

2012 - Mazda6 - Engine

DTC P0442:00, P0455:00, P0456:00 [MZI 3.7 V6]

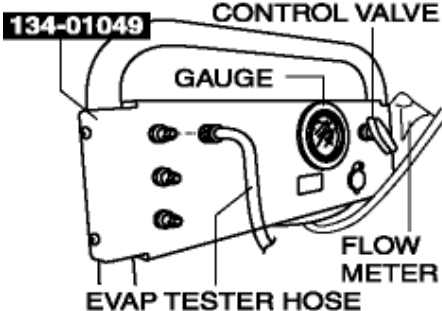
DTC P0442:00 DTC P0455:00 DTC P0456:00	P0442:00: Evaporative emission system leak detected (small leak) P0455:00: Evaporative emission system leak detected (gross leak/no flow) P0456:00: Evaporative emission system leak detected (very small leak)
DETECTI ON CONDI TI ON	• P0442:00 indicates that a leak has been detected as small as 1 mm {0.040 in} in the EVAP system when there is less than 0.625 kPa (PID FTP_H2O displays "2.5") bleed-up over 15 s at 75% fuel fill. Bleed-up and evaluation time vary as a function of fuel fill level. The vapor generation limit is more than 0.625 kPa (PID FTP_H2O displays "2.5") over 120 s. • P0455:00: PCM measures the fuel tank pressure while applying engine vacuum to the EVAP system. If fuel tank pressure does not reach -1.74 kPa (PID FTP_H2O displays "-7.0") or above vacuum for a 30 s evaluation time, the PCM determines that the EVAP system is blocked or has a large leak. • P0456:00 indicates that a fuel vapor leak from an opening as small as 0.508 mm {0.020 in} has been detected by the EVAP running loss monitor test.
POSSI BLE CAUSE	DTC P0442:00, P0456:00 • After-market EVAP hardware (such as fuel-filler cap) not conforming to required specifications. • Small holes or cuts in fuel vapor hoses/tubes (P0442:00, P0456:00). • CV solenoid stays partially open on closed command. • Damaged, cross-threaded or loosely installed fuel-filler cap. • EVAP system component seals leaking. • Purge solenoid leaking to atmosphere DTC P0455:00 • After-market EVAP hardware (such as fuel-filler cap) not conforming to required specifications. • Disconnected or cracked CV solenoid valve tube, purge solenoid valve outlet tube, or EVAP return tube. • Loose, malfunctioning, damaged or missing fuel-filler cap. • Loose fuel vapor hose/tube connections to EVAP system components.

- Blockages or restrictions in fuel vapor hoses/tubes between engine and fuel tank pressure sensor.
- Rollover valve or fuel shut-off valve blocked.
- CV solenoid valve stuck open.
- EVAP purge solenoid valve stuck closed or blockage
- Mechanically inoperative Fuel tank pressure sensor.
- Damaged charcoal canister.

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. • Are 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 to off, then to the ON (Engine off). • Verify related pending code or stored DTCs. • Are any other DTCs present?	Yes	Go to the appropriate DTC troubleshooting. (See DTC TABLE [MZI 3.7 V6] .)
		No	Go to the next step.
4	VERIFY DTC FOR SMALL LEAK • Is P0456:00 stored?	Yes	Go to Step 9.

		No	Go to the next step.
5	VERIFY DTC FOR LARGE LEAK Is P0455:00 stored?	Yes	Verify that the purge solenoid valve is not blocked. If the purge solenoid valve is functioning correctly and receiving engine vacuum, go to the next step.
		No	Go to the next step.
6	PRELIMINARY LEAK TEST (EXCEPT P0456:00) - Perform the EVAP system leak inspection using the M-MDS. - Verify that all PIDs are within the following specifications: NOTE: - To successfully perform this procedure, all PIDs must be within specification before proceeding to the next step. - Select the following items from the initialization screen of the M-MDS. - Select "Powertrain". - Select "Fuel". - Select "EVAP Test". - Verify that ECT and IAT are within specification at the confirmation screen. To successfully perform this procedure, ECT and IAT must be within specification before proceeding to the next step. - The fuel level must be maintained within 15%—85%. The PCM will cancel the EVAP test if the fuel level is lower than 15% or higher than 85%. - Allow the M-MDS to run the EVAP test. - Does M-MDS indicate an EVAP system leak exists?	Yes	Go to the next step.
		No	Go to Step 9.
7	PRELIMINARY LEAK TEST (EXCEPT P0456:00) - Tighten the fuel-filler cap then repeat the EVAP system leak inspection using the M-MDS again. - Verify that all PIDs are within the following specifications: NOTE:	Yes	Go to the next step.
		No	The fuel cap was not properly tightened. Go

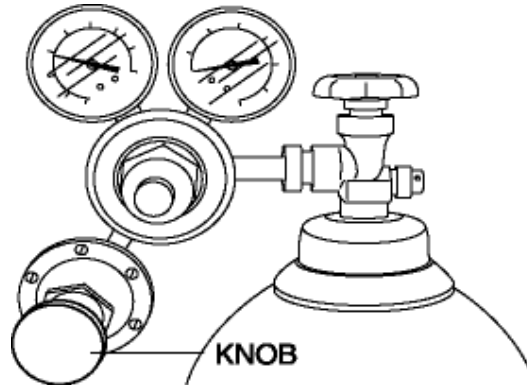
	- To successfully perform this procedure, all PIDs must be within specification before proceeding to the next step. - Select the following items from the initialization screen of the M-MDS. - Select "Powertrain". - Select "Fuel". - Select "EVAP Test". - Verify that ECT and IAT are within specification at the confirmation screen. To successfully perform this procedure, ECT and IAT must be within specification before proceeding to the next step. - The fuel level must be maintained within 15%—85%. The PCM will cancel the EVAP test if the fuel level is lower than 15% or higher than 85%. - Allow the M-MDS to run the EVAP test. - Does M-MDS still indicate an EVAP system leak exists?		to Step 15.
8	VISUALLY INSPECT COMPONENTS FOR LEAKS (EXCEPT P0456:00) - Verify that the CV solenoid valve is properly seated on the charcoal canister. - Visually inspect for cut or loose connections to the fuel vapor hoses/tubes in the following locations: - Charcoal canister to CV solenoid valve. - Charcoal canister to evaporative emission valve component. - Evaporative emission valve component to the fuel tank (if applicable). - Check for fuel-filler pipe damage. - Is a concern with a hose, tube, connection or valve visually evident?	Yes Repair or install a new component if necessary. Afterwards, verify that the leak is repaired by repeating diagnostic Step 6. If the leak is repaired, go to Step 15. No Go to the next step.	
9	CALIBRATE THE LEAK TESTER FOR DIAGNOSIS - Verify that the control valve on the panel is in the HOLD position then open the nitrogen bottle valve.  - Connect the EVAP Tester Hose (part of the SST) to the SELF-TEST port located on the control panel. Hand tighten the fitting. (Do not	Yes Go to the next step. No Refer to the tester operator's manual for tester repair instructions.	

overtighten.)

- Turn the control valve to the TEST position; the gauge should read 331—381 mm {13—15 in} of water.

NOTE:

- If the gauge is not reading in this range, adjust the pressure by turning the black knob on the low pressure regulator at the nitrogen bottle.



- After verifying the regulator is properly calibrated, turn the control valve to the HOLD position.
- Verify that the gauge holds pressure and that the flow meter reads no flow.
- Does the gauge hold pressure and the flow meter read no flow?

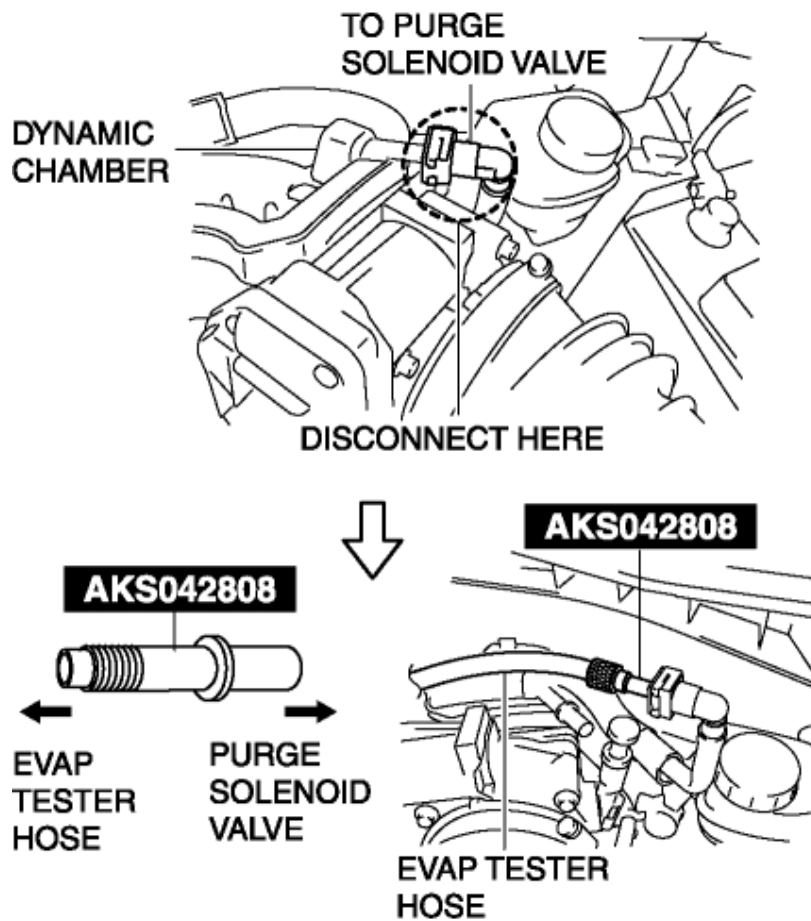
10

PRESSURIZE THE EVAP SYSTEM WITH NITROGEN TO TEST FOR LEAKS

- Verify that the control valve on the panel is in the HOLD position then open the nitrogen bottle valve.
- Disconnect the purge solenoid valve hose from the dynamic chamber and insert **SST** AKS042808 into the purge solenoid valve hose.

Yes Go to Step 13 to locate the leak.

No EXCEPT P0456:00, go to the next step. If diagnosing P0456:00 go to Step 12.



- Connect the EVAP Tester Hose to **SST AKS042808**.
- Connect the M-MDS to the DLC-2.
- Switch the ignition to ON (Engine off).
- Access the datalogger for the PCM.
- Press the eraser icon to deselect the highlighted PIDs

Icon name	Screen display
Eraser icon	
Tick icon	
Control item activate icon	
Control icon	
Up icon	

- Select PIDs EVAPCP and EVAPCV, then click the tick icon.
- Command EVAPCP to 100% duty cycle to open the purge solenoid valve.

- To open the purge solenoid valve, click the control item activate icon.
- Click the EVAPCV box on the left-hand side of the screen to select it.
- Click the control icon on the right-hand side of the screen.
- Click the up icon immediately below the control icon.
- Each click increases the duty cycle by 10%.
- Continue clicking until the M-MDS shows the purge solenoid valve is open 100%.
- Command EVAPCV to ON to Close the CV solenoid valve.
 - To close the CV solenoid valve, click the control item activate icon.
 - Click the EVAPCV box in the upper left-hand corner of the screen to select it.
 - Click the control icon on the right-hand side of the screen.
 - Click the up icon immediately below the control icon (the EVAPCV should now be on).
- Turn the control valve to the TEST position and let the system fill. A drop in the gauge pressure should be noted along with the flow meter being pegged at maximum flow for several minutes depending on how full or empty the fuel tank is, and how long it takes to completely fill and pressurize the evaporative emissions system hoses.

NOTE:

- If the gauge and the flow meter do not settle to a measurable level after **2—3 min**, then refer to the Mazda Workshop Manual to verify that the canister vent valve is properly closed. If the canister vent valve is properly closed, the EVAP system has a large leak.
- Does the test indicate that a leak exists?

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CHECKING SYSTEM FOR BLOCKAGE

- Leave the tester in the test position
- Using the M-MDS datalogger, command the CV solenoid valve open.
 - To open the CV solenoid valve, click the down icon (the EVAPCV should now be off).

Icon name	Screen display
Down icon	

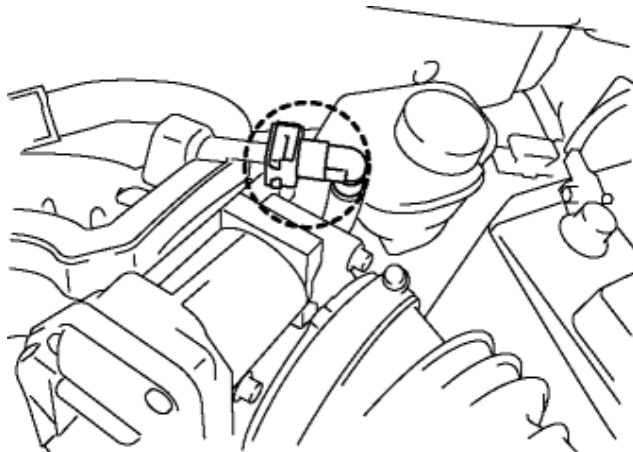
- Does the flow indicator in the flow meter immediately jump to the top?

Yes Go to the next step

No System is blocked between the CV solenoid valve and the fuel tank pressure sensor; locate and remove blockage then perform Step 10.

PRESSURIZE THE EVAP SYSTEM WITH NITROGEN TO TEST THE PURGE SOLENOID FOR LEAKAGE

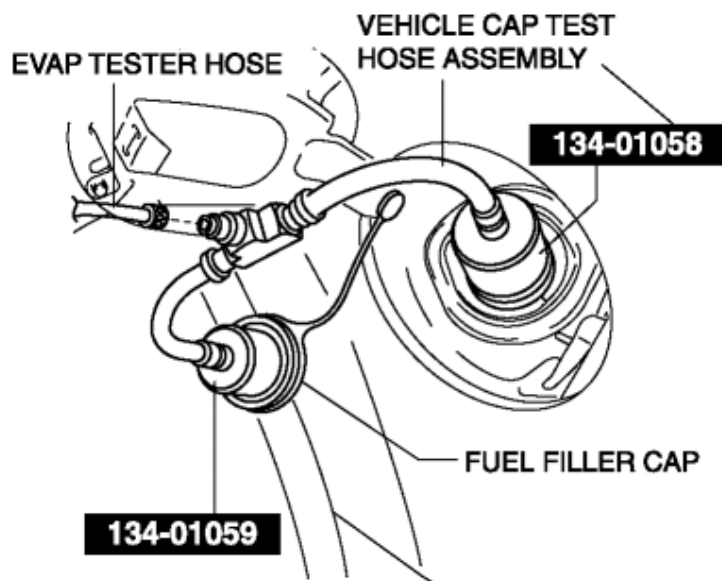
- Reconnect the purge solenoid valve hose.



- Verify that the control valve on the panel is in the HOLD position.
- Remove the fuel-filler cap from the vehicle.
 - If the fuel-filler cap is not a MAZDA part or equivalent, replace it.

NOTE:

- INSPECT FUEL-FILLER CAP AND FILLER NECK
 - Visually inspect for damage, insufficient sealing, rust, cracks or warps on the filler cap and filler neck
 - Repair or replace if necessary
- Connect the receiver assembly (**SST**: 134-01059) to the vehicle cap test hose assembly (part of the **SST**) and the fuel-filler cap from the vehicle.



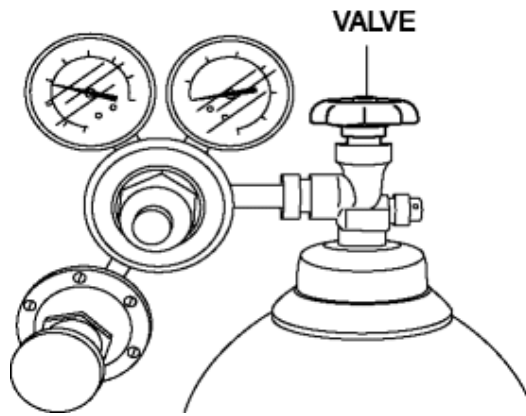
Yes Replace the purge valve then go to Step 13.

No Go to Step 13.

- Connect the cap adaptor (**SST**: 134-01058) to the vehicle cap test hose assembly (part of the **SST**) and to the fuel-filler neck.
- Connect the EVAP Tester Hose (part of the **SST**) to the center fitting of the vehicle cap test hose assembly (part of the **SST**).
- Connect M-MDS to the DLC-2.
- Switch the ignition to ON (Engine off).
- Access the datalogger for the PCM.
- Press the eraser icon to deselect the highlighted PIDs.

Icon name	Screen display
Eraser icon	
Tick icon	
Control item activate icon	
Control icon	
Up icon	

- Select PID EVAPCV, then click the tick icon.
- Command EVAPCV to ON to close the CV solenoid valve.
 - To close the CV solenoid valve, click the control item activate icon.
 - Click the EVAPCV box in the upper left-hand corner of the screen to select it.
 - Click the control icon on the right-hand side of the screen.
 - Click the up icon immediately below the control icon (the EVAPCV should now be on).
- Verify that the valve on the nitrogen bottle is still open.

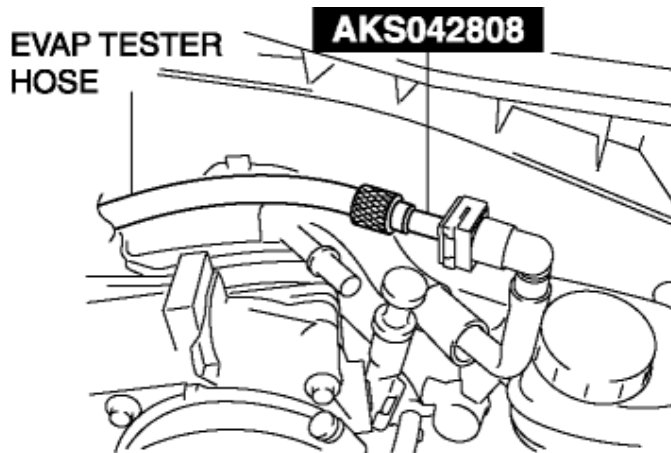


- Turn the control valve to the TEST position and let the system fill. A drop in the gauge pressure should be noted along with the flow meter being pegged at maximum flow for several minutes depending on how full or empty the fuel tank is, and how long it takes to completely fill and pressurize the evaporative emissions system hoses.
- Does the test indicate that a leak exists?

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LOCATE LEAKAGE POINT

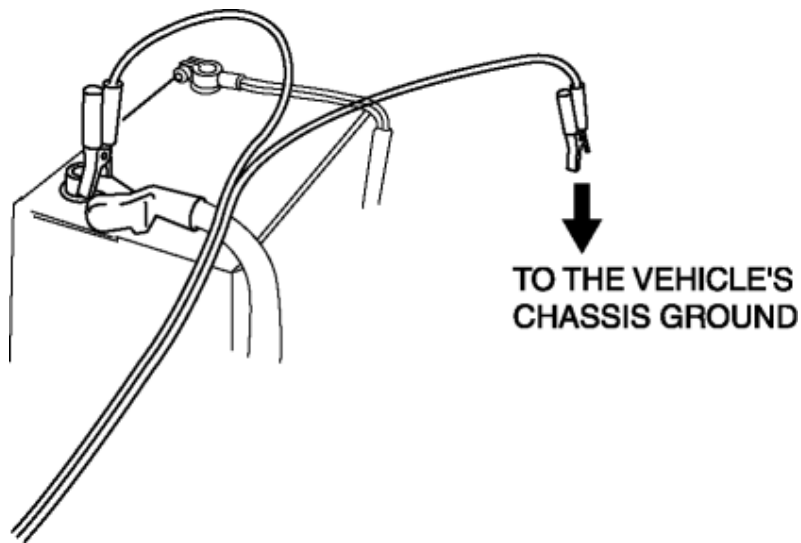
- Verify that the control valve on the panel is in the HOLD position and the valve on the nitrogen bottle valve is open.
- Disconnect the purge solenoid valve hose from the dynamic chamber and insert **SST AKS042808** into the purge solenoid valve hose.



- Connect the EVAP Tester Hose to **SST AKS042808**.
- Connect the 12 volt power connector leads on the smoke generation unit to the vehicle's battery. Make sure to connect the red lead to the positive post (+) or power, and the black lead to the vehicle's chassis ground.

Yes Repair or install a new component if necessary. Go to the next step.

No Check all EVAP connections. Conduct diagnosis of intermittent concerns, then go to the next step.



- Connect the M-MDS to the DLC-2.
- Switch the ignition to ON (Engine off).
- Access the datalogger for the PCM.
- Press the eraser icon to deselect the highlighted PIDs.

Icon name	Screen display
Eraser icon	
Tick icon	
Control item activate icon	
Control icon	
Up icon	

- Select PIDs EVAPCP and EVAPCV, then click the tick icon.
- Command EVAPCP to 100% duty cycle to open the purge solenoid valve.
 - To open the purge solenoid valve, click the control item activate icon.
 - Click the EVAPCP box on the left-hand side of the screen to select it.
 - Click the control icon on the right-hand side of the screen.
 - Click the up icon immediately below the control icon.
- Each click increases the duty cycle by 10%.
- Continue clicking until the M-MDS shows the purge solenoid valve is open

100%.

- Command EVAPCV to ON to close the CV solenoid valve.
 - To close the CV solenoid valve, click the control item activate icon.
 - Click the EVAPCV box in the upper left-hand corner of the screen to select it
 - Click the control icon on the right-hand side of the screen.
 - Click the up icon immediately below the control icon (the EVAPCV should now be on).
- Turn the control valve to the TEST position.
- Press the remote smoke trigger on the smoke generation unit and let the system fill with smoke.

REMOTE SMOKE TRIGGER



NOTE:

- It may be necessary to lift the vehicle to provide sufficient clearance underneath to conduct a proper visual inspection of the fuel and EVAP system.
- NEVER depress the remote smoke trigger before opening the nitrogen tank valve and setting the tester control valve to TEST
- Use a 12 volt 400,000 candle power spot light (part # 4410000-100) or equivalent to help locate the smoke.
- Is a leak detected?

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VERIFY LEAK IS REPAIRED

- Were you diagnosing DTC P0456:00?

Yes Verify that the leak is repaired by repeating diagnostic Step 10. If the leak is repaired, go to Step 15.

No Verify that the leak is repaired by repeating diagnostic Step 6. If the leak is repaired, go to Step 15.

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VERIFY AFTER REPAIR PROCEDURE

- Perform the "AFTER REPAIR PROCEDURE".

Yes Go to the applicable DTC inspection.

	(See AFTER REPAIR PROCEDURE [MZI 3.7 V6] .)	• Are any DTCs present?	(See DTC TABLE [MZI 3.7 V6] .)
			No Troubleshooting completed.

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DTC P0442:00, P0455:00, P0456:00 [MZI 3.7 V6]

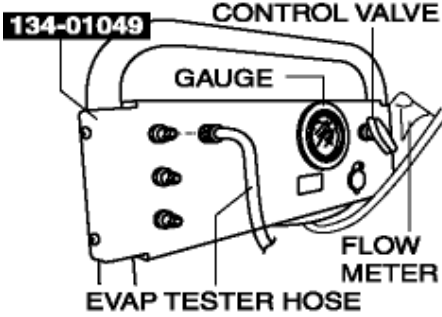
DTC P0442:00 DTC P0455:00 DTC P0456:00	P0442:00: Evaporative emission system leak detected (small leak) P0455:00: Evaporative emission system leak detected (gross leak/no flow) P0456:00: Evaporative emission system leak detected (very small leak)
DETECTION CONDITION	- P0442:00 indicates that a leak has been detected as small as 1 mm {0.040 in} in the EVAP system when there is less than 0.625 kPa (PID FTP_H2O displays "2.5") bleed-up over 15 s at 75% fuel fill. Bleed-up and evaluation time vary as a function of fuel fill level. The vapor generation limit is more than 0.625 kPa (PID FTP_H2O displays "2.5") over 120 s. - P0455:00: PCM measures the fuel tank pressure while applying engine vacuum to the EVAP system. If fuel tank pressure does not reach -1.74 kPa (PID FTP_H2O displays "-7.0") or above vacuum for a 30 s evaluation time, the PCM determines that the EVAP system is blocked or has a large leak. - P0456:00 indicates that a fuel vapor leak from an opening as small as 0.508 mm {0.020 in} has been detected by the EVAP running loss monitor test.
POSSIBLE CAUSE	DTC P0442:00, P0456:00 - After-market EVAP hardware (such as fuel-filler cap) not conforming to required specifications. - Small holes or cuts in fuel vapor hoses/tubes (P0442:00, P0456:00). - CV solenoid stays partially open on closed command. - Damaged, cross-threaded or loosely installed fuel-filler cap. - EVAP system component seals leaking. - Purge solenoid leaking to atmosphere DTC P0455:00 - After-market EVAP hardware (such as fuel-filler cap) not conforming to required specifications. - Disconnected or cracked CV solenoid valve tube, purge solenoid valve outlet tube, or EVAP return tube. - Loose, malfunctioning, damaged or missing fuel-filler cap. - Loose fuel vapor hose/tube connections to EVAP system components.

- Blockages or restrictions in fuel vapor hoses/tubes between engine and fuel tank pressure sensor.
- Rollover valve or fuel shut-off valve blocked.
- CV solenoid valve stuck open.
- EVAP purge solenoid valve stuck closed or blockage
- Mechanically inoperative Fuel tank pressure sensor.
- Damaged charcoal canister.

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. • Are 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 to off, then to the ON (Engine off). • Verify related pending code or stored DTCs. • Are any other DTCs present?	Yes	Go to the appropriate DTC troubleshooting. (See DTC TABLE [MZI 3.7 V6] .)
		No	Go to the next step.
4	VERIFY DTC FOR SMALL LEAK • Is P0456:00 stored?	Yes	Go to Step 9.

		No	Go to the next step.
5	VERIFY DTC FOR LARGE LEAK Is P0455:00 stored?	Yes	Verify that the purge solenoid valve is not blocked. If the purge solenoid valve is functioning correctly and receiving engine vacuum, go to the next step.
		No	Go to the next step.
6	PRELIMINARY LEAK TEST (EXCEPT P0456:00) - Perform the EVAP system leak inspection using the M-MDS. - Verify that all PIDs are within the following specifications: NOTE: - To successfully perform this procedure, all PIDs must be within specification before proceeding to the next step. - Select the following items from the initialization screen of the M-MDS. - Select "Powertrain". - Select "Fuel". - Select "EVAP Test". - Verify that ECT and IAT are within specification at the confirmation screen. To successfully perform this procedure, ECT and IAT must be within specification before proceeding to the next step. - The fuel level must be maintained within 15%—85%. The PCM will cancel the EVAP test if the fuel level is lower than 15% or higher than 85%. - Allow the M-MDS to run the EVAP test. - Does M-MDS indicate an EVAP system leak exists?	Yes	Go to the next step.
		No	Go to Step 9.
7	PRELIMINARY LEAK TEST (EXCEPT P0456:00) - Tighten the fuel-filler cap then repeat the EVAP system leak inspection using the M-MDS again. - Verify that all PIDs are within the following specifications: NOTE:	Yes	Go to the next step.
		No	The fuel cap was not properly tightened. Go

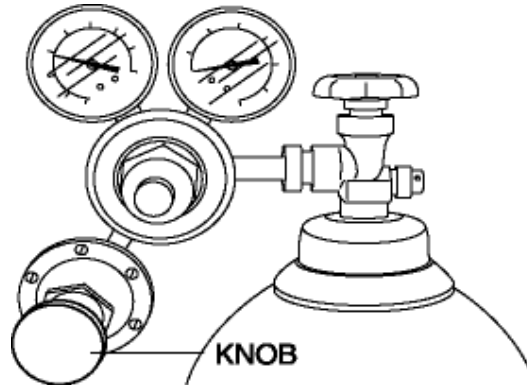
	- To successfully perform this procedure, all PIDs must be within specification before proceeding to the next step. - Select the following items from the initialization screen of the M-MDS. - Select "Powertrain". - Select "Fuel". - Select "EVAP Test". - Verify that ECT and IAT are within specification at the confirmation screen. To successfully perform this procedure, ECT and IAT must be within specification before proceeding to the next step. - The fuel level must be maintained within 15%—85%. The PCM will cancel the EVAP test if the fuel level is lower than 15% or higher than 85%. - Allow the M-MDS to run the EVAP test. - Does M-MDS still indicate an EVAP system leak exists?		to Step 15.
8	VISUALLY INSPECT COMPONENTS FOR LEAKS (EXCEPT P0456:00) - Verify that the CV solenoid valve is properly seated on the charcoal canister. - Visually inspect for cut or loose connections to the fuel vapor hoses/tubes in the following locations: - Charcoal canister to CV solenoid valve. - Charcoal canister to evaporative emission valve component. - Evaporative emission valve component to the fuel tank (if applicable). - Check for fuel-filler pipe damage. - Is a concern with a hose, tube, connection or valve visually evident?	Yes Repair or install a new component if necessary. Afterwards, verify that the leak is repaired by repeating diagnostic Step 6. If the leak is repaired, go to Step 15. No Go to the next step.	
9	CALIBRATE THE LEAK TESTER FOR DIAGNOSIS - Verify that the control valve on the panel is in the HOLD position then open the nitrogen bottle valve.  - Connect the EVAP Tester Hose (part of the SST) to the SELF-TEST port located on the control panel. Hand tighten the fitting. (Do not	Yes Go to the next step. No Refer to the tester operator's manual for tester repair instructions.	

overtighten.)

- Turn the control valve to the TEST position; the gauge should read 331—381 mm {13—15 in} of water.

NOTE:

- If the gauge is not reading in this range, adjust the pressure by turning the black knob on the low pressure regulator at the nitrogen bottle.



- After verifying the regulator is properly calibrated, turn the control valve to the HOLD position.
- Verify that the gauge holds pressure and that the flow meter reads no flow.
- Does the gauge hold pressure and the flow meter read no flow?

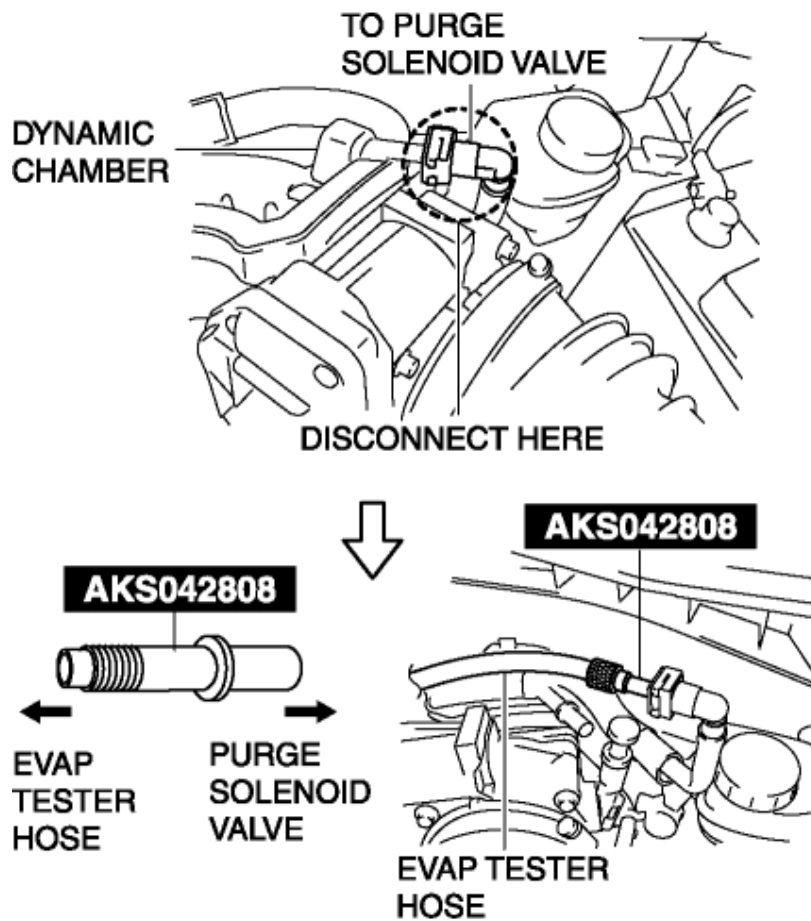
10

PRESSURIZE THE EVAP SYSTEM WITH NITROGEN TO TEST FOR LEAKS

- Verify that the control valve on the panel is in the HOLD position then open the nitrogen bottle valve.
- Disconnect the purge solenoid valve hose from the dynamic chamber and insert **SST** AKS042808 into the purge solenoid valve hose.

Yes Go to Step 13 to locate the leak.

No EXCEPT P0456:00, go to the next step. If diagnosing P0456:00 go to Step 12.



- Connect the EVAP Tester Hose to **SST AKS042808**.
- Connect the M-MDS to the DLC-2.
- Switch the ignition to ON (Engine off).
- Access the datalogger for the PCM.
- Press the eraser icon to deselect the highlighted PIDs

Icon name	Screen display
Eraser icon	
Tick icon	
Control item activate icon	
Control icon	
Up icon	

- Select PIDs EVAPCP and EVAPCV, then click the tick icon.
- Command EVAPCP to 100% duty cycle to open the purge solenoid valve.

- To open the purge solenoid valve, click the control item activate icon.
- Click the EVAPCV box on the left-hand side of the screen to select it.
- Click the control icon on the right-hand side of the screen.
- Click the up icon immediately below the control icon.
- Each click increases the duty cycle by 10%.
- Continue clicking until the M-MDS shows the purge solenoid valve is open 100%.
- Command EVAPCV to ON to Close the CV solenoid valve.
 - To close the CV solenoid valve, click the control item activate icon.
 - Click the EVAPCV box in the upper left-hand corner of the screen to select it.
 - Click the control icon on the right-hand side of the screen.
 - Click the up icon immediately below the control icon (the EVAPCV should now be on).
- Turn the control valve to the TEST position and let the system fill. A drop in the gauge pressure should be noted along with the flow meter being pegged at maximum flow for several minutes depending on how full or empty the fuel tank is, and how long it takes to completely fill and pressurize the evaporative emissions system hoses.

NOTE:

- If the gauge and the flow meter do not settle to a measurable level after **2—3 min**, then refer to the Mazda Workshop Manual to verify that the canister vent valve is properly closed. If the canister vent valve is properly closed, the EVAP system has a large leak.
- Does the test indicate that a leak exists?

11

CHECKING SYSTEM FOR BLOCKAGE

- Leave the tester in the test position
- Using the M-MDS datalogger, command the CV solenoid valve open.
 - To open the CV solenoid valve, click the down icon (the EVAPCV should now be off).

Icon name	Screen display
Down icon	

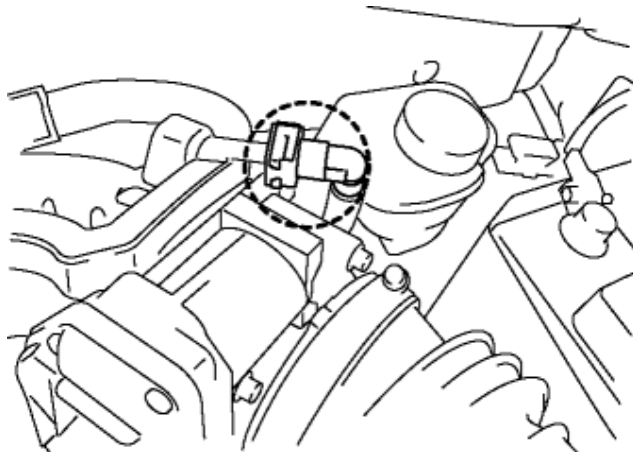
- Does the flow indicator in the flow meter immediately jump to the top?

Yes Go to the next step

No System is blocked between the CV solenoid valve and the fuel tank pressure sensor; locate and remove blockage then perform Step 10.

PRESSURIZE THE EVAP SYSTEM WITH NITROGEN TO TEST THE PURGE SOLENOID FOR LEAKAGE

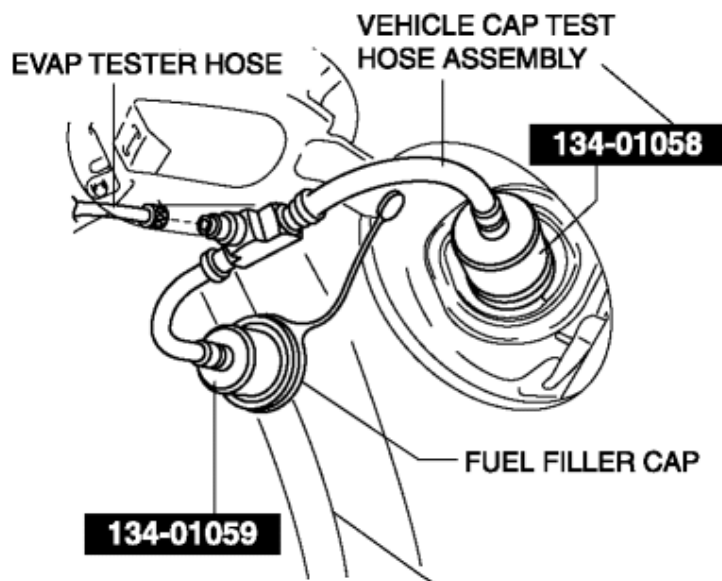
- Reconnect the purge solenoid valve hose.



- Verify that the control valve on the panel is in the HOLD position.
- Remove the fuel-filler cap from the vehicle.
 - If the fuel-filler cap is not a MAZDA part or equivalent, replace it.

NOTE:

- INSPECT FUEL-FILLER CAP AND FILLER NECK
 - Visually inspect for damage, insufficient sealing, rust, cracks or warps on the filler cap and filler neck
 - Repair or replace if necessary
- Connect the receiver assembly (**SST**: 134-01059) to the vehicle cap test hose assembly (part of the **SST**) and the fuel-filler cap from the vehicle.



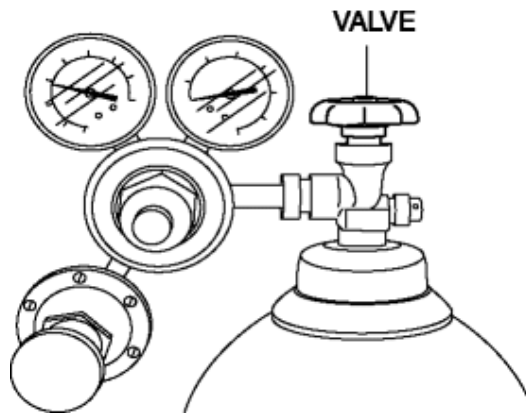
Yes Replace the purge valve then go to Step 13.

No Go to Step 13.

- Connect the cap adaptor (**SST**: 134-01058) to the vehicle cap test hose assembly (part of the **SST**) and to the fuel-filler neck.
- Connect the EVAP Tester Hose (part of the **SST**) to the center fitting of the vehicle cap test hose assembly (part of the **SST**).
- Connect M-MDS to the DLC-2.
- Switch the ignition to ON (Engine off).
- Access the datalogger for the PCM.
- Press the eraser icon to deselect the highlighted PIDs.

Icon name	Screen display
Eraser icon	
Tick icon	
Control item activate icon	
Control icon	
Up icon	

- Select PID EVAPCV, then click the tick icon.
- Command EVAPCV to ON to close the CV solenoid valve.
 - To close the CV solenoid valve, click the control item activate icon.
 - Click the EVAPCV box in the upper left-hand corner of the screen to select it.
 - Click the control icon on the right-hand side of the screen.
 - Click the up icon immediately below the control icon (the EVAPCV should now be on).
- Verify that the valve on the nitrogen bottle is still open.

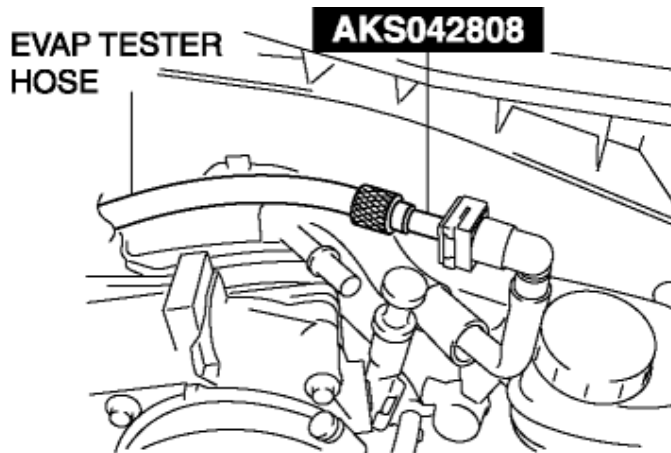


- Turn the control valve to the TEST position and let the system fill. A drop in the gauge pressure should be noted along with the flow meter being pegged at maximum flow for several minutes depending on how full or empty the fuel tank is, and how long it takes to completely fill and pressurize the evaporative emissions system hoses.
- Does the test indicate that a leak exists?

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LOCATE LEAKAGE POINT

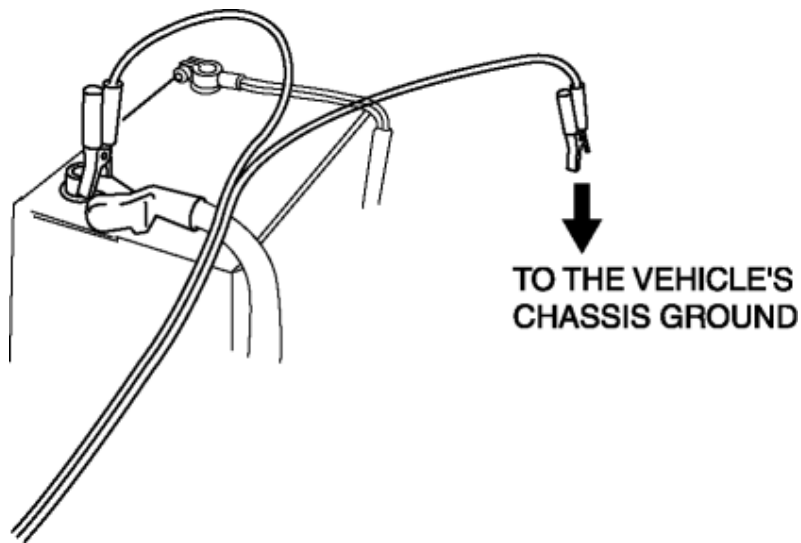
- Verify that the control valve on the panel is in the HOLD position and the valve on the nitrogen bottle valve is open.
- Disconnect the purge solenoid valve hose from the dynamic chamber and insert **SST AKS042808** into the purge solenoid valve hose.



- Connect the EVAP Tester Hose to **SST AKS042808**.
- Connect the 12 volt power connector leads on the smoke generation unit to the vehicle's battery. Make sure to connect the red lead to the positive post (+) or power, and the black lead to the vehicle's chassis ground.

Yes Repair or install a new component if necessary. Go to the next step.

No Check all EVAP connections. Conduct diagnosis of intermittent concerns, then go to the next step.



- Connect the M-MDS to the DLC-2.
- Switch the ignition to ON (Engine off).
- Access the datalogger for the PCM.
- Press the eraser icon to deselect the highlighted PIDs.

Icon name	Screen display
Eraser icon	
Tick icon	
Control item activate icon	
Control icon	
Up icon	

- Select PIDs EVAPCP and EVAPCV, then click the tick icon.
- Command EVAPCP to 100% duty cycle to open the purge solenoid valve.
 - To open the purge solenoid valve, click the control item activate icon.
 - Click the EVAPCP box on the left-hand side of the screen to select it.
 - Click the control icon on the right-hand side of the screen.
 - Click the up icon immediately below the control icon.
- Each click increases the duty cycle by 10%.
- Continue clicking until the M-MDS shows the purge solenoid valve is open

100%.

- Command EVAPCV to ON to close the CV solenoid valve.
 - To close the CV solenoid valve, click the control item activate icon.
 - Click the EVAPCV box in the upper left-hand corner of the screen to select it
 - Click the control icon on the right-hand side of the screen.
 - Click the up icon immediately below the control icon (the EVAPCV should now be on).
- Turn the control valve to the TEST position.
- Press the remote smoke trigger on the smoke generation unit and let the system fill with smoke.

REMOTE SMOKE TRIGGER



NOTE:

- It may be necessary to lift the vehicle to provide sufficient clearance underneath to conduct a proper visual inspection of the fuel and EVAP system.
- NEVER depress the remote smoke trigger before opening the nitrogen tank valve and setting the tester control valve to TEST
- Use a 12 volt 400,000 candle power spot light (part # 4410000-100) or equivalent to help locate the smoke.
- Is a leak detected?

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VERIFY LEAK IS REPAIRED

- Were you diagnosing DTC P0456:00?

Yes Verify that the leak is repaired by repeating diagnostic Step 10. If the leak is repaired, go to Step 15.

No Verify that the leak is repaired by repeating diagnostic Step 6. If the leak is repaired, go to Step 15.

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VERIFY AFTER REPAIR PROCEDURE

- Perform the "AFTER REPAIR PROCEDURE".

Yes Go to the applicable DTC inspection.

	(See AFTER REPAIR PROCEDURE [MZI 3.7 V6] .)		(See DTC TABLE [MZI 3.7 V6] .)
			No Troubleshooting completed.