

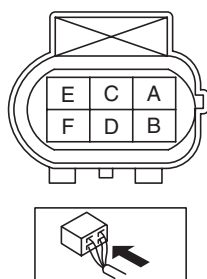
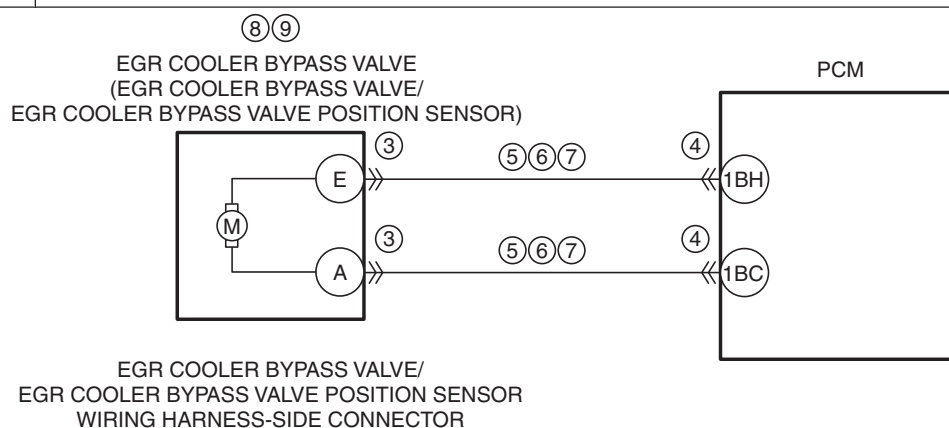
DTC P245B:00 [SKYACTIV-D 2.2]

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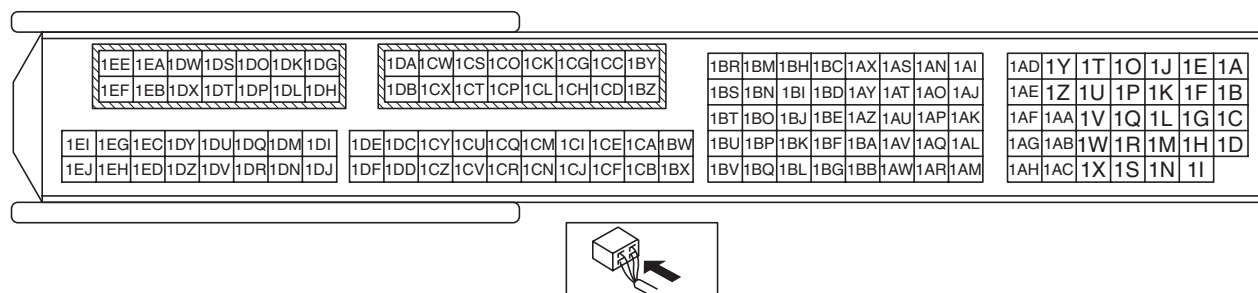
DTC P245B:00	EGR cooler bypass valve control: duty signal malfunction
DETECTION CONDITION	<ul style="list-style-type: none"> • If the duty value is 95 % for 2 s, the PCM determines that there is a EGR cooler bypass valve actuator control system range/performance problem. <p>Diagnostic support note</p> <ul style="list-style-type: none"> • This is a continuous monitor (CCM). • The check engine light 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. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	<ul style="list-style-type: none"> • Inhibits the two-stage turbo control. • Inhibits the EGR control. • Inhibits engine-stop by operating the i-stop function. • PCM restricts engine-transaxle integration control.
POSSIBLE CAUSE	<ul style="list-style-type: none"> • EGR cooler bypass valve/EGR cooler bypass valve position sensor connector or terminals malfunction • PCM connector or terminals malfunction • Open circuit in wiring harness between the following terminals: <ul style="list-style-type: none"> — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal E—PCM terminal 1BH — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal A—PCM terminal 1BC • Short to ground in wiring harness between the following terminals: <ul style="list-style-type: none"> — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal E—PCM terminal 1BH — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal A—PCM terminal 1BC • Short to power supply in wiring harness between the following terminals: <ul style="list-style-type: none"> — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal E—PCM terminal 1BH — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal A—PCM terminal 1BC • EGR cooler bypass valve position sensor malfunction • EGR cooler bypass valve malfunction • PCM malfunction

DTC P245B:
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EGR cooler bypass valve control: duty signal malfunction



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 EGR COOLER BYPASS VALVE/EGR COOLER BYPASS VALVE POSITION SENSOR CONNECTOR CONDITION • Switch the ignition off. • Disconnect the EGR cooler bypass valve/EGR cooler bypass valve position 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 10.
		No	Go to the next step.
4	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 10.
		No	Go to the next step.

STEP	INSPECTION	ACTION	
5	INSPECT EGR COOLER BYPASS VALVE CIRCUIT FOR OPEN CIRCUIT <ul style="list-style-type: none"> • Verify that the EGR cooler bypass valve/EGR cooler bypass valve position sensor and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal E—PCM terminal 1BH — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal A—PCM terminal 1BC • Is there continuity? 	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 10.
6	INSPECT EGR COOLER BYPASS VALVE POSITION SENSOR CIRCUIT FOR SHORT TO GROUND <ul style="list-style-type: none"> • Verify that the EGR cooler bypass valve/EGR cooler bypass valve position sensor and PCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: <ul style="list-style-type: none"> — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal E — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal A • Is there continuity? 	Yes	Repair or replace the wiring harness for a possible short to ground, then go to Step 10.
		No	Go to the next step.
7	INSPECT EGR COOLER BYPASS VALVE CIRCUIT FOR SHORT TO POWER SUPPLY <ul style="list-style-type: none"> • Verify that the EGR cooler bypass valve/EGR cooler bypass valve position sensor and PCM connectors are disconnected. • Switch the ignition ON (engine off). • Measure the voltage at the following terminals (wiring harness-side): <ul style="list-style-type: none"> — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal E — EGR cooler bypass valve/EGR cooler bypass valve position sensor terminal A • 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 10.
8	INSPECT EGR COOLER BYPASS VALVE POSITION SENSOR <ul style="list-style-type: none"> • Reconnect all disconnected connectors. • Inspect the EGR cooler bypass valve position sensor. (See EGR COOLER BYPASS VALVE POSITION SENSOR INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction? 	Yes	Replace the EGR cooler bypass valve, then go to Step 10. (See EGR COOLER BYPASS VALVE REMOVAL/ INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.
9	INSPECT EGR COOLER BYPASS VALVE <ul style="list-style-type: none"> • Inspect the EGR cooler bypass valve. (See EGR COOLER BYPASS VALVE INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction? 	Yes	Replace the EGR cooler bypass valve, then go to the next step. (See EGR COOLER BYPASS VALVE REMOVAL/ INSTALLATION [SKYACTIV-D 2.2].)
		No	Go to the next step.

STEP	INSPECTION		ACTION
10	VERIFY DTC TROUBLESHOOTING COMPLETED <ul style="list-style-type: none"> • 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 Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) • 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 [SKYACTIV-D 2.2].) Go to the next step.
		No	Go to the next step.
11	VERIFY AFTER REPAIR PROCEDURE <ul style="list-style-type: none"> • 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.