Installation Instructions



Bendix[®] BA-921[®] Compressor Gear Replacement for Detroit[®] Diesel Corporation (DDC) Engines DD13[®] and DD15[®]

GENERAL

For genuine Bendix remanufactured compressors *not* equipped with a drive gear, it is necessary to remove the existing gear from the old compressor and reinstall it on the new remanufactured compressor.

NOTE: It may be necessary to remove the fittings from the cylinder head prior to removing the gear to prevent damage.



The Bendix remanufactured compressor is equipped with a new safety valve. Do not reuse the old safety valve.

KIT COMPONENTS

 Genuine Bendix remanufactured BA-921 Compressor (including safety valve)

GEAR REPLACEMENT PROCEDURE

1. After removing the old compressor from the engine, place the compressor with drive gear facing upward so it can be removed safely. **NOTE:** It may be helpful to secure the compressor and gear so that the gear does not rotate and the lock nut can be removed more easily. *See Figure 1.*



Figure 1 – Remove the Bendix® BA-921® Compressor

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.



Secure the compressor in a vise to help mitigate risk of personal injury.

2. Using a pneumatic or electric torque gun with a 27-mm socket, loosen the lock nut by turning it clockwise (this is a left-hand threaded lock nut). Leave the lock nut partially threaded on the crankshaft to prevent the gear from fully dislodging. *See Figure 2.*



Figure 2 – Loosen the Lock Nut

3. Position a gear puller on the drive gear and hand snug the puller screw against the crankshaft. Bendix suggests a gear puller like the one *shown in Figure 3* that uses a retaining cage to help position and secure the puller arms. *See Figure 3*.



Figure 3 – Gear Puller

4. Again, using a pneumatic or electric torque gun with a 27-mm socket, tighten the gear puller screw until the compressor drive gear comes loose from the crankshaft. The lock nut should capture the gear and prevent it from coming completely off. *See Figure 4.*



The drive gear may quickly "pop" free during this step. Extra caution is necessary to prevent personal injury.



Figure 4 – Loosen the Compressor Drive Gear

5. It is now safe to remove the gear puller and lock nut from the crankshaft. Once the lock nut is removed, the gear can slide off. *See Figure 5.*



Figure 5 – Slide Off the Gear

6. Once the gear is removed, thoroughly clean the gear and inspect it for any physical damage. *See Figure 6.*



Figure 6 – Clean and Inspect the Gear

7. Secure the remanufactured compressor with the crankshaft oriented upward, and carefully place the salvaged drive gear on the crankshaft ensuring it is square. *See Figure 7.*



Figure 7 – Place the Drive Gear on the Crankshaft

8. Replace the lock nut and hand tighten counter-clockwise (this is a left-hand threaded lock nut). See Figure 8.



Figure 8 – Replace the Lock Nut

 Once the lock nut is snug, use a torque wrench to secure the lock nut to 165-200 ft-lbs (220-280 N•m). Ensure the crankshaft is secure while torquing the lock nut. See Figure 9.



Figure 9 – Secure the Lock Nut

10. Reinstall the compressor – and any fittings that were removed – per the engine manufacturer's specifications.

ADDITIONAL INFORMATION

Visit b2bendix.com for all related spare parts and service kits.

NOTE: Bendix recommends replacing the power steering pump mounting gasket, o-ring, and oil seal with genuine OE parts.

The following torque specifications are for reference only. Refer to the engine manufacturer's specifications.

Fitting	Torque
Coolant Fitting	40-45 N•m
M18 x 1.5-6H	354-398 inlbs
Air Discharge Port Fitting	80 +/- 12 N•m
M26 x 1.5-6H	708 +/- 106 inlbs
Unloader (Governor) Port Fitting	15 +/- 2.2 N•m
ISO 6149-1, M10 x 1-6H	133 +/- 19 inlbs
Power Steering Pump Screw	50 + 8 N•m
M8 x 1.25-6H	443 + 71 inlbs

