

Front Suspension

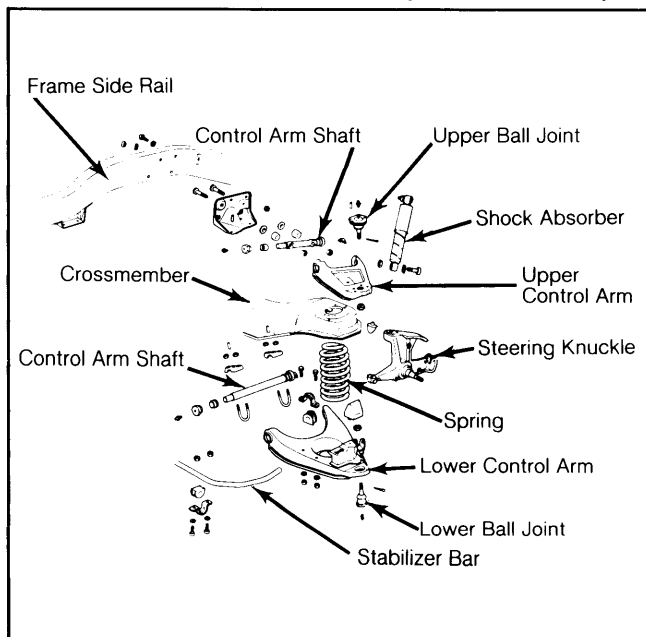
GENERAL MOTORS COIL SPRING TYPE — EXCEPT S10

Chevrolet, GMC

DESCRIPTION

Independent front suspension consists of upper and lower control arms with steering knuckle mounted inbetween by ball joints. Upper and lower control arms are mounted to crossmember with pivot shafts, through either rubber or threaded steel bushings. Coil springs are mounted between lower control arm and a formed seat in suspension crossmember. Hydraulic shock absorbers fit between lower control arm and frame. A stabilizer bar is mounted to frame side rails and connected to lower control arms by links.

Fig. 1: Exploded View of Front Suspension Assembly



ADJUSTMENT & CHECKING

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

See *Wheel Alignment Specifications & Procedures* in **WHEEL ALIGNMENT** Section.

WHEEL BEARING ADJUSTMENT

Tighten bearing nut to 16 ft. lbs. (22 N.m) while spinning wheel forward. Back off nut until it is just loose. Hand-tighten nut, then loosen slightly (no more than 1/2 turn) until cotter pin can be inserted. End play should be .001-.005" (.03-.13 mm).

BALL JOINT CHECKING

Upper ball joint is spring-loaded. If upper stud has any lateral shake, or if it can be twisted with fingers, replace ball joint. Lower ball joint is a loose fit with no weight applied. To check, lift vehicle. Support weight of control arms at wheel hub. Measure distance between ball joint stud and lower grease fitting. Remove support from control arm and remeasure. If distance exceeds .095" (2.38 mm), replace ball joint.

REMOVAL & INSTALLATION

SHOCK ABSORBERS

Removal

Remove nuts and eye bolts securing upper and lower ends of shock absorber, and remove shock absorber from vehicle.

Installation

Position shock absorber over mounting bolts or into mounting brackets and install eye bolts. Tighten all bolts and nuts.

STABILIZER BAR

Removal

Raise vehicle. Remove nuts and bolts attaching stabilizer bar brackets to frame. Remove link bolts and bushings at lower control arm. Remove stabilizer bar from vehicle.

Installation

Position stabilizer bar on frame. Loosely install frame bushings and brackets. Install link units at lower control arms. Tighten all nuts and bolts. Lower vehicle.

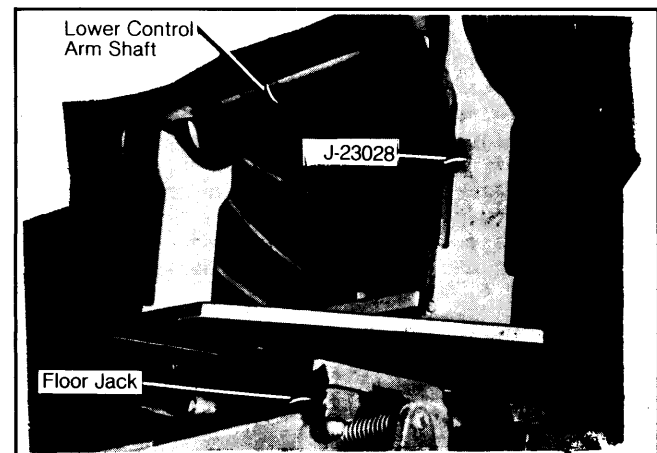
COIL SPRINGS

Removal

1) Raise vehicle and support under frame so that control arms hang free. Disconnect shock absorber and stabilizer bar at lower control arm. Install a support tool (J-23028) onto jack. Position tool under lower control arm shaft so that shaft seats in grooves of tool.

2) Install a safety chain through lower control arm and spring. Raise jack to relieve tension on lower control arm shaft and remove control arm shaft bolts. Carefully lower jack until all tension is released from spring. Remove spring from vehicle.

Fig. 2: Coil Spring Removal



Use floor jack and special tool J-23028.

Installation

To install coil spring, reverse removal procedure. On models with air cylinders in coil springs, check for leaks and damage before installation.

STEERING KNUCKLE

NOTE: Front of vehicle should be supported with a twin-post hoist so the front coil spring remains compressed, yet the steering knuckle is accessible.

GENERAL MOTORS COIL SPRING TYPE — EXCEPT S10 (Cont.)

Removal

Raise and support vehicle as described. Remove wheel, hub, disc rotor and caliper. Remove disc splash shield. Remove upper and lower ball joint cotter pins and loosen nuts. Using tool (J-23742) to free steering knuckle from ball studs. Remove ball stud nuts and withdraw steering knuckle.

Installation

Clean all parts thoroughly, and inspect for damage. To install, reverse removal procedure and tighten all nuts and bolts.

CAUTION: When installing ball joint nuts, do not loosen nut to install cotter pin. If necessary, tighten one extra notch.

UPPER BALL JOINT

Removal

Raise vehicle. Support front end on safety stands positioned under lower control arms. Remove cotter pin from upper ball stud and loosen nut 2 turns. Remove brake caliper and suspend it from frame. Do not hang caliper by brake line. Install tool J-23742 between the ball studs. Loosen ball stud. Remove tool and stud nut. Drill out rivets and remove ball joint assembly.

Installation

To install, reverse removal procedure. Use nuts and bolts in place of rivets to attach ball joint to control arm.

Installation

Using special tools (J9529-10 and J9519-16), install new ball joint in control arm. Reverse removal procedure to complete installation.

UPPER CONTROL ARM

Removal

1) Raise vehicle. Support front end with safety stands under lower control arms. Remove cotter pin from upper ball joint and loosen nut. Remove brake caliper and suspend out of way. Do not hang by brake line.

2) Using suitable tool (J-23742), loosen ball joint in steering knuckle. Remove tool and ball joint nut, then raise control arm to clear steering knuckle. Remove nuts and bolts attaching control arm shaft to frame member, and remove control arm from vehicle.

Installation

To install, reverse removal procedure and check wheel alignment. See *WHEEL ALIGNMENT* Section for procedures and specifications.

LOWER CONTROL ARM

Removal

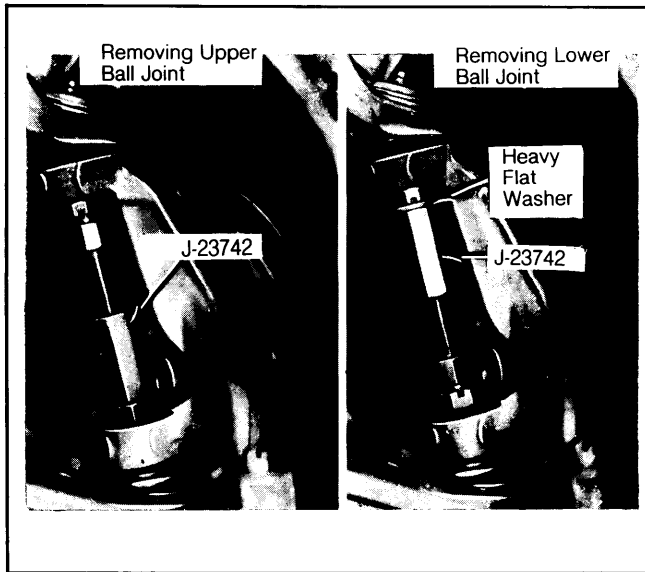
1) Raise vehicle and place safety stands under frame side rails. Remove coil springs. Support inboard end of control arm after springs are removed. Remove cotter pin from lower stud and loosen stud nut 1 turn. Remove brake caliper and suspend out of way. Do not hang from brake line.

2) Using removal tool (J-23742), position large cupped end of tool over upper ball stud nut and pilot threaded end of tool on the lower ball stud. Loosen ball stud, then remove tool and stud nut. Remove nuts attaching control arm to vehicle and remove control arm.

Installation

To install, reverse removal procedure, tighten all nuts and bolts, and check wheel alignment. See *WHEEL ALIGNMENT* Section for procedures and specifications.

Fig. 3: Removing Upper and Lower Ball Joints



LOWER BALL JOINT

Removal

1) Raise vehicle. Support front end with safety stands positioned under lower control arms. Remove wheel and tire. Remove lower stud cotter pin and loosen stud nut 2 turns. Remove brake caliper and suspend out of way. Do not hang by brake line.

2) Install tool J-23742 between the ball studs, and loosen ball stud. Remove tool and ball stud nut. Pull the brake disc and steering knuckle assembly up off the ball stud and support upper control arm with a block of wood. Press lower ball joint out of its seat and remove from vehicle.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Lower Control Arm-to-Frame	
G10,20	65 (88)
All Others	85 (115)
Upper Control Arm-to-Frame	
C & P10,G10,20	70 (95)
All Others	105 (142)
Upper Ball Joint Nut	
C & P10,G10,20	50 (68)
C & P20,30,G30	90 (122)
Lower Ball Joint Nut	90 (122)
Stabilizer Bar	25 (34)
Shock Absorber Upper Nut	
C & P Models	140 (190)
G Models	75 (102)
Shock Absorber Lower Nut	
C & P Models	60 (81)
G Models	75 (102)