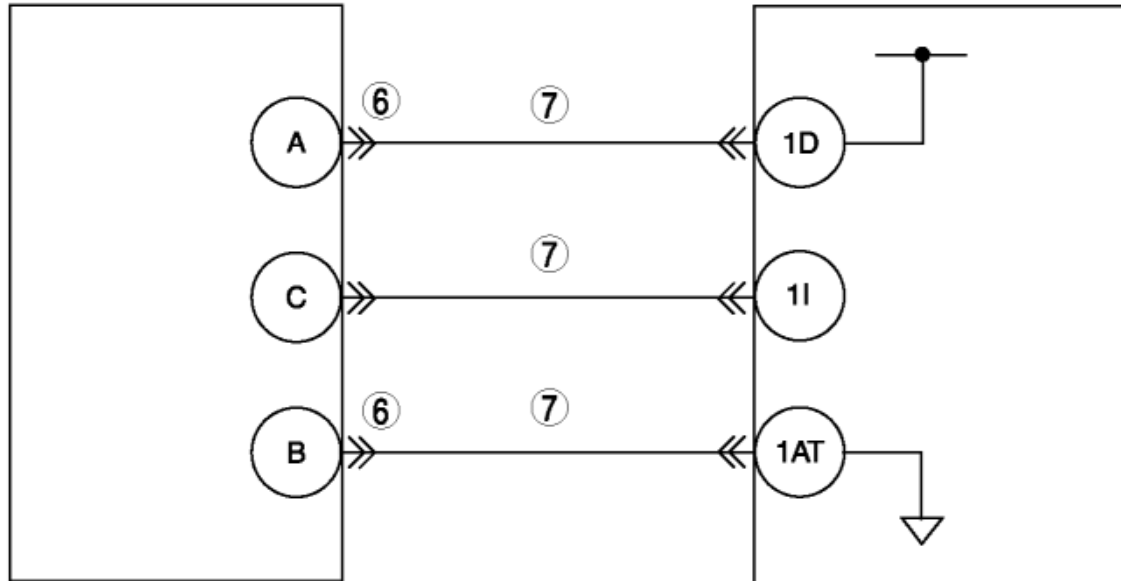


2012 - Mazda6 - Engine

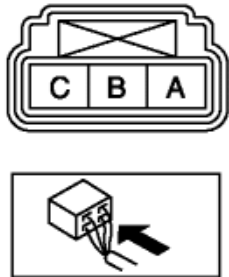
DTC P1450:00 [MZI 3.7 V6]

DTC P1450:00	Unable to bleed up fuel tank vacuum
DETECTION CONDITION	• Monitors the fuel vapor vacuum and pressure in the fuel tank. System failure occurs when the EVAP running loss monitor detects excessive fuel tank vacuum with the engine running, but not at idle.
POSSIBLE CAUSE	• Contaminated fuel vapor elbow on charcoal canister. • Open circuit in fuel pressure sensor power supply (wiring harness near fuel tank pressure sensor, fuel tank pressure sensor or PCM). • Fuel tank pressure sensor malfunction • Open circuit in fuel tank pressure sensor ground circuit (wiring harness near fuel tank pressure sensor, fuel tank pressure sensor or PCM) • Purge solenoid valve is stuck open. • Blockage or kinks in the charcoal canister tube or purge solenoid valve outlet tube (between fuel tank, CV solenoid valve and charcoal canister). • CV solenoid valve is stuck open (partially or fully). • Plugged CV solenoid valve filter. • Restricted charcoal canister. • Fuel filler cap is stuck closed (no vacuum relief). • PCM malfunction

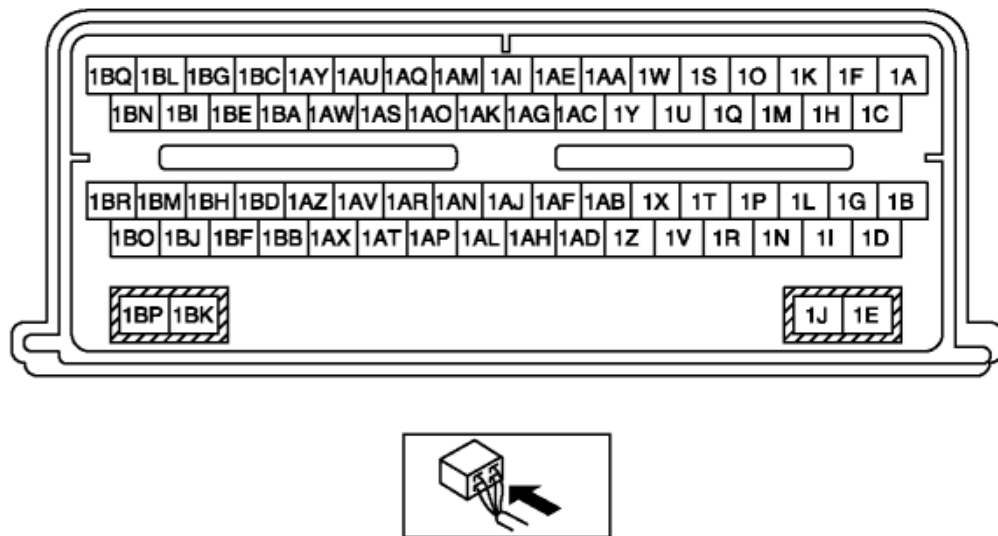
FUEL TANK PRESSURE SENSOR



FUEL TANK PRESSURE SENSOR WIRING HARNESS-SIDE CONNECTOR



PCM WIRING HARNESS-SIDE CONNECTOR



Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED Has FREEZE FRAME DATA been recorded?	Yes Go to the next step.
		No Record FREEZE FRAME DATA on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY - Verify related Service Bulletins and/or on-line repair information availability. - Is any related Service Bulletins available?	Yes Perform repair or diagnosis according to the available Service Bulletins. If the vehicle is not repaired, go to the next step.
		No Go to the next step.

3	VERIFY RELATED PENDING CODE OR STORED DTCs - Switch the ignition off then to the ON position (Engine off). - Verify related pending code or stored DTCs. - Are other DTCs present?	Yes	Go to the appropriate DTC troubleshooting. (See DTC TABLE [MZI 3.7 V6] .)
		No	Go to the next step.
4	INSPECT FOR VISUAL CAUSES OF EXCESSIVE FUEL TANK VACUUM - Verify kinks or bends in the fuel vapor hoses and tubes. - Visually inspect the charcoal canister inlet port, CV solenoid valve, EVAP dust separator or the outlet hose for contamination or foreign material. - Is a concern evident?	Yes	Remove any contamination or foreign material around fuel vapor hoses and tubes. Repair the hoses, tubes or components if necessary. Go to Step 13.
		No	Go to the next step.
5	INSPECT FOR FUEL TANK PRESSURE SENSOR PID WITHOUT PRESSURE APPLIED - Disconnect the charcoal canister outlet tube at the charcoal canister. - Switch the ignition ON (Engine off) - Using M-MDS tester, select Diagnostic Data Link. - Select PCM. - Select Active Command Modes. - Access FTP PID and record the reading. - Is the reading between 2.40 to 2.80 V?	Yes	Go to the next step.
		No	Replace the evaporative hose component. (See FUEL PUMP UNIT DISASSEMBLY/ ASSEMBLY [MZI 3.7 V6] .) Go to the next step.
6	INSPECT VREF VOLTAGE TO FUEL TANK PRESSURE SENSOR - Switch the ignition off. - Disconnect the fuel tank pressure sensor connector. - Switch the ignition ON position (Engine off). - Measure the voltage between the following fuel tank pressure sensor terminal on the wiring harness-side connector. - Terminal A and terminal B - Is the voltage 4—6 V?	Yes	Replace the fuel tank pressure sensor. Go to Step 13.
		No	Go to the next step.
7	INSPECT VREF AND SIGRTN CIRCUIT FOR OPEN CIRCUIT IN WIRING HARNESS - Switch the ignition off. - Disconnect the PCM connector.	Yes	Go to Step 13. (The system is operating normally at this time. The concern may have been caused by a loose or corroded connector.)

	- Measure the resistance between the following PCM and fuel tank pressure sensor terminals on the wiring harness-side connector. - PCM terminal 1D and fuel tank pressure sensor terminal A - PCM terminal 1AT and fuel tank pressure sensor terminal B - PCM terminal 1I and fuel tank pressure sensor terminal C - Is the resistance less than 5 ohms?	No	Repair for an open circuit, then go to Step 13.
8	INSPECT IF MALFUNCTION IS IN PURGE SOLENOID VALVE OR FUEL TANK VENT SYSTEM - Start the engine and run it at idle. - Does the engine stall or is it unable to maintain idle?	Yes	Go to the next step.
		No	Go to Step 10.
9	INSPECT IF PURGE SOLENOID VALVE IS STUCK OPEN - Switch the ignition off. - Disconnect the fuel vapor to intake manifold line at the purge solenoid valve and cap the line at the purge solenoid valve. - Start the engine and run it at idle. - Does the engine stall or is it unable to maintain idle?	Yes	The EVAP system is not the cause of the symptom.
		No	Replace the purge solenoid valve. Go to Step 13.
10	INSPECT FOR BLOCKAGE IN FUEL TANK VENT SYSTEM NOTE: - The CV solenoid is normally open and venting to atmosphere. - Access and monitor following PCM PIDs using the M-MDS. - EVAPCP (purge solenoid valve) - FTP (fuel tank pressure) - EVAPCV (CV solenoid) - While monitoring the FTP PID, ramp open the purge solenoid valve by incrementally commanding the EVAPCP PID to a 100% - Does the fuel tank pressure sensor voltage drop below 2 V when the EVAPCP valve is commanded fully open?	Yes	Inspect and repair for the following: - Blockage in the vapor line to the CV solenoid. - Blockage or contamination in the CV solenoid filter. - Blockage charcoal canister. If the blockage is not detected, replace the CV solenoid. Go to Step 13.
		No	Go to the next step.
11	INSPECT IF EVAP SYSTEM IS STUCK OPEN	Yes	Replace the purge solenoid valve.

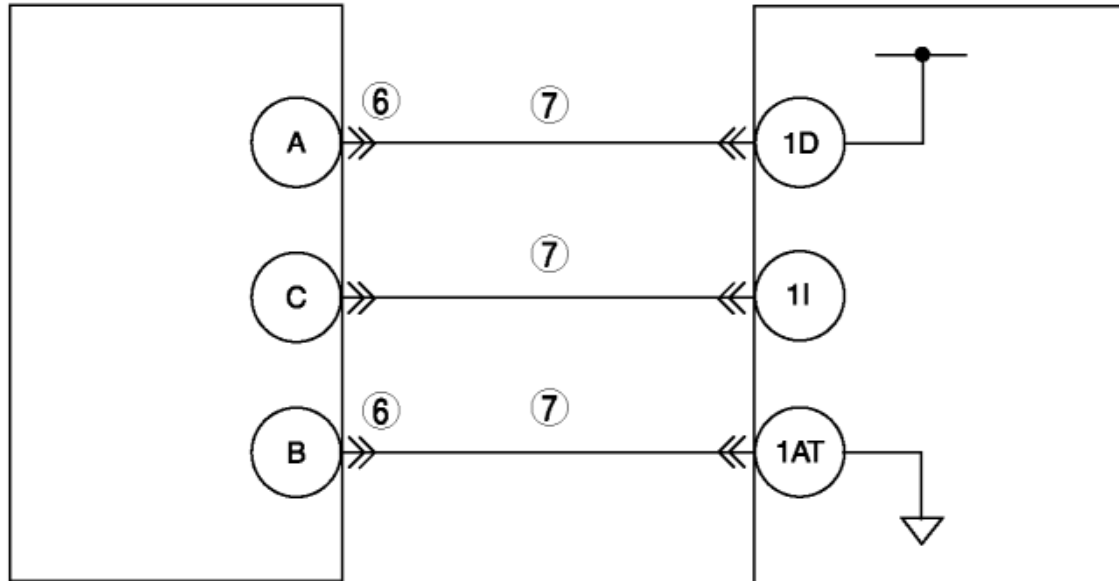
	Start the engine and run it at idle. • Access and monitor FTP PID (voltage) of PCM using the M-MDS. • Access and control EVAPCP PID of PCM using the M-MDS. • Close the purge solenoid valve by commanding the EVAPCP PID to 0 %. • Access and control the EVAPCV PID of PCM using the M-MDS. • Close the CV solenoid by commanding the EVAPCV PID to 100%. • Does the FTP PID decrease, the engine RPM change, or the engine stall, as an indication that the purge solenoid valve is stuck open?	Go to Step 13. No Go to the next step.
12	EVAP CANISTER PURGE VALVE TEST • Switch the ignition ON (Engine running). • Access the PCM and control the EVAPCV PID. • Close the CV solenoid by commanding the EVAPCV PID to 100%. • Access the PCM and control the EVAPCP PID. • While monitoring the FTP PID, ramp open the purge solenoid valve by incrementally commanding the EVAPCP PID to 100%. • Does the FTP PID decrease, the engine RPM change, or the engine stall as an indication that the purge solenoid valve is opening?	Yes Go to the next step. (Unable to duplicate or identify the concern at this time.) No Inspect and repair the following: • Blockage between the fuel tank, the purge solenoid valve, and the engine intake manifold. • Obstructions in the purge solenoid valve diaphragm and ports. If they are normal, replace the purge solenoid valve. Go to the next step.
13	VERIFY TROUBLESHOOTING OF DTC P1450:00 HAS BEEN COMPLETED • Verify that all disconnected connectors are reconnected. • Switch the ignition ON (Engine off). • Clear the DTC from the PCM memory using the M-MDS. • Start the engine and the perform "EVAP system monitor drive cycle" • Retrieve DTCs using the M-MDS. • Is the PENDING CODE for this DTC present?	Yes Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZI 3.7 V6].) Go to the next step. No Go to the next step.
14	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". • (See AFTER REPAIR PROCEDURE [MZI 3.7 V6].) • Are any DTCs present?	Yes Go to the applicable DTC inspection. (See DTC TABLE [MZI 3.7 V6].) No Troubleshooting completed.

2012 - Mazda6 - Engine

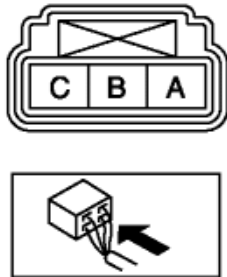
DTC P1450:00 [MZI 3.7 V6]

DTC P1450:00	Unable to bleed up fuel tank vacuum
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POSSIBLE CAUSE	• Contaminated fuel vapor elbow on charcoal canister. • Open circuit in fuel pressure sensor power supply (wiring harness near fuel tank pressure sensor, fuel tank pressure sensor or PCM). • Fuel tank pressure sensor malfunction • Open circuit in fuel tank pressure sensor ground circuit (wiring harness near fuel tank pressure sensor, fuel tank pressure sensor or PCM) • Purge solenoid valve is stuck open. • Blockage or kinks in the charcoal canister tube or purge solenoid valve outlet tube (between fuel tank, CV solenoid valve and charcoal canister). • CV solenoid valve is stuck open (partially or fully). • Plugged CV solenoid valve filter. • Restricted charcoal canister. • Fuel filler cap is stuck closed (no vacuum relief). • PCM malfunction

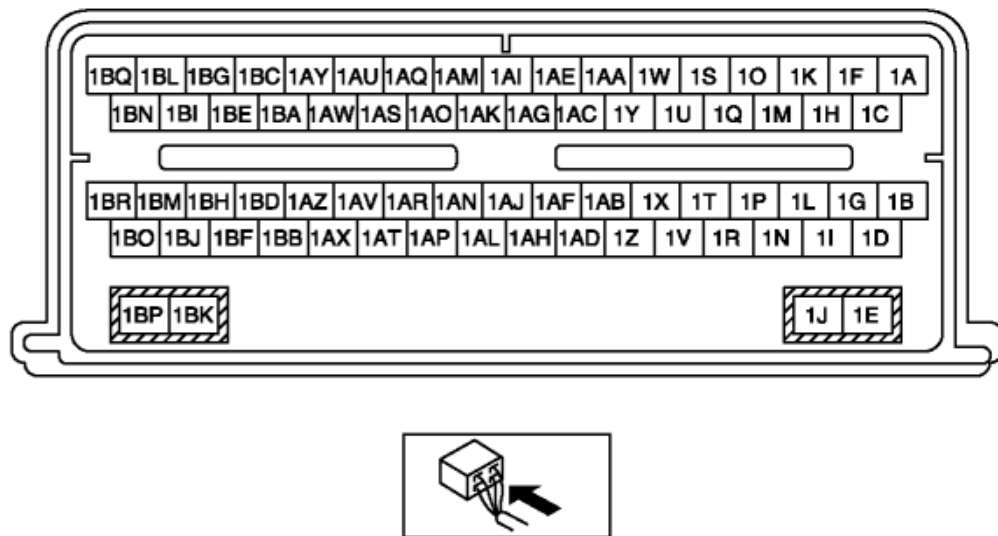
FUEL TANK PRESSURE SENSOR



FUEL TANK PRESSURE SENSOR WIRING HARNESS-SIDE CONNECTOR



PCM WIRING HARNESS-SIDE CONNECTOR



Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED Has FREEZE FRAME DATA been recorded?	Yes Go to the next step.
		No Record FREEZE FRAME DATA on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY - Verify related Service Bulletins and/or on-line repair information availability. - Is any related Service Bulletins available?	Yes Perform repair or diagnosis according to the available Service Bulletins. If the vehicle is not repaired, go to the next step.
		No Go to the next step.

3	VERIFY RELATED PENDING CODE OR STORED DTCs - Switch the ignition off then to the ON position (Engine off). - Verify related pending code or stored DTCs. - Are other DTCs present?	Yes	Go to the appropriate DTC troubleshooting. (See DTC TABLE [MZI 3.7 V6] .)
		No	Go to the next step.
4	INSPECT FOR VISUAL CAUSES OF EXCESSIVE FUEL TANK VACUUM - Verify kinks or bends in the fuel vapor hoses and tubes. - Visually inspect the charcoal canister inlet port, CV solenoid valve, EVAP dust separator or the outlet hose for contamination or foreign material. - Is a concern evident?	Yes	Remove any contamination or foreign material around fuel vapor hoses and tubes. Repair the hoses, tubes or components if necessary. Go to Step 13.
		No	Go to the next step.
5	INSPECT FOR FUEL TANK PRESSURE SENSOR PID WITHOUT PRESSURE APPLIED - Disconnect the charcoal canister outlet tube at the charcoal canister. - Switch the ignition ON (Engine off) - Using M-MDS tester, select Diagnostic Data Link. - Select PCM. - Select Active Command Modes. - Access FTP PID and record the reading. - Is the reading between 2.40 to 2.80 V?	Yes	Go to the next step.
		No	Replace the evaporative hose component. (See FUEL PUMP UNIT DISASSEMBLY/ ASSEMBLY [MZI 3.7 V6] .) Go to the next step.
6	INSPECT VREF VOLTAGE TO FUEL TANK PRESSURE SENSOR - Switch the ignition off. - Disconnect the fuel tank pressure sensor connector. - Switch the ignition ON position (Engine off). - Measure the voltage between the following fuel tank pressure sensor terminal on the wiring harness-side connector. - Terminal A and terminal B - Is the voltage 4—6 V?	Yes	Replace the fuel tank pressure sensor. Go to Step 13.
		No	Go to the next step.
7	INSPECT VREF AND SIGRTN CIRCUIT FOR OPEN CIRCUIT IN WIRING HARNESS - Switch the ignition off. - Disconnect the PCM connector.	Yes	Go to Step 13. (The system is operating normally at this time. The concern may have been caused by a loose or corroded connector.)

	- Measure the resistance between the following PCM and fuel tank pressure sensor terminals on the wiring harness-side connector. - PCM terminal 1D and fuel tank pressure sensor terminal A - PCM terminal 1AT and fuel tank pressure sensor terminal B - PCM terminal 1I and fuel tank pressure sensor terminal C - Is the resistance less than 5 ohms?		No Repair for an open circuit, then go to Step 13.
8	INSPECT IF MALFUNCTION IS IN PURGE SOLENOID VALVE OR FUEL TANK VENT SYSTEM - Start the engine and run it at idle. - Does the engine stall or is it unable to maintain idle?	Yes	Go to the next step.
		No	Go to Step 10.
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		No	Go to the next step.
11	INSPECT IF EVAP SYSTEM IS STUCK OPEN	Yes	Replace the purge solenoid valve.

	Start the engine and run it at idle. • Access and monitor FTP PID (voltage) of PCM using the M-MDS. • Access and control EVAPCP PID of PCM using the M-MDS. • Close the purge solenoid valve by commanding the EVAPCP PID to 0 %. • Access and control the EVAPCV PID of PCM using the M-MDS. • Close the CV solenoid by commanding the EVAPCV PID to 100%. • Does the FTP PID decrease, the engine RPM change, or the engine stall, as an indication that the purge solenoid valve is stuck open?	Go to Step 13. No Go to the next step.
12	EVAP CANISTER PURGE VALVE TEST • Switch the ignition ON (Engine running). • Access the PCM and control the EVAPCV PID. • Close the CV solenoid by commanding the EVAPCV PID to 100%. • Access the PCM and control the EVAPCP PID. • While monitoring the FTP PID, ramp open the purge solenoid valve by incrementally commanding the EVAPCP PID to 100%. • Does the FTP PID decrease, the engine RPM change, or the engine stall as an indication that the purge solenoid valve is opening?	Yes Go to the next step. (Unable to duplicate or identify the concern at this time.) No Inspect and repair the following: • Blockage between the fuel tank, the purge solenoid valve, and the engine intake manifold. • Obstructions in the purge solenoid valve diaphragm and ports. If they are normal, replace the purge solenoid valve. Go to the next step.
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14	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". • (See AFTER REPAIR PROCEDURE [MZI 3.7 V6].) • Are any DTCs present?	Yes Go to the applicable DTC inspection. (See DTC TABLE [MZI 3.7 V6].) No Troubleshooting completed.

