

TOYOTA CELICA, COROLLA, CORONA, CRESSIDA, STARLET & 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.

all other models while turning hub to seat bearings. Loosen nut until it can be turned with fingers. Tighten nut finger tight using a socket without a handle.

2) If not aligned for cotter pin installation, tighten until installation is possible. Preload at hub (while turning) should be within specifications listed in *Bearing Preload Specifications Table*.

Bearing Preload Specifications	
Application	Preload Lbs. (kg)
Celica, Corolla, Starlet & Supra7-1.5 (.3-.7)
Corona8-1.9 (.4-.9)
Cressida	2.2 (1.0)

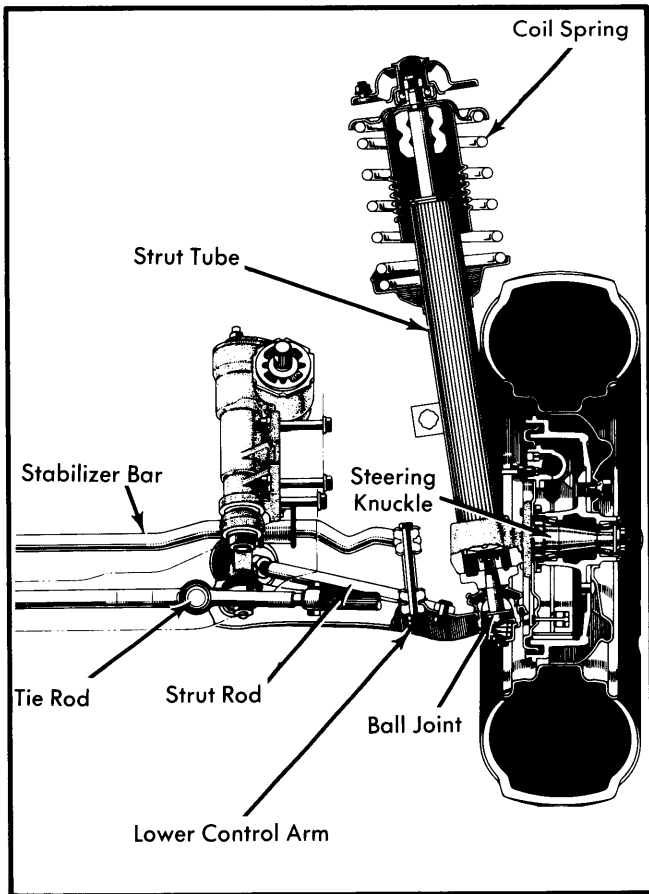


Fig. 1 Assembled View of Front Suspension Assembly (Corolla Shown; Other Models Similar)

ADJUSTMENT

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

WHEEL BEARING ADJUSTMENT

1) Tighten nut to 22 ft. lbs. (30 N·m) on Celica, Cressida, Supra and Starlet models or to 19-23 ft. lbs. (26-31 N·m) for

BALL JOINT CHECKING

Check ball joints for damaged rubber boot, excessive looseness or play. If damaged or excessively worn, replace lower control arm with ball joint.

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.

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- 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 Capacities

Application	Ozs.
Celica & Supra	11.0
Corolla	10.6
Corona	
13" (330 mm) Shock	10.6
14" (325 mm) Shock	11.0
Cressida	10.8
Starlet	8.1

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.

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.

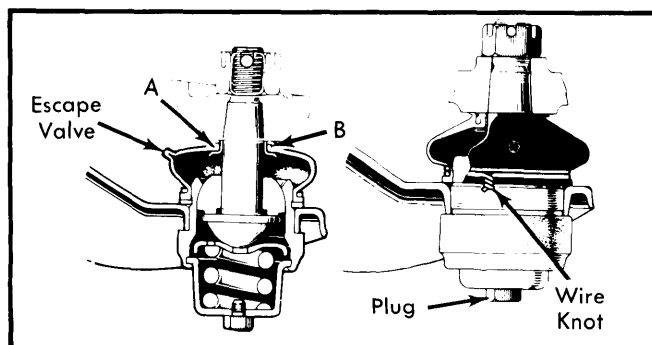


Fig. 2 Ball Joint and Dust Cover

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 – Check distance between staked nut and center of bolt hole. Distance should be 14.64" (372 mm) on Corolla, 15.90" (405 mm) on Cressida and 14.92" (379 mm) on all other models. Place rod in vehicle and tighten mounting bolts.

WHEEL BEARING

Removal – 1) Raise vehicle and support with stands. Remove wheel and grease cap. Remove cotter pin and loosen outer bearing nut.

2) Remove caliper mounting bolts and remove caliper. Remove outer bearing nut, washer, outer bearing and disc. Remove seal from disc and remove inner bearing.

Installation – To install, reverse removal procedure.

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.

Front Suspension

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

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TIGHTENING SPECIFICATIONS

Application	Fr. Lbs. (N·m)
Ball Joint-to-Knuckle Arm	51-65 (69-88)
Control Arm-to-Crossmember [Ⓢ]	
Cressida	65-94 (88-128)
All Other Models	51-65 (69-88)
Control Arm-to-Stabilizer	11-15 (15-20)
Control Arm-to-Strut Rod	
Cressida	43-53 (58-72)
All Other Models	29-40 (39-54)
Knuckle Arm-to-Strut Tube	
Corolla	51-65 (69-88)
All Other Models	58-86 (79-117)
Piston Rod-to-Mounting Plate	29-40 (39-54)
Piston Rod Ring Nut	73-108 (99-147)

[Ⓢ] — With vehicle at full curb weight.