

# A/T SHIFT LOCK SYSTEM

< SYSTEM DESCRIPTION >

## A/T SHIFT LOCK SYSTEM

### System Description

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#### WITH INTELLIGENT KEY SYSTEM

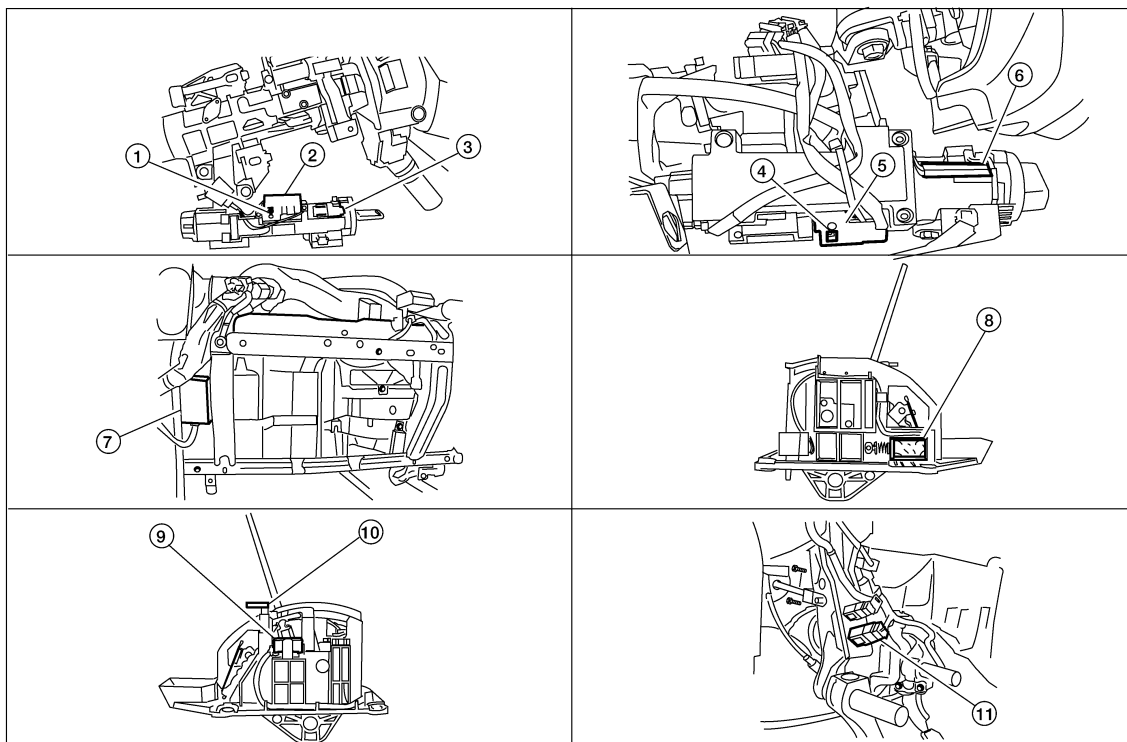
- The selector lever cannot be shifted from “P” (Park) unless the brake pedal is applied and the ignition knob switch is turned to the “ON” position.
- The ignition knob switch cannot be returned to the “OFF” position unless the selector lever is placed in “P” (Park).
- The shift lock mechanism is controlled by the ON-OFF operation of the shift lock solenoid.
- The key switch and ignition knob switch lock mechanism is controlled by the ON-OFF operation of the key lock solenoid.

#### WITHOUT INTELLIGENT KEY SYSTEM

- The selector lever cannot be shifted from “P” (Park) unless the brake pedal is applied and the ignition switch is turned to the “ON” position.
- The ignition switch cannot be returned to the “OFF” position and the key removed unless the selector lever is placed in “P” (Park).
- The shift lock mechanism is controlled by the ON-OFF operation of the shift lock solenoid.
- The key switch and key lock solenoid lock mechanism are controlled by the ON-OFF operation of the key lock solenoid and the operation of the rotator and slider located inside the key cylinder.

### Component Parts Location

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AWDIA0696ZZ

- |  |   |   |
|--|---|---|
| 1. Emergency lever (without Intelligent Key system)      | 2. Key lock solenoid (without Intelligent Key system) | 3. Key switch (without Intelligent Key system)        |
| 4. Emergency lever (with Intelligent Key system)         | 5. Key lock solenoid (with Intelligent Key system)    | 6. Ignition knob switch (with Intelligent Key system) |
| 7. Shift lock control unit (view with glove box removed) | 8. Shift lock solenoid                                | 9. Park position switch                               |
| 10. Shift lock release                                   | 11. Stop lamp switch                                  |   |

# ON BOARD DIAGNOSTIC (OBD) SYSTEM

< SYSTEM DESCRIPTION >

## ON BOARD DIAGNOSTIC (OBD) SYSTEM

### Introduction

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The A/T system has two self-diagnostic systems.

The first is the emission-related on board diagnostic system (OBD-II) performed by the TCM in combination with the ECM. The malfunction is indicated by the MIL (malfunction indicator lamp) and is stored as a DTC in the ECM memory but not the TCM memory.

The second is the TCM original self-diagnosis indicated by the A/T CHECK indicator lamp. The malfunction is stored in the TCM memory. The detected items are overlapped with OBD-II self-diagnostic items. For detail, refer to [TM-34, "CONSULT Function \(TRANSMISSION\)"](#).

### OBD-II Function for A/T System

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The ECM provides emission-related on board diagnostic (OBD-II) functions for the A/T system. One function is to receive a signal from the TCM used with OBD-related parts of the A/T system. The signal is sent to the ECM when a malfunction occurs in the corresponding OBD-related part. The other function is to indicate a diagnostic result by means of the MIL (malfunction indicator lamp) on the instrument panel. Sensors, switches and solenoid valves are used as sensing elements.

The MIL automatically illuminates in One or Two Trip Detection Logic when a malfunction is sensed in relation to A/T system parts.

### One or Two Trip Detection Logic of OBD-II

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#### ONE TRIP DETECTION LOGIC

If a malfunction is sensed during the first test drive, the MIL will illuminate and the malfunction will be stored in the ECM memory as a DTC. The TCM is not provided with such a memory function.

#### TWO TRIP DETECTION LOGIC

When a malfunction is sensed during the first test drive, it is stored in the ECM memory as a 1st trip DTC (diagnostic trouble code) or 1st trip freeze frame data. At this point, the MIL will not illuminate. — 1st Trip

If the same malfunction as that experienced during the first test drive is sensed during the second test drive, the MIL will illuminate. — 2nd Trip



The "Trip" in the "One or Two Trip Detection Logic" means a driving mode in which self-diagnosis is performed during vehicle operation.

### OBD-II Diagnostic Trouble Code (DTC)

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#### HOW TO READ DTC AND 1ST TRIP DTC

DTC and 1st trip DTC can be read by the following methods.

( **With CONSULT** or ( **GST**) CONSULT or GST (Generic Scan Tool) Examples: P0705, P0720 etc.

These DTC are prescribed by SAE J2012.

(CONSULT also displays the malfunctioning component or system.)

- **1st trip DTC No. is the same as DTC No.**
  - **Output of the diagnostic trouble code indicates that the indicated circuit has a malfunction. However, in case of the Mode II and GST, they do not indicate whether the malfunction is still occurring or occurred in the past and returned to normal.**
- CONSULT can identify them as shown below, therefore, CONSULT (if available) is recommended.**

#### Freeze Frame Data and 1st Trip Freeze Frame Data

The ECM has a memory function, which stores the driving condition such as fuel system status, calculated load value, engine coolant temperature, short term fuel trim, long term fuel trim, engine speed and vehicle speed at the moment the ECM detects a malfunction.

Data which are stored in the ECM memory, along with the 1st trip DTC, are called 1st trip freeze frame data, and the data, stored together with the DTC data, are called freeze frame data and displayed on CONSULT or GST. The 1st trip freeze frame data can only be displayed on the CONSULT screen, not on the GST. For detail, refer to [TM-32](#).

Only one set of freeze frame data (either 1st trip freeze frame data or freeze frame data) can be stored in the ECM. 1st trip freeze frame data is stored in the ECM memory along with the 1st trip DTC. There is no priority for 1st trip freeze frame data and it is updated each time a different 1st trip DTC is detected. However, once freeze frame data (2nd trip detection/MIL on) is stored in the ECM memory, 1st trip freeze frame data is no