# Rear Suspension

## AUDI QUATTRO

### DESCRIPTION

The design of the rear axle is the same as that of the front axle, but it has been rotated 180°. Additional mountings have been welded on the sub-frame; one for the rear axle final drive and one for each of the tie rods.

Suspension is the independent type, consisting of a strut assembly, control arm, and stabilizer bar. Strut assembly consists of MacPherson strut, surrounded by a coil spring.

The lower control arm is connected by a ball joint to the wheel bearing housing and by a bushing connected to frame. Stabilizer bar is connected by brackets to sub-frame and by bracket to control arm.

### ADJUSTMENTS

#### WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

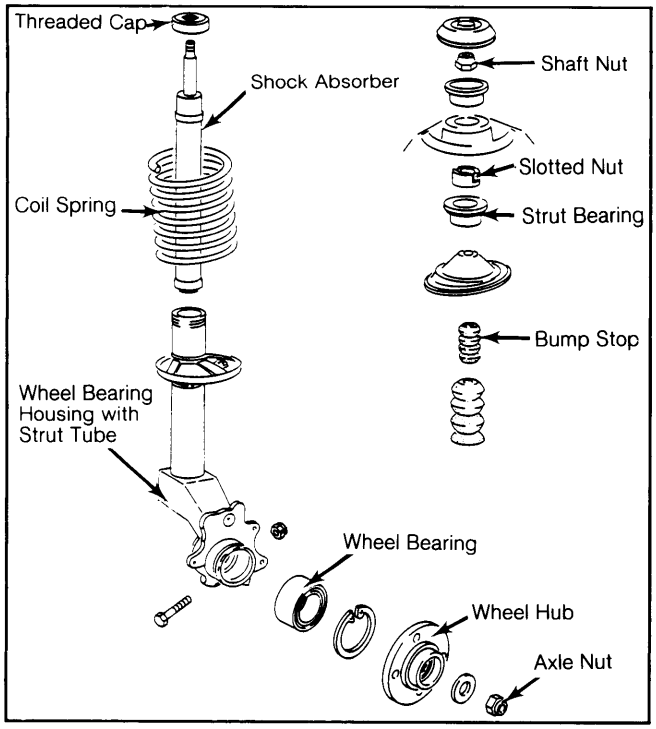
#### WHEEL BEARING

No adjustment required.

#### BALL JOINT CHECKING

Inspect ball joints for wear or excessive play. Replace as necessary.

*Fig. 1: Exploded View of Quattro Rear Strut & Hub*




### REMOVAL & INSTALLATION

#### BALL JOINT

**Removal & Installation**

To remove ball joint, remove wheel bearing housing/ball joint clamp bolt. Remove 2 bolts holding ball joint to lower control arm. To install, reverse removal procedure.

#### STRUT ASSEMBLY

**NOTE: If axle nut is removed or installed during any removal and installation procedure, do so with vehicle resting on floor at full curb weight.**

**Removal**

**1)** Loosen axle nut. Raise and support vehicle. Remove wheel assembly. Without detaching brake hose or line, unbolt caliper, remove brake hose bracket, and suspend caliper out of the way.

**2)** Detach stabilizer bar. Remove brake rotor. Remove wheel bearing housing/ball joint clamp bolt. Remove ball joint from lower control arm. Press off tie rod end. Using puller attached to hub studs, press out drive shaft from hub.

**3)** Remove axle nut and push control arm down, pull drive shaft out of wheel bearing housing. Loosen top nut on MacPherson strut, while holding piston rod with hex wrench. Remove strut from vehicle.

**Disassembly**

**1)** With strut assembly on bench, attach spring compressor to coil spring, and compress enough to remove upper piston rod retaining nut.

**2)** Remove strut top plate. Slowly release tension from coil spring, and remove spring. Remove threaded cap from top of MacPherson strut. Remove inner shock absorber.

**Reassembly & Installation**

To reassemble and install, reverse disassembly and removal procedure. Note the following. Drive axle splines must be grease-free. Apply a narrow ring of locking compound around outer end of drive shaft splines, and allow 1 minute to dry before installing. Tighten drive axle nut with vehicle resting on floor.

#### WHEEL BEARING

**Removal**

**1)** Remove strut assembly from vehicle. Press wheel hub from housing. Remove bearing retaining snap rings.

**2)** Press wheel bearing from bearing housing. Press inner race from wheel hub. Whenever wheel bearing is replaced, a new race must be used.

**Installation**

To install, reverse removal procedure.

**CAUTION: When installing hub, be sure that tool contacts inner bearing race only.**

#### LOWER CONTROL ARM

**Removal**

**1)** Raise and support vehicle. Place additional support under strut assembly. Detach end of stabilizer bar. It may be necessary to remove stabilizer bar clamp bolts from frame to gain movement.

**2)** Loosen control arm mounting bolts. Remove axle drive shaft, (if necessary). Mark ball joint nuts and bracket for reassembly. Remove ball joint mounting nuts, bolts and bracket and separate ball joint from strut. Remove control arm.

## AUDI QUATTRO (Cont.)

**Bushing Replacement**

Use support (VW 401) and driver (VW 409), remove old bushings from control arm. Using same tools, lubricate and replace bushings.

**Installation**

To install lower control arm, reverse removal procedure, while noting the following. If ball joint is not replaced at this time, be sure index marks made during removal are aligned. Tighten all nuts and bolts to specifications. Check wheel alignment.

***TIGHTENING SPECIFICATIONS***

| Application | Ft. Lbs. (N.m) |
|---|---|
| Axle Nut [1] | 203 (276) |
| Ball Joint Bracket Nuts | 47 (64) |
| Ball Joint Clamp Nut | 47 (64) |
| Control Arm-to-Sub-frame | 43 (58) |
| Suspension Strut Threaded Cap | 130 (177) |
| Shock Absorber Shaft Nut | 43 (58) |
| Stabilizer Bar Bracket | 18 (24) |

[1] — Always replace nut when removed.