

2012 - Mazda6 - Engine

DTC P0116:00 [MZI 3.7 V6]

DTC P0116:00	CHT sensor circuit range/performance
DETECTION CONDITION	• P0116:00 indicates the engine coolant temperature rationality test has failed. This DTC indicates that the CHT value is higher than the calibrated value and could prevent 1 or more OBD monitors from completing. The PCM runs this logic after an engine off and a calibrated soak period (typically 6 hours). This soak period allows the IAT and the CHT to stabilize and not differ by more than a calibrated value. DTC P0116:00 is set when all of the following conditions are met: ▪ The CHT at engine start exceeds the IAT at engine start by more than a calibrated value, typically 17 °C { 31 °F} . ▪ The CHT exceeds a calibrated value, typically 107 °C { 225 °F} . ▪ The fuel system, heated oxygen and misfire monitors have not completed. ▪ The calibrated time to set DTC P0116:00 has expired.
POSSIBLE CAUSE	• Cooling system malfunction • CHT sensor malfunction • PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED	YesGo to the next step.
	• Has FREEZE FRAME DATA been recorded?	NoRecord FREEZE FRAME DATA on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR	YesPerform repair or diagnosis according to the

	INFORMATION AVAILABILITY • Verify related Service Bulletins and/or on-line repair information availability. • Is any related Service Bulletins available?	available Service Bulletins. If the vehicle is not repaired, go to the next step.	
		No	Go to the next step.
3	VERIFY RELATED PENDING CODE OR STORED DTC • Verify the related PENDING CODE or stored DTCs. • Are other DTCs present?	Yes	Go to appropriate DTC inspection. (See DTC TABLE [MZI 3.7 V6] .)
		No	Go to the next step.
4	INSPECT CHT SENSOR • Inspect the CHT sensor. (See CYLINDER HEAD TEMPERATURE (CHT) SENSOR INSPECTION [MZI 3.7 V6] .) • Are there any malfunction?	Yes	Replace the CHT sensor, then go to the next step. (See CYLINDER HEAD TEMPERATURE (CHT) SENSOR REMOVAL/ INSTALLATION [MZI 3.7 V6] .)
		No	Go to the next step.
5	VERIFY TROUBLESHOOTING OF DTC P0116:00 HAS BEEN COMPLETED • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See OBD-II DRIVE MODE [MZI 3.7 V6] .) • Carry out the OBD-II Drive Mode or KOER self-test. (See KOEO/ KOER SELF TEST [MZI 3.7 V6] .) • Retrieve the DTCs using the M-MDS. • 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 [MZI 3.7 V6] .) Go to the next step.
		No	Go to the next step.
6	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE".	Yes	Go to the applicable DTC inspection. (See DTC TABLE [MZI 3.7 V6] .)
		No	Troubleshooting completed.

	(See AFTER REPAIR PROCEDURE [MZI 3.7 V6] .)		
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- Are any DTCs present?

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POSSIBLE CAUSE	- Cooling system malfunction - CHT sensor malfunction - PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED	Yes Go to the next step.
	Has FREEZE FRAME DATA been recorded?	No Record FREEZE FRAME DATA on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR	Yes Perform repair or diagnosis according to the

	INFORMATION AVAILABILITY - Verify related Service Bulletins and/or on-line repair information availability. - Is any related Service Bulletins available?	available Service Bulletins. If the vehicle is not repaired, go to the next step.	
3	VERIFY RELATED PENDING CODE OR STORED DTC - Verify the related PENDING CODE or stored DTCs. - Are other DTCs present?	Yes Go to appropriate DTC inspection. (See DTC TABLE [MZI 3.7 V6] .)	
		No Go to the next step.	
4	INSPECT CHT SENSOR - Inspect the CHT sensor. (See CYLINDER HEAD TEMPERATURE (CHT) SENSOR INSPECTION [MZI 3.7 V6] .) - Are there any malfunction?	Yes Replace the CHT sensor, then go to the next step. (See CYLINDER HEAD TEMPERATURE (CHT) SENSOR REMOVAL/ INSTALLATION [MZI 3.7 V6] .)	
		No Go to the next step.	
5	VERIFY TROUBLESHOOTING OF DTC P0116:00 HAS BEEN COMPLETED - Make sure to reconnect all disconnected connectors. - Clear the DTC from the PCM memory using the M-MDS. (See OBD-II DRIVE MODE [MZI 3.7 V6] .) - Carry out the OBD-II Drive Mode or KOER self-test. (See KOEO/ KOER SELF TEST [MZI 3.7 V6] .) - Retrieve the DTCs using the M-MDS. - 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 [MZI 3.7 V6] .) Go to the next step.	
		No Go to the next step.	
6	VERIFY AFTER REPAIR PROCEDURE Perform the "AFTER REPAIR PROCEDURE".	Yes Go to the applicable DTC inspection. (See DTC TABLE [MZI 3.7 V6] .)	
		No Troubleshooting completed.	

	(See AFTER REPAIR PROCEDURE [MZI 3.7 V6] .)		
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