Installation Instructions

KNORR-BREMSE

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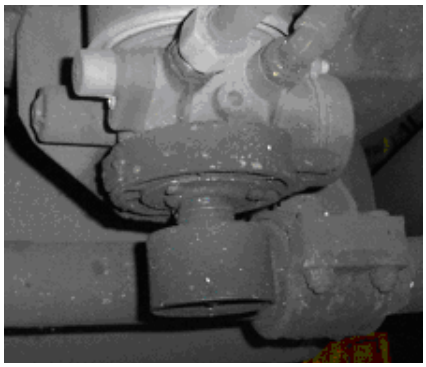
Replacing an Air Compressor
Installation Guidelines

When an air compressor is replaced it is important that any factors outside of the compressor which may have created the need for the replacement or have been created by the old compressor are eliminated otherwise the new compressor will not give the expected performance or durability.

1. If the compressor is being replaced due to poor pump-up performance or excessive oil carry over, this may have been caused by one or several factors. Carry out the following:

   - Inspect the engine and compressor induction system for any blockage or damage to the inlet pipes. Check the condition of Induction Filter (check vehicle service records). Repair or replace as necessary.
   - Establish the duty cycle of the compressor. If this is greater than 50% (compressor on-load more than 50% of running time) then check the air system for any leakage and ensure that the system pressure is in line with the vehicle manufacturer's recommendations. Repair or replace as necessary.
   - Check the condition of the air dryer exhaust. If there is oil or emulsified oil present (see photos) then replace the air dryer cartridge and check for any water/oil in the reservoirs - drain if necessary.



Normal air dryer exhaust

Air dryer exhaust with oil present

2. If the Compressor is being replaced due to carbon formation in the compressor or delivery pipe, or due to reed valve/cylinder head/gasket failure, (leading to poor pump-up performance) check the following:

   - All of the points in 1 above.
   - Temperature of cooling air/coolant are within the engine/vehicle manufacturer's recommendations.
   - Anti-freeze content of the coolant. If this is below the engine/vehicle manufacturer's recommendations then erosion can occur within the compressor.
   - The condition of delivery pipe, but as this difficult to ascertain physically measure the pressure drop from the compressor outlet to the first reservoir. If this is greater than 1.5 bar then replace the compressor delivery pipe and also the fittings.

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3. If the compressor is being replaced due to crankshaft/con rod wear, check the following:

   - Oil pressure and temperature should be within the vehicle/engine manufacturer's recommendations.
   - Condition of engine oil filter (check vehicle service records).
   - Frequency of change of the engine oil (check vehicle service records). Carry out oil change if necessary using oil to the vehicle/engine manufacturer's specification. Note: for modern engines good engine oil quality is essential for good compressor durability.
   - Duty cycle of the compressor (see 1. above).

4. If the compressor is being replaced due to slippage of the drive gear:

   - Check the wear of the drive gear taper – use engineers' blue to check contact between crankshaft and gear. Replace the drive gear if necessary.

Unworn gear

Worn gear

   - Check that the crankshaft nut is in good condition and is tightened to the correct torque (see engine manufacturer's specification).
   - If the drive gear is secured by a bolt, check that this is in good condition and does not 'bottom' in the threaded hole in the crankshaft – check that it is tightened to the correct torque (see engine manufacturer's specification).

SAFETY ADVICE

- Always wear safety glasses when working with air pressure – never look into air jets or direct them at others.
- Never remove a device or pipe plug unless system pressure has been depleted - never connect or disconnect a hose or line containing air pressure – it may whip as air escapes.
- Park the vehicle on a level surface, apply the parking brake and always chock the wheels.
- When working under or around the vehicle, and particularly when working in the engine compartment, the engine should be shut off and the ignition key removed. Where circumstances require that the engine is running, EXTREME CAUTION should be taken to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically charged components. Additionally, it is advisable to place a clear sign on or near the steering wheel advising that there is work in progress on the vehicle.
- Prior to returning the vehicle to service, make certain all components and systems are leak free and restored to their proper operating condition.

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