

2012 - Mazda6 - Body and Accessories

NO. 8 SPEEDOMETER INDICATION IS DEFECTIVE [INSTRUMENT CLUSTER (WITH MALFUNCTION WARNING LIGHT)]

8	Speedometer indication is defective
POSSIBLE CAUSE	• DSC HU/CM malfunction • PCM malfunction • TCM malfunction • Instrument cluster malfunction • Connector or pin malfunction • Short circuit in wiring harness between CAN-L, CAN-H and ground • Open circuit in CAN wiring harness (CAN-L, CAN-H) • CAN wiring harness (CAN-L, CAN-H) short each other

Diagnostic procedure

STEP	INSPECTION	ACTION
1	• Start the engine, and drive the vehicle. ▪ Does the speedometer needle move smoothly? ▪ Does the speedometer needle indicate correct speed?	Yes Troubleshooting completed. (The system is normal.)
		No Go to the next step.
2	• Retrieve the DTCs related to the PCM, TCM, DSC HU/CM using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) (See ON-BOARD DIAGNOSTIC TEST [MZI 3.7 V6].) (See ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)].) (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].)	Yes Go to the applicable troubleshooting procedure. (See DTC TABLE [MZR 2.5] .) (See DTC TABLE [MZI 3.7 V6] .) (See ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)] .) (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL] .)

	(See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [AY6A-EL] .) Is there any DTC retrieved?		(See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [AY6A-EL] .)
		No	Go to the next step.
3	- Start the engine. - Inspect the tachometer and water temperature gauge indications. - Do the tachometer and water temperature gauge function properly?	Yes	Go to the next step.
		No	Go to Step 5.
4	- Inspect that the speedometer indication when the following commands are send to the instrument cluster using the M-MDS active command modes SPDMTR. (See ACTIVE COMMAND MODES TABLE [INSTRUMENT CLUSTER] .) - Does the speedometer move according to active command modes?	Yes	Verify that the PCM, TCM, DSC HU/CM are connected securely. If the PCM, TCM, DSC HU/ CM is poorly connected: Connect the suspected connector securely. If a malfunction is in the PCM, TCM, DSC HU/ CM side connector: Replace the suspected control module. (See PCM REMOVAL/ INSTALLATION [MZR 2.5] .) (See PCM REMOVAL/ INSTALLATION [MZI 3.7 V6] .) (See TCM REMOVAL/ INSTALLATION [FS5A-EL] .) (See TCM REMOVAL/ INSTALLATION [AY6A-EL] .) (See PARKING BRAKE LEVER REMOVAL/ INSTALLATION .) (See DSC HU/ CM REMOVAL/ INSTALLATION .) If a malfunction is in the vehicle side connector: Repair or replace the malfunctioning part.

		No	Replace the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/ INSTALLATION .)
5	- Retrieve the DTC related to the instrument cluster using the M-MDS. (See DTC INSPECTION [INSTRUMENT CLUSTER].) - Is there any DTC retrieved?	Yes	Go to applicable DTC inspection. (See DTC TABLE [INSTRUMENT CLUSTER] .)
		No	Go to the next step.
6	- Disconnect the negative battery cable. - Measure the resistance between the DLC-2 terminals F and E. - Is the resistance below 60 ohms?	Yes	Go to the next step.
		No	Go to Step 7.
7	- Disconnect the negative battery cable. - Inspect the DLC-2 terminals F and E for short to power supply or ground. - Is there any malfunction?	Yes	- Inspect the wiring harness and CAN system-related module. - Repair or replace the malfunctioning part.
		No	Replace the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/ INSTALLATION .)
8	- Switch the ignition to off. - Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). - Are the terminals normal?	Yes	Go to the next step.
		No	Repair or replace the terminal.
9	- Disconnect the negative battery cable. - Measure the resistance between the instrument cluster connector terminals 2X and 2W. - Is the resistance 114—126 ohms?	Yes	- Inspect the wiring harness and CAN system-related module. - Repair or replace the malfunctioning

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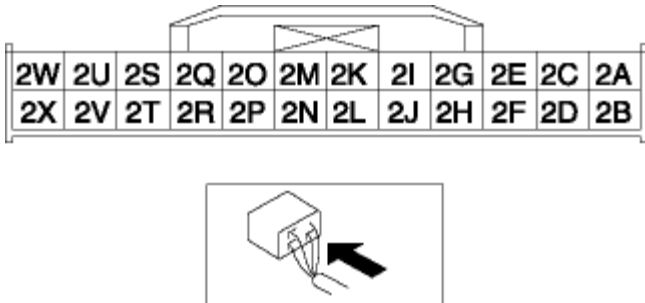
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		part.
		No Replace the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/ INSTALLATION.)