

## QUICK DIAGNOSTIC CHART [SKYACTIV-D 2.2]

id0103q1052800

×: Applicable  
—: Not applicable

[illegible]

Troubleshooting item		Intake air system									
		Intake air system part		Air cleaner			Intake shutter valve		Compressor (small)	Compressor (large)	Compressor bypass solenoid valve
		Air suction / Leakage / Perforation	Clogging	Deformation	Air cleaner element restricted	Non-genuine part installation	Does not fully close (Does not conform to target value)	Clogging, sticking	Improper operation	Improper operation	Improper operation
15	Low idle/stalls during deceleration	—	—	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	—	×	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	×	—	—	—	—	—
20	Emission compliance	—	—	—	—	×	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—
26	Engine noise	×	—	×	—	×	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)									

×: Applicable  
—: Not applicable

[illegible]

Troubleshooting item		Intake air system		Exhaust system						
		Improper installation of turbocharger	Interference with housing of turbo rotational mechanism	Each exhaust system part		Small-type turboc harger	Large-type turboc harger	Regulating solenoi d valve	Waste gate solenoi d valve	EGR cooler bypass valve
				Leakage	Clogging (mostly in oxidation catalytic converter for diesel, diesel particulate filter)	Improper operation	Improper operation	Improper operation	Improper operation	Improper operation
17	Lack/loss of power-acceleration/cruise	—	—	—	—	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	x	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—
26	Engine noise	—	x	x	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)								

×: Applicable  
—: Not applicable

[illegible]

[illegible]



Troubleshooting item		Fuel system								
		Sedimentor switch		Fuel warmer	Jet pump (4WD)	Supply pump	Suction control valve		Fuel pressure relief valve	
		Always on	Always off	Improper operation	Improper operation	Poor discharge amount	Low adjusted pressure value	High adjusted pressure value	Low adjusted pressure value	High adjusted pressure value
10	Hard to start/long crank/erratic start/erratic crank	—	—	—	×	—	—	—	—	—
11	Engine stalls-after start/at idle	—	—	—	×	—	—	—	—	—
12	Cranks normally but will not start	—	—	—	×	—	—	—	—	—
13	Engine runs rough/rolling idle	—	—	—	×	—	—	—	—	—
14	Fast idle/runs on	—	—	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	—	—	—	×	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	×	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	×	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	×	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)								

×: Applicable  
—: Not applicable

Troubleshooting item		Fuel system									
		Fuel check valve	Fuel feed valve	Fuel system /Fuel injection	Fuel injector						
		Improper operation	Improper operation	Injection system malfunction (such as leakage)	Open circuit in drive circuit	Short circuit in drive circuit	Leakage	Restricted	Always open	Always close	QR code mismatch
1	Blown fuses	—	—	—	—	—	—	—	—	—	—
2	Check engine light illuminates	x	x	—	x	x	x	x	x	x	x
3	Diesel particulate filter indicator light illuminates frequently/message “Soot Accumulation in DPF too high” is frequently indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—
4	Diesel particulate filter indicator light flashes/ message “DPF Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—
5	Wrench indicator light illuminates/message “Drain Water from Fuel Filter” is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—
6	Master warning light illuminates	—	—	—	—	—	—	—	—	—	—
7	Charging system warning light illuminates/message “Charging System Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—
8	Engine oil warning light illuminates/message “Engine Oil Pressure Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—	—	—	—	—
10	Hard to start/long crank/ erratic start/erratic crank	x	x	x	—	—	—	—	—	—	—
11	Engine stalls-after start/at idle	x	x	x	—	—	—	—	—	—	—
12	Cranks normally but will not start	x	x	x	—	—	—	—	—	—	—
13	Engine runs rough/rolling idle	x	x	x	—	—	—	—	—	—	—
14	Fast idle/runs on	x	x	x	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	x	x	x	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	x	x	x	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	x	x	x	—	—	—	—	—	—	—



Troubleshooting item		Fuel system									
		Fuel check valve	Fuel feed valve	Fuel system /Fuel injection system malfunction (such as leakage)	Fuel injector						
		Improper operation	Improper operation		Open circuit in drive circuit	Short circuit in drive circuit	Leakage	Restricted	Always open	Always close	QR code mismatch
18	Knocking/pinging-acceleration/cruise	x	x	x	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—	—
20	Emission compliance	x	x	x	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	x	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	x	x	x	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)									

×: Applicable  
—: Not applicable

Troubleshooting item		Fuel system			Control system					
		Fuel injector	Fuel		PCM				Main relay	
		Injection amount correction miss-match	Low cetane value	Inferior constituent	No initiation	No configuration	No learning	Open circuit in back-up power supply circuit of PCM	Always off	Always on
1	Blown fuses	—	—	—	—	—	—	—	—	—
2	Check engine light illuminates	—	—	—	—	x	—	x	—	—
3	Diesel particulate filter indicator light illuminates frequently/message “Soot Accumulation in DPF too high” is frequently indicated in TFT LCD	—	—	x	—	—	—	—	—	—

[illegible]



[illegible]



Troubleshooting item		Control system (PCM input signal)											
		ECT sensor			IAT sensor No.1			Boost air temperature sensor			IAT sensor No.2		
		High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit
10	Hard to start/long crank/erratic start/erratic crank	x	x	—	—	—	—	—	—	—	—	—	—
11	Engine stalls-after start/at idle	x	x	—	—	—	—	—	—	—	—	—	—
12	Cranks normally but will not start	x	x	—	—	—	—	—	—	—	—	—	—
13	Engine runs rough/rolling idle	x	x	—	—	—	—	—	—	—	—	—	—
14	Fast idle/runs on	—	—	—	—	—	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	x	x	—	—	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	x	x	—	—	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	x	x	—	—	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	x	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	x	—	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	x	x	—	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)											

x: Applicable  
 —: Not applicable

[illegible]





Troubleshooting item		Control system (PCM input signal)											
		Exhaust gas temperature sensor No.1			Exhaust gas pressure sensor No. 1			Engine oil temperature sensor			Engine oil pressure sensor		
		High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit
5	Wrench indicator light illuminates/message "Drain Water from Fuel Filter" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—	—
6	Master warning light illuminates	—	—	—	—	—	—	—	—	—	×	—	—
7	Charging system warning light illuminates/message "Charging System Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—	—
8	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—	—	—	—	—	—	—
10	Hard to start/long crank/erratic start/erratic crank	—	—	—	—	—	—	—	—	—	—	—	—
11	Engine stalls-after start/at idle	—	—	—	—	—	—	—	—	—	—	—	—
12	Cranks normally but will not start	—	—	—	—	—	—	—	—	—	—	—	—
13	Engine runs rough/rolling idle	—	—	—	—	×	—	—	—	—	—	—	—
14	Fast idle/runs on	—	—	—	—	—	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	—	—	—	—	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	×	—	—	×	×	—	—	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	×	—	—	—	—	—	—	—



Troubleshooting item		Control system (PCM input signal)											
		Exhaust gas temperature sensor No.2			Exhaust gas temperature sensor No.3			Exhaust gas pressure sensor No. 2			A/F sensor		
		High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit
8	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—	—	—	—	—	—	—
10	Hard to start/long crank/erratic start/erratic crank	—	—	—	—	—	—	—	—	—	—	—	—
11	Engine stalls-after start/at idle	—	—	—	—	—	—	—	—	—	—	—	—
12	Cranks normally but will not start	—	—	—	—	—	—	—	—	—	—	—	—
13	Engine runs rough/rolling idle	—	—	—	—	—	—	—	—	—	×	×	×
14	Fast idle/runs on	—	—	—	—	—	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	—	—	—	—	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	—	—	—	—	—	—	×	×	×
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—	—	×	×	×
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)											

×: Applicable  
—: Not applicable

Troubleshooting item		Control system (PCM input signal)											
		BARO sensor (built-into PCM)			Regulating valve position sensor		EGR cooler bypass valve position sensor		EGR valve position sensor		Generator output current signal		
		High input	Low input	Open or short circuit in signal circuit	Errati c signal input	Open or short circuit in signal circuit	Errati c signal input	Open or short circuit in signal circuit	Errati c signal input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit
1	Blown fuses	—	—	—	—	—	—	—	—	—	—	—	—
2	Check engine light illuminates	—	—	x	x	x	x	x	x	x	—	—	—
3	Diesel particulate filter indicator light illuminates frequently/message “Soot Accumulation in DPF too high” is frequently indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—	—
4	Diesel particulate filter indicator light flashes/ message “DPF Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—	—
5	Wrench indicator light illuminates/message “Drain Water from Fuel Filter” is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—	—
6	Master warning light illuminates	—	—	—	—	—	—	—	—	—	—	—	—
7	Charging system warning light illuminates/message “Charging System Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	x	—	x
8	Engine oil warning light illuminates/message “Engine Oil Pressure Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—	—	—	—	—	—	—
10	Hard to start/long crank/ erratic start/erratic crank	—	—	—	—	—	—	—	—	—	—	—	—
11	Engine stalls-after start/at idle	—	—	—	—	—	—	—	—	—	—	—	—
12	Cranks normally but will not start	—	—	—	—	—	—	—	—	—	—	—	—
13	Engine runs rough/rolling idle	x	x	—	—	—	—	—	—	—	—	—	—
14	Fast idle/runs on	—	—	—	—	—	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	—	—	—	—	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—	—	—	—	—	—	—
17	Lack/loss of power- acceleration/cruise	x	x	—	x	x	—	—	x	x	—	—	—

Troubleshooting item		Control system (PCM input signal)											
		BARO sensor (built-into PCM)			Regulating valve position sensor		EGR cooler bypass valve position sensor		EGR valve position sensor		Generator output current signal		
		High input	Low input	Open or short circuit in signal circuit	Errati c signal input	Open or short circuit in signal circuit	Errati c signal input	Open or short circuit in signal circuit	Errati c signal input	Open or short circuit in signal circuit	High input	Low input	Open or short circuit in signal circuit
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	×	×	—	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)											

×: Applicable  
—: Not applicable

[illegible]

[illegible]



Troubleshooting item		Control system (PCM input signal)				Control system (PCM output signal)						
		Neutral switch (MTX)		Back-up light switch (MTX)		Fan control module control circuit				A/C relay circuit		
		Always on	Always off	Always on	Always off	Open circuit in power supply circuit	Control signal circuit always on	Control signal circuit always off	Open circuit in ground circuit	Open circuit in circuit on coil side	Circuit on switch side constantly on	Circuit on switch side constantly off
7	Charging system warning light illuminates/message "Charging System Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—
8	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—	—	—	—	—	—
10	Hard to start/long crank/erratic start/erratic crank	—	—	—	—	—	—	—	—	—	x	—
11	Engine stalls-after start/at idle	—	—	—	—	—	—	—	—	—	—	—
12	Cranks normally but will not start	—	—	—	—	—	—	—	—	—	—	—
13	Engine runs rough/rolling idle	—	—	—	—	—	—	—	—	—	—	—
14	Fast idle/runs on	—	—	—	—	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	—	—	—	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	—	—	—	—	—	—	x	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	x	—	—	—	x	—
20	Emission compliance	—	—	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	x	—	x	x	—	x	—
23	Cooling system concerns-runs cold	—	—	—	—	—	x	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	x	—	x
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	x	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)										



×: Applicable  
—: Not applicable

[illegible]

Troubleshooting item		Control system (PCM output signal)										
		Generator control signal	Starter relay circuit			Blow-by heater relay circuit			Glow control module control signal			
		Open or short circuit	Open circuit in circuit on coil side	Circuit on switch side constantly on	Circuit on switch side constantly off	Open circuit in circuit on coil side	Circuit on switch side constantly on	Circuit on switch side constantly off	Open circuit in power supply circuit	Control signal circuit constantly energizes (FET malfunction)	Control signal circuit always off	Open circuit in ground circuit
15	Low idle/stalls during deceleration	—	—	—	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	—	—	—	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)										

×: Applicable  
—: Not applicable

Troubleshooting item		Control system (PCM output signal)		Mechanical								
		A/F sensor heater		Each engine internal part								
		Always on	Always off	Large mechanical resistance	Deviation in valve timing	High compression pressure	No compression in specific cylinder	No compression in all cylinders	Bad compression in specific cylinder	Bad compression in all cylinders	Oil working up or down	Piston ring malfunction
1	Blown fuses	—	—	—	—	—	—	—	—	—	—	—
2	Check engine light illuminates	x	x	—	—	—	—	—	—	—	—	—
3	Diesel particulate filter indicator light illuminates frequently/message "Soot Accumulation in DPF too high" is frequently indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—
4	Diesel particulate filter indicator light flashes/message "DPF Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—
5	Wrench indicator light illuminates/message "Drain Water from Fuel Filter" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—
6	Master warning light illuminates	—	—	—	—	—	—	—	—	—	—	—
7	Charging system warning light illuminates/message "Charging System Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—
8	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—	—	—	—	—	—
10	Hard to start/long crank/erratic start/erratic crank	—	—	x	x	x	x	—	x	x	x	—
11	Engine stalls-after start/at idle	—	—	x	x	x	x	—	x	x	x	—
12	Cranks normally but will not start	—	—	x	x	x	x	x	x	x	x	—
13	Engine runs rough/rolling idle	—	—	x	x	x	x	—	x	x	x	—
14	Fast idle/runs on	—	—	—	—	—	—	—	—	—	x	—
15	Low idle/stalls during deceleration	—	—	x	x	x	x	—	x	x	x	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	x	x	x	x	—	x	x	x	—
17	Lack/loss of power-acceleration/cruise	—	—	x	x	x	x	—	x	x	x	—

Troubleshooting item		Control system (PCM output signal)		Mechanical								
		A/F sensor heater		Each engine internal part								
		Always on	Always off	Large mechanical resistance	Deviation in valve timing	High compression pressure	No compression in specific cylinder	No compression in all cylinders	Bad compression in specific cylinder	Bad compression in all cylinders	Oil working up or down	Piston ring malfunction
18	Knocking/pinging-acceleration/cruise	—	—	×	×	×	×	—	×	×	×	—
19	Poor fuel economy	—	—	×	×	×	×	—	×	×	×	—
20	Emission compliance	—	—	×	×	×	×	—	×	×	×	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—	×
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	×	×	×	—	×	×	—	—
27	Vibration concerns (engine)	—	—	×	×	×	×	—	×	×	×	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)										

×: Applicable  
—: Not applicable

[illegible]

[illegible]



Troubleshooting item		Lubrication system			Cooling system					Charging system	
		Engine oil			Engine coolant passage		Thermostat		Cooling fan motor	Battery	
		Leakage	Clogging	Improper level	Restricted	Leakage	Always open	Always close	Improper operation	Does not charge	No discharge (deterioration)
7	Charging system warning light illuminates/message "Charging System Inspection Required" is indicated in TFT LCD	—	—	—	—	—	—	—	—	×	×
8	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD	×	×	×	—	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—	—	—	×	×
10	Hard to start/long crank/erratic start/erratic crank	—	—	—	—	—	—	—	—	—	—
11	Engine stalls-after start/at idle	—	—	—	—	—	—	—	—	—	—
12	Cranks normally but will not start	—	—	—	—	—	—	—	—	—	—
13	Engine runs rough/rolling idle	—	—	—	—	—	—	—	—	—	—
14	Fast idle/runs on	—	—	—	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	—	—	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	—	—	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	×	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	×	×	—	×	×	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	×	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)									

×: Applicable  
—: Not applicable

[illegible]



Troubleshooting item		Charging system							Emission system	ATX	
		Generator			Starter		Glow plug		Catalytic converter (diesel particulate filter)	ATF	
		Low power generation voltage	No power generation	High power generation	Open/short circuit in drive circuit	Internal malfunction	Always off	Always on	Deterioration or loss	Oil cooler restriction	Lack of ATF
17	Lack/loss of power-acceleration/cruise	—	—	—	—	—	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	×	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)									

×: Applicable  
—: Not applicable

Troubleshooting item		ATX			Other						
		Automatic transaxle			Engine mount	Instrument cluster	Brake	Tire	Vehicle electric devices		
		TCC non-operation	Constant lockup	Abnormal shift point	Looseness	Improper operation	Drag	Low air pressure	Remote transmitter left in vehicle cabin	Large amount of parasitic draw	Large power consumption
1	Blown fuses	—	—	—	—	—	—	—	—	—	—
2	Check engine light illuminates	—	—	—	—	×	—	—	—	—	—

[illegible]

Troubleshooting item		ATX			Other						
		Automatic transaxle			Engine mount	Instrument cluster	Brake	Tire	Vehicle electric devices		
		TCC non-operation	Constant lockup	Abnormal shift point	Looseness	Improper operation	Drag	Low air pressure	Remote transmitter left in vehicle cabin	Large amount of parasitic draw	Large power consumption
15	Low idle/stalls during deceleration	—	x	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	x	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	x	—	x	—	—	x	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—	—	—
19	Poor fuel economy	x	—	x	—	—	x	x	—	—	—
20	Emission compliance	—	—	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	x	x	x	x	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	x	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)									

x: Applicable  
—: Not applicable

[illegible]



[illegible]

Troubleshooting item		i-stop								
		False detection of driver-side buckle switch		Instrument cluster malfunction	Number of times i-stop function operates exceeds assured operation amount of components	Ambient temperature sensor	Cabin temperature sensor	Solar radiation sensor	Driver-side air mix actuator malfunction	Driver-side air mix actuator position sensor
		Stuck off	Stuck on			Erratic signal input	Erratic signal input	Erratic signal input		Erratic signal input
21	High oil consumption/leakage	—	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)								

×: Applicable  
—: Not applicable

Troubleshooting item		i-stop							
		Steering angle sensor	Defroster switch malfunction	Low power brake unit load	Power brake unit vacuum sensor	Heater core temperature sensor malfunction	Battery management system malfunction	Brake fluid pressure sensor (built-into DSC HU/CM)	M position switch malfunction (ATX)
		Erratic signal input			Erratic signal input				Erratic signal input
1	Blown fuses	—	—	—	—	—	—	—	—
2	Check engine light illuminates	—	—	—	—	—	—	—	—
3	Diesel particulate filter indicator light illuminates frequently/message “Soot Accumulation in DPF too high” is frequently indicated in TFT LCD	—	—	—	—	—	—	—	—
4	Diesel particulate filter indicator light flashes/ message “DPF Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—
5	Wrench indicator light illuminates/message “Drain Water from Fuel Filter” is indicated in TFT LCD	—	—	—	—	—	—	—	—

Troubleshooting item		i-stop							
		Steering angle sensor	Defroster switch malfunction	Low power brake unit load	Power brake unit vacuum sensor	Heater core temperature sensor malfunction	Battery management system malfunction	Brake fluid pressure sensor (built-into DSC HU/CM)	M position switch malfunction (ATX)
		Erratic signal input			Erratic signal input				Erratic signal input
6	Master warning light illuminates	—	—	—	—	—	—	—	—
7	Charging system warning light illuminates/message “Charging System Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—
8	Engine oil warning light illuminates/message “Engine Oil Pressure Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—	—	—
10	Hard to start/long crank/erratic start/erratic crank	—	—	—	—	—	—	—	—
11	Engine stalls-after start/at idle	—	—	—	—	—	—	—	—
12	Cranks normally but will not start	—	—	—	—	—	—	—	—
13	Engine runs rough/rolling idle	—	—	—	—	—	—	—	—
14	Fast idle/runs on	—	—	—	—	—	—	—	—
15	Low idle/stalls during deceleration	—	—	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—	—	—
19	Poor fuel economy	—	—	—	—	—	×	—	—
20	Emission compliance	—	—	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)							



×: Applicable  
—: Not applicable

Troubleshooting item		i-stop					
		Low-G (XY) sensor (built-into SAS control module)	TFT sensor (ATX)	Electric AT oil pump malfunction (ATX)	DSC HU/CM malfunction	Generator drive belt wear	Ignition switch input (PCM terminal 2H)
		Erratic signal input	Erratic signal input				Stuck on
1	Blown fuses	—	—	—	—	—	—
2	Check engine light illuminates	—	—	—	—	—	—
3	Diesel particulate filter indicator light illuminates frequently/message “Soot Accumulation in DPF too high” is frequently indicated in TFT LCD	—	—	—	—	—	—
4	Diesel particulate filter indicator light flashes/ message “DPF Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—
5	Wrench indicator light illuminates/message “Drain Water from Fuel Filter” is indicated in TFT LCD	—	—	—	—	—	—
6	Master warning light illuminates	—	—	—	—	—	—
7	Charging system warning light illuminates/message “Charging System Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—
8	Engine oil warning light illuminates/message “Engine Oil Pressure Inspection Required” is indicated in TFT LCD	—	—	—	—	—	—
9	Will not crank	—	—	—	—	—	—
10	Hard to start/long crank/erratic start/erratic crank	—	—	—	—	—	—
11	Engine stalls-after start/at idle	—	—	—	—	—	—
12	Cranks normally but will not start	—	—	—	—	—	—
13	Engine runs rough/rolling idle	—	—	—	—	—	—
14	Fast idle/runs on	—	—	—	—	—	—
15	Low idle/stalls during deceleration	—	—	—	—	—	—
16	Engine stalls/quits, engine runs rough, misses, buck/jerk, hesitation/stumble, surges	—	—	—	—	—	—
17	Lack/loss of power-acceleration/cruise	—	—	—	—	—	—
18	Knocking/pinging-acceleration/cruise	—	—	—	—	—	—

Troubleshooting item		i-stop					
		Low-G (XY) sensor (built-into SAS control module)	TFT sensor (ATX)	Electric AT oil pump malfunction (ATX)	DSC HU/CM malfunction	Generator drive belt wear	Ignition switch input (PCM terminal 2H)
		Erratic signal input	Erratic signal input				Stuck on
19	Poor fuel economy	—	—	—	—	—	—
20	Emission compliance	—	—	—	—	—	—
21	High oil consumption/leakage	—	—	—	—	—	—
22	Cooling system concerns-overheating	—	—	—	—	—	—
23	Cooling system concerns-runs cold	—	—	—	—	—	—
24	Excessive black smoke	—	—	—	—	—	—
25	Fuel odor (in engine compartment)	—	—	—	—	—	—
26	Engine noise	—	—	—	—	—	—
27	Vibration concerns (engine)	—	—	—	—	—	—
28	A/C does not work sufficiently	—	—	—	—	—	—
29	A/C is always on or A/C compressor runs continuously	—	—	—	—	—	—
i-stop related troubleshooting item		(See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].)					