

# Front Suspension

## MERCEDES-BENZ — EXCEPT 380SL & 380SLC

### DESCRIPTION

Mercedes-Benz uses independent front suspension, consisting of upper and lower control arms, coil springs, shock absorbers, steering knuckles and a stabilizer bar. Steering knuckle is connected at top and bottom with ball joints.

### ADJUSTMENTS

#### WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

See *Wheel Alignment Specifications and Procedures* in *WHEEL ALIGNMENT* section.

#### WHEEL BEARING

1) While rotating hub, tighten clamp nut until hub can just be turned. Loosen clamp nut and release bearing tension by striking steering knuckle spindle with soft mallet.

2) Using a dial indicator, check wheel bearing end play. End play should be .0004-.0008" (.01-.02 mm). Adjust clamp nut until end play is within limits. Tighten socket bolt of clamp nut. Washer between outer bearing and clamp nut should rotate when light pressure is applied.

#### BALL JOINT CHECKING

Check ball joint lateral and vertical movement. If any measurable lateral movement is observed, replace ball joint. Correct excessive or insufficient vertical movement by adding or removing washers.

### REMOVAL & INSTALLATION

#### WHEEL BEARING

Information not available from manufacturer.

#### STEERING KNUCKLE

##### Removal

1) Raise vehicle and support with safety stands under outer edge of lower control arms. Remove wheel assemblies.

2) Detach steering knuckle arm from steering knuckle. Remove caliper from steering knuckle and support out of the way. Remove hub.

3) Loosen brake hose holder on backing plate. Remove nut from upper ball joint and separate from steering knuckle.

4) Remove nut from lower ball joint. Swivel upper end of steering knuckle slightly outward, and use separator tool to detach steering knuckle from lower ball joint. Remove knuckle from vehicle.

##### Installation

To install, reverse removal procedure.

#### COIL SPRING

##### Removal

1) Disconnect upper shock mount. Raise vehicle and support under lower control arms with safety stands. Remove wheel assembly.

2) Attach coil spring compressor. Tighten spring compressor while raising floor jack under lower

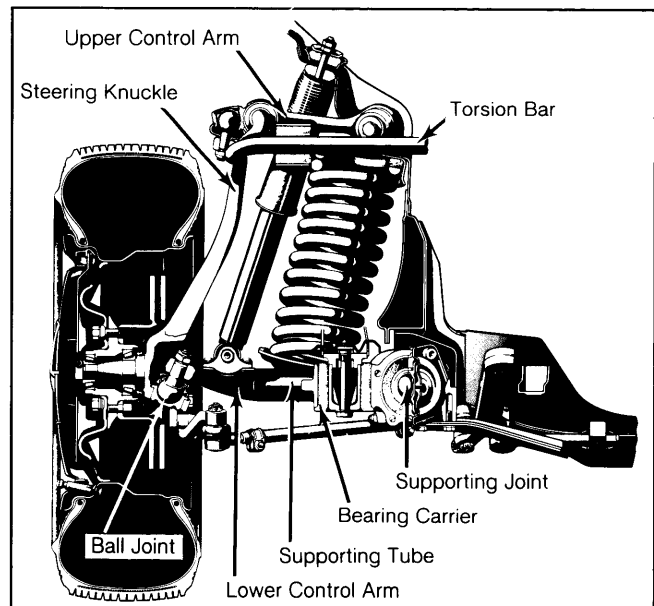
control arm to assist compressing spring. Slowly lower floor jack and remove the coil spring and rubber mounting.

##### Installation

1) Position rubber mount on coil spring. With spring compressed, position in vehicle. Slowly release spring, being sure it rests in mounting groove.

2) Install wheel assembly and lower vehicle to floor. Attach upper shock absorber mount.

**Fig. 1: Assembled View of Mercedes-Benz Front Suspension**



#### UPPER CONTROL ARM

##### Removal

1) Raise vehicle and support under outer edge of lower control arms with safety stands.

**NOTE:** Loosen hex nuts on ball joints with coil spring installed **ONLY WHEN SUPPORTING STANDS ARE UNDER LOWER CONTROL ARM AND NOT BODY**. If jack cannot be so positioned, remove coil spring.

2) Remove upper ball joint nut. Using separator tool, detach ball joint from steering knuckle arm. Wire steering knuckle to frame so it will not drop.

3) Remove upper control arm support from stabilizer bar and from body. Remove upper control arm.

##### Installation

1) Position upper control arm in vehicle and install control arm-to-body bolt. Connect upper ball joint to steering knuckle.

2) Mount stabilizer bar support to upper control arm, attaching bolt loosely. Lower vehicle to floor and tighten all bolts to specifications. Check wheel alignment.

#### LOWER CONTROL ARM

##### Removal

1) Loosen top shock absorber mount. Remove lower mount and remove shock absorber. Raise vehicle and support with safety stands under outer edge of lower control arms.

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2) Remove wheel assembly. Remove coil spring as previously described. Detach tie rod end from steering knuckle arm.

3) Mark position of lower control arm eccentric bolt and bushing to crossmember for reassembly reference.

4) Remove bolts holding brake support to frame. Remove lower control arm eccentric bolt. Detach lower ball joint from control arm. Remove lower control arm with brake support.

### Installation

1) Mount lower control arm to ball joint. Position control arm bushing to frame. Attach brake support to frame.

2) Install coil spring. Install shock absorber, loosely. Install wheel assembly and lower vehicle to floor.

3) Tighten shock absorber mountings. Position eccentric bolt to original position and tighten to specifications. Attach tie rod end to steering knuckle arm. Check wheel alignment.

## SUSPENSION ASSEMBLY

### Removal

1) Disconnect upper shock mount. Raise vehicle and support with safety stands under outer edge of lower control arms. Remove wheel assembly.

2) Remove coil spring, as previously described. Use separator tool to remove tie rod end from steering knuckle arm.

3) Detach flexible brake hose from brake line at connection on fender well. Loosen plug connection of brake lining wear indicator on caliper. Remove bolts holding brake support to frame.

4) Support front axle half. Mark position of lower control arm. Remove eccentric bolt.

5) Remove stabilizer bar support from upper control arm. Remove bolt holding upper control arm bushing to body. Remove suspension assembly.

### Installation

1) Position suspension in vehicle and mount upper control arm to body and stabilizer bar, but do not fully tighten bolts.

2) Raise opposite side of vehicle as required to obtain proper stabilizer bar position. Attach upper control arm to frame crossmember.

3) Attach brake support to frame. Reconnect brake line to hose and connect plug connection of caliper wear indicator. Install coil spring.

4) Install shock absorber loosely. Attach tie rod end to steering knuckle arm. Bleed brake system. Install wheel assembly and lower vehicle to floor.

5) Place eccentric bolt of camber adjustment to original position and tighten. Tighten upper control arm-to-body bolt and stabilizer bar-to-control arm support bolt.

6) Tighten shock absorber mounting bolts. Check axle riding height and wheel alignment. See *WHEEL ALIGNMENT* section.

## STABILIZER BAR

### Removal

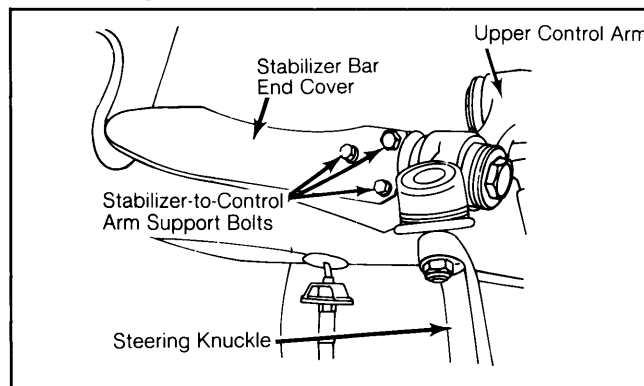
1) Raise vehicle and support with safety stands under lower control arms. Remove wheel assemblies. Detach upper control arm support from stabilizer bar.

2) Remove master cylinder and booster. Remove heater hoses, air cleaner, regulator linkage,

vacuum lines and electrical wiring as required to allow clearance for stabilizer bar removal.

3) Remove stabilizer bar mounting brackets and bushings. Remove end covers and remove stabilizer bar.

**Fig. 2: Upper Control Arm and Stabilizer Bar Mounting Locations**



### Installation

1) Position stabilizer bar in vehicle and loosely attach bar support to upper control arm.

2) Position rubber bushings on stabilizer bar, with splits facing against frame. Install brackets loosely.

3) Attach left and right end covers and replace all hoses, linkage, wiring and brake components removed. Install wheel assemblies and lower vehicle to floor.

4) Tighten stabilizer bar-to-control arm support bolt. Tighten mounting brackets. Check wheel alignment.

## TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Shock Absorber Lower Mount .....	18 (24)
Stabilizer Bar Bracket Bolts .....	18 (24)
Steering Linkage Bolts .....	25 (34)
Steering Knuckle Arm Bolts .....	58 (79)
Upper Control Arm Eccentric Bolts .....	43 (58)
Lower Control Arm Eccentric Bolts .....	87 (118)
Upper Ball Joint Nut .....	43 (58)
Lower Ball Joint Nut .....	58 (79)