AMERICAN MOTORS

American Motors

DESCRIPTION

Independent front suspension is used on all models. Each wheel is attached by means of a steering knuckle, upper and lower control arm and ball joint assembly. Front wheels are held in proper relation by linkage which attaches to steering knuckle. Inner end of lower control arm is attached to front crossmember by a pivot bolt-eccentric assembly and outer end is connected to steering knuckle by a ball joint. Inner end of upper control arm is attached to wheelhouse panel with pivot bolts and outer end is connected to steering knuckle by a ball joint. Coil springs are located between seats in wheelhouse panels and seats attached to upper control arms. Conventional type shock absorbers are located inside the coil springs.

ADJUSTMENT

CASTER & CAMBER

See Caster and Camber Adjustments and Specifications in WHEEL ALIGNMENT Section.

FRONT WHEEL BEARINGS

See Wheel Bearing Adjustment and Specifications in WHEEL ALIGNMENT Section.

BALL JOINT CHECKING

See Ball Joint Checking in WHEEL ALIGNMENT Section.

REMOVAL & INSTALLATION

COIL SPRING

Removal – Remove shock absorbers. Install suitable spring compressor tool (J-23474) through upper spring seat opening and seat ball joint in socket support. Place tool lower attachment screws through shock absorber mounting holes in lower spring seat, then tighten to approximately 5 ft. lbs. Remove lower spring seat pivot retaining nuts and turn compression nut (on tool) clockwise until spring is compressed about 1". Raise front of car and support body at side sills, allowing control arms to fall free of lower spring seat. Remove wheel and pull lower spring seat away from car. Turn tool compression nut counterclockwise and carefully guide lower spring seat out and over upper control arm. Remove tool, spring seat and spring.

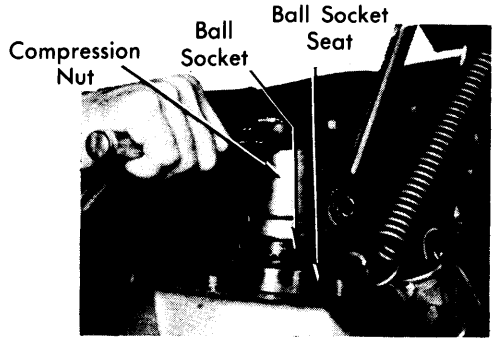

Fig. 1 Installation of Coil Spring Compressor Tool in Upper Spring Opening

Installation – 1) Install suitable spring compressor tool (J-23474) through upper spring seat opening and seat ball joint in socket support. Install upper spring cushion on top of spring coil and tape in place. Position spring on lower seat with end against formed shoulder of seat (see illustration). **NOTE** – *Lower coil end and shouldered end of spring seat must be located facing toward engine compartment.*

2) Place spring against upper seat. Align and install compressor lower attachment screws through shock absorber mounting holes in lower spring seat, then install lower retainer and retaining nuts of tool. Align lower spring seat pivot so retaining studs will enter upper control arm when spring is in position. **CAUTION** – *Spring lower coil end must be properly positioned on seat.*

Fig. 2 Correct Position of Lower Spring Seat

3) Compress spring by turning compression nut clockwise until lower spring seat pivot studs can be aligned with holes in upper control arm. Turn compression nut counterclockwise and guide spring seat pivot studs into control arm. Replace wheel and lower car. Install and tighten lower spring seat pivot retaining nuts. Remove tool and install shock absorbers.

UPPER CONTROL ARM

Removal – Remove shock absorbers and install suitable spring compressor tool (J-23474) through upper spring seat opening. Seat ball socket support. Place tool lower attachment screws through shock absorber mounting holes in lower spring seat, then tighten to approximately 5 ft. lbs. Remove lower spring seat pivot retaining nuts and turn compression nut (on tool) clockwise until spring is compressed about 2". Raise front of car and support body at side sills, allowing control arms to fall free of lower spring seat. Remove wheel, then remove ball joint retaining nut. Remove ball stud from steering knuckle with suitable tool (J-9656). Remove inner pivot bolts and control arm from suspension support panel.

Installation – Place control arm in position in suspension support panel and install inner pivot bolts. **NOTE** – *Pivot bolt nuts should not be tightened until car is supported by wheel.* Install steering knuckle and retaining nut onto ball joint stud and tighten nut. Turn spring compressor tool compression nut counterclockwise and guide spring seat pivot studs into control arm. Replace wheel and lower car. Install and tighten lower spring seat pivot retaining nuts. Tighten control arm inner pivot bolts, remove spring compressor tool and install shock absorbers. Check wheel alignment.

UPPER CONTROL ARM BUSHING SERVICE

1) Remove shock absorber and mounting bracket. Using coil spring compressor tool, compress spring approximately 2". Raise and support front of vehicle and remove wheel. Remove control arm pivot bolts and remove arm from wheelhouse by tilting steering knuckle outward and backward using care not to damage brake line. Rotate contol arm over disc brake rotor to expose bushings.

2) Remove and install bushing using suitable bushing replacement tool J-23473 (or equivalent).

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NOTE – *When installing bushings, ensure retainer ring is installed on rear side of bushing only.*

3) To complete service procedure, reverse removal procedure. Do not tighten control arm pivot bolt nuts until weight is supported by wheels. When service is completed, check wheel alignment and correct as necessary.

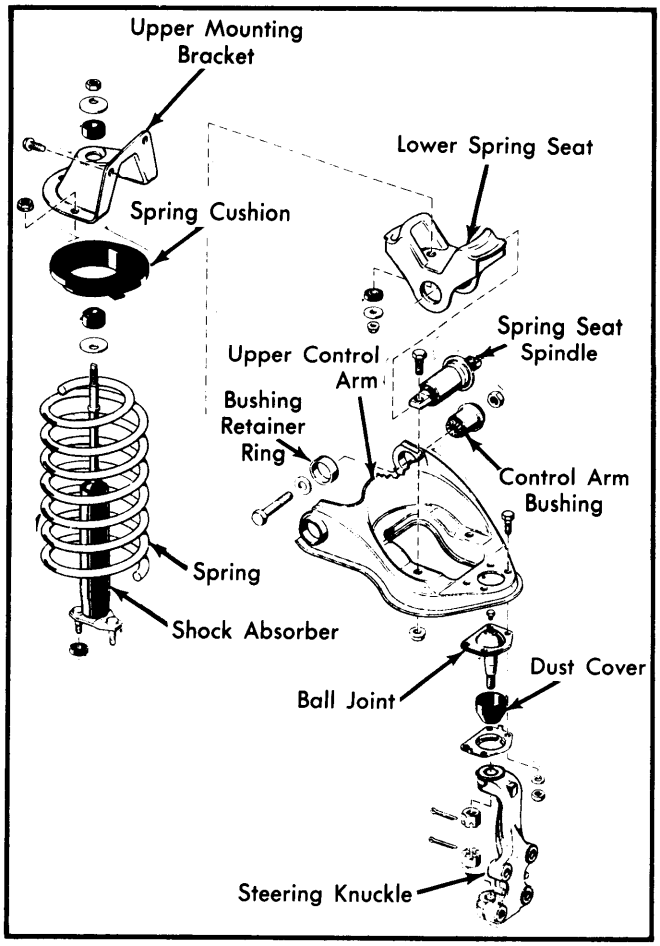

Fig. 3 Exploded View of Upper Control Arm and Coil Spring Components

LOWER CONTROL ARM

Removal (Eagle) – **1)** Raise and support front of vehicle. Remove wheel, caliper and rotor. Remove lower ball joint cotter pin and retaining nut, then remove ball stud from steering knuckle using tool J-9656.

2) Remove half shaft nuts and half shafts. Remove bolts attaching strut rod to control arm, disconnect stabilizer bar from control arm. Remove inner pivot bolt and remove control arm from crossmember.

Installation (Eagle) – **1)** Position control arm in crossmember and install inner pivot bolt. Insert ball stud in steering knuckle and install retaining nut on ball joint stud. Torque to specifications.

NOTE – *Do not tighten the inner pivot bolt until vehicle weight is supported by the wheels.*

2) Place hydraulic jack under lower control arm and raise jack to compress spring slightly and tighten control arm inner pivot bolt to specifications.

Removal (All Others) – **1)** Lift front of vehicle and support body. Remove wheel and disc brake caliper and rotor. Disconnect steering arm from steering knuckle, remove lower ball joint stud nut and remove from steering knuckle using suitable tool (J-9656).

2) Disconnect stabilizer bar from control arm. Disconnect strut from control arm, remove inner pivot bolt and remove control arm from crossmember.

Installation (All Others) – **1)** Place control arm into position in crossmember and install inner pivot bolt. Install steering knuckle and retaining nut onto ball joint stud and tighten to specifications. Connect strut rod to crossmember and tighten to specifications.

2) Connect stabilizer bar to control arm and tighten nuts. Install disc brake caliper and rotor, then install wheel. Place floor jack under control and raise jack to compress spring slightly. Tighten control arm inner pivot bolt, lower vehicle and check wheel alignment.

STEERING KNUCKLE

Removal – Raise and support front of vehicle. Remove wheel, caliper and rotor. Remove caliper anchor plate, adapter, steering spindle, and steering arm from steering knuckle. Remove upper and lower ball joint stud nuts, then separate ball joints from steering knuckle and lift off steering knuckle.

Installation – Reverse removal procedure and tighten all nuts. Check wheel alignment.

UPPER CONTROL ARM BALL JOINTS

Removal – Position a wooden block (2″ x 4″ x 5″) on side sill under control arm. Raise front of car and support under side sills. Remove wheel and disc brake caliper and rotor. Disconnect lower control arm strut, then disconnect steering arm from knuckle and remove ball joint stud nut. Use suitable tool (J-9656) to loosen ball joint in steering knuckle. Support lower control arm. Remove rivets attaching ball joint to control arm, remove tool from ball stud, ball stud from knuckle and ball joint assembly from control arm.

Installation – Reverse removal procedures and tighten all nuts and bolts while noting following: Use bolts supplied with new ball joint to attach assembly to control arm. Check wheel alignment.

LOWER CONTROL ARM BALL JOINTS

Removal – Position a wooden block (2″ x 4″ x 5″) on side sill under control arm. Raise front of car and support under side sills. Remove wheel and brake drum or caliper and rotor. Disconnect lower control arm strut, steering arm from knuckle and remove ball joint stud nut. Use suitable tool (J-9656) to loosen ball joint in steering knuckle. Support lower control arm. Remove rivets attaching ball joint to control arm, remove tool from ball stud, ball stud from knuckle and ball joint assembly from control arm.

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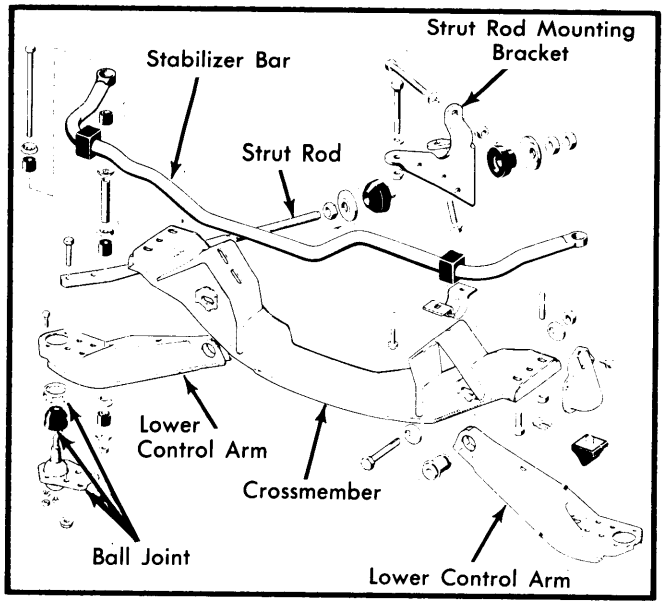

Fig. 4 Exploded View of Lower Control Arm Components

Installation – Reverse removal procedures and tighten all nuts and bolts while noting following: Apply light coat of grease to steering stop. Attach new ball joint using bolts supplied in replacement kit. Check wheel alignment.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Ball Joint Stud Nut	60-90
Shock Absorber Nut	5-14
Spindle-to-Anchor Plate Bolt	50-65
Steering Arm Bolt	50-65
Strut Rod-to-Bracket	55-80
Strut Rod-to-Lower Control Arm	60-90
Lower Control Arm Pivot Bolt	95-120
Upper Control Arm Pivot Bolt	70-90

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