

## JAGUAR

XJ6  
XJ12  
XJS

### DESCRIPTION

Suspension consists of upper and lower control arms, double acting hydraulic shock absorbers, coil springs, stabilizer bar and steering knuckles. The upper control arms are mounted inboard to fulcrum shafts and are mounted outboard to steering knuckles by upper ball joints. Lower control arms are mounted inboard to crossmember and outboard to steering knuckles by lower ball joints. Coil springs are mounted between lower control arms and crossmember. Shock absorbers are attached at the bottom to lower control arms and at the top to body. Stabilizer bar is attached to lower control arms and crossmember.

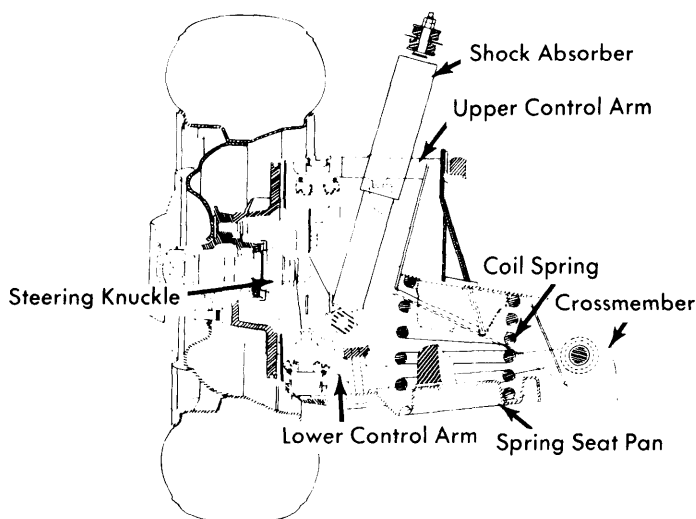


Fig. 1 Sectional View of Front Suspension Assembly

### ADJUSTMENT

#### 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.

#### FRONT SUSPENSION ASSEMBLY

**Removal** — 1) Disconnect battery and remove air cleaners. Disconnect the upper end of shock absorber. Drain and discard power steering fluid. Disconnect and plug power steering inlet and outlet hoses.

2) Remove nuts securing engine mounts to brackets on frame crossmember. Disconnect rear crossmember mountings, then separate stabilizer bar from link. Turn steering until lower steering column pinch bolt is accessible, and remove bolt.

3) Return steering to straight ahead position, then disconnect horn wiring harness. Separate lower end of battery ground, then release wiring harness from clips.

4) Remove nuts from pivot bolts. **NOTE** — Do not attempt to remove pivot shaft bolts. Working from drivers compartment, loosen upper steering column "U" joint pinch bolts. Slide lower steering column "U" joint off pinion housing splines.

5) Fit overhead engine support to brackets. Using a floor jack under center of suspension crossmember, raise vehicle and place jack stands on lift points. Remove front wheels and disconnect brake system. Carefully lower jack and remove suspension from vehicle.

**Installation** — To install front suspension assembly, reverse removal procedure and note the following: Ensure all lines and/or hoses are properly routed without kinks. Engine must not be started until power steering reservoir is full. **NOTE** — If it is difficult to reinstall steering column, See **Steering Columns** in **STEERING** Section. Bleed brake system.

#### SHOCK ABSORBERS

**Removal** — Remove lock nut securing upper shock absorber to body. Raise and support vehicle. Remove wheel, then remove bolt securing lower portion of shock absorber. Compress shock absorber and remove from vehicle.

**Installation** — To install, reverse removal procedure. On XJS models, refit bolts from rear to front of bracket.

#### COIL SPRINGS

**Removal** — Raise and support vehicle, then remove tire and wheel. Fit a spring compressor (JD-6D & adaptor JD-6D-1) and collapse spring coil enough to allow load on pan seat to be relieved. Remove hardware mounting spring pan to lower control arm. Slightly loosen spring compressor and remove assembly complete. **NOTE** — Keep track of number and placement of packing shims.

**Installation** — To install coil spring, reverse removal procedure noting the following: Floor jack can be placed under lower ball joint to aid in aligning spring pan bolt. A maximum of three packers may be placed in spring pan and no more than two can be fitted on crossmember.

#### LOWER CONTROL ARM

**Removal** — Raise and support vehicle. Remove complete front suspension assembly as previously outlined. With assembly removed, disconnect tie rod ball joints from steering knuckle. Remove steering rack from crossmember and remove coil spring. Disconnect upper and lower ball joints from respective control arms. Remove stabilizer bar and using a suitable drift, remove pivot shaft from lower control arm.

**Installation** — To install, reverse removal procedure. **NOTE** — Before tightening nuts on ends of pivot shaft, lower vehicle until full weight is on ground.

#### UPPER CONTROL ARM

**Removal** — Raise and support vehicle, then remove wheel. Disconnect upper ball joint from control arm. Note number

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and position of caster adjusting shims for reinstallation. Wire steering knuckle to coil spring and remove bolts securing upper control arm pivot shaft to crossmember. Upper control arm can now be maneuvered from vehicle.

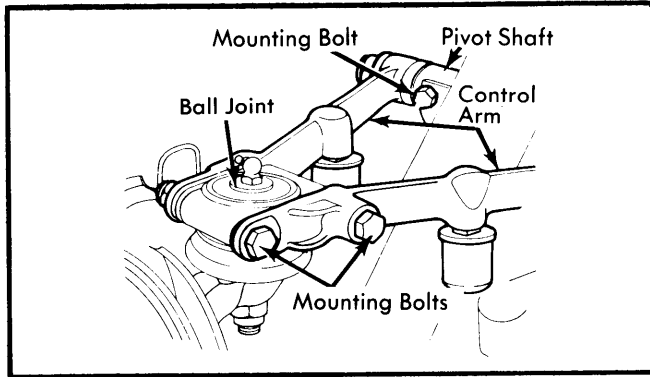


Fig. 2 Detail of Upper Control Arm Mounting Points

**Installation** — To install upper control arm, reverse removal procedure and tighten all nuts and bolts. Recheck wheel alignment.

### STABILIZER BAR

**Removal** — Raise vehicle and place on safety stands, then remove both front wheels. Disconnect both ends of stabilizer bar from mounting links. Remove both mounting brackets from frame and separate stabilizer bar from all mounting bushings. Disconnect one tie rod end from steering knuckle and maneuver stabilizer bar from vehicle.

**Installation** — To install stabilizer bar, reverse removal procedure noting the following: Lightly coat rubber bushings with suitable liquid. Tighten all nuts, bolts, and fasteners when vehicle weight is on ground.

### LOWER BALL JOINT

**Removal** — 1) Raise front of vehicle and place on safety stands. Remove wheel. Disconnect brake line from caliper and plug openings. Disconnect tie rod from steering arm. Twist stub axle carrier to gain access to bolts securing upper ball joint to control arm, then remove bolts. Note position and number of shims.

2) Remove nut mounting lower ball joint to control arm. Use tool JD 24 (or equivalent) to separate ball joint from control arm, then maneuver assembly from vehicle.

**Disassembly & Reassembly** — 1) Pry back tab washers and remove four screws keeping ball pin cap. Lift out ball pin. Release clip and remove upper socket from stub axle.

2) Clean all components and inspect for excessive wear or damage.

3) Install new upper socket to stub axle. Fit lip of boot clip in recess in socket. Lip **MUST** be near lower face of clip. Install new boot to clip and attach with plastic retaining ring. Grease new ball pin and put into position.

4) Put ball pin cap into vise and cut out lower socket. Clean shavings and fit new socket. Refit shims and replace ball cap. Fit four setscrews with lock tabs and tighten, continually checking ball joint movement.

5) If ball pin is loose in socket, remove shims. If pin is excessively tight, add shims until movement is correct. Movement should be slightly stiff.

**Installation** — Insert ball joint in lower control arm and tighten lock nut. Align stub axle with upper control arm and insert bolts (bolt heads **MUST** face front). Make sure packing pieces and shims are properly installed. Reconnect tie rod. Attach brake lines and bleed brakes. Check camber and caster angles.

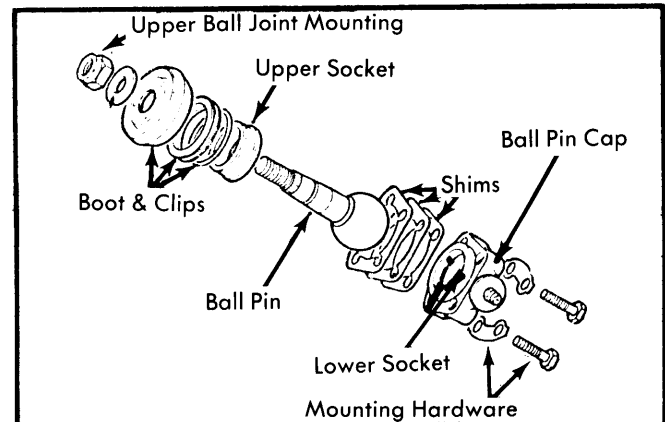


Fig. 3 Exploded View of Ball Joint

### UPPER BALL JOINT

**NOTE** — Upper control arm ball joint cannot be overhauled. If ball joint is excessively worn, assembly must be replaced.

**Removal** — 1) Raise vehicle and place on safety stands. Remove wheel. Twist steering to full lock position. Wire stub axle to crossmember to prevent tension on brake hose when ball joint is separated.

2) Remove bolt mounting upper ball joint to control arm. Note number of shims and position of packing pieces. Remove ball joint lock nut and separate ball joint from control arm. Maneuver assembly from vehicle. Withdraw ball joint from stub axle.

**Installation** — Apply grease to replacement ball joint and place in position in stub axle. Hold ball joint against taper fit washer and tighten retaining nut. Refit upper control arm mounting bolts (bolt heads must face forward) and caster shims. Check camber and caster angles.

### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Upper Pivot Shaft-to-Crossmember .....	49-55 (6.8-7.6)
Upper Ball Joint-to-Control Arm .....	26-32 (3.6-4.4)
Pivot Shaft-to-Upper Control Arm .....	45-55 (6.3-7.6)
Pivot Shaft-to-Lower Control Arm .....	32-50 (4.4-6.9)
Upper Shock Absorber .....	27-32 (3.8-4.4)
Lower Shock Absorber .....	32-36 (4.4-5.0)
Spring Pan .....	27-32 (3.8-4.4)
Link-to-Lower Control Arm .....	14-18 (2.0-2.5)