GROUP

WHEELS AND TIRES 11

(1000 & 2000)

SECTION 11-01 Wheels and Tires—Service

VEHICLE APPLICATION

Capri.

DESCRIPTION

Factory installed tires and wheels are designed to operate satisfactorily with loads up to the full-rated load capacity when inflated to recommended pressures.

Correct tire pressures and driving techniques have an important influence on tire life. Heavy cornering, excessively rapid acceleration and unnecessary sharp braking increase tire wear.

Tires

When replacing tires, only the size, load range and construction type (radial) originally installed on the vehicle are recommended. Use of any other tire size or type may seriously affect ride, handling, speedometer/odometer calibration, vehicle ground clearance, and tire clearance to the body and chassis.

WARNING: DO NOT MIX DIFFERENT TYPES OF TIRES ON THE SAME VEHICLE SUCH AS RADIAL, BIAS OR BIAS-BELTED TIRES EXCEPT IN EMERGENCIES (TEMPORAL SPARE USAGE), BECAUSE VEHICLE HANDLING MAY BE SERIOUSLY AFFECTED AND MAY RESULT IN LOSS OF CONTROL.

DESCRIPTION (Continued)

Consider the following when replacing tires:

1. It is recommended that new tires be installed in pairs.
2. When replacing only one tire, it should be paired with the tire having the most tread, to equalize braking traction.

Wheels

Wheels must be replaced when they are bent, dented or heavily rusted, have air leaks (aluminum wheels can, in most cases, be serviced using the procedure outlined in Maintenance), or elongated bolt holes, and have excessive lateral or radial runout. Wheels with lateral or radial runout greater than the recommended specification may cause an objectionable, high-speed vehicle vibration.

Replacement wheels must be equal to the original equipment wheels in load capacity, diameter, width, offset and mounting configuration. An improper wheel may affect bearing life, ground and tire clearance, or speedometer and odometer calibrations.

Corrosion build-up can result in wheels sticking to the axle or rotor flange after extensive service. To prevent this from recurring once the wheels are removed, use the following procedure:

1. Clean axle / rotor flange and wheel bore of corrosion with wire brush, steel wool, or suitable material.
2. Coat wheel bore with Disc Brake Caliper Slide Grease D7AZ-19590-A or equivalent. Do not apply grease to lug nut seats or wheel studs.
3. Install wheel on vehicle.

Wheel Lug Nuts

Replacement of lug nuts must be of the same type and thread size.

NOTE: Aluminum wheels and several steel wheels must use a special type metric lug nut with enlarged chamfers, or distortion of the aluminum wheel lug nut seat will result.

MAINTENANCE

Steel Wheels

Wheel services that use welding, heating or peening are not approved. An inner tube is not acceptable service for leaky wheels or tires.

Aluminum Wheels

Appearance

To clean wheels, use a mild soap and water solution and rinse thoroughly with clean water.

CAUTION: Do not use steel wool, abrasive type cleaner or strong detergents containing high alkaline or caustic agents. Damage may occur to the protective coating and cause discoloration.

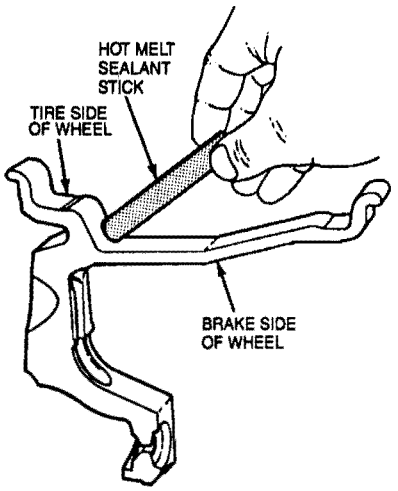
Air Leaks

If air pressure in a tire mounted on an aluminum wheel is found to be low, the following procedure should be performed prior to wheel replacement.

1. Raise vehicle on a hoist. Refer to Section 10-04. Remove tire and wheel assembly, and inspect wheel for structural damage. If none exists, go to Step 2. If the wheel is damaged, replace wheel.
2. With tire mounted on wheel, locate air leak using a water bath or equivalent method, and mark location. Check complete wheel for possible additional leaks.
3. On tire side of leak, use sandpaper of about 80-grit to thoroughly remove all contamination and score surface of wheel to improve sealer adhesion. An adequately sized area around the leak should be prepared to ensure covering the leak. Remove the valve stem if it is close to the repair area.
4. Use a clean cloth to remove all sanding dust.
5. Heat and seal the leak using Rotunda Heat Gun 107-00301 and Aluminum Wheel Repair Compound E7AZ-19554-A or equivalent as follows:
   a. Heat repair area so that sealing compound flows when applied.
   b. Apply a liberal amount of sealer using a wiping action to ensure complete coverage.
   c. Apply only enough heat to melt sealer and then remove heat source.

MAINTENANCE (Continued)

d. Allow wheel to cool. Reassemble and test for leaks.



F7020-A

NOTE: Caution must be exercised when mounting the tire so as not to damage the sealer.

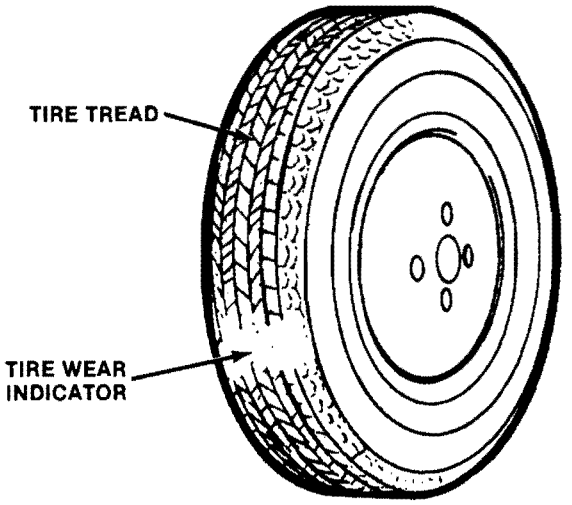
6. Inflate tire and install on vehicle.
7. Lower vehicle.

Tire Maintenance

To maximize tire performance, inspect tires for signs of improper inflation and uneven wear, which may indicate a need for balancing, rotation, or suspension alignment. If the tires have uneven or abnormal wear patterns, refer to the Tire Wear diagnosis chart.

Check tires frequently for cuts, stone bruises, abrasions, blisters, and for objects that may have become imbedded in the tread. More frequent inspections are recommended when rapid or extreme temperature changes occur, or where road surfaces are rough or littered with debris.

As a further visible check of tire condition, tread wear indicators are moulded into the bottom of the tread grooves. These indicators will appear as 12.7mm (1/2 inch) wide bands when the tire tread depth becomes 1.6mm (1/16 inch). When the indicators appear in two or more adjacent grooves, at three locations around the tire, or when cord or fabric is exposed, tire replacement due to tread wear is recommended.

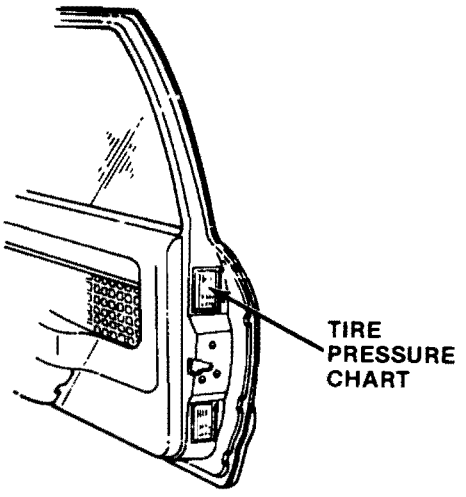


F5296-A

Tire Inflation

Always check tire inflation pressure using an accurate gauge and inflate the tires to recommended levels only.

The tire inflation pressure is carefully calculated to give the vehicle satisfactory ride and steering characteristics while not compromising long tire tread life. The recommended vehicle load capacities and tire inflation pressures for full or reduced load operation are listed in the Tire Inflation Pressure Chart. This information is also provided in the Owner Guide and on a label attached to the inside edge of the passenger door.



F5297-A

MAINTENANCE (Continued)

kPa	psi	kPa	psi
140	20	215	31
145	21	220	32
155	22	230	33
160	23	235	34
165	24	240	35
170	25	250	36
180	26	275	40
185	27	310	45
190	28	345	50
200	29	380	55
205	30	415	60

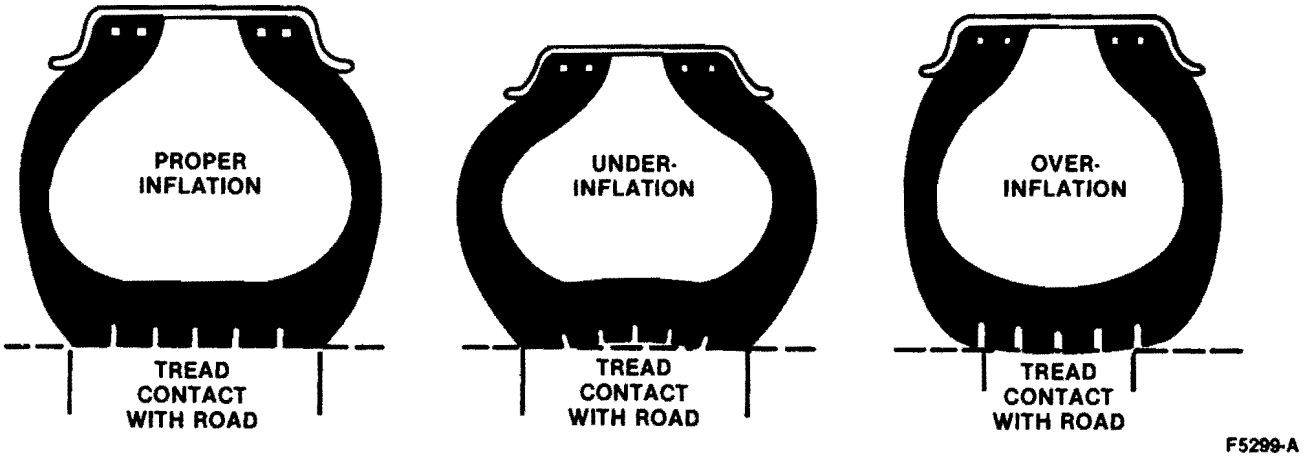
CONVERSION: 6.9 kPa = 1 psi

F5298-A

Check and adjust tire inflation pressures only when the tires are cold (vehicle has been parked for three hours or more) or driven less than 3.2 km (2 miles) at speeds below 64 km/h (40 mph).

Do not reduce inflation pressures if the tires are hot, or driven over 3.2 km (2 miles) at speeds above 62 km/h (40 mph) as pressures can increase as much as 41 kPa (6 psi) over cold inflation pressures.

Be sure to reinstall the valve cap. It prevents air leaks and keeps dust and dirt out of the valve stems.



F5299-A

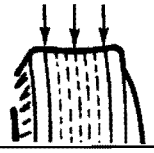
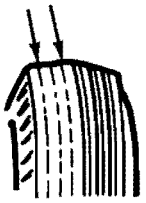
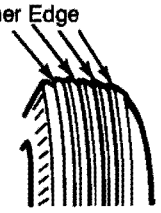
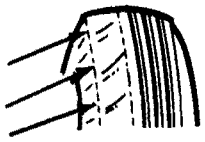
CAUTION: Radial-ply tires have a highly flexible sidewall, which produces a characteristic sidewall bulge, making the tire appear underinflated. This is a normal condition for radial-ply tires. Do not attempt to reduce this bulge by overinflating the tire.

Check the condition of the wheels. Replace any wheel that is bent, cracked, severely dented, or has excessive runout. Also, check the condition of the valve stem. Replace the valve stem if worn, cracked, loose or leaking air.

It is mandatory that only the tire size recommended on the tire chart attached to the vehicle be used. Larger or smaller tires can damage the vehicle and affect durability, and may cause the speedometer to read incorrectly. Be sure wheel sizes and offsets match those recommended for the tire in use.

DIAGNOSIS

TIRE WEAR DIAGNOSIS CHART

CONDITION	POSSIBLE SOURCE	ACTION
• Rapid Wear At The Shoulders 	• Tires underinflated.	• Inflate tires to recommend pressure—rotate tires.
	• Worn suspension components. i.e., ball joints, upper strut mounts, lower control arm bushings.	• Replace worn components.
	• Excessive cornering speeds.	• Rotate tires.
• Rapid Wear At Center Of Tread 	• Tires overinflated.	• Inflate tires to recommend pressure—rotate tires.
• Wear At One Shoulder 	• Toe out of adjustment.	• Adjust toe to specifications.
	• Camber out of specification.	• Check for worn or damaged suspension components.
	• Bent lower control arms.	• Replace lower control arms.
	• Bent MacPherson struts.	• Replace strut.
	• Bent lower control arm.	• Replace lower control arm.
	• Bent strut tower.	• Replace strut tower.
• Feather Edge 	• Toe out of adjustment.	• Adjust toe to specifications.
	• Bent or worn tie rods.	• Replace tie rods.
	• Damaged spindle carrier.	• Replace spindle carrier.
• Bald Spots or Tire Cupping 	• Unbalanced wheel.	• Balance tire and wheel.
	• Excessive radial runout.	• Check runout and replace tire if necessary.
	• Shock absorber in strut worn.	• Replace strut.
• Tire Scalloped 	• Toe out of adjustment.	• Adjust toe to specifications.
	• Camber out of specification.	• Check for worn or damaged suspension components.
	• Worn suspension components. i.e., ball joints. weak struts.	• Replace worn suspension components.

CF7015-A

DIAGNOSIS (Continued)

Vibration and Roughness

Vibration, roughness, tramp, shimmy and thump may be caused by excessive tire or wheel runout, worn or cupped tires, or wheel and tire unbalance.

These conditions may also be caused by rough or undulating road surfaces. Driving the vehicle on different types of road surfaces will indicate if the road surfaces are actually causing the problem.

Do not immediately suspect the tires when attempting to diagnose a vibration problem. Other sources of vibration include:

- Loose or worn wheel bearings.
- Loose or worn suspension or steering components.
- Worn upper strut bearings.
- Worn or damaged CV joints.
- Brake rotor runout.
- Loose engine or transmission supports.
- Engine driven accessories.

This section of the manual only covers those vibrations related to the tires and wheels.

For diagnostic procedures and repairs for non-tire related vibrations, refer to Section 18-01.

Road Test

A tire vibration diagnostic procedure always begins with a road test. The road test and customer interview (if available) will provide much of the information needed to find the source of a vibration.

During the road test, drive the vehicle on a road that is smooth and free of undulations. If vibration is apparent, note and record the following:

- The speed at which the vibration occurs.
- What type of vibration occurs in each speed range—mechanical or audible.
- How the vibration is affected by changes in vehicle speed, engine speed, and engine torque.
- Type of vibration sensitivity—torque sensitive, vehicle speed sensitive, or engine speed sensitive.

Use the following explanation of terms to help isolate the source of the vibration.

Torque Sensitive

This means that the condition can be improved or worsened by accelerating, decelerating, coasting, maintaining a steady vehicle speed and application of engine torque.

Vehicle Speed Sensitive

This means that the vibration always occurs at the same vehicle speed and is not affected by engine torque, engine speed, or transaxle gear selection.

Engine Speed Sensitive

This means that the vibration occurs at varying vehicle speeds when a different transaxle gear is selected. It can sometimes be isolated by increasing or decreasing engine speed with the transaxle in neutral, or by stall testing with the transaxle in gear. If the condition is engine-speed sensitive, the problem is not related to tires.

If the road test indicates the vibration is related to the tires or wheels, use the Wheel / Tire Vibration Diagnosis chart to help pinpoint the cause of the problem. If the road test indicates that there is tire whine, but no shake or vibration, the noise originates with the contact between the tire and the road surface.

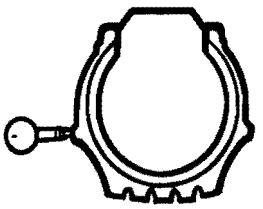
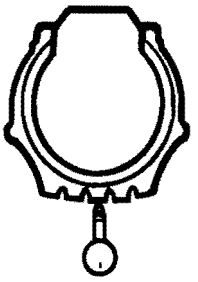
- A THUMPING NOISE usually means that the tire has FLAT or SOFT SPOTS making a noise as they slap the roadway. TIRE WHINE can be distinguished from axle noise because axle noise diminishes or changes according to load or speed. Tire noise remains the same over a range of speeds.
- To verify that tire noise is not associated with shake or vibration, inflate the tires one at a time to 345 kPa (50 psi) and check for a change in the sound. The pitch or whine will change as the increased pressure changes the tire frequency.

CAUTION: Be sure to deflate tires to their proper pressures after this check is completed.

NOTE: A complete road test procedure is provided in Section 18-01.

DIAGNOSIS (Continued)

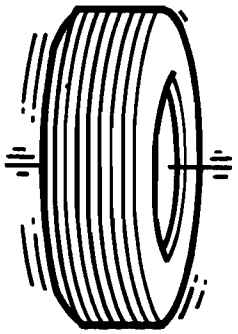
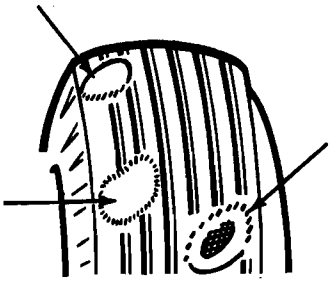
TIRE WEAR DIAGNOSIS CHART

CONDITION	POSSIBLE SOURCE	ACTION
• Vehicle Speed Sensitive Vibration. Vibration at Speeds Above 88 km/h (55 mph).	• Tire and wheel lateral runout. 	• Replace tire(s). Road test vehicle.
• Speed Required to Cause Vibration Increases as Runout Decreases. Vehicle Speed Sensitive Vibration. Vibration at Speeds Above 32 km/h (20 mph).	• Tire and wheel radial runout. 	• Replace tire(s). Road test vehicle.
• Up-down Movement in Steering Wheel and Instrument Panel Along With Mechanical Vibration. Most Noticeable Between 32-64 km/h (20-40 mph). Vehicle speed sensitive vibration.	• Wheel hop. Caused by tires having radial runout of more than 1.14mm (0.045 inch). Do not attempt to correct by balancing. 	• Replace tire(s). Road test vehicle.

CF7016-A

DIAGNOSIS (Continued)

TIRE WEAR DIAGNOSIS CHART

CONDITION	POSSIBLE SOURCE	ACTION
• Steering Vibration Vehicle Speed Sensitive 	• Tire balance. Static unbalance not a cause of vibration below 48 km/h (30 mph). Dynamic unbalance not a cause under 64 km/h (40 mph).	• Balance tires. Road test vehicle.
• Tire Wear Can cause vibration in 48 to 88 km/h (30 to 55 mph) range and may also generate whine at high speed changing to growl at low speed. Vehicle speed sensitive vibration. 	• Worn/damaged suspension components or tires. Vehicle out of align. Tires out of balance.	• Balance tires. Service tires and vehicle as required. Road test vehicle.
• Waddle Side to side (waddle) movement at the front and/or rear of the vehicle. Most noticeable at low speed 5 to 48 km/h (5 to 30 mph). It may also appear as a ride roughness at 80 to 113 km/h (50 to 70 mph).	• Steel belt in tire not straight within tire. It is possible to road test a vehicle and tell on which end of the vehicle the worn or damaged tire is located. If the waddle tire is on the rear, the rear end of the vehicle will shake from side to side or "waddle." From the driver's seat it will feel as though someone is pushing on the side of the vehicle. If the worn or damaged tire is on the front, the waddle is more visual. The front sheet metal will appear to be moving back and forth and the driver will feel as though they are at a pivot point in the vehicle.	• Replace tires(s). Road test vehicle.

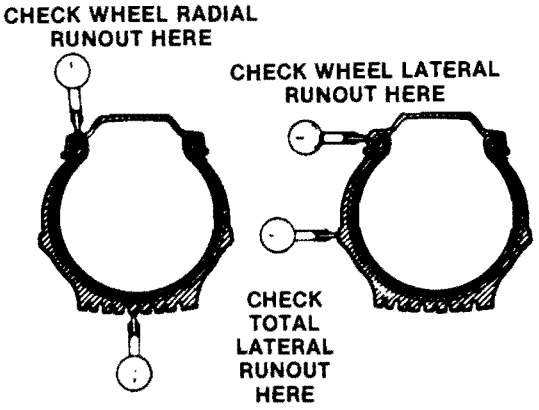
CF7017-A

DIAGNOSIS (Continued)

Wheel/Tire Runout

Check wheel and tire runout with the tires inflated to the normal load inflation pressure. To ensure accurate results, make the checks with a dial indicator, or Radial Runout Gauge 007-00014 or equivalent, immediately after the road test. If time is allowed to pass between the road test and the runout checks, the tires may develop slight flat spots, which can affect the accuracy of the tire runout checks.

CHECKING WHEEL/TIRE RUNOUT



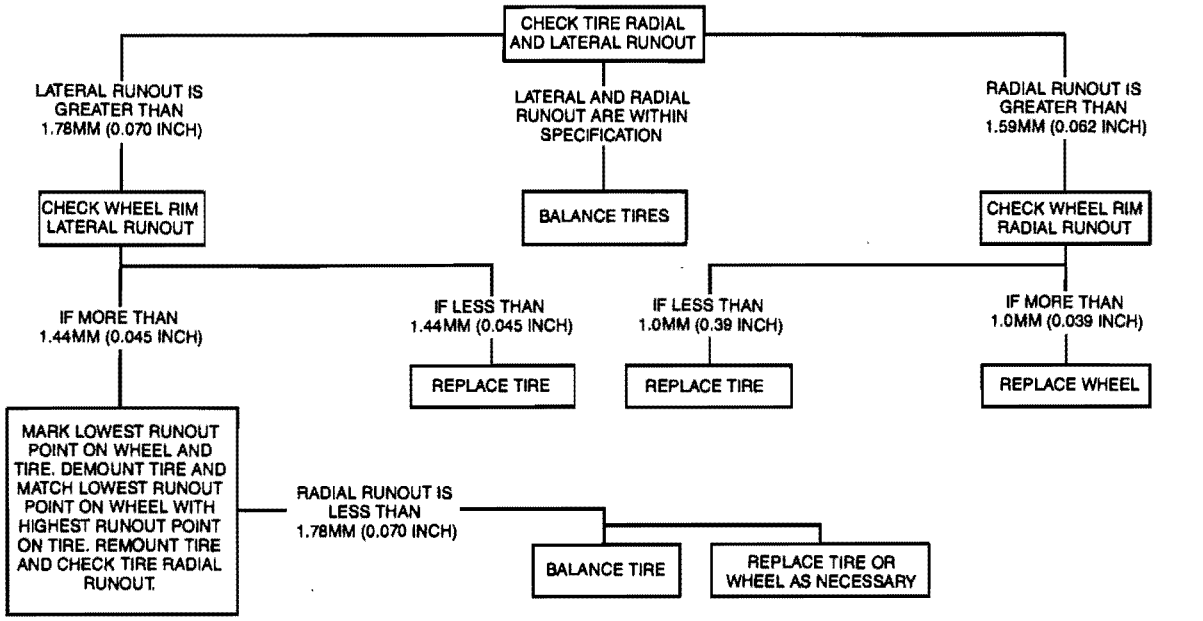
F5303-A

Measure tire radial runout at the center and outside ribs of the tread face. It may be necessary to put tape on the tire tread to keep the dial indicator roller from falling into tread block grooves in the tread. Measure the lateral runout just above the letters identifying the tire size.

Measure wheel radial runout at the wheel rim along the inside edge of the flange.

Use the Wheel / Tire Runout Diagnosis Chart to determine if wheel or tire runout are the source of a vibration problem.

WHEEL/TIRE RUNOUT DIAGNOSIS CHART



F7018-A

Tire Lead

"Lead" is the movement or wander of the vehicle from a straight path on a level road with no pressure on the steering wheel.

Lead is usually caused by:

- Incorrect wheel alignment.
- Uneven brake adjustment.

DIAGNOSIS (Continued)

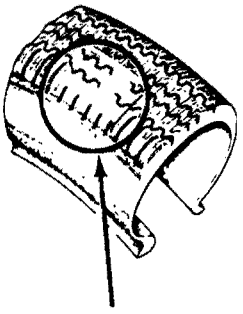
- Uneven or incorrect tire inflation pressures.
- Faulty tire construction.

The way in which a tire is constructed can produce lead. An example of this is placement of the radial belts. Off center belts on a radial tire can cause the tire to develop a side force while rolling straight down the road. If one side of the tire is a little larger diameter than the other, the tire will tend to roll to one side. This will develop a side force which can produce lead.

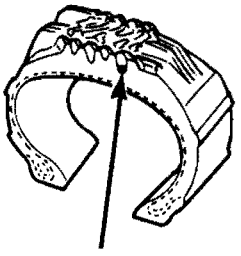
SERVICE

The tires should be replaced if the wear indicators are exposed, or if there is severe shoulder wear. Shoulder wear is usually caused by excessive camber or excessive toe on radial tires.

Sometimes incorrect rear toe settings or bad shock absorbers will cause severe "cupping" or "scalloped" tire wear on non-drive wheels.

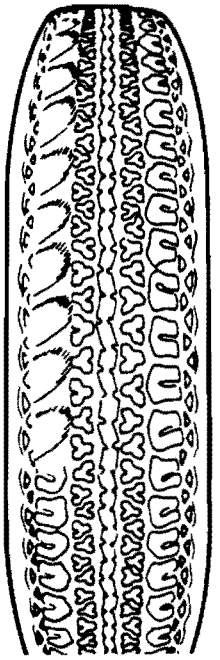


WEAR INDICATORS



WEAR PLATFORM

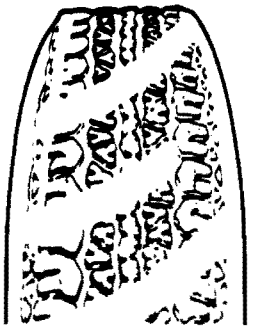
F5376-A



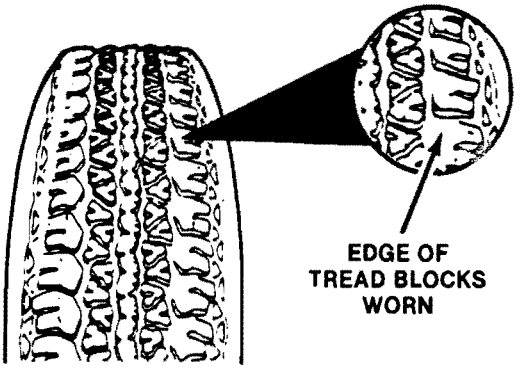
CUPPING OR SCALLOPED TIRE WEAR

F5377-A

Severely misadjusted rear toe will also cause other unusual wear patterns.



- EXCESSIVE TOE ON THE NON-DRIVE WHEELS
- LACK OF ROTATION



EDGE OF TREAD BLOCKS WORN

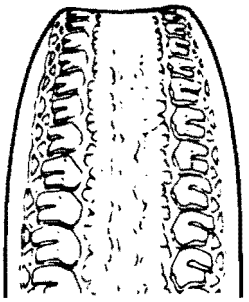
- EXCESSIVE TOE ON THE NON-DRIVE WHEELS
- LACK OF ROTATION

F5378-A

SERVICE (Continued)

If the cupping or other wear patterns are severe enough to cause noise or vibration, the tire must be replaced. Tire rotation at proper intervals may prevent these tire patterns from developing.

Underinflation will cause shoulder wear in a radial tire, but because of the strength of the radial belts, overinflation seldom causes center tread wear. Radial tire center tread wear can be caused by heavy acceleration or excessive toe on drive wheels.



- **HEAVY ACCELERATION ON DRIVE WHEELS**
- **EXCESSIVE TOE ON DRIVE WHEELS**

F5379-A

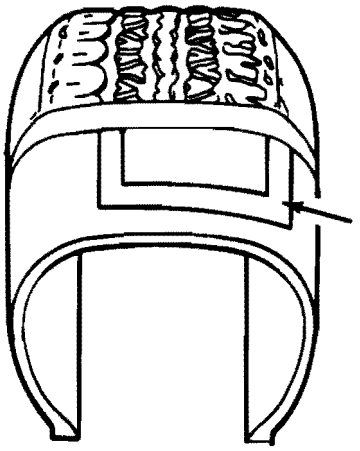
A nail puncture may allow water to seep in and cause rust damage to one of the steel belts in a radial tire. Internal stresses in the tire caused by the loss of one of the steel belts will cause the tread to distort. Tread distortion is often incorrectly referred to as belt shift.

TREAD DISTORTION

F5380-A

This condition will cause low speed "waddle" and vibration similar to a statically imbalanced tire at high speed. A tire with severe tread distortion should be replaced.

A defective tire built with the radial belts closer to one side of the tire than the other may cause the tire to be slightly cone shaped. This will cause the tire and therefore the vehicle to pull in one direction or the other.



TIRE CONICITY

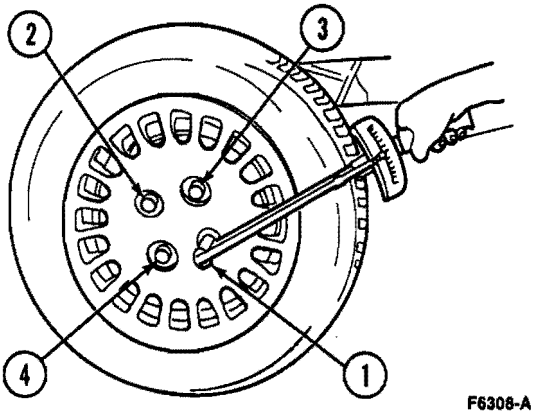
F5385-A

If a vehicle pulls and there is not apparent tread wear, switch the two front tires. If the vehicle now pulls in the opposite direction, rotate all four tires.

Tire Replacement

If a new tire comes with a sticker or dye mark to indicate the high spot, this should always be installed at the valve stem. When replacing tires on wheels with over 48,279 km (30,000 miles), the valve stem should always be replaced.

When installing lug nuts to mount the road wheels, a torque wrench should always be used for final tightening. Tighten lug nuts to 90-120 N·m (65-87 lb-ft) progressively in a diagonal sequence. This will prevent problems with warped disc brake rotors, and stretched wheel studs.



F6308-A

Tire and Wheel Balance

Before balancing a tire, clean deposits of dirt, mud and ice from the wheel, both inside and outside the rims, and remove any existing balance weights.

SERVICE (Continued)

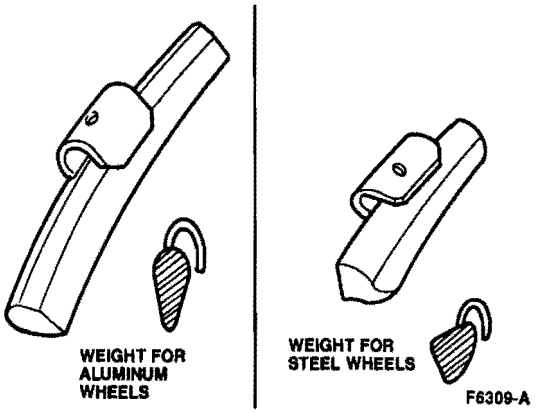
Remove stones from the tire tread in order to avoid operator injury when spin balancing and to obtain a proper balance. Inspect all tires for damage. Check and, if necessary, correct tire pressures, then balance according to equipment manufacturer's instructions.

Never add more than 160 grams (5 1/2 ounces) of weight to any one wheel. If using a bubble balancer or an on the vehicle spin balancer, always split the weight so that half of the weight is on the inside wheel rim edge and half of the weight is on the outside wheel rim edge.

NOTE: The shape of the rim on the aluminum alloy wheels requires a unique wheel weight with a matching contour. Do not attempt to use a steel wheel weight on an aluminum wheel.

Balance Weights

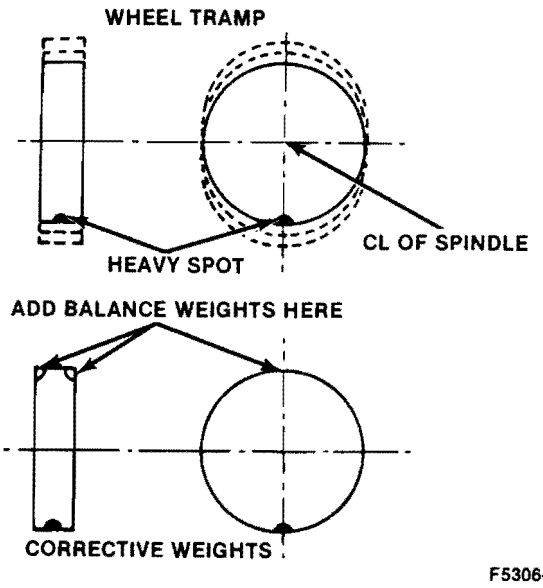
When balancing aluminum wheels, note that the weights have a different profile from those used on steel wheels. **It is important that only the correct balance weights are used.** In the following illustration, "B" shows the type of wheel weight for use with steel wheels and "A" shows the type of wheel weight for use with aluminum wheels. Adhesive type weights may also be used on aluminum wheels.



Static Tire Balance

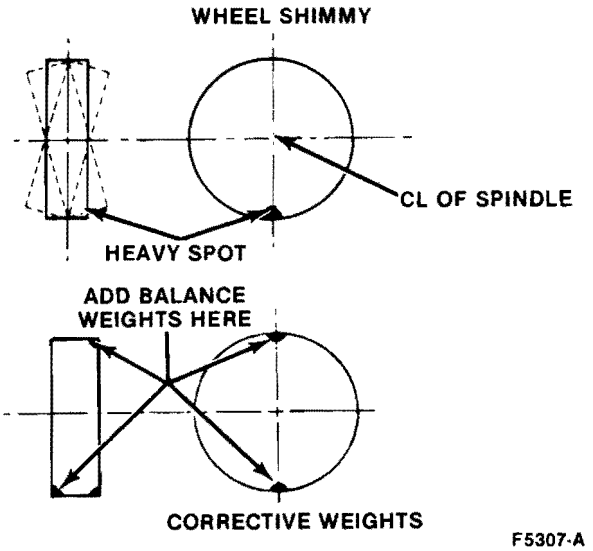
There are two types of wheel and tire balance: single plane STATIC balance and two plane DYNAMIC balance.

A **static** balance is the equal distribution of weight around the wheel. Wheels that are statically unbalanced cause a bouncing action called wheel tramp. This condition will eventually cause uneven tire wear.



Dynamic Tire Balance

A **dynamic** balance is the equal distribution of weight on each side of the wheel centerline, so that when the wheel spins there is no tendency for side-to-side movement. Wheels that are dynamically unbalanced may cause wheel shimmy.



There are two types of wheel balancing procedures: off-vehicle and on-vehicle. A brief description of each is provided as follows.

SERVICE (Continued)

Off-Vehicle Balancing

With off-vehicle balancing, the wheel is removed from the vehicle and put on a special machine which balances it. In most cases (except with bubble balancers), the wheel is spun on a machine and both static and dynamic balance are corrected for. Always place the centering cone on the back side of the wheel. This is especially important with stamped steel wheels. Most steel wheels are stamped from the back side—locating the cone on the front side of the wheel could cause an incorrect balance. When using special adapters, it is imperative that the wheels be located by the center hole and NOT the stud holes.

On-Vehicle Balancing

When balancing the front wheels, use the engine to spin the tires, not the balancing spinner. Place a wooden block under the wheel that is not being balanced. If a vehicle has a limited slip differential, remove the wheel from the side that is not being balanced, and support the lower control arm with a jackstand. Be sure to mark the wheel and one of the studs so the tire can be installed in the same position as it was taken off. Be sure the axle shafts are not hitting any suspension components when performing a front on-vehicle balance.

Always refer to the manufacturer's instructions provided with the dynamic-type wheel balancer when balancing wheels on the vehicle.

Support the front suspension so that the axle shaft angles are at near curb height angles. The wheel being balanced would be 50mm (2 inches) or slightly more off the ground. BE SURE THE PARKING BRAKE IS APPLIED WHEN BALANCING THE FRONT WHEELS. Before spinning the wheels, check for looseness in the suspension joints, worn wheel bearings, and brake grab.

Start the engine, select top gear and accelerate slowly. Be sure the speed as indicated on the speedometer does not go over the equivalent road speed of 56 km/h (35 mph). Remember that the wheel speed (when driven by the engine) will be twice speedometer speed.

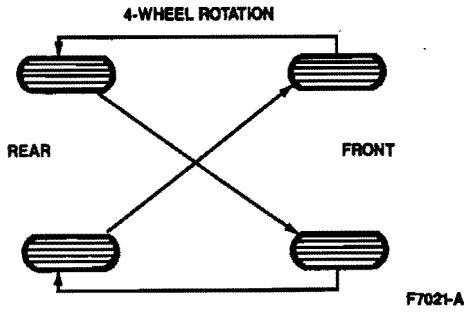
WARNING: WHEN BALANCING FRONT WHEELS ON FRONT WHEEL DRIVE VEHICLES WITH CONVENTIONAL TRANSAXLES, LIMIT THE WHEEL SPEED TO 56 KM/H (35 MPH) AS INDICATED ON THE SPEEDOMETER. IF CARE IS NOT TAKEN DURING THIS PROCEDURE, POSSIBLE TIRE DISINTEGRATION, TRANSAXLE AND/OR HALFSHAFT FAILURE CAN RESULT, WHICH COULD CAUSE PERSONAL INJURY OR EXTENSIVE COMPONENT DAMAGE.

Tire Rotation

Front and rear tires perform different jobs and can wear differently depending on the type of vehicle and driving habits. To equalize wear and optimize tire life, rotate tires every 6,000 km (3,750 miles).

If abnormal wear is detected, find and correct the cause, and rotate the tires, to allow more even wear.

CAUTION: Do not use "Temporary" tire for tire rotation.



Wheel Bearing Adjustment—Rear

Refer to Section 11-15.

SPECIFICATIONS

WHEEL RIM RUNOUT AND BALANCE SPECIFICATIONS

Type Wheel	Max. Radial Runout	Max. Lateral Runout	Max. Balance Weight
Aluminum	2.0mm (.079 inch)	1.5mm (.059 inch)	3.5 oz per wheel
Steel	2.5mm (.098 inch)		3.5 oz per wheel

CF6310-A

SPECIFICATIONS (Continued)

WHEELS

Size	Offset	Diameter of Pitch Circle	Material	Tire Size
5 1/2—JJ X 14	45mm (1.77 inches)	114.3mm (4.5 inches)	Steel and Aluminum	185/60R14 82H
4-T X 14	50mm (1.97 inches)	114.3mm (4.5 inches)	Steel	T105/70D14

CF6311-A

SPECIAL SERVICE TOOLS

ROTUNDA EQUIPMENT

Model	Description
007-00014	Radial Runout Gauge
078-00153	Computer Wheel Balancer
107-00301	Heat Gun

SECTION 11-10 Wheel Hubs and Bearings—Front

VEHICLE APPLICATION

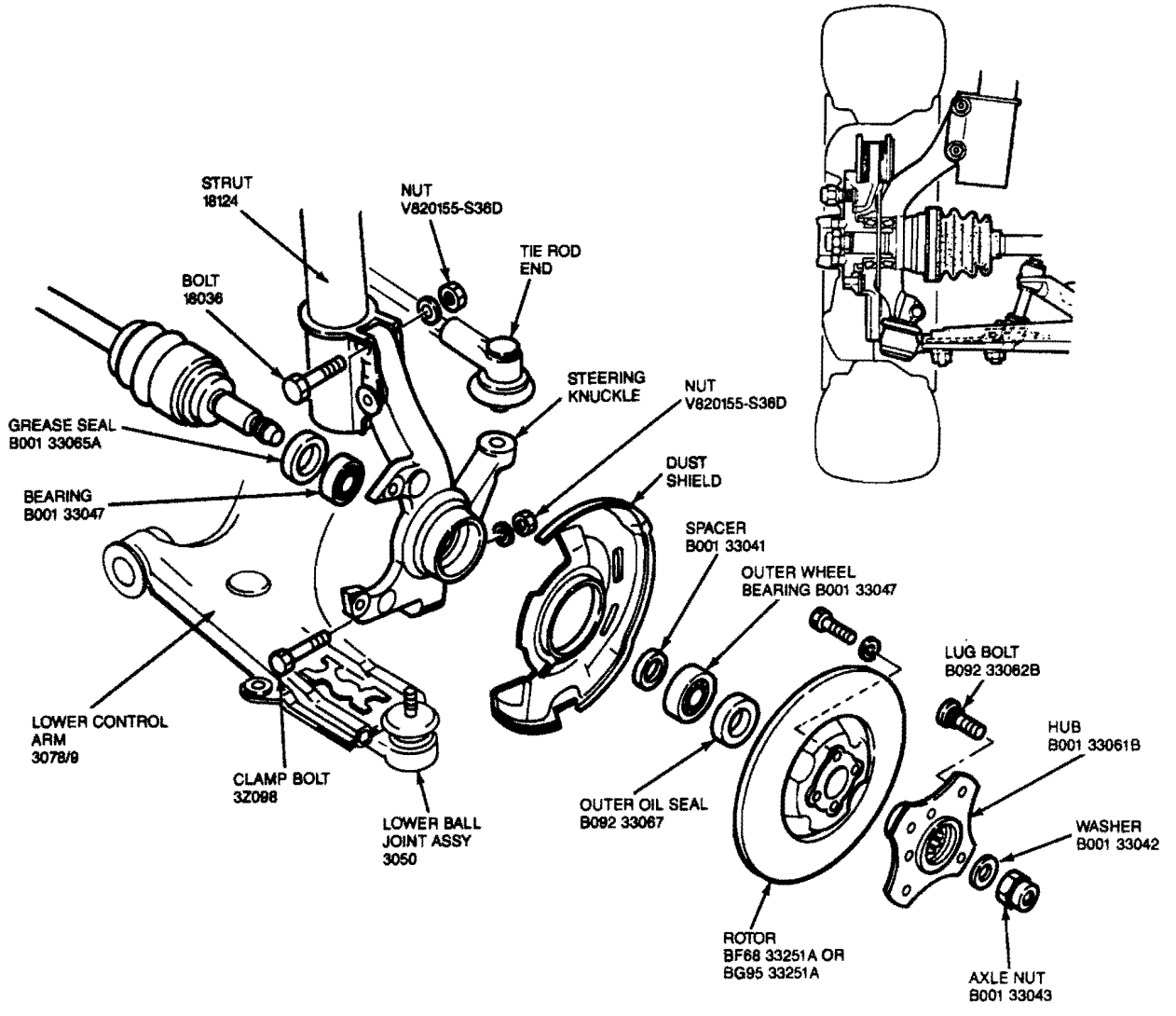
Capri.

DESCRIPTION

The front wheels are attached to the front hub and rotor assemblies. The assembly is supported by roller bearings mounted in the steering knuckle. The outer races are pressed into the steering knuckle. The hub and rotor assemblies are pressed into the inner wheel bearing races during assembly. Inner and outer grease seals retain grease in the bearings and steering knuckle. Pressure from the torqued halfshaft nut and the halfshaft holds the bearings and hub in place.

For easier service, the rotor unbolts from the hub, and the steering knuckle can be easily removed from the strut.

DESCRIPTION (Continued)



DIAGNOSIS

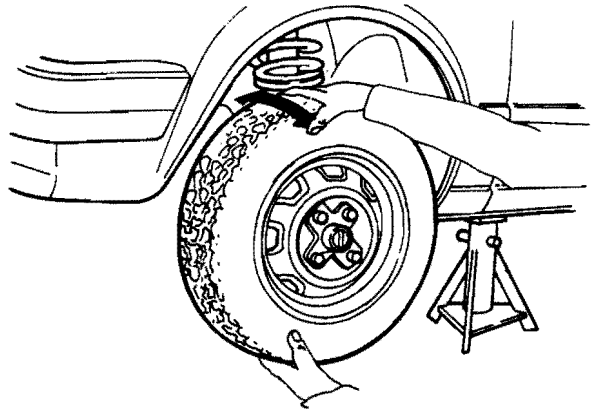
Bearing, Front

The most obvious clue to bearings that need replacing is the presence of noise that occurs only when making a turn. To diagnose the bearings:

1. Road test the vehicle on a smooth road. Make sharp turns to the right and left.
   a. If the vehicle makes noises on right turns, the left bearing most likely needs replacement.
   b. If the vehicle makes noises on left turns, the right bearing most likely needs replacement.
   c. If bearing noise is heard on either right or left turns, the hub and bearing assembly on the suspected side should be disassembled and inspected.

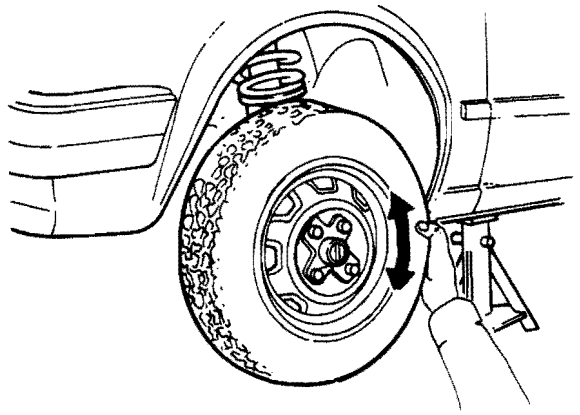
DIAGNOSIS (Continued)

2. Raise the front of the vehicle and check for loose front bearings by rocking the tires at the top and bottom.



F5087-A

3. Spin the tire quickly by hand and make sure the tire turns smoothly with no abnormal noises from the bearings.

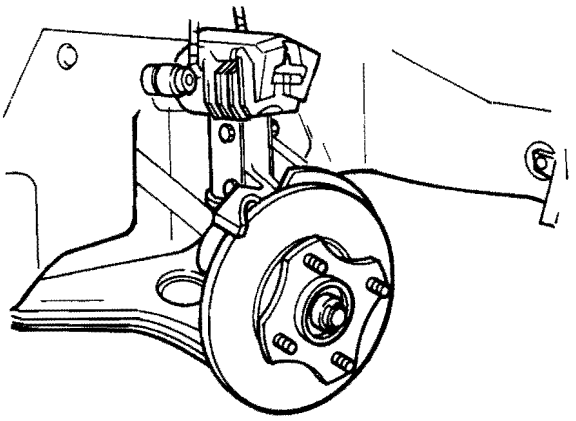


F5088-A

NOTE: Be careful not to confuse ball joint looseness with bearing looseness.

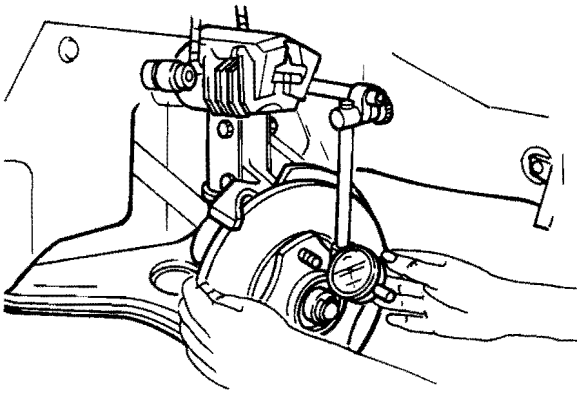
If abnormal looseness or noise is found, disassemble the hub and knuckle, inspect the bearings, and adjust the bearing preload.

4. Remove the wheel and disc brake caliper. Hang the caliper from the coil spring using a cord or piece of wire.



F5089-A

5. Position Dial Indicator TOOL-4201-C or equivalent against the wheel hub, then push and pull the wheel hub. Measure the end play of the wheel hub and bearing assembly. If the end play exceeds the specified limit, adjust the bearing preload or replace the bearings as outlined.



F5090-A

REMOVAL AND INSTALLATION

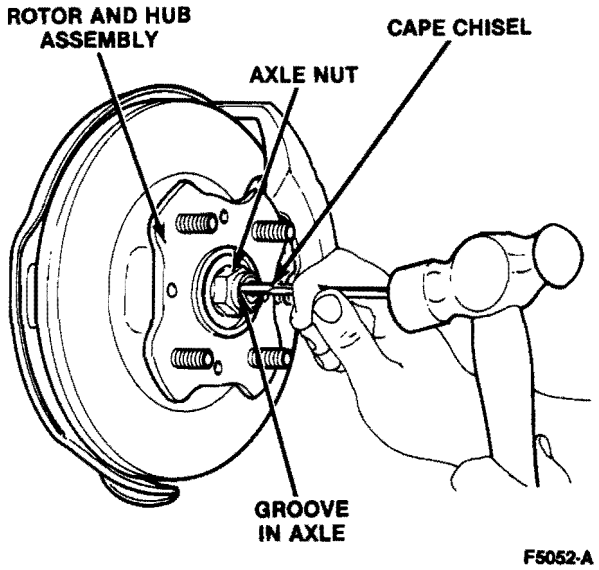
Wheel Hub / Steering Knuckle Assembly

Removal

1. Raise vehicle. Refer to Section 10-04.
2. Remove the tire and wheel assembly.

REMOVAL AND INSTALLATION (Continued)

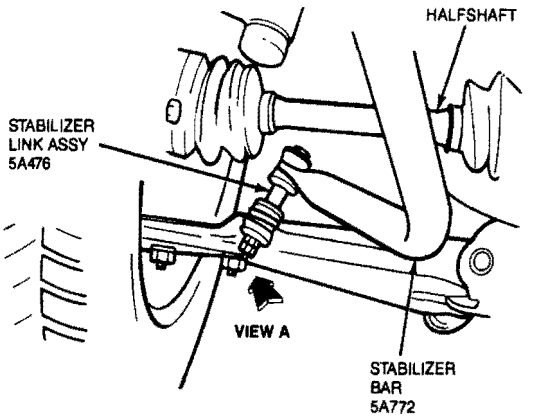
3. Carefully raise the staked portion of the halfshaft attaching nut using a small cape chisel.

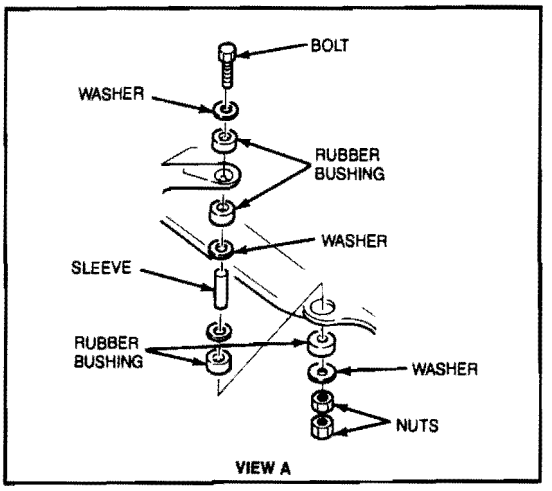


4. Remove halfshaft attaching nut and washer. Discard the nut. Do not reuse.

   NOTE: When loosening the nut, lock the hub by applying the brakes.

5. Remove the stabilizer bar to control arm attaching bolt, nut, washers and bushings.

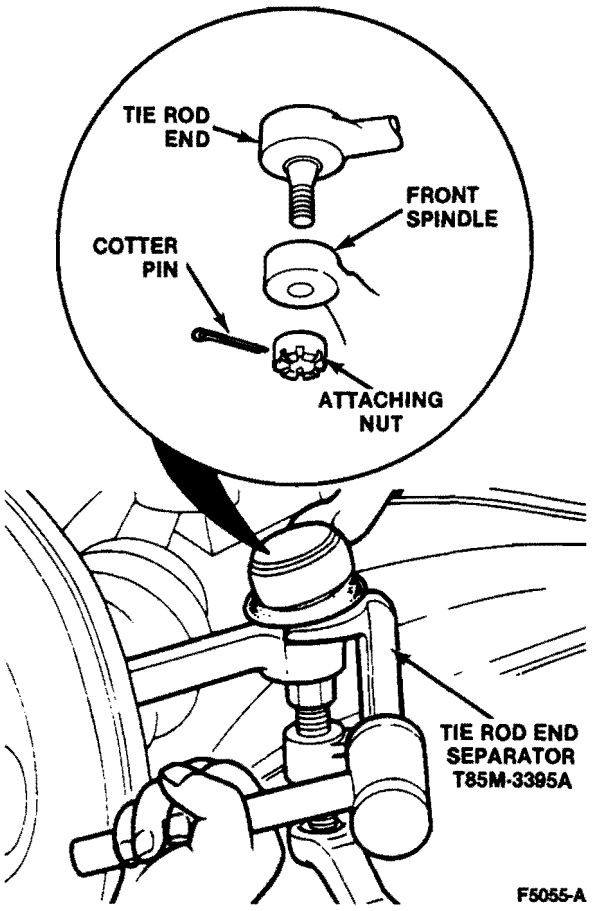




6. Remove cotter pin and tie rod end attaching nut.

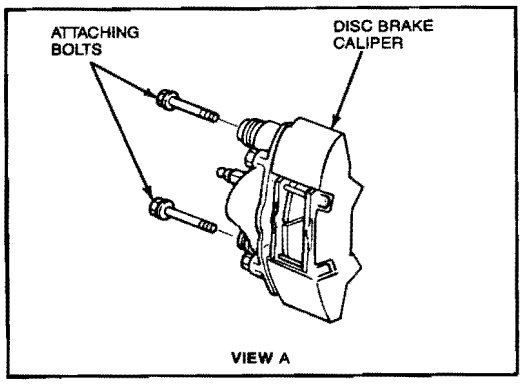
REMOVAL AND INSTALLATION (Continued)

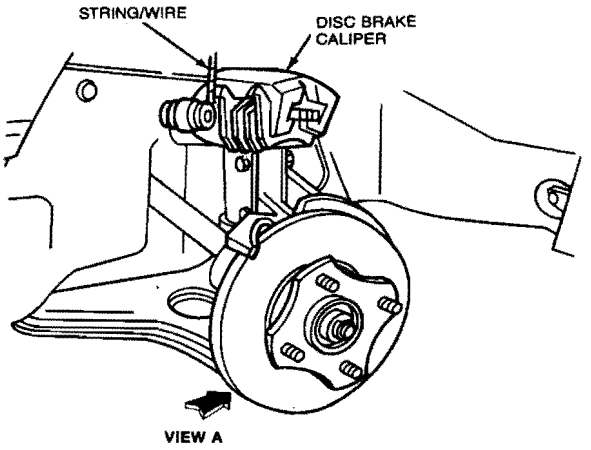
7. Separate the tie rod end from the steering knuckle arm using Tie Rod End Separator T85M-3395-A or equivalent. If tie rod end does not separate easily, give the steering knuckle a sharp blow with a soft faced hammer to shock the taper.



8. Remove U-shaped retaining clip from the center section of the caliper flex hose.
9. Remove the disc brake pads. Refer to Section 12-20.
10. Remove the brake caliper attaching bolts. Lift caliper off the rotor and suspend it from the suspension coil spring.

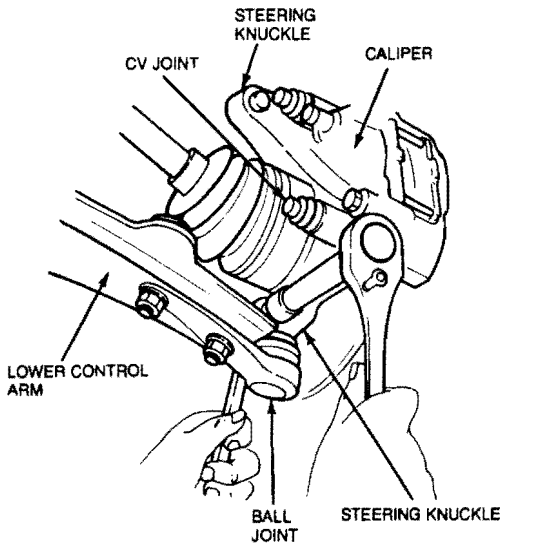
REMOVAL AND INSTALLATION (Continued)





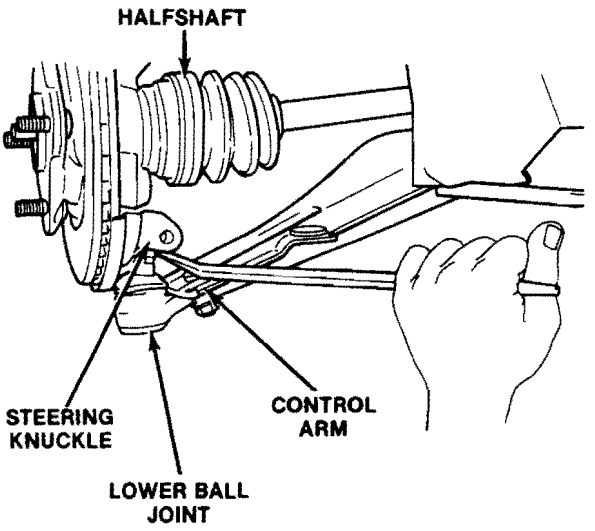
F7068-A

11. Remove the lower control arm ball joint clamp bolt and nut.



F7067-A

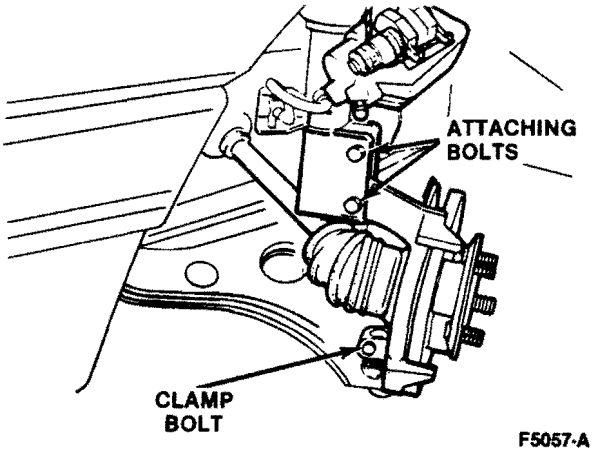
12. Pry downward on the lower control arm to separate the ball joint from the steering knuckle.



F5086-A

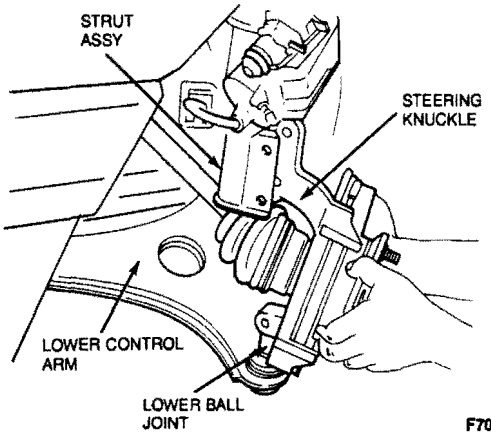
REMOVAL AND INSTALLATION (Continued)

13. Remove the steering knuckle to strut attaching bolts.



F5057-A

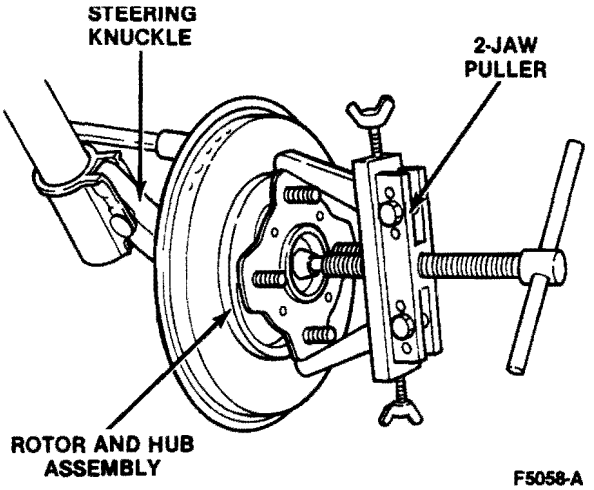
14. Slide the front hub / steering knuckle assembly out of its bracket in the strut and off the end of the halfshaft. Use care to prevent damage to the grease seals.



F7066-A

NOTE: If the hub binds on the halfshaft splines, it can be loosened by lightly tapping with a plastic faced hammer on the end of the halfshaft.

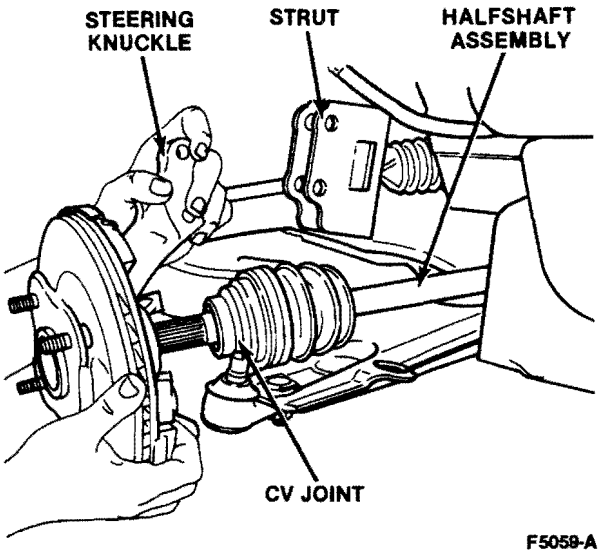
CAUTION: Never use any type of metal faced hammer to separate the halfshaft from the hub. Damage to the CV joint internal components will result. If the halfshaft splines become rusted to the hub, a two jaw puller or hub puller must be used to separate them.



F5058-A

Installation

1. Position the front hub / steering knuckle assembly over the halfshaft and into the strut.

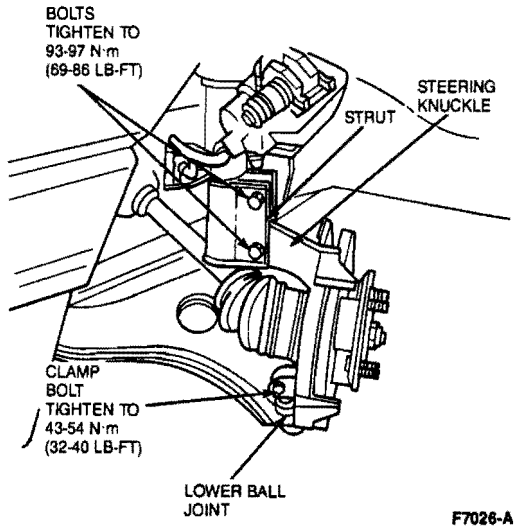


F5059-A

2. Install the steering knuckle to strut attaching bolts and nuts. Tighten the attaching nuts to 93-117 N·m (69-86 lb-ft).

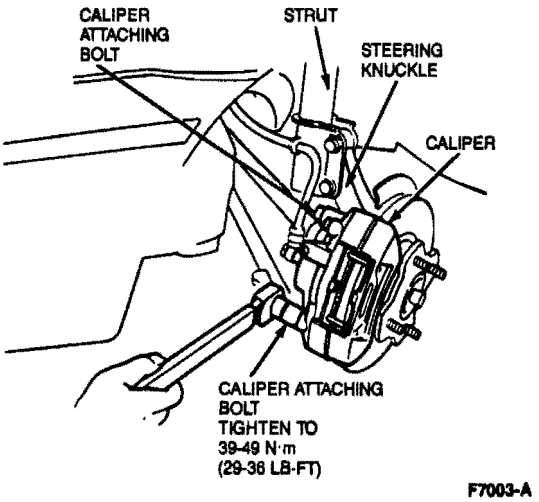
REMOVAL AND INSTALLATION (Continued)

3. Position the lower control arm ball joint through the steering knuckle and install the clamp bolt and nut. Tighten the clamp bolt to 43-54 N·m (32-40 lb-ft).



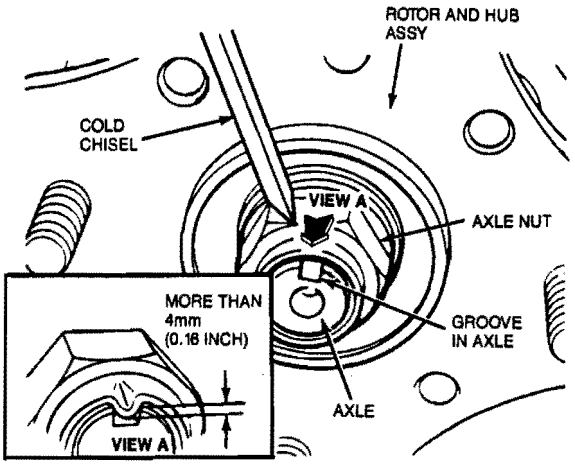
F7026-A

4. Position the brake caliper over the rotor and install the attaching bolts. Tighten to 39-49 N·m (29-36 lb-ft).



F7003-A

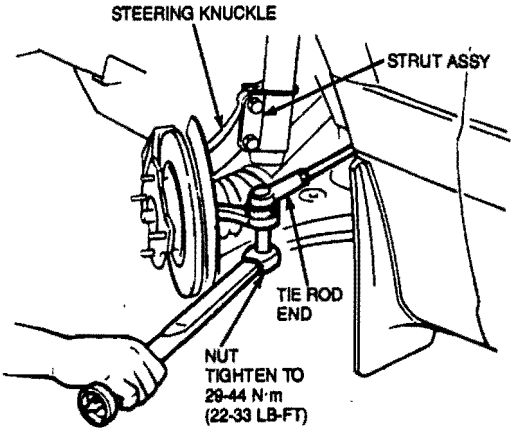
5. Install the U-clip on the caliper flex line.
6. Install a new halfshaft attaching nut. Tighten to 157-235 N·m (116-174 lb-ft).
7. Stake the halfshaft attaching nut using a cold chisel with the cutting edge rounded.



F7023-A

CAUTION: If the nut splits or cracks after staking, it must be replaced with a new nut.

8. Connect the tie rod to the steering knuckle arm and install the attaching nut. Tighten to 29-44 N·m (22-33 lb-ft) and install a new cotter pin.

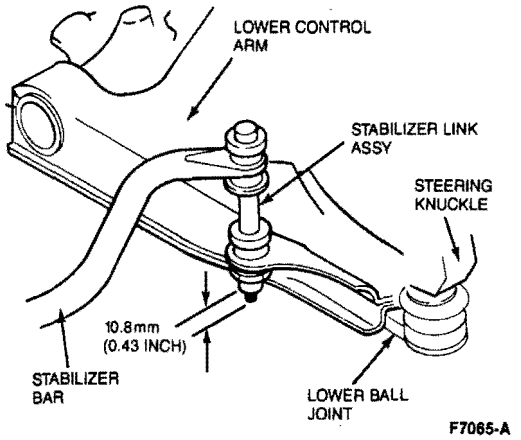


F7004-A

NOTE: If the slots in the nut do not align with the cotter pin hole in the ball joint stud, tighten the nut for proper alignment. Never loosen the nut.

REMOVAL AND INSTALLATION (Continued)

9. Position the stabilizer bar and install the stabilizer link assembly including the attaching bolt, nut, washers, sleeve and rubber bushings. Tighten the attaching nut until 10.8mm (0.43 inch) of the bolt threads extend beyond the nut.



F7065-A

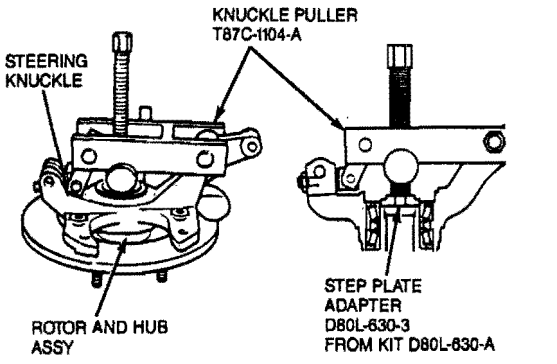
10. Install the wheel and the tire assembly.
11. Tighten retaining bolts to 90-120 N·m (65-88 lb-ft).
12. Lower vehicle.

DISASSEMBLY AND ASSEMBLY

Brake Rotor/Wheel Hub

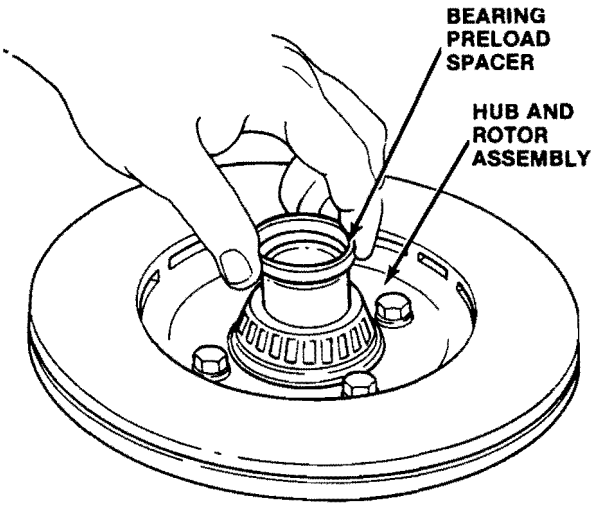
Disassembly

1. Remove the hub and rotor assembly from the steering knuckle using Knuckle Puller T87C-1104-A or equivalent.



F6990-A

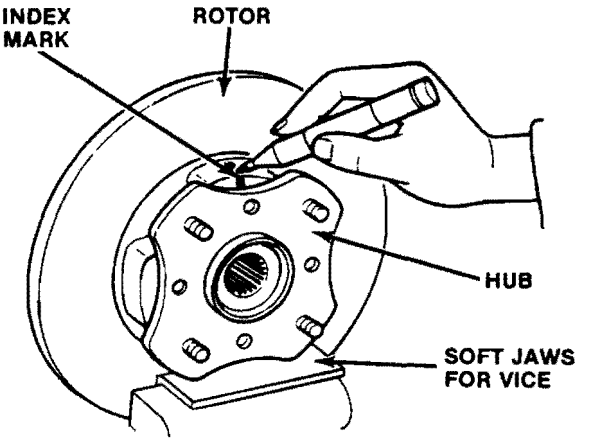
2. Remove the bearing preload spacer from the hub and rotor assembly.



F5067-A

NOTE: The spacer located between the bearings determines bearing preload. It must not be discarded.

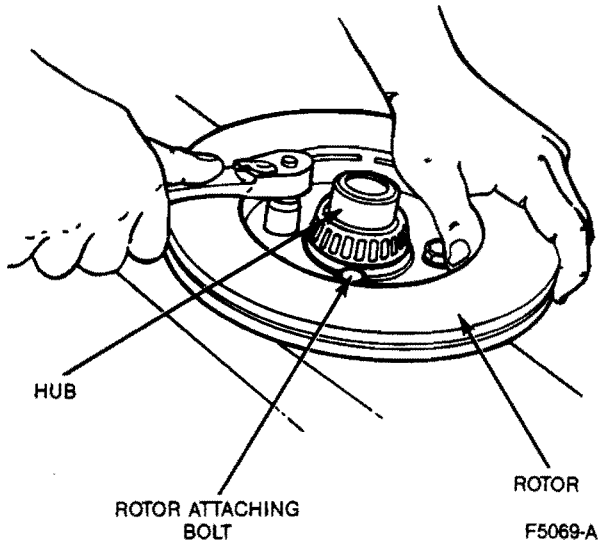
3. Mark or paint aligning marks on the hub and rotor assembly so they can be assembled in the same position.



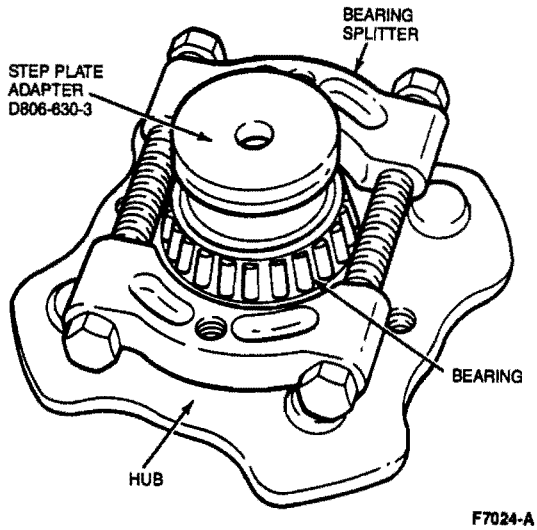
F5068-A

DISASSEMBLY AND ASSEMBLY (Continued)

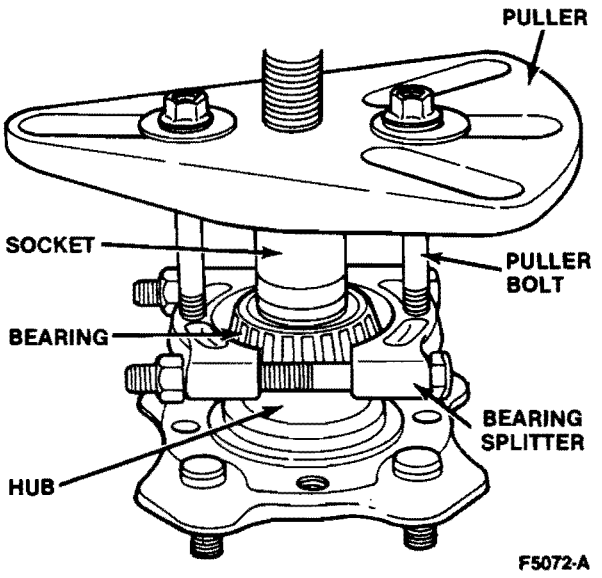
4. Remove the attaching bolts and separate the rotor from the hub. It may be helpful to mount the rotor in a soft jawed vise.



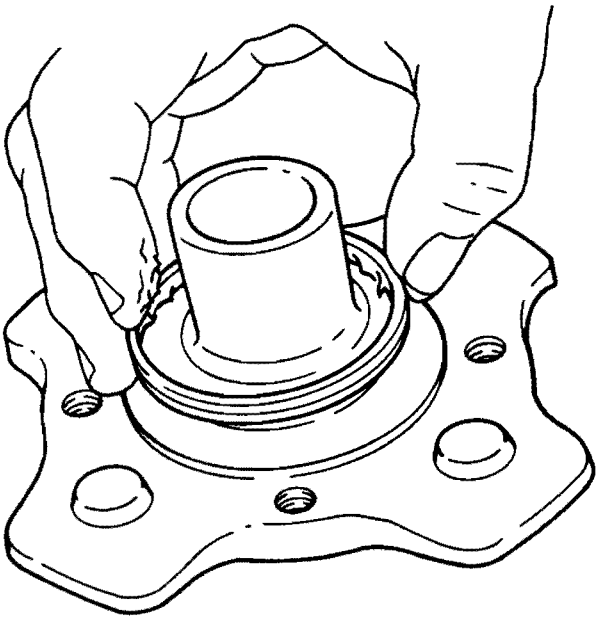
5. Remove the bearing from the wheel hub using Bearing Puller Attachment D84L-1123-A and Puller D80L-927-A or equivalent.
6. A bearing splitter and a large vibration damper puller can also be used. A spacer block will have to be used over the hub.



7. A socket may also have to be used to finish pulling the bearing off the hub.



8. Remove the outer grease seal from the hub.



9. Remove the inner grease seal from the steering knuckle using a large screwdriver.

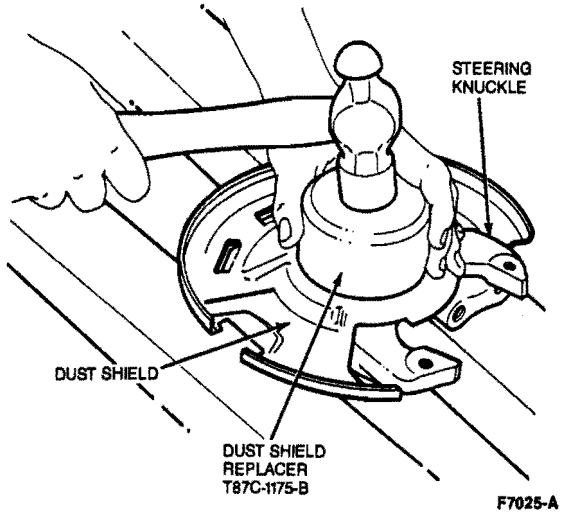
   NOTE: The seal should be discarded.
10. Remove the bearing from the steering knuckle.
11. Unless it has been damaged, the disc brake dust shield should be left on the steering knuckle.

Assembly

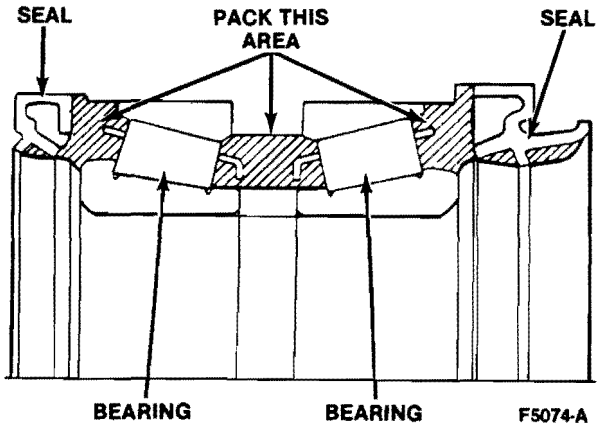
1. Inspect the hub and steering knuckle for cracks, wear, and scoring.

DISASSEMBLY AND ASSEMBLY (Continued)

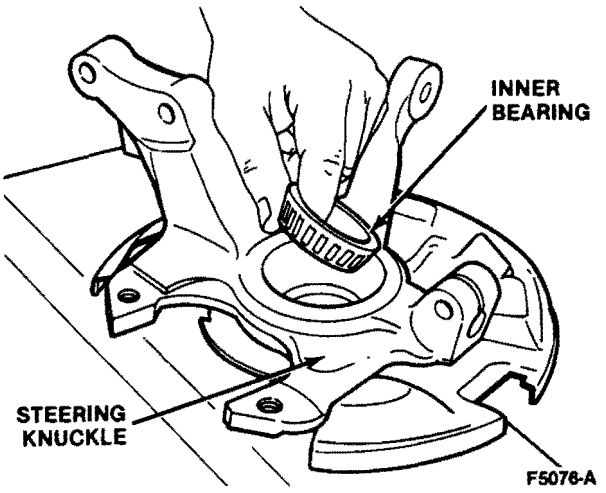
2. If removed, install the dust shield on the steering knuckle using Dust Shield Replacer T87C-1175-B or equivalent.



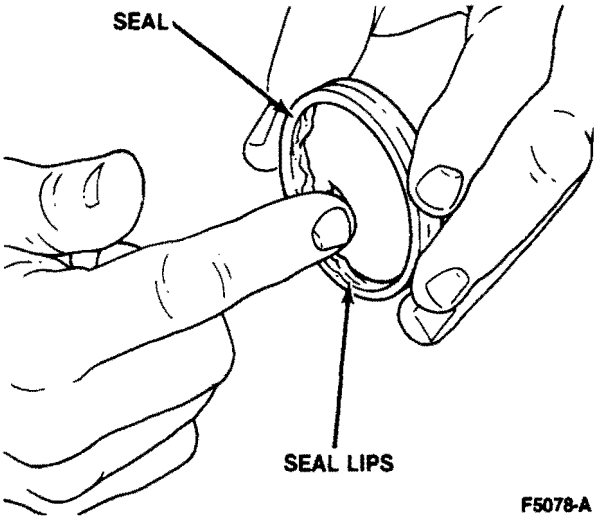
3. Pack the bearings and the hub area shown with Long Life Lubricant C1AZ-19590-BA or C, D, E or equivalent.



4. Position the inner bearing in the steering knuckle.

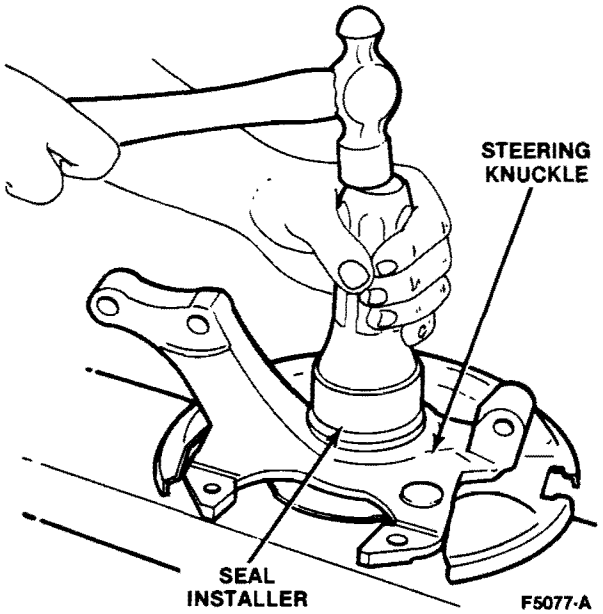


5. Lubricate the grease seal lip with Long Life Lubricant C1AZ-19590-BA or equivalent before installing the seal. Form the lubricant into a fillet along the seal lip edges.

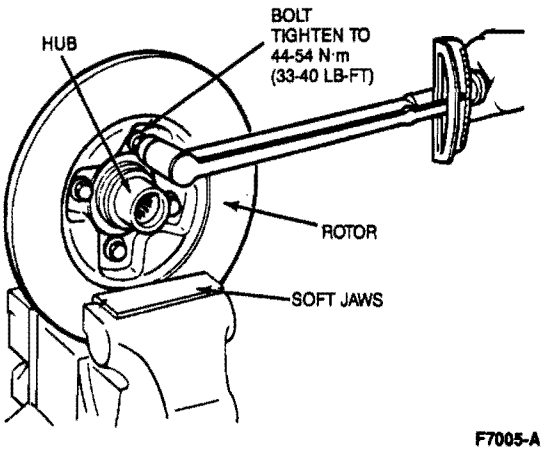


DISASSEMBLY AND ASSEMBLY (Continued)

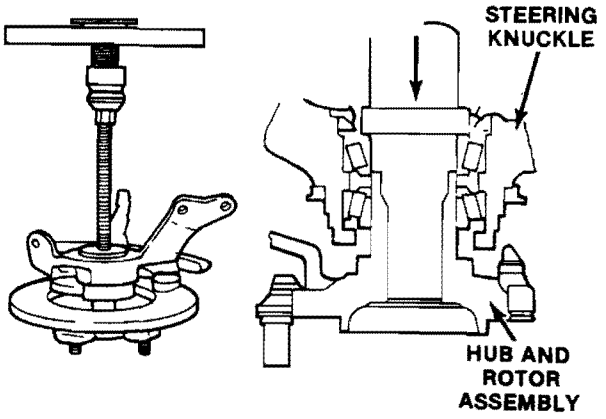
Be sure the bearing is in position and install a new inner grease seal using Seal Installer T87C-1175-A or equivalent.



6. Install the bearing preload spacer in the steering knuckle.
7. Position the bearing in the steering knuckle.
8. Lubricate the grease seal lip with Long Life Lubricant C1AZ-19590-BA or equivalent before installing the seal. Form the lubricant into a fillet along the seal lip edges.
9. Install a new outer grease seal in the steering knuckle using Seal Installer T87C-1175-A or equivalent.
10. Position the hub on the rotor and install the attaching bolts. Be sure the index marks on the hub and rotor align with each other. Tighten the attaching bolts to 44-54 N·m (33-40 lb-ft).



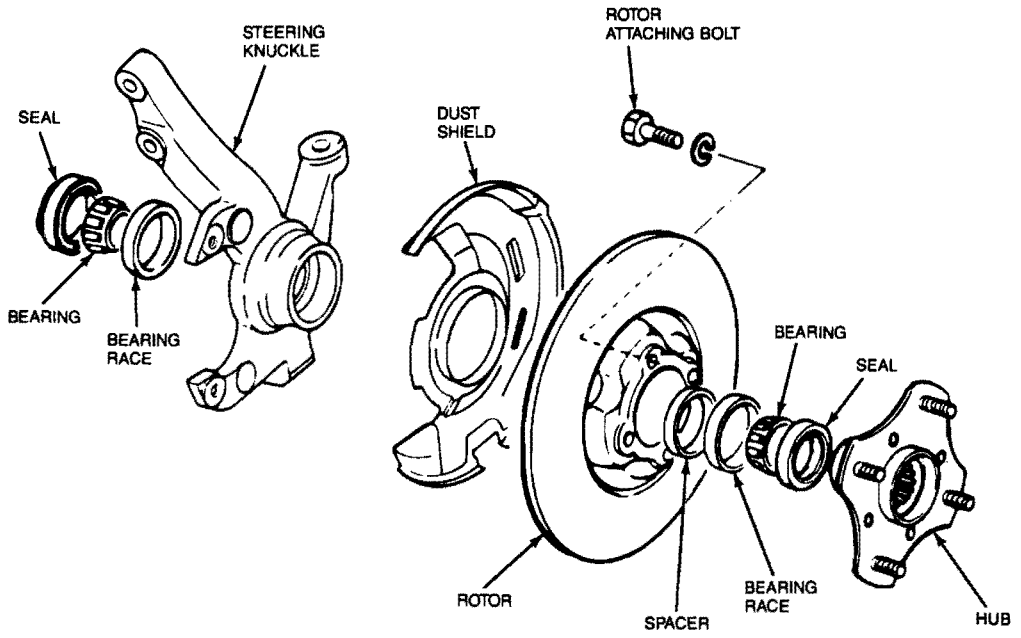
11. Install the hub and rotor assembly in the steering knuckle using a hydraulic press and suitable fixtures.



DISASSEMBLY AND ASSEMBLY (Continued)

Steering Knuckle/Bearings

Disassembly



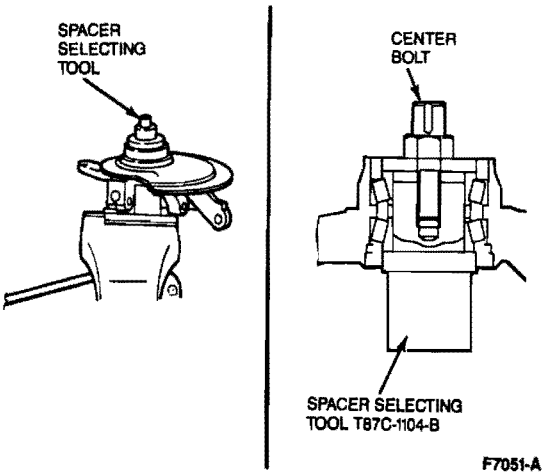
F7064-A

NOTE: If the bearings and races are to be reused they must be identified so that they can be installed in their original positions.

1. Remove the wheel hub/brake rotor assembly as outlined.
2. Remove the inner bearing from the steering knuckle.
3. Remove the bearing races from the steering knuckle using a brass drift.

Assembly

1. Install the bearing races in the steering knuckle using Bearing Cup Replacer D79P-1202-A or equivalent.
2. Install the bearing and preload spacer in the steering knuckle.
3. Install Spacer Selection Tool T87C-1104-B or equivalent in the steering knuckle and clamp the tool in a vise.



F7051-A

4. Tighten the center bolt in increments to 49, 98, 147 and 196 N·m (36, 72, 108 and 145 lb-ft). After tightening seat the bearings by rotating the steering knuckle. Verify torque of center bolt is 196 N·m (145 lb-ft).
5. Remove the tool/steering knuckle from the vise.

DISASSEMBLY AND ASSEMBLY (Continued)

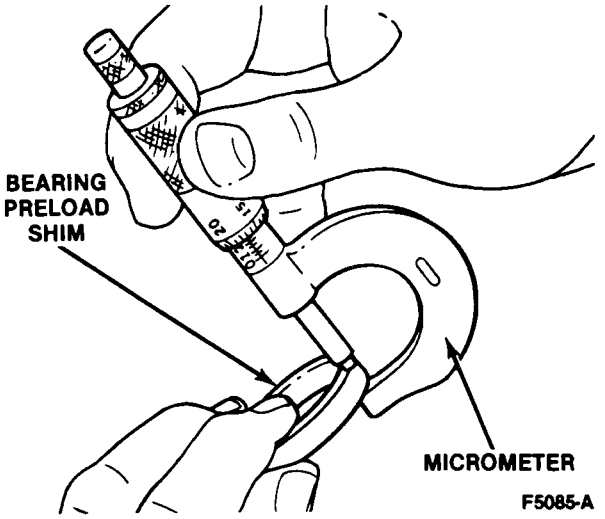
6. Mount the steering knuckle in a vise, clamping it where the shock absorber mounts.
7. Install a socket and N·m (lb-in) torque wrench on the space selector tool.
8. Measure the amount of torque required to rotate the Spacer Selection Tool T87C-1104-B or equivalent using a torque wrench. The torque wrench reading must be taken just as the tool starts to rotate.
   - If reading indicates 0.25-1.8 N·m(2.21-10.44 lb-in) the spacer is the correct thickness.
   - If reading indicates less than 0.25 N·m(2.21 lb-in) a thinner spacer must be installed.
   - If the torque wrench indicates more than 1.8 N·m(10.44 lb-in) a thicker spacer must be installed.

   Each bearing spacer has been assigned a numerical code that identifies its thickness. The code is stamped into the outer diameter of the spacer. The numbers range from 1 to 21 with 1 being the thinnest spacer.

Stamped mark	Thickness
1	6.285 mm (0.2474 in)
2	6.325 mm (0.2490 in)
3	6.365 mm (0.2506 in)
4	6.405 mm (0.2522 in)
5	6.445 mm (0.2538 in)
6	6.485 mm (0.2554 in)
7	6.525 mm (0.2570 in)
8	6.565 mm (0.2586 in)
9	6.605 mm (0.2602 in)
10	6.645 mm (0.2618 in)
11	6.685 mm (0.2634 in)
12	6.725 mm (0.2650 in)
13	6.765 mm (0.2666 in)
14	6.805 mm (0.2682 in)
15	6.845 mm (0.2698 in)
16	6.885 mm (0.2714 in)
17	6.925 mm (0.2730 in)
18	6.965 mm (0.2746 in)
19	7.005 mm (0.2762 in)
20	7.045 mm (0.2778 in)
21	7.085 mm (0.2794 in)

F5084-A

If the number is not legible, measure the spacer with a micrometer and compare it to the chart to determine which number it is.



F5085-A

Changing the spacer thickness by one number, either higher or lower, will change bearing preload by 0.2-0.4 N·m (1.7-3.5 lb-in).

EXAMPLE: Bearing preload too low—thinner spacer required.

- Measured Preload: 0.15 N·m (1.32 lb-in)
- Spacer Thickness: 11
- Required Spacer: 9

A change of two will change bearing preload by 0.4-0.8 N·m (3.4-7.0 lb-in).

2 x 0.2 to 0.4 = 0.4 to 0.8

(2 x 1.7 to 3.5 = 3.4 to 7.0)

When added to the existing preload, the measured preload will now be 0.55 to 0.95 N·m (4.72 to 8.32 lb-in).

N·m	Lb-In
0.40 0.80 +0.15 +0.15	3.40 7.00 +1.32 +1.32
= 0.55 to 0.95 N·m	= 4.72 to 8.32 Lb-In

CF7027-A

- EXAMPLE: Bearing preload too high—thicker spacer required.
- Measured Preload: 1.9 — (16.82 lb-in)
- Spacer Thickness: 7
- Required Spacer: 11

A change of four will change bearing preload by 0.8-1.6 N·m (6.8-14.0 lb-in).

4 x 0.2 to 0.4 = 0.8 to 1.6

(4 x 1.7 to 3.5 = 6.8 to 14.0 lb-in)

DISASSEMBLY AND ASSEMBLY (Continued)

When subtracted from the existing preload, the measured preload will now be 0.30-1.10 N·m (2.82-10.02 lb-in).

N·m	Lb-in
1.90 1.90 -1.60 -0.80	16.82 16.82 -14.00 -6.80
= 0.30 to 1.10 N·m	= 2.82 to 10.02 Lb-In

CF7028-A

After selecting a spacer, verify the bearing preload using Spacer Selection Tool T87C-1104-B or equivalent.

9. Install the brake rotor / wheel hub assembly as outlined.

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	N·m	Lb-Ft
Steering Knuckle to Strut Retaining Bolts	93-117	69-86
Lower Ball Joint Clamp Bolts	43-54	32-40
Brake Caliper Retaining Bolts	39-49	29-36
Halfshaft Retaining Nuts	157-235	116-174
Tie Rod to Steering Knuckle Retaining Nuts ①	29-44	22-33
Stabilizer Link Retaining Bolts ②	—	—
Hub to Rotor Retaining Bolts	44-54	33-40
Wheel Retaining Nuts	90-120	65-88

① Tighten to Torque Specification, then continue to tighten to nearest cotter pin slot.
② Tighten nut until 10.8 mm (0.43 inch) of the bolt threads extend beyond the nut.

CF6322-A

SPECIAL SERVICE TOOLS

Tool Number	Description
TOOL-4201-C	Dial Indicator
T85M-3395-A	Tie Rod End Separator
T87C-1104-B	Spacer Selection Tool
D80L-927-A	Puller
D84L-1123-A	Bearing Puller Attachment
D80L-630-3	Step Plate Adapter
T87C-1175-B	Seal Replacer
T87C-1175-B	Dust Shield Replacer
D79P-1202-A	Bearing Cup Replacer
T87C-1104-A	Knuckle Puller

SECTION 11-15 Wheel Hubs and Bearings—Rear

VEHICLE APPLICATION

Capri.

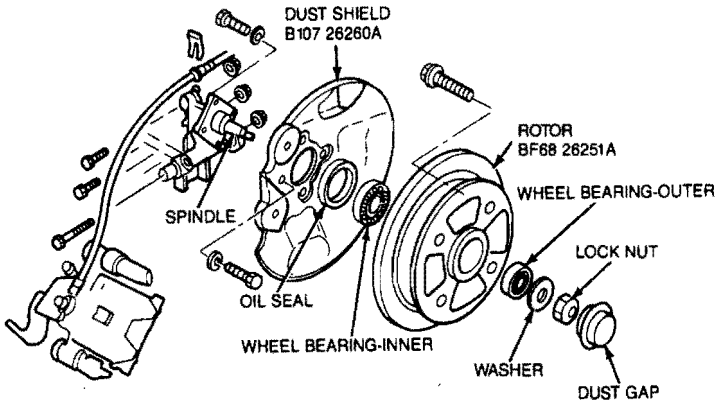
DESCRIPTION

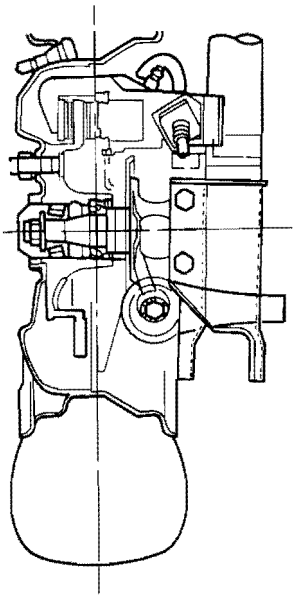
The rear wheels and brake rotors are supported on opposed tapered roller bearings. The bearing inner race rides on a spindle bolted to the rear strut and suspension control arms. The outer bearing races are press-fit into the hub. A staked nut and washer are installed to hold the bearings and hub in position on the spindle.

The attaching nut is also used to set bearing preload. If the nut is loosened to adjust preload or to remove the brake rotor it must be replaced with a new nut.

The bearings and bearing races are serviceable separate from the rotor/hub assembly. The bearing hub is available only as part of the brake rotor.

DISC BRAKE





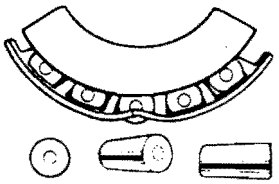
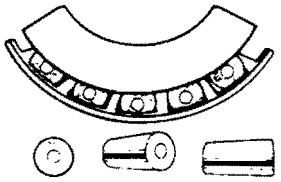
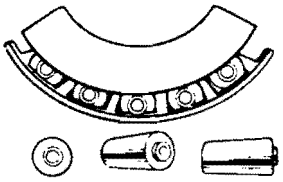
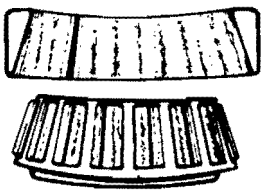
ASSEMBLED VIEW

F6312-A

INSPECTION

Bearings

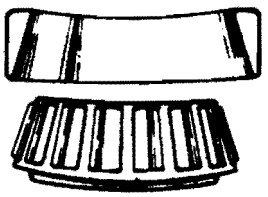
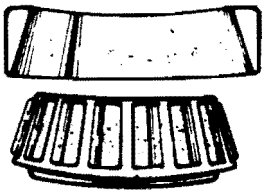
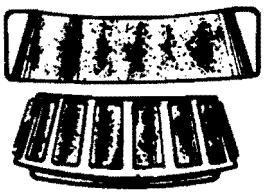
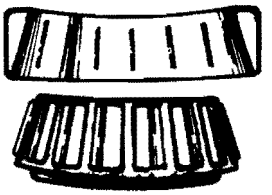
REAR WHEEL BEARINGS AND HUBS COMPONENT INSPECTION CHART —BEARINGS—

CONDITION	CAUSE	CORRECTION
BENT CAGE 	• Improper handling or tool usage	• Replace bearings
GALLING (Metal Smears on roller ends) 	• Overheating • Lubricant failure • Incorrect lubricant • Lubricant failure	• Replace bearings • Use only specified lubricant
ABRASIVE STEP WEAR 	• Fine abrasives mixed with lubricant	• Replace bearings
ETCHING (Bearing surfaces appear gray or grayish black in color. Etching of bearing material may occur between the rollers) 	• Incorrect lubricant • Lubricant failure	• Replace bearings • Use only specified lubricant

F5093-A

INSPECTION (Continued)

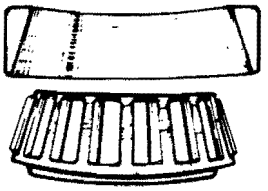
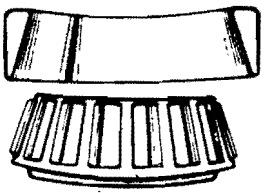
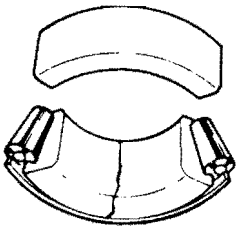
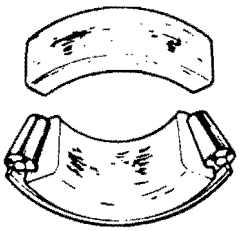
REAR WHEEL BEARINGS AND HUBS
COMPONENT INSPECTION CHART (Continued)
—BEARINGS—

CONDITIONS	CAUSE	CORRECTION
MISALIGNMENT 	• Bearing cup misaligned in spindle bore due to burr, nick or dirt on cup seat	• Replace bearings • Inspect bearing cup seats for damage or dirt
INDENTATIONS 	• Contaminated lubricant	• Replace bearings
FATIGUE SPALLING (Flaking or surface metal) 	• Excessive preload • Insufficient lubricant • Incorrect lubricant	• Replace bearings • Use only specified lubricant
BRINELLING (Surface indentations in raceway) 	• Impact loading or vibration while the bearings is not rotating • Insufficient lubricant	• Replace bearings if rough or noisy

F5091-A

INSPECTION (Continued)

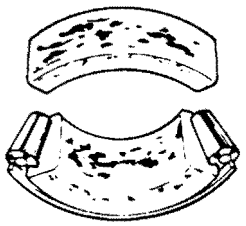
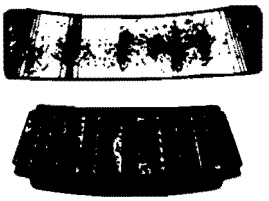
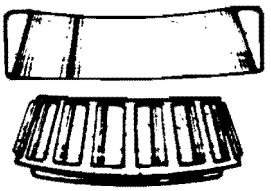
REAR WHEEL BEARINGS AND HUBS COMPONENT INSPECTION CHART (Continued) —BEARINGS—

CONDITIONS	CAUSE	CORRECTION
CAGE WEAR 	• Fine abrasives mixed with lubricant • Insufficient lubricant	• Replace bearings • Use only specified lubricant
ABRASIVE ROLLER WEAR 	• Fine abrasives mixed with lubricant	• Replace bearings if rough or noisy
CRACKED INNER RACE 	• Improper fit • Misaligned bearing cup • Metal chips	• Replace bearings • Use correct bearing • Inspect bearing cup seats for damage or dirt
SMEARS (Smearing of metal due to slippage) 	• Improper fit • Incorrect lubricant • Overheating • Excessive loading	• Replace bearings • Use correct bearings • Use only specified lubricant

F5092-A

INSPECTION (Continued)

REAR WHEEL BEARINGS AND HUBS COMPONENT INSPECTION CHART (Continued) —BEARINGS—

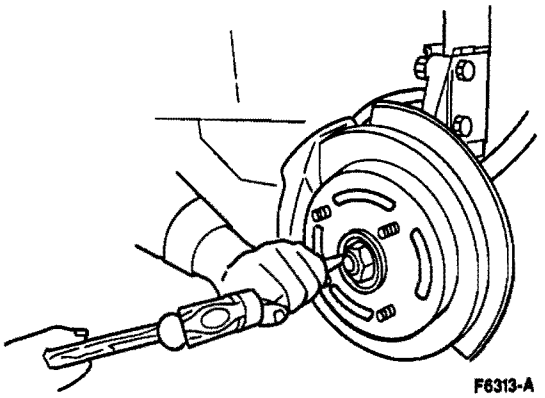
CONDITION	CAUSE	CORRECTION
FRETTAGE 	• Corrosion set up by small relative movement between bearing rollers, races and cups without adequate lubrication	• Replace bearings
HEAT DISCOLORATION (Color can range from faint yellow to dark blue) 	• Excessive loading • Incorrect lubricant • Insufficient lubricant • Improper fit • Excessive preload	• Replace bearings • Use only specified lubricant • Use correct bearings
STAIN DISCOLORATION (Color can range from light brown to black) 	• Incorrect lubricant • Moisture contamination	• Reuse bearings if stains can be removed by light polishing or if no evidence of overheating is observed • Use only specified lubricant

F5094-A

ADJUSTMENTS

Bearing Preload

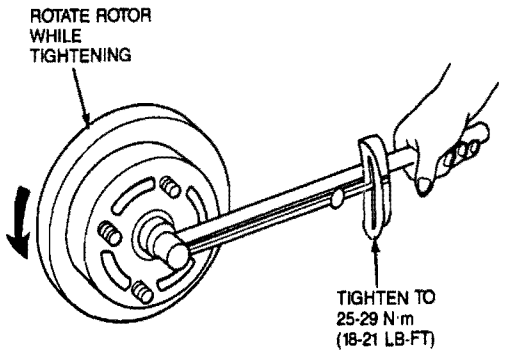
1. Make sure the parking brake is fully released.
2. Raise vehicle and install safety stands.
3. Remove wheel and tire assembly.
4. Rotate the brake rotor to make sure there is no brake drag. If the brakes drag, press on inner brake pad to push caliper piston back slightly.
5. Remove the grease cap.
6. Carefully raise the staked portion of the locknut using a small cape chisel.



F6313-A

7. Remove and discard the locknut.

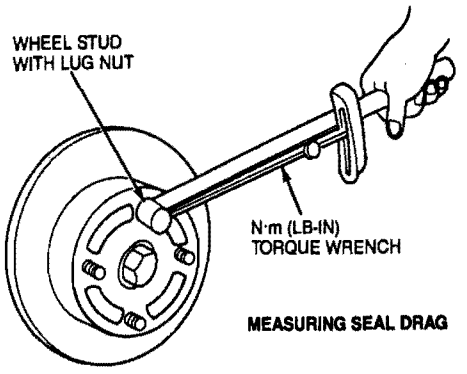
   NOTE: The locknuts are threaded left and right. The LH threaded locknut is located on the RH side of the vehicle. Turn this locknut clockwise to loosen. The RH threaded locknut is turned counterclockwise to loosen.
8. Install a new locknut.
9. Seat the bearings by tightening the locknut to 25-29 N·m (18.1-21.7 lb-ft). While tightening the locknut rotate the brake rotor.



F6314-A

10. Loosen the locknut slightly until it can be turned by hand.
11. Before bearing preload can be set, the amount of seal drag must be measured and added to the required preload.

    To measure seal drag, place a N·m (lb-in) torque wrench onto a lug nut positioned at twelve o'clock and measure the amount of force required to rotate the brake rotor.



MEASURING SEAL DRAG

F6315-A

    Pull the torque wrench and note the reading when rotation starts.
12. To determine the specified preload, add the amount of seal drag to the required preload which is 0.15 to 0.49 N·m (1.3 to 4.3 lb-in).

    For example:

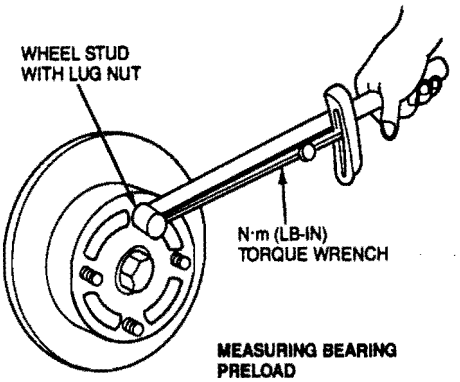
    If seal drag measures 0.25 N·m (2.2 lb-in), this amount must be added to the required preload:

    - 0.15 N·m + 0.25 N·m = 0.40 N·m Minimum
    - (1.3 lb-in + 2.2 lb-in = 3.5 lb-in Minimum)
    - 0.49 N·m + 0.25 N·m = 0.74 N·m Maximum
    - (4.3 lb-in + 2.2 lb-in = 6.5 lb-in Maximum)

    In the above example, when the seal drag is added the specified amount of preload becomes 0.40 to 0.74 N·m(3.5 to 6.5 lb-in).
13. Tighten the wheel bearing locknut a slight amount.
14. Place the N·m (lb-in) torque wrench onto a lug nut positioned at twelve o'clock and measure the amount of pull required to rotate the brake rotor.

ADJUSTMENTS (Continued)

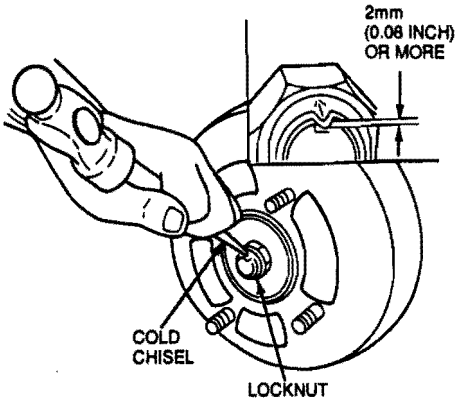
Continue tightening the attaching nut until the specified amount of preload is measured with the torque wrench.



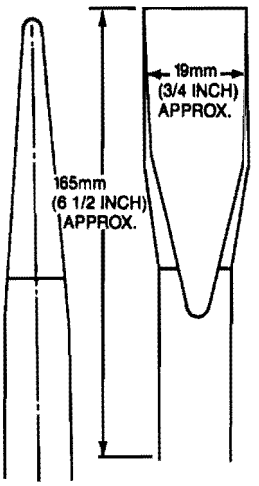
MEASURING BEARING PRELOAD

F6316-A

15. Stake new locknut using a cold chisel with the cutting edge rounded as shown.



NOTE: INSTALL A NEW LOCKNUT



THE STAKING TOOL CAN BE FABRICATED FROM AN EXISTING HARDENED CHISEL. THE CORRECT RADIUS ON THE CHISEL TIP WILL PREVENT IMPROPER STAKING. DO NOT ATTEMPT TO STAKE WITH A SHARP EDGED TOOL.

F6317-A

CAUTION: If the nut splits or cracks after staking, it must be replaced with a new nut.

16. Install the grease cap.
17. Install the wheel and tire assembly.
18. Remove safety stands and lower vehicle.
19. Tighten the lug nuts to 90-120 N·m (67-88 lb-ft).

REMOVAL AND INSTALLATION

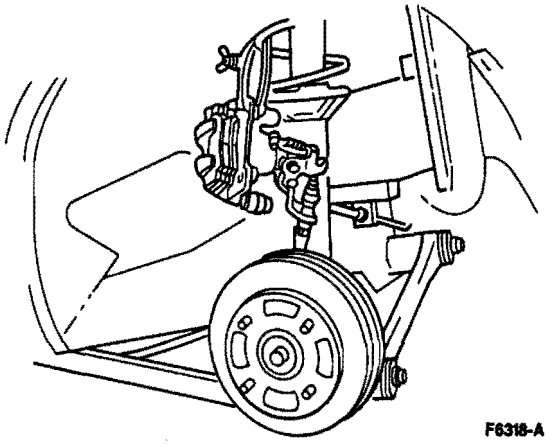
Brake Rotor/Bearing Hub Assembly

Removal

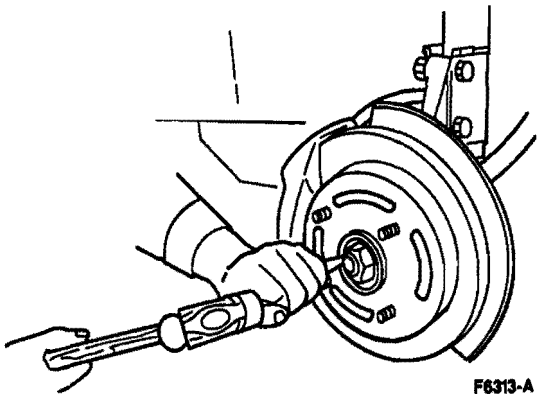
1. Make sure parking brake is fully released.
2. Raise vehicle and install safety stands.
3. Remove the wheel and tire assembly.
4. Remove two guide pin bolts from caliper and lift caliper clear of disc with inner cable and flexible hose attached. Tie caliper to strut spring.

REMOVAL AND INSTALLATION (Continued)

5. Remove the grease cap.


F6318-A

6. Carefully raise the staked portion of the locknut using a small cape chisel.


F6313-A

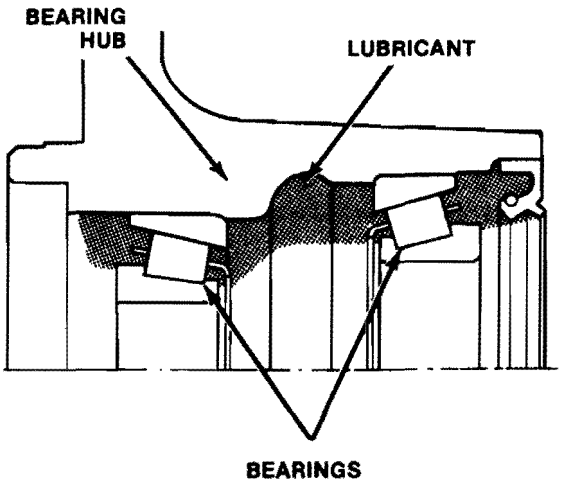
7. Remove and discard the locknut.

   NOTE: The locknuts are threaded left and right. The LH threaded locknut is located on the RH side of the vehicle. Turn this locknut clockwise to loosen. The RH threaded locknut is turned counterclockwise to loosen.

8. Remove washer and outer bearing from the bearing hub.
9. Remove the brake rotor / bearing hub assembly.

Installation

1. Make sure the bearings and hub area contain adequate lubricant. If necessary, add Long Life Lubricant C1AZ-19590-BA or equivalent.



F4813-A

2. Position the brake rotor / bearing hub assembly on the spindle.

   CAUTION: Keep the hub centered on the spindle to prevent damage to the grease seal and spindle threads.

3. Install the outer bearing, washer and a new locknut.
4. Adjust the bearing preload as outlined.
5. Install the grease cap.
6. Install the wheel and tire assembly.
7. Remove safety stands and lower vehicle.
8. Tighten lug nuts to 90-120 N·m (67-88 lb-ft)

Grease Seal / Bearings

Removal

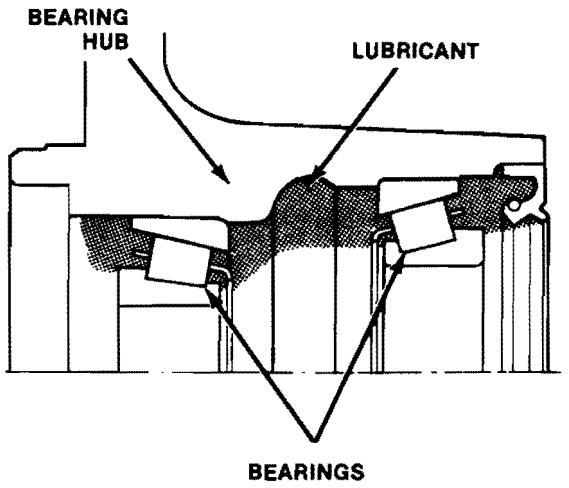
1. Remove the brake rotor / bearing hub assembly as outlined.
2. Remove the bearing grease seal using a large screwdriver. Discard the seal.
3. Remove the inner bearing from the bearing hub.

   NOTE: If the bearings are to be re-used, they should be tagged so that they can be installed in their original positions.

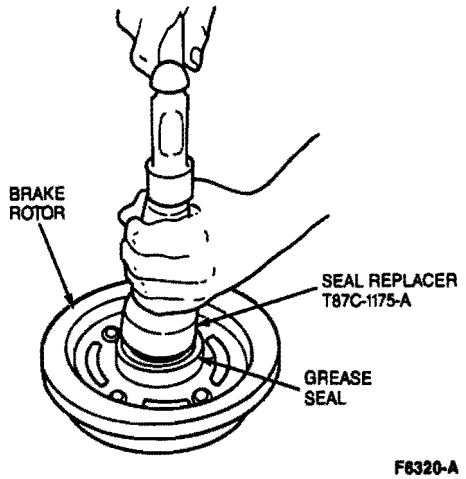
REMOVAL AND INSTALLATION (Continued)

Installation

1. Pack the bearings and the hub area shown in the illustration with Long Life Lubricant C1AZ-19590-BA or equivalent.



2. Position the inner bearing in the bearing hub.
3. Lubricate the grease seal lip with Long Life Lubricant C1AZ-19590-BA or equivalent. Form the lubricant into a fillet along the seal lip edges.
4. Install a new grease seal using Seal Replacer T87C-1175-A or equivalent.

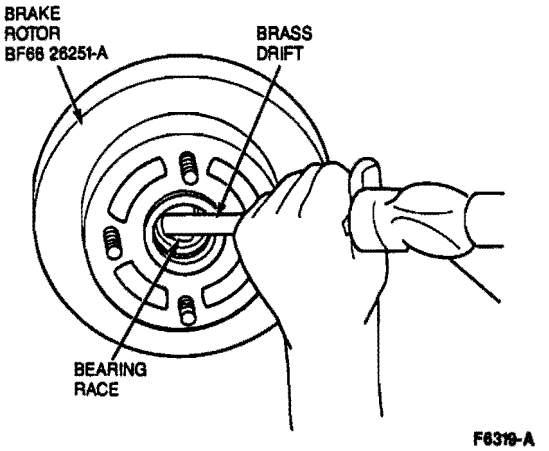


5. Install the rotor / bearing hub assembly as outlined.

Bearing Races

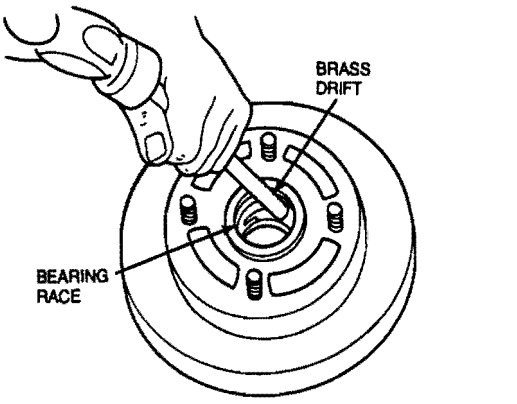
Removal

1. Remove the brake rotor / bearing hub assembly, grease seal and bearings as outlined.
2. Remove the inner and outer bearing races using a brass drift.



Installation

1. Install the inner and outer bearing races using a brass drift.



2. Install the inner bearing. Install grease seal using Seal Replacer T87C-1175-A or equivalent.
3. Install brake rotor / bearing hub assembly as outlined.

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	Nem	Lb-Ft
Wheel Bearing Locknut	25-29	18-21
Wheel Lug Nuts	90-120	67-88

SPECIAL SERVICE TOOLS

Tool Number	Description
T87C-1175-A	Seal Replacer

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