

Troubleshooting Precautions

ABS Indicator Light:

The ABS indicator light comes on for three seconds and then goes off when the control unit detects no problem during the initial diagnosis right after the engine starts.

However, the ABS indicator light can stay on for up to 40 seconds when the control unit starts to check for pump overrun, etc. during the initial diagnosis.

The ABS indicator light comes on, and the ABS control unit memorizes the diagnostic trouble code (DTC) under certain conditions.

- The parking brake is applied for more than 30 seconds while the vehicle is being driven. (DTC 2-1)
- The transmission downshifted excessively. (DTC 4-1, 4-2)
- The vehicle loses traction, and the front wheels spin for more than one minute when starting from a stuck condition on a muddy, snowy, or sandy road. (DTC 4-8)
- The tires adhesion is lost due to excessive cornering speed. (DTC 5, 5-4, 5-8)
- The vehicle is driven on an extremely rough road. (DTC 8-1)
- The vehicle is interfered by strong radio waves (noise), for example, illegal radio, etc. (DTC 8-2)

NOTE: If there is any trouble in the system, the ABS indicator light turns on during driving.

Diagnostic Trouble Code (DTC):

- When the control unit detects a problem and the ABS indicator light comes on, the control unit memorizes the DTC.
- The control unit has three memory registers. When a problem occurs, the control unit stores the DTC in the first memory register. If another problem occurs, or the same problem occurs again, the control unit moves the first DTC to the next memory register, and stores the second DTC in the first register. If there's a third problem occurrence, the two existing DTCs are moved up one register, and the third DTC is stored in the first register. If problems continue to occur, the oldest problem is moved out of the last register and lost, and the most recent problem is stored in the first register. When the same problem occurs three times, the same DTC is stored in all memory registers. (Refer to the Symptom-to-System Chart for diagnostic period.)
- The most recent DTC is indicated first, and the oldest DTC is indicated last.
- The DTCs are erased from the control unit when the ABS control unit +B2 power supply or connector is disconnected.
- The control unit's memory can be erased by disconnecting the ABS B2 fuse for more than three seconds.

Self-diagnosis:

- There are three self-diagnoses described below.
 - ① Initial diagnosis: Performed right after the engine starts until the ABS indicator light goes off.
 - ② Regular diagnosis: Continuously performed (under some conditions) after the ABS indicator light goes off until the engine stops.
 - ③ Individual part/system diagnosis: Diagnosis about a specific part/system under its operating conditions.
- The CPU (central processing unit) controls the following when it detects a problem during self-diagnosis:
 - ① Turns the ABS indicator light ON.
 - ② Turns the front and rear fail-safe relays off.
 - ③ Stops the ABS control.
 - ④ Stops the ABS pump. (The pump may work under some conditions.)
 - ⑤ After the DTC is stored in the control unit, the CPU stops self-diagnosis.

Kickback and Pump Operation:

- When the engine is started, the ABS control unit begins the initial diagnosis and operates the solenoid valve one time. The kickback may be felt when the brake pedal is depressed.
- When the ABS control unit detects the pressure switch OFF signal during the initial diagnosis, it operates the pump motor, and performs the pump motor over-run diagnosis and pump motor diagnosis. Therefore, there are two cases where the pump motor operates or does not operate after the engine is started.
- Normally, after the initial diagnosis, the pump motor operates based on the pressure switch signal, regardless of the vehicle speed.

Troubleshooting:

- When two or three DTCs are stored in the control unit, perform troubleshooting for the DTC that appears first.
- When a customer's reported problem cannot be verified on the car, ask the customer about the conditions when the ABS indicator light came ON, and test drive the car under those conditions, if possible. When the ABS indicator light does not come ON during the test, check for loose terminals and check by shaking the harnesses and connectors while following the flowchart.
- The connector terminal numbers are viewed from the wire side for the female terminals, and from the terminal side for the male terminals.
- After the repair finished off, test drive the car and check the ABS indicator light does not come ON again during the test. (Refer to the Symptom-to-System Chart for diagnostic period.)