

Front Suspension

MERCEDES-BENZ, EXCEPT 450SL & 450SLC

230
240D
280CE, E & SE
300CD & D
450SEL
6.9

NOTE — Some 6.9 models use a "Hydropneumatic" suspension system. See article at end of this section.

DESCRIPTION

Front suspension consists of upper and lower control arms, coil springs, shock absorbers, steering knuckles and a stabilizer bar.

ADJUSTMENTS

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

WHEEL BEARING ADJUSTMENT

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

BALL JOINT CHECKING

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

REMOVAL & INSTALLATION

NOTE — Manufacturer requires that shock absorber mountings and stabilizer attachments not be loosened or tightened unless vehicle is resting on ground or axle is supported to simulate vehicle load.

SUSPENSION ASSEMBLY (ONE SIDE)

Removal — 1) Remove front shock absorber by detaching upper mounting first, then lower mounting. Raise front of vehicle, with jacks placed under outer edge of lower control arms. Remove front wheel.

2) Remove coil spring, as described in this article. Use suitable tool to separate tie rod ball joint 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 eccentric to crossmember for reinstallation purposes. Remove eccentric bolt.

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

Installation — 1) Position front suspension in vehicle and mount upper control arm to body and stabilizer bar, but do not fully tighten bolts. Raise opposite side of vehicle as required to obtain proper stabilizer bar position.

2) Attach upper control arm to frame crossmember. Attach brake support to frame. Reconnect brake line to hose and plug connection of caliper wear indicator.

3) Install coil spring. Install shock absorber loosely. Attach tie rod ball joint to steering knuckle arm.

4) Bleed brake system. Install front wheel and lower vehicle to ground.

5) Place eccentric bolt of camber adjustment to original position and tighten.

6) Tighten upper control arm-to-body bolt and stabilizer bar-to-control arm support bolt. Tighten shock absorber mounting bolts. Check axle height and front wheel alignment. See *WHEEL ALIGNMENT* section.

UPPER CONTROL ARM

NOTE — Loosen hex nuts on ball joints with coil spring installed *ONLY* when supporting jacks are under lower control arm and not body. If jack cannot be so positioned, remove coil spring.

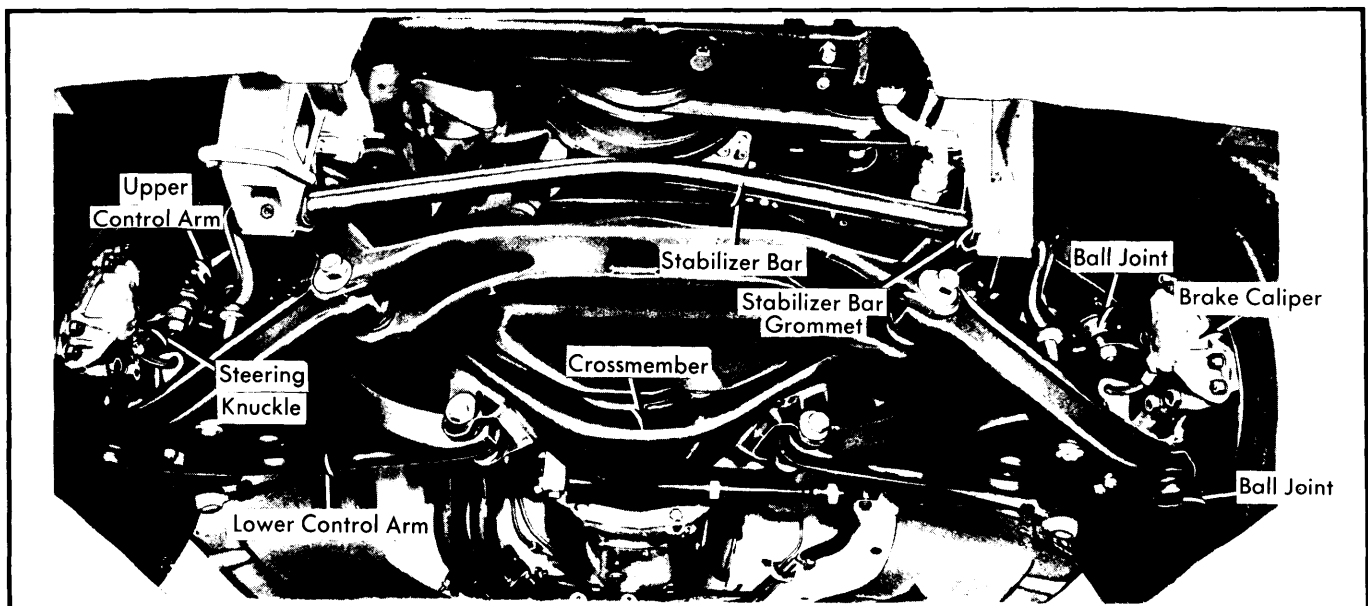


Fig. 1 Assembled View of Mercedes-Benz Front Suspension (280 Series Shown; Others Similar with Major Difference in Stabilizer Bar Configuration and Mounting)

MERCEDES-BENZ, EXCEPT 450SL & 450SLC (Cont.)

Removal — 1) Raise front of vehicle, placing jacks under outer edges of control arms.

2) Remove upper ball joint nut. Using suitable 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 attach 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 ground and tighten all bolts to specifications. Check front end alignment.

LOWER CONTROL ARM

Removal — 1) Loosen top shock absorber mounting, then lower mounting. Remove shock absorber. Raise front of vehicle, with jacks placed under outer edge of control arm.

2) Remove front wheel. Remove coil spring as described in this article. Detach tie rod ball joint 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.

2) Attach brake support to frame. Install coil spring. Install shock absorber, loosely. Mount front wheel and lower vehicle to ground.

3) Tighten shock absorber mountings. Position eccentric bolt to original position and tighten to specifications.

4) Attach tie rod ball joint to steering knuckle arm. Check wheel alignment.

COIL SPRING

Removal — 1) Release upper shock absorber mount. Raise front of vehicle with jack placed under lower control arm. Remove front wheel.

2) Attach suitable coil spring compressor. Tighten spring compressor while raising jack under lower control arm to assist compressing operation. Slowly lower 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) Mount front wheel and lower vehicle to ground. Attach upper shock absorber mount.

STABILIZER BAR

Removal — 1) Raise front of vehicle, with jacks placed under lower control arms. Remove front wheels.

2) Detach upper control arm support from stabilizer bar.

3) 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.

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

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. Mount front wheels and lower vehicle to ground.

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

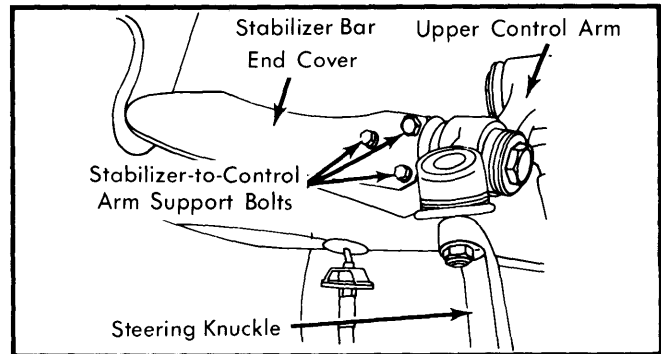


Fig. 2 Showing Attachment of Upper Control Arm and Stabilizer Bar

STEERING KNUCKLE

Removal — 1) Raise front of vehicle, with jacks placed under outer edge of lower control arm. Remove front wheels.

2) Detach steering knuckle arm from steering knuckle. Remove caliper from steering knuckle and suspend out of way with wire. Remove front wheel 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 suitable tool to detach steering knuckle from lower ball joint. Remove knuckle from vehicle.

Installation — To install, reverse removal procedure.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Lower Shock Absorber Mount	18 (2.5)
Stabilizer Bar Bracket Bolts	18 (2.5)
Steering Linkage Bolts	25 (3.5)
Steering Knuckle Arm Bolts	58 (8.0)
Upper Control Arm Eccentric Bolts	43 (6.0)
Lower Control Arm Eccentric Bolts	87 (12.0)
Upper Ball Joint Nut	43 (6.0)
Lower Ball Joint Nut	58 (8.0)