DTC P007D:00 [SKYACTIV-D 2.2]

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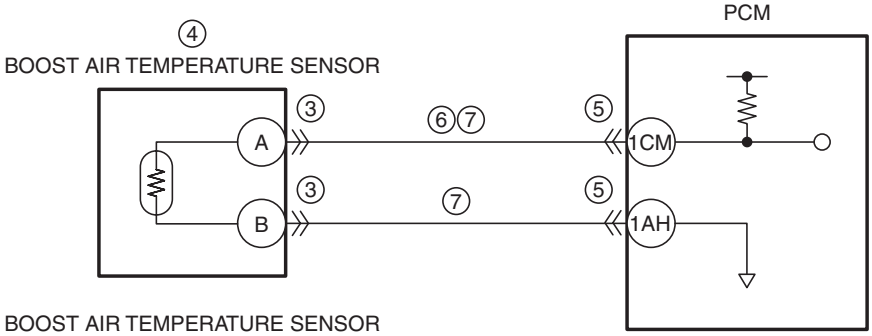
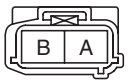
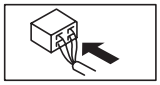
DTC P007D:00	Boost air temperature sensor circuit high input
DETECTION CONDITION	• The PCM monitors the input signal from the boost air temperature sensor. If the voltage from the boost air temperature sensor is **above 4.90 V** for **1 s**, the PCM determines that the boost air temperature sensor circuit has a malfunction. **MONITORING CONDITIONS** — Battery voltage: **8—20 V** **Diagnostic support note** • This is a continuous monitor (CCM). • The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• PCM restricts engine torque. • Inhibits the two-stage turbo control. • Inhibits the EGR control. • Inhibits the diesel particulate filter regeneration control. • Inhibits engine-stop by operating the i-stop function. • PCM restricts engine-transaxle integration control.
POSSIBLE CAUSE	• Intake air temperature is too low • Boost air temperature sensor connector or terminals malfunction • Boost air temperature sensor malfunction • PCM connector or terminals malfunction • Short to power supply in wiring harness between boost air temperature sensor terminal A and PCM terminal 1CM • Open circuit in wiring harness between the following terminals: — Boost air temperature sensor terminal A—PCM terminal 1CM — Boost air temperature sensor terminal B—PCM terminal 1AH • PCM malfunction

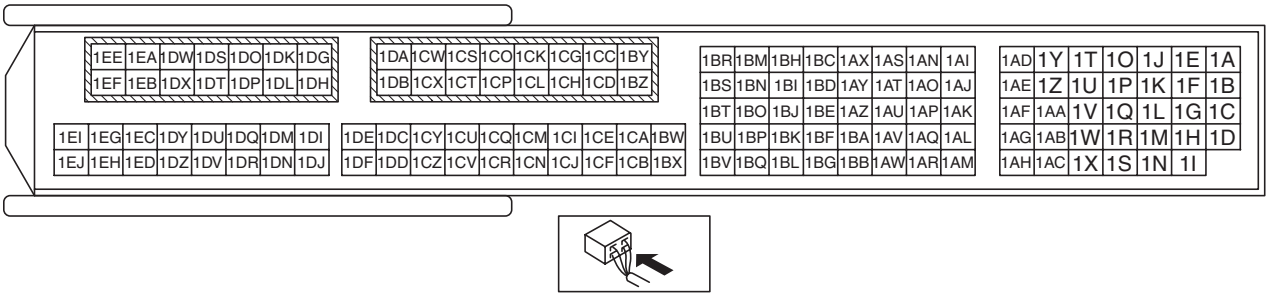


BOOST AIR TEMPERATURE SENSOR WIRING HARNESS-SIDE CONNECTOR





PCM WIRING HARNESS-SIDE CONNECTOR



Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order, then go to the next step.
2	**VERIFY RELATED SERVICE INFORMATION AVAILABILITY** • Verify related Service Information availability. • Is any related Service Information available?	Yes	Perform repair or diagnosis according to the available Service Information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT BOOST AIR TEMPERATURE SENSOR CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the boost air temperature sensor connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 8.
		No	Go to the next step.
4	**INSPECT BOOST AIR TEMPERATURE SENSOR** • Inspect the boost air temperature sensor. (See BOOST AIR TEMPERATURE SENSOR INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the boost air temperature sensor, then go to Step 8. (See BOOST AIR TEMPERATURE SENSOR REMOVAL/ INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
5	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 8.
		No	Go to the next step.
6	**INSPECT BOOST AIR TEMPERATURE SENSOR CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the boost air temperature sensor and PCM connectors are disconnected. • Switch the ignition ON (engine off). • Measure the voltage at the boost air temperature sensor terminal A (wiring harness-side). • Is the voltage **0 V**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to power supply, then go to Step 8.
7	**INSPECT BOOST AIR TEMPERATURE SENSOR CIRCUIT FOR OPEN CIRCUIT** • Verify that the boost air temperature sensor and PCM connectors are disconnected. • Switch the ignition off. • Inspect for continuity between the following terminals (wiring harness-side): — Boost air temperature sensor terminal A— PCM terminal 1CM — Boost air temperature sensor terminal B— PCM terminal 1AH • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
8	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].) • Is the same DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Go to the next step.
		No	Go to the next step.

STEP	INSPECTION		ACTION
9	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	DTC troubleshooting completed.