

HUB, DRUM, AND WHEEL

SECTION I. TROUBLE SHOOTING

See Group 5, Brakes, and Group 7, Steering, for systematic trouble shooting guides relating to these assemblies.

SECTION II. WHEELS

2-1. Inspection and Maintenance.

a. Inspect the wheels regularly for dirt, grease, and other foreign matter. Clean when necessary. Check particularly for stones wedged between wheels and drums. These can unbalance a wheel.

b. Rotate the wheels after each 5,000 miles of service. See Fig. 1. Balance the wheels after rotating.

c. Inspect wheels for bent rims and damaged or broken hub cap spring clips. Replace damaged parts.

2-2. Wheel Replacement.

a. Pry the hub cap off the wheel.

b. Loosen the mounting stud nuts, but do not remove them.

NOTE

Mounting studs on the right side of the vehicle have right-hand threads. Mounting studs on the left side of the vehicle have left-hand threads.

c. Jack up the vehicle until the wheel clears the ground.

d. Remove the stud nuts. Remove the wheel and tire from the hub and drum assembly.

e. Inspect and clean the hub, drum, and replacement wheel and tire.

f. Install the wheel stud nuts and tighten them enough to hold the wheel firmly in position.

g. Lower the vehicle and torque the wheel stud nuts to 65 foot-pounds.

h. Inspect the wheel stud nuts after 100 miles of service and retighten if necessary.

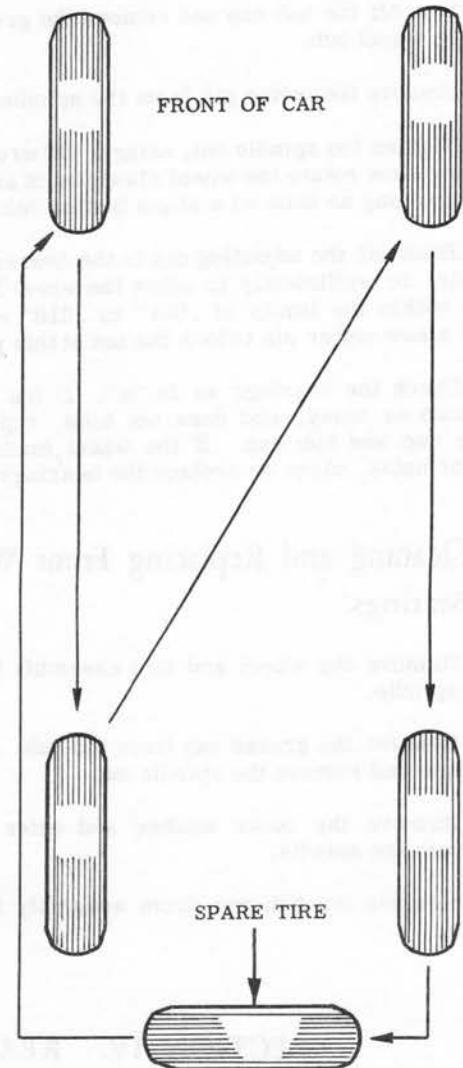


Fig. 1 - Wheel Rotation

SECTION III. FRONT HUBS, DRUMS, AND BEARINGS

3-1. Front Wheel Bearing Adjustment.

a. Inspect the wheel bearings and adjust if necessary.

(1) Jack up the vehicle and spin the wheels to check for binding.

(2) Grasp the tire and wobble it to check for loose bearings.

b. Pry off the hub cap and remove the grease cap from the wheel hub.

c. Remove the cotter pin from the spindle nut.

d. Tighten the spindle nut, using a 12" wrench. At the same time rotate the wheel slowly back and forth. Stop tightening as soon as a slight bind is felt.

e. Back off the adjusting nut to the nearest cotter pin hole, or sufficiently to allow the wheel to rotate freely within the limits of .001" to .010" end play. Install a new cotter pin to lock the nut at this position.

f. Check the bearings as in "a". If the wheel is not loose or noisy, and does not bind, replace the grease cap and hub cap. If the wheel binds, or is loose or noisy, clean or replace the bearings.

3-2. Cleaning and Replacing Front Wheel Bearings.

a. Remove the wheel and tire assembly from the wheel spindle.

b. Remove the grease cap from the hub. Pull the cotter pin and remove the spindle nut.

c. Remove the outer washer and outer bearing cone from the spindle.

d. Remove the hub and drum assembly from the spindle.

e. Remove the grease retainer and seal from the hub. Remove the inner bearing cone.

f. Inspect the hubs, drums, and wheel mounting studs for excessive wear or damage. Replace worn or damaged parts.

g. Inspect inner and outer bearing cups for wear or damage. If necessary, remove cups, using a puller. Always replace cones if cups are replaced.

h. Inspect wheel spindle for excessive wear or damage. If necessary, replace steering knuckle assembly.

i. Clean the bearing cones and retainer and inspect. Replace if necessary.

j. If bearing cups were removed, install new cups, using the proper drivers. Do not drive cups with a hammer. Bearing cups must have .001" to .003" press fit in hub.

NOTE

Bearing cups must not turn in hub.

k. Pack the wheel hub cavity with grease to the inside of diameter of the bearing cups.

CAUTION

Do not overpack the hub cavity.

l. Pack the inner wheel bearing with grease and install it in hub. Seat the grease seal and retainer in hub.

m. Position the hub and drum assembly on the spindle.

n. Pack the outer wheel bearing with grease and install on spindle. Install washer and spindle nut, and adjust the bearings.

o. Install the wheel and tire.

SECTION IV. REAR HUBS, DRUMS, AND BEARINGS

4-1. Disassembly and Inspection.

Rear wheel bearings cannot be adjusted. Inspect bearings when axle shafts are removed. See Fig. 2.

a. Remove hub cap and wheel and tire assembly.

b. Remove axle shaft cotter pin, nut, and washer.

c. Using a puller, remove the hub and drum assembly from the axle shaft. Retain the key.

d. Uncouple the hydraulic brake line and disconnect the parking brake cable.

e. Remove the bolts from the axle tube flange. Remove the oil seal retainer, gasket, seals, brake plate, and shims (found on right side only) from the axle tube flange.

f. Remove the axle shaft and bearing from the axle tube.

g. Rock the outer cup of the bearing on the axle shaft. If lubricant appears as the bearing is rocked, or if the bearing is loose on the shaft, replace the bearing.

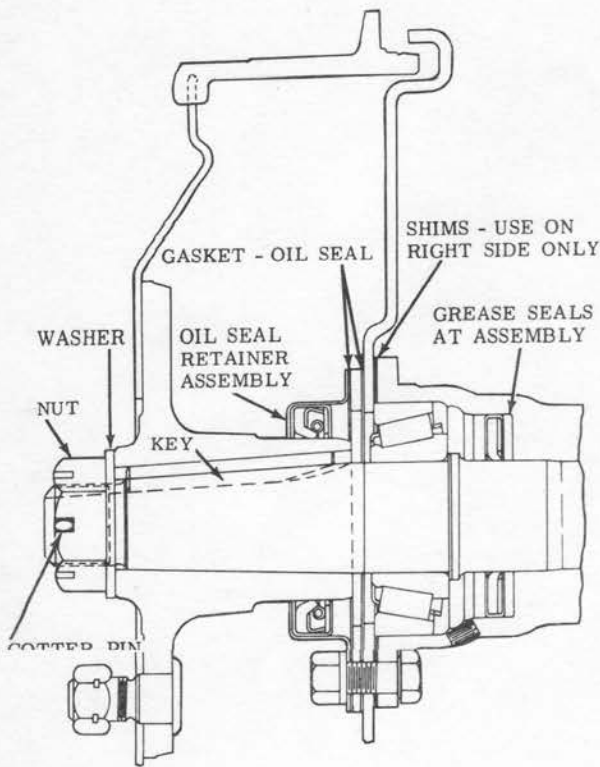


Fig. 2 - Rear Wheel, Hub, and Brake Drum Assembly

h. Clean and inspect the hubs, drums, and wheel studs for excessive wear or damage. Wipe clean and inspect the oil seal retainer, gaskets, and seals. Replace worn or damaged parts.

i. Remove the bearing from the shaft.

j. Remove the oil seal from the axle housing tube. Inspect the axle shaft and the inside of the housing tube for burrs and rough spots which might interfere with the seal. Remove irregularities.

4-2. Reassembly.

a. Inspect the housing tube oil seal and replace if necessary. Install the seal in the housing tube.

b. Press a new bearing on the axle shaft, using the proper tool. Seat the bearing against the shoulder of the shaft. Install the axle shaft and the bearing cup.

c. Install shims as necessary (right side only; end play should be .001" to .006"), brake plate, gasket, seals, and oil seal retainer assembly on the flange of the housing tube.

d. Install the hub and drum assembly with the key tapered end down on the axle shaft. Install the axle washer and nut. Torque the nut to 150 foot-pounds and tighten it to the nearest cotter pin hole. Install a new cotter pin.

e. Reconnect the hydraulic brake line and parking brake cable. Bleed and adjust brakes (see Group 5, Brakes).

f. Replace the wheel and tire assembly with the mounting nuts. Lower the vehicle and tighten the wheel stud nuts.

SECTION V. INSPECTING AND REFINISHING BRAKE DRUMS

5-1. Drum Inspection.

a. Visually inspect brake linings as a guide to the condition of drums (see Group 5, Brakes).

(1) If linings are tapered toward one side, brake drum is "bell mouthed."

(2) If linings are worn more on the sides than at the center, the brake drum is probably "barrel shaped."

b. Inspect inner drum surfaces for tool marks to determine whether drums have previously been reconditioned. If so, new drums may be required. Inside diameter of front and rear drums must not exceed 11.050".

c. Inspect inner drum surfaces for scoring and heat checking. If scoring can be felt with fingertips, resurface drums. Heat-checked drums have cracks with cutting edges which shave off lining surfaces rapidly. Such drums should be resurfaced or replaced.

d. Measure all brake drums, using a micrometer

gage, a diameter-bar and thickness gage, or by checking the drums in a lathe and measuring radius. Measure at points 45° apart around the entire circumference, at the inside and outside of the surface, as well as the center. Drums should be resurfaced if maximum measurement differences exceed .010". The maximum resurfacing margin is .050".

5-2. Resurfacing Drums.

a. Always resurface drums in right- and left-hand pairs. Machine pairs to the same diameter. Front and rear drums may be resurfaced differently.

b. Follow the drum lathe manufacturer's instructions for resurfacing drums. If wheels are left mounted, loosen wheel nuts and torque them equally tight before turning.

c. Finish grind or hone all drums to remove cutting tool marks, which may cause brake shoes to "thread."

d. Inspect drums for high spots, caused by areas of local hardness, after turning. Make sure drums are perfectly concentric, to avoid brakes grabbing or squealing.