

Product: BridgeMaster E Series Radars

Subject: Mechanical Maintenance Schedule for S-Band Turning Unit

The BME S-Band Turning Unit has been designed to be a low maintenance unit throughout the design life of the equipment. LMS have carried out extensive accelerated life testing of the unit and the following is the recommended Mechanical Maintenance Schedule that should be observed.

1. Rehfuss Worm and Wheel Gearbox
LMS Part No 91003755/756/766/772/773/774

This gearbox is maintenance free, oil lubricated and sealed for life. However, an opportunist inspection period of the gearbox should be undertaken to check for oil leaks through oil seals.

2. Gearbox Housing Assembly 65830645/646/649/667/668 and
AC Motor 91003751/52/53/54/57/59 Assembly

LMS recommend that instead of changing the AC motor in the field that the whole gearbox/motor assembly be removed from the main turning unit and replaced. This assembly could then be returned for repair in a service workshop and therefore the downtime of the radar would be minimized.

3. Rehfuss Gearbox to AC Motor Coupling

The Rehfuss Gearbox incorporates a unique Rehfuss IEC coupling size 01 which allows easy removal of the AC motors from the gearbox without fear of the motor output shaft seizing into the gearbox hollow shaft.

When it is necessary to remove an AC motor from the gearbox in the field LMS recommend that a new coupling is fitted to the AC motor before reassembling. LMS have gained experience from life testing that these coupling once disturbed after sustained usage tend to break and must be replaced even if they do not break they may be defective after the disturbance of motor removal.

4. Baldor & Brown Pestall 1 Phase and 3 Phase AC Motors
LMS Part No 91003751/52/53/54/57/59

Each time the AC motor is removed from the gearbox, as well as fitting a new coupling, the sealing gasket between these components must also be replaced.

After assembly of motor¹, gearbox housing assy² and gaskets³ using the supplied fixings apply a smear of denso paste all around the joint line.

Note: Denso paste must not be applied directly to gasket faces.

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Care should also be taken to not damage the flanges when removing the motor from the gearbox.

All AC Motors are maintenance free. They are sealed for their operational life, have permanently lubricated bearings and no additional lubrication is necessary.

Items ^{1,2,3}: For appropriate part numbers see Service Bulletin No. 11

5. Main Gearbox Lubrication

The main gear is made of Tufnol while the pinion is made of steel and both are lubricated in the factory with Molykote Long Term 2 (Colour: Black) which is spread using a paint brush over the teeth of the main gear, its viscosity is such that it remains attached to the gear teeth during rotation. It is, however, recommended that after 2 years the gears should be visually inspected and regreased with the correct grease, if necessary.

If the turning unit has been operating at high ambient temperatures for long periods then the grease does tend to congeal and dry out so relubrication is necessary at yearly intervals. However, the lubricant does soak into the Tufnol main gear and will be able to operate satisfactorily for extended periods against an unlubricated pinion gear without undue wear occurring to the main gear. At each service period the main gear should be inspected and relubricated if dry of grease.

6. Removal of Covers

When covers are removed for maintenance procedures ensure that the sealing faces are clean and if necessary the reapplication of petroleum jelly to the RFI/Environmental seals is recommended to maintain a good environmental seal.

7. Main Torque Tube Bearings

These bearings are manufactured by 'Koyo', Nachi or NTN and have been selected so that they are sealed for life with a high/low temperature grease, no additional greasing is necessary.

8. Greasing Points

The S-band turning unit has been designed to be relatively maintenance free from a lubrication point of view, there are no greasing nipples provided for relubrication, only manual greasing of the main gear is recommended. See paragraph 5.