

## GENERAL MOTORS TORSION BAR TYPE

### GMC Front Wheel Drive Motor Home

#### DESCRIPTION

Front suspension is torsion bar type, with control arms, stabilizer bar, and tubular, gas filled shock absorbers. Front end of each torsion bar is attached to lower control arm. Rear end of each torsion bar is mounted at torsion bar crossmember through an adjustable arm, which is used for vehicle riding height adjustments. Steering knuckle is mounted between upper and lower control arms by conventional ball joints. Front wheel bearings require no adjustment.

#### ADJUSTMENT

##### WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

##### BALL JOINT CHECKING

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

#### REMOVAL & INSTALLATION

##### HUB & BEARING ASSEMBLY

**Removal** — Remove and discard  $\frac{2}{3}$  of the brake fluid from front reservoir of master cylinder. Raise and support vehicle, and remove hub nut and washer. Remove wheel, then remove disc brake caliper. See *appropriate article* in **BRAKE SYSTEMS** Section. Remove three retainer-to-knuckle attaching bolts. Using a slide hammer, if necessary, remove hub and bearing assembly from vehicle.

**Installation** — To install, reverse removal procedure, and tighten all nuts and bolts.

##### KNUCKLE SEAL

**Removal** — Remove hub and bearing assembly as previously outlined. Carefully pry seal out of steering knuckle.

**Installation** — Place new seal on installation tool (J-26485). Insert tool and seal as far as possible into steering knuckle. Now drive seal into place until tool bottoms. Install hub and bearing assembly as previously outlined.

##### STEERING KNUCKLE

**Removal** — Raise and support vehicle. Remove wheel, and hub and bearing assembly. Remove upper ball joint cotter pin and nut, and remove brake line clip from ball joint stud. Using

a brass drift and hammer, drive upper ball joint stud from knuckle. Remove tie rod end, then remove lower ball joint stud from knuckle. Remove knuckle from vehicle.

**Installation** — Position knuckle on vehicle and install lower ball joint stud in knuckle. Loosely attach lower ball joint nut. Install tie rod end, then install upper ball joint stud into knuckle. Loosely install nuts. Install hub and bearing assembly, then tighten all nuts and bolts, and install cotter pins.

**NOTE** — Do not back off nuts to install cotter pins.

##### UPPER CONTROL ARM

**Removal** — Raise and support vehicle under lower control arm. Remove upper shock absorber attaching bolt. Remove cotter pin, and nut from upper ball joint, and remove brake line clip from ball joint stud. Using brass drift and hammer, drive on ball joint stud until it is free from knuckle. Remove upper control arm cam assemblies, and remove control arm from vehicle.

**Installation** — To install, reverse removal procedure, being sure that upper ball joint cotter pin is bent toward upper control arm, to prevent damage to constant velocity joint seal. Check alignment.

##### LOWER CONTROL ARM

**Removal** — Raise and support vehicle. Remove wheel and torsion bar. See *Torsion Bar Removal*. Disconnect shock absorber and stabilizer link from lower control arm. Remove drive axle nut, and remove cotter pin and nut from lower ball joint stud. Remove lower ball joint stud from control arm, and remove lower control arm-to-frame attaching bolts. Push inward on drive axle, and outward on steering knuckle to gain clearance, then lower control arm from vehicle.

**Installation** — To install, reverse removal procedure, and check alignment and riding height.

##### BALL JOINTS

**Removal (Lower Ball Joint)** — Raise and support vehicle. Remove steering knuckle. See *Steering Knuckle Removal*. Drill out rivets attaching ball joint to control arm, and remove ball joint from vehicle.

**Removal (Upper Ball Joint)** — Raise and support vehicle under lower control arms, and remove wheel. Remove cotter pin and nut from upper ball joint stud, and disconnect brake hose clip from stud. Using a brass drift and hammer, drive on upper ball joint stud until it is free from knuckle. Raise and support control arm to gain access to ball joint rivets, and drill out rivets attaching ball joint to control arm. Remove ball joint from vehicle.

**Installation (All)** — To install, reverse removal procedure, using bolts supplied with service ball joint in place of rivets.

##### STABILIZER BAR

**Removal** — Remove link bolts, nuts, grommets, spacers, and retainers from lower control arm. Remove dust shield from frame. Remove stabilizer frame bracket, and remove stabilizer bar from vehicle.

**Installation** — To install, reverse removal procedure, tighten nuts and bolts, and cut off bolt such that  $\frac{1}{4}$ " of threads extend beyond nut.

# Front Suspension

## GENERAL MOTORS TORSION BAR TYPE (Cont.)

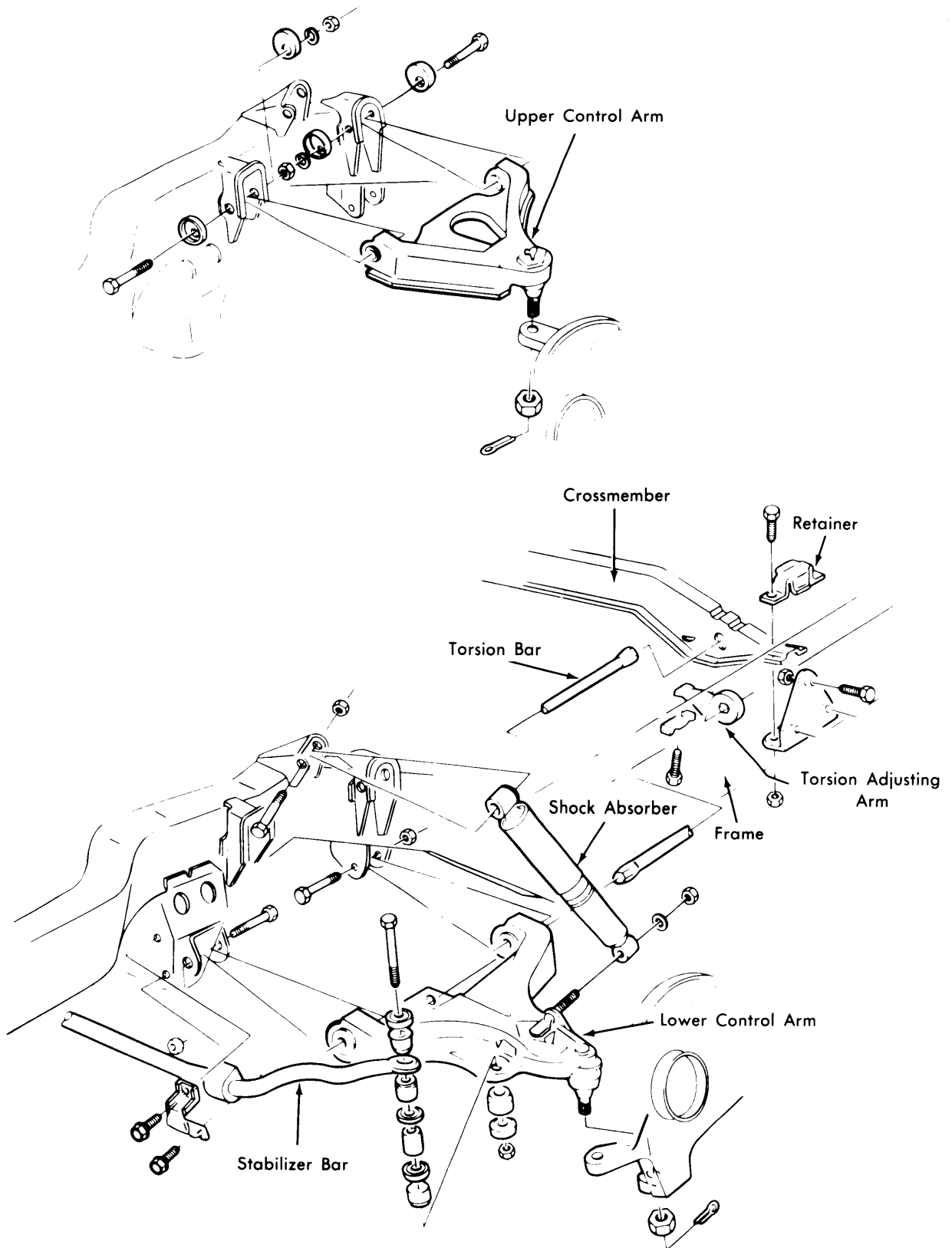


Fig. 1 Exploded View of Front Suspension Assembly

## GENERAL MOTORS TORSION BAR TYPE (Cont.)

### TORSION BARS/CROSSMEMBER

**Removal** — Raise and support vehicle. Install suitable tool (J-22517) on crossmember, and turn tool screw until seated in dimple of torsion bar adjusting arm. Remove torsion bar adjusting bolt and nut, noting number of turns required to remove. **NOTE** — Reinstall bolt same number of turns on installation to obtain original ride height. Tighten center screw of tool until torsion bar is completely relaxed. Remove tool and repeat procedure on opposite torsion bar. Remove bolts attaching torsion bar crossmember to frame, and remove ex-

haust pipe hanger from crossmember. Move crossmember toward rear until torsion bars are free and adjusting arms are removed. Move crossmember toward left and remove from vehicle. Remove torsion bars and mark for reassembly reference.

**Installation** — 1) Lubricate both ends of torsion bar and install bars on vehicle. Install crossmember insulators on crossmember and position on vehicle, approximately two inches rearward of its normal position. Raise torsion bars and align with holes in crossmember. Slide torsion bar forward, so that torsion bars just rest on edges of holes.

2) Insert adjusting arms in crossmember, and position so arms will engage torsion bars and end of arms are 1 3/4"-2" below crossmember. Tap crossmember forward into its normal position. **NOTE** — Make sure end of torsion bar is flush with rear face of adjusting arm. Move torsion bar to adjust. Install crossmember retainers and nuts, then install exhaust pipe hanger. Install suitable tool (J-22517) over crossmember, and turn center screw until adjusting arm is positioned to allow installation of adjusting nut. Install adjusting nut and turn adjusting bolt into nut same number of turns as were recorded at removal. Turn center screw of tool until torsion is completely relaxed and remove tool.

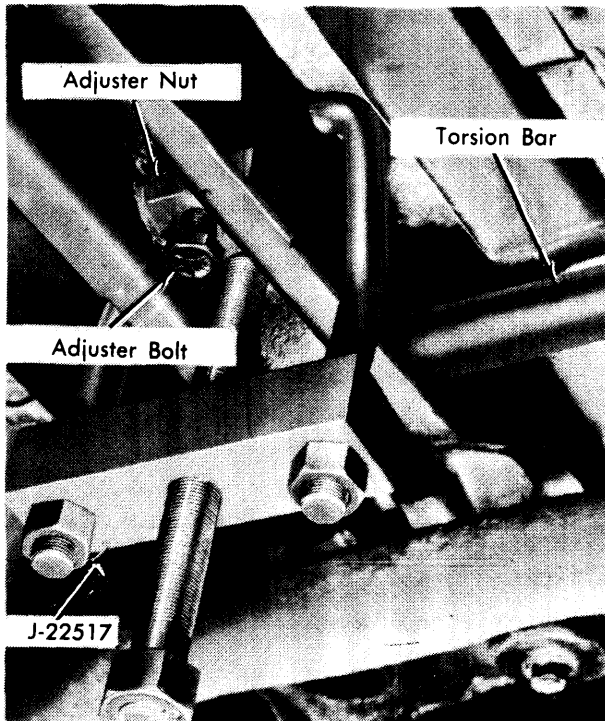


Fig. 2 Removing Torsion Bar Using a Special Tool

### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Drive Axle Nut.....	110
Stabilizer Link Nut.....	35
Stabilizer Bracket-to-Frame Bolt.....	15
Crossmember Retainer Bolts.....	10
Shock Absorber Nuts.....	90
Upper Ball Joint Nut.....	50
Lower Ball Joint Nut.....	100
Tie Rod End Nut.....	40
Constant Velocity Joint-to-Output Shaft Bolts.....	65
Bearing Retainer-to-Knuckle Bolts.....	35