CADILLAC REAR WHEEL DRIVE

DESCRIPTION

System is an independent spring type suspension, consisting of two upper and two lower control arm assemblies, coil springs, shock absorbers, a stabilizer bar and two integral steering arm and knuckles. Suspension is designed to produce an anti-dive reaction during braking.

ADJUSTMENT

CASTER & CAMBER

See Caster and Camber Adjustments and Specifications in WHEEL ALIGNMENT Section.

RIDING HEIGHT

See Riding Height Adjustments and Specifications in WHEEL ALIGNMENT Section.

FRONT WHEEL BEARINGS

Raise vehicle and support at lower control arms. Remove hub cap, dust cap and cotter pin. Tighten spindle nut to 12 ft. lbs. while rotating wheel by hand. Back off nut until just loose, then hand tighten until snug. Back off enough to insert cotter pin (about ½ hex). Adjustment should provide about .001-.005" end play. Install cotter pin, dust cap and hub cap. Lower vehicle.

BALL JOINT CHECKING

See Ball Joint Checking in WHEEL ALIGNMENT Section.

REMOVAL & INSTALLATION

STABILIZER BAR

Removal – **Remove nuts, retainer and grommet from bottom of each stabilizer link. Unbolt stabilizer mounting brackets from frame. Remove rubber bushings from bar, then remove grommets, retainers, spacers, and links from ends of stabilizer bar. Turn wheels to full stop and work stabilizer from vehicle.**

Installation – Position stabilizer bar under front frame side rails and slide bushings into place, with slit forward. Install

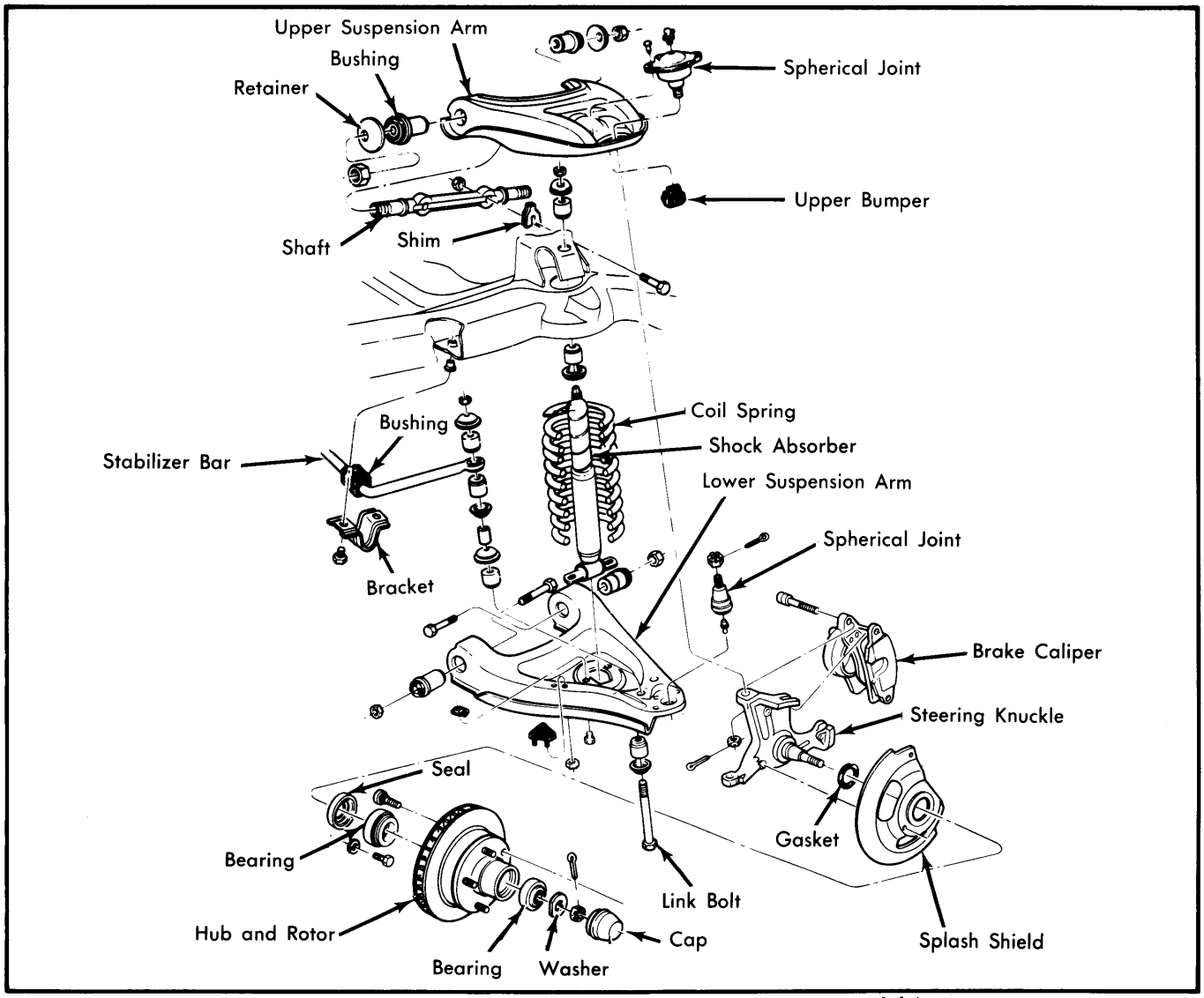

Fig. 1 Cadillac Front Suspension (Rear Wheel Drive Models)

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mounting brackets over bushings and tighten bolts. Install grommets, retainers, links and spacers. Install grommet retainer and tighten nut.

NOTE – *Stabilizer bar grommets and retainers are larger than those used on shock absorbers. Ensure that replacement parts are the correct size.*

UPPER BALL JOINT

Removal – 1) Raise car and remove wheel and tire assembly. Remove cotter pin from upper ball joint stud. Remove caliper assembly and wire to frame so no strain is placed on brake hose.

2) Loosen (do not remove) stud nut about one turn. Using suitable tool (J-23742 or equivalent), turn threaded end of tool until stud is free of steering knuckle.

NOTE – *Lower control arm must be supported so chassis spring cannot force arm down.*

3) Remove upper ball joint stud nut and swing knuckle out of way. Lift and support upper control arm with block of wood between frame and arm.

4) Remove rivets from upper control arm and drive out with a punch.

CAUTION – *Avoid damage to control arm or ball joint seat.*

Inspection – Upper ball joint is spring loaded in its socket. If stud can be finger-twisted in its socket, or if stud has any lateral shake, replacement of ball joint is required.

Installation – 1) Install new ball joint in arm and attach with bolt and nut assemblies provided. Insert bolts from bottom. Ball joint stud cotter pin hole should run fore and aft. Remove wood support from upper arm and clean tapered hole in steering knuckle.

2) Install caliper assembly. Lubricate ball joint and install wheel and tire assembly. Lower car and check and adjust wheel alignment, if necessary.

LOWER BALL JOINT

Removal – 1) Raise vehicle and remove wheel and tire. Loosen stud nut no more than 1 turn, and do not remove nut.

2) Using tool (J-23742) between studs, turn threaded end of tool until stud is free of steering knuckle. Remove lower stud nut.

NOTE – *Ensure that lower control arm is supported so chassis spring cannot force arm down.*

3) Work knuckle free from ball joint stud. Lift upper control arm, knuckle and hub assembly and support with block of wood between arm and frame.

NOTE – *Remove tie-rod end only if necessary. Do not place strain on brake hose while moving arm assembly.*

4) Using proper tools, turn hex bolt until lower ball joint is forced out of control arm.

Installation – 1) Position ball joint in lower control arm with bleed vent in boot facing inward. Using appropriate tools, turn down hex head bolt until joint is seated and remove tools. Align stud cotter pin hole fore and aft.

2) Remove wood support from upper control arm. Inspect tapered hole in steering knuckle and clean. Connect lower joint stud to steering knuckle and install stud nut. Torque nut to specification and install new cotter pin.

NOTE – *Do not back off nut for cotter pin installation. Turn nut 1/16 turn maximum to install cotter pin.*

3) Lubricate ball joint, install tie rod end (if removed) and install wheel and tire assembly. Check front wheel alignment and reset as necessary.

UPPER CONTROL ARM

Removal – Raise vehicle and support at lower control arms. Remove wheel and tire. Separate upper arm ball joint stud from steering knuckle. Remove nuts securing arm shaft to frame bracket and remove assembly. Mark shims for proper positioning upon reassembly.

Bushing Removal – Remove upper control arm. Remove bushing nuts. Using suitable tools (J-22269-5,J-24770-2 & J-24770-3), remove bushings *(see Fig. 2).*

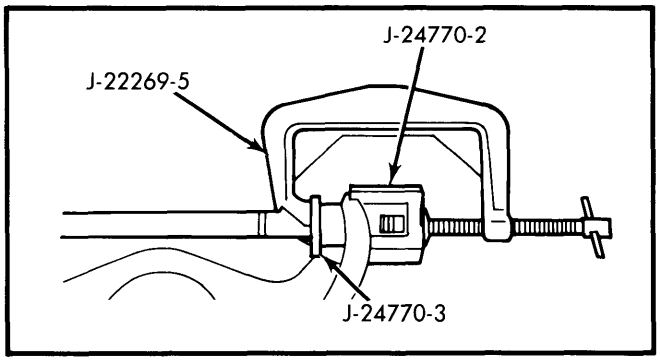

Fig. 2 Removing Upper Control Arm Bushing

Bushing Installation – Using same tools used for removal, and adapter (J-24770-1), install bushings. *See Fig. 3.* Install bushing nuts loosely. Install upper control arm and tighten bushing nuts.

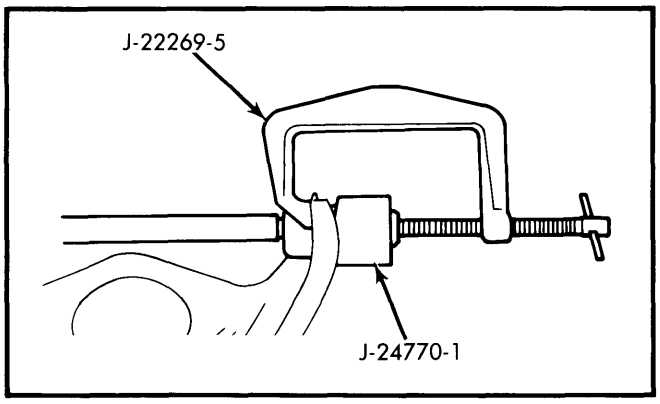

Fig. 3 Installing Upper Control Arm Bushing

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Installation – 1) Position new upper arm attaching bolts loosely in frame. Install control arm cross shaft on attaching bolts. Using a free running nut, instead of regular lock nut, tighten both nuts until serrated bolts are reseated.

2) Remove free running nuts and install regular lock nuts. Install same number of shims to each bolt that were removed. Tighten mounting nuts. Tighten nut on thinner shim pack first for proper clamping force.

3) Install wheel and tire and lower vehicle. Check and adjust front wheel alignment if necessary.

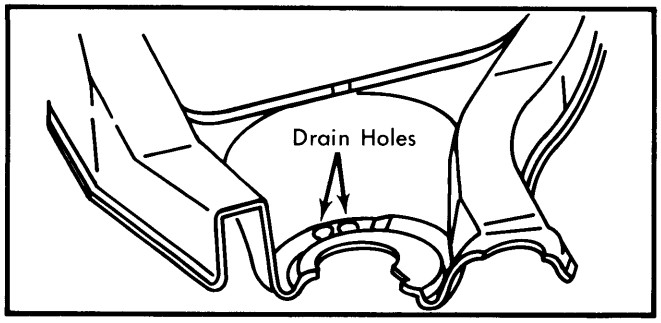

Fig. 4 Coil Spring Positioning

COIL SPRING

Removal – 1) Raise vehicle and remove shock absorber lower mounting screws. Push shock up through control arm and into spring. Support vehicle so that control arms hang free.

2) Place support tool (J-23028-01) into position so it cradles inner bushings. Tool must be secured to a suitable jack.

3) Remove stabilizer bar-to-lower control arm attaching bolts. Raise jack to remove tension on lower arm pivot bolts. Install a safety chain around spring and through lower arm. Remove rear pivot bolt first, then remaining bolts and nuts.

4) Lower control arm by slowly lowering jack. When all compression is removed from spring, remove chain and spring.

CAUTION – *Do not use force to remove spring. Proper maneuvering of spring will allow it to be removed easily.*

Installation – Position spring into frame so lower end of coil covers all or part of one inspection hole in lower control arm. Second hole must be partly or completely uncovered (see Fig. 4). Position lower arm in frame. Install front pivot bolt first and remaining bolts and nuts. On Fleetwood Brougham and DeVille, rear bolt must be installed in same direction as removed. Reverse removal procedure to complete installation.

LOWER CONTROL ARM

Removal & Installation – Remove coil spring. Remove ball joint stud from steering knuckle. Remove lower control arm. To install, install lower control arm, then install ball joint stud in steering knuckle. Install coil spring. Check and adjust front end alignment if necessary.

Rear Bushing Removal – 1) Raise vehicle. Support frame with safety stands so lower control arms hang free. Remove lower shock absorber mounting bolts and push shock up through control arm into coil spring.

2) Position support tool (J-23028-01) on suitable jack and place under lower control arm so bushings seat in grooves of tool. Install safety chain around lower arm and through coil spring.

3) Remove lower arm rear pivot bolt first, then remaining bolts and nuts. If bolts hang up in lower arm, release by using pry bar. DO NOT hammer. Lower control arm by slowly releasing jack.

4) Install spacer tool (J-21474-12) as shown in *Fig. 5*. Install remaining tools as shown in *Fig. 5*, and turn hex bolt and nut until bushing is removed. Remove tools and discard bushing.

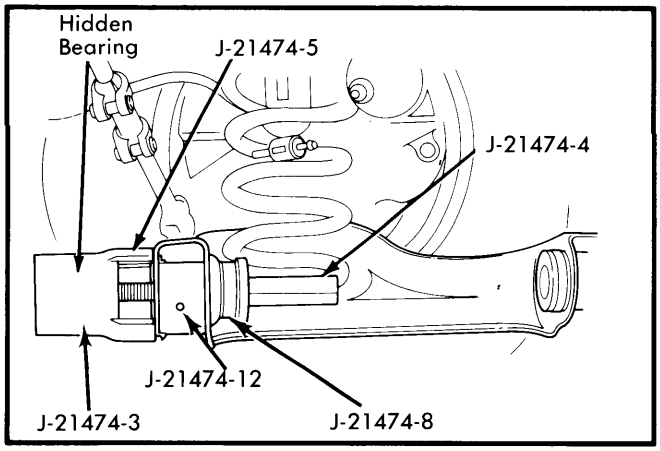

Fig. 5 Removing Lower Control Arm Bushing

Rear Bushing Installation – Position new bushing and install correct tools as shown in *Fig. 5*. Using spacer, turn hex bolt and nut until new bushing is seated. Reverse removal procedure to complete assembly.

Front Bushing Removal – With lower control arm removed, remove bushing flare by tapping on edge with hammer. Install tools as shown in *Fig. 5*. Turn down on hex nut until bushing is removed.

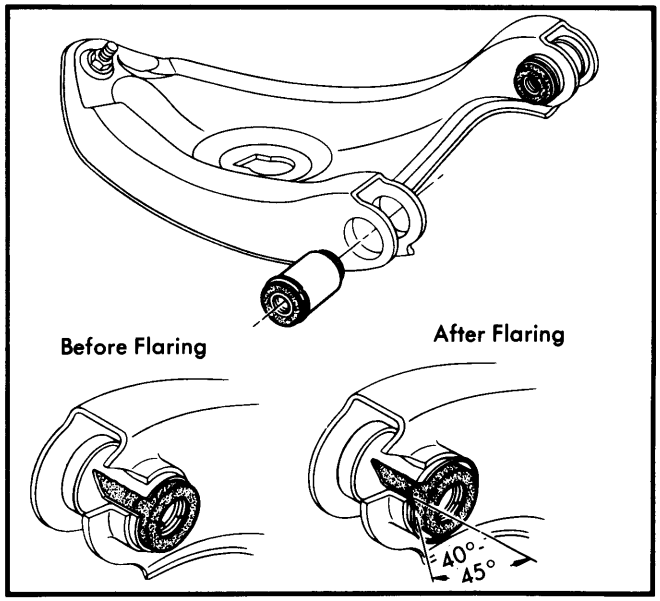

Fig. 6 Lower Control Arm Front Bushing Flaring

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Front Bushing Installation – Place installing tools in position as shown in *Fig. 7*, and press bushing into place. Remove tools and install flaring tool (J-23915). Turn tool until bushing is flared as shown in *Fig. 6*. Reverse removal procedure for remaining components.

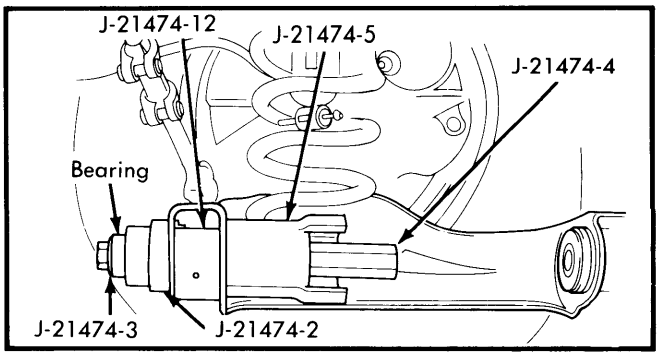

Fig. 7 Installing Lower Control Arm Bushing

STEERING KNUCKLE

NOTE – *If either a twin post hoist, or frame hoist is used to raise vehicle, the coil spring must remain compressed in its curb height position.*

Removal – Raise vehicle and support lower control arms. Remove wheel and tire. Remove tie-rod end from steering knuckle. Remove brake caliper, rotor and hub assembly. Suspend caliper out of way. Remove splash shield, upper and lower ball joints and studs from steering knuckle.

Installation – Place steering knuckle in position and install upper and lower ball joint studs in bosses. Install stud nuts and tighten. Install splash shield and tighten. Install hub and rotor assembly, outer bearing, spindle washer and nut. Adjust wheel bearings. Install brake caliper, wheel and tire. Lower vehicle and check wheel alignment.

WHEEL BEARINGS

Removal – Raise and support vehicle. Remove tire and wheel. Remove dust cap, cotter pin, spindle nut washer and outer bearing assembly. Remove hub and rotor from spindle. Remove inner bearing grease seal and bearing. Discard seal.

Installation – **1)** Apply a small amount of grease to spindle at bearing seat and at inner seat, shoulder and seal seat. Thoroughly grease bearing cone and roller assemblies. Place bearing inner cone and roller assembly into hub. Install a new grease seal with flat plate. Seal should be flush with hub.

2) Lubricate seal lip with thin layer of grease. Install hub and rotor assembly. Place outer cone and roller assembly in outer bearing cup. Install washer and nut and tighten with fingers. Install caliper, wheel and tire. Install wheel mounting nuts finger tight. Adjust wheel bearings. Install dust cap. Lower vehicle and tighten wheel mounting nuts.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N·m)
Lower Ball Joint-to-Knuckle	83 (113)
Upper Ball Joint-to-Knuckle	61 (83)
Stabilizer Bracket-to-Frame	24 (33)
Upper Control Arm-to-Frame Nuts	72 (98)
Control Arm Shaft Attaching Nuts	72 (98)
Tie Rod Pivots-to-Knuckle	40 (54)
Shock Absorber Lower Bolts	20 (27)
Stabilizer Link Nut	13 (17)