Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2000 MAZDA MX-5 / Miata OEM Service and Repair Workshop Manual

Go to manual page

DTC P0132:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))]

SM2896947

id0102t370230

Note

• To determine the malfunctioning part, proceed with the diagnostics from "Function Inspection Using M-MDS".

Details On DTCs

DESCRIPTION	**A/F sensor circuit high input**	
DETECTION CONDITION	Determination conditions	• Any one of the following conditions is met: — Voltage of A/F sensor terminal F is more than specified value — Voltage of A/F sensor terminal D is more than specified value — Voltage of A/F sensor terminal B is more than specified value
	Preconditions	• Switch the ignition ON (engine off or on) • Battery voltage: 11–18 V *1 • The following DTC is not detected: — Internal PCM malfunction: P064D:00 *1: Standard can be verified by displaying PIDs using M-MDS
	Drive cycle	• 2
	Self test type	• CMDTC self test, KOER self test
	Sensor used	• A/F sensor
FAIL-SAFE FUNCTION	• Fixes duty value of A/F sensor heater • Stops fuel feedback control of A/F sensor	
VEHICLE STATUS WHEN DTCs ARE OUTPUT	• Illuminates check engine light.	
POSSIBLE CAUSE	• A/F sensor connector or terminals malfunction • PCM connector or terminals malfunction • Short to power supply in wiring harness between the following terminals: — A/F sensor terminal F–PCM terminal 1T — A/F sensor terminal D–PCM terminal 1S — A/F sensor terminal B–PCM terminal 1M • A/F sensor malfunction • PCM malfunction	

System Wiring Diagram

STEP	INSPECTION	RESULTS	ACTION
3	**PURPOSE: INSPECT A/F SENSOR CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the A/F sensor and PCM connectors are disconnected. • Switch the ignition ON (engine off). **Note** **• Another DTC may be stored by the PCM detecting an open circuit.** • Measure the voltage at the following terminals (wiring harness-side): — A/F sensor terminal F — A/F sensor terminal D — A/F sensor terminal B • Is the voltage 0 V?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals • A/F sensor terminal F—PCM terminal 1T • A/F sensor terminal D—PCM terminal 1S • A/F sensor terminal B—PCM terminal 1M **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to power supply. • Repair or replace the malfunctioning part **If there is no common connector:** • Repair or replace the wiring harness which has a short to power supply. Go to Step 5.
4	**PURPOSE: DETERMINE INTEGRITY OF A/F SENSOR** • Start the engine and warm it up completely. • Access the O2S11 PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Drive the vehicle under the following conditions. **Warning** **• When the M-MDS is used to observe monitor system status while driving, be sure to have another technician with you, or record the data in the M-MDS using the PID/DATA MONITOR AND RECORD capturing function and inspect later.** **• While performing this step, always operate the vehicle in a safe and lawful manner.** — After increasing the engine speed to 3,000 rpm, decelerate using engine braking. • Is the displayed PID value as follows? — O2S11: 0.25 mA or more	Yes	Go to the next step.
		No	Replace the A/F sensor, then go to the next step. (See AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
5	**PURPOSE: VERIFICATION OF VEHICLE REPAIR COMPLETION** • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See CLEARING DTC [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Perform the KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • 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 [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) Go to the next step.
		No	Go to the next step.
6	**PURPOSE: VERIFY IF THERE IS ANY OTHER MALFUNCTION** • Is any other DTC or pending code stored?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].)
		No	DTC troubleshooting completed.

Function Inspection Using M-MDS

STEP	INSPECTION	RESULTS	ACTION
1	**PURPOSE: 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.
2	**PURPOSE: IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA** • Is the DTC P0133:00 on FREEZE FRAME DATA?	Yes	Go to the next step.
		No	Go to the troubleshooting procedure for DTC on FREEZE FRAME DATA. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].)
3	**PURPOSE: RECORD FREEZE FRAME DATA/SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS TO UTILIZE WITH REPEATABILITY VERIFICATION** **Note** **• Recording can be facilitated using the screen capture function of the PC.** • Record the FREEZE FRAME DATA/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor, HO2S related) on the repair order.	–	Go to the next step.
4	**PURPOSE: VERIFY IF DIAGNOSTIC RESULT IS AFFECTED BY DTC OCCURRING FROM A/F SENSOR UNIT** • Switch the ignition off, then ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Is the PENDING CODE/DTC P0131:00, P0132:00, P0134:00, P2237:00, P2243:00 or P2251:00 also present?	Yes	Go to the applicable DTC inspection. (See DTC P0131:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See DTC P0132:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See DTC P0134:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See DTC P2237:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See DTC P2243:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See DTC P2251:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) Go to the next step.
		No	Go to the next step.
5	**PURPOSE: VERIFY A/F SENSOR** • Start the engine and idle it. • Access the O2S11 PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Is the O2S11 PID value normal? (See PCM INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)	Yes	Go to the next step.
		No	Go to Troubleshooting Diagnostic Procedure to perform the procedure from Step 1.

DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))]

SM2897008

id0102t380150

Note

• When each warning/indicator light turns on/flashes, a message may be displayed in the multi-information display (with multi-information display).

×: Applicable−: Not applicable

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
B10A2:00	OFF	OFF	OFF	OFF	OFF	Vehicle collision	×	1	
P0010:00	ON	OFF	OFF	OFF	OFF	Electric variable valve timing control circuit range/performance problem	×	1	
P0011:00	ON	OFF	OFF	OFF	OFF	Electric variable valve timing control system: over-advanced	−	1	
P0012:00	ON	OFF	OFF	OFF	OFF	Electric variable valve timing control system: over-retarded	−	1	

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
P0073:00	OFF	OFF	OFF	OFF	OFF	Ambient temperature sensor circuit high input	–	1	
P0087:00	ON	OFF	OFF	OFF	OFF	Fuel pressure sensor circuit range/performance problem	×	1	
P0088:00	ON	OFF	OFF	OFF	OFF	Fuel pressure sensor circuit range/performance problem	×	1	
P0089:00	ON	OFF	OFF	OFF	OFF	Spill valve control solenoid valve control circuit range/performance problem	×	1	
P0091:00	ON	OFF	OFF	OFF	OFF	Fuel pressure regulator control circuit low input	×	1	
P0092:00	ON	OFF	OFF	OFF	OFF	Fuel pressure regulator control circuit high input	×	1	

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
P0122:00	ON	OFF	OFF	OFF	OFF	TP sensor No.1 circuit low input	×	1	
P0123:00	ON	OFF	OFF	OFF	OFF	TP sensor No.1 circuit high input	×	1	
P0126:00 *5	ON	OFF	OFF	OFF	OFF	Thermostat stuck open	–	2	E c s
P012F:00 *5	ON	OFF	OFF	OFF	OFF	Engine oil temperature : correlation error	–	2	
P0130:00	ON	OFF	OFF	OFF	OFF	• Voltage problem between PCM terminal 1S and PCM terminal 1M	×	2	A/F H
P0131:00	ON	OFF	OFF	OFF	OFF	A/F sensor circuit low input	×	2	A/F H

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
P0197:00	ON	OFF	OFF	OFF	OFF	Engine oil temperature sensor circuit low input	–	1	
P0198:00	ON	OFF	OFF	OFF	OFF	Engine oil temperature sensor circuit high input	–	1	
P0201:00	ON	OFF	OFF	OFF	OFF	Fuel injector circuit/open cylinder No.1	–	1	
P0202:00	ON	OFF	OFF	OFF	OFF	Fuel injector circuit/open cylinder No.2	–	1	
P0203:00	ON	OFF	OFF	OFF	OFF	Fuel injector circuit/open cylinder No.3	–	1	
P0204:00	ON	OFF	OFF	OFF	OFF	Fuel injector circuit/open cylinder No.4	–	1	

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
P0365:00	ON	OFF	OFF	OFF	OFF	Exhaust CMP sensor circuit problem	×	1	
P0421:00	ON	OFF	OFF	OFF	OFF	Catalytic converter system	–	1	Ca
P0442:00 *5	ON	OFF	OFF	OFF	OFF	Evaporative gas leakage (leakage amount: low)	–	2	s
P0443:00	ON	OFF	OFF	OFF	OFF	Purge solenoid valve circuit problem	–	2	
P0446:00 *5	ON	OFF	OFF	OFF	OFF	CV solenoid valve control circuit problem	–	2	
P0451:00 *5	ON	OFF	OFF	OFF	OFF	Fuel tank pressure sensor: sensor characteristic malfunction	–	2	

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
P0500:00	ON	OFF	OFF	OFF	OFF	VSS circuit problem	×	2	
P0504:00	ON	Indication/illumination	OFF	OFF	OFF	Brake switch circuit problem	–	1	
P0506:00 *5	ON	OFF	OFF	OFF	OFF	IAC system RPM lower than expected	–	2	
P0507:00 *5	ON	OFF	OFF	OFF	OFF	IAC system RPM higher than expected	–	2	
P050A:00 *5	ON	OFF	OFF	OFF	OFF	Cold start IAC system performance problem	×	2	Co en rec st mo
P050B:00 *5	ON	OFF	OFF	OFF	OFF	Cold start ignition timing performance problem	–	2	Co en rec st mo