

RE-INSTALLATION OF FOCAL RETARDER

SAFETY NOTE: Always use suitable lifting tackle with safety lugs and chains when lifting the retarder assembly

INITIAL PREPARATION

- Refit the stator carrier (if removed) to the gearbox or axle; ensure that the correct torques are maintained
- Thoroughly clean and check the rotors, stator, gearbox or axle flange and the Retarder Adaptor Flange faces
- Thoroughly clean and check all fasteners to ensure in good condition and replace if necessary; replacement of rotor nuts and stator Belleville spring washers is recommended. Loctite may be used, especially on re-used parts

INSTALLING THE INBOARD ROTOR AND FLANGE ASSEMBLY

- Find the triangular balance mark on the cast side of the rotor and make a chalk line on the outside diameter of the rotor to indicate its position
- Offer up the inboard rotor and Rotor Adaptor Flange assembly to the gearbox or axle flange, line up the holes and fit the fasteners. Set the torques to the correct figure as per the appropriate gearbox manual
- Check that the machined face of the rotor is almost flush with the four machined faces of the stator carrier
- Check that the run-out on the outside of the machined edge of the rotor face does not exceed 0.2mm

INSTALLING THE STATOR AND SHIMS

- Check that the terminal block is in the desired position. Offer up the retarder stator into position with the machined bosses mating with the stator carrier; line up the holes and fit all eight bolts and washers. Do not fully tighten at this stage
- Select the 'M' shaped shims
- Using the four thickest shims, fit them between the stator and carrier faces; tighten one bolt in each pair to the specified torque, ensuring the rotor is free to turn; measure the air gap between the pole-shoes and the rotor at each corner and record the four dimensions
- Check the specified air gap for the particular model of retarder and add or subtract shims until the correct air-gap is achieved for all eight pole-shoes.
- Revolve the rotor through 90° - 180° and check that the air-gap remains within tolerance
- When the air-gap is correctly set, fully tighten all eight fasteners to specified torque

INSTALLING OUTBOARD ROTOR AND SHIMS

- Take the two thickest rotor shims and fit to the protruding rotor studs
 - Offer up the outboard rotor and line up the balance marks with the inboard rotor; tighten to the specified torque with plain nuts
- Note:** The use of plain nuts eases the assembly and removal during shimming and also protects the effectiveness of the metal locknut for final tightening to the specified torque
- Measure the resulting air-gap between the outboard rotor and the pole-shoes and make any adjustments until the specified air-gap is achieved
 - Check the outboard rotor air-gap remains within tolerance when the rotor is revolved through 90° - 180°

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- Remove the plain nuts and fit the metal locknuts to secure the outboard rotor; torque to the correct setting

RE-FITTING THE PROPSHAFT

- Fully inspect the propshaft, ensuring joints and sliders are in good condition
- Offer up the propshaft and secure with correct fasteners as specified

Note: In certain cases, access to the propshaft nuts may be restricted. It may be easier to firstly slide the outboard rotor along the prop-shaft, offer up the propshaft flange to the Rotor Adaptor Flange and tighten the propshaft nuts. Finally, return the rotor into position, secure with the metal locknuts and torque to the correct setting

FINAL CHECK

- If previously drained, ensure the gearbox oil has been replaced to the correct level
- Check that the gearbox auxiliary support is correctly adjusted to bring the retarder height back to the original position
- Ensure that the shielding of vulnerable pipes and cables is securely replaced
- Ensure that the retarder feed cable is correctly re-connected and the connecting block is sufficiently sealed and protected
- Ensure that the retarder earth is correctly fitted and that the chassis earth is thoroughly clean and well-protected from dirt and corrosion
- Ensure that all wiring is suitably secured or clamped to prevent damage at the terminals or chafing
- Carry out a full road test.