

2012 - Mazda6 - Engine

DTC P0401:00 [MZR 2.5]

DTC P0401:00	EGR flow insufficient detected
DETECTION CONDITION	- The PCM monitors the difference in the intake manifold pressures when the EGR is operated and when it is stopped. If the difference is too small, the PCM determines that the EGR flow insufficient. Diagnostic support note - This is an intermittent monitor (EGR system). - 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 the first drive cycle. - FREEZE FRAME DATA (Mode 2)/Snapshot data is available. - The DTC is stored in the PCM memory.
POSSIBLE CAUSE	- MAP sensor malfunction - EGR valve malfunction - EGR valve passage malfunction - Gasket of EGR valve malfunction - Clogged EGR valve passage - PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED Have the FREEZE FRAME DATA	YesGo to the next step.
		NoRecord the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair

	(Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (EGR system related) been recorded?		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 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.
3	VERIFY RELATED PENDING AND STORED DTC - 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] .) - Are any other DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [MZR 2.5] .)
		No	Go to the next step.
4	INSPECT MAP SENSOR - Inspect the MAP sensor. (See MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR INSPECTION [MZR 2.5] .) - Is there any malfunction?	Yes	Replace the MAP sensor, then go to Step 7. (See MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR REMOVAL/ INSTALLATION [MZR 2.5] .)
		No	Go to the next step.
5	INSPECT EGR VALVE OPERATION - Perform the EGR Control System Inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [MZR 2.5] .) - Does the EGR system operate properly?	Yes	Go to the next step.
		No	Repair or replace malfunctioning part according to inspection result, then go to Step 7.
6	INSPECT EGR VALVE PASSAGE - Switch the ignition to off. - Remove the EGR valve. - Visually inspect the gasket installation of EGR valve and EGR valve passage for clogging. - Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection result, then go to the next step.
		No	Go to the next step.

7	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].) • Perform the Drive Mode 03 (EGR System, A/F sensor heater, HO2S heater, A/F sensor, HO2S and TWC Repair Verification Drive Mode). (See OBD-II DRIVE MODE [MZR 2.5].) • Stop the vehicle and access the ON BOARD READINESS TEST to inspect the DRIVE MODE completion status. • Verify that the ON BOARD READINESS TEST status changing to YES. • Access the DIAGNOSTIC MONITORING TEST RESULTS. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) • Verify the #31:83 (EGR pressure variation) value. • Is the value out of the specification?		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. No Repeat this step.
8	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.

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POSSIBLE CAUSE	• MAP sensor malfunction • EGR valve malfunction • EGR valve passage malfunction ▪ Gasket of EGR valve malfunction ▪ Clogged EGR valve passage • PCM malfunction

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