

STEERING COLUMN - AUTOMATIC TILT WHEEL

1993 Toyota Celica

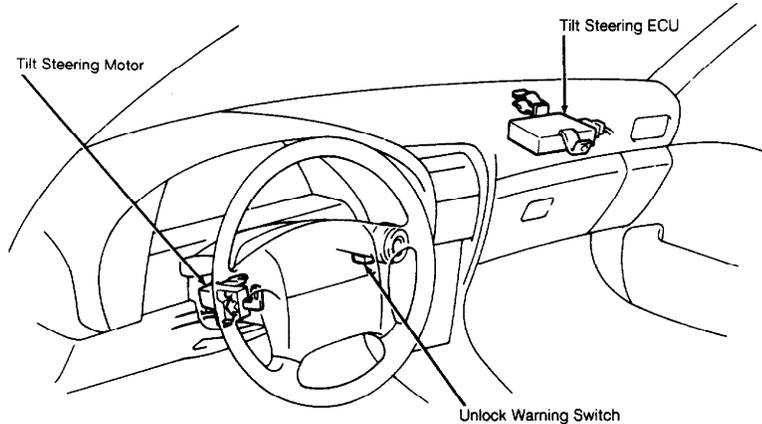
1993 STEERING
Toyota - Steering Columns - Automatic Tilt Wheel
Celica All-Trac

DESCRIPTION & OPERATION

Automatic tilt steering column uses a standard tilt steering column with a motor located in the column housing. The motor allows the column to automatically swing up when the ignition key is removed for easier exit and entry to the vehicle. When the key is inserted in the ignition and the steering wheel is pulled down, it will automatically return to the pre-set position.

The position of the wheel can be adjusted by pulling the lock release knob, placing the wheel in the desired position and releasing the knob. An unlock warning switch is located in the ignition key cylinder and a tilt steering ECU is located behind the instrument panel above the glove box.

NOTE: For Adjustments and Removal and Installation of steering wheel pad, combination switch, ignition switch and Overhaul of steering column see STEERING COLUMN - TILT article in the STEERING section.



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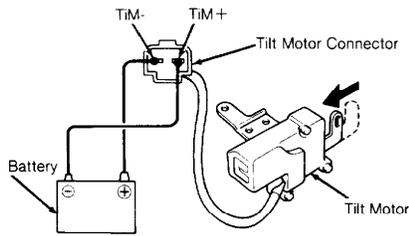
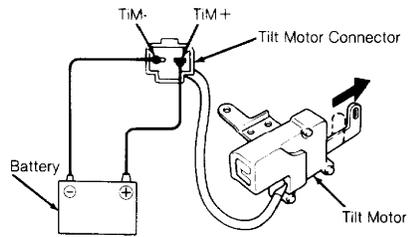
Fig. 1: Locating Celica All-Trac Auto Tilt Wheel Steer Col Components
Courtesy of Toyota Motor Sales, U.S.A., Inc.

TESTING

COMPONENT TESTING

Tilt Steering Motor

1) Disconnect tilt motor electrical connector. Connect positive lead from battery to connector terminal TiM+ and negative lead to terminal TiM-. Motor arm should move away from housing. Reverse battery leads to terminals. Motor arm should move toward housing. If motor does operate as specified, replace motor. See Fig. 2.



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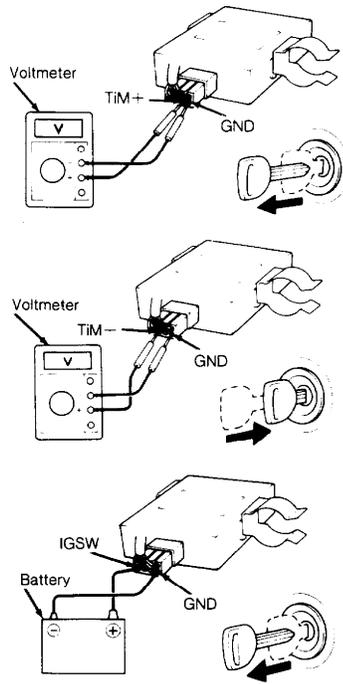
Fig. 2: Tilt Steering Motor Test
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

Tilt Steering ECU

1) Place ignition key in ignition switch. Remove glove box to gain access to ECU. Connect positive voltmeter lead to ECU terminal TiM+ and negative lead to GRD terminal. See Fig. 3. Check that meter needle jumps once to approximately 10 volts when the key is removed from ignition.

2) Connect voltmeter positive lead to ECU terminal TiM- and negative lead to GRD terminal. Check that meter needle jumps once to approximately 10 volts when key is inserted in ignition.

3) Connect positive lead from battery to ECU terminal lead IGSW and negative lead to GRD terminal. Check that tilt-away feature does not operate when key is removed from ignition. If ECU operation is not as specified, replace ECU.



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Fig. 3: Tilt Steering ECU Test
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

Key Unlock Warning Switch

Using ohmmeter, check for continuity between terminals 1 and 5 of ignition switch. With ignition key removed, there should be no continuity. With ignition key installed there should be continuity. If continuity is not as specified, replace unlock switch.

SYSTEM TESTING

1) Check battery voltage. If less than 8 volts, check battery and charging system. If more than 8 volts, check POWER fuse in fuse block. If fuse is blown, replace fuse and check auto-tilt operation. If system does not operate, check for short circuit in wire harness between fuse and tilt ECU terminal B+. If fuse is okay, but system does not operate, disconnect tilt ECU connector.

2) Using volt-ohmmeter, check for battery voltage between terminal B+ and body ground. See Fig. 4. If voltage is okay, go to next step. If voltage is not okay, check for open circuit between fuse and terminal B+

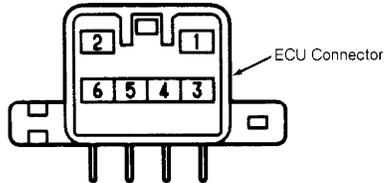
3) Using volt-ohmmeter, check for continuity between terminal GND and body ground. If continuity exists, go to next step. If no continuity, check body ground, or for open circuit between terminal GND and ground.

4) Check for continuity between terminal UWSW and GND. There should be no continuity with ignition key removed, and continuity with key inserted in ignition switch. If continuity is okay, go to next step. If continuity is not as specified, check for open circuit between terminal UWSW and unlock warning switch. If circuit is okay, replace unlock warning switch.

5) Check for voltage between terminals IGSW and GND. With ignition switch on, battery voltage should be present. With switch off, 0 volts should be present. If voltage is okay, go to next step.

If voltage is not as specified, check for open circuit between terminal IGSW and ignition switch.

6) Check for continuity between terminals TiM+ and TiM-. If continuity exists, check ECU. See Tilt Steering ECU under COMPONENT TESTING. If ECU fails test, replace ECU. If continuity does not exist, check for open circuit between terminals TiM+ and TiM-. If circuit is okay, check tilt motor. See Tilt Steering Motor under COMPONENT TESTING. If motor fails test, replace motor.

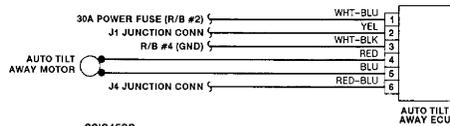


No.	Symbol	Terminal Name
1	B+	Power Source
2	UWSW	Unlock Warning Switch
3	GND	Ground
4	TiM +	Tilt Away
5	TiM-	Tilt Return
6	IGSW	Ignition Switch

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Fig. 4: Tilt Steering ECU Connector Terminal Identification
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

WIRING DIAGRAMS



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Fig. 5: Automatic Tilt Wheel Steering Column Wiring Diagram