FRONT AXLE

Removal

1. Jack up the vehicle, remove the wheel, and disconnect the brake hose. (For the details, see "Removal of front axle and suspension assembly" above.)

2. Remove the caliper fitting bolts, and remove the caliper assembly.

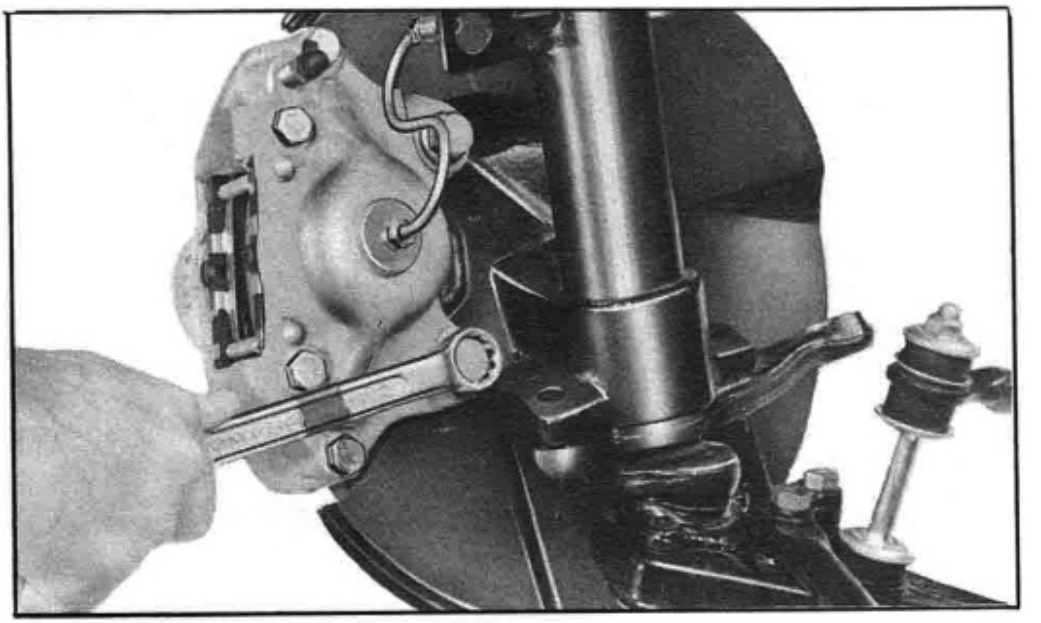


Fig. FA-13 Removing caliper assembly

3. Remove the hub cap with a flat-headed (-) screw driver or other proper tool and hammer as shown in Figure FA-14.

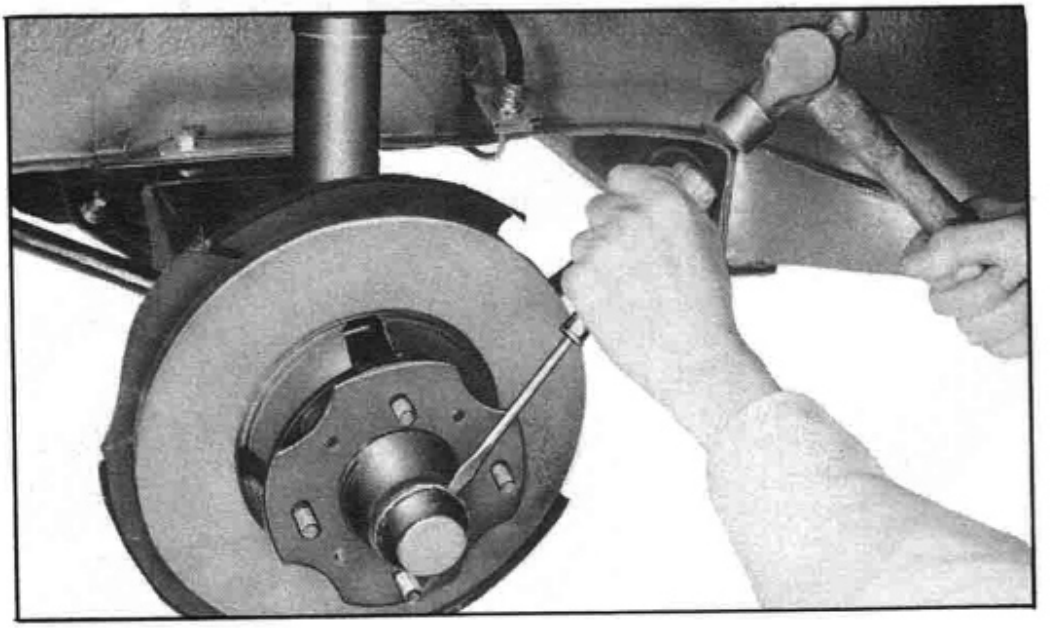


Fig. FA-14 Removing hub cap

4. Withdraw the cotter pin, and remove the wheel bearing lock nut.

5. Remove the wheel hub with the wheel bearing washer, wheel bearing and brake disc rotor installed on the wheel hub, from the spindle.

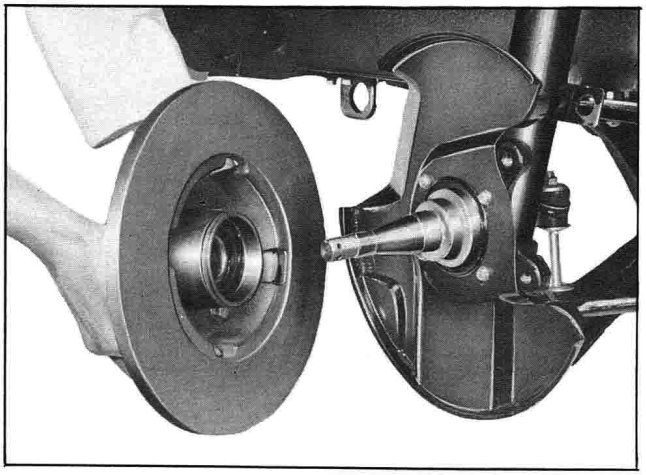


Fig. FA-15 Removing wheel hub assembly

6. Remove set screws and remove the baffle plate.

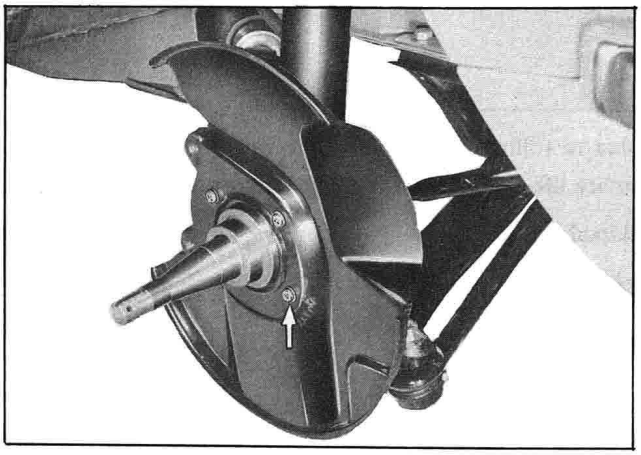


Fig. FA-16 Removing baffle plate

7. Utilizing two grooves inside the wheel hub, tap and remove the wheel bearing outer race from the hub.

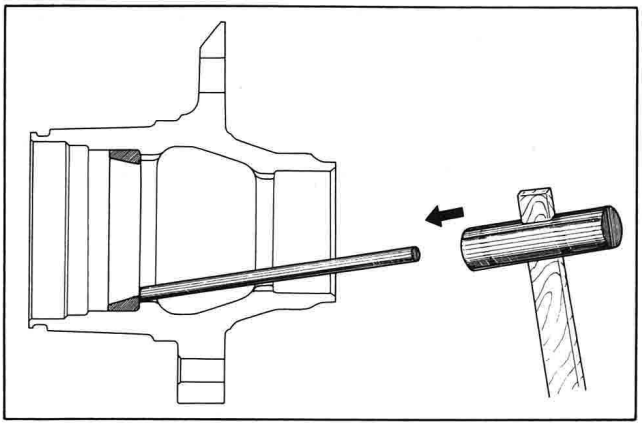


Fig. FA-17 Removing wheel bearing outer race

8. Remove four brake disc fitting bolts, and remove the brake disc rotor from the wheel hub assembly.

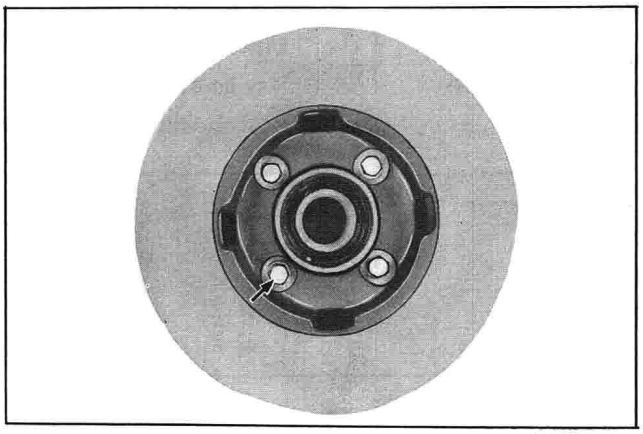


Fig. FA-18 Removing brake disc rotor

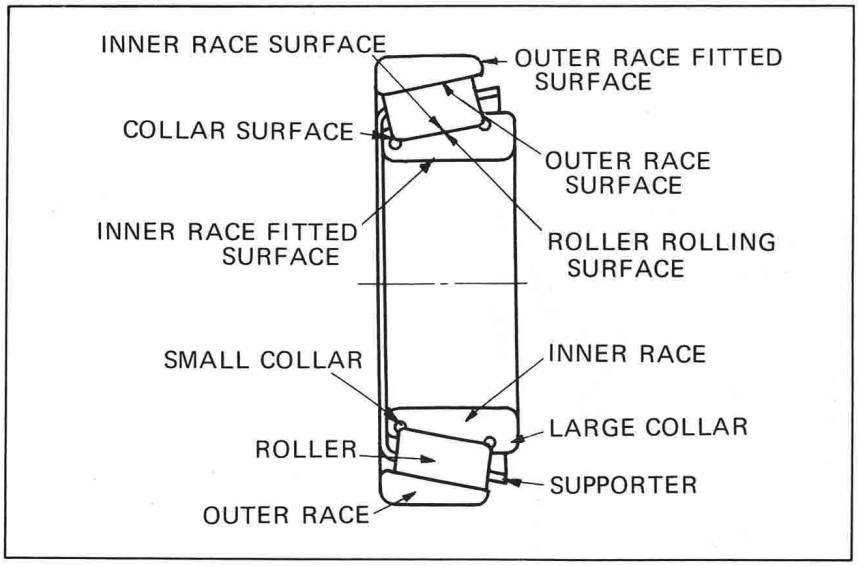
Inspection

1. Wheel bearing

Remove used grease from the wheel bearing with solvent, and inspect the bearing for operating condition from the rotation, operating sound and appearance. The outer race may be checked for the condition of rolling surface with the race installed on the wheel hub.

Visual serviceability judgement standard for the wheel bearing is indicated in the following table.

Visual Serviceability Judgement Standard for Wheel Bearing



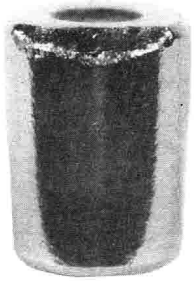
Judgement	×: Unserviceable △: May be used when minor. *: Rust should be removed with #0 emery paper.			
	Race and roller		Supporter	Cause
	Race surface roller and collar surface	Fitted surface		
Flaking	×			Service life due to rolling fatigue. However, this symptom occurs before the service life. The following causes are considered. . Abnormal load (overload) . Improper handling or improper installation
Crack	×	×	×	. Excessive tightening . Gap is excessive and a considerable shock is received from the outside. . Rapid heat generation on the race due to creep . Rollers bite the supporter due to seizure . Abnormal thrust load . Tapped with a hammer while removing
Seizure	×	×	×	In the most cases, seizure occurs as the result of grown discoloring or flaking
Scratch	△	△	△	. Shock is given carelessly during installation · Bit foreign matter

Recess or wear made by pressing or striking	△	△	△	. Careless installation, removal, or other handling (scar due to striking) . Recess made by bit foreign matter
Wear	△	△	△	. Poor lubricant quality or deteriorated lubricant . Intrusion of dust. Fitted surface is worn remarkably. . Wear due to excessive preliminary pressure
Biting	△	△	△	. Excessive preliminary pressure or faulty lubrication
Fretting	△*	△*	△*	. The fitted part is discolored to brown or black . Fretting corrosion (rust on fitted part) means fine relative slip on metal) contact surface.
Rust	△*	△*	△*	. Temperature increased during operation lowers when the bearing stops, moisture inside the bearing is condensed, becoming fine drips, and the grease is moistened. . The bearing has been placed in a highly moistened place for a long period of time. . Intrusion of moisture, chemicals, etc., or the bearing is touched with bare hand and no rustproof action has been taken.
Discoloring	The wheel bearing is serviceable if discoloring can be removed with solvent (such as thinner) or by polishing.			. Slight discoloring may become like oxidized oil stain due to grease . In the most cases, this occurs when preliminary pressure is too high.

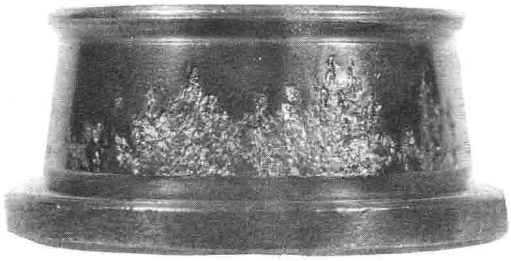
Inner race

Roller flaking

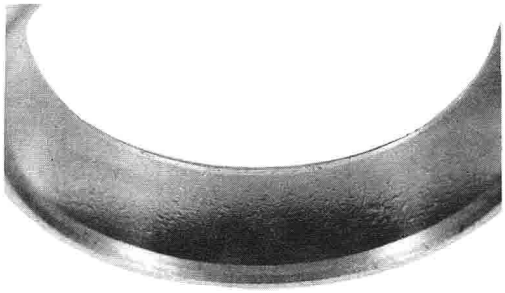
Cracked inner race



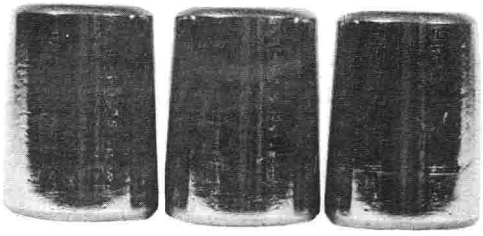
Cracked roller



Recess on inner race made by bit foreign matter



Recess on outer race made by bit foreign matter



Recess on roller made by bit foreign matter

2. Grease seal

(1) When grease leakage is detected during disassembly, replace.

(2) Replace the grease seal with a new one, if worn or cracked.

Reinstallation

1. Reinstall the wheel bearing in reverse sequence of removal.

2. Install the bearing outer race by the use of a front wheel bearing drift (special tool ST35300000).

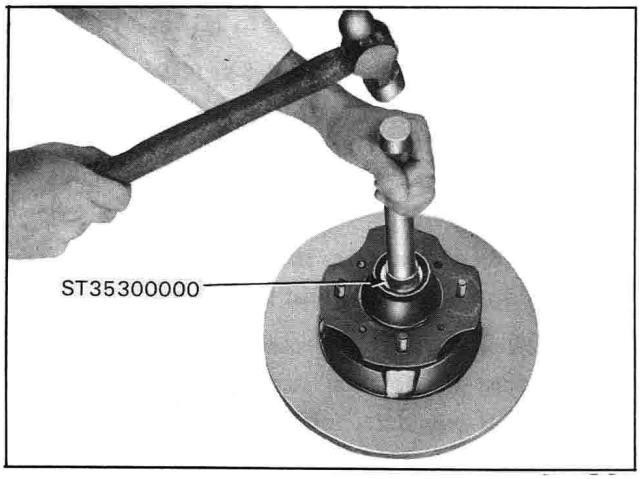


Fig. FA-19 Installing wheel bearing outer race

3. Fill the wheel hub and hub cap with multi-purpose grease (MIL G2108 or 10924) up to the line indicated in Figure FA-20.

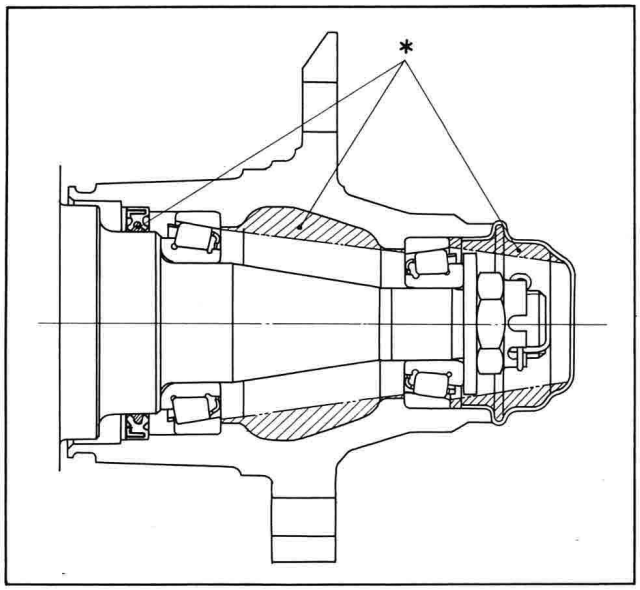


Fig. FA-20 Greasing points of hub assembly

4. Fill the spaces between wheel bearing rollers and grease seal lip pocket with multi-purpose grease sufficiently. (See Figures FA-21 and FA-22.)

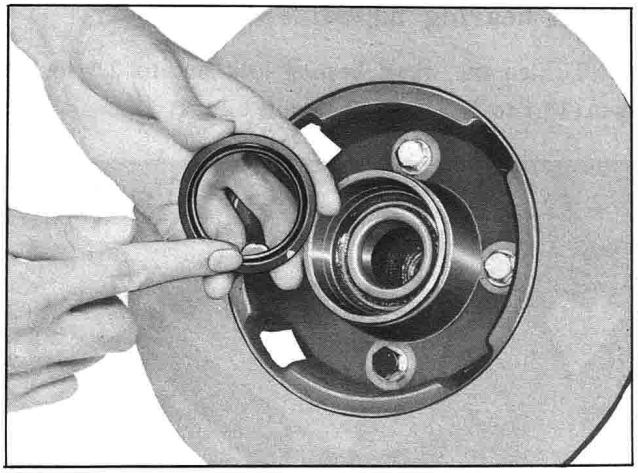


Fig. FA-21 Filling grease seal lip pocket with grease

Fig. FA-22 Filling spaces between wheel bearing rollers with grease

5. Apply multi-purpose grease to the spindle shaft and threaded portions, wheel bearing washer, and wheel bearing lock nut surfaces slightly.

6. Install the wheel bearing and grease seal on the wheel hub, and install them on the spindle.

Note: In order to provide the bearing with a proper prepressure and to extend the bearing service life, install the wheel bearing, grease seal, washer, and lock nut carefully so that no dust and foreign matters stick on grease applied to them.

Wheel bearing adjustment

1. Tighten the wheel bearing lock nut to 2.5 to 3.0 kg-m (18.1 to 21.7 ft-lb) tightening torque.

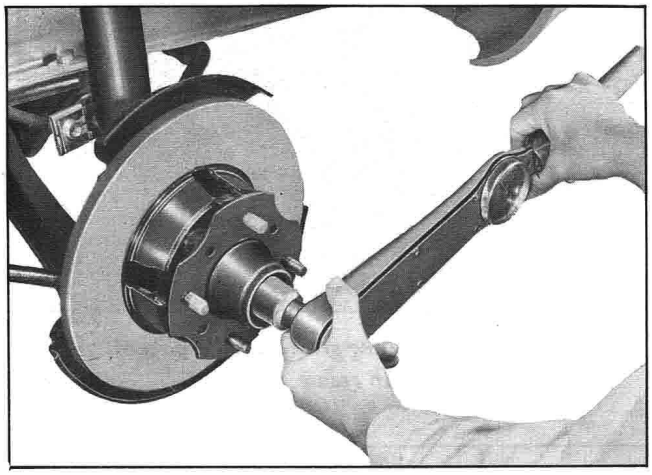


Fig. FA-23 Tightening wheel bearing lock nut

2. Turn the wheel hub in a few turns toward both clockwise and counterclockwise to settle down the bearing, and retighten the wheel bearing lock nut to the same tightening torque.

3. Return the wheel bearing lock nut 60° and coincide it with cotter pin hole on the spindle. When the wheel bearing lock nut is returned 60° and not coincided with the cotter pin hole, turn the nut toward loosening direction in maximum range of 15° and correctly coincide it with the cotter pin hole.

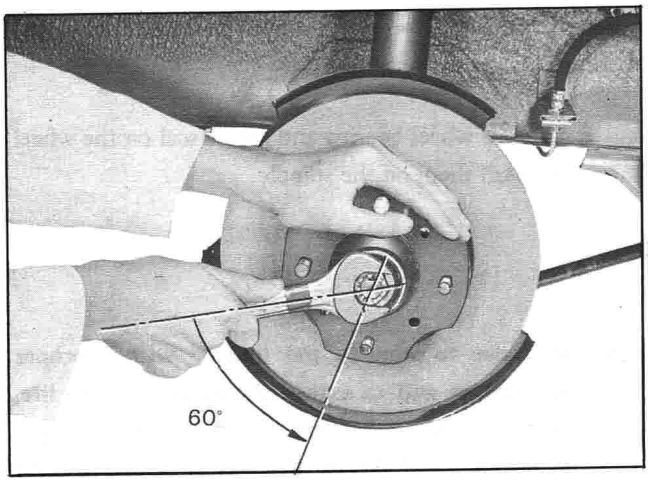


Fig. FA-24 Returning wheel bearing lock nut 60°

4. Turn the wheel hub in a few turns toward both clockwise and counterclockwise again to allow the bearing breaking-in, measure bearing rotation starting torque, apply a cotter pin to secure the nut (if the measured starting torque is within the rated value), and install the hub cap.

Wheel bearing rotation starting torque:
4.0 to 8.5 kg-cm (3.47 to 7.37 in-lb)

- At the hub bolt: 0.7 to 1.5 kg (1.54 to 3.30 lb)
- No slackness should exist toward the axis direction.
- Be sure to remove the brake pad.
- Correctly measure starting force toward tangential direction against the hub bolt.
- When bearing is reused (without replacing), adjust the rotation starting torque so that the wheel hub starts rotating at a starting torque as closer to 4.0 kg-cm (3.47 in-lb) as possible within the permissible rotation starting torque range 4.0 to 8.5 kg-cm (3.47 to 7.37 in-lb).

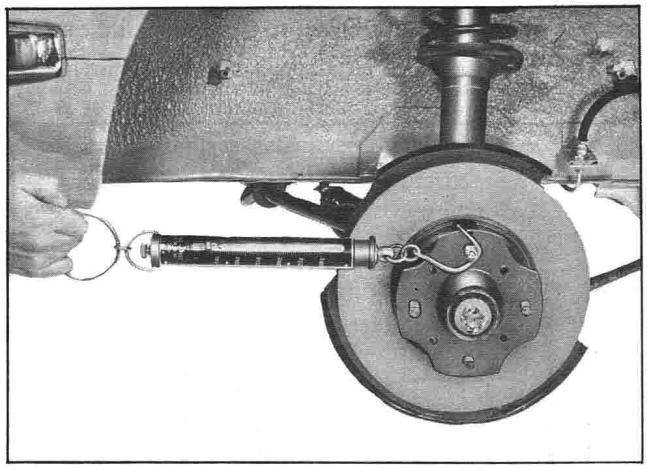


Fig. FA-25 Measuring wheel bearing rotation starting torque

STRUT ASSEMBLY

The strut assembly, consisting of a strut-outer casing with spindle, forms a cylinder between the piston rod guide and bottom valve.

TORQUE

Front axle

Wheel bearing lock nut	2.5 to 3.0 kg-m (18.1 to 21.7 ft-lb)
Front wheel bearing rotation starting torque	4.0 to 8.5 kg-cm (3.47 to 7.37 in-lb)