

2012 - Mazda6 - Body and Accessories

NO. 1 FUEL GAUGE NEEDLE POSITION INCORRECT [INSTRUMENT CLUSTER (WITHOUT MALFUNCTION WARNING LIGHT)]

1	Fuel gauge needle position incorrect
POSSIBLE CAUSE	- Fuel gauge sender unit malfunction - Instrument cluster malfunction - Connector or pin malfunction - Fuel gauge sender unit is improperly installed - Open or short circuit in wiring harness between instrument cluster and ground - Open or short circuit in wiring harness between instrument cluster and fuel gauge sender unit
	NOTE: The fuel gauge does not display the remaining fuel quantity correctly until the microcomputer built into instrument cluster calculates the fuel amount after refueling:

Diagnostic procedure

STEP	INSPECTION		ACTION
1	- Switch the ignition to ON. - Verify that the fuel gauge needle does not move after the ignition is switched to off (LOCK), or the display does not indicate F even though the fuel tank is full. - Is the fuel gauge normal?	Yes	Troubleshooting completed. (The system is normal.)
		No	Go to the next step.
2	- Retrieve the instrument cluster DTC using the M-MDS. (See DTC INSPECTION [INSTRUMENT CLUSTER].) - Is there any DTC retrieved?	Yes	Go to applicable DTC troubleshooting procedure.
		No	If the

			communication error message is not displayed on M-MDS screen, go to the next step. If the communication error message is displayed on the M-MDS screen, go to Step 4.
3	- Inspect the following fuel gauge needle indication when commands are sent to the instrument cluster using the M-MDS active command modes FUEL_GAUGE. (See ACTIVE COMMAND MODES TABLE [INSTRUMENT CLUSTER].) - Does the fuel gauge indicator move according to the command?	Yes	Go to Step 5.
		No	Replace the instrument cluster.
4	- Inspect the instrument cluster connector connection. - Is the instrument cluster connector connected securely?	Yes	Inspect for an open or short circuit in the instrument cluster power and ground circuit.
		No	Connect the connector securely.
5	- Inspect the fuel gauge sender unit connector. - Is the fuel gauge sender unit connector connected securely?	Yes	Go to the next step.
		No	Connect the connector securely.
6	- Switch the ignition to off (LOCK). - Disconnect the instrument cluster and the fuel gauge sender unit connectors. - Inspect for continuity between the instrument cluster wiring harness-side connector (24-pin) terminal 2M and ground. - Is there continuity?	Yes	Repair or replace for a short to the ground circuit between the instrument cluster and the fuel gauge sender unit.
		No	Go to the next step.
7	- Instrument cluster and fuel gauge sender unit connectors disconnected. - Inspect for continuity between the instrument cluster and the fuel gauge sender unit. - Terminal 2M — terminal C	Yes	Go to the next step.
		No	Repair or replace for an open circuit between the instrument cluster and the fuel gauge sender unit.

	▪ Terminal 2D — terminal E • Is there continuity?		
8	• Turn the ignition switch off. • Is the fuel gauge sender unit installed properly?	Yes	Inspect the fuel gauge sender unit.
		No	Reinstall the fuel gauge sender unit.

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		No	Replace the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/ INSTALLATION.)
4	- Inspect the instrument cluster connector connection. - Is the instrument cluster connector connected securely?	Yes	Inspect for an open or short circuit in the instrument cluster power and ground circuit.
		No	Connect the connector securely.
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