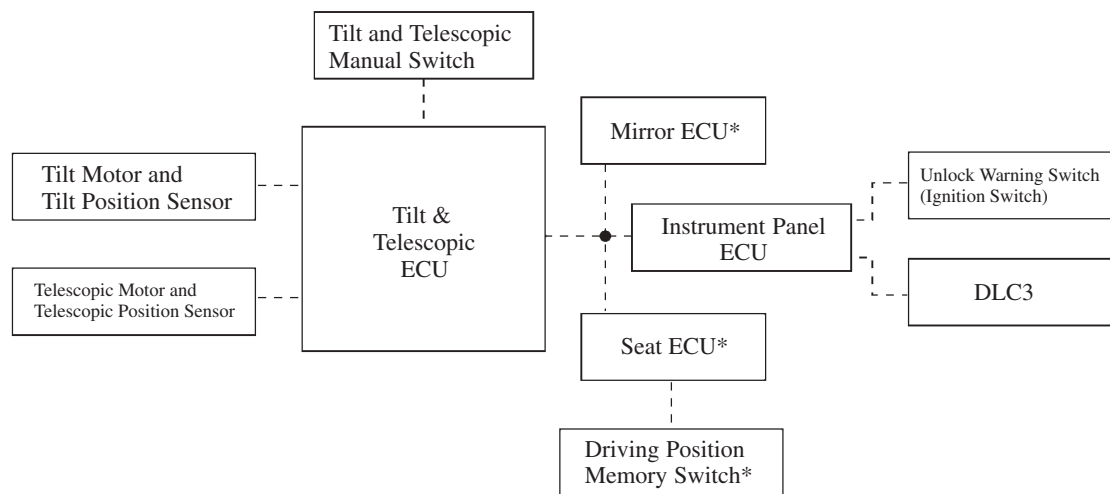


■ POWER TILT AND POWER TELESCOPIC STEERING COLUMN

1. General

- A compact and lightweight power tilt and power telescopic steering column that uses ultrasonic motors is available as an option.
- The auto set function has been adopted.
- The steering column can be set to 2 positions in conjunction with the driving position memory function for European model.
- A self-diagnosis function is used. The M-OBD (Multiplex On-Board Diagnostic) system is supported.

2. System Diagram



*: Models for Europe

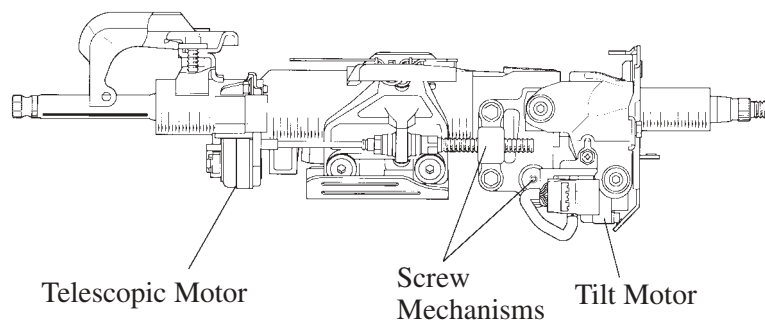
155CH15

3. Construction

Using ultrasonic motors that feature low-speed and high-torque characteristics, the power tilt and power telescopic steering column has adopted a compact and light weight tilt and telescopic mechanism that does not require a reduction mechanism.

Each of the ultrasonic motors contains a position sensor that uses a Hall IC and a magnet to detect the tilt position or the telescopic position.

The tilt and telescopic mechanism uses a screw mechanism to convert the motor's rotational movement to a linear movement.



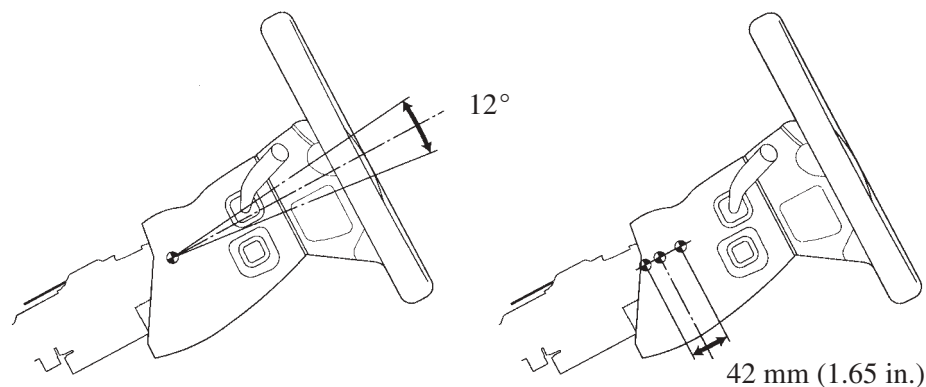
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4. Operation

Manual Operation

The tilt position and the telescopic position can be adjusted as desired by operating the tilt and telescopic switch.

A stepless adjustment enables the tilt mechanism to be tilted 12° vertically, and the telescopic mechanism to be moved 42 mm (1.65 in.) longitudinally.



155CH91

Tilt

Telescopic

Auto Set Function

When the ignition key is removed, the steering column moves forward away from the driver and also tilts up for easy exit and entry.

When the ignition key is inserted in the ignition switch, the steering column returns to the previously set position.

The auto set function can be prohibited by using a hand-held tester.

Position Detection

The rotation of the motor is sensed and the tilt and telescopic positions are detected by the position sensor in the motor, which uses a Hall IC and a magnet.

Driving Position Memory Function (Models for Europe)

Pressing the driving position memory switch that is located in the driver's door duplicates the tilt and telescopic positions that have been previously stored in memory. Up to 2 sets of tilt and telescopic position can be stored.

Self-Diagnosis Function

If the tilt and telescopic ECU detects a malfunction in the power tilt and power telescopic system, the ECU stores the malfunction data in memory. Then, by connecting a hand-held tester to the DLC3 terminal, the diagnostic trouble codes (DTCs) can be accessed and an active test can be performed. For details, see the Land Cruiser Chassis and Body Repair Manual (Pub. No. RM616E).