

STEERING COLUMN - STANDARD

1993 Toyota Celica

1993 STEERING

Toyota - Steering Columns - Standard

Celica

DESCRIPTION & OPERATION

Steering column is a collapsible 2-piece design. Columns use shear pins to absorb collision impact. Steering shaft is connected directly to steering gear with either a flexible coupling or "U" joint. Car models have an air bag integral with the steering wheel pad.

NOTE: For models with tilt wheel steering columns, see the STEERING COLUMN - TILT article in the STEERING section.

DISABLING & ACTIVATING AIR BAG SYSTEM

WARNING: Before any repairs are performed on air bag equipped models, disconnect and shield negative battery cable. Wait at least 90 seconds after disconnecting battery cable before performing any repairs. Air bag system retains enough voltage to deploy air bag for a short time after disconnecting power. Use caution when working around steering column. Air bag could deploy.

To disable air bag system, ensure ignition switch is in LOCK position and negative battery terminal is disconnected for at least 90 seconds before attempting any repair. DO NOT apply electrical power to any component on steering column without disconnecting air bag control unit. Information labels are attached to air bag components. Follow all notices on labels.

ADJUSTMENTS

SPIRAL CABLE

On vehicles equipped with air bag system, spiral cable MUST be correctly adjusted to ensure proper air bag operation. Ensure front wheels are in straight-ahead position. Turn spiral cable counterclockwise by hand until it becomes harder to turn cable. Turn spiral cable clockwise about 2 1/2-3 turns and ensure Red marks align and are visible through inspection hole. See Fig. 1.

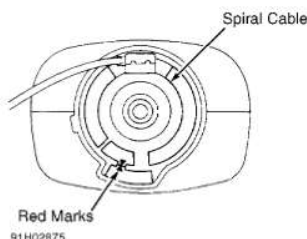


Fig. 1: Adjusting Air Bag Spiral Cable
Courtesy of Toyota Motor Sales, U.S.A., Inc.

REMOVAL & INSTALLATION

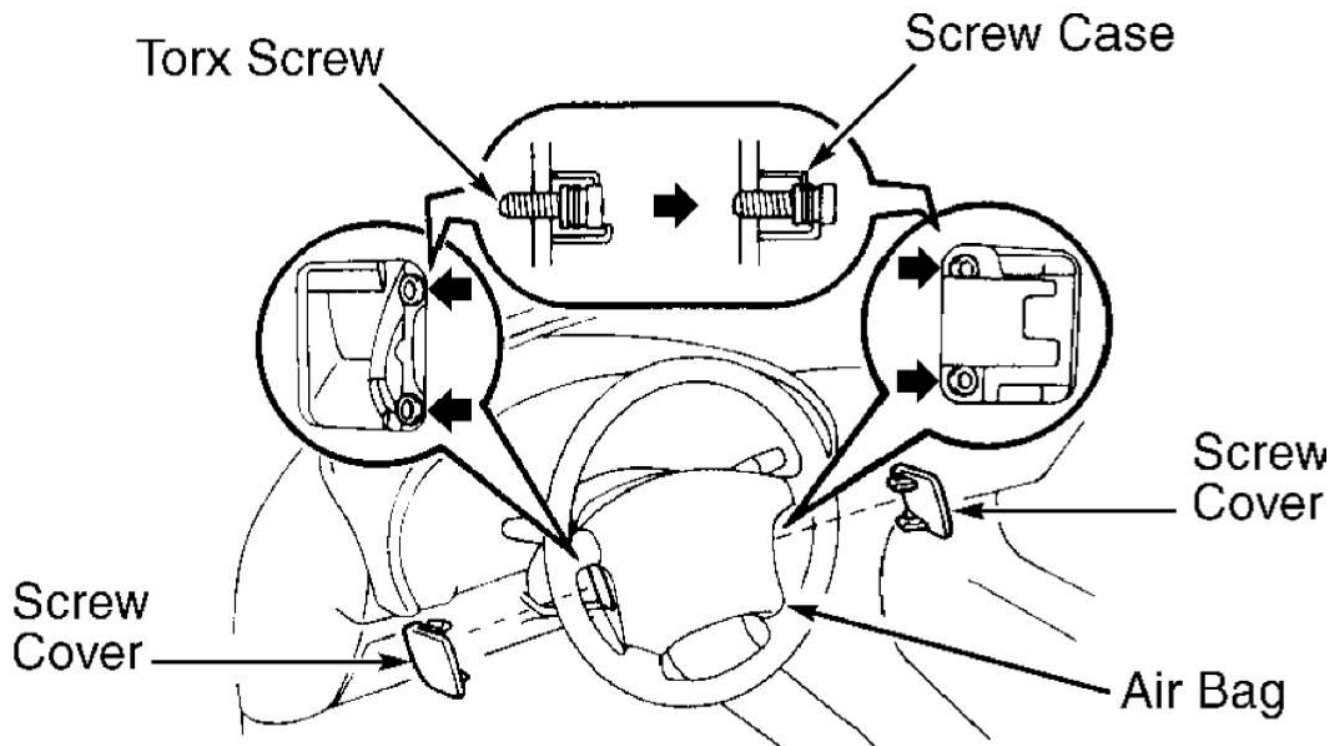
STEERING WHEEL PAD & SPIRAL CABLE (WITH AIR BAG)

NOTE: See DISABLING & ACTIVATING AIR BAG SYSTEM.

Removal

1) Ensure front wheels are in straight-ahead position. Turn ignition switch to LOCK position. Disconnect and shield negative battery cable.

2) Remove screw covers, screws, and lower instrument cluster trim panel(s). Loosen steering wheel pad Torx screws until groove along screw circumference catches on screw case. See Fig. 2.



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Fig. 2: Removing Steering Wheel Pad
Courtesy of Toyota Motor Sales, U.S.A., Inc.

3) Pull steering wheel pad from steering wheel and disconnect electrical connector. Remove steering wheel pad. Place steering wheel pad on flat surface with pad cover facing up.

WARNING: Place steering wheel pad assembly on workbench. Pad surface **MUST** face up. If assembly is stored face down, accidental air bag deployment could propel assembly and cause serious bodily injury.

4) Mark steering wheel and steering shaft for installation reference. Remove steering wheel nut. Use appropriate puller to remove steering wheel. Remove 4 screws from upper and lower steering column covers. Remove screws attaching spiral cable to combination (headlight/turn signal/wiper) switch. Disconnect spiral cable and remove from vehicle.

Installation

1) To install, reverse removal procedure. Before installing spiral cable, ensure spiral cable is properly aligned. See ADJUSTMENTS . Tighten steering wheel nut and Torx screws to specification. See TORQUE SPECIFICATIONS.

2) After spiral cable and steering wheel pad are installed, ensure proper operation of air bag system by turning ignition switch to ACC or ON position. AIR BAG warning light should come on and go out after approximately 6 seconds.

3) If AIR BAG warning light stays on for more than 6 seconds, air bag system is malfunctioning and needs repair. If AIR BAG warning light comes on with ignition on, a short circuit is likely in AIR BAG warning light circuit.

COMBINATION SWITCH

Removal & Installation

1) Disconnect negative battery cable. Remove steering wheel. See STEERING WHEEL PAD & SPIRAL CABLE or STEERING WHEEL & HORN PAD. Remove instrument cluster lower trim panel. Remove upper and lower steering column covers.

2) Disconnect combination switch electrical connector. Remove screws securing combination switch to steering column and remove combination switch. To install, reverse removal procedure. Tighten steering wheel nut to specification. See TORQUE SPECIFICATIONS.

IGNITION SWITCH & LOCK CYLINDER

Removal

1) Disconnect negative battery cable. Remove steering wheel. See STEERING WHEEL PAD & SPIRAL CABLE or STEERING WHEEL & HORN PAD. Remove upper and lower steering column covers. Remove combination switch (if necessary).

2) Disconnect ignition switch harness connectors. If shear bolt studs are accessible, use a hacksaw to cut a slot into exposed studs. Using a screwdriver, remove studs.

3) If shear bolt studs are recessed or hard to reach with a hacksaw, center punch studs. Using a drill bit and a screw extractor, remove studs. Remove ignition switch and lock cylinder.

Installation

1) To install, reverse removal procedure. Install NEW shear bolts. Tighten shear bolts finger tight. Ensure proper operation of ignition switch and lock cylinder.

2) Tighten shear bolts until heads break off. Install combination switch, upper and lower steering column covers and steering wheel. Tighten steering wheel nut to specification. See TORQUE SPECIFICATIONS.

STEERING COLUMN

Removal & Installation

1) Disconnect negative battery cable. Remove steering wheel pad. Mark steering shaft and steering wheel for installation reference. Remove steering wheel. See STEERING WHEEL PAD & SPIRAL CABLE or STEERING WHEEL & HORN PAD.

2) Remove instrument cluster lower trim panel. Remove air duct from under steering column (if equipped). Remove steering column upper and lower covers. Remove combination switch.

3) On passenger cars, mark "U" joint and steering shaft for installation reference. Remove bolt(s) and disconnect "U" joint from bottom of steering column shaft. Remove bolts securing steering

column.

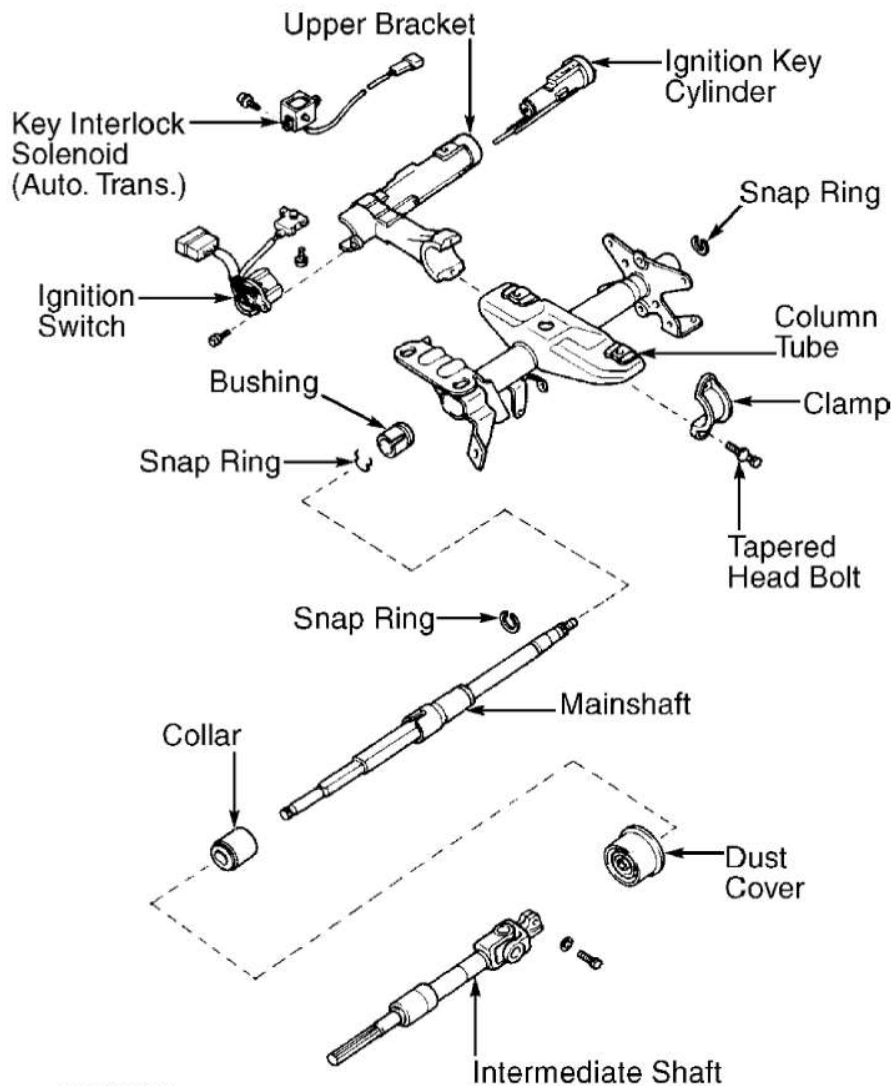
OVERHAUL

NOTE: See DISABLING & ACTIVATING AIR BAG SYSTEM.

Disassembly

1) Drill out tapered head bolts and use screw extractor to remove upper bracket bolts. Remove upper bracket from column tube. Remove upper snap ring. Remove steering column main shaft from column tube. See Fig. 3.

2) Remove lower snap ring. Remove collar from main shaft. Use a screwdriver to remove bushing. Place ignition key lock in ACC position. Push down on stop pin and pull out key cylinder.



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Fig. 3: Exploded View Of Steering Column
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Inspection

Ensure lock mechanism operates properly. Check upper bracket

for damage and upper bearing for rotating smoothness. Check steering shafts for bending, damaged splines, or damaged "U" joints. Check column tube for bending or other damage. Repair or replace components as necessary.

Reassembly

To reassemble, reverse disassembly procedure. Apply molybdenum disulfide base grease to thrust stopper and upper bushing. Align bushing tabs with holes of column tube. Install upper bracket with tapered head bolts. Tighten bolts until hexagonal heads break off.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS TABLE

Application	Ft. Lbs. (N.m)
Intermediate Shaft-To-Main Shaft Bolt	26 (35)
Lower Tube-To-Upper Tube Bolt	14 (19)
Steering Column Bracket-To-Instrument	
Panel Bolt/Nut	19 (26)
Steering Wheel Nut	25 (34)
"U" Joint Bolt	26 (35)
	INCH Lbs. (N.m)
Column Hole Cover Bolt	69 (7.8)
Column Hole Dust Seal Bolt	69 (7.8)
Steering Wheel Pad Torx Screw	78 (8.8)