

# Front Suspension

## TOYOTA CELICA, COROLLA, CORONA, CRESSIDA & SUPRA

### DESCRIPTION

Independent strut type suspension consisting of vertically mounted strut assemblies, lower control arms, strut rods and a stabilizer bar. Individual strut assembly is mounted at top to inner fender by a thrust bearing and at bottom to lower control arm by means of a ball joint. Strut assembly consists of a shock absorber built into strut outer tube, a coil spring mounted on outside of strut tube and a steering knuckle integral with bottom of strut tube. A strut rod is mounted between lower control arm and frame. A stabilizer bar is mounted to front frame members and connected at ends to lower control arms. The suspension crossmember that serves as support for all suspension components is removable.

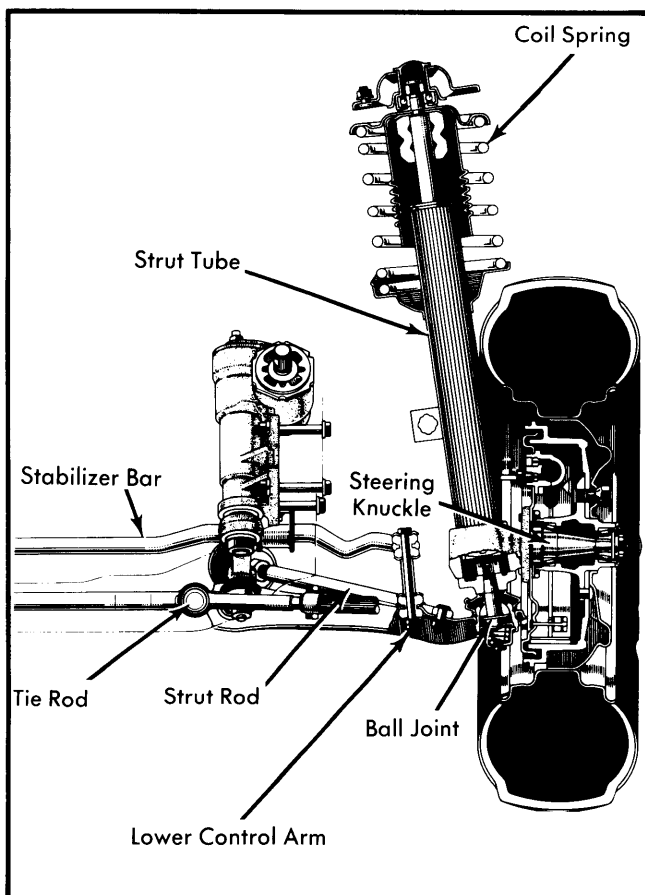


Fig. 1 Assembled View of Front Suspension Assembly (Corolla Shown; Other Models Similar)

### 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 front wheel. Disconnect brake tube and flexible hose.

2) Remove 3 nuts retaining top of strut assembly to vehicle. Remove bolts holding lower end of strut tube to steering knuckle.

3) Pull down on control arm to gain clearance and remove strut assembly (with brake and hub assembly attached) from vehicle.

**Disassembly** – 1) Install assembly in vise, clamping portion of strut tube below flange.

2) Use suitable spring compressor to collapse spring enough to remove strut rod top nut. Relieve pressure and remove spring.

3) Using ring nut removing tool, remove ring nut. Remove gasket by picking out with a needle. Remove piston rod, rod guide and rebound stopper.

4) Remove cylinder from shell, and using a 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 of disassembly procedure, noting the following:

- After installing piston nut, stake it in place.
- When installing base valve onto cylinder, use a soft-face hammer to drive into place.
- Add specified amount of new shock absorber oil to cylinder.
- Install new oil seal to ring nut.
- Before fully tightening ring nut, pull piston rod out of cylinder about 3-4".
- Always use new self-locking nut on top of piston rod.

#### Shock Absorber Oil Amount

Application	Ounces (cc)
Celica & Supra .....	11.0 (325)
Corolla .....	10.6 (315)
Corona	
13" (330 mm) Shock .....	10.6 (315)
14" (356 mm) Shock .....	11.0 (325)
Cressida .....	10.8 (320)

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

- After top end of strut is attached to mounting, fill bearing recess, which protrudes into engine compartment, with multi-purpose grease.

## TOYOTA CELICA, COROLLA, CORONA, CRESSIDA & SUPRA (Cont.)

### CONTROL ARM

**Removal** – 1) Raise and support vehicle. Remove wheel. On Cressida, remove engine under cover and detach strut bar and stabilizer bar from lower arm.

2) On all models, remove strut assembly-to-knuckle mounting bolts. Push lower arm down and disconnect strut from knuckle arm. On Corolla, separate stabilizer bar and strut bar from lower arm.

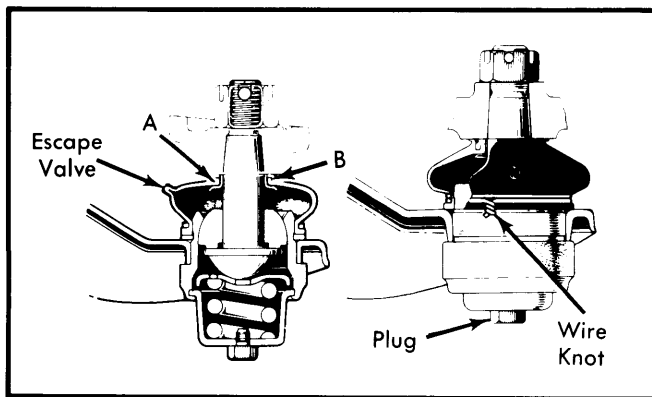
3) On Celica, Corolla, Corona and Supra, disconnect knuckle arm from ball joint. On Celica, Supra and Corona, disconnect stabilizer bar and strut bar from lower arm. On Cressida, detach tie rod end from knuckle arm.

4) On all models, remove bolt holding lower arm to crossmember and remove lower arm.

**Disassembly** – 1) On Cressida, place control arm in a vise and use suitable puller to remove knuckle arm from ball joint.

2) On all models, pry dust cover from ball joint and discard (also discard dust cover snap ring or retaining wire).

3) Press bushing out of control arm toward front side of arm, using suitable press and arbor.



**Fig. 2 Ball Joint and Dust Cover**

**Reassembly** – 1) Use suitable support and press in new bushing. Apply ball joint grease to points "A" and "B" of new dust cover. See Fig. 2.

2) Install dust cover with escape valve facing rear of vehicle. Wind wire twice around dust cover and bend wire knot down, facing rear of ball joint.

3) Remove plug and install grease fitting. Fill ball joint with grease. Remove fitting and install plug.

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

### STABILIZER BAR

**Removal** – Remove strut rods from lower arms. Remove engine under cover, if so equipped. Disconnect stabilizer bar from lower arms. Remove bolts securing stabilizer brackets to chassis and remove stabilizer bar.

**Installation** – To install, reverse removal procedure. Make sure components connecting stabilizer bar to control arms are installed properly.

### STRUT ROD

**Removal** – Raise vehicle and place safety stands under vehicle. 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.

**NOTE** – Do not attempt to loosen staked nut.

**Installation** – 1) Check distance between staked nut and center of bolt hole. Celica, Corona and Supra should measure 14.92" (379 mm), Corolla 14.64" (372 mm) and Cressida 15.90" (405 mm). Place rod in vehicle and tighten mounting hardware.

### CROSSMEMBER

**Removal** – 1) Remove engine under cover, if so equipped. Remove nuts holding both sides of crossmember to engine mounts. Raise and support vehicle on safety stands. Remove bolts holding lower arms to crossmember. On Corolla and Corona, remove engine shock absorber.

2) On all models, raise engine with chain or jack. On Cressida, disconnect stabilizer bar from lower arm. On all models, remove bolts securing crossmember to frame and remove crossmember.

**Installation** – To install, reverse removal procedure. Make sure components connecting stabilizer bar to control arms are installed in correct order.

### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Control Arm-to-Crossmember <sup>ⓐ</sup>	
Cressida .....	65-94 (9.0-13.0)
All Other Models .....	51-65 (7.0-9.0)
Control Arm-to-Strut Rod	
Cressida .....	43-53 (6.0-7.0)
All Other Models .....	29-40 (4.0-5.5)
Control Arm-to-Stabilizer .....	11-15 (1.4-2.2)
Ball Joint-to-Knuckle Arm .....	51-65 (7.0-9.0)
Knuckle Arm-to-Strut Tube	
Corolla .....	51-65 (7.0-9.0)
All Other Models .....	58-86 (8.0-12.0)
Piston Rod-to-Mounting Plate .....	29-40 (4.0-5.5)
Piston Rod Ring Nut .....	73-108 (10.0-15.0)

<sup>ⓐ</sup> – With vehicle at full curb weight.