

# Front Suspension

## TOYOTA CELICA & COROLLA

Celica  
Corolla

### REMOVAL & INSTALLATION

#### 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.

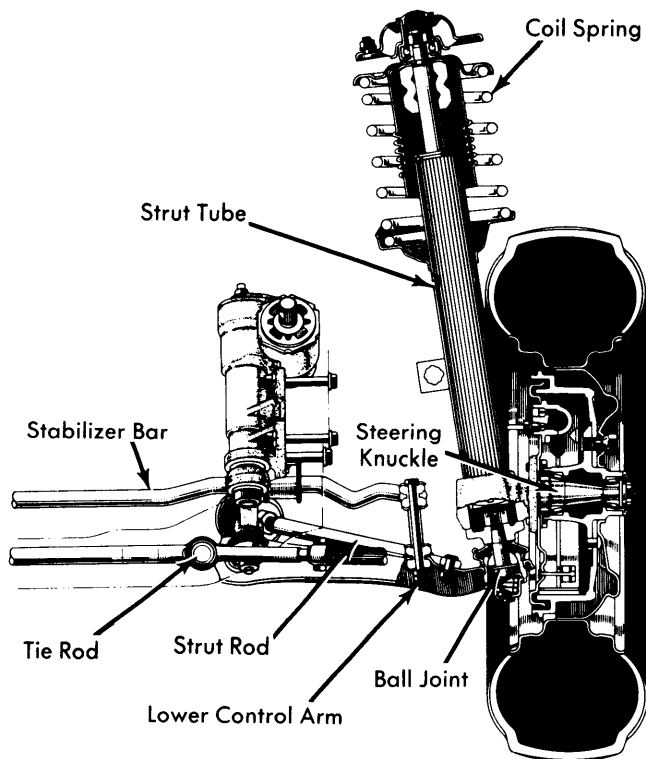


Fig. 1 Typical Front Suspension Assembly for Celica/Corolla

#### 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.

#### STRUT ASSEMBLY

**Removal** — Raise vehicle and place jack stands under body. Remove wheel and tire. Disconnect brake flex line from bracket on strut tube by removing retaining clip. Remove three upper mounting nuts from strut assembly, accessible from inside engine compartment. Remove bolts securing steering arm to strut lower mount. Pull down on control arm and remove strut assembly complete with brake system components.

**Disassembly, Corolla, Celica** — 1) Bolt a holding fixture to bottom of strut tube and clamp assembly into vise. Compress coil spring. Remove dust cover from center of bearing support and remove nut from center of support. Remove support, upper spring seat, rubber bumper and coil spring.

2) Remove brake disc and backing plate from steering knuckle. See *appropriate article* in *BRAKE SYSTEMS* Section. Remove cap from upper portion of strut tube and straighten crimped edges of strut tube with a punch.

3) Remove ring nut from inside strut tube. Remove gasket and pull out piston rod and guide. Take out cylinder and drain fluid. Using a punch, drive base valve from bottom of cylinder. Pry base from case. Secure upper portion of piston rod in a vise and remove nut from bottom end. Remove following: piston, valve, springs, stopper, and piston ring.

**Reassembly, Corolla** — 1) Thoroughly clean and inspect all components for wear or damage. Piston rod should be no less than .783" (19.9 mm) in diameter and piston diameter should be no less than 1.183" (29.9 mm). Inside diameter of cylinder should be no more than 1.193" (30.2 mm).

2) With upper portion of piston rod in vise, fit valve stopper, two valve springs, valve, piston (ring installed), and new piston nut. Tighten nut and stake edges. Install valve nut, tighten to stop, and back off 1½ turns. Stake threads between valve and nut.

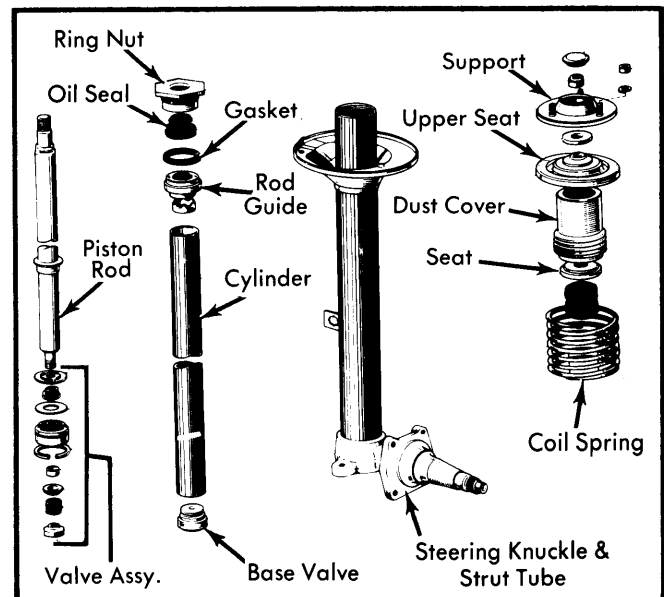


Fig. 2 Exploded View of Corolla Strut Assembly

## TOYOTA CELICA & COROLLA (Cont.)

3) Insert base valve into case and drive into cylinder. Install piston rod into cylinder and insert cylinder into tube. Fill tube with approximately 9.3-9.7 ozs. of shock absorber fluid. Install piston rod guide in strut tube with new gasket. Smear a light coat of grease on seal in ring nut and install seal guide on piston rod.

4) Install ring nut in strut tube and tighten. Bend over edge of strut tube into grooves in ring nut with a punch and install cap. To install coil spring and components, reverse removal procedure.

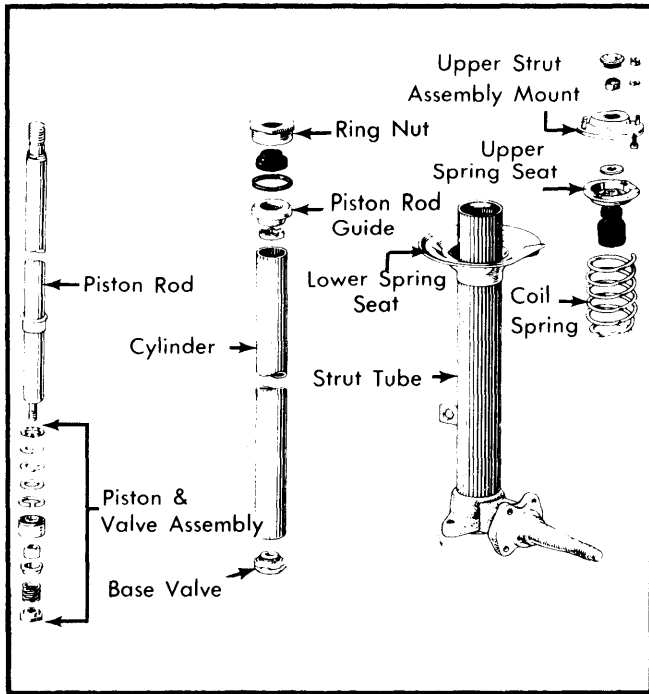


Fig. 3 Exploded View of Celica Strut Assembly

**Reassembly, Celica** – 1) Thoroughly clean and inspect all components for damage and wear. Piston rod diameter should be no less than .865" (22 mm) and piston diameter should be no less than 1.252" (31.7 mm). Inside diameter of cylinder should be no more than 1.269" (32.2 mm). Replace seal in ring nut by prying out with a screwdriver and pressing in with an available mandrel.

2) Place upper portion of piston rod in a vise and install internal components in reverse order of removal procedure. Tighten new nut. Stake center of piston nut and install ring on piston. Press valve into case and drive into base of cylinder. Install piston rod into cylinder and insert cylinder into strut tube.

3) Fill strut tube with approximately 10.7 ozs. of shock absorber fluid. Install piston rod guide and gasket into strut tube. Coat ring nut seal with grease and install into strut tube. Tighten ring nut. **NOTE** – Raise piston rod 3-3 1/2" from edge of strut tube before tightening fully. Install coil spring and components in reverse order of removal.

**Installation** – To install, reverse removal procedure. Tighten all nuts and bolts and bleed brake system.

### CONTROL ARM & BALL JOINT

**Removal** – Raise vehicle and place jack stands under body. Remove wheel and tire. Disconnect stabilizer bar and compression rod from control arm. Remove bolts securing strut assembly to steering arm. Remove tie rod end stud nut and using a puller, separate tie rod from steering arm. Remove control arm pivot bolt and nut, then remove control arm from vehicle.

**Disassembly** – Remove nut from ball joint stud and using a puller, separate steering arm from ball joint. Ball joint is not removable from control arm, if either are defective, both must be replaced. Dust cover on ball joint is replaceable. Using a mandrel, press bushing out of control arm in a forward direction.

**Reassembly** – Using same mandrel used for disassembly, press new bushing into control arm in a forward direction. Install new dust cap on ball joint. Remove plug from bottom of ball joint and install grease fitting. Fill ball joint with grease. Install steering arm on ball joint and tighten nut. Install new cotter pin.

**Installation** – To install control arm, reverse removal procedure and tighten bolts and nuts, except control arm pivot bolt. Tighten control arm pivot bolt when weight of vehicle is on front wheels.

### STABILIZER BAR

**Removal** – Disconnect stabilizer bar from both control arms. Remove engine protective cover, if equipped. Remove bolts securing mounting 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.

**Installation** – Install first nut on rod so leading edge is 3.43" (87.2 mm) for Corolla or 3.22" (82 mm) for Celica from edge of threaded portion. Place in vehicle and tighten hardware.

### SUSPENSION CROSSMEMBER

**Removal** – Disconnect control arms as previously outlined. Place a jack under engine for support and remove nuts securing motor mounts to crossmember. Remove protective cover from under engine. Remove bolts securing crossmember to body and remove crossmember.

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

# Front Suspension

## TOYOTA CELICA & COROLLA (Cont.)

### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Piston Nut	
Corolla .....	40 (5.5)
Celica .....	18 (2.5)
Ring Nut .....	93 (12.9)
Upper Mounting Support-to-	
Piston Rod Nut .....	35 (4.8)
Upper Mounting Support-to-	
Fender Panel .....	18 (2.5)
Strut Assembly-to-Steering Arm .....	58 (8.0)
Ball Joint Stud Nut .....	42 (5.8)
Tie Rod End Stud Nut .....	42 (5.8)
Stabilizer Bar-to-Control	
Arm Nut .....	13 (1.8)
Stabilizer Bar-to-Control	
Arm Lock Nut .....	10 (1.4)
Strut Rod-to-Lower Arm .....	35 (4.8)
Strut Rod Bracket-to-Chassis .....	12 (1.7)
Control Arm-to-Bracket .....	67 (9.3)