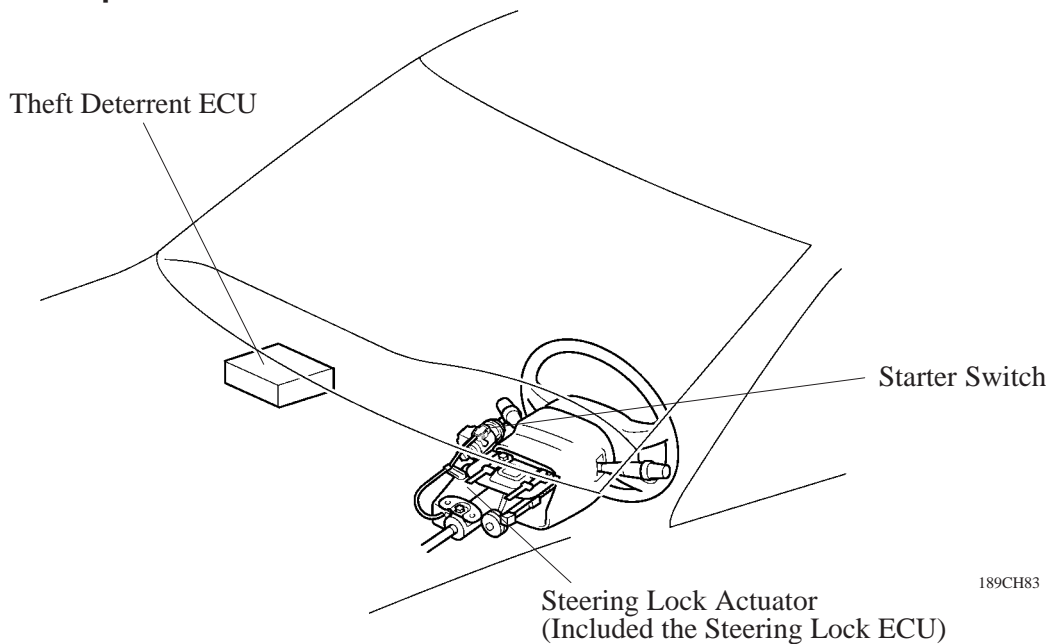


## ■ ELECTRIC STEERING LOCK SYSTEM

### 1. General

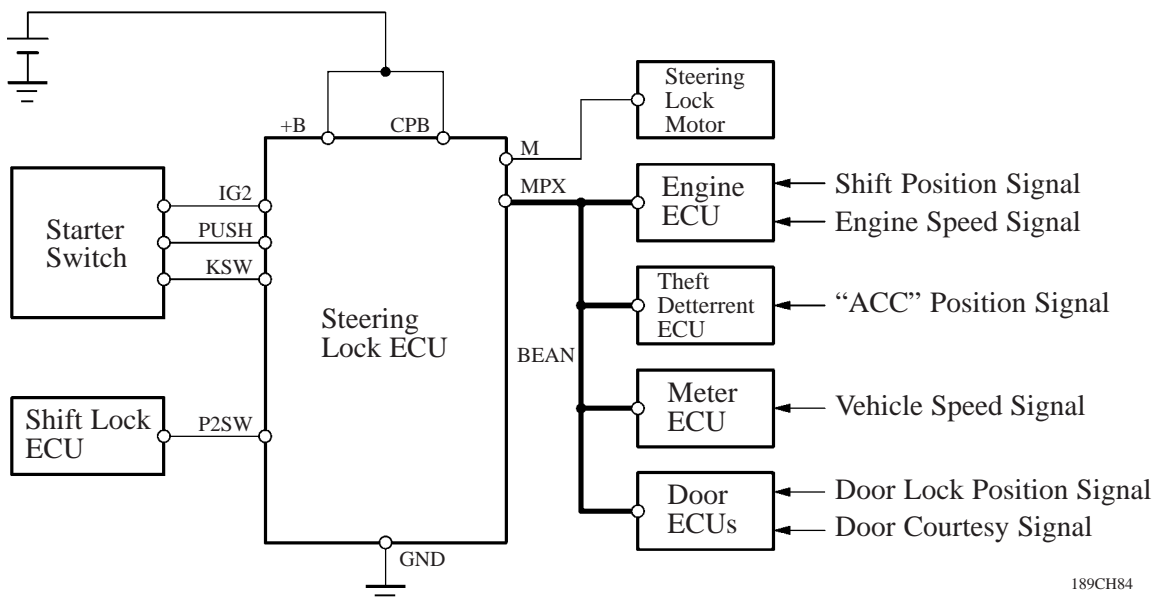
- This system works in unison with the engine immobiliser system to lock or unlock the steering lock in accordance with the ID code checked by the theft deterrence ECU. As a result, the vehicle's theft deterrence performance has been improved.
- The immobiliser computer included in the steering lock ECU.
- This system is provided in the model with the smart key system.

### 2. Layout of Components



LHD Model

### 3. System Diagram



## 4. Construction

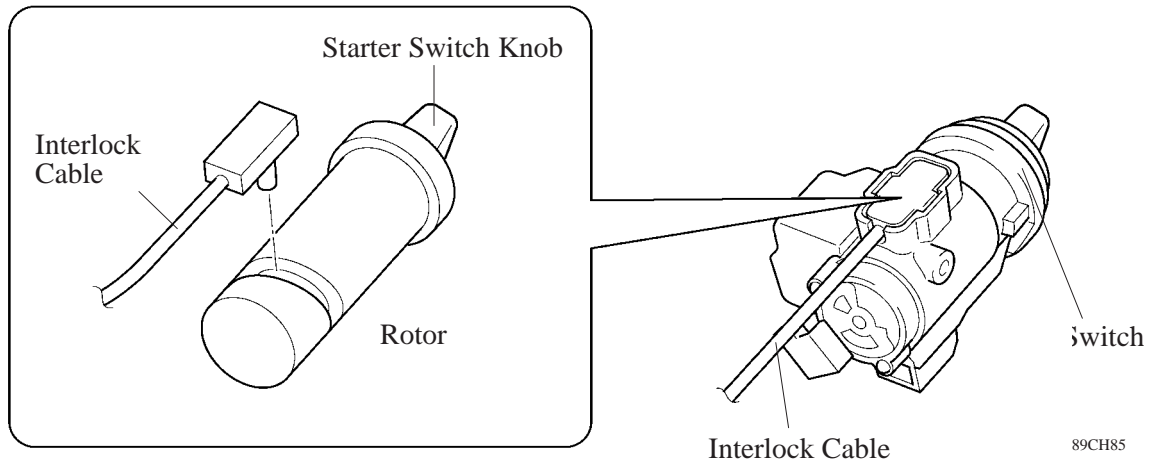
### General

The steering lock system consists of a starter switch, cable, steering lock actuator, and steering lock ECU. The steering lock ECU is included in the steering lock actuator.

### Starter Switch

The starter switch consists of a starter switch knob and a rotor.

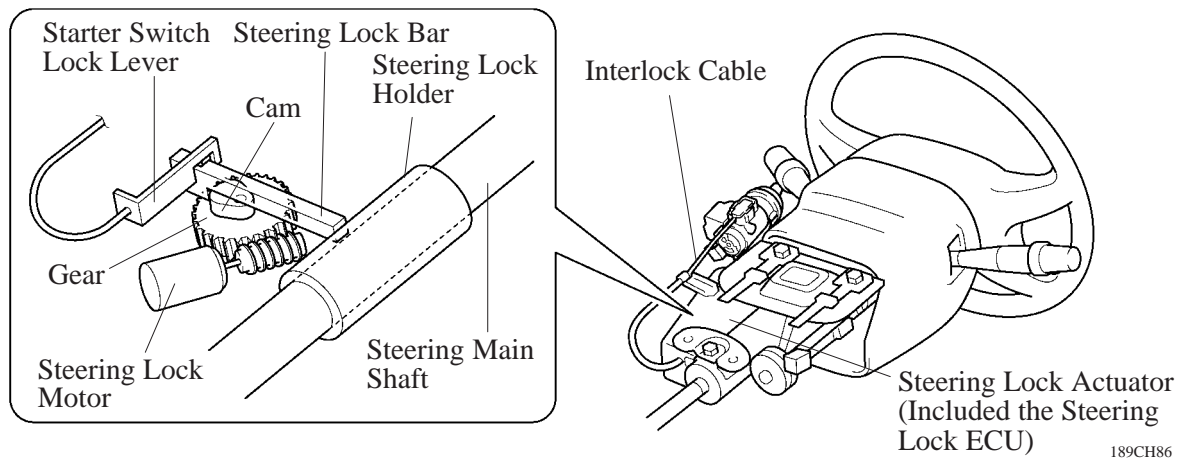
The tip of the steering lock cable is fitted into the groove in the rotor, and when the starter switch knob is turned, the rotor turns, thus pulling on the interlock cable that is fitted in the rotor groove.



### Steering Lock Actuator

The Steering lock actuator consists of a steering lock motor, gear, cam, steering lock bar, and starter switch lock lever.

In the steering lock system, the steering lock motor operates in accordance with the signals from the steering lock ECU. This causes the gear as well as the cam that is integrated with the gear to rotate, and the cam pushes the steering lock bar up, thus disengaging it from the steering lock holder.



### Steering Lock ECU

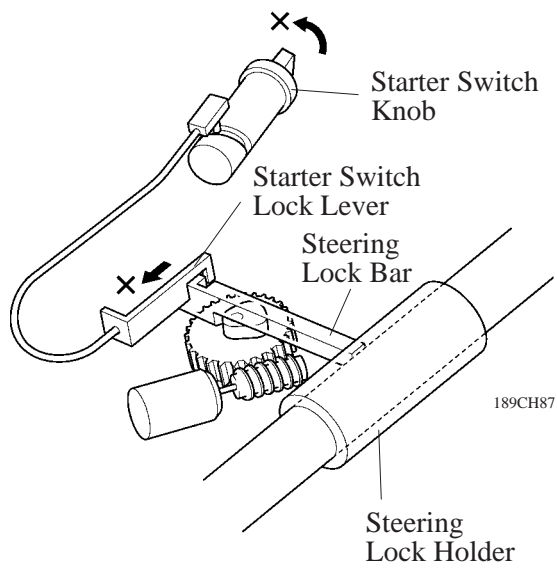
The steering lock ECU is integrated with the immobiliser computer and effects both steering lock control and engine immobiliser control.

The theft deterrence ECU checks the ID code of the ignition key and transmits its signal to the steering lock ECU. Then, the steering lock ECU transmits an engine start authorization signal to the engine ECU and a motor activation signal to the steering lock motor.

## 5. Operation

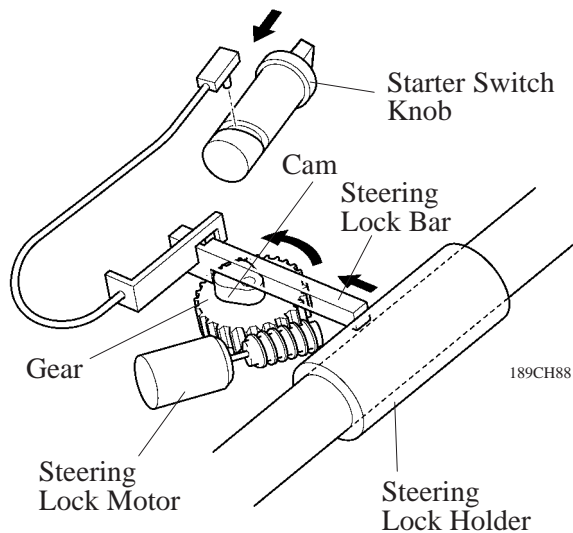
### Steering Lock System Activated

When the steering lock system is activated, the steering lock bar is engaged in the groove of the steering lock holder. At this time, because the starter lock lever is disengaged from the steering lock bar groove, the starter switch knob cannot be turned because the steering lock bar prevents the movement of the starter switch lock lever. Consequently, the operation of the engine is prevented before the steering lock system is unlocked.



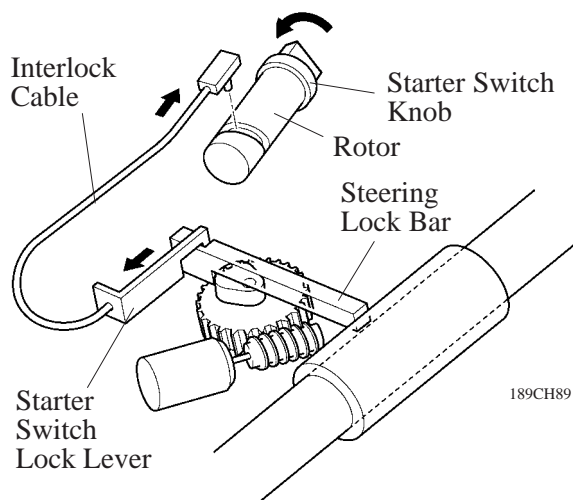
### Steering Lock System Not Activated

- When the starter switch knob is pressed, the steering lock ECU actuates the steering lock motor, which turns the gear that is integrated with the cam. This causes the steering lock bar to move and unlocks the steering lock system.



- When the steering lock bar moves, the groove portion of this bar moves to the position of the starter switch lock lever, allowing the starter switch knob to turn.

At this time, the rotor turns together with the starter switch knob, and the interlock cable becomes pulled along the groove of the rotor. Then, the starter switch lock lever also becomes pulled via the interlock cable, causing the starter switch lock lever to engage in the groove of the lock bar. As a result, the steering lock bar is prevented from engaging with the groove in the steering lock holder when the engine is running.



## 6. Fail-Safe

If the steering lock ECU detects a malfunction in the electric lock system, the fail-safe functions shown in the table below are effected because the starter switch and the steering lock actuator are connected by a cable.

Furthermore, as a measure against a drained battery in the smart key, inserting the smart key into the starter switch knob causes the steering lock ECU to output a steering lock system unlock signal to the steering lock motor.

Function	Outline
Preventing the activation of the steering lock system during engine operation	When the engine is operating, the steering lock bar is locked because the starter switch lock lever and the steering lock bar are engaged, thus preventing the steering lock system from activating.
Preventing the engine from being started before the steering lock system is unlocked	Because the steering lock bar prevents the starter switch lock lever from moving before the steering lock system is unlocked, the starter switch knob cannot be turned, thus preventing the engine from being started.

## 7. Diagnosis

If the steering lock ECU detects a malfunction in the electric steering lock system, the warning messages described below will appear on the multi-information display in the combination meter. Also, the master warning light illuminates and the buzzer sounds to inform the driver.

Warning Message	Description
S/T LOCK CBL FAILURE	Indicates that the steering lock cable has been cut.
KEY IS DIFFERENT	Indicates that a key with a wrong ID has been used.
SHIFT TO P RANGE	Indicates when the shift lever is in a position other than “P”.