LUV

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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 front of vehicle. Remove tire and wheel.

2) Remove upper ball joint cotter pin and nut. Separate ball joint from steering knuckle arm. Safety wire steering knuckle and brake assembly so it does not hang loose.

3) Note number and placement of shims at upper control arm bracket. Remove 2 bolts holding control arm bracket to frame and remove control arm from vehicle.

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) Install boots on upper control arm pivot shaft. Pack inside of bushings with molybdenum disulfide grease and alternately tighten right and left bushings into place (a spacer tool such as J-24258 should be placed over pivot shaft when tightening bushings).

2) Install grease fittings and lubricate all parts. Place ball joint stud through steering knuckle arm. Install retaining nut and cotter pin (if cotter pin hole does not align after tightening to specification, tighten nut further to align hole; do not loosen).

3) Install upper control arm to frame, making sure any shims removed are installed in original position. Tighten mounting bolts to specifications, torquing bolt at thin shim pack first to achieve best control arm-to-frame retention.

4) Install dust cover, wheel assembly, and lower vehicle. Check alignment if required.

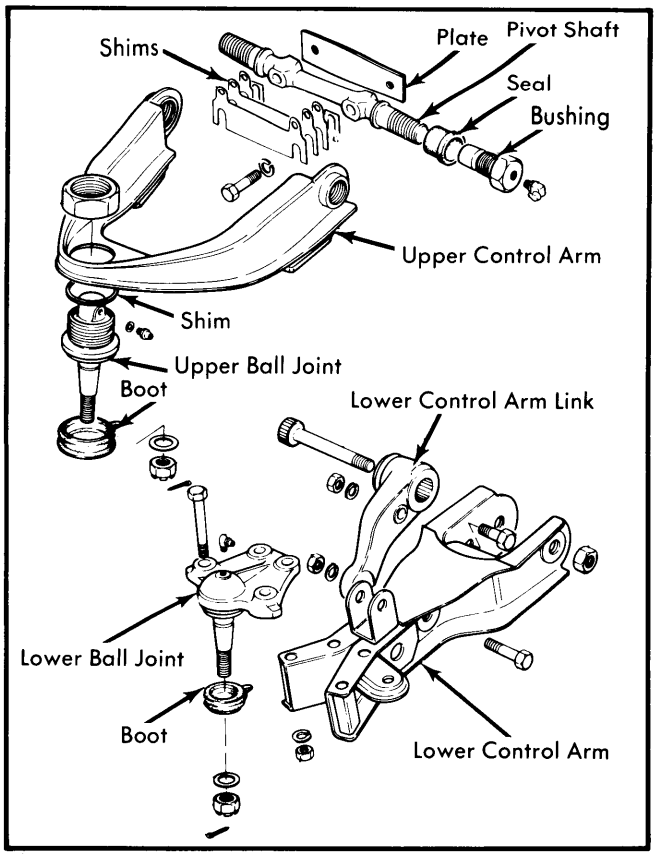

Fig. 1 Exploded View of LUV Front Suspension (2-Wheel Drive Shown; 4 x 4 Similar)

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.

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.

LUV (Cont.)

SHOCK ABSORBER

Removal – Raise vehicle. Hold shock absorber upper stem with a wrench and remove retaining nut, retainer and rubber grommet. Remove lower shock absorber 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. Tighten bolt to specification 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 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.

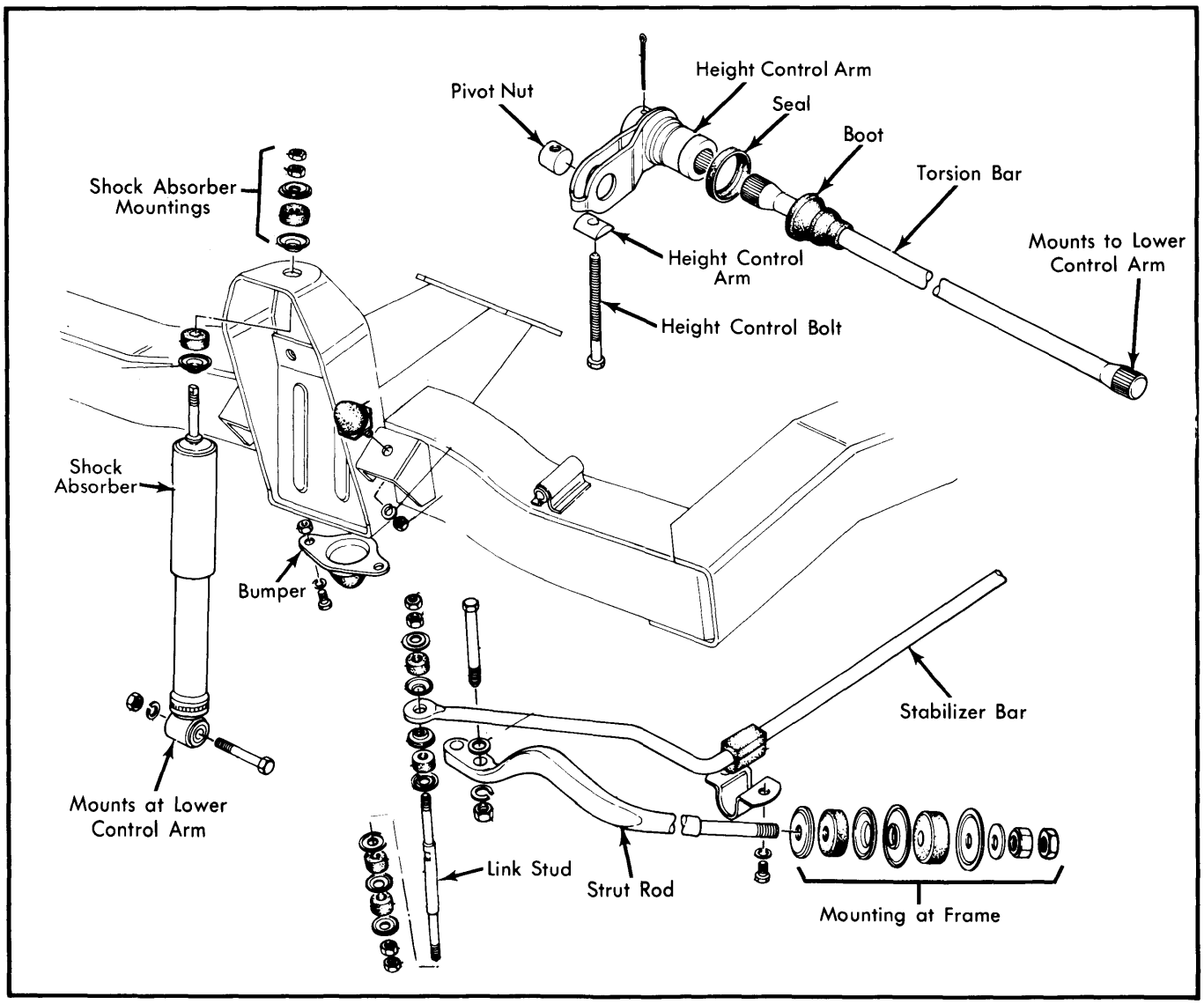

Fig. 2 Exploded View of Torsion Bar, Stabilizer Bar, Strut Bar and Shock Absorber (2-Wheel Drive Shown; 4 x 4 Similar)

LUV (Cont.)

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.*

LOWER CONTROL ARM STRUT BAR

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 x 4 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-wheel drive 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 while noting the following: Adjust wheel bearings. Bleed brakes after connecting brake hose to wheel cylinder. Tighten all bolts to specifications.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Backing Plate-to-Knuckle	
2-Wheel Drive	
Small Bolts	35 (4.8)
Large Bolts	55 (7.5)
4 x 4	29 (4.0)
Ball Joint-to-Lower Control Arm	45(6.2)
Ball Joint Stud Nut	75(10.4)
Control Arm Pivot-to-Frame	
Lower	130(18.0)
Upper	50(6.9)
Lower Control Arm-to-Crossmember	130(18.0)
Shock Absorber	
Lower End	45(6.2)
Upper End	18(2.5)
Stabilizer Bar	
Nuts	7(1.0)
Lock Nuts	18(2.5)
Strut Bar-to-Frame	
Nut	15(2.1)
Lock Nut	50(6.9)
Strut Bar-to-Lower Control Arm	45(6.2)
Upper Control Arm Shaft Bushings	220(30.4)