

KD: Electric Exhaust Gas Recirculation (EEGR) System

 [KD: Introduction](#)

KD1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

Are DTCS P0400, P0403, or P1408 present?

Yes	No
For DTC P1408, GO to KD9 . For DTCS P0400 and P0403, GO to KD2 .	For all others, GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions , to continue diagnosis.

KD2 DTCS P0400 AND P0403: CHECK THE EEGR CONNECTOR

Note: If the DTC is intermittent, wiggle the harness and connectors when taking measurements.

- Check the connection of the EEGR harness connector to the EEGR.

Are the connector contacts clean and correctly seated?

Yes	No
GO to KD3 .	REPAIR as necessary. CLEAR the DTCS. REPEAT the self-test.

KD3 CHECK THE VPWR CIRCUITS FOR AN OPEN

- Ignition ON, engine OFF.
- EEGR Assembly connector disconnected.
- Measure the voltage between:

(+) EEGR Assembly Connector, Harness Side	(-) Vehicle Battery
VPWR - Pin 2	Negative terminal
VPWR - Pin 5	Negative terminal

Are the voltages greater than 10 V?

Yes	No
GO to KD4 .	REPAIR the open circuit. CLEAR the DTCS. REPEAT the self-test.

KD4 CHECK THE EEGR CIRCUITS FOR AN OPEN

- Ignition OFF.
- PCM connector disconnected.

- Measure the resistance between:

(+) EGR Assembly Connector, Harness Side	(-) PCM Connector, Harness Side
EGRMC1 - Pin 1	EGRMC1
EGRMC2 - Pin 3	EGRMC2
EGRMC3 - Pin 4	EGRMC3
EGRMC4 - Pin 6	EGRMC4

Are the resistances less than 5 ohms?

Yes	No
GO to KD5 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

KD5 CHECK THE EGR CIRCUITS FOR A SHORT TO GROUND

- Measure the resistance between:

(+) EGR Assembly Connector, Harness Side	(-) Vehicle Battery
EGRMC1 - Pin 1	Negative terminal
EGRMC2 - Pin 3	Negative terminal
EGRMC3 - Pin 4	Negative terminal
EGRMC4 - Pin 6	Negative terminal

Are the resistances greater than 10K ohms?

Yes	No
GO to KD6 .	REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.

KD6 CHECK FOR A SHORT BETWEEN EGR CIRCUITS

Note: Refer to the PCM connector pin numbers in the beginning of this pinpoint test.

- Measure the resistance between:

(+) PCM Connector, Harness Side	(-) PCM Connector, Harness Side
EGRMC3	EGRMC1
EGRMC3	EGRMC2
EGRMC3	EGRMC4
EGRMC1	EGRMC2
EGRMC1	EGRMC4
EGRMC2	EGRMC4

Are the resistances greater than 10K ohms?

Yes	No
GO to KD7 .	REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.

KD7 CHECK THE EEGR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON, engine OFF.
- Measure the voltage between:

(+) EEGR Assembly Connector, Harness Side	(-) Vehicle Battery
EGRMC1 - Pin 1	Negative terminal
EGRMC2 - Pin 3	Negative terminal
EGRMC3 - Pin 4	Negative terminal
EGRMC4 - Pin 6	Negative terminal

Is any voltage present?

Yes	No
REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.	GO to KD8 .

KD8 CHECK THE EEGR COILS FOR AN OPEN

- Ignition OFF.
- Measure the resistance between:

(+) EEGR Assembly Connector, Component Side	(-) EEGR Assembly Connector, Component Side
EGRMC1 - Pin 1	VPWR - Pin 2
EGRMC2 - Pin 3	VPWR - Pin 2
EGRMC3 - Pin 4	VPWR - Pin 5
EGRMC4 - Pin 6	VPWR - Pin 5

Are the resistances between 15 - 24 ohms?

Yes	No
GO to KD12 .	INSTALL a new EEGR assembly. REFER to the Workshop Manual Section 303-08, Engine Emission Control. CLEAR the DTCs. REPEAT the self-test.

KD9 DTC P1408: CHECK FOR STUCK OR STICKY EGR VALVE OPERATION BY COMPARING ACTUAL MAP VOLTAGE TO MAP PID VOLTAGE

Note: Repair the following DTCs first, if present: P0102, P0103, P0107, P0108, P1100, P1101.

- Ignition OFF.
- MAP Sensor connector disconnected.
- Connect a 5 amp fused jumper wire between the following:

Point A MAP Sensor Connector, Harness Side	Point B MAP Sensor Connector, Component Side
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VREF	VREF
SIGRTN	SIGRTN

- Ignition ON, engine running.
- Measure the voltage between:

(+) MAP Sensor Connector, Component Side	(-) Vehicle Battery
MAP	Negative terminal

Is the voltage between 1 - 2 V?

Yes	No
GO to KD10 .	CHECK the MAP harness for open and short circuits.

KD10 COMPARE ACTUAL MAP VOLTAGE TO MAP PID VOLTAGE EGR

- Ignition OFF.
- Remove the jumper wires.
- MAP Sensor connected.
- Record the actual MAP voltage values at KOEO, idle, 1,000 and 2,000 RPM.
- Ignition ON, engine OFF.
- Access the PCM and monitor the MAP PID.
- Note the MAP PID voltage.
- Ignition ON, engine running.
- Note the MAP PID voltage.
- Increase engine speed to 1,000 RPM.
- Note the MAP PID voltage.
- Increase engine speed to 2,000 RPM.
- Note the MAP PID voltage.

Does the MAP PID voltage stay within 0.5 V of the actual MAP voltage?

Yes	No
The concern is not present at this time. Make sure the MAP sensor is correctly seated and the vacuum source is not blocked. CLEAR the DTCs. REPEAT the self-test.	GO to KD11 .

KD11 CARRY OUT THE KOER SELF-TEST

Is DTC P1408 retrieved again?

Yes	No
INSTALL a new EEGR assembly. REFER to the Workshop Manual Section 303-08, Engine Emission Control. CLEAR the DTCs. REPEAT the self-test.	REFER to Section 3, Symptom Charts, No Diagnostic Trouble Codes (DTCs) Present Symptom Chart Index , to continue diagnosis.

KD12 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Visually inspect for:
 - pushed out pins
 - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test and verify the concern is still present.

Is the concern still present?

Yes	No
INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) , Programming the VID Block for a Replacement PCM.	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.
