

## GENERAL MOTORS COIL SPRING TYPE

Chevrolet  
GMC

### BALL JOINT CHECKING

See *Ball Joint Checking* in *WHEEL ALIGNMENT* Section.

### DESCRIPTION

Independent type front suspension consisting of upper and lower control arms with steering knuckle mounted between by means of ball joints. Upper and lower control arms are mounted to crossmember by means of 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 are mounted between lower control arm and frame at rear of suspension. A stabilizer bar is transversely mounted to frame side rails and is connected at ends to lower control arms by link units.

### ADJUSTMENT

#### WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

#### WHEEL BEARING ADJUSTMENT

See *Wheel Bearing Adjustment* in *WHEEL ALIGNMENT* Section.

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

**Installation** — Position stabilizer bar on frame and loosely install frame bushings and brackets. Install link units at lower control arms, and tighten all nuts and bolts. Lower vehicle.

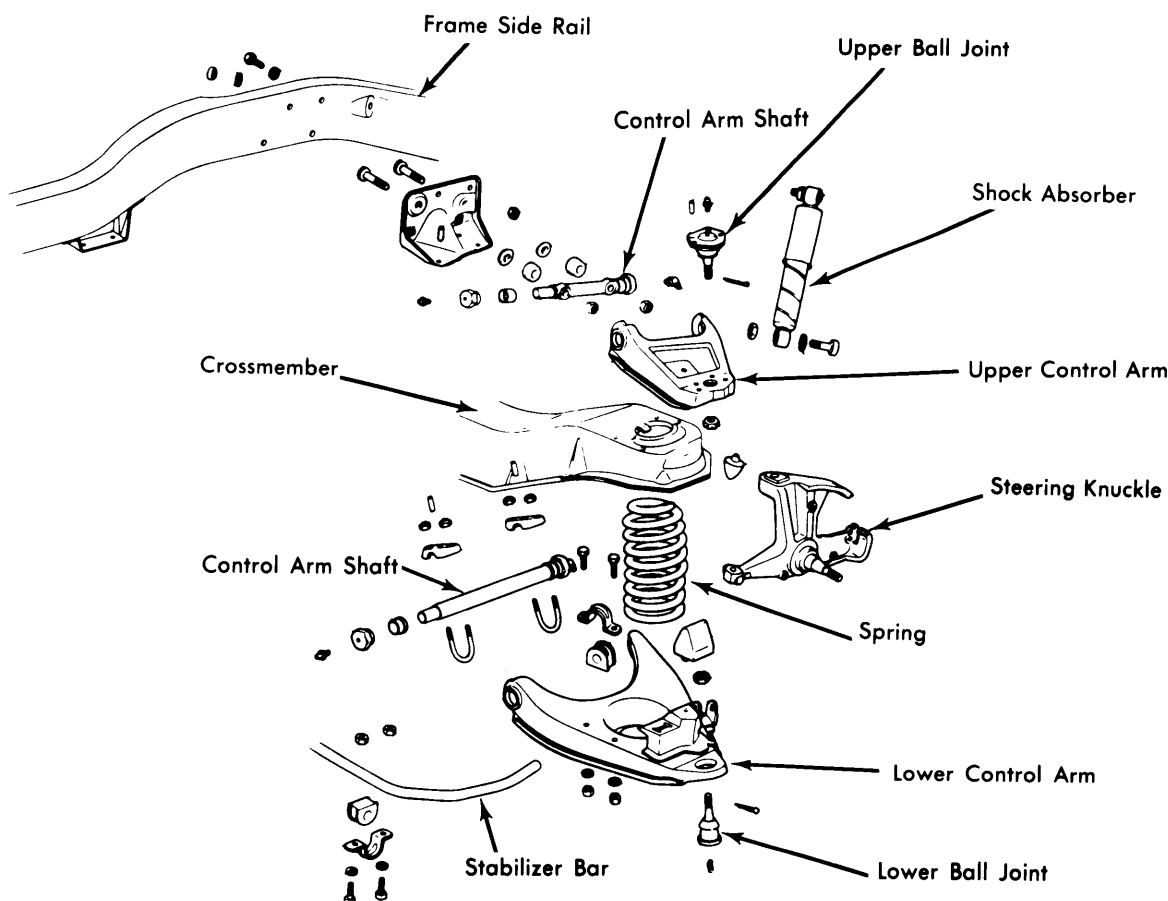


Fig. 1 Exploded View of Front Suspension Assembly

# Front Suspension

## GENERAL MOTORS COIL SPRING TYPE (Cont.)

### COIL SPRINGS

**Removal** — Raise vehicle and support under frame so that control arms hang free. Disconnect shock absorber and stabilizer bar at lower control arm. Install a suitable support tool (J-23038) onto jack and position tool under lower control arm shaft so that shaft seats in grooves of tool. 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 mounting bolts. Carefully lower jack until all tension is released from spring, and remove spring from vehicle.



Fig. 2 Coil Spring Removal Using a Jack & Special Tool

**Installation** — To install coil spring, reverse removal procedure.

### STEERING KNUCKLE

**Removal** — Raise vehicle and support front of vehicle on safety stands positioned under lower control arms. Remove wheel, then remove hub and drum (hub, disc rotor, and caliper on vehicle equipped with disc brakes). Remove tie rod from steering knuckle. See *Steering Linkage in STEERING Section*. Remove upper and lower ball joint cotter pins and LOOSEN nuts. Using suitable tool (J-23742), free steering knuckle from ball joints. Remove ball joint nuts and remove steering knuckle from vehicle.

**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 and support front of vehicle on safety stands positioned under lower control arms. Remove cotter pin from upper ball joint and LOOSEN nut. Using suitable tool (J-23742), loosen ball joint in steering knuckle. Remove tool, and ball joint nut. Remove rivets attaching ball joint to control arm, 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.

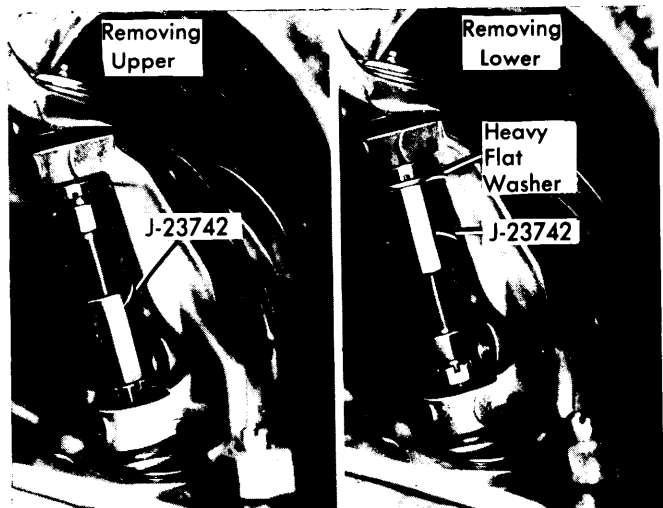


Fig. 3 Removing Upper & Lower Ball Joints

### LOWER BALL JOINT

**Removal** — Raise vehicle and support front of vehicle on safety stands positioned under lower control arms. Remove cotter pin from lower ball joint and LOOSEN nut. Using suitable tool (J-23742), loosen ball joint in steering knuckle. Remove tool and ball joint nut, then swing knuckle assembly up off ball joint and support upper control arm out of the way. Press lower ball joint out of seat in lower control arm and remove from vehicle.

**Installation** — To install lower ball joint, reverse removal procedure.

### UPPER CONTROL ARM

**Removal** — Raise vehicle and support front of vehicle on safety stands positioned under lower control arm. Remove cotter pin from upper ball joint and LOOSEN nut. 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*

### LOWER CONTROL ARM

**Removal** — Raise vehicle and place safety stands under frame side rails. Remove coil spring as previously outlined. Remove cotter pin from lower ball joint and loosen nut. Using a suitable tool (J-23742), separate ball joint from steering knuckle. Remove tool and nut from lower ball joint, and carefully remove lower control arm from vehicle.

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

## GENERAL MOTORS COIL SPRING TYPE (Cont.)

<b>TIGHTENING SPECIFICATIONS</b>	
<b>Application</b>	<b>Ft. Lbs.</b>
<b>Lower Control Arm-to-Frame</b>	
All 10, 1500, & G20, 2500 Models.....	45
All Others .....	85
<b>Upper Control Arm-to-Frame</b>	
All 10, 1500, & G20, 2500 Models.....	70
All Others .....	105
Control Arm Rubber Bushings.....	140
<b>Upper Control Arm Steel Bushings</b>	
G20, 2500	
W/Spacer.....	160
W/O Spacer .....	95
All Others	
W/Spacer.....	190
W/O Spacer .....	115
<b>Lower Control Arm Steel Bushings</b>	
W/Spacer.....	280
W/O Spacer .....	130
<b>Upper Ball Joint Nut</b>	
All 10, 1500, & G20, 2500 Models.....	50
All Others .....	90
Lower Ball Joint Nut .....	90
Stabilizer Bar-to-Control Arm.....	25
Stabilizer Bar-to-Frame.....	25
<b>Upper Shock Absorber Nut</b>	
All 10, 1500, & C-P 20, 2500, 30, 3500 .....	140
G20, 2500, 30, 3500 .....	75
<b>Lower Shock Absorber Nut</b>	
All 10, 1500, & C-P 20, 2500, 30, 3500.....	60
G20, 2500, 30, 3500 .....	75