

Front Suspension

TOYOTA TERCEL

DESCRIPTION

Vehicles are equipped with front wheel drive and independent strut type suspension. Vertically mounted strut assemblies are surrounded by coil springs and mounted at inner fender at top and steering knuckle at bottom. Tie rod ends connect rack and pinion steering to steering knuckle. Lower ball joint connects knuckle to lower control arm which attaches to frame crossmember. Stabilizer bar attaches to lower control arm and crossmember in front of wheels and strut rod attaches to lower control arm and chassis to the rear of front wheels.

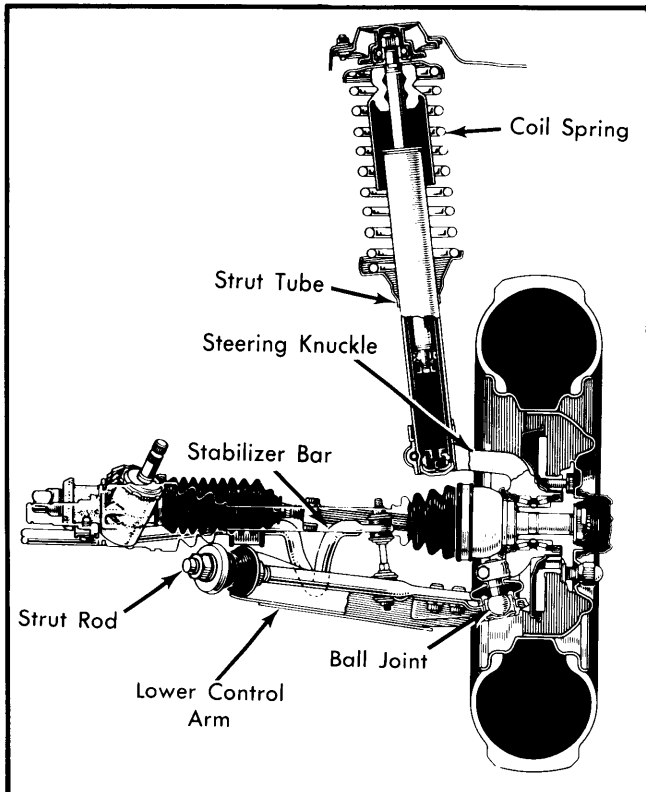


Fig. 1 Assembled View of Tercel Front Suspension

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

STRUT ASSEMBLY

Removal – 1) Raise and support vehicle. Remove wheel and tire. Remove brake caliper and suspend with wire. Disconnect stabilizer bar end from lower control arm.

2) Remove bolt attaching strut assembly to steering knuckle. Tap on knuckle with a hammer to separate it from lower end of strut. Remove 3 nuts holding top of strut to fender and remove strut from vehicle.

Disassembly – 1) Install assembly in a vise, clamping portion of strut tube below flange or use holding fixture (09714-16010).

2) Use suitable spring compressor to collapse spring enough to remove strut rod top nut. Relieve pressure on spring and remove spring, and disassemble shock absorber top end retaining components.

3) Using ring nut removing tool, remove ring nut. Remove gasket by picking out with a needle.

4) Withdraw piston and rod guide from cylinder. Remove cylinder from shell, and using brass rod, remove base valve from cylinder.

NOTE – Do not attempt to disassemble piston rod and valve.

Reassembly – Thoroughly clean and inspect all components. Replace any damaged parts. Install shock absorber components into cylinder in reverse order of disassembly, noting the following:

- When installing base valve into cylinder, use a soft face hammer to drive it into place.
- Fill shock absorber with 7.8 ounces (230 cc) new shock absorber fluid.
- After assembling rod guide, install new gasket.
- Apply multi-purpose grease to ring nut oil seal.
- Before fully tightening ring nut, pull out piston rod from cylinder 3-4".
- Assemble coil spring with paint mark downward.

Installation – To install strut assembly into vehicle, reverse removal procedure, noting the following:

- Always use a new self-locking nut on top of piston rod.
- Check wheel alignment after installation.

CONTROL ARM & BALL JOINT

Removal – 1) Raise and support front of vehicle. Detach tie rod end ball joint from steering knuckle.

2) Detach strut rod and stabilizer bar from lower control arm. Detach lower control arm ball joint from steering knuckle.

3) Remove control arm pivot bolt and remove control arm from vehicle.

NOTE – On left side, jack up control arm to remove bolt.

Bushing Replacement – Use suitable press to remove and install bushing. When installing, there must be no oil or grease on bushing or arm boss. Press only on flange of outer tube.

NOTE – Control arm and ball joint are servicable as a unit only. If damaged, replace entire assembly.

TOYOTA TERCEL (Cont.)

Installation — To install, reverse removal procedure, noting the following:

- Tighten the lower arm with vehicle weight on suspension.
- Check front wheel alignment.

STABILIZER BAR

Removal and Installation — Remove engine under cover. Remove stabilizer bar ends from control arms, noting bushing positioning, then remove bolts securing mounting brackets to chassis. Remove stabilizer bar. To install, reverse removal procedure, ensuring components connecting bar to control arms are installed in correct order.

STRUT ROD

Removal — Raise and support front of vehicle. Jack up lower control arm, remove nut from front of strut rod and remove washer, retainer, and rubber grommet. Remove bolts connecting strut rod to control arm and remove rod from vehicle.

Installation — Set distance between outer side of staked nut (inside retaining nut) and inner mounting bolt to 13.0" (330.4 mm). Place rod in vehicle and tighten mounting hardware.

SUSPENSION CROSSMEMBER

Removal — 1) Raise and support front of vehicle. Disconnect steering intermediate shaft pinch bolt. Remove engine under cover and detach tie rod end ball joints from steering knuckle.

2) Remove stabilizer bar. Remove lower control arm pivot bolt, and detach engine shock absorber from crossmember. Remove steering link housing brackets and remove steering assembly from vehicle.

3) Remove engine mounting nuts and prop up engine from below. Remove lower crossmember retaining bolts and remove crossmember.

Installation — To install, reverse removal procedure and note the following:

- For the left side, jack up lower control arm to install to crossmember.
- Lower and rock vehicle before tightening lower arm pivot bolts.
- Check front end alignment.
- Make sure components connecting stabilizer bar to control arms are installed in correct order.

TIGHTENING SPECIFICATIONS	
Application	Ft. Lbs. (mkg)
Control Arm-to-Crossmember [ⓐ]	51-65 (7.0-9.0)
Control Arm-to-Strut	40-52 (5.5-7.2)
Control Arm-to-Stabilizer	11-15 (1.4-2.2)
Control Arm-to-Strut Rod	29-39 (4.0-5.5)
Ball Joint-to-Steering Knuckle	40-52 (5.5-7.2)
Tie Rod End-to-Steering Knuckle	37-50 (5.0-7.0)
Piston Rod Ring Nut	66-97 (9.0-13.5)
Piston Rod-to-Mounting Plate	29-39 (4.0-5.5)
Strut-to-Upper Mount	15-21 (2.0-3.0)
Crossmember Mounting Bolts	30-39 (4.1-5.5)
Engine Mounting Bolts	26-39 (3.5-5.5)
Steering Link Brackets	22-32 (3.0-4.5)
Stabilizer Bar Brackets	22-32 (3.0-4.5)
Caliper Mounting Bolts	33-39 (4.5-5.5)

ⓐ — With vehicle at full curb weight.