

SECTION 3C2

FRONT SUSPENSION

NOTICE: All front suspension fasteners are important attaching parts in that they could affect the performance of vital components and systems, and/or could result in major repair expense. They must be replaced with one of the same part number or with an equivalent part if replacement becomes necessary. Do not use a replacement part of lesser quality or substitute design. Torque values must be used as specified during reassembly to assure proper retention of these parts. For prevailing torque nut(s) and bolt(s), refer to the "Reuse of Prevailing Torque Nut(s) and Bolt(s)" chart in Section 10.

B-G SERIES

CONTENTS

Ball Joint Checking	3C2-6	Remove and Install Hub and Bearing Assembly, Knuckle and Knuckle Seal	3C2-3
Ball Joint - Lower	3C2-6	Remove and Install Lower Ball Joint on Car	3C2-6
Ball Joint - Upper	3C2-6	Remove and Install Lower Control Arm	3C2-12
Bearing and Seals	3C2-3	Remove and Install Lower Control Arm Bushing on Car	3C2-12
Caliper	3C2-3	Remove and Install One or Both	
Coil Springs	3C2-10	Remove and Install Shock Absorber	3C2-5
Description	3C2-1	Remove and Install Stabilizer Shaft	3C2-5
Hub Assembly	3C2-3	Remove and Install Upper Ball Joint on Car	3C2-6
Hub Bolt	3C2-4	Remove and Install Upper Control Arm and/or Bushing	3C2-10
Lower Control Arm	3C2-12	Remove and Install Wheel Stud	3C2-4
Lower Control Arm Bushing	3C2-12	Upper Control Arm	3C2-10
Shock Absorber	3C2-5	Upper Control Arm Pivot Shaft Bushing Service	3C2-11
Specifications	3C2-15	Wheel Bearings	3C2-1
Stabilizer Shaft	3C2-5		
Steering Knuckle	3C2-8		
Tools	3C2-14		
Checking Ball Joint	3C2-6		
Description	3C2-1		
Remove and Install Disc	3C2-15		

GENERAL DESCRIPTION

The front suspension is designed to allow each wheel to compensate for changes in the road surface level without appreciably affecting the opposite wheel. Each wheel is independently connected to the frame by a steering knuckle, ball joint assemblies, and upper and lower control arms. The control arms are specifically designed and positioned to allow the steering knuckles to move in a prescribed three dimensional arc. The front wheels are held in proper relationship to each other by two tie rods which are connected to steering arms on the knuckles and to an intermediate rod.

Coil chassis springs are mounted between the spring housings on the frame and the lower control arms. Ride control is provided by double, direct acting shock absorbers mounted inside the coil springs and attached to the lower control arms by bolts and nuts. The upper portion of each shock absorber extends through the spring housing and is secured to the frame with two grommets, two grommet retainers, and a nut.

Side roll of the front suspension is controlled by a spring steel stabilizer shaft. It is mounted in rubber bushings which are held to the frame side rails by brackets. The ends of the stabilizer are connected to the lower control arms. Rubber grommets at these connections provide flexibility and ride features.

The upper control arm is attached to a cross shaft through isolating rubber bushings. The cross shaft, in turn, is bolted to frame brackets.

A ball joint assembly is riveted to the outer end of the upper arm. It is pre-loaded by a rubber spring to insure proper seating of the ball in the socket. The upper ball joint is attached to the steering knuckle by a castellated nut and cotter pin.

The inner ends of the lower control arm have pressed-in bushings. Bolts, passing through the bushings, attach the arm to the frame. The lower ball joint assembly is press fit in the arm and attaches to the steering knuckle with a castellated nut and cotter pin.

Rubber grease seals are provided at ball socket assemblies to keep dirt and moisture from entering the joint and damaging bearing surfaces.

ON-CAR SERVICE

WHEEL BEARINGS

The proper function of the front suspension cannot be maintained unless the front wheel **TAPERED ROLLER BEARINGS** are correctly adjusted. Cones must be slip fit on the spindle and the inside diameter of cones should be lubricated to insure that the cones will creep. Spindle nut must have a free-running fit on threads.

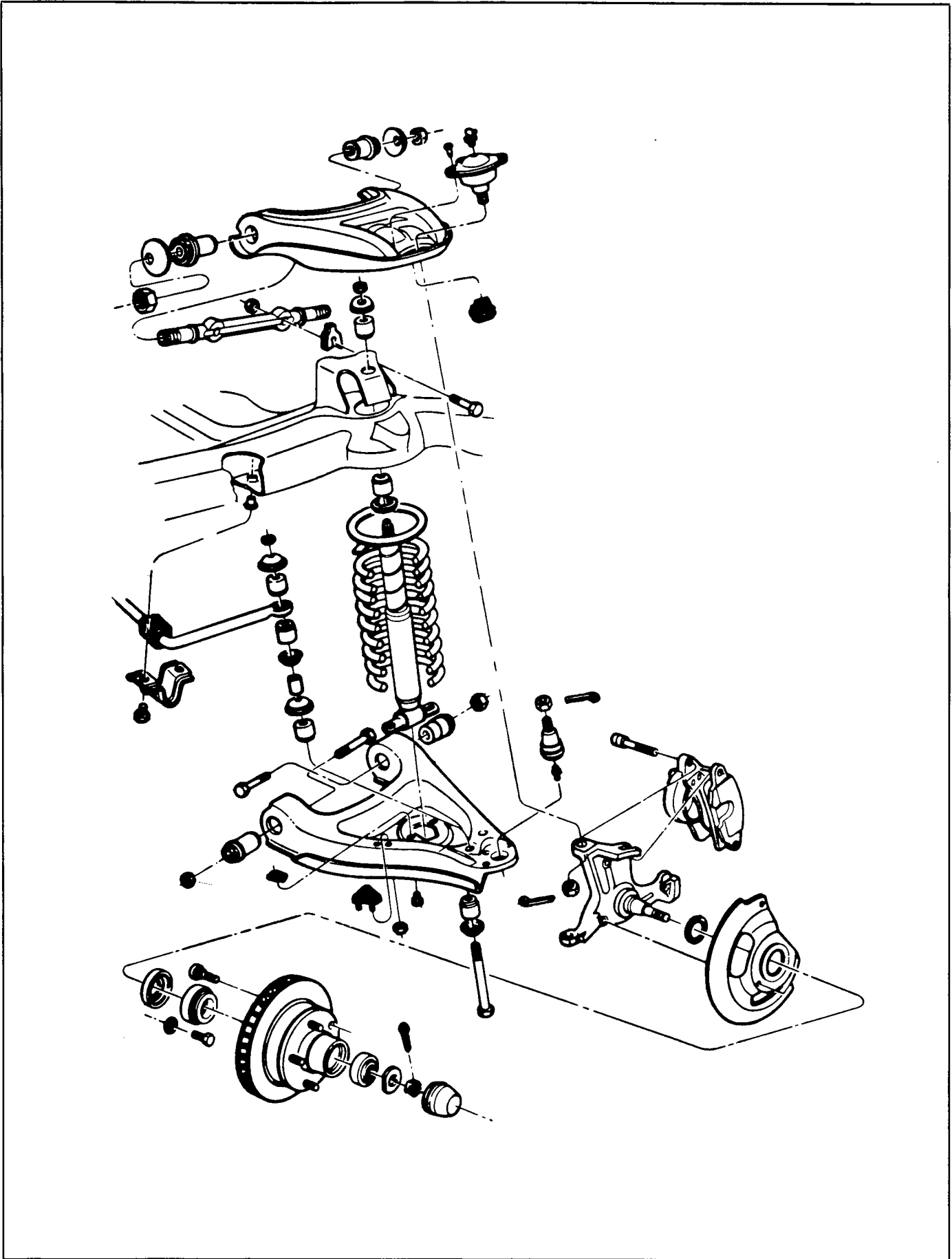


Figure 1 Front Suspension

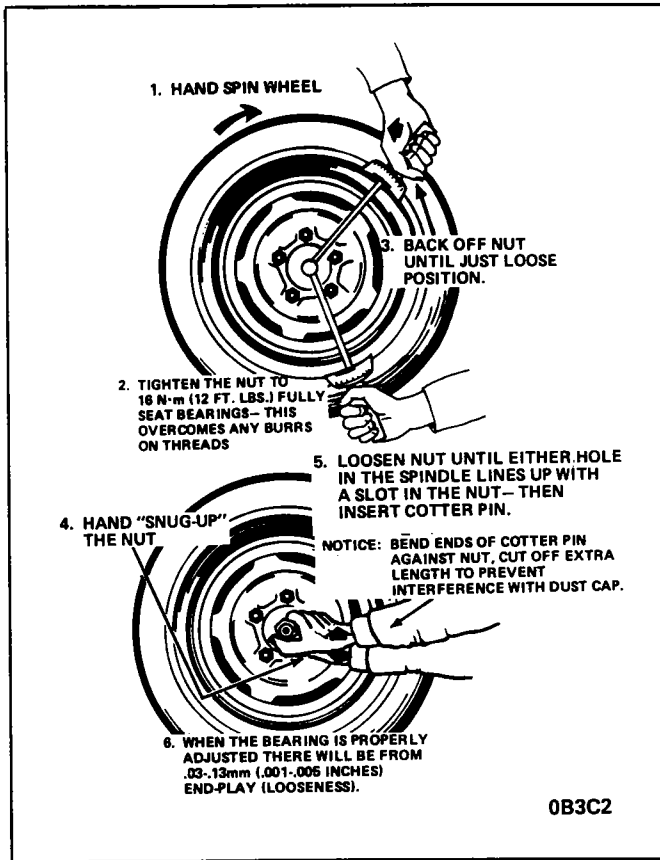


Figure 2 Wheel Bearing Adjustment

ADJUSTMENT

See Figure 2

See NOTICE on Page 3C2-1 of this section.

1. Remove dust cap from hub.
2. Remove cotter pin from spindle and spindle nut.
3. Tighten the spindle nut to 16 N·m (12 ft. lbs.) while turning the wheel assembly forward by hand to fully seat the bearings. This will remove any grease or burrs which could cause excessive wheel bearing play.
4. Back off the nut to the "just loose" position.
5. Hand tighten the spindle nut. Loosen spindle nut until either hole in the spindle lines up with a slot in the nut (not more than 1/2 flat).
6. Install new cotter pin. Bend the ends of the cotter pin against nut. Cut off extra length to ensure ends will not interfere with the dust cap.
7. Measure the looseness in the hub assembly. There will be from .03 to .13mm (.001 to .005 inches) end play when properly adjusted.
8. Install dust cap on hub.

CALIPER

Removal

See Figure 3

1. Hoist car and remove wheel.
2. Using a screwdriver or suitable bar, pry with a steady pressure against the back of the caliper to push the piston into its bore. Use caution not to pinch any lines, fittings, or the bleeder valve. Only a slight amount of movement will be noticed. Rotate the disc as you work until you can feel that all drag has been removed.
3. Remove the two caliper to adapter attaching bolts.

4. Carefully lift caliper assembly from disc and support so that brake hose is not kinked or stretched.

NOTICE: Brake hose is still connected to caliper assembly; therefore, caliper assembly must be moved out of way and supported so brake hose will not be damaged.

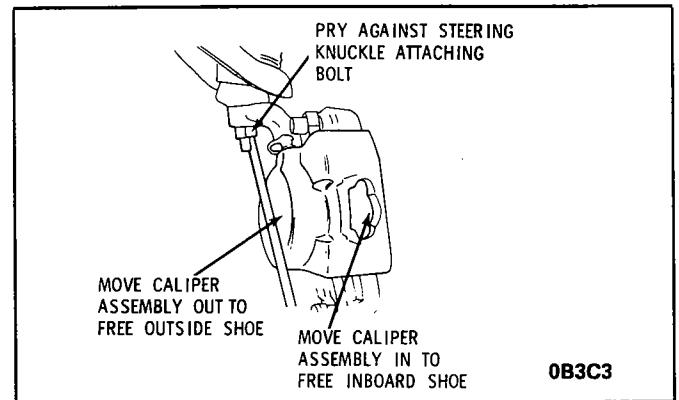


Figure 3 Compressing Caliper With Pry Bar

Installation

See NOTICE on Page 3C2-1 of this section.

1. Position caliper over disc and install caliper attaching bolts. Torque to 48 N·m (35 ft. lbs.).
2. Install wheel.
3. Lower car to floor.
4. Check master cylinder reservoirs and fill with new brake fluid (Delco Supreme II fluid, DOT-3 fluid or equivalent).
5. Recheck brake action.

HUB ASSEMBLY

Removal (Wheel Removed)

1. Refer to CALIPER-Removal.
2. Remove dust cap from hub, using Tool BT-6507.
3. Remove cotter pin, nut and washer from spindle.
4. Carefully pull hub assembly from spindle.

BEARING AND SEAL

Removal

See Figures 5 & 6

1. Refer to CALIPER - Removal.
2. Remove hub and outer roller bearing assembly.
3. Pry seal from hub, then remove inner roller bearing assembly.
4. If necessary, remove outer race.
5. If necessary to remove inner race, insert a brass drift into hub, indexing end of drift with notches in hub and tap with a hammer.

Cleaning Inspection

For inspection of disc, refer to BRAKES, Section 5.

1. Wash all parts in clean solvent and air dry.
2. Check bearings for cracked cage and worn or pitted rollers.
3. Check bearing races for cracks, scores or a brinelled condition.

Refer to TAPERED ROLLER BEARING DIAGNOSIS.

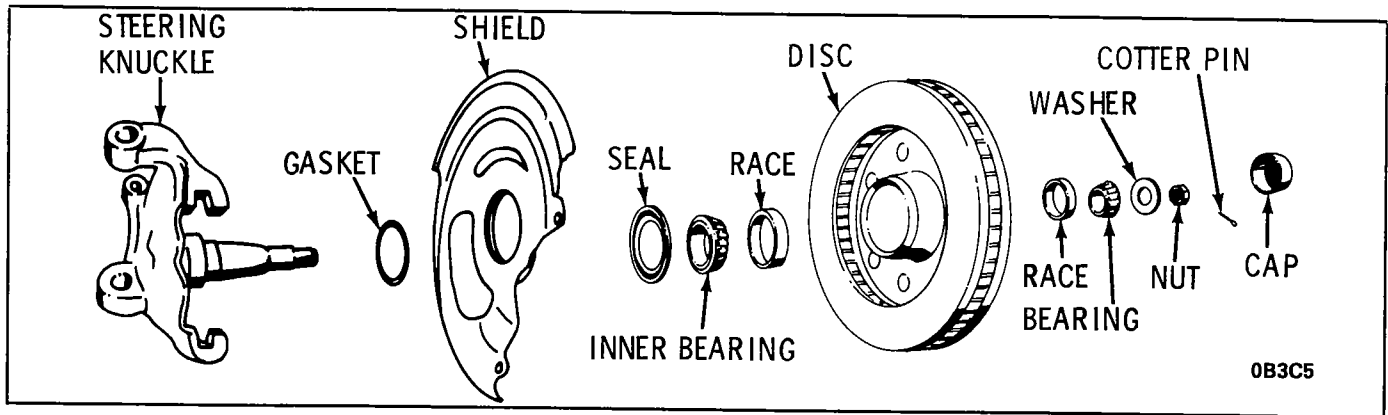


Figure 4 Knuckle and Hub Assembly

Installation

See NOTICE on Page 3C2-1 of this section.

1. If the outer races were removed, drive or press the races into the hub.

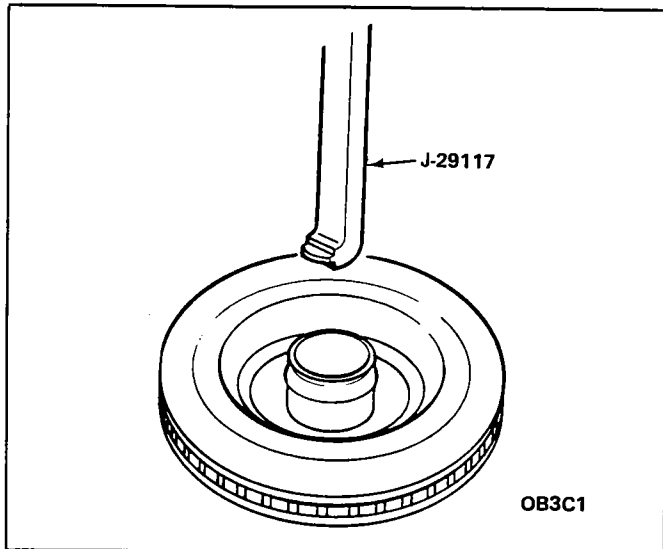


Figure 5 Replacing Front Wheel Bearing Outer Race

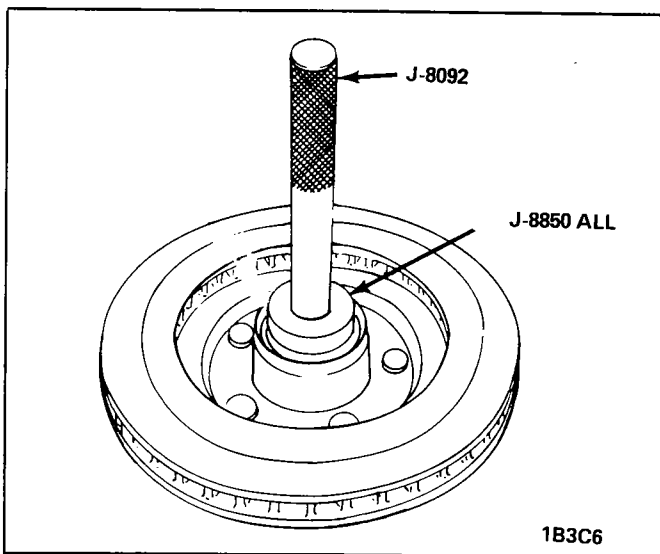


Figure 6 Installing Inner Bearing Race

2. Clean off any grease in the hub and spindle and thoroughly clean out any grease in the bearings. Use clean solvent. Use of a small brush with no loose

bristles will be helpful to clean out all old grease. Do not spin the bearing with compressed air while drying it or the bearing may be damaged.

3. Use an approved high temperature front wheel bearing grease. Do not mix greases as mixing may change the grease properties and result in poor performance.
4. Apply a thin film of grease to the spindle at the outer bearing seat and at the inner bearing seat, shoulder, and seal seat.
5. Put a small quantity of grease inboard of each bearing cup in the hub. This can be applied with your finger, forming a dam to provide extra grease availability to the bearing and to keep thinned grease from flowing out of the bearing.
6. Fill the bearing cone and roller assemblies full of grease. A preferred method for doing this is with a cone type grease machine that forces grease into the bearing. If a cone greaser is not available, the bearings can be packed by hand. If hand packing is used, it is extremely important to work the grease thoroughly into the bearings between the rollers, cone and the cage. Failure to do this could result in premature bearing failure.
7. Place the inner bearing cone and roller assembly in the hub. Then using your finger, put an additional quantity of grease outboard of the bearing.
8. Install a new grease seal using a flat plate until the seal is flush with the hub. Lubricate the seal lip with a thin layer of grease.
9. Carefully install the hub and rotor assembly. Place the outer bearing cone and roller assembly in the outer bearing cup. Install the washer and nut and initially tighten the nut to 16 N·m (12 ft. lbs.) while turning the wheel assembly forward by hand. Put an additional quantity of grease outboard the bearing. This provides extra grease availability to the bearing.
10. Final wheel bearing adjustment should be performed. Refer to Wheel Bearing Adjustment.

Replacement of Wheel Hub Bolts

It may be necessary to replace damaged wheel hub bolts. In this case, service the hub in the following manner. See NOTICE on page 3C2-1 of this section.

1. Remove the hub or hub-and-disc from the car.
2. Remove the hub or disc bolt with a press. Do not damage wheel mounting surface on hub flange.
3. Install new serrated bolt into hole in hub. Tap lightly with a hammer to start bolt serrations in hole, making sure that bolt is square with hub flange. The brake disc must be supported before pressing the wheel stud in or out.

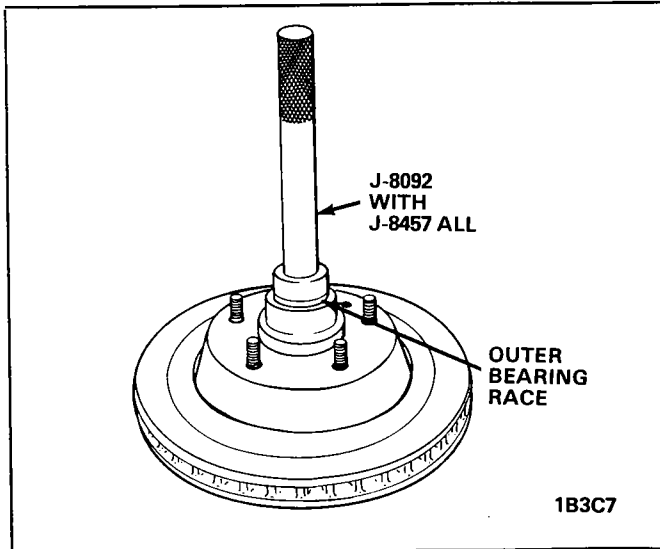


Figure 7 Installing Outer Bearing Race

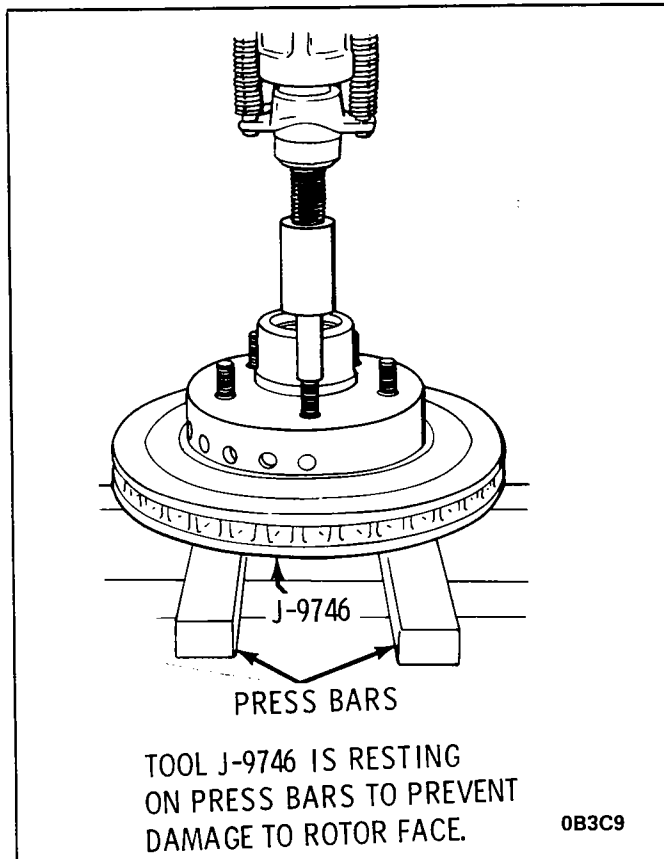


Figure 8 Pressing Hub Bolt Out

SHOCK ABSORBERS

Removal

See Figure 9

1. Raise car on hoist, and with an open end wrench hold the shock absorber upper stem from turning, and then remove the upper stem retaining nut, retainer and rubber grommet.
2. Remove the two bolts retaining the lower shock absorber pivot to the lower control arm and pull the shock absorber assembly out from the bottom.

Installation

1. With the lower retainer and rubber grommet in place over the upper stem, install the shock absorber (fully extended) up through the lower control arm and spring so that the upper stem passes through the mounting hole in the upper control arm frame bracket.
2. Install the upper rubber grommet, retainer and attaching nut over the shock absorber upper stem.
3. With an open end wrench, hold the upper stem from turning and tighten the retaining nut.
4. Install the retainers attaching the shock absorber lower pivot to the lower control arm, torque and lower car to floor.

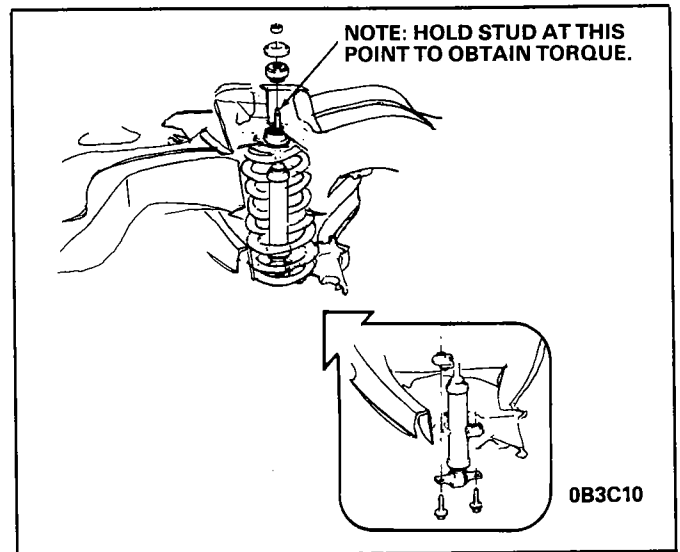


Figure 9 Shock Absorber Attachments

STABILIZER SHAFT

See Figure 10

See NOTICE on Page 3C2-1 of this section.

Removal

1. Hoist car.
2. Disconnect each side of stabilizer linkage by removing nut from link bolt. Pull bolt from linkage and remove retainers, grommets and spacer.
3. Remove bracket to frame or body bolts and remove stabilizer shaft, rubber bushings and brackets. "G" Series models require Tool J-25359-20 to remove stabilizer shaft bolt.

Installation

To replace, reverse sequence of operations, being sure to install with the identification forming on the right side of the car. The rubber bushings should be positioned squarely in the brackets with the slit in the bushings facing the front of car. Torque stabilizer link nut to 18 N·m (13 ft. lbs.) and bracket bolts to 33 N·m (25 ft. lbs.).

BALL JOINTS

See Figures 11 & 12

Lubrication

For ball joint seal inspection and lubrication interval, refer to MAINTENANCE SCHEDULE, Section 0A.

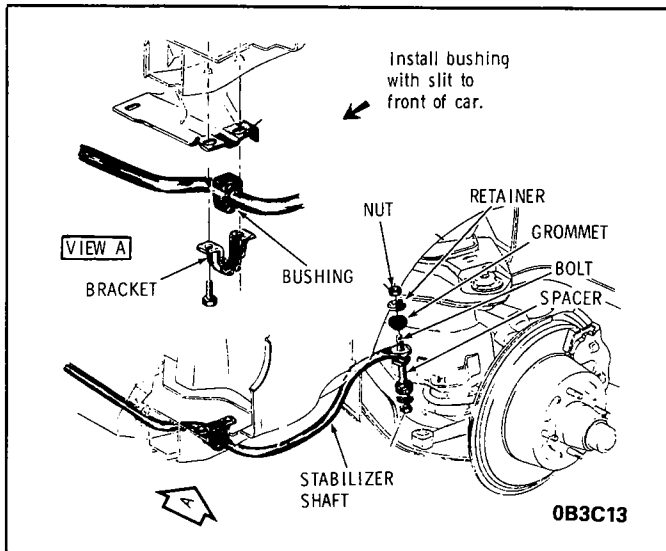


Figure 10 Stabilizer Shaft

Checking

Before checking ball joints, the wheel bearings must first be properly adjusted.

Upper Ball Joint

1. Raise the car and position floor stands under the left and right lower control arm as near as possible to each lower ball joint. Car must be stable and should not rock on the floor stands.
Upper control arm bumper must not contact frame.
2. Position dial indicator against the wheel rim.
3. Grasp front wheel and push in on bottom of tire while pulling out at the top. Read gauge, then reverse the push-pull procedure. Horizontal deflection on dial indicator should not exceed 3.18 mm (.125 in.).
4. If dial indicator reading exceeds 3.18 mm (.125 in.), or if ball stud has been disconnected from knuckle assembly and any looseness is detected, replace ball joint.

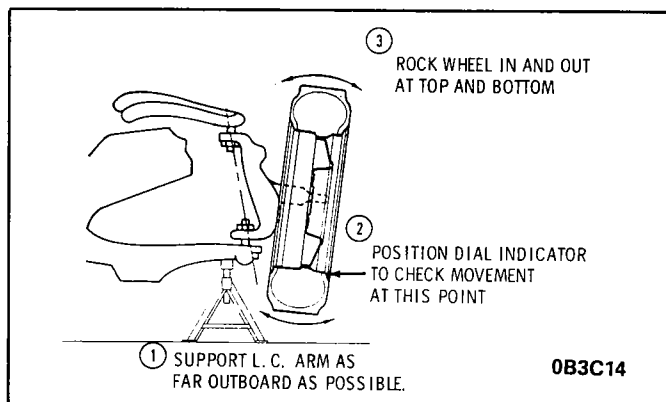


Figure 11 Checking Upper Ball Joint

Lower Ball Joint

The lower ball joint has a VISUAL WEAR INDICATOR. Checking the condition of the ball joint is a simple procedure but must be followed accurately to prevent unnecessary ball joint replacement.

Inspection

Car must be supported by the wheels so weight of car will properly load the ball joints.

The lower ball joint is inspected for wear by visual observation alone. Wear is indicated by the protrusion of the 12.7 mm (1/2 in.) diameter nipple into which the grease fitting is threaded. This round nipple projects 1.27 mm (.050 in.) beyond the surface of the ball joint cover on a new, unworn joint. Normal wear will result in the surface of this nipple retreating very slowly inward.

To inspect for wear, wipe the grease fitting and nipple free of dirt and grease. Observe surface across the cover. If the round nipple is flush or inside the cover surface, replace the ball joint.

Inspect the tapered hole in the steering knuckle. Remove any dirt and if any out-of-roundness, deformation, or damage is noted, the knuckle MUST be replaced.

Removal-Lower

See Figure 13, 14, 15 & 16

1. Raise car, support with floor stands under frame.
2. Remove tire and wheel assembly.
3. Place floor jack under control arm spring seat.
Floor jack must remain under control arm spring seat during removal and installation to retain spring and control arm in position.
4. To disconnect the lower control arm ball joint from the steering knuckle:
 - a. Remove the cotter pin from ball joint stud. Loosen stud nut 2 or 3 turns. Tool J-8806 or J-23742 can be used to break the ball joint loose from knuckle.
5. After stud breaks loose, remove stud nut.
6. Guide lower control arm out of opening in splash shield with a putty knife or similar tool.
7. Block knuckle assembly out of the way by placing a wooden block between frame and upper control arm.
8. Remove ball joint seal by prying off retainer with a screwdriver or driving off with a chisel.
9. Remove grease fittings and install tool and remove lower ball joint from lower control arm.

Installation-Lower

See NOTICE on Page 3C2-1 of this section.

1. Position ball joint into lower control arm and press in until it bottoms on the control arm, using tools. Grease purge on seal must be located facing inboard.
2. Install ball joint stud into steering knuckle using Tool J-29194 and torque to 55 N·m (40 ft. lbs.). Remove tool and install nut and torque to 110 N·m (81 ft. lbs.), and install cotter pin. Bend cotter pin to side of nut not over top.
3. Install and lubricate ball joint fitting until grease appears at the seal.
4. Install tire and wheel assembly.

BALL JOINT

NOTICE: Inspect the tapered hole in the steering knuckle. Remove any dirt and if any out-of-roundness, deformation, or damage is noted, the knuckle MUST be replaced.

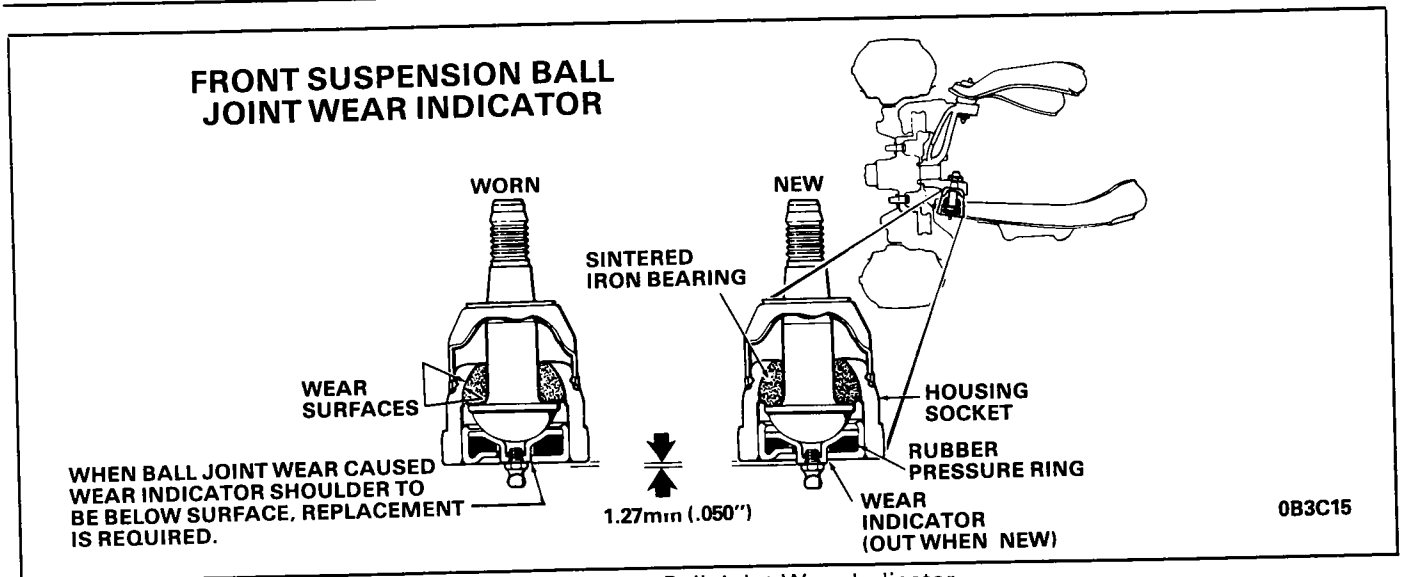


Figure 12 Lower Ball Joint Wear Indicator

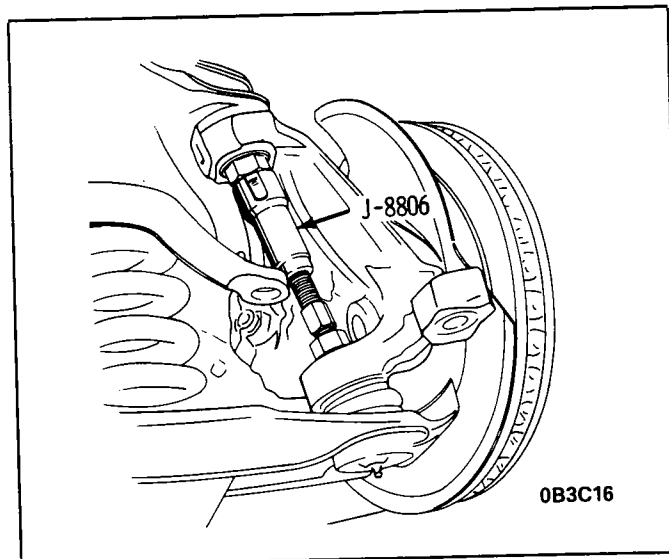


Figure 13 Disconnecting Lower Ball Joint

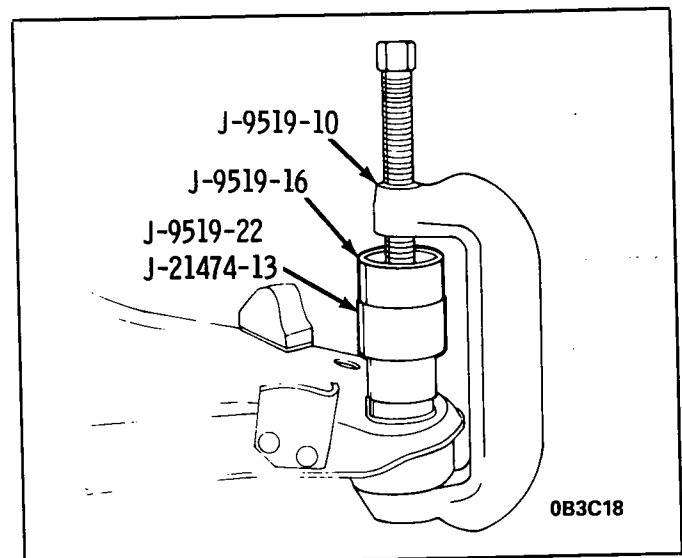


Figure 15 Removing Lower Ball Joint

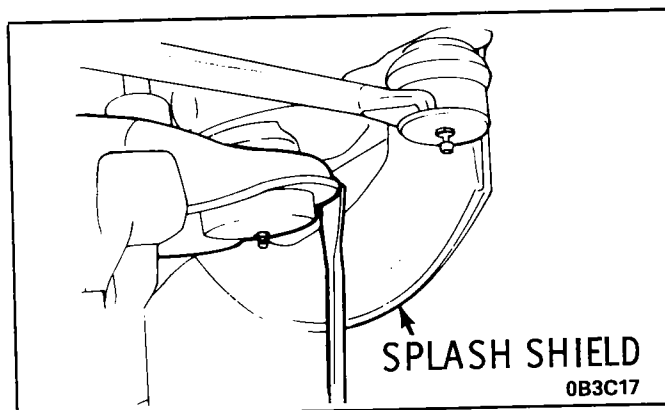


Figure 14 Guiding Lower Control Arm Past Shield

Removal-Upper

See Figures 17 thru 21

1. Raise front of car and support lower control arm with floor stands.

Floor jack or stand must remain under control arm spring seat during removal and installation to retain spring and control arm in position.

Since the weight of the car is used to relieve spring tension on the upper control arm, the floor stands must be positioned between the spring seats and ball joints of the lower control arms for maximum leverage.

2. Remove wheel, then loosen the upper ball joint from the steering knuckle as follows:
 - a. Remove the cotter pin from the upper ball joint stud and clean threads of stud.
 - b. Loosen the upper ball joint nut and install Tool J-8806 or J-23742.

It may be necessary to remove cotter pin in lower ball joint so tool can be positioned correctly.
 - c. Remove tool and upper ball joint nut, then pull stud free from knuckle. Support the knuckle assembly to prevent weight of the assembly from damaging the brake hose.
3. With control arm in the raised position, drill four rivets 1/4 in. deep using a 1/8 in. diameter drill.

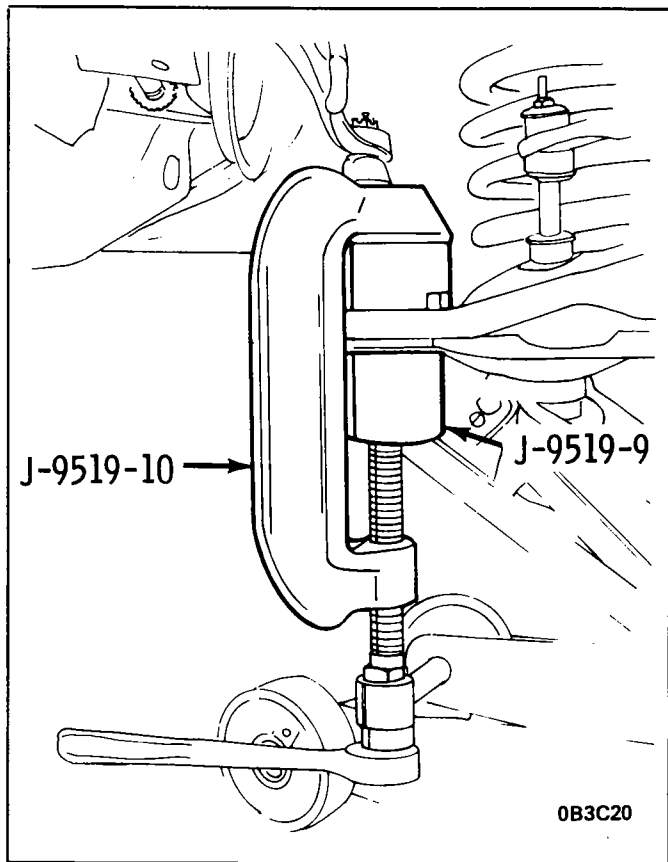


Figure 16 Installing Lower Ball Joint

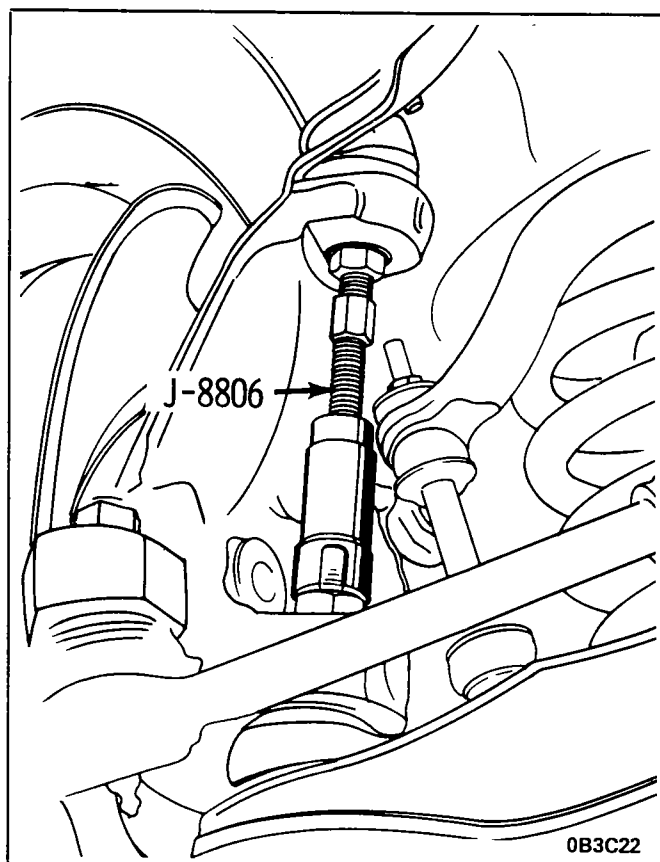


Figure 17 Disconnecting Upper Ball Joint

4. Drill off rivet heads using a 1/2 in. diameter drill.
5. Punch out rivets using a small punch, and remove ball joint.

Installation-Upper

See NOTICE on Page 3C2-1 of this section.

1. Position new ball joint in control arm and install the four attaching bolts. Torque nuts to 11 N·m (8 ft. lbs.).
2. Remove the temporary support from knuckle assembly, then connect ball joint to steering knuckle. On "B-G" Series, install ball joint to steering knuckle using Tool J-29193 and torque to 40 N·m (30 ft. lbs.). Remove Tool and install nut and torque to 90 N·m (65 ft. lbs.). Then install cotter pin.
3. Install and lubricate ball joint fitting until grease appears at the seal.
4. Install wheel. Lower car.

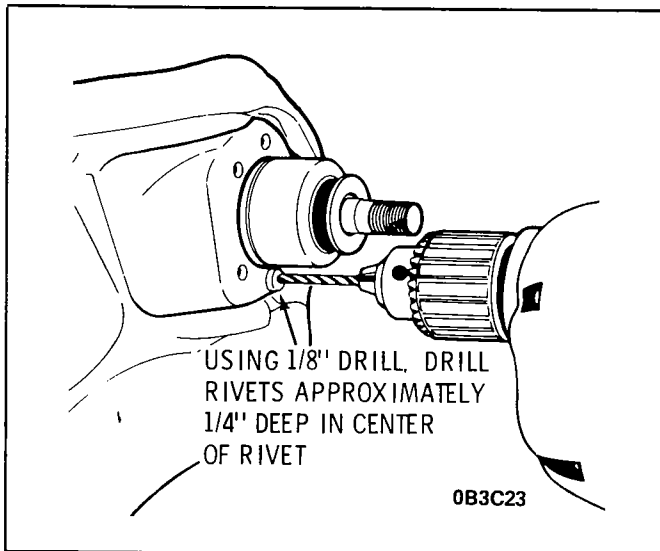


Figure 18 Drilling Upper Ball Joint Rivet

STEERING KNUCKLE

See Figures 21, 22 & 23

Removal

1. Raise front of car and support with floor stands under front lift points. Remove wheel. Spring tension is needed to assist in breaking ball joint studs loose from steering knuckle. Do not place stands under lower control arm.
2. Remove caliper. Refer to CALIPER-Removal.
3. Remove hub and rotor assembly.
4. Remove the three bolts attaching shield to knuckle.
5. Remove tie-rod end from knuckle using Tool J-6627.
6. Carefully remove knuckle seal if knuckle is to be replaced.

7. Remove cotter pins from both ball joint studs and clean studs.
8. Loosen lower ball joint stud nut, then install Tool J-8806 or J-23742 and expand tool until stud breaks loose from knuckle. Remove tool.
9. Loosen upper ball joint stud nut. Install Tool J-8806 or J-23742 and expand tool until stud breaks loose from knuckle.

Floor jack must remain under control arm spring seat during removal and installation to retain spring and control arm in position.

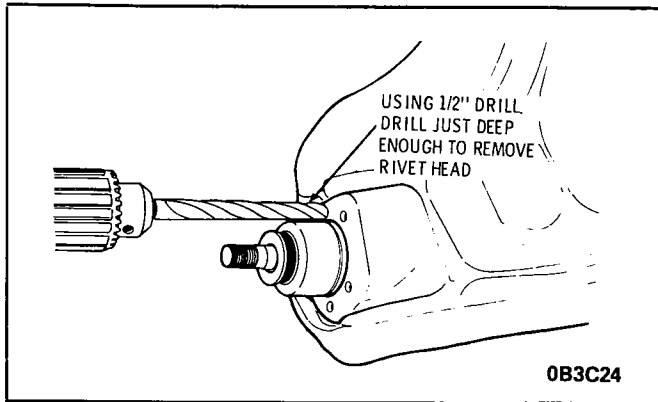


Figure 19 Drilling Upper Ball Joint Rivet Heads

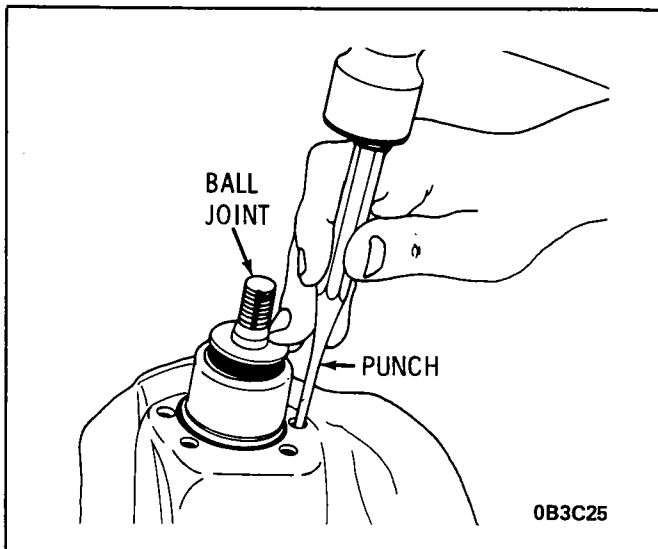


Figure 20 Removing Upper Ball Joint

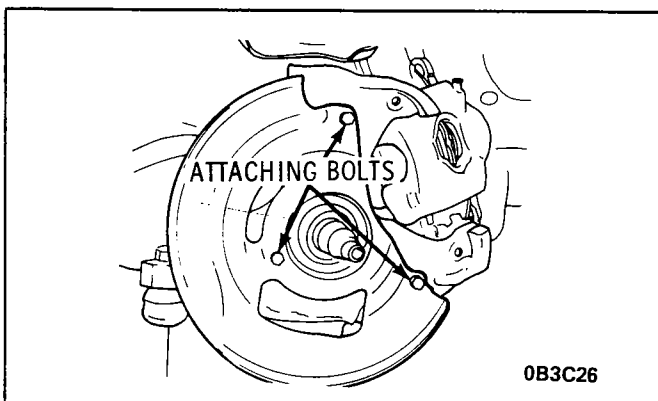


Figure 21 Shield Attachment

10. Position a floor jack under lower control arm near spring seat and raise jack until it just supports lower control arm.
11. Remove upper and lower ball joint stud nuts.
12. Raise upper control arm to disengage ball joint stud from knuckle.
13. Raise knuckle from lower ball joint stud and remove knuckle.

Installation

See NOTICE on Page 3C2-1 of this section.

1. Insert upper and lower ball joint studs into knuckle and install nuts. On "B-G" Series, install upper ball

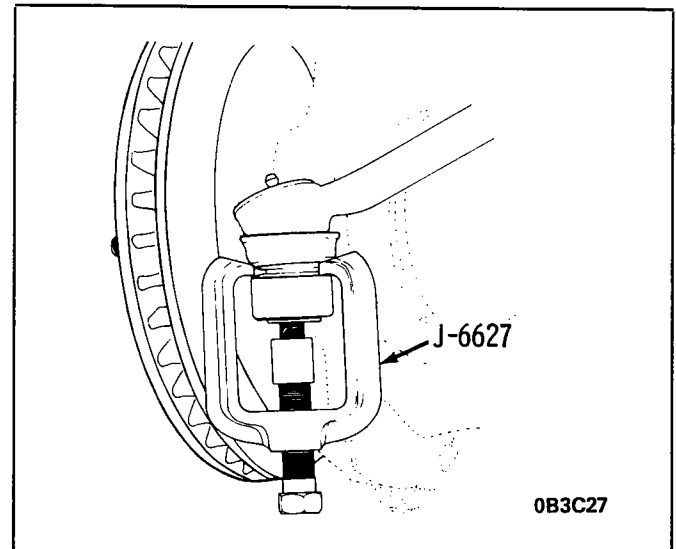


Figure 22 Removing Tie-Rod End

joint stud into steering knuckle using Tool J-29193 and torque to 55 N·m (40 ft. lbs.). Remove tool and install nut and torque to 90 N·m (65 ft. lbs.). Install lower ball joint stud into steering knuckle using Tool J-29194 and torque to 55 N·m (40 ft. lbs.). Remove tool. Install nut and torque to 120 N·m (90 ft. lbs.). Then install cotter pins, tighten nuts further if necessary to install cotter pin.

2. Install shield to knuckle seal and splash shield. Torque attaching bolts to 14 N·m (10 ft. lbs.).
3. Install tie rod end into knuckle using Tool J-29193 and torque to 50 N·m (35 ft. lbs.). Install cotter pin. If necessary, nut can be tightened further to install cotter pin.
4. Install hub and disc assembly.
5. Install caliper. Refer to CALIPER - Installation.
6. Install wheel and tire assembly. Adjust wheel bearings. Refer to WHEEL BEARING ADJUSTMENT.
7. Remove floor stands and lower car.

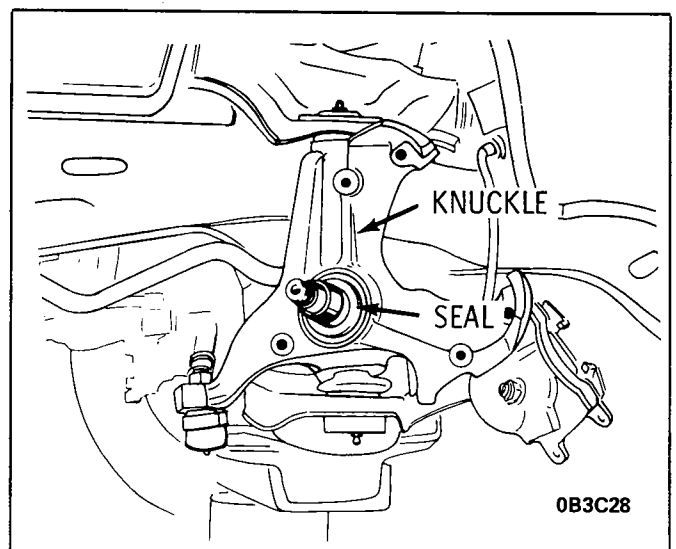


Figure 23 Knuckle Seal

FRONT SPRING - "B-G" SERIES

See Figures 24, 25 & 26

Removal

1. Raise and suitably support car.
2. Remove the two shock absorber screws and push shock up through control arm and into spring.
3. With the car supported so that the control arms hang free, place Tool J-23028 into position cradling the inner bushings.

CAUTION: Tool J-23028 should be secured to a suitable jack.

4. Remove stabilizer to lower control arm attachment.
5. Raise the jack to remove the tension on the lower control arm pivot bolts. Install a chain around the spring and through the control arm as a safety measure. Remove nuts and bolts - (Remove rear bolt first).
6. Lower control arm by slowly lowering jack.
7. When all compression is removed from the spring, remove safety chain and spring.



Figure 24 Removing Coil Spring

Do not apply force on the lower control arm and ball joint to remove spring. Proper maneuvering of the spring will allow for easy removal.

Installation

See Figures 25 & 26

See NOTICE on page 3C2-1.

1. Properly position spring on the control arm and lift control arm with Tool J-23028.

NOTICE: Take care that the spring is properly installed. Figures 3C2-26 and 3C2-27.

2. Position control arm into frame and install pivot bolts (front bolt first) and nuts. Torque to specifications and lower jack.
3. Replace the stabilizer shaft link and shock absorber. Lower car to floor.
4. Torque all fasteners to specifications.

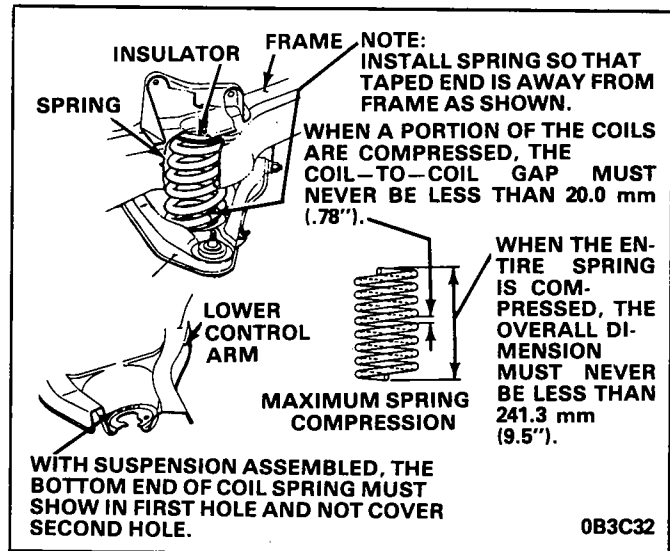


Figure 25 Front Spring "B" Series

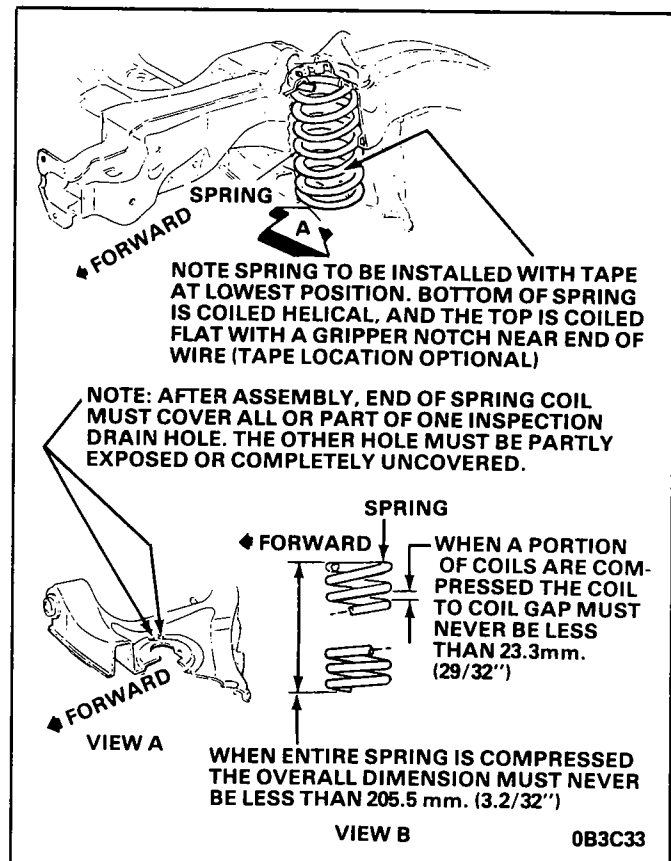


Figure 26 Front Spring "G" Series

UPPER CONTROL ARM

See Figures 27, 28 & 29

Removal

1. Raise front of car and support lower control arm with floor stands.
Since the weight of the car is used to relieve spring tension on the upper control arm, the floor stands must be positioned between the spring seats and ball joints of the lower control arms for maximum leverage.
2. Remove wheel, then loosen the upper ball joint from the steering knuckle as follows:

- a. Remove the cotter pin from the upper ball joint stud and clean the ends of stud.
 - b. Loosen the upper ball joint nut and install tool J-8806 or J-23742.
 - c. Apply pressure on stud by expanding the tool until the stud breaks loose.
3. Loosen pivot shaft to frame attaching nuts and remove alignment shims. Alignment shims are to be installed in the same position from which they were removed.

3. Remove the temporary support from the hub assembly, then connect ball joint to steering knuckle using Tool J-29193 and torque to 20 N·m (15 ft. lbs.). Remove tool and torque nut to 80 N·m (60 ft. lbs.) and install cotter pin.
4. Install wheel, check wheel alignment, and adjust if necessary.

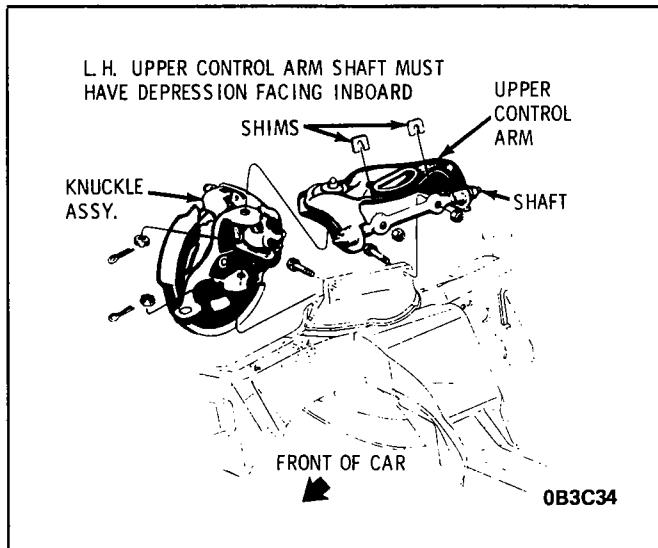


Figure 27 Upper Control Arm Assembly

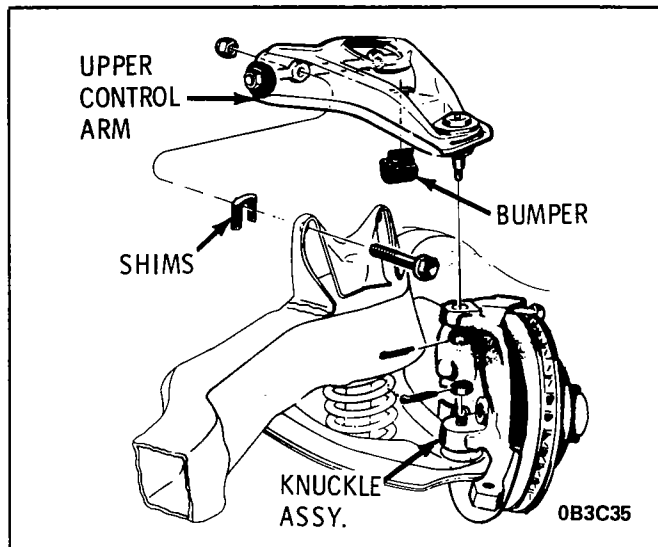


Figure 28 Upper Control Arm

It is necessary to remove the upper control arm attaching bolts to allow clearance to remove upper control arm assembly.

4. Remove upper control arm from the car.

Installation

See NOTICE on Page 3C2-1 of this section.

1. Position upper control arm attaching bolts loosely in the frame and install pivot shaft on the attaching bolts.
2. Install alignment shims between the pivot shaft and frame on their respective bolts. Torque nuts to 100 N·m (75 ft. lbs.) on "B" Series; 60 N·m (45 ft. lbs.) on "G" Series.

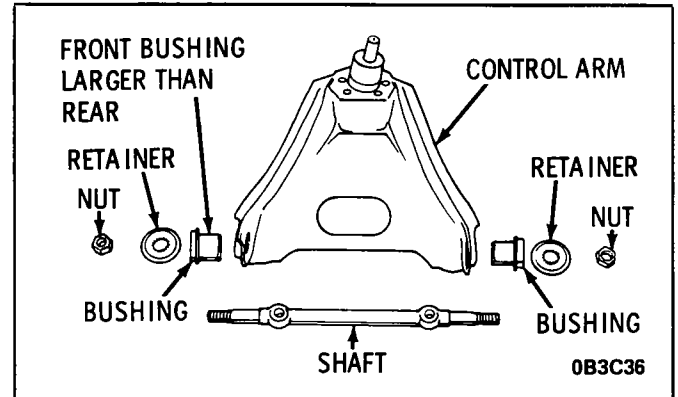


Figure 39 Upper Control Arm

UPPER CONTROL ARM PIVOT SHAFT BUSHING ("B-G")

See NOTICE on Page 3C2-1 of this section.

Removal

1. Remove upper control arm assembly from the car.
2. Remove nuts from ends of pivot shaft.
3. Position control arm assembly and tools and push bushing out of control arm.

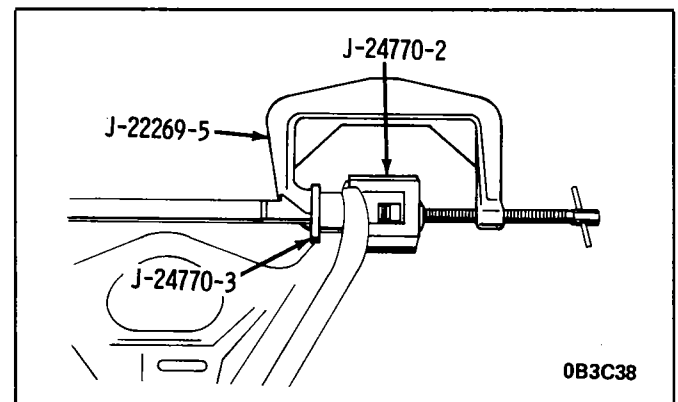


Figure 30 Removing Upper Control Arm Bushing

4. Repeat Step 3 on other bushing.

Installation

1. To install bushings, place pivot shaft in control arm and push new bushing into control arm and over end of pivot shaft. On "G" Series models, both upper control arm bushings are to be installed $13.3 \pm 0.5\text{mm}$ ($.5 \pm .02$ inches) from face of the control arm to the bushing outer sleeve.
2. Repeat Step 5 on other bushing.
3. Assemble nuts to ends of pivot shaft.
4. Install the upper control arm assembly. Refer to UPPER CONTROL ARM-Installation. With weight of car on the wheels, torque pivot shaft nuts to 100 N·m (75 ft. lbs.). Check front end alignment and adjust if necessary.

3C2-12 FRONT SUSPENSION

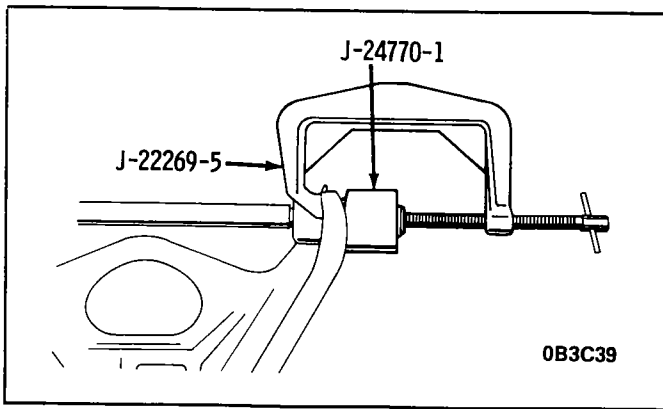


Figure 31 Installing Upper Control Arm Bushing

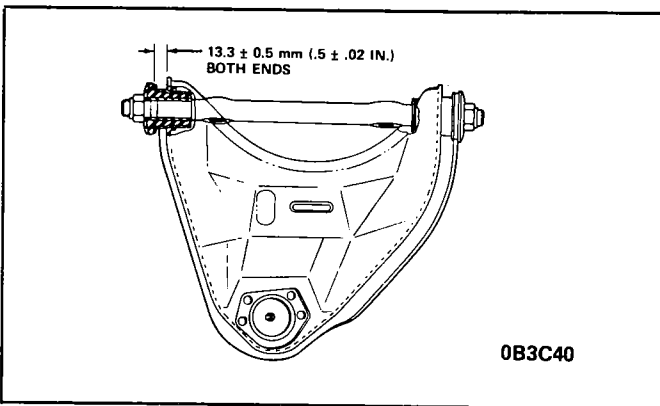


Figure 32 Upper Control Arm Bushing ("G" Series)

LOWER CONTROL ARM

Removal

1. Remove coil spring. Refer to removal procedures.
2. Remove cotter pin from lower ball joint stud.
3. Loosen stud 2 or 3 turns. Tool J-8806 or J-23742 can be used to break the ball joint loose from knuckle.
4. After stud breaks loose, hold up on lower control arm and remove stud. Remove control arm.
5. Guide lower control arm out of opening in splash shield with a putty knife or similar tool.

Installation

1. Install lower ball joint stud into knuckle, then install nut. Torque to 115 N·m (83 ft. lbs.). Then install cotter pin.
2. Install spring. Refer to coil spring removal and reverse removal procedures.

LOWER CONTROL ARM BUSHINGS

See Figures 33 thru 42

Removal - Front

1. Remove lower control arm. Refer to LOWER CONTROL ARM - Removal.
2. Exc. "G" Series - using a blunt chisel, drive bushing flare down flush with rubber of bushing.
3. Remove bushing.

Removal - Rear

See Figures 35 & 36

Installation - Front

1. Install bushing.

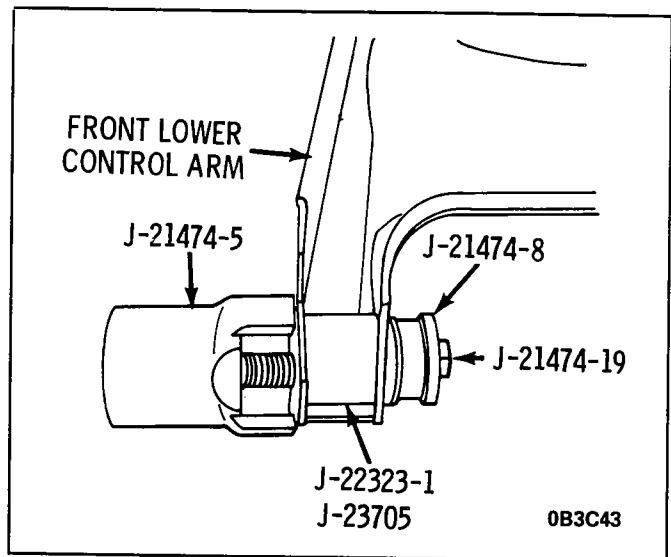


Figure 33 Removing Front Bushing (Exc. "G" Series)

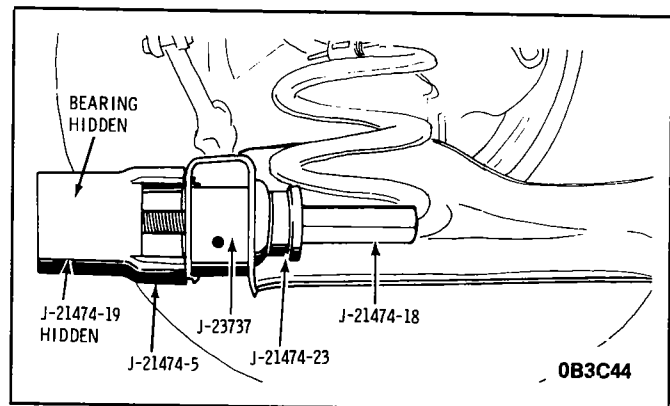


Figure 34 Removing Front Bushing ("G" Series)

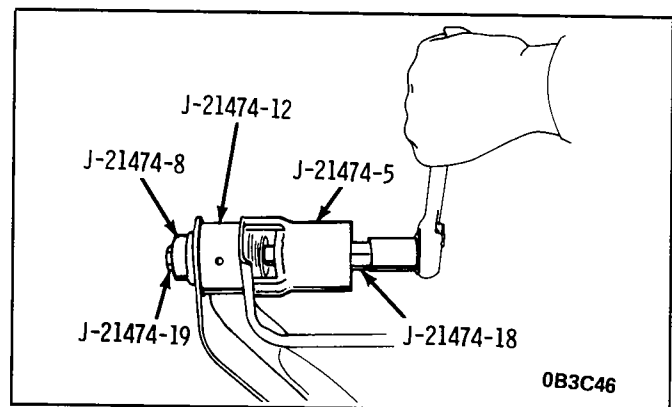


Figure 35 Removing Rear Bushing (Exc. "G" Series)

2. Remove Tool J-21474-13 and install Tool J-23915 for "B" Series and Tool J-21474-21 for "G" Series (Flaring Tool).
3. Turn nut until bushing is flared.

Installation - Rear

See Figures 41 & 42

Install lower control arm. Refer to Lower Control Arm-Installation.

Lower control arm bushing nuts must be torqued with weight of car on wheels.

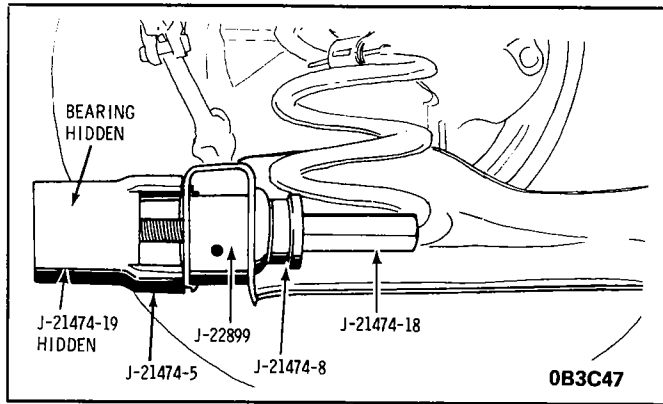


Figure 36 Removing Rear Bushing ("G" Series)

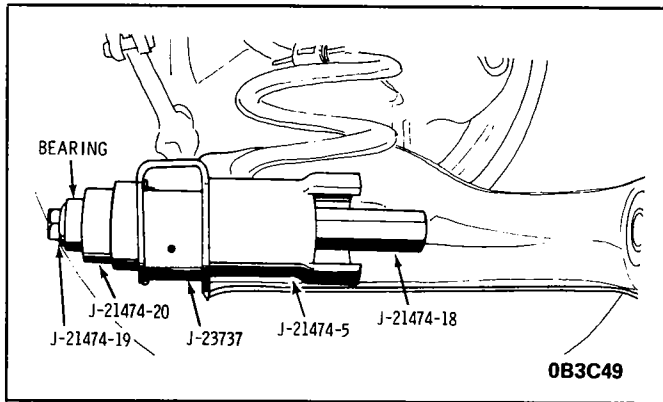


Figure 38 Installing Front Bushing ("G" Series)

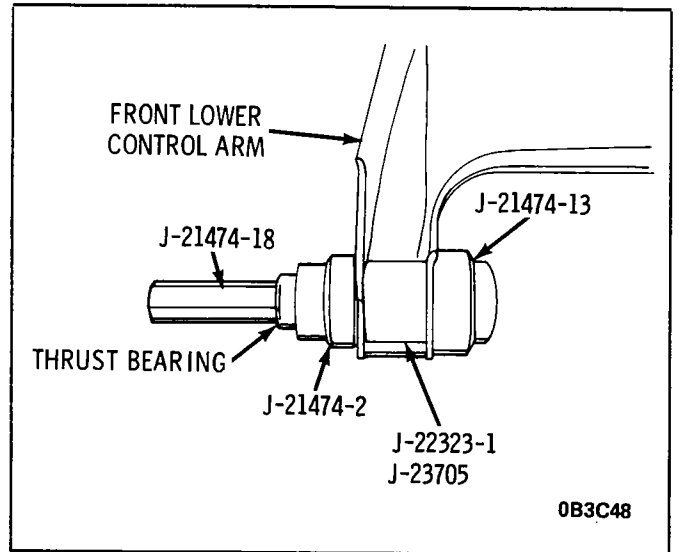


Figure 37 Installing Front Bushing (Exc. "G" Series)

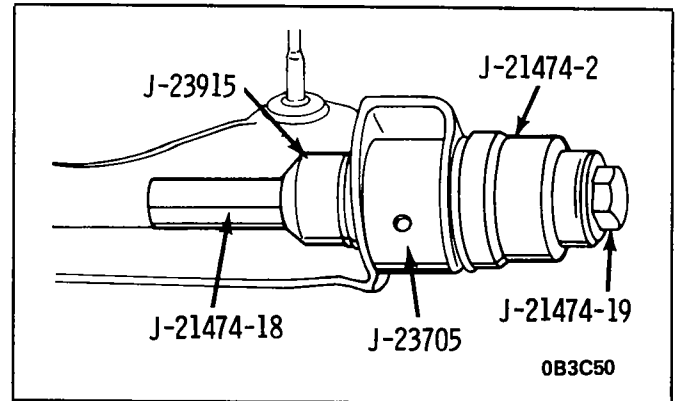
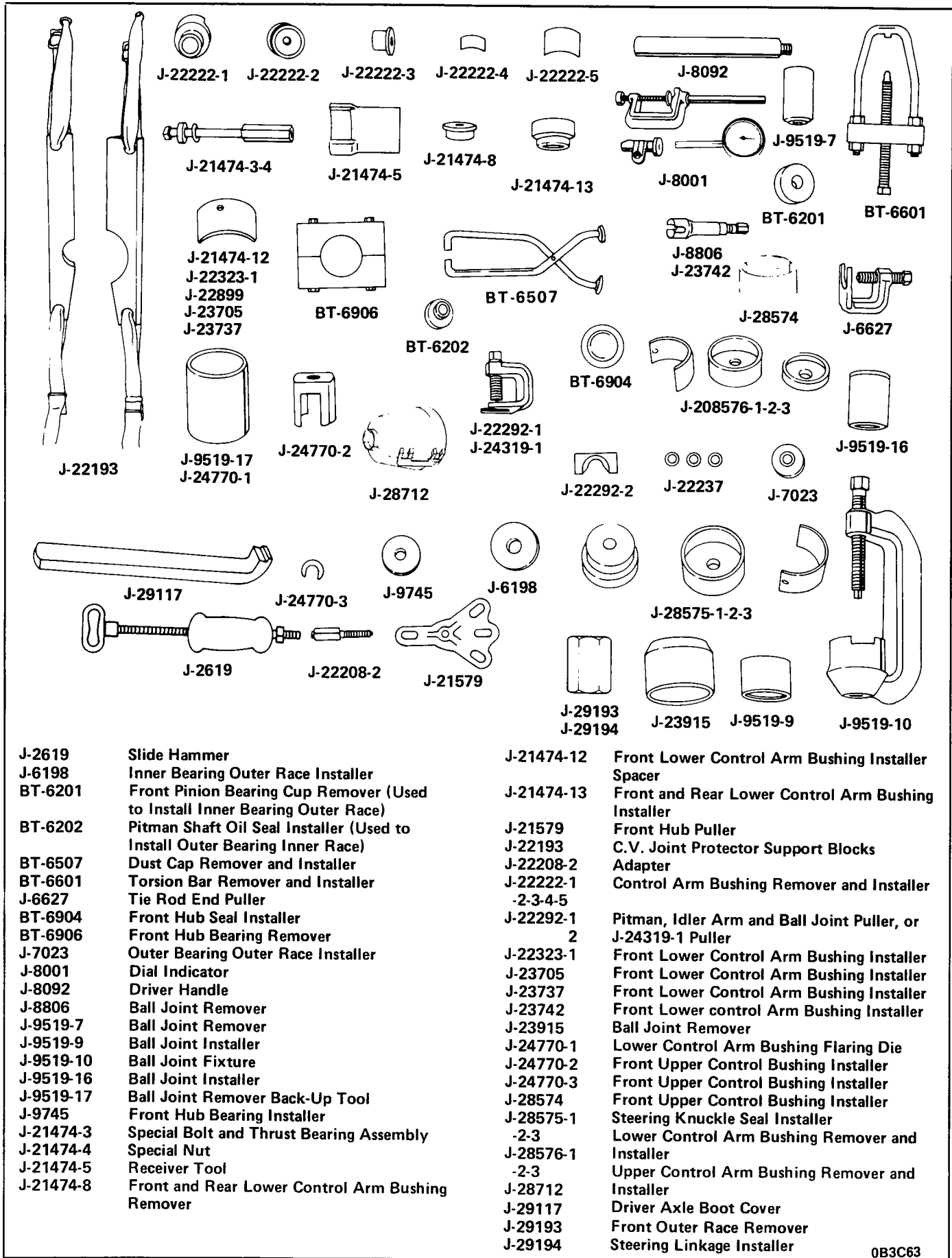


Figure 39 Flaring Front Bushing

3C2-14 FRONT SUSPENSION



- | | | | |
|-----------|---|------------|--|
| J-2619 | Slide Hammer | J-21474-12 | Front Lower Control Arm Bushing Installer |
| J-6198 | Inner Bearing Outer Race Installer | J-21474-13 | Spacer |
| BT-6201 | Front Pinion Bearing Cup Remover (Used to Install Inner Bearing Outer Race) | J-21579 | Front and Rear Lower Control Arm Bushing Installer |
| BT-6202 | Pitman Shaft Oil Seal Installer (Used to Install Outer Bearing Inner Race) | J-22193 | Front Hub Puller |
| BT-6507 | Dust Cap Remover and Installer | J-22208-2 | C.V. Joint Protector Support Blocks |
| BT-6601 | Torsion Bar Remover and Installer | J-22222-1 | Adapter |
| J-6627 | Tie Rod End Puller | J-22222-1 | Control Arm Bushing Remover and Installer |
| BT-6904 | Front Hub Seal Installer | J-22292-1 | Pitman, Idler Arm and Ball Joint Puller, or J-24319-1 Puller |
| BT-6906 | Front Hub Bearing Remover | J-22292-2 | 2 |
| J-7023 | Outer Bearing Outer Race Installer | J-22323-1 | Front Lower Control Arm Bushing Installer |
| J-8001 | Dial Indicator | J-23705 | Front Lower Control Arm Bushing Installer |
| J-8092 | Driver Handle | J-23737 | Front Lower Control Arm Bushing Installer |
| J-8806 | Ball Joint Remover | J-23742 | Front Lower control Arm Bushing Installer |
| J-9519-7 | Ball Joint Remover | J-23915 | Ball Joint Remover |
| J-9519-9 | Ball Joint Installer | J-24770-1 | Lower Control Arm Bushing Flaring Die |
| J-9519-10 | Ball Joint Fixture | J-24770-2 | Front Upper Control Bushing Installer |
| J-9519-16 | Ball Joint Installer | J-24770-3 | Front Upper Control Bushing Installer |
| J-9519-17 | Ball Joint Remover Back-Up Tool | J-28574 | Front Upper Control Bushing Installer |
| J-9745 | Front Hub Bearing Installer | J-28575-1 | Steering Knuckle Seal Installer |
| J-21474-3 | Special Bolt and Thrust Bearing Assembly | -2-3 | Lower Control Arm Bushing Remover and Installer |
| J-21474-4 | Special Nut | J-28576-1 | 2-3 |
| J-21474-5 | Receiver Tool | J-28712 | Upper Control Arm Bushing Remover and Installer |
| J-21474-8 | Front and Rear Lower Control Arm Bushing Remover | J-29117 | Driver Axle Boot Cover |
| | | J-29193 | Front Outer Race Remover |
| | | J-29194 | Steering Linkage Installer |

Figure 40 Tools

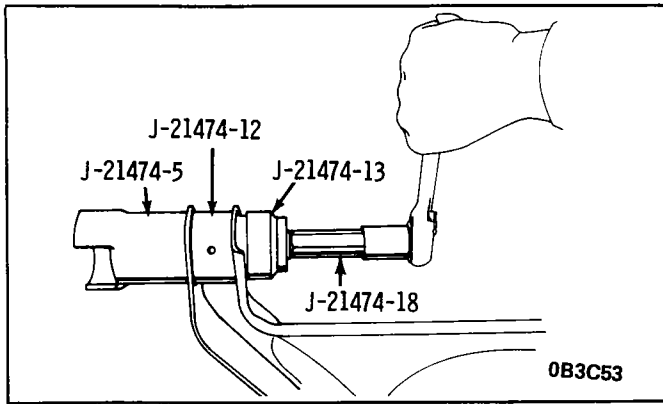


Figure 41 Installing Rear Bushing (Exc. "G" Series)

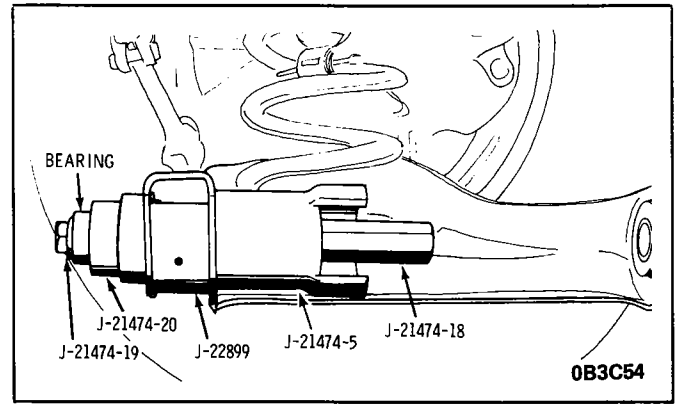


Figure 42 Installing Rear Bushing "G" Series

TORQUE SPECIFICATIONS

	G SERIES	B SERIES
	N·m (lbs. ft.)	N·m (lbs. ft.)
Stabilizer Link Nut	17 (13)	17 (13)
Stabilizer Bar Bracket to Frame Bolts*	32 (24)	32 (24)
Shock Upper Nut	11 (8)	11 (8)
Shock Lower Bolts	27 (20)	27 (20)
Upper Control Arm to Frame Nuts	65 (48)	98 (72)
Lower Control Arm to Frame Nuts*	88 (65)	125 (92)
Upper Control Arm Bushing Nuts (Rear)*	115 (85)	115 (85)
Upper Control Arm Busing Nuts (Front)*	115 (85)	115 (85)
Service Ball Joint to Control Arm	18 (13)	18 (13)
Lower Ball Joint	113 (83)	113 (83)
Upper Ball Joint	83 (61)	83 (61)
Splash Shield to Steering Knuckle Bolts	14 (10)	14 (10)
Lower Control Arm Bumper	27 (20)	27 (20)
Wheel Nut (1/2 inch Studs)		140 (100)
Wheel Nut (7/16 inch Studs)	110 (80)	110 (80)

*Torque with weight of car on the wheels.

