drain valve on the purge volume before restoring the vehicle to service.



Figure 2 – Lanyard Drain Valve

DISASSEMBLY OF THE DESICCANT CARTRIDGE

 Using an appropriate filter wrench, loosen the desiccant cartridge and remove it from the Bendix[®] AD-HFi[™] air dryer housing by turning it in a counterclockwise direction. Be careful not to allow dirt or other contaminants to fall into the AD-HFi air dryer housing.

NOTE: Place the filter wrench only on areas *A* or *B* as shown in *Figure 3* to avoid damage to the desiccant cartridge.



Figure 3 – Filter Wrench Placement

REASSEMBLY OF THE DESICCANT CARTRIDGE

- 1. Clean the surface area of the AD-HFi air dryer housing with a clean cloth. Be careful not to allow dirt or other contaminants to fall into the AD-HFi air dryer housing.
- 2. Using the tube of lubricant provided in this kit, apply a thin coat of lubricant to the sealing ring on the bottom of the desiccant cartridge.
- 3. Apply the remaining lubricant to the AD-HFi air dryer cartridge mounting threads on the housing.
- 4. Spin the desiccant cartridge onto the AD-HFi air dryer housing in a clockwise direction until the seal makes contact with the housing. Using an appropriate filter wrench, tighten the desiccant cartridge 3/4 turn.

NOTE: Place the filter wrench only on areas *A* or *B* as shown in *Figure 3* to avoid damage to the desiccant cartridge.

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