2012 - Mazda6 - Engine

DTC P0128:00 [MZI 3.7 V6]

DTC P0128:00	Coolant thermostat (coolant temp below thermostat regulating temperature)
DETECTION CONDITION	• P0128:00 indicates that the thermostat monitor has not achieved the required engine operating temperature within a specified amount of time after starting the engine.
POSSIBLE CAUSE	• Low engine coolant level • Inoperative CHT sensor • Leaking or stuck-open thermostat • Insufficient warm up time • PCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has FREEZE FRAME DATA been recorded?	Yes	Go to the next step.
		No	Record FREEZE FRAME DATA on the repair 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 Service Bulletins available?	Yes	Perform repair or diagnosis according to the available Service Bulletins. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ENGINE COOLANT LEVEL** **WARNING:** • Never remove the cooling system cap or	Yes	Go to the next step.
		No	Inspect for a loss of engine coolant. Repair if necessary.

	loosen the radiator drain plug while the engine is running, or when the engine and radiator are hot. Scalding engine coolant and steam may shoot out and cause serious injury. It may also damage the engine and cooling system. • Turn off the engine and wait until it is cool. Even then, be very careful when removing the cap. Wrap a thick cloth around it and slowly turn it counterclockwise to the first stop. Step back while the pressure escapes. • When you're sure all the pressure is gone, press down on the cap using the cloth, turn it, and then remove it. • Is the engine coolant fill level correct?		(See **ENGINE COOLANT LEVEL INSPECTION [MZI 3.7 V6]**.) Go to Step 6.
4	**INSPECT CHT SENSOR OPERATION** • Run the engine until the engine temperature stabilizes. • Verify that the radiator hoses are hot and the cooling system is pressurized. • Access the PCM and monitor the CHT PID. • Is the temperature more than 77 °C {171 °F}?	Yes	Go to the next step.
		No	Inspect the CHT sensor. Replace if necessary, then go to Step 6. (See **CYLINDER HEAD TEMPERATURE (CHT) SENSOR INSPECTION [MZI 3.7 V6]**.)
5	**INSPECT THERMOSTAT** • Cool down the engine. • Inspect the thermostat. (See **THERMOSTAT INSPECTION [MZI 3.7 V6]**.) • Is the thermostat normal?	Yes	The test is complete. Go to the next step.
		No	Replace the thermostat, then go to the next step. (See **THERMOSTAT REMOVAL/ INSTALLATION [MZI 3.7 V6]**.)
6	**VERIFY TROUBLESHOOTING OF DTC P0128:00 HAS BEEN COMPLETED** • Verify that all disconnected connectors are reconnected. • Switch the ignition to ON (Engine off). • Clear the DTC from the PCM memory using the M-MDS. • Cool down the engine and radiator. • Start the engine and run it until the	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See **PCM REMOVAL/ INSTALLATION [MZI 3.7 V6]**.) Go to the next step.
		No	Go to the next step.

	engine temperature stabilizes. • Retrieve DTCs using the M-MDS. • Is the PENDING CODE for this DTC present?		
7	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See **AFTER REPAIR PROCEDURE [MZI 3.7 V6]**.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZI 3.7 V6]**.)
		No	Troubleshooting completed.

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Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has FREEZE FRAME DATA been recorded?	Yes	Go to the next step.
		No	Record FREEZE FRAME DATA on the repair 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 Service Bulletins available?	Yes	Perform repair or diagnosis according to the available Service Bulletins. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ENGINE COOLANT LEVEL** **WARNING:** • Never remove the cooling system cap or	Yes	Go to the next step.
		No	Inspect for a loss of engine coolant. Repair if necessary.

	loosen the radiator drain plug while the engine is running, or when the engine and radiator are hot. Scalding engine coolant and steam may shoot out and cause serious injury. It may also damage the engine and cooling system. • Turn off the engine and wait until it is cool. Even then, be very careful when removing the cap. Wrap a thick cloth around it and slowly turn it counterclockwise to the first stop. Step back while the pressure escapes. • When you're sure all the pressure is gone, press down on the cap using the cloth, turn it, and then remove it. • Is the engine coolant fill level correct?		(See **ENGINE COOLANT LEVEL INSPECTION [MZI 3.7 V6]**.) Go to Step 6.
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		No	Inspect the CHT sensor. Replace if necessary, then go to Step 6. (See **CYLINDER HEAD TEMPERATURE (CHT) SENSOR INSPECTION [MZI 3.7 V6]**.)
5	**INSPECT THERMOSTAT** • Cool down the engine. • Inspect the thermostat. (See **THERMOSTAT INSPECTION [MZI 3.7 V6]**.) • Is the thermostat normal?	Yes	The test is complete. Go to the next step.
		No	Replace the thermostat, then go to the next step. (See **THERMOSTAT REMOVAL/ INSTALLATION [MZI 3.7 V6]**.)
6	**VERIFY TROUBLESHOOTING OF DTC P0128:00 HAS BEEN COMPLETED** • Verify that all disconnected connectors are reconnected. • Switch the ignition to ON (Engine off). • Clear the DTC from the PCM memory using the M-MDS. • Cool down the engine and radiator. • Start the engine and run it until the	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See **PCM REMOVAL/ INSTALLATION [MZI 3.7 V6]**.) Go to the next step.
		No	Go to the next step.

	engine temperature stabilizes. • Retrieve DTCs using the M-MDS. • Is the PENDING CODE for this DTC present?		
7	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See **AFTER REPAIR PROCEDURE [MZI 3.7 V6]**.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZI 3.7 V6]**.)
		No	Troubleshooting completed.

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