

2012 - Mazda6 - Engine

DTC P0420:00, P0430:00 [MZI 3.7 V6]

DTC P0420:00 DTC P0430:00	P0420:00: Catalyst system efficiency below threshold (RH) P0430:00: Catalyst system efficiency below threshold (LH)
DETECTION CONDITION	• The PCM monitors the catalyst operation efficiency when the following conditions are met. • P0420:00: The PCM stores P0420:00 when the catalyst operation efficiency on the right bank is the allowable value or lower three times consecutively. • P0430:00: The PCM stores P0430:00 when the catalyst operation efficiency on the left bank is the allowable value or lower three times consecutively. MONITORING CONDITIONS • During deceleration with throttle valve fully closed from driving at vehicle speed of 49—96 km/ h { 30—60 mph } . • Catalyst temperature: 537.8—815.5 °C { 1,000—1,500 °F } .
POSSIBLE CAUSE	• Use of leaded fuel. • Oil contamination • Cylinder misfiring. • Retarded ignition timing • Fuel pressure too high • Damaged exhaust system pipe. • Damaged exhaust manifold. • Damaged muffler/tailpipe component • Damaged catalytic converter • A/F sensor wiring harness malfunction • Downstream HO2S wires incorrectly connected. • Damaged A/F sensor • Damaged HO2S

- Malfunctioning CHT sensor.
- Leaking fuel injector
- PCM malfunction

NOTE:

- Internal deterioration of a catalytic converter is usually caused by abnormal engine operation front of the catalyst. Events that can produce higher than normal temperatures in the catalyst are particularly suspect, such as misfiring. Incorrect A/F sensor/HO2S signal input (e.g., rich/lean signal when engine is operating under rich/lean conditions) can cause an abnormal temperature increase in the catalyst. CHT sensor DTCs can indicate that the thermostat is not operating correctly or that the engine coolant level is not filled to specification, producing above normal operating temperatures.

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 FUEL AND ENGINE OIL CONDITIONS NOTE: • An engine that consumes oil at a high rate deposits high levels of phosphorus on the catalyst and reduces the catalyst efficiency. • Make sure the customer has not: ▪ Refueled the vehicle with leaded gasoline. ▪ Noticed a high vehicle oil consumption. • Does the vehicle exhibit one of the above conditions?	Yes Replace the fuel and/or engine oil. Go to the next step.
		No Go to the next step.

4	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. • Is other DTCs present?	Yes	Go to the appropriate DTC troubleshooting. (See DTC TABLE [MZI 3.7 V6].)
5	INSPECT THE ELECTRONIC ENGINE CONTROL (EEC) WIRING HARNESS NOTE: • Inspect the A/F sensor and HO2S electrical connectors to make sure the correct A/F sensor and HO2S are connected to the correct electrical connector. The electrical connectors are color coded to make sure the correct connection is made. If the electrical connection of the A/F sensor and HO2S are interchanged/crossed, the catalyst efficiency monitor test fails. • Visually inspect for following: ▪ A/F sensor and HO2S wiring harness connectors for any indication of crossed wiring. ▪ Wiring harness for exposed wiring, corrosion and correct routing. ▪ PCM connectors for damaged or pushed out pins, corrosion and loose wires • Are there any concerns with the wiring or the PCM connection?	Yes	Repair or replace malfunctioning part. Then go to Step 10.
6	CHECK THE FUEL PRESSURE NOTE: • Fuel pressure above the specification can produce an abnormally rich air/fuel mixture. This rich air/fuel mixture can cause higher than normal catalyst operating temperatures. • Connect the fuel pressure gauge.	Yes	Go to the next step.
		No	Repair or replace malfunctioning part according to the inspection results. Then go to Step 10.

	(See FUEL LINE PRESSURE INSPECTION [MZI 3.7 V6].) - Start the engine and record the fuel pressure. - Switch the ignition to off. - Is the fuel pressure within the specification?		
7	INSPECT GAS LEAKAGE OF EXHAUST SYSTEM - Visually inspect for exhaust gas leakage in exhaust system. - Are there gas leakage?	Yes	Repair or replace malfunctioning exhaust parts, then go to Step 10.
		No	Go to the next step.
8	INSPECT INSTALLATION OF A/ F SENSOR AND HO2S - Inspect for looseness of A/F sensor and HO2Ss. - Are they it normal?	Yes	Go to the next step.
		No	Retighten sensor, then go to Step 10.
9	INSPECT TWC - Verify that all disconnected connectors are reconnected. - Switch the ignition to ON (Engine off). - Clear the DTC from the PCM memory using the M-MDS. - Perform the OBD-II DRIVE MODE up to Catalyst (Step 7). (See OBD-II DRIVE MODE [MZI 3.7 V6].) - Retrieve DTCs using the M-MDS. - Is the PENDING CODE for this DTC present?	Yes	Replace the TWC, then go to the next step.
		No	Go to the next step. (The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.)
10	VERIFY TROUBLESHOOTING OF DTC P0420:00, P0430:00 HAS BEEN COMPLETED - Verify that all disconnected connectors are reconnected. - Switch the ignition to ON (Engine off). - Clear the DTC from the PCM memory using the M-MDS.	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.

	• Perform the OBD-II DRIVE MODE up to Catalyst (Step 7). (See OBD-II DRIVE MODE [MZI 3.7 V6].) • Retrieve DTCs using the M-MDS. • Is the PENDING CODE for this DTC present?	No	Go to the next step.
11	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.
		No	Troubleshooting completed.

2012 - Mazda6 - Engine

DTC P0420:00, P0430:00 [MZI 3.7 V6]

DTC P0420:00 DTC P0430:00	P0420:00: Catalyst system efficiency below threshold (RH) P0430:00: Catalyst system efficiency below threshold (LH)
DETECTION CONDITION	• The PCM monitors the catalyst operation efficiency when the following conditions are met. • P0420:00: The PCM stores P0420:00 when the catalyst operation efficiency on the right bank is the allowable value or lower three times consecutively. • P0430:00: The PCM stores P0430:00 when the catalyst operation efficiency on the left bank is the allowable value or lower three times consecutively. MONITORING CONDITIONS • During deceleration with throttle valve fully closed from driving at vehicle speed of 49—96 km/ h { 30—60 mph } . • Catalyst temperature: 537.8—815.5 °C { 1,000—1,500 °F } .
POSSIBLE CAUSE	• Use of leaded fuel. • Oil contamination • Cylinder misfiring. • Retarded ignition timing • Fuel pressure too high • Damaged exhaust system pipe. • Damaged exhaust manifold. • Damaged muffler/tailpipe component • Damaged catalytic converter • A/F sensor wiring harness malfunction • Downstream HO2S wires incorrectly connected. • Damaged A/F sensor • Damaged HO2S

- Malfunctioning CHT sensor.
- Leaking fuel injector
- PCM malfunction

NOTE:

- Internal deterioration of a catalytic converter is usually caused by abnormal engine operation front of the catalyst. Events that can produce higher than normal temperatures in the catalyst are particularly suspect, such as misfiring. Incorrect A/F sensor/HO2S signal input (e.g., rich/lean signal when engine is operating under rich/lean conditions) can cause an abnormal temperature increase in the catalyst. CHT sensor DTCs can indicate that the thermostat is not operating correctly or that the engine coolant level is not filled to specification, producing above normal operating temperatures.

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 FUEL AND ENGINE OIL CONDITIONS NOTE: • An engine that consumes oil at a high rate deposits high levels of phosphorus on the catalyst and reduces the catalyst efficiency. • Make sure the customer has not: ▪ Refueled the vehicle with leaded gasoline. ▪ Noticed a high vehicle oil consumption. • Does the vehicle exhibit one of the above conditions?	Yes Replace the fuel and/or engine oil. Go to the next step.
		No Go to the next step.

4	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. • Is other DTCs present?	Yes	Go to the appropriate DTC troubleshooting. (See DTC TABLE [MZI 3.7 V6].)
5	INSPECT THE ELECTRONIC ENGINE CONTROL (EEC) WIRING HARNESS NOTE: • Inspect the A/F sensor and HO2S electrical connectors to make sure the correct A/F sensor and HO2S are connected to the correct electrical connector. The electrical connectors are color coded to make sure the correct connection is made. If the electrical connection of the A/F sensor and HO2S are interchanged/crossed, the catalyst efficiency monitor test fails. • Visually inspect for following: ▪ A/F sensor and HO2S wiring harness connectors for any indication of crossed wiring. ▪ Wiring harness for exposed wiring, corrosion and correct routing. ▪ PCM connectors for damaged or pushed out pins, corrosion and loose wires • Are there any concerns with the wiring or the PCM connection?	Yes	Repair or replace malfunctioning part. Then go to Step 10.
6	CHECK THE FUEL PRESSURE NOTE: • Fuel pressure above the specification can produce an abnormally rich air/fuel mixture. This rich air/fuel mixture can cause higher than normal catalyst operating temperatures. • Connect the fuel pressure gauge.	Yes	Go to the next step.
		No	Repair or replace malfunctioning part according to the inspection results. Then go to Step 10.

	(See FUEL LINE PRESSURE INSPECTION [MZI 3.7 V6].) - Start the engine and record the fuel pressure. - Switch the ignition to off. - Is the fuel pressure within the specification?		
7	INSPECT GAS LEAKAGE OF EXHAUST SYSTEM - Visually inspect for exhaust gas leakage in exhaust system. - Are there gas leakage?	Yes	Repair or replace malfunctioning exhaust parts, then go to Step 10.
		No	Go to the next step.
8	INSPECT INSTALLATION OF A/ F SENSOR AND HO2S - Inspect for looseness of A/F sensor and HO2Ss. - Are they it normal?	Yes	Go to the next step.
		No	Retighten sensor, then go to Step 10.
9	INSPECT TWC - Verify that all disconnected connectors are reconnected. - Switch the ignition to ON (Engine off). - Clear the DTC from the PCM memory using the M-MDS. - Perform the OBD-II DRIVE MODE up to Catalyst (Step 7). (See OBD-II DRIVE MODE [MZI 3.7 V6].) - Retrieve DTCs using the M-MDS. - Is the PENDING CODE for this DTC present?	Yes	Replace the TWC, then go to the next step.
		No	Go to the next step. (The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.)
10	VERIFY TROUBLESHOOTING OF DTC P0420:00, P0430:00 HAS BEEN COMPLETED - Verify that all disconnected connectors are reconnected. - Switch the ignition to ON (Engine off). - Clear the DTC from the PCM memory using the M-MDS.	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.

	• Perform the OBD-II DRIVE MODE up to Catalyst (Step 7). (See OBD-II DRIVE MODE [MZI 3.7 V6].) • Retrieve DTCs using the M-MDS. • Is the PENDING CODE for this DTC present?	No	Go to the next step.
11	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.