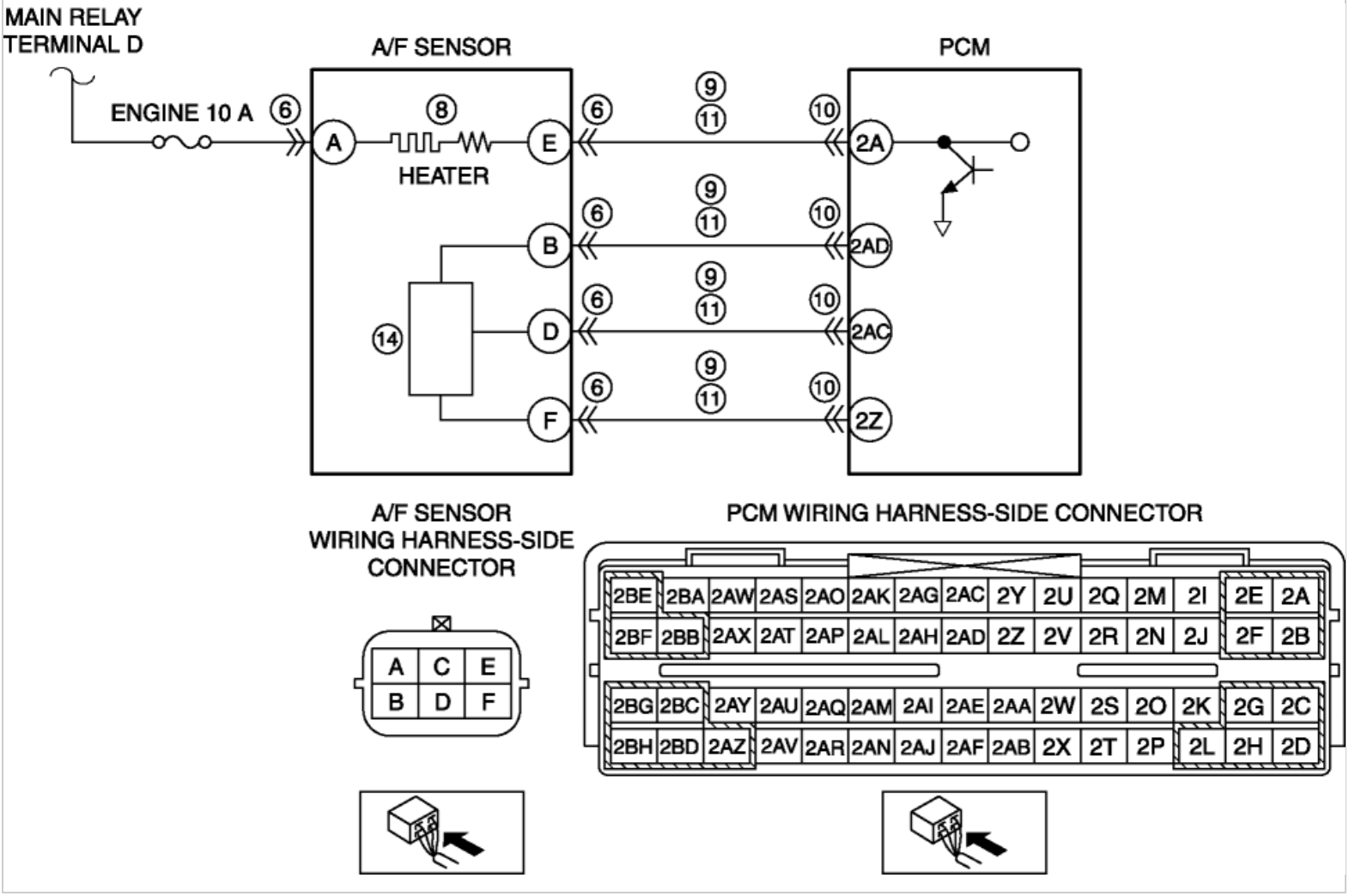
2012 - Mazda6 - Engine

DTC P0134:00 [MZR 2.5]

DTC P0134:00	A/F sensor circuit no activity detected
DETECTION CONDITION	• The PCM monitors the element impedance A/F sensor when the following conditions are met. Under the following monitoring conditions, the element impedance more than specified value, the PCM determines that the A/F sensor is not activated. **MONITORING CONDITIONS** ▪ EGR System, A/F sensor heater, HO2S heater, A/F sensor, HO2S and TWC Repair Verification Drive Mode ▪ Following conditions are met: • A/F sensor heater is turned on **for more than 35 s** • Battery voltage: **11—18 V** **Diagnostic support note** • This is an intermittent monitor (A/F sensor, HO2S). • The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available if the PCM detects the above malfunction condition during first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • The DTC is stored in the PCM memory.
POSSIBLE CAUSE	• A/F sensor loose • Leakage exhaust system • A/F sensor connector or terminal malfunction • A/F sensor heater malfunction ▪ A/F sensor heater deterioration • Short to ground in wiring harness between A/F sensor terminal E and PCM terminal 2A • Short to ground in wiring harness between A/F sensor terminal B and PCM terminal 2AD • Short to ground in wiring harness between A/F sensor terminal D and PCM terminal 2AC • Short to ground in wiring harness between A/F sensor terminal F and PCM terminal 2Z • PCM connector or terminal malfunction • Open circuit in wiring harness between A/F sensor terminal E and PCM terminal 2A • Open circuit in wiring harness between A/F sensor terminal B and PCM terminal 2AD • Open circuit in wiring harness between A/F sensor terminal D and PCM terminal 2AC • Open circuit in wiring harness between A/F sensor terminal F and PCM terminal 2Z • Engine malfunction ▪ Insufficient engine compression

- Engine coolant leakage
- PCM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2)** • Is the DTC P0134:00 on FREEZE FRAME DATA (Mode 2)?	Yes	Go to the next step.
		No	Go to troubleshooting procedures for DTC on FREEZE FRAME DATA (Mode 2). (See **DTC TABLE [MZR 2.5]**.)
2	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED** • Have the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor, HO2S related) been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair order, then go to the next step.
3	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.

		No	Go to the next step.
4	**VERIFY RELATED PENDING AND STORED DTC** **NOTE:** • If fuel monitor DTC, DTC P0132:00 is retrieved, ignore it until P0134:00 is fixed. • Switch the ignition to off, then to ON (engine off). • Verify pending and stored DTCs using the M-MDS. (See **ON-BOARD DIAGNOSTIC TEST [MZR 2.5]**.) • Is the DTC P2237:00 or P2251:00 also present?	Yes	Go to the applicable DTC inspection. (See **DTC P2237:00 [MZR 2.5]**.) (See **DTC P2251:00 [MZR 2.5]**.)
		No	Go to the next step.
5	**INSPECT INSTALLATION OF A/F SENSOR** Inspect if the A/F sensor is loosely installed. Is the A/F sensor installed securely?	Yes	Go to the next step.
		No	Retighten the A/F sensor, then go to Step 15. (See **AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [MZR 2.5]**.)
6	**INSPECT A/F SENSOR CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the A/F sensor connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal and/or connector, then go to Step 15.
		No	Go to the next step.
7	**INSPECT GAS LEAKAGE FROM EXHAUST SYSTEM** • Visually inspect if there is any gas leakage between the exhaust manifold and A/F sensor. • Is there gas leakage?	Yes	Repair or replace the malfunctioning part according to inspection results, then go to Step 15.
		No	Go to the next step.
8	**INSPECT A/F SENSOR HEATER** • Inspect the A/F sensor heater. (See **AIR FUEL RATIO (A/F) SENSOR INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Replace the A/F sensor, then go to Step 15. (See **AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [MZR 2.5]**.)
		No	Go to the next step.
9	**INSPECT A/F SENSOR CIRCUIT FOR SHORT TO GROUND** • A/F sensor connector is disconnected. • Inspect for continuity between the following terminals and body ground: ▪ A/F sensor terminal E (wiring harness-side) ▪ A/F sensor terminal B (wiring harness-side) ▪ A/F sensor terminal D (wiring harness-side) ▪ A/F sensor terminal F (wiring harness-side) • Is there continuity?	Yes	If the short to ground circuit could be detected: • Repair or replace the wiring harness for a possible short to ground. If the short to ground circuit could not be detected: • Replace the PCM (short to ground in PCM internal circuit). (See **PCM REMOVAL/INSTALLATION [MZR 2.5]**.) Go to Step 15.
		No	Go to the next step.
10	**INSPECT PCM CONNECTOR CONDITION**	Yes	Repair or replace the terminal and/or connector, then go

	• Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?		to Step 15.
		No	Go to the next step.
11	**INSPECT A/F SENSOR CIRCUIT FOR OPEN CIRCUIT** • A/F sensor and PCM connectors are disconnected. • Inspect for continuity between the following terminals: ▪ A/F sensor terminal E (wiring harness-side) and PCM terminal 2A (wiring harness-side) ▪ A/F sensor terminal B (wiring harness-side) and PCM terminal 2AD (wiring harness-side) ▪ A/F sensor terminal D (wiring harness-side) and PCM terminal 2AC (wiring harness-side) ▪ A/F sensor terminal F (wiring harness-side) and PCM terminal 2Z (wiring harness-side) • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 15.
12	**INSPECT ENGINE COMPRESSION** • Inspect the engine compression. (See **COMPRESSION INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Perform the engine overhaul for repairs, then go to Step 15.
		No	Go to the next step.
13	**INSPECT SEALING OF ENGINE COOLANT PASSAGE** • Perform the "ENGINE COOLANT LEAKAGE INSPECTION". (See **ENGINE COOLANT LEAKAGE INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to inspection results, then go to Step 15.
		No	Go to the next step.
14	**INSPECT A/F SENSOR** • Reconnect all disconnected connectors. • Inspect the A/F sensor. (See **AIR FUEL RATIO (A/F) SENSOR INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Inspect and repair for exhaust gas leakage between exhaust manifold and A/F sensor. If the exhaust system is normal: • Replace the A/F sensor, then go to the next step. (See **AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [MZR 2.5]**.)
		No	Go to the next step.
15	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.) • Start the engine and warm it up completely.	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See **PCM REMOVAL/INSTALLATION [MZR 2.5]**.) Go to the next step.

	• Perform the KOER self test. (See **KOEO/ KOER SELF TEST [MZR 2.5]**.) • Is the PENDING CODE for this DTC present?	No	Go to the next step.
16	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZR 2.5]**.)
		No	DTC troubleshooting completed.

< Previous **Next >**

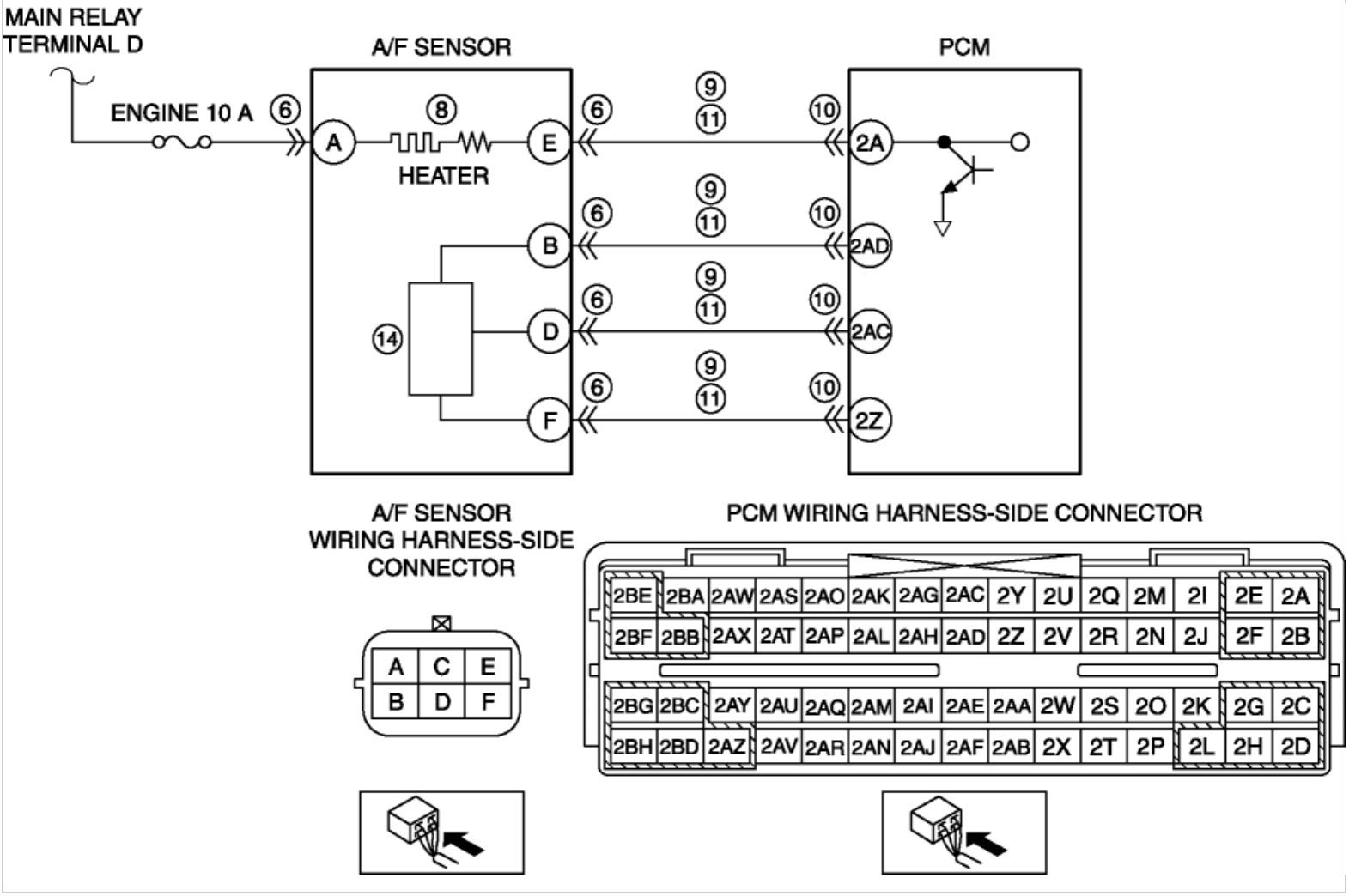
Back to Top

2012 - Mazda6 - Engine

DTC P0134:00 [MZR 2.5]

DTC P0134:00	A/F sensor circuit no activity detected
DETECTION CONDITION	• The PCM monitors the element impedance A/F sensor when the following conditions are met. Under the following monitoring conditions, the element impedance more than specified value, the PCM determines that the A/F sensor is not activated. **MONITORING CONDITIONS** ▪ EGR System, A/F sensor heater, HO2S heater, A/F sensor, HO2S and TWC Repair Verification Drive Mode ▪ Following conditions are met: • A/F sensor heater is turned on **for more than 35 s** • Battery voltage: **11—18 V** **Diagnostic support note** • This is an intermittent monitor (A/F sensor, HO2S). • The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available if the PCM detects the above malfunction condition during first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • The DTC is stored in the PCM memory.
POSSIBLE CAUSE	• A/F sensor loose • Leakage exhaust system • A/F sensor connector or terminal malfunction • A/F sensor heater malfunction ▪ A/F sensor heater deterioration • Short to ground in wiring harness between A/F sensor terminal E and PCM terminal 2A • Short to ground in wiring harness between A/F sensor terminal B and PCM terminal 2AD • Short to ground in wiring harness between A/F sensor terminal D and PCM terminal 2AC • Short to ground in wiring harness between A/F sensor terminal F and PCM terminal 2Z • PCM connector or terminal malfunction • Open circuit in wiring harness between A/F sensor terminal E and PCM terminal 2A • Open circuit in wiring harness between A/F sensor terminal B and PCM terminal 2AD • Open circuit in wiring harness between A/F sensor terminal D and PCM terminal 2AC • Open circuit in wiring harness between A/F sensor terminal F and PCM terminal 2Z • Engine malfunction ▪ Insufficient engine compression

- Engine coolant leakage
- PCM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2)** • Is the DTC P0134:00 on FREEZE FRAME DATA (Mode 2)?	Yes	Go to the next step.
		No	Go to troubleshooting procedures for DTC on FREEZE FRAME DATA (Mode 2). (See **DTC TABLE [MZR 2.5]**.)
2	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED** • Have the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor, HO2S related) been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair order, then go to the next step.
3	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.

		No	Go to the next step.
4	**VERIFY RELATED PENDING AND STORED DTC** **NOTE:** • If fuel monitor DTC, DTC P0132:00 is retrieved, ignore it until P0134:00 is fixed. • Switch the ignition to off, then to ON (engine off). • Verify pending and stored DTCs using the M-MDS. (See **ON-BOARD DIAGNOSTIC TEST [MZR 2.5]**.) • Is the DTC P2237:00 or P2251:00 also present?	Yes	Go to the applicable DTC inspection. (See **DTC P2237:00 [MZR 2.5]**.) (See **DTC P2251:00 [MZR 2.5]**.)
		No	Go to the next step.
5	**INSPECT INSTALLATION OF A/F SENSOR** Inspect if the A/F sensor is loosely installed. Is the A/F sensor installed securely?	Yes	Go to the next step.
		No	Retighten the A/F sensor, then go to Step 15. (See **AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [MZR 2.5]**.)
6	**INSPECT A/F SENSOR CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the A/F sensor connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal and/or connector, then go to Step 15.
		No	Go to the next step.
7	**INSPECT GAS LEAKAGE FROM EXHAUST SYSTEM** • Visually inspect if there is any gas leakage between the exhaust manifold and A/F sensor. • Is there gas leakage?	Yes	Repair or replace the malfunctioning part according to inspection results, then go to Step 15.
		No	Go to the next step.
8	**INSPECT A/F SENSOR HEATER** • Inspect the A/F sensor heater. (See **AIR FUEL RATIO (A/F) SENSOR INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Replace the A/F sensor, then go to Step 15. (See **AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [MZR 2.5]**.)
		No	Go to the next step.
9	**INSPECT A/F SENSOR CIRCUIT FOR SHORT TO GROUND** • A/F sensor connector is disconnected. • Inspect for continuity between the following terminals and body ground: ▪ A/F sensor terminal E (wiring harness-side) ▪ A/F sensor terminal B (wiring harness-side) ▪ A/F sensor terminal D (wiring harness-side) ▪ A/F sensor terminal F (wiring harness-side) • Is there continuity?	Yes	If the short to ground circuit could be detected: • Repair or replace the wiring harness for a possible short to ground. If the short to ground circuit could not be detected: • Replace the PCM (short to ground in PCM internal circuit). (See **PCM REMOVAL/INSTALLATION [MZR 2.5]**.) Go to Step 15.
		No	Go to the next step.
10	**INSPECT PCM CONNECTOR CONDITION**	Yes	Repair or replace the terminal and/or connector, then go

	• Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?		to Step 15.
		No	Go to the next step.
11	**INSPECT A/F SENSOR CIRCUIT FOR OPEN CIRCUIT** • A/F sensor and PCM connectors are disconnected. • Inspect for continuity between the following terminals: ▪ A/F sensor terminal E (wiring harness-side) and PCM terminal 2A (wiring harness-side) ▪ A/F sensor terminal B (wiring harness-side) and PCM terminal 2AD (wiring harness-side) ▪ A/F sensor terminal D (wiring harness-side) and PCM terminal 2AC (wiring harness-side) ▪ A/F sensor terminal F (wiring harness-side) and PCM terminal 2Z (wiring harness-side) • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 15.
12	**INSPECT ENGINE COMPRESSION** • Inspect the engine compression. (See **COMPRESSION INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Perform the engine overhaul for repairs, then go to Step 15.
		No	Go to the next step.
13	**INSPECT SEALING OF ENGINE COOLANT PASSAGE** • Perform the "ENGINE COOLANT LEAKAGE INSPECTION". (See **ENGINE COOLANT LEAKAGE INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to inspection results, then go to Step 15.
		No	Go to the next step.
14	**INSPECT A/F SENSOR** • Reconnect all disconnected connectors. • Inspect the A/F sensor. (See **AIR FUEL RATIO (A/F) SENSOR INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Inspect and repair for exhaust gas leakage between exhaust manifold and A/F sensor. If the exhaust system is normal: • Replace the A/F sensor, then go to the next step. (See **AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [MZR 2.5]**.)
		No	Go to the next step.
15	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.) • Start the engine and warm it up completely.	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See **PCM REMOVAL/INSTALLATION [MZR 2.5]**.) Go to the next step.

	• Perform the KOER self test. (See **KOEO/ KOER SELF TEST [MZR 2.5]**.) • Is the PENDING CODE for this DTC present?	No	Go to the next step.
16	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZR 2.5]**.)
		No	DTC troubleshooting completed.

< Previous **Next >**

Back to Top