# 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.

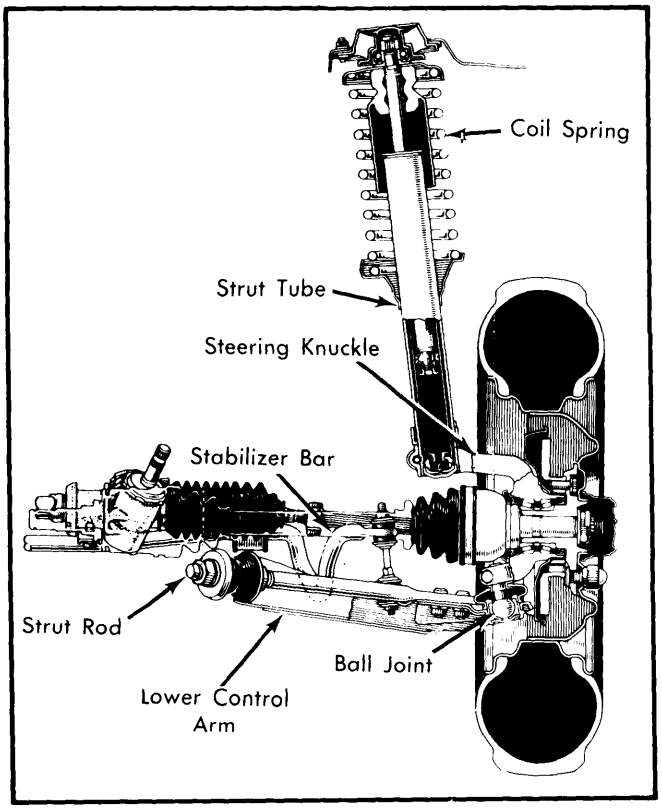


***Fig. 1 Assembled View of Tercel Front Suspension***

## ADJUSTMENT

### WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

*See Wheel Alignment Specifications & Procedures in WHEEL ALIGNMENT Section.*

### WHEEL BEARING ADJUSTMENT

Front wheel bearings are not adjustable. Check bearings for excessive play and replace as necessary.

### BALL JOINT CHECKING

Raise front of vehicle. Place wooden block 7.09-7.87" (180-200 mm) in height under one front tire. Lower jack until there is about half a load on front coil springs. Place safety stand under vehicle. Insure that front wheels are in a straight ahead position and block them. Move lower arm up and down. Ball joint should have no vertical play. Repeat in same manner for other side.

## 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.*

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## TOYOTA TERCEL (Cont.)

**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.*

**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.

### WHEEL BEARINGS

**Removal** – **1)** Raise vehicle and secure with safety stands. Remove front wheels. Remove cotter pin and adjusting nut cap. Remove 2 brake caliper retaining bolts and tie caliper out of the way with a piece of wire.

**2)** Remove bearing lock nut. Disconnect strut bar end by removing nut holding stabilizer bar-to-lower arm. Disconnect strut bar end by removing nut holding strut bar-to-lower arm.

**3)** Remove cotter pin and nut retaining tie rod-to-axle hub. Using tie rod puller tool (SST 09610-20012) remove tie rod from axle hub. Place jack under axle hub side of lower arm and raise vehicle slightly to relieve pressure on lower arm.

**4)** Do this only on one side at a time. Remove bolt holding lower arm-to-crossmember. Disconnect lower arm from crossmember. Remove the bolt holding axle hub to shock absorber.

**5)** Using puller tool (SST 09950-20014) pull axle hub from drive shaft. Separate shock absorber from steering knuckle and remove axle hub.

NOTE – *Take care not to damage boot.*

**6)** Remove bolt holding axle hub to lower arm. Separate axle hub from lower arm. Remove disc splash shield. Using puller tool (SST 09308-00010) remove oil seal from axle hub.

**7)** Using separator tool (SST 09608-16031) remove axle hub from steering knuckle. Remove inner bearing and spacer. Separate hub from disc by removing 4 bolts.

**8)** Place hub in a vise. Using a chisel and hammer, open a clearance between outer bearing and hub. Using a bearing puller (SST 09950-20014) remove outer bearing from hub. If necessary, remove any scratches on hub surface using an oil stone.

**Installation** – To install, reverse removal procedure.

### 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. (N·m) |
|---|---|
| Ball Joint-to-Steering Knuckle | 40-52 (54-71) |
| Caliper Mounting Bolts | 33-39 (45-53) |
| Control Arm-to-Crossmember① | 51-65 (69-88) |
| Control Arm-to-Strut | 40-52 (54-71) |
| Control Arm-to-Stabilizer | 11-15 (15-20) |
| Control Arm-to-Strut Rod | 29-39 (39-53) |
| Crossmember Mounting Bolts | 30-39 (41-53) |
| Engine Mounting Bolts | 26-39 (35-53) |
| Piston Rod Ring Nut | 66-97 (90-132) |
| Piston Rod-to-Mounting Plate | 29-39 (39-53) |
| Stabilizer Bar Brackets | 22-32 (30-44) |
| Steering Link Brackets | 22-32 (30-44) |
| Strut-to-Upper Mount | 15-21 (20-29) |
| Tie Rod End-to-Steering Knuckle | 37-50 (50-68) |

① – With vehicle at full curb weight.

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