

DTC P0401:00 [SKYACTIV-D 2.2]

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DTC P0401:00	EGR flow insufficient detected
DETECTION CONDITION	<ul style="list-style-type: none"> When the following condition is met, the EGR volume is lower than the specification for the target value for a continuous 8 s: MONITORING CONDITIONS <ul style="list-style-type: none"> During EGR control Engine speed: 1,300—2,000 rpm Fuel injection amount: 15—45 mm³/stroke Diagnostic support note <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 engine-stop by operating the i-stop function.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Intake shutter valve malfunction EGR valve malfunction (stuck close) Air suction in intake air system between turbocharger and intake manifold EGR system malfunction (EGR piping restriction) PCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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	VERIFY RELATED PENDING CODE AND/OR DTC <ul style="list-style-type: none"> Switch the ignition off, then ON (engine off). Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) Are any other PENDING CODEs and/or DTCs present? 	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.
4	INSPECT INTAKE SHUTTER VALVE CONTROL SYSTEM OPERATION <ul style="list-style-type: none"> Perform the Intake Shutter Valve Operation Inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [SKYACTIV-D 2.2].) Is there any malfunction? 	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 8.
		No	Go to the next step.
5	INSPECT EGR VALVE CONTROL SYSTEM OPERATION <ul style="list-style-type: none"> Perform the EGR Valve Operation Inspection. (See ENGINE CONTROL SYSTEM OPERATION INSPECTION [SKYACTIV-D 2.2].) Is there any malfunction? 	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 8.
		No	Go to the next step.

STEP	INSPECTION	ACTION
6	INSPECT INTAKE AIR SYSTEM FOR AIR SUCTION <ul style="list-style-type: none"> Inspect for air leakage at the following: <ul style="list-style-type: none"> — Around connection of turbocharger and intake manifold <p>Note</p> <ul style="list-style-type: none"> Engine speed may change when rust penetrating agent is sprayed on the air suction area. <p>• Is there any malfunction?</p>	Yes Repair or replace the malfunctioning part according to the inspection results, then go to Step 8.
		No Go to the next step.
7	INSPECT FOR RESTRICTION IN EGR PASSAGE <ul style="list-style-type: none"> Switch the ignition off. Remove the EGR valve. (See EGR VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Visually inspect the EGR passage for restriction and the gasket correctly installed. Is there any malfunction? 	Yes Repair or replace the malfunctioning part according to the inspection results, then go to the next step. (If there is restriction caused by soot in the EGR valve, inspect around the EGR piping and clean or replace it.)
		No Go to the next step.
8	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].) Start the engine and warm it up completely. <p>Caution</p> <ul style="list-style-type: none"> While performing this step, always operate the vehicle in a safe and lawful manner. When the M-MDS is used to observe monitor system status while driving, be sure to have another technician with you, or record the data in the M-MDS using the PID/DATA MONITOR AND RECORD capturing function and inspect later. <ul style="list-style-type: none"> Drive the vehicle under the FREEZE FRAME DATA (Mode 2)/snapshot data condition. 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.
9	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.