

C0244 or P1689 A serial data message is sent to the EBCM indicating that traction control is not allowed

Circuit Description

The electronic brake control module (EBCM) and the engine control module (ECM) simultaneously control the traction control. The ECM reduces the amount of torque supplied to the drive wheels by retarding spark timing and selectively turning OFF fuel injectors. The EBCM actively applies the brakes to the front wheels in order to reduce torque. The EBCM sends a requested torque message via a pulse width modulated (PWM) signal to the ECM. The duty cycle of the signal is used to determine how much engine torque the EBCM is requesting the ECM to deliver. Normal values are between 10 and 90 percent duty cycle. The signal should be at 90 percent when traction control is not active and at lower values during traction control activations. The ECM supplies a pull up voltage of 12 volts that the EBCM switches to ground to create the signal. The ECM sends a delivered torque message via a PWM signal to the EBCM. The duty cycle of the signal is used to determine how much engine torque the ECM is delivering. Normal values are between 10 and 90 percent duty cycle. The signal should be at low values, around 10 percent, at idle and higher values under driving conditions. The EBCM supplies a pull up voltage of 12 volts that the ECM switches to ground to create the signal. When certain ECM DTCs are set, the ECM will not be able to perform the torque reduction portion of traction control. A serial data message is sent to the EBCM indicating that traction control is not allowed.

Conditions for Running the DTC

The engine is running.

Conditions for Setting the DTC

C1276

One of the following conditions exists:

- The EBCM detects that delivered torque signal is out of the valid range.

- The EBCM does not receive the delivered torque signal.

P1644 or P1689

The PCM detects that the delivered torque signal voltage is invalid.

Action Taken When the DTC Sets

- The EBCM disables the TCS for the duration of the ignition cycle.
- The PCM will store conditions which were present when the DTC set as Fail Records data only.
- The Traction Off indicator turns ON.
- The ABS remains functional.

Conditions for Clearing the DTC

- The condition for the DTC is no longer present and you used the scan tool Clear DTC function.
- The EBCM automatically clears the history DTC when a current DTC is not detected in 100 consecutive drive cycles.
- The PCM automatically clears the history DTC when a current DTC is not detected in 40 consecutive warm-up cycles.

Diagnostic Aids

The following conditions can cause this concern:

- An open in the delivered torque circuit.
- An short to ground or voltage in the delivered torque circuit.
- A wiring problem, terminal corrosion, or poor connection in the delivered torque circuit.
- A communication frequency problem.
- A communication duty cycle problem.
- The EBCM is not receiving information from the PCM.
- Loose or corroded EBCM ground or PCM ground.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

3. Use the scan tool in order to determine if the delivered torque signal has a valid duty cycle.
9. This vehicle is equipped with a ECM which uses an Electrically Erasable

Programmable Read Only Memory (EEPROM). When replacing the ECM, the replacement ECM must be programmed.

Step	Action	Values	Yes	No
Schematic Reference: ABS Schematics Connector End View Reference: ABS Connector End Views or Engine Electrical Connector End Views				
1	Did you perform the ABS Diagnostic System Check?	—	Go to Step 2	Go to Diagnostic System Check -ABS
2	Inspect the EBCM ground and ECM ground, making sure each ground is clean and torqued to the proper specification. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	—	Go to Step 11	Go to Step 3
3	1. Install a scan tool. 2. Start the engine. 3. With a scan tool, observe the Delivered Torque parameter in the DRP/ABS/TCS data list. Does the scan tool display the specified value?	90%	Go to Step 4	Go to Testing for Intermittent and Poor Connections in Wiring Systems
4	1. Turn OFF the ignition. 2. Disconnect the EBCM harness connector. 3. Install the J 39700 universal breakout box using the J 39700-300 cable adapter to the EBCM harness connector and the EBCM connector. 4. Disconnect the engine control module (ECM) harness connector. 5. Turn ON the ignition, with the engine OFF. 6. Measure the voltage from the delivered torque signal circuit to a good ground. Does the voltage measure near the specified value?	B+	Go to Step 5	Go to Step 6

Step	Action	Value(s)	Yes	No
5	1. Turn OFF the ignition. 2. Disconnect the J 39700-300 cable adapter from the EBCM connector. 3. Turn ON the ignition, with the engine OFF. 4. Test the delivered torque signal circuit for a short to voltage. Refer to Circuit Testing on page 8-1184 and Wiring Repairs on page 8-1189 in Wiring Systems. Did you find and correct the condition?	—	Go to Step 11	Go to Step 7
6	1. Turn OFF the ignition. 2. Disconnect the J 39700-300 cable adapter from the EBCM connector. 3. Test the delivered torque signal circuit for the following conditions: <ul style="list-style-type: none"> • An open • A short to ground • A high resistance Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	—	Go to Step 11	Go to Step 8
7	Inspect for poor connections the harness connector of the ECM. Refer to Testing for Intermittent and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	—	Go to Step 11	Go to Step 9

Step	Action	Value(s)	Yes	No
8	Inspect for poor connections the harness connector of the EBCM. Refer to Testing for Intermittent and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	—	Go to Step 11	Go to Step 10
9	Important: The replacement ECM must be programmed. Replace the ECM. Refer to Engine Control Module (ECM) Replacement in Engine Controls -3.6L or Engine Control Module (ECM) Replacement in Engine Controls -4.6L. Did you complete the repair?	—	Go to Step 11	—
10	Important: Perform the setup procedure for the EBCM. An unprogrammed EBCM will result in the following conditions: • Inoperative or poorly functioning system operations • The EBCM sets DTC C0281 and DTC C0550. Replace the EBCM. Refer to Electronic Brake Control Module (EBCM) Replacement. Did you complete the repair?	—	Go to Step 11	—
11	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	—	Go to Step 2	System OK