

# Wheel End Seals

## 37 RED & 38 GOLD SERIES INSTALLATION PROCEDURES

For over 75 years, National® has made oil bath seals that work so well you can install them and forget about them. And if that rock-solid reliability isn't enough, National Oil Seals are backed by unparalleled expertise. Simple to install, easy to forget. That's National performance.

### Prepare the Spindle



If wear sleeve is present, remove it by striking the sleeve with the round end of a ball-peen hammer. Never use a cold chisel or other sharp tool which could damage the spindle.



Using a cloth, inspect the spindle shoulder for nicks or roughness. Use a file to remove any burrs from the leading edge or shoulder area.



Clean spindle areas thoroughly with emery cloth. Fill chisel marks or gouges with hardening compound, allow to set, then smooth with emery cloth. Clean spindle threads and keyway, then wipe spindle with clean cloth to remove dirt, grit or any foreign material.



Proper seal fit can be verified by placing the seal on the spindle shoulder and checking the interference fit.

### Prepare the Hub



Remove old lube and thoroughly clean the hub cavity and hub bore. Inspect inner bore for roughness. Use emery cloth to remove any bore sealant or burrs from the seal bore and the leading edge, and wipe hub clean.



Hub Mount Tool

### Install Hub Mounted Seals and Bearings



After thoroughly inspecting the bearings\*, clean and pre-lube the inner bearing with a clean oil. Lay the wheel flat or lean at 45° angle. Place the inner bearing inside hub in the bearing cup.

\*If damage is visible or condition is questionable, replace the cup and cone.



Place the seal on the recommended installation tool with the oil side facing up. Lightly lubricate seal O.D. with clean oil. (NEVER use bore sealant on seal O.D.)



Using a 3 to 5 pound hammer, drive seal straight and firmly into the hub. Once the seal has bottomed out, there will be a sound of impact change. Lightly lube I.D. of seal with clean oil after installation.



Return wheel end to upright position. Pre-lube hub cavity with clean oil.

### Install Spindle Mounted Seals and Bearings



Place seal on spindle with the oil side facing out towards the end of the spindle. Press seal by hand as far as possible onto axle shoulder.



Place the Federal Mogul Motorparts installation tool over spindle with flange against the seal. Use RD-386 for TN (tapered) or RD-295 for TP (straight) axle. Strike the end of tool with a 3 to 5 pound hammer until the tool flange bottoms on axle shoulder and a tone change is heard. Rotate tool 90° to 180° between each strike to assure seal is installed completely and squarely. Once the tone change of the tool hitting the shoulder face is heard, rotate tool another 180° and hit one more time.



Remove installation tool and check to see that seal is aligned squarely on shoulder. Pre-lube inner bearing cone with clean oil and place onto spindle. Lightly lube rubber O.D. of seal.



Spindle Mount Tool

### Reassemble the Wheel End



With a wheel dolly, carefully align the hub with the spindle and guide the wheel assembly onto the spindle. Pre-lube outer bearing and install into bearing cup.



Inspect threads of adjusting nut and hand-tighten onto spindle. While rotating the wheel, torque the adjusting nuts to recommended adjustment and final assembly procedures. To achieve consistent and accurate adjustment, ALWAYS use a torque wrench.



Install hubcap using a new gasket, and fill to proper level with clean oil. (Do not over-torque bolts.) Insert hubcap plug, making sure vent hole is clean and free from debris. Rotate the wheel, allowing oil to drain into the hub cavity, and refill if needed. For drive axle applications, use a new drive axle gasket before assembly of drive axle. Inspect vent plug on axle, making sure it is clean and free from debris.



To prove proper adjustment is achievable using recommended wheel bearing adjustment procedures, we designed a patented fixture which accurately measures axial end play. For information on adjustment procedures, consult your Heavy Duty Fleet Specialist.

HUB MOUNTED

SPINDLE MOUNTED