

LUV

Pickup

DESCRIPTION

Independent type suspension, using torsion bars. Upper control arms are mounted to bracket which is part of shock tower. Lower control arm is mounted to crossmember. Ball joints attach both upper and lower control arms to steering knuckles, which are part of the front wheel spindle. Torsion bars are connected in front to lower control arm and at rear to frame crossmember. Back and forth movement of front suspension is regulated by a strut bar connecting lower control arm to frame, by means of a rubber bumper at frame end of strut. A stabilizer bar is attached to lower control arms and frame.

ADJUSTMENT

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

See *Wheel Alignment Specifications & 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

UPPER CONTROL ARM & BALL JOINT

Removal – 1) Raise and support vehicle with safety stands under lower control arms. Remove tire and wheel. Remove shock absorber dust cover. Remove upper ball joint cotter pin and nut.

2) Separate ball joint from steering knuckle and wire the knuckle and brake caliper assembly out of way. Do not allow assembly to hang from brake hose. Note number and placement of shims at upper control arm bracket.

3) Remove 2 bolts from upper pivot shaft. Remove upper stem retaining nut, retainer and rubber grommet and depress shock absorber lever. Remove control arm from bracket.

4) If replacing pivot shaft and bushings, remove bolts from each side of pivot shaft, and remove lock washer and plate. Remove pivot shaft and bushings using suitable remover tool (J-29755).

Inspection – Check control arm and pivot shaft for cracks or distortion. Replace both pivot shaft and bushings if either is found defective. Replace ball joint and control arm as an assembly if either is defective.

Installation – 1) If pivot shaft and bushings have been removed, install pivot shaft and bushings on control arm using installer tool (J-29755). Install bolt with plate, washer and lock washer on each side of pivot shaft and tighten.

2) Install ball joint stud through knuckle. Install castle nut. Tighten to specifications, plus just enough more to install cotter pin. Mount control arm to chassis and install shims in equal thickness to those removed during disassembly.

3) Tighten bolt at thin shim pack first, then bolt at thicker shim pack. Install shock absorber dust cover, wheel and tire. Lower vehicle to ground.

4) Mount lower control arm to chassis and tighten. Install torsion bar, strut rod, and stabilizer bar as described in this article. Leave strut rod nut semi-tight until adjusting vehicle height.

5) Install wheel and tire, remove stands and lower vehicle to ground. Adjust vehicle height and tighten strut rod nuts. See *appropriate article* in *WHEEL ALIGNMENT* Section.

LOWER CONTROL ARM & BALL JOINT

Removal – 1) Raise front of vehicle and place safety stands under frame. Remove front wheel.

2) Remove strut bar, torsion bar and stabilizer bar as described in this article.

3) Detach lower end of shock absorber. Remove cotter pin and nut from lower ball joint stud. Remove lower control arm retaining nuts and bolts and remove lower control arm om vehicle.

Inspection – Check all parts for distortion, cracking or excessive wear. Replace all worn parts.

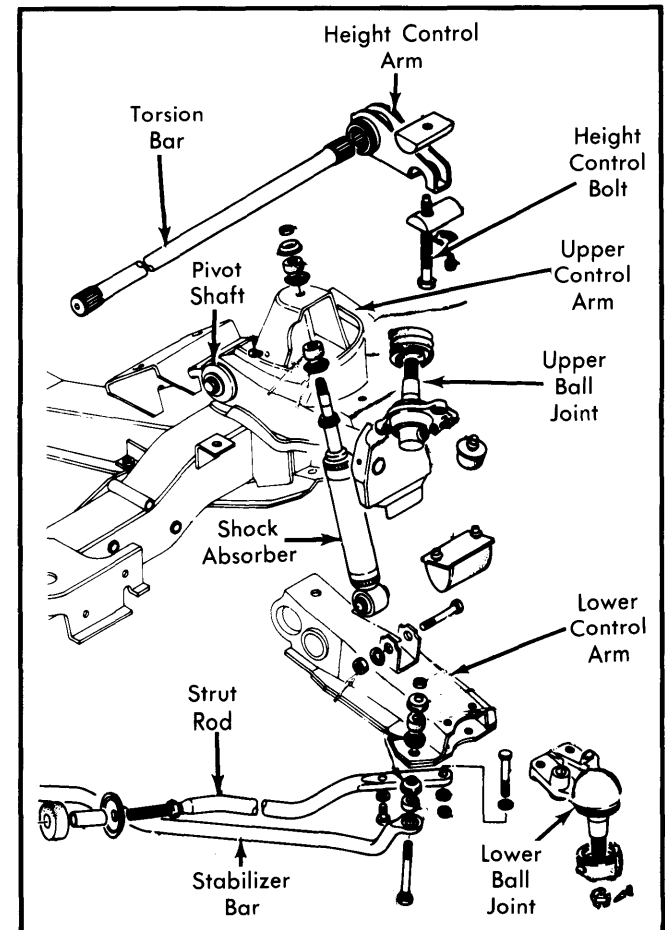


Fig. 1 Exploded View of Front Suspension (2-WD Shown, 4-W Similar)

Front Suspension

LUV (Cont.)

Installation — 1) If ball joint was removed from lower control arm (it can be replaced separately), install new ball joint to control arm.

2) Place ball joint stud in steering knuckle spindle, tighten nut and install new cotter pin.

NOTE — If cotter pin hole does not align after tightening ball joint nut to specification, tighten further to align hole; do not loosen nut.

3) Install torsion bar, strut bar and stabilizer bar as described in this article. Install front wheel, remove stands and lower vehicle.

SHOCK ABSORBER

Removal — Raise vehicle and support on safety stands. Remove shock absorber dust cover. Hold shock absorber upper stem with a wrench and remove retaining nut, retainer and rubber grommet. Remove shock absorber lower pivot bolt from lower control arm and remove shock absorber.

Installation — Check shock absorber and replace if necessary. Fully extend shock absorber, place lower retainer and grommet on stem and slide shock absorber into position. Install upper grommet and retainer on stem and tighten nut to specification. Slide bolt thru lower shock absorber mount and shock absorber. Install shock absorber dust cover, tighten mounting bolt and lower vehicle.

STABILIZER BAR

Removal — Raise vehicle and disconnect stabilizer bar from lower control arm. Remove brackets holding bar to frame and remove bar. Remove link bolt, spacers and rubber grommets from lower control arm or stabilizer bar. Inspect all parts for wear or damage and replace if necessary.

Installation — Bolt brackets to frame over rubber bushings installed over stabilizer bar but do not tighten. Connect link bolts to lower control arm, making sure washers are installed in correct position. Connect link bolts to stabilizer, and tighten to specifications. Tighten bracket bolts to specifications.

TORSION BAR

Removal — Raise vehicle and place safety stands under front of vehicle. Remove stopper plate and height control arm adjusting bolt. Mark position, then remove height control arm from torsion bar and crossmember. Remove torsion bar from lower control arm after marking position.

Installation — 1) Thoroughly grease serrated portions at both ends of torsion bar. Raise lower control arm with jack to position rubber bumpers in contact with lower control arm. Install front end of torsion bar into control arm.

2) Install height control arm into position so its end reaches height control bolt (grease portion of height control arm which fits into frame).

3) Turn height control adjusting bolt to position marked during removal. Check riding height. See *appropriate article* in **WHEEL ALIGNMENT** section. Install stopper plate.

LOWER CONTROL ARM STRUT BAR

NOTE — Correct caster angle can be maintained by marking positions of strut rod nuts for reassembly reference.

Removal — Raise vehicle and remove double nuts, washers and rubber bushings from front side of strut bar. Remove two bolts holding strut bar to lower control arm and remove strut bar.

Installation — Place washer and bushing on strut bar and slide rod through frame bracket. Place second set of washers and bushings on end through bracket, then start on washer and one nut, but do not tighten. Bolt other end of strut to lower control arm and tighten to specifications. Lower vehicle and tighten bracket nut, install second nut and tighten to specifications.

STEERING KNUCKLE

Removal — 1) Raise vehicle and place safety stands under front of vehicle. Remove brake caliper assembly without disconnecting line and support out of way.

2) On 4-WD models, shift transfer case lever into "2H" position and set free wheeling hub knob to "FREE" position. Remove hub cover assembly, then remove snap ring and shims from spindle end. Remove hub body from hub assembly. Remove hub nut and lock washer using hub nut wrench.

3) On 2-WD models, remove grease cap, cotter pin, spindle nut retainer and spindle nut. On all models, remove hub and rotor assembly. Remove 4 bolts surrounding spindle, then remove brake backing plate assembly.

4) Remove cotter pins and attaching nuts for upper and lower ball joints. Disconnect knuckle from ball joints, then remove steering knuckle from vehicle.

Installation — To install, reverse removal procedures. Adjust wheel bearings. Tighten all bolts and nuts to specifications.

TIGHTENING SPECIFICATIONS	
Application	Ft. Lbs. (mkg)
Backing Plate-to-Knuckle	29 (4.1)
Ball Joint-to-Lower Control Arm	
2-WD	30 (4.2)
4-WD	45 (6.2)
Ball Joint Stud Nut	75 (10.4)
Upper Control Arm	
Pivot-to-Frame	74 (10.2)
Bushings	87 (12.0)
Lower Control Arm-to-Crossmember	
2-WD	90 (12.5)
4-WD	94 (13.0)
Shock Absorber	
Lower End	45 (6.2)
Upper End	14 (1.9)
Stabilizer Bar	
Frame Attachment	55 (7.6)
Control Arm Attachment	7 (1.0)
Strut Bar-to-Lower Control Arm	
2-WD	30 (4.2)
4-WD	45 (6.2)