

2012 - Mazda6 - Engine

DTC P0138:00, P0158:00 [MZI 3.7 V6]

DTC P0138:00	P0138:00: HO2S (RH) circuit high voltage
DTC P0158:00	P0158:00: HO2S (LH) circuit high voltage
DETECTION CONDITION	• P0138:00 indicates that HO2S (RH) circuit high voltage • P0158:00 indicates that HO2S (LH) circuit high voltage • The HO2S signals are monitored for an over voltage condition. The code is set when the HO2S signal voltage is 1.5 V or more.
POSSIBLE CAUSE	• Short to power supply in the wiring harness or HO2S • PCM malfunction

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	VISUALLY INSPECT HO2S WIRING HARNESS NOTE: - Disconnect the HO2S wiring harness connector. Only the suspect HO2S needs to be diagnosed. - Switch the ignition to off. - Disconnect the suspect HO2S connector. - Visually inspect the HO2S wiring harness. - Check the connector (both halves) for contamination - Make sure the connector pins are fully seated - Is a concern present?	Yes	Repair if necessary. Go to Step 8.
		No	Go to the next step.
4	INSPECT WHETHER HO2S SIGNAL LEVEL IS TOO HIGH - Connect the suspect HO2S connector. - Switch the ignition to ON (Engine running) - Access and monitor the following HO2S signal PID.	Yes	Go to the next step.
		No	Go to Step 6.

	▪ P0138:00: O2S12 ▪ P0158:00: O2S22 • Is the voltage less than 1.1 V?		
5	PERFORM THOROUGH WIGGLE TEST ON HO2S WIRING HARNESS • Switch the ignition to off. • Switch the ignition to ON (Engine off) • Access and monitor the suspect HO2S signal PID on Step 4. • Perform a thorough wiggle test on the suspect HO2S wiring harness. • Does the voltage change during the wiggle test?	Yes	Repair if necessary. Go to Step 8.
		No	Perform the "INTERMITTENT CONCERN TROUBLESHOOTING". Then go to the next step.
6	INSPECT HO2S SIGNAL FOR SHORT TO POWER SUPPLY INSIDE SENSOR • Switch the ignition to off. • Disconnect suspect HO2S connector. • Start the engine and run it at idle. • Access and monitor the HO2S signal PID at Step 4. • Is the voltage less than 1.1 V?	Yes	Replace the suspect HO2S. (See HEATED OXYGEN SENSOR (HO2S) REMOVAL/ INSTALLATION [MZI 3.7 V6] .) Then go to Step 8.
		No	Go to the next step.
7	INSPECT HO2S CIRCUIT FOR SHORT TO POWER SUPPLY IN WIRING HARNESS • Suspect HO2S connector is disconnected. • Switch the ignition to off. • Disconnect the PCM connector. • Switch the ignition to ON (Engine off) • Measure the voltage between suspect HO2S terminal B and body ground. • Is any voltage present?	Yes	Repair or replace suspected part, 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.)

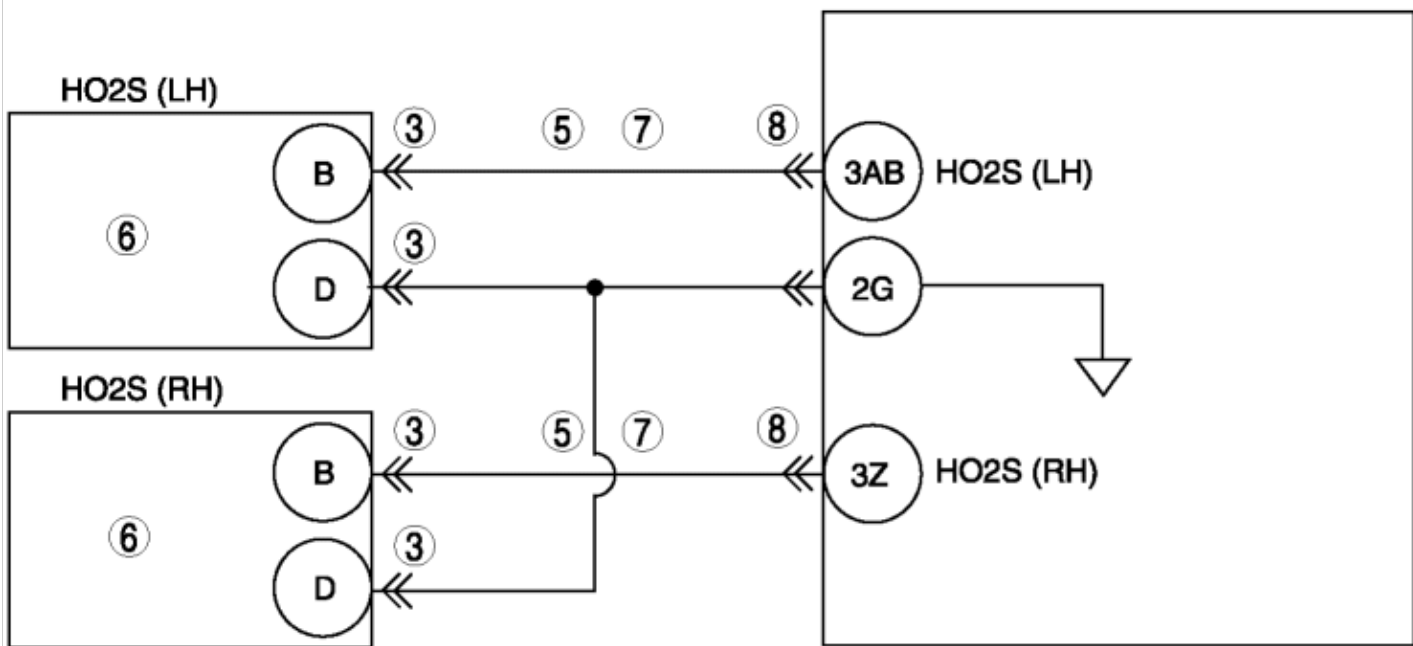
8	VERIFY TROUBLESHOOTING OF DTC P0138:00, P0158:00 HAS BEEN COMPLETED - Verify that all disconnected connectors are reconnected. - Switch the ignition to ON (Engine off). - Clear the DTC from the PCM memory using the M-MDS. - Perform the KOEO or KOER self-test. (See KOEO/ KOER SELF TEST [MZI 3.7 V6] .) - 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.
9	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.

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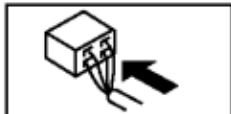
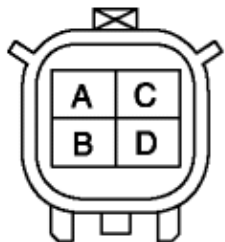
DTC P0138:00, P0158:00 [MZI 3.7 V6]

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DTC P0158:00	P0158:00: HO2S (LH) circuit high voltage
DETECTION CONDITION	• P0138:00 indicates that HO2S (RH) circuit high voltage • P0158:00 indicates that HO2S (LH) circuit high voltage • The HO2S signals are monitored for an over voltage condition. The code is set when the HO2S signal voltage is 1.5 V or more.
POSSIBLE CAUSE	• Short to power supply in the wiring harness or HO2S • PCM malfunction

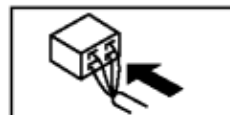
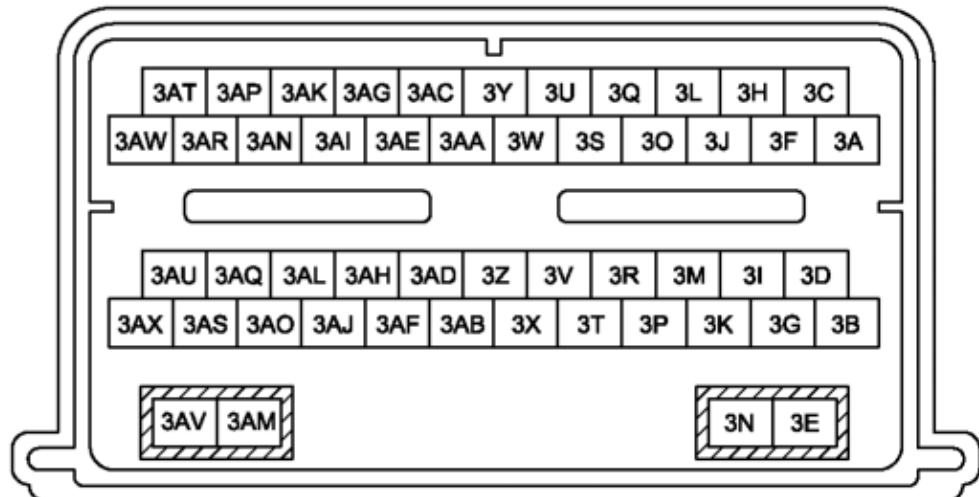
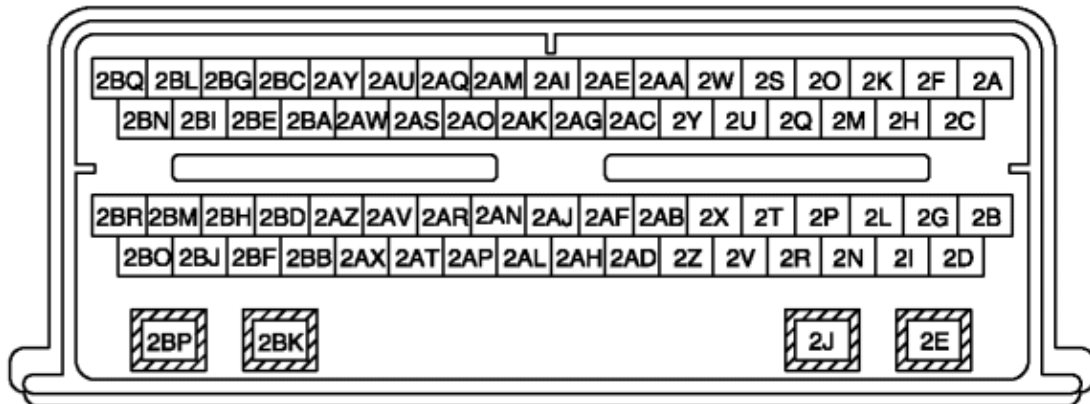
PCM



HO2S (LH, RH) 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	VISUALLY INSPECT HO2S WIRING HARNESS NOTE: - Disconnect the HO2S wiring harness connector. Only the suspect HO2S needs to be diagnosed. - Switch the ignition to off. - Disconnect the suspect HO2S connector. - Visually inspect the HO2S wiring harness. - Check the connector (both halves) for contamination - Make sure the connector pins are fully seated - Is a concern present?	Yes	Repair if necessary. Go to Step 8.
		No	Go to the next step.
4	INSPECT WHETHER HO2S SIGNAL LEVEL IS TOO HIGH - Connect the suspect HO2S connector. - Switch the ignition to ON (Engine running) - Access and monitor the following HO2S signal PID.	Yes	Go to the next step.
		No	Go to Step 6.

	▪ P0138:00: O2S12 ▪ P0158:00: O2S22 • Is the voltage less than 1.1 V?		
5	PERFORM THOROUGH WIGGLE TEST ON HO2S WIRING HARNESS • Switch the ignition to off. • Switch the ignition to ON (Engine off) • Access and monitor the suspect HO2S signal PID on Step 4. • Perform a thorough wiggle test on the suspect HO2S wiring harness. • Does the voltage change during the wiggle test?	Yes	Repair if necessary. Go to Step 8.
		No	Perform the "INTERMITTENT CONCERN TROUBLESHOOTING". Then go to the next step.
6	INSPECT HO2S SIGNAL FOR SHORT TO POWER SUPPLY INSIDE SENSOR • Switch the ignition to off. • Disconnect suspect HO2S connector. • Start the engine and run it at idle. • Access and monitor the HO2S signal PID at Step 4. • Is the voltage less than 1.1 V?	Yes	Replace the suspect HO2S. (See HEATED OXYGEN SENSOR (HO2S) REMOVAL/ INSTALLATION [MZI 3.7 V6] .) Then go to Step 8.
		No	Go to the next step.
7	INSPECT HO2S CIRCUIT FOR SHORT TO POWER SUPPLY IN WIRING HARNESS • Suspect HO2S connector is disconnected. • Switch the ignition to off. • Disconnect the PCM connector. • Switch the ignition to ON (Engine off) • Measure the voltage between suspect HO2S terminal B and body ground. • Is any voltage present?	Yes	Repair or replace suspected part, 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.)

8	VERIFY TROUBLESHOOTING OF DTC P0138:00, P0158:00 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. • Perform the KOEO or KOER self-test. (See KOEO/ KOER SELF TEST [MZI 3.7 V6] .) • 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.
9	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.