

RAFNA TECHNICAL SERVICE BULLETIN No. 159
Rafna Steel Rail Wheel Assembly Inspection Procedure

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This Technical Service Bulletin provides a procedure to inspect steel rail wheel assemblies on all Rafna railgear. This inspection should be carried out during the railgear's yearly inspection, during overhaul, and if the vehicle is involved in a derailment or accident or another incident which could damage the rail wheel assemblies.

Safety Precautions

If any problems are encountered, please call Rafna Industries Ltd. for technical assistance.



- **Failure to heed to any of the following warnings could result in severe bodily injury and/or equipment damage.**
- **Ensure all body parts and loose clothing are clear of any moving parts of the equipment.**
- **Before performing any work under the vehicle or railgear, ensure the engine is turned off and the parking brake is set and the equipment is securely supported.**

The following procedure should be used to inspect each rail wheel assembly on the railgear (refer to the applicable Operating, Service, and Parts manual for additional information such as torque values, part numbers, assembly sequences, etc.):

1. Remove the hub cap and gasket from the rail wheel.
2. Remove the rail wheel complete with bearings and oil seal from the spindle. Remove the bearings and oil seal from the rail wheel.
3. Remove the spindle retaining fasteners. Some spindles are retained with a bolt passing through the wheel housing or axle while others are retained with a castellated nut on the end of the spindle. Remove the insulating bushings from the spindle retaining fasteners.
4. Pull the spindle out of the wheel housing or axle.
5. Remove the insulating washer from the spindle and remove the insulating tube from inside the wheel housing or axle.
6. Under certain circumstances, cracks have been found to develop through the cross section of rail wheel spindles, which, if left unattended, could lead to catastrophic failure. Thoroughly clean the spindle. Remove any paint, grease, dirt, rust, etc that may be present. Subject the entire spindle to a dye penetrant test or equivalent crack detection test. Follow the supplier's instructions to carry out the test. If any cracks are found in the spindle, it must be removed from service and a new spindle installed.

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7. Thoroughly clean and inspect the wheel housing or axle end for damage. Replace with new components as required.
8. Thoroughly clean and inspect the insulating tube, washer and bushings for cracks or wear. Replace with new components as required.
9. Re-install the insulating washer and insulating tube on the spindle. Ensure any holes in the insulating tube align with the holes in the spindle. New insulating tubes may need to be drilled to match the spindle holes.
10. Install the spindle with insulating washer and tube into the wheel housing or axle. Ensure any holes in the insulating tube and spindle align with the holes in the wheel housing or axle.
11. Fasten the spindle to the wheel housing or axle using the insulating bushings and new hardware. Where the spindle is retained with a bolt passing through the wheel housing or axle, ensure that the fastener is only snug. Over tightening of this fastener will crack the insulating bushings. Where the spindle is retained with castellated nut, torque the nut to specifications and insert a new cotter pin.
12. Thoroughly clean and inspect the rail wheel. Use the applicable Rafna rail wheel wear gauge to verify tread and flange wear. Replace with new components as required.
13. Thoroughly clean and inspect the rail wheel bearing cones and cups. Replace with new components as required. Re-pack the rail wheel bearings with the specified grease. Install the bearings into the rail wheel.
14. Thoroughly clean and inspect the oil seal. Replace with new components as required. Install the oil seal into the rail wheel.
15. Install the rail wheel complete with bearings and oil seal onto the spindle using new hardware. Follow the procedure in the Operating, Service, and Parts manual to adjust the rail wheel bearings.
16. Thoroughly clean and inspect the rail wheel hub cap and gasket. Replace with new components as required. Install the hub cap and gasket on the rail wheel using new hardware. Blue Loc-Tite can be used on the hub cap bolts to prevent loosening.
17. Grease the rail wheel with the specified grease.
18. Follow the railgear alignment procedure detailed in the Operating, Service, and Parts manual.
19. Ensure all fasteners are torqued to specifications.