

BUICK, CHEVROLET, OLDSMOBILE & PONTIAC

Rear Wheel Drive
(Exc. Cadillac, Chevette, Corvette & T1000)

ADJUSTMENT

DESCRIPTION

Independent front suspension is used on all models. Each wheel is attached to frame by means of a steering knuckle, upper and lower control arm and ball joint assembly. Firebird & Camaro use a steering knuckle, strut assembly, ball joint and lower control arm.

Front wheels are held in proper relation by linkage which attaches to steering knuckle. Inner end of lower control arm is connected to frame with rubber pivot bushings and outer end is connected to steering knuckle by ball joint. Inner end of upper control arm is attached to cross shaft, which bolts to frame. Outer end of upper arm is attached by a ball joint to steering knuckle. Firebird & Camaro have the steering knuckle connected directly to the strut.

Side roll stability is maintained with stabilizer shaft, supported by brackets at each frame side rail (forward of springs). End of stabilizer shaft is connected to lower control arm. Coil springs are located between each frame side rail and lower control arm. Front shock absorbers are located within springs.

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 and support vehicle at lower control arms. Remove hub cap, dust cover and cotter pin. Tighten spindle nut to 12 ft. lbs. while spinning wheel by hand. Back off nut until just loose, then tighten by hand until snug. Back off enough to insert cotter pin (about $\frac{1}{2}$ hex flat or $\frac{1}{12}$ turn). Adjustment should provide .001-.005" end play. Install cotter pin, dust cover and hub cap.

BALL JOINTS

See *Ball Joint Checking in WHEEL ALIGNMENT Section.*

REMOVAL & INSTALLATION

STABILIZER BAR

Removal — Raise vehicle and support with safety stands. Disconnect each side of linkage by removing nut from link bolt. Pull bolt from linkage and remove retainers, grommets and spacer. Remove bracket-to-body bolts. Remove stabilizer bar, bushings and brackets.

Installation — Reverse removal procedure and tighten nuts and bolts.

COIL SPRING

Removal (Exc. Oldsmobile) — Support vehicle at side rails, then remove wheel and tire assembly. Disconnect lower end of shock absorber and push up through spring. Disconnect front stabilizer rod link from lower control arm. Attach safety chain around lower control arm and coil spring. Position jack, with suitable removal tool (J-23028) attached, under lower control arm. Raise jack to remove tension on control arm pivot bolts. Remove pivot bolts and nuts (rear bolt first). Lower control arm slowly until spring is fully extended. Remove safety chain and spring.

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

Removal (Oldsmobile) — Support vehicle at side rails, then remove wheel and tire assembly. Disconnect front stabilizer rod link from lower control arm and remove shock absorber. Install suitable coil spring compression tools (BT-74081A, 1B or B-7522), and compress spring until free in its seat. Remove 2 lower control arm pivot bolts and disengage lower control arm from lower frame.

Installation (All Models) — Reverse removal procedures and tighten nuts and bolts. Ensure spring is turned to proper mounting position as follows: Bottom end of coil spring must show in first drain hole and not cover second drain hole.

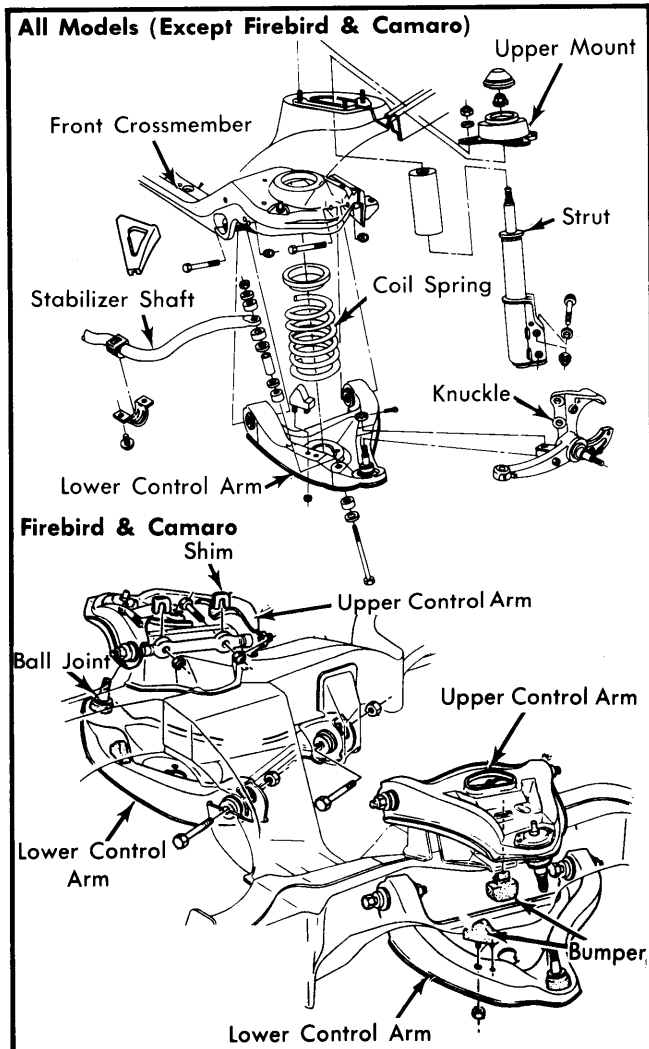


Fig. 1 View of Front Suspension

BUICK, CHEVROLET, OLDSMOBILE & PONTIAC (Cont.)

STEERING KNUCKLE AND/OR STEERING KNUCKLE ARM

Removal — 1) Raise vehicle and support with safety stands at front lift points. Remove wheel, caliper and hub assembly. Remove splash shield. Remove tie rod end from steering knuckle using suitable removal tool. Remove knuckle seal if knuckle is to be replaced.

2) Remove lower ball joint cotter pin and nut and use suitable tool to break stud loose from knuckle. Place floor jack under lower control arm to keep coil spring in place. Remove upper ball joint cotter pin and nut and use suitable tool to break stud loose from knuckle. Raise upper arm to disengage stud from knuckle. Raise knuckle from lower ball joint stud and remove knuckle.

Installation — Reverse removal procedure while noting the following: Tighten all nuts and bolts. Adjust front wheel bearings.

UPPER CONTROL ARM

Removal — 1) Raise vehicle and support lower control arm with safety stands placed between spring seats and ball joints. Remove wheel and tire. Remove upper ball joint nut and install suitable tool (J-23742) on ball joint. Expand tool until stud breaks loose from arm. Remove tool and ball joint nut and pull stud from knuckle.

2) Support hub assembly to prevent damage to brake line. Remove alignment shims, noting position for reinstallation. Remove upper control arm attaching nuts, and remove upper control arm.

Bushing Service — With control arm removed from vehicle, remove nut and retainer from both ends of control arm shaft. Place control arm in an arbor press and position suitable tools as required. Press out and discard old bushings. Reverse procedure, for installation.

Installation — Reverse removal procedure, tightening nuts and bolts. Check front end wheel alignment.

LOWER CONTROL ARM

Removal — See coil spring removal in this section.

Bushing Service — With lower control arm removed from vehicle, use suitable removal tools and press bushings from arm. After bushings are installed, flare as necessary to retain bushing. Reverse removal procedure for control arm, and then check front wheel alignment.

Installation — Reverse removal procedure, tightening control arm-to-frame attaching bolts with vehicle off the hoist and at curb weight. Check front end alignment.

UPPER BALL JOINT

Removal — Raise vehicle and support lower control arm. Remove wheel and tire assembly. Pry ball joint stud from steering knuckle. Chisel or drill rivets which retain ball joint. Remove ball joint.

Installation — Reverse removal procedure, using special nuts and bolts supplied in service kit. Tighten all nuts and bolts and adjust front wheel bearing.

LOWER BALL JOINT

Removal — Raise vehicle and support lower control arms under spring seats. Remove brake caliper assembly and suspend out of way. Do not disconnect brake hose. Pry ball joint stud from control arm. Remove ball joint seal and retainer (pry off with screwdriver). Remove ball joint.

Installation — Reverse removal procedures, tightening nuts and bolts.

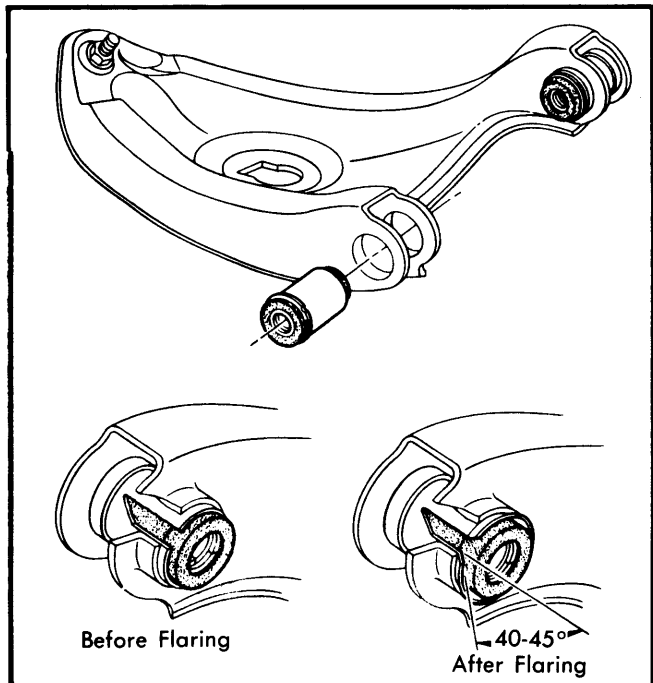


Fig. 2 Lower Control Arm Bushing Installation

WHEEL BEARING

Removal — 1) Raise vehicle on hoist. Remove wheel and tire assembly. Remove brake caliper from disc.

2) Remove dust cover, cotter pin, spindle nut and washer. Remove hub and bearing. Do not allow bearing to fall out of hub.

3) Remove outer bearing with fingers. Remove inner bearing by prying out grease seal. Discard seal. Wash parts thoroughly in cleaning solvent.

Installation — 1) Using an approved high temperature front wheel bearing grease, apply a thin film of grease to spindle at outer bearing seat and inner seat, shoulder, and seal seat. Put a small amount of grease inboard of each bearing cup in the hub.

2) Fill bearing cone and roller 100% full of grease. With grease thoroughly packed into bearings, place inner bearing cone and roller in the hub. Using your finger, put an additional amount of grease outboard of bearing.

3) Install a new grease seal, using a flat plate, until seal is flush with hub. Lubricate lip of seal with grease. Install hub and rotor assembly. Place outer bearing cone and roller in outer bearing cup. Install washer and nut. Install brake caliper, wheel and tire. Adjust as previously outlined.

BUICK, CHEVROLET, OLDSMOBILE & PONTIAC (Cont.)

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N·m)
Upper Ball Joint Stud	
Buick, Chevrolet & Pontiac	65 (88)
Cadillac	61 (83)
Oldsmobile	50 (68)
Lower Ball Joint	
Buick, Chevrolet & Pontiac	90 (122)
Cadillac	83 (113)
Oldsmobile	70 (95)
Upper Control Arm-to-Frame	
Buick	
Regal	45 (61)
Electra & LeSabre	75 (100)
Cadillac	72 (98)
Chevrolet	
El Camino, Malibu & Monte Carlo	45 (60)
Caprice & Impala	73 (97)
Oldsmobile	
Cutlass	45 (60)
88 & 98	75 (100)
Pontiac	45 (60)
Lower Control Arm-to-Frame	
Buick	
Regal	65 (88)
Electra & LeSabre	95 (130)
Cadillac	92 (125)
Chevrolet	
El Camino, Malibu, Monte Carlo & Camaro	65 (88)
Caprice & Impala	90 (122)
Oldsmobile	
Cutlass	65 (88)
88 & 98	95 (130)
Pontiac	65 (88)
Strut-to-Steering Knuckle	
Firebird & Camaro	195 (265)
Stabilizer Shaft Bracket-to-Frame	
Buick & Oldsmobile	13 (18)
Cadillac & Pontiac	24 (33)
Chevrolet	
El Camino, Malibu, Monte Carlo & Camaro	24 (33)
Caprice & Impala	13 (18)
Stabilizer Shaft Link Nut	
Buick, Cadillac & Oldsmobile	13 (18)
Chevrolet	
Camaro	15 (20)
All Others	13 (18)
Pontiac	
Firebird	15 (20)
All Others	13 (18)