

Evaporative Emissions

Preliminary Inspection

1. Visually inspect for obvious signs of mechanical or electrical damage, blown fuses, etc.
2. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
3. If the concern is not visually evident, verify the symptom and proceed with diagnosis, using the Jaguar approved diagnostic system, where available.
4. Where K-Line or Vacutec equipment is available, it should be used as an aid to diagnosis. The equipment must be capable of testing to the 0.020 thou standard.

Diagnostic Drive Cycles

Following the setting of a DTC, the appropriate repairs must be carried out, and the normal operation of the system checked. This will be done by performing a series of drive cycles which will enable the vehicle to operate the evaporative emissions system as a function check. The following drive cycles cover the use of the Jaguar approved diagnostic system, a scan tool, and a test with no additional equipment, where possible.

Flow check monitor drive cycle conditions (non-Federal)

NOTE:

These conditions must be satisfied before the test is commenced.

This drive cycle should be performed following rectification work on the system.

- Make sure the fuel tank is between one third and three quarters full. (Adding fuel will increase vapor generation; the diagnostic will not run if the vapor concentration is too great).
- Make sure the ambient air temperature is above -5°C (23°F).

Flow check monitor drive cycle (non-Federal)

- Drive the vehicle for a minimum of 15 minutes, avoiding severe or excessive fuel movement.
- Avoiding excessive fuel movement, gently bring the vehicle to rest (coast to a stop).
- Allow the vehicle to idle for two minutes.

Full Evaporative system monitor drive cycle conditions

NOTE:

These conditions must be satisfied before the test is commenced.

- Make sure the fuel filler cap is correctly fitted.
- Clear the DTCs. (Perform a code clear, even if no codes are present. This will reset TIDs).
- Make sure the fuel tank is between one third and three quarters full (adding fuel will increase vapor generation; the diagnostic will not run if the vapor concentration is too great).
- Drive the vehicle for a minimum of two minutes, and until fully warm (temperature gauge just below mid-point).

- Make sure that the purge valve is operating, either by touch, sound, or using datalogger (purge vapor management valve-duty cycle).

If the purge is not active, perform the 'drive cycle for green ECM' in this section.

Full Evaporative system monitor drive cycle

- Drive the vehicle to a suitable road where the test can be carried out, switch off the ignition.
- Leave the ignition switched off for 30 seconds.
- Restart the engine, accelerate briskly to 80 kilometers per hour (50 miles per hour), making sure that the engine speed reaches at least 3500 rpm for a minimum of five seconds.

40 thou test, using the Jaguar approved diagnostic system

- Avoiding high engine loads, drive the vehicle steadily between 64 and 97 kilometers per hour (40 and 60 miles per hour). Using the Jaguar approved diagnostic system, monitor the evaporative valve duty cycle (purge vapor management valve-duty cycle), CCV status (canister close valve-vapor recovery system), and the FTPS (fuel tank pressure-vapor recovery system). The Jaguar approved diagnostic system will give an indication when the test is active. Dependant on the level of vapor concentration, it may take up to 30 minutes for the test to initialize. (Vapor concentration cannot be measured using the Jaguar approved diagnostic equipment). When the test has initialized (CCV closed), it will take up to 90 seconds to complete. Avoid excessive fuel movement while the test is active.

20 thou test, using the Jaguar approved diagnostic system

- Continue driving the vehicle steadily between 64 and 97 kilometers per hour (40 and 60 miles per hour) avoiding high engine loads for a further 10 minutes.
- Avoiding excessive fuel movement, gently bring the vehicle to rest (coast to a stop).
- Allow the vehicle to idle for 2 minutes.

• Use the Jaguar approved diagnostic system to monitor the evaporative valve duty cycle (purge vapor management valve-duty cycle), CCV status (canister close valve-vapor recovery system), and the FTPS (fuel tank pressure-vapor recovery system). The Jaguar approved diagnostic system will give an indication when the test is active. When the test has initialized (CCV closed), it will take up to 90 seconds to complete.

If the 20 thou test has not run, it is likely that the vapor concentration in the purge system is too great. In this case, carry out the following:

- Drive the vehicle steadily for a further 30 minutes, avoiding excessive fuel movement.
- Avoiding excessive fuel movement, gently bring the vehicle to rest (coast to a stop).
- Allow the vehicle to idle for 2 minutes.
- Use the Jaguar approved diagnostic system to monitor the evaporative valve duty cycle (purge vapor management valve-duty cycle), CCV status (canister close valve-vapor recovery system), and the FTPS (fuel tank pressure-vapor recovery system). The Jaguar approved diagnostic system will give an indication when the test is active. When the test has initialized (CCV closed), it will take up to 90 seconds to complete.

If the 20 thou test fails to run a second time, repeat the entire test.

- Check for DTCs. Rectify as indicated.

40 thou test, using scan tool

- Avoiding high engine loads, drive the vehicle steadily between 64 and 97 kilometers per hour (40 and 60 miles per hour).

- When the test has initialized, using the scan tool, monitor the evaporative valve duty cycle, CCV status, and the FTPS (the scan tool should give an indication when the test is active).
- When the test has initialized (CCV closed), it will take up to 90 seconds to complete.
- To make sure that the test has completed, TID 08 in mode 6 must be checked (if the test has not completed, this TID will display 0. Any other value indicates test completion).
- If the test did not complete, repeat the test.

20 thou test, using scan tool

- Continue driving the vehicle steadily between 64 and 97 kilometers per hour (40 and 60 miles per hour) avoiding high engine loads for a further 10 minutes.
- Avoiding excessive fuel movement, gently bring the vehicle to rest (coast to a stop).
- Allow the vehicle to idle for 2 minutes.
- When the test has initialized, using the scan tool, monitor the evaporative valve duty cycle, CCV status, and the FTPS (the scan tool should give an indication when the test is active).
- When the test has initialized (CCV closed), it will take up to 90 seconds to complete.
- To make sure that the test has completed, TID 06 in mode 6 must be checked (if the test has not completed, this TID will display 0. Any other value indicates test completion).
- If the test did not complete, repeat the test.
- If the 20 thou test has not run, it is likely that the vapor concentration in the purge system is too great. In this case, drive the vehicle steadily for a further 30 minutes, avoiding excessive fuel movement, then repeat the test.
- Check for DTCs. Rectify as indicated.

40 thou and 20 thou tests using no additional equipment

The test procedure and conditions are as for the Jaguar approved diagnostic system or scan tool, but no confirmation of the test having run is possible without the use of one of these instruments. The DTC will be set if the fault still exists, but the possibility exists that the conditions for the test to run may not have been met, in which case, the DTC may not be set until the owner reproduces the conditions in which the fault originally occurred.

Drive cycle for 'green' ECM

- To enable the ECM to re-learn fuelling adaptations.

NOTE:

This procedure should be performed whenever the vehicle battery has been disconnected.

Due to component tolerance and wear during the normal running of a vehicle, fuelling and air requirements for an engine will vary over time. The ECM has the ability to adjust for this variation by 'learning' the level of compensation that is required (these compensation values are referred to as adaptations).

If the vehicle battery is disconnected, all adaptations held within the ECM will be lost (ie, set to zero). The ECM is then referred to as 'green'. To enable the vehicle to function correctly, the ECM must 'relearn' these adaptations.

There are five areas or sites that need to be relearn:

- Allow the vehicle to idle until fully warm (temperature gauge just below mid-point).
- Allow to idle for a further three minutes, minimum.
- Drive the vehicle with the air conditioning **OFF** on a level road using a constant throttle, or speed control if fitted, for at least one minute in the following gears, at the stated engine speeds for each of the sites below.

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'Green' ECM drive cycle chart. Site 1

NOTE:

The vehicle speed is for guidance only. **DO NOT** use the vehicle speed as the target to set adaptations.

All Engines

Monitor condition	Parameters
GEAR	P
ENGINE SPEED	Idle
VEHICLE SPEED (GUIDE ONLY)	0 mph

'Green' ECM drive cycle chart. Site 2

NOTE:

The vehicle speed is for guidance only. **DO NOT** use the vehicle speed as the target to set adaptations.

3.0 V6 Engine

Monitor condition	Parameters
GEAR	2
ENGINE SPEED	1595 rpm
VEHICLE SPEED (GUIDE ONLY)	15.4 kph (9.56 mph)

3.5 Engine

Monitor condition	Parameters
GEAR	2
ENGINE SPEED	1295 rpm
VEHICLE SPEED (GUIDE ONLY)	11.0 kph (6.8 mph)

4.2 Engine without supercharger

Monitor condition	Parameters
GEAR	2
ENGINE SPEED	1158 rpm
VEHICLE SPEED (GUIDE ONLY)	14.4 kph (8.7 mph)

4.2 Engine with supercharger

Monitor condition	Parameters
GEAR	2
ENGINE SPEED	984 rpm
VEHICLE SPEED (GUIDE ONLY)	6.4 kph (4.0 mph)

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'Green' ECM drive cycle chart. Site 3

NOTE:

The vehicle speed is for guidance only. **DO NOT** use the vehicle speed as the target to set adaptations.

3.0 V6 Engine

Monitor condition	Parameters
GEAR	2
ENGINE SPEED	2385 rpm
VEHICLE SPEED (GUIDE ONLY)	37.5 kph (23.3 mph)

3.5 Engine

Monitor condition	Parameters
GEAR	2
ENGINE SPEED	1877 rpm
VEHICLE SPEED (GUIDE ONLY)	30.4 kph (18.9 mph)

4.2 Engine without supercharger

Monitor condition	Parameters
GEAR	2
ENGINE SPEED	1831 rpm
VEHICLE SPEED (GUIDE ONLY)	32.0 kph (19.9 mph)

4.2 Engine with supercharger

Monitor condition	Parameters
GEAR	2
ENGINE SPEED	1481 rpm
VEHICLE SPEED (GUIDE ONLY)	22.4 kph (14.0 mph)

'Green' ECM drive cycle chart. Site 4

NOTE:

The vehicle speed is for guidance only. **DO NOT** use the vehicle speed as the target to set adaptations.

3.0 V6 Engine

Monitor condition	Parameters
GEAR	3
ENGINE SPEED	2635 rpm
VEHICLE SPEED (GUIDE ONLY)	66.5 kph (41.3 mph)

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3.5 Engine

Monitor condition	Parameters
GEAR	3
ENGINE SPEED	1937 rpm
VEHICLE SPEED (GUIDE ONLY)	44.8 kph (27.8 mph)

4.2 Engine without supercharger

Monitor condition	Parameters
GEAR	3
ENGINE SPEED	2152 rpm
VEHICLE SPEED (GUIDE ONLY)	57.6 kph (35.8 mph)

4.2 Engine with supercharger

Monitor condition	Parameters
GEAR	3
ENGINE SPEED	2250 rpm
VEHICLE SPEED (GUIDE ONLY)	64.0 kph (39.8 mph)

'Green' ECM drive cycle chart. Site 5

NOTE:

The vehicle speed is for guidance only. **DO NOT** use the vehicle speed as the target to set adaptations.

3.0 V6 Engine

Monitor condition	Parameters
GEAR	3
ENGINE SPEED	3500 rpm
VEHICLE SPEED (GUIDE ONLY)	89.0 kph (55.3 mph)

3.5 Engine

Monitor condition	Parameters
GEAR	3
ENGINE SPEED	3287 rpm
VEHICLE SPEED (GUIDE ONLY)	80.0 kph (50.0 mph)

4.2 Engine without supercharger

Monitor condition	Parameters
GEAR	3
ENGINE SPEED	2891 rpm
VEHICLE SPEED (GUIDE ONLY)	80.0 kph (50.0 mph)

4.2 Engine with supercharger

Monitor condition	Parameters
GEAR	3
ENGINE SPEED	2592 rpm
VEHICLE SPEED (GUIDE ONLY)	80.0 kph (50.0 mph)

Bring the vehicle to rest, allow to idle for one minute.



WARNING: **THE FOLLOWING TESTS MAY INVOLVE PARTS WHICH ARE HOT.**

If sufficient adaptations have occurred, the canister purge valve should now be operating. This can be verified manually by either touching or listening to the valve. By touching the canister purge valve, it should be possible to feel the valve switching. Listening to the canister purge valve is best done using a workshop stethoscope, through which it should be possible to hear the valve operating.

Diagnostic Trouble Code (DTC) Index/Symptom Chart

1. Where the Jaguar approved diagnostic system is available, complete the S93 report before clearing any or all fault codes from the vehicle.

NOTE:

If a DTC cannot be cleared, then there is a permanent fault present that flags again as soon as it is cleared. (The exception to this is P1260, which will only clear following an ignition **OFF/ON** cycle after rectification).

2. If the cause is not visually evident and the Jaguar approved diagnostic system is not available, use a fault code reader to retrieve the fault codes before proceeding to the Diagnostic Trouble Code (DTC) Index Chart, or the Symptom Chart if no DTCs are set.
3. Using the Jaguar approved diagnostic system where available, and a scan tool where not, check the freeze frame data for information on the conditions applicable when the fault was flagged. The format of this will vary, depending on the tool used, but can provide information useful to the technician in diagnosing the fault.



CAUTION:

When probing connectors to take measurements in the course of the pinpoint tests, use the adaptor kit, part number 3548-1358-00.

NOTE:

When performing electrical voltage or resistance tests, always use a digital multimeter (DMM) accurate to 3 decimal places, and with an up-to-date calibration certificate. When testing resistance, always take the resistance of the DMM leads into account.

NOTE:

Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

Symptom Chart

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Symptom	Possible Source	Action
Difficulty in filling	<ul style="list-style-type: none"> Restriction in the vapor line between the fuel tank and the carbon canister outlet/atmospheric port 	Refer to Action for DTC P0446
Fuel smell	<ul style="list-style-type: none"> Adaptations incomplete Purge valve inoperative 	Carry out adaptations procedure, check purge valve operation
Message center display (see below)	<ul style="list-style-type: none"> Fuel filler cap missing/not tightened after refuelling 	Check fuel filler cap, refer to Action for DTC P0455,

Driver Information

NOTE:

Use this table to identify DTCs associated with the message center display, then refer to the DTC index for possible sources and actions.

NOTE:

For definitions of Default Modes, see the foot of this table.

NOTE:

A trip is an ignition **OFF**, 30 seconds delay, ignition **ON** cycle, plus a minimum coolant temperature increase of 22°C (72°F) after which the coolant temperature should reach a minimum 71°C (160°F)

Warning Light	Message	Default Mode	DTC
Check engine (after two trips)	None	ECM default: (Canister purge inhibited, adaptive fuel metering inhibited).	P0441, P0442, P0443, P0444, P0445, P0446, P0447, P0448, P0455, P0456
Check engine (after two trips)	None	None	P0450, P0452, P0453
Red	Check fuel filler cap	ECM default: (Canister purge inhibited, adaptive fuel metering inhibited).	P0455

Diagnostic Trouble Code (DTC) index

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Diagnostic Trouble Code	Description	Possible Source	Action
P0441 (Euro only)	Incorrect purge flow	<ul style="list-style-type: none"> • Evaporative canister purge pipe restricted, leaking, disconnected • Evaporative canister vent restricted • Evaporative canister purge valve to engine pipe(s) restricted, leaking, disconnected • Evaporative canister purge valve failure 	Goto <<A>>
P0442	Leak detected. 40 thou	<ul style="list-style-type: none"> • Fuel tank filler cap seal defective • System leak (canister damage, pipework) • Canister close valve leaking • Fuel tank leak 	<p>Check filler cap, system pipework, fuel tank.</p> <p>Goto <></p> <p>. For fuel tank information, <<310-01>> . Where K-Line or Vacutec equipment is available, carry out the appropriate test. See bulletin 05.1-29, or Vacutec operating instructions</p>
P0443	Canister purge valve malfunction (leaking)	<ul style="list-style-type: none"> • Canister purge valve failure 	<p>Carry out system pressure check (K-Line or Vacutec equipment. See bulletin 05.1-29, or Vacutec operating instructions)</p>
P0444	Canister purge valve circuit open circuit	<ul style="list-style-type: none"> • Canister purge valve disconnected • Canister purge valve to ECM drive circuit; open circuit, high resistance • Canister purge valve failure 	<p>Check purge valve connections.</p> <p>Goto <></p>
P0445	Canister purge valve circuit short circuit	<ul style="list-style-type: none"> • Canister purge valve to ECM drive circuit; short circuit to ground • Canister purge valve failure 	<p>Goto <></p>
P0446	Canister close valve malfunction (CCV stuck closed)	<ul style="list-style-type: none"> • Restricted flow through; air vent, filter, CCV or canister • Canister close valve failure 	<p>Inspect the components listed, and interconnecting pipework for blockage, kinks or flattened areas</p>

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P0447	Canister close valve circuit open circuit.	<ul style="list-style-type: none"> • Canister close valve power supply circuit; open circuit; short circuit • Canister close valve to ECM drive circuit; open circuit, high resistance, short circuit to B+ voltage • Canister close valve failure 	Goto <<C>>
P0448	Canister close valve circuit short circuit	<ul style="list-style-type: none"> • Canister close valve to ECM drive circuit; short circuit to ground • Canister close valve failure 	Goto <<C>>
P0450	Fuel tank pressure (FTP) sensor malfunction (output stuck/not changing)	<ul style="list-style-type: none"> • FTP sensor disconnected • FTP sensor failure 	Check FTP sensor connections. Goto <<D>>
P0452	Fuel tank pressure (FTP) sensor circuit; low voltage (low pressure)	<ul style="list-style-type: none"> • FTP sensor disconnected • FTP sensor to ECM sense circuit; open circuit, short circuit to ground • FTP sensor to splice in sensor supply circuit; open circuit; high resistance • FTP sensor failure 	For FTP sensor supply tests, <<303-14A>><<303-14B>> Goto <<D>>
P0453	Fuel tank pressure (FTP) sensor circuit; high voltage (high pressure)	<ul style="list-style-type: none"> • FTP sensor to splice in sensor ground circuit; open circuit; high resistance • FTP sensor to ECM sense circuit; open circuit, short circuit to high voltage • FTP sensor failure 	Check fuel filler cap and seal, pipework, etc. Goto <> . For fuel tank information, <<310-01>>

P0455	Leak detected-large	<ul style="list-style-type: none"> • Fuel filler cap missing • Fuel filler cap seal defective • System leak (canister damage, pipework damage) • CCV stuck open • Canister purge valve to engine purge pipe; restricted, leaking, disconnected • Canister purge valve stuck closed • Fuel tank leak 	<p>Check fuel filler cap and seal, pipework, etc. Goto <> . For fuel tank information, <<310-01>></p>
P0456	Leak detected - 20 thou	<ul style="list-style-type: none"> • Fuel filler cap seal defective • System leak (canister damage, pipework damage) • CCV leaking • Fuel tank leak 	<p>Check fuel filler cap and seal, pipework, etc. Goto <> . For fuel tank information, <<310-01>></p>

Pinpoint Tests

A : DTC P0441; EVAPORATIVE SYSTEM INCORRECT PURGE FLOW

NOTE:

European specification vehicles only.

A1 : CHECK FUEL FILLER CAP FITMENT AND CONDITION OF CANISTER, PIPES AND CONNECTORS

1. Make sure that the fuel filler cap is correctly installed and tightened.
2. Check the condition of the carbon canister.
3. Check the condition of all accessible pipes and connectors in the vapor line.

•Are the canister and all pipes and connectors in good condition?

-> Yes

Goto <<A2>>

-> No

REPAIR as necessary. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle. Recheck DTCs. For additional information, see 'diagnostic drive cycles' above.

A2 : CHECK EVAPORATIVE PURGE VALVE IS OPERATING

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1. Disconnect the vapor pipe from the inlet port of the evaporative purge valve (ie, from fuel tank).
2. **RUN** the engine for 2 minutes, making sure that the engine reaches normal operating temperature.
3. Check that the evaporative purge valve is operating, by touch or by sound (using a stethoscope, it will be possible to hear the valve operating).

•Is the valve operating?

-> **Yes**

Recheck DTCs. Carry out a flow check monitor drive cycle. For additional information, see 'diagnostic drive cycles' above.

-> **No**

CHECK for DTC P0444, P0445. Conduct 'green' ECM drive cycle. For additional information, see 'diagnostic drive cycles' above.

B : DTC P0442, P0444, P0445, P0455, P0456; LEAK DETECTED: LARGE/20 THOU/40 THOU, PURGE VALVE CIRCUIT MALFUNCTION, OPEN/SHORT CIRCUIT,

NOTE:

Where K-Line or Vacutec equipment is available, the appropriate test should be carried out, see bulletin 05.1-29, and Vacutec operating instructions.

B1 : CHECK FUEL FILLER CAP FITMENT AND CONDITION OF CANISTER, PIPES AND CONNECTORS

1. Make sure that the fuel filler cap is correctly installed and tightened.
2. Check the condition of the carbon canister.
3. Check the condition of all accessible pipes and connectors in the vapor line.

•Are the canister and all pipes and connectors in good condition?

-> **Yes**

Goto <<**B2**>>

-> **No**

REPAIR as necessary. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle. Recheck DTCs. For additional information, see 'diagnostic drive cycles' above.

B2 : CHECK THE CANISTER PURGE VALVE DRIVE CIRCUIT FOR HIGH RESISTANCE

1. Disconnect the battery negative terminal.
2. Disconnect the canister purge valve electrical connector, EC63.
3. Disconnect the ECM electrical connector, PI01.
4. Measure the resistance between EC63, pin 02 (UY) and PI01, pin 66 (UY).

•Is the resistance greater than 5 ohms?

-> **Yes**

REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> **No**

Goto <<**B3**>>

B3 : CHECK THE CANISTER PURGE VALVE DRIVE CIRCUIT FOR SHORT TO HIGH VOLTAGE

1. Reconnect the battery negative terminal.
2. Turn the ignition switch to the **ON** position.
3. Measure the voltage between EC63, pin 02 (UY) and GROUND.

•Is the voltage greater than 3 volts?

-> Yes

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

Goto <<**B4**>>

B4 : CHECK THE CANISTER PURGE VALVE DRIVE CIRCUIT FOR SHORT TO GROUND

1. Turn the ignition switch to the **OFF** position.
2. Measure the resistance between EC63, pin 02 (UY) and GROUND.

•Is the resistance less than 10,000 ohms?

-> Yes

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

Goto <<**B5**>>

B5 : CHECK THE CANISTER PURGE VALVE POWER SUPPLY

1. Turn the ignition switch to the **ON** position.
Make sure the EMS relay is energized.
2. Measure the voltage between EC63, pin 01 (GU) and GROUND.

•Is the voltage less than 10 volts?

-> Yes

REPAIR the circuit between the canister purge valve and battery. This circuit includes the front power distribution box, fuse 14, the EMS relay, and the high power protection module. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

INSTALL a new canister purge valve. <<**Evaporative Emission Canister Purge Valve** - ->> Carry out a full evaporative system monitor drive cycle. Recheck DTCs. For additional information, see 'diagnostic drive cycles' above.

C : DTC P0447, P0448; CANISTER CLOSE VALVE (CCV) CIRCUIT MALFUNCTION, OPEN /SHORT CIRCUIT

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C1 : CHECK THE CANISTER CLOSE VALVE POWER SUPPLY

1. Disconnect the GCV electrical connector, CV02.
2. Turn the ignition switch to the **ON** position.
Make sure the EMS relay is energized.
3. Measure the voltage between CV02, pin 02 (GU) and GROUND.

•Is the voltage greater than 10 volts?

-> Yes

Goto <<C2>>

-> No

REPAIR the circuit between the GCV and battery. This circuit includes the front power distribution box, fuse 14, the EMS relay and the high power protection module. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

C2 : CHECK THE CANISTER CLOSE VALVE POWER SUPPLY CIRCUIT FOR SHORT CIRCUIT

1. Turn the ignition switch to the **OFF** position.
2. Measure the voltage between CV02, pin 02 (GU) and GROUND.

•Is the voltage greater than 3 volts?

-> Yes

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

Goto <<C3>>

C3 : CHECK THE CANISTER CLOSE VALVE DRIVE CIRCUIT FOR HIGH RESISTANCE

1. Disconnect the battery negative terminal.
2. Disconnect the ECM electrical connector, PI01.
3. Measure the resistance between CV02, pin 01 (O) and PI01, pin 67 (O).

•Is the resistance greater than 5 ohms?

-> Yes

REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

Goto <<C4>>

C4 : CHECK THE CANISTER CLOSE VALVE DRIVE CIRCUIT FOR SHORT TO HIGH VOLTAGE

1. Reconnect the battery negative terminal.
2. Measure the voltage between CV02, pin 01 (O) and GROUND.

•Is the voltage greater than 3 volts?

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-> Yes

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

Goto <<C5>>

C5 : CHECK THE CANISTER CLOSE VALVE DRIVE CIRCUIT FOR SHORT TO GROUND

1. Measure the resistance between CV02, pin 01 (O) and GROUND.

•Is the resistance less than 10,000 ohms?

-> Yes

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

INSTALL a new CCV. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

D : DTC P0450, P0452, P0453; FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT MALFUNCTION, LOW/HIGH VOLTAGE

NOTE:

For FTP sensor supply and ground circuit tests, <<303-14A>><<303-14B>>

D1 : CHECK THE FTP SENSOR SENSE CIRCUIT FOR HIGH RESISTANCE

1. Disconnect the battery negative terminal.

2. Disconnect the FTP sensor electrical connector, FP01.

3. Disconnect the ECM electrical connector, PI01.

4. Measure the resistance between FP01, pin 02 (RG) and PI01, pin 104 (RG).

•Is the resistance greater than 5 ohms?

-> Yes

REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

Goto <<D2>>

D2 : CHECK THE FTP SENSOR SENSE CIRCUIT FOR SHORT TO HIGH VOLTAGE

1. Reconnect the battery negative terminal.

2. Turn the ignition switch to the ON position.

3. Measure the voltage between FP01, pin 02 (RG) and GROUND.

•Is the voltage greater than 3 volts?

-> Yes

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

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-> No

Goto <<D3>>

D3 : CHECK THE FTP SENSOR SENSE CIRCUIT FOR SHORT TO GROUND

1. Measure the resistance between FP01, pin 02 (RG) and GROUND.

•Is the resistance less than 10,000 ohms?

-> Yes

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.

-> No

INSTALL a new FTP sensor. <<Fuel Tank Pressure Sensor - >> CLEAR the DTC. Carry out a full evaporative system monitor drive cycle.