

NO.26 ENGINE NOISE [SKYACTIV-D 2.2]

id0103g1899300

26	ENGINE NOISE
DESCRIPTION	<ul style="list-style-type: none"> Engine noise from under bonnet.
POSSIBLE CAUSE	<ul style="list-style-type: none"> PCM DTC is stored. Air cleaner malfunction (deformity or non-genuine part installed) Intake air system malfunction (air suction, leakage, perforation) Exhaust gas leakage from exhaust system Slippage of belts for engine accessories Turbocharger malfunction (interference with housing of turbo rotational mechanism) Mechanical (engine) malfunction <ul style="list-style-type: none"> Improper engine compression Improper valve timing <p>Warning</p> <ul style="list-style-type: none"> The following troubleshooting flow chart contains the fuel system diagnosis and repair procedures. Read the following warnings before performing the fuel system services: <ul style="list-style-type: none"> Always keep sparks and flames away from fuel. Fuel can be easily ignited which could cause serious injury or death, and damage to equipment. Fuel line spills and leakage from the pressurized fuel system are dangerous. Fuel can ignite and cause serious injury or death, and damage to property and facilities. Fuel can also irritate skin and eyes. To prevent this, always complete the "Fuel Line Safety Procedure", while referring to the "BEFORE SERVICE PRECAUTION". (See BEFORE SERVICE PRECAUTION [SKYACTIV-D 2.2].) Fuel is highly flammable and dangerous. Fuel line spills and leakage can cause serious injury or death, and damage to equipment. When installing the fuel hose, always refer to the "AFTER SERVICE PRECAUTION" and perform the "Fuel Hose Installation Procedure". (See AFTER SERVICE PRECAUTION [SKYACTIV-D 2.2].)

Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	VERIFY PCM DTC <ul style="list-style-type: none"> Retrieve PCM DTCs using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) Are any DTCs present? 	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.
2	INSPECT AIR CLEANER FOR DEFORMITY OR NON-GENUINE AIR CLEANER INSTALLATION <ul style="list-style-type: none"> Remove the air cleaner. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Verify the symptom. Does the symptom disappear? 	Yes	Explain to the customer that a malfunction occurred due to a deformed air cleaner or installation of a non-genuine air cleaner. • Go to Step 9.
		No	Install the removed parts correctly, then go to the next step. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
3	INSPECT INTAKE AIR SYSTEM <ul style="list-style-type: none"> Visually inspect for air suction, leakage and perforation in the intake air system. Is the intake air system normal? 	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results, then go to Step 9.
4	INSPECT EXHAUST SYSTEM FOR LEAKAGE <ul style="list-style-type: none"> Visually inspect for exhaust gas leakage from the exhaust system. Is the exhaust system normal? 	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results, then go to Step 9.
5	INSPECT SLIPPAGE OF BELTS FOR ENGINE ACCESSORIES <ul style="list-style-type: none"> Inspect slippage of the belts for the engine accessories. (See DRIVE BELT INSPECTION [SKYACTIV-D 2.2].) (See DRIVE BELT AUTO TENSIONER INSPECTION [SKYACTIV-D 2.2].) Are the belts for the engine accessories normal? 	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results, then go to Step 9.

STEP	INSPECTION	RESULTS	ACTION
6	INSPECT TURBOCHARGER <ul style="list-style-type: none"> Inspect the turbocharger. (See TURBOCHARGER INSPECTION [SKYACTIV-D 2.2].) Is the turbocharger normal? 	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results, then go to Step 9.
7	INSPECT ENGINE COMPRESSION <ul style="list-style-type: none"> Inspect the engine compression. (See COMPRESSION INSPECTION [SKYACTIV-D 2.2].) Are compression pressures within specification? Specification: <ul style="list-style-type: none"> Compression <ul style="list-style-type: none"> Standard: 2255 kPa {22.99 kgf/cm², 327.1 psi} (180 rpm) Minimum: 1804 kPa {18.40 kgf/cm², 261.6 psi} (180 rpm) Maximum difference between cylinders: 147 kPa {1.50 kgf/cm², 21.3 psi} (180 rpm) 	Yes	Go to Step 9.
		No	Go to the next step.
8	INSPECT FOR MALFUNCTION DUE TO DEVIATED VALVE TIMING <ul style="list-style-type: none"> Inspect the valve timing (timing chain installation condition). (See TIMING CHAIN REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Is the valve timing normal? 	Yes	Go to the next step.
		No	Adjust the valve timing to the correct timing, then go to the next step.
9	Verify the test results. <ul style="list-style-type: none"> If normal, return to the diagnostic index to service any additional symptoms. (See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].) If a malfunction remains, inspect the related Service Information and perform the repair or diagnosis. <ul style="list-style-type: none"> If the vehicle is repaired, troubleshooting is completed. If the vehicle is not repaired or additional diagnostic information is not available, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) 		