TOYOTA PICKUP

DESCRIPTION

Independent front suspension with torsion bars. Wheel is supported by steering knuckle mounted between upper and lower control arms by ball joints. Upper and lower control arms pivot on shafts connected to frame. Torsion bars mount in anchor arms at frame and in torque arms mounted to lower control arms. Strut bars mount at frame and at lower control arm ends. Hydraulic shock absorbers mount between lower control arms and frame. A stabilizer bar is mounted to frame and connected at ends to lower control arms.

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

SHOCK ABSORBERS

Removal – 1) Raise vehicle and place on jack stands under frame. Remove wheel and tire. Remove 2 nuts holding shock absorber to bracket. Remove washers and cushions from shaft of shock absorber.

2) Remove bolts securing shock absorber lower mount to control arm. Fully compress shock absorber, tilt forward and remove from vehicle.

Installation – To install, reverse removal procedure. Tighten all nuts and bolts.

TORSION BAR

Removal – 1) Raise and support front of vehicle. Remove wheel. Remove torsion bar boots at both ends and mark anchor arm and torque arm for correct spline alignment during reassembly.

2) Remove adjuster bolt lock nut. Measure distance from end of adjuster bolt to lower face of adjusting nut. Record distance for use during installation.

3) Place a jack under the anchor arm and raise slightly. Remove adjusting nut, lower jack slowly and remove the anchor arm and torsion bar.

Inspection – Inspect all parts for wear or damage. Check all splines carefully. Note that left and right torsion bars are not interchangeable.

Installation – 1) Grease splines prior to installation. When re-using old torsion bar, align marks on torsion bar with marks on torque arm and anchor arm and install.

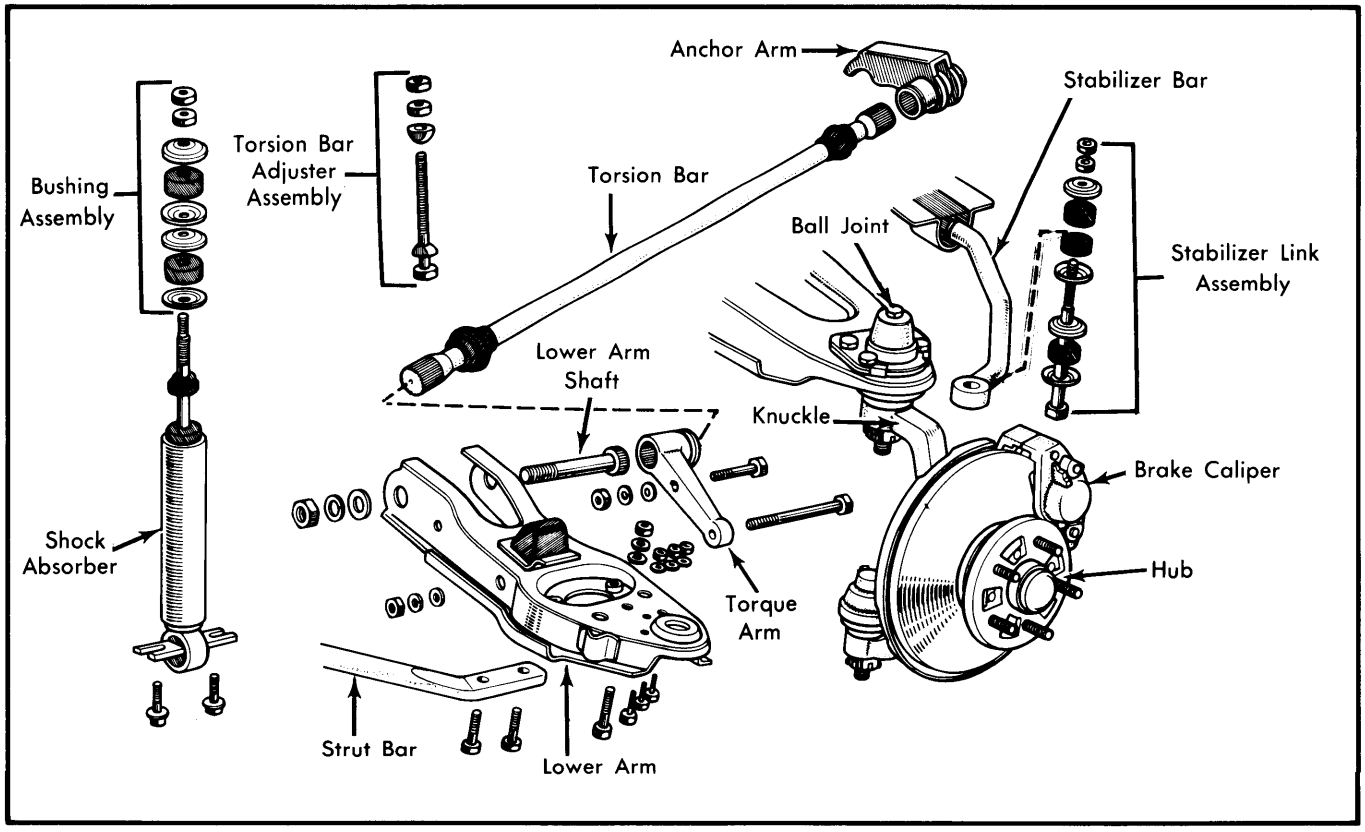

Fig. 1 Exploded View of Toyota Pickup Front Suspension

TOYOTA PICKUP (Cont.)

2) When using new torsion bar, jack up front of vehicle and block tire up to height of 7.09-7.87" (180-200 mm). Lower jack until clearance between spring bumper on lower arm and frame is .51" (13 mm).

NOTE – *Place stands under vehicle for safety.*

3) Install new torsion bar so adjusting bolt protrusion is .31-1.10" (7.87-27.94 mm) for ½ ton vehicles and .43-1.22" (11-31 mm) for ¾ ton vehicles. Remove block from under wheel and lower front of vehicle until it rests on stands. Tighten adjusting nut until bolt protrudes 2.72-3.50" (69-89 mm).

4) With either old or new torsion bar, grease boot lips and install boots to torque arm and anchor arm. Remove stands and bounce vehicle several times to settle suspension. Adjust vehicle to standard height with adjusting nut. See *Riding Height Specifications in Wheel Alignment Section*. Using 2 wrenches, tighten lock nut.

NOTE – *If bolt protrusion is not 2.72-3.50" (69-89 mm), change the position of anchor arm spline and reassemble.*

UPPER CONTROL ARM & BALL JOINT

Removal – 1) Raise vehicle by placing jack under lower control arm. Place stands under frame and leave jack in place. Remove wheel. Remove cotter pin and nut from upper ball joint stud. Using a puller, separate ball joint from knuckle.

2) Remove bolts securing upper control arm shaft, noting size and number of shims between pivot shaft and frame. Remove control arm as an assembly. Remove bolts securing ball joint to control arm, and remove ball joint. Press off bushings using suitable adapters and remove shaft.

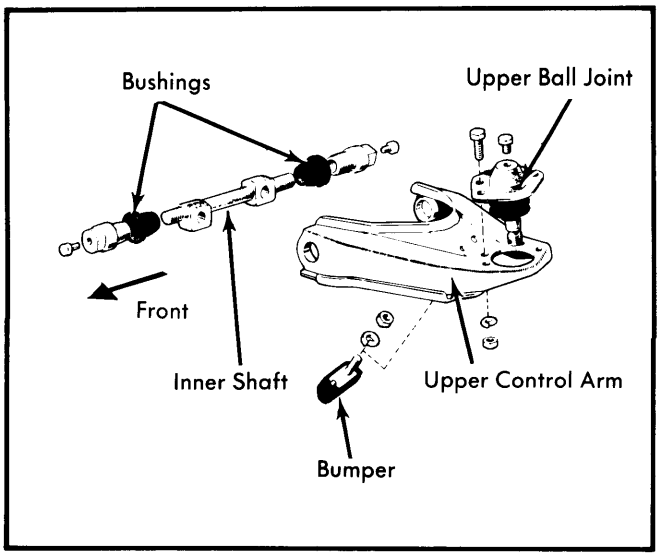

Fig. 2 Exploded View of Upper Control Arm Assembly

Installation – Inspect all components for wear or distortion. Install pivot shaft with offset mounting hole to front. Reverse removal procedure for installation, making sure wheel alignment shims are installed in correct position. Tighten all bolts and nuts to specifications. Check wheel alignment.

LOWER CONTROL ARM & BALL JOINT

Removal – 1) Raise and support vehicle. Remove wheel. Remove torsion bar and shock absorber. Disconnect stabilizer bar and strut bar from control arm.

2) Remove cotter pin and nut from lower ball joint stud and, using a puller, separate ball joint from steering knuckle. Remove torque arm and pivot shaft from control arm. Remove control arm from vehicle. Remove bolts securing ball joint to control arm and remove ball joint. Remove bushings from frame, if necessary.

Installation – To install, reverse removal procedure, noting the following: Tighten lower arm mount nut to specifications after vehicle has been lowered to the ground. Check wheel alignment.

STEERING KNUCKLE

Removal – 1) Raise and support vehicle. Remove wheel. Disconnect brake tube from brake caliper. Remove caliper from knuckle.

2) Remove cap, cotter pin, nut lock, nut and axle hub with rotor. Remove knuckle arm and dust cover. Suspend brake hose out of the way.

3) Remove cotter pins and nuts from ball joint studs. Use a puller and separate ball joints from steering knuckle. Remove knuckle.

Installation – To install, reverse removal procedure. Check wheel alignment.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Lower Ball Joint-to-Steering Knuckle	87-123 (12.0-17.0)
Upper Ball Joint-to-Steering Knuckle	66-94 (9.0-13.0)
Ball Joint-to-Lower Arm (8 mm)	15-21 (2.0-3.0)
Ball Joint-to-Lower Arm (10 mm)	29-39 (4.0-5.5)
Ball Joint-to-Upper Arm	15-21 (2.0-3.0)
Lower Arm-to-Frame	145-217 (20.0-30.0)
Upper Arm Shaft-to-Frame	51-65 (7.0-9.0)
Upper Arm-to-Shaft	62-79 (8.5-11.0)
Strut Bar-to-Lower Arm	55-75 (7.5-10.5)
Shock Absorber-to-Lower Arm	11-15 (1.5-2.2)
Shock Absorber-to-Bracket	14-22 (1.9-3.1)