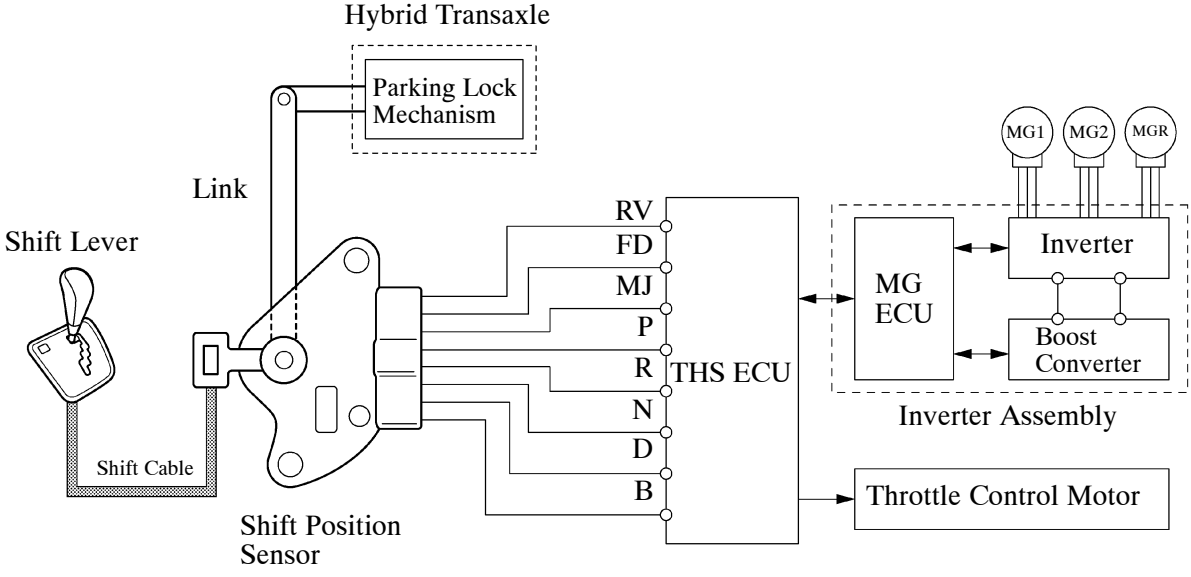
■SHIFT CONTROL SYSTEM

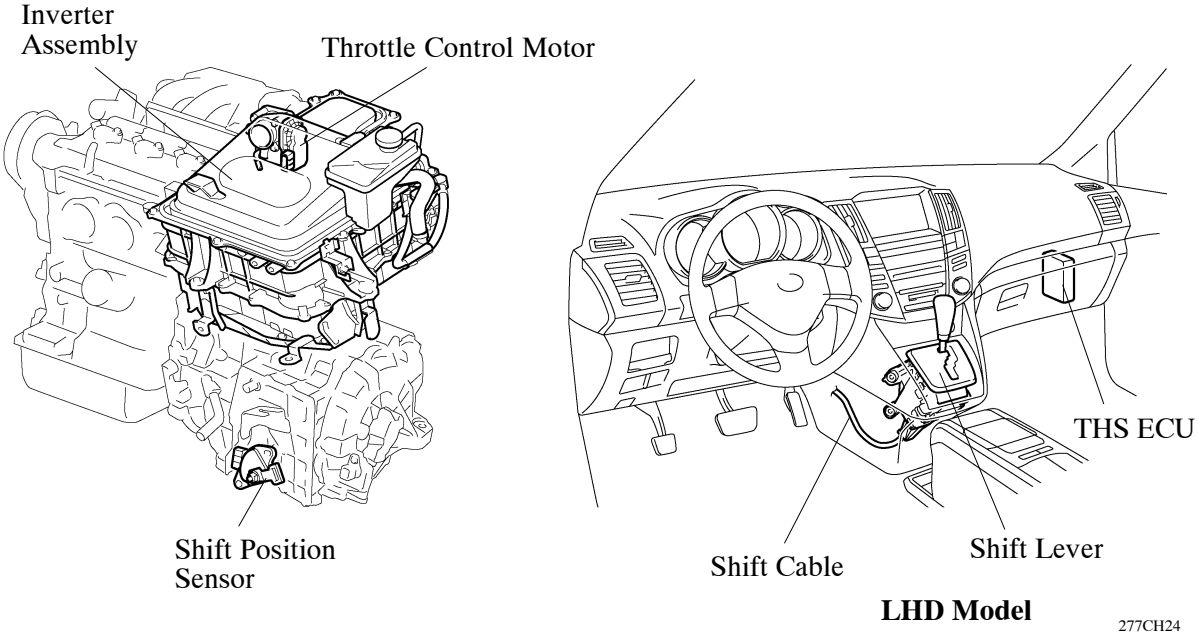
1. Shift Control

- A shift position sensor is provided in the transaxle to detect the shift position and sends a corresponding signal to the THS ECU. Upon receiving this signal, the THS ECU optimally combines the operation of the engine, MG1, MG2, and MGR in order to produce the respective shift positions (“P”, “R”, “N”, “D”, and “B”).
- However, because the movement of the wheels must be mechanically locked in the P position, a parking lock mechanism is used in the transaxle. Therefore, if the driver operates the shift lever to the P position, a cable and a linkage cause the movement of the transaxle to lock mechanically.

▶ System Diagram ◀

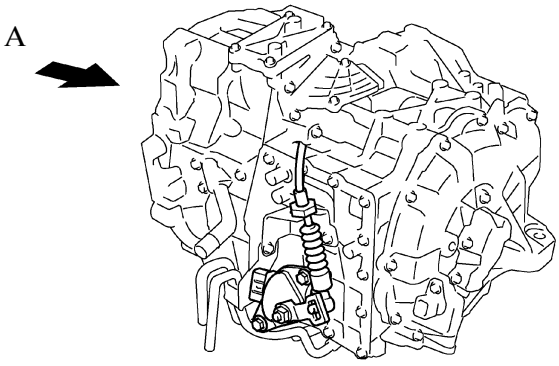


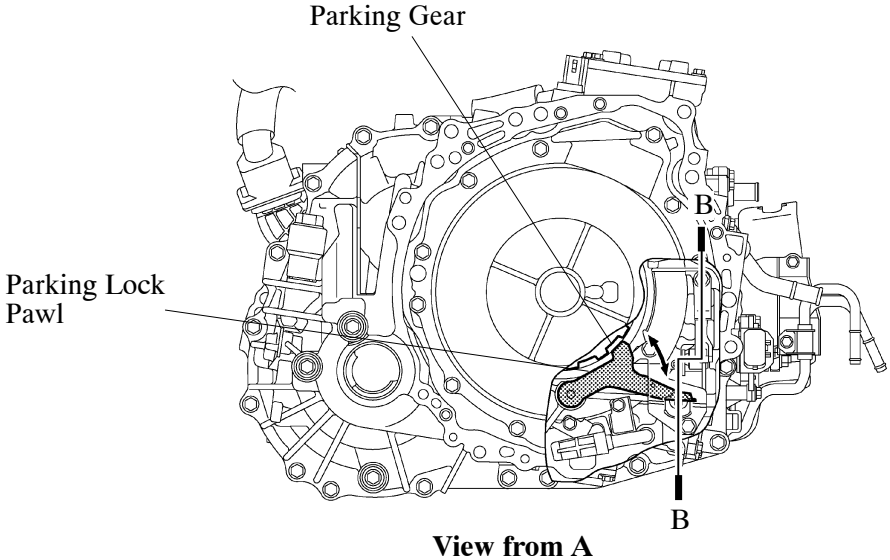
▶ Layout of Main Components ◀



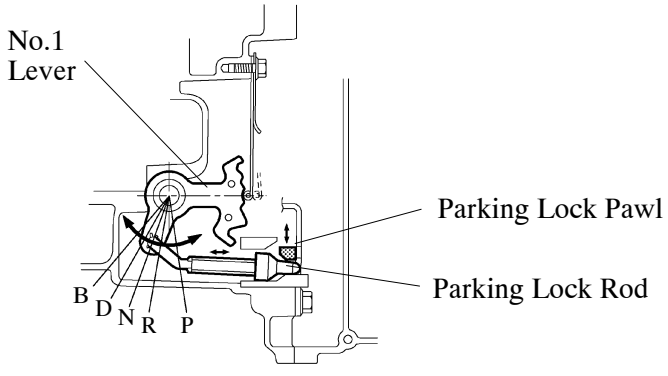
2. Parking Lock Mechanism

- A mechanical parking lock mechanism has been provided in the compound gear.
  The engagement of the parking lock pawl with the parking gear that is integrated with the compound gear locks the movement of the vehicle.
- When the driver moves the shift lever to the P position, the cable at the shift lever causes the No. 1 lever to rotate. The rotational movement of the No. 1 lever causes the parking lock rod to slide and the parking lock pawl to push up. As a result, the parking lock pawl locks the parking gear.





View from A



B – B Cross Section

277CH25

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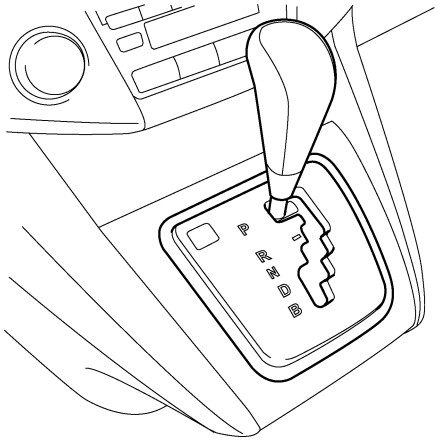
3. Shift Lever

A 5-position (P, R, N, D, and B) gate type shift lever is used. The gate type shift lever operates on the single-shift operation principle (fore-aft and side-to-side). Therefore, it does not require the use of a shift lever button, which is used on a straight type shift lever. Therefore, it excels in ease of use.



277CH26

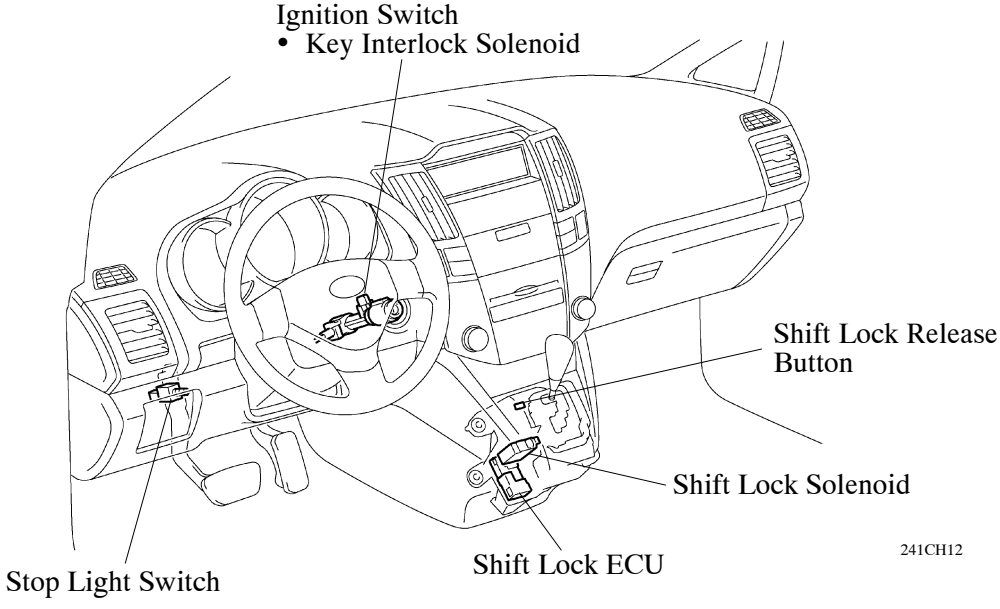
LHD Model

4. Shift Lock System

General

- The key interlock device prevents the key from being pulled out after the ignition switch is turned OFF, unless the shift lever is moved to the P position. Thus, the driver is urged to park the vehicle in the P position.
- The shift lock mechanism prevents the shift lever from being shifted to a position other than the P position, unless the ignition switch is ON and the brake pedal is pressed. It prevents the driver from accidentally releasing the parking lock condition.

Layout of Main Components

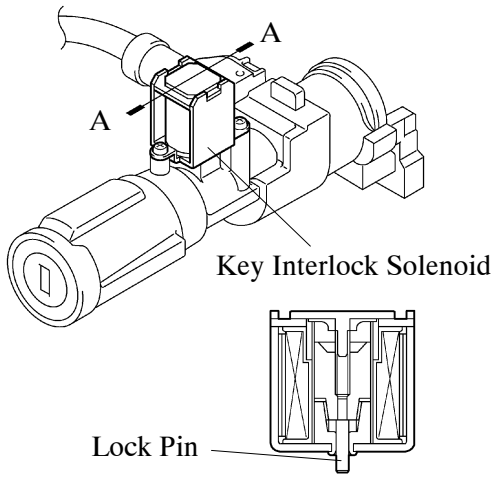


241CH12

LHD Model

Key Interlock Solenoid

The activation of the key interlock solenoid that is mounted on the upper column bracket moves the lock pin to restrict the movement of the key cylinder. Therefore, if the shift lever is shifted to any position other than "P", the ignition key cannot be moved from "ACC" to the "LOCK" position.



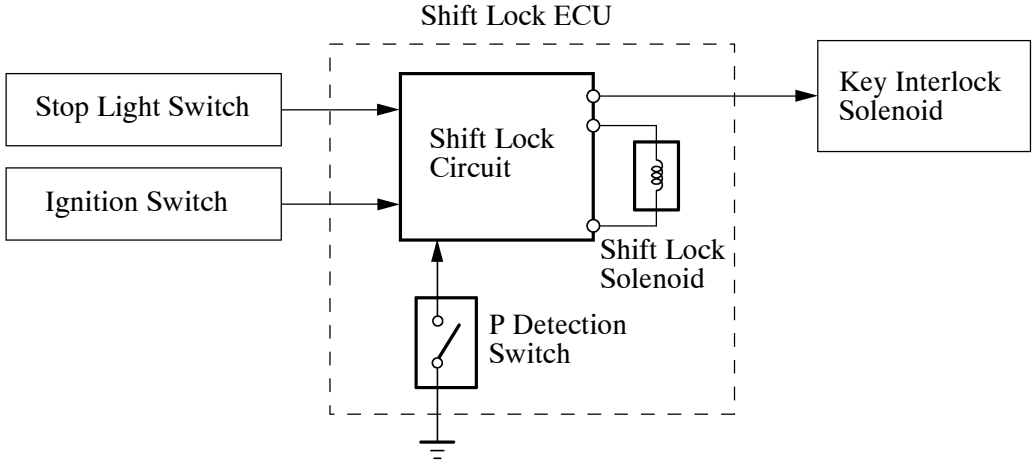
A – A Cross Section

241CH13

System Operation

- The shift lock ECU uses the P detection switch to detect the shift lever position, and receives the inputs of the stop light switch and ignition switch signals. Upon receiving these signals, the shift lock ECU turns ON the key interlock solenoid and the shift lock solenoid in order to release the key interlock and shift lock.
- A shift lock override button, which manually overrides the shift lock mechanism, is provided.

▶ System Diagram ◀



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