

QUICK DIAGNOSTIC CHART [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

id0103g3800600

X: Applied

Possible factor			Starter motor malfunction (mechanical or electrical)	Starter circuit including ignition switch is open	Improper engine oil level	Low or dead battery	Charging system malfunction	Improper engine compression	Improper dipstick	Base engine malfunction	Drive plate (ATX) or flywheel (MTX) is seized	Improper tension or damaged drive belts	Improper engine coolant level	Water and anti-freeze mixture is improper	Cooling system malfunction (radiator, hoses, overflow system, thermostat, etc.)	Cooling fan system malfunction
Troubleshooting item																
1	Blown fuses															
2	Check engine light illuminates															
3	Will not crank		X	X		X	X			X	X					
4	Hard to start/long crank/erratic start/erratic crank		X					X		X						
5	Engine stalls	After start/at idle						X								
6	Cranks normally but will not start							X								
7	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD				X				X	X						
8	Engine runs rough/rolling idle							X								
9	Fast idle/runs on															
10	Low idle/stalls during deceleration							X								
11	Engine stalls/quits	Acceleration/cruise						X								
	Engine runs rough	Acceleration/cruise						X								
	Misses	Acceleration/cruise						X								
	Buck/jerk	Acceleration/cruise/deceleration						X								
	Hesitation/stumble	Acceleration						X								
	Surges	Acceleration/cruise						X								
12	Lack/loss of power	Acceleration/cruise						X								
13	Knocking/pinging	Acceleration/cruise						X								X
14	Poor fuel economy							X					X		X	X
15	Emission compliance							X		X					X	
16	High oil consumption/leakage								X	X						
17	Cooling system concerns	Overheating										X	X	X	X	X
18	Cooling system concerns	Runs cold													X	X
19	Exhaust smoke							X		X					X	
20	Fuel odor (in engine compartment)															
21	Engine noise											X				
22	Vibration concerns (engine)															
23	A/C does not work sufficiently															
24	A/C is always on or A/C compressor runs continuously															
25	A/C is not cut off under wide open throttle conditions															
26	Exhaust sulphur smell															
27	Spark plug condition							X								
28	ATX concerns	Upshift/downshift/engagement	See Section 05-03 TRANSMISSION/TRANSAXLE, SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]													

See Section 05-03 TRANSMISSION/TRANSAXLE,
SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]

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X: Applied

Possible factor			Engine or transaxle mounts are improperly installed	Cooling fan or condenser fan seats improper	Fuel quality	Improper engine oil viscosity	Improper valve timing	Oil leakage (internal, turbocharger, external)	Improper oil or fluid level	Coolant leakage (internal, turbocharger, external)	Electric variable valve timing system malfunction	Hydraulic variable valve timing system malfunction	Engine overheating	Air cleaner element clogged or restricted	Air leakage from intake-air system (loose tubes, cracks, gaskets breakage)	Air suction in intake-air system	Intake-air system restriction
Troubleshooting item																	
1	Blown fuses																
2	Check engine light illuminates										X	X					
3	Will not crank																
4	Hard to start/long crank/erratic start/erratic crank				X		X							X	X		X
5	Engine stalls	After start/at idle			X						X	X	X		X		X
6	Crank normally but will not start				X		X						X	X	X		X
7	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD																
8	Engine runs rough/rolling idle				X		X						X		X		X
9	Fast idle/runs on										X	X			X		
10	Low idle/stalls during deceleration						X								X		X
11	Engine stalls/quits	Acceleration/cruise			X		X						X	X			X
	Engine runs rough	Acceleration/cruise			X		X						X	X			X
	Misses	Acceleration/cruise			X		X						X	X			X
	Buck/jerk	Acceleration/cruise/deceleration			X		X						X	X			X
	Hesitation/stumble	Acceleration			X		X						X	X			X
	Surges	Acceleration/cruise			X		X						X	X			X
12	Lack/loss of power	Acceleration/cruise			X		X				X	X	X	X	X		X
13	Knocking/pinging	Acceleration/cruise			X								X		X		
14	Poor fuel economy				X		X							X			
15	Emission compliance				X		X						X	X	X		
16	High oil consumption/leakage					X		X									
17	Cooling system concerns	Overheating								X							
18	Cooling system concerns	Runs cold															
19	Exhaust smoke							X		X				X	X		
20	Fuel odor (in engine compartment)																
21	Engine noise								X								
22	Vibration concerns (engine)		X	X													
23	A/C does not work sufficiently																
24	A/C is always on or A/C compressor runs continuously																
25	A/C is not cut off under wide open throttle conditions																
26	Exhaust sulphur smell				X												
27	Spark plug condition																
28	ATX concerns	Upshift/downshift/engagement	See Section 05-03 TRANSMISSION/TRANSAXLE, SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]														

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X: Applied

Possible factor			Drive-by-wire control system improper operation	Drive-by-wire control system operates with brake override system	Throttle body malfunction	Vacuum leakage (vacuum hose damage, misrouting)	Ignition coil malfunction (e.g. open, short or cracks)	Initial ignition timing misadjustment (CKP and pulse wheel misadjustment)	Spark plug malfunction	Fuel pump (low-pressure side) malfunction (mechanically or electrically)	Pressure regulator (built-into fuel pump unit at fuel tank)	Inadequate fuel pressure (high-pressure side)	Inadequate fuel pressure (low-pressure side)	Fuel line restricted or clogged
Troubleshooting item														
1	Blown fuses													
2	Check engine light illuminates		X											
3	Will not crank													
4	Hard to start/long crank/erratic start/erratic crank		X		X	X	X	X	X	X		X	X	X
5	Engine stalls	After start/at idle	X			X	X			X		X	X	X
6	Crank normally but will not start		X			X	X		X	X		X	X	X
7	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD													
8	Engine runs rough/rolling idle		X			X	X		X	X		X	X	
9	Fast idle/runs on		X		X									
10	Low idle/stalls during deceleration		X			X						X	X	X
11	Engine stalls/quits	Acceleration/cruise	X		X	X			X	X		X	X	X
	Engine runs rough	Acceleration/cruise	X		X	X			X	X		X	X	X
	Misses	Acceleration/cruise	X		X	X			X	X		X	X	X
	Buck/jerk	Acceleration/cruise/deceleration	X	X	X	X			X	X		X	X	X
	Hesitation/stumble	Acceleration	X	X	X	X			X	X		X	X	X
	Surges	Acceleration/cruise	X	X	X	X			X	X		X	X	X
12	Lack/loss of power	Acceleration/cruise	X	X	X	X	X		X	X		X	X	X
13	Knocking/pinging	Acceleration/cruise	X				X					X	X	
14	Poor fuel economy					X	X		X			X	X	X
15	Emission compliance		X		X	X			X			X	X	
16	High oil consumption/leakage													
17	Cooling system concerns	Overheating												
18	Cooling system concerns	Runs cold												
19	Exhaust smoke						X		X			X	X	
20	Fuel odor (in engine compartment)											X	X	
21	Engine noise					X								
22	Vibration concerns (engine)													
23	A/C does not work sufficiently													
24	A/C is always on or A/C compressor runs continuously													
25	A/C is not cut off under wide open throttle conditions													
26	Exhaust sulphur smell					X						X	X	
27	Spark plug condition													
28	ATX concerns	Upshift/downshift/engagement	See Section 05-03 TRANSMISSION/TRANSAXLE, SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]											

X: Applied

Possible factor														
Troubleshooting item			Fuel injector malfunction (inoperative)	Fuel filters restricted or clogged	Fuel pressure limiter malfunction (built-into common rail)	Spill valve control solenoid valve malfunction (built-into high pressure fuel pump)	Fuel leakage at fuel line	High pressure fuel pump malfunction	Incorrect fuel injection timing or amount	Improper air/fuel ratio mixture control	Exhaust system or catalytic converter restriction	Exhaust gas leakage	Catalytic converter malfunction	PCV valve malfunction
1	Blown fuses													
2	Check engine light illuminates		X							X			X	
3	Will not crank													
4	Hard to start/long crank/erratic start/erratic crank		X	X	X	X	X	X	X	X	X			X
5	Engine stalls	After start/at idle	X		X	X	X	X	X	X	X			X
6	Crank normally but will not start		X		X	X	X	X	X	X	X			X
7	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD													
8	Engine runs rough/rolling idle		X	X	X	X	X	X			X			X
9	Fast idle/runs on		X			X								
10	Low idle/stalls during deceleration		X		X	X	X	X	X					
11	Engine stalls/quits	Acceleration/cruise	X		X	X		X	X	X	X			X
	Engine runs rough	Acceleration/cruise	X		X	X		X	X	X	X			X
	Misses	Acceleration/cruise	X		X	X		X	X	X	X			X
	Buck/jerk	Acceleration/cruise/deceleration	X		X	X		X	X	X	X			X
	Hesitation/stumble	Acceleration	X		X	X		X	X	X	X			X
	Surges	Acceleration/cruise	X		X	X		X	X	X	X			X
12	Lack/loss of power	Acceleration/cruise			X	X		X	X		X	X		X
13	Knocking/pinging	Acceleration/cruise	X			X			X		X			
14	Poor fuel economy		X	X			X	X	X		X			X
15	Emission compliance		X		X	X		X	X	X	X		X	X
16	High oil consumption/leakage													X
17	Cooling system concerns	Overheating												
18	Cooling system concerns	Runs cold												
19	Exhaust smoke		X						X			X		X
20	Fuel odor (in engine compartment)		X				X							
21	Engine noise													
22	Vibration concerns (engine)													
23	A/C does not work sufficiently													
24	A/C is always on or A/C compressor runs continuously													
25	A/C is not cut off under wide open throttle conditions													
26	Exhaust sulphur smell													X
27	Spark plug condition													
28	ATX concerns	Upshift/downshift/engagement	See Section 05-03 TRANSMISSION/TRANSAXLE, SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]											

X: Applied

Possible factor			Constant voltage supply circuit malfunction	Main relay malfunction (mechanically or electrically)	No battery power supply to PCM	Poor PCM ground or vehicle ground (open)	Electrical connector disconnection	ECT sensor or related circuit malfunction	Transaxle range sensor malfunction (ATX)	Brake switch or related circuit malfunction	A/F sensor or HO2S or related circuit malfunction	IAT sensor No.1 (integrated in MAF sensor/ IAT sensor No.1) or related circuit malfunction	Fuel pressure sensor or related circuit malfunction	MAP sensor or related circuit malfunction
Troubleshooting item														
1	Blown fuses													
2	Check engine light illuminates						X	X		X	X	X	X	X
3	Will not crank			X										
4	Hard to start/long crank/erratic start/erratic crank							X			X		X	
5	Engine stalls	After start/at idle			X	X		X			X		X	
6	Crank normally but will not start						X	X			X		X	
7	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD													
8	Engine runs rough/rolling idle						X	X					X	X
9	Fast idle/runs on							X						
10	Low idle/stalls during deceleration							X		X	X		X	
11	Engine stalls/quits	Acceleration/cruise		X				X				X	X	X
	Engine runs rough	Acceleration/cruise		X				X				X	X	X
	Misses	Acceleration/cruise		X				X				X	X	X
	Buck/jerk	Acceleration/cruise/deceleration		X				X				X	X	X
	Hesitation/stumble	Acceleration		X				X				X	X	X
	Surges	Acceleration/cruise		X				X				X	X	X
12	Lack/loss of power	Acceleration/cruise						X				X	X	X
13	Knocking/pinging	Acceleration/cruise										X	X	X
14	Poor fuel economy							X				X	X	X
15	Emission compliance							X			X	X	X	X
16	High oil consumption/leakage													
17	Cooling system concerns	Overheating												
18	Cooling system concerns	Runs cold												
19	Exhaust smoke							X			X	X		X
20	Fuel odor (in engine compartment)													
21	Engine noise													
22	Vibration concerns (engine)													
23	A/C does not work sufficiently													
24	A/C is always on or A/C compressor runs continuously													
25	A/C is not cut off under wide open throttle conditions													
26	Exhaust sulphur smell						X							
27	Spark plug condition													
28	ATX concerns	Upshift/downshift/engagement	See Section 05-03 TRANSMISSION/TRANSAXLE, SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]											

X: Applied

Possible factor			Intake CMP sensor damaged (e.g.open or short circuit)	Intake CMP sensor pulse wheel (intake camshaft) damaged	Exhaust CMP sensor damaged (e.g.open or short circuit)	Exhaust CMP sensor pulse wheel (exhaust camshaft) damaged	Improper gap between CKP sensor and pulse wheel	CKP sensor damaged (e.g.open or short circuit)	CKP sensor pulse wheel damaged	CPP switch or related circuit malfunction (MTX)	Neutral switch or related circuit malfunction (MTX)	MAF sensor or related circuit malfunction	KS or related circuit malfunction	TP sensor or related circuit malfunction	APP sensor or related circuit malfunction	Improper vehicle speed signal	Cruise control system operation improper
Troubleshooting item																	
1	Blown fuses																
2	Check engine light illuminates		X		X		X					X	X	X	X	X	
3	Will not crank											X					
4	Hard to start/long crank/erratic start/erratic crank		X	X	X	X	X	X	X			X					
5	Engine stalls	After start/at idle	X	X	X	X	X	X	X			X			X		
6	Crank normally but will not start		X	X	X	X	X	X	X			X			X		
7	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD																
8	Engine runs rough/rolling idle		X	X	X	X	X	X	X			X			X		
9	Fast idle/runs on									X	X				X		X
10	Low idle/stalls during deceleration		X	X	X	X	X	X	X	X	X	X		X	X		
11	Engine stalls/quits	Acceleration/cruise	X	X	X	X	X	X	X	X	X	X		X	X	X	
	Engine runs rough	Acceleration/cruise	X	X	X	X	X	X	X	X	X	X		X	X	X	
	Misses	Acceleration/cruise	X	X	X	X	X	X	X	X	X	X		X	X	X	
	Buck/jerk	Acceleration/cruise/deceleration	X	X	X	X	X	X	X	X	X	X		X	X	X	
	Hesitation/stumble	Acceleration	X	X	X	X	X	X	X	X	X	X		X	X	X	
	Surges	Acceleration/cruise	X	X	X	X	X	X	X	X	X	X		X	X	X	
12	Lack/loss of power		X	X	X	X	X	X	X	X	X	X			X	X	
13	Knocking/pinging	Acceleration/cruise	X	X	X	X						X	X		X		
14	Poor fuel economy		X	X	X	X	X	X	X			X			X	X	
15	Emission compliance		X	X	X	X	X	X	X			X		X	X	X	
16	High oil consumption/leakage																
17	Cooling system concerns	Overheating															
18	Cooling system concerns	Runs cold															
19	Exhaust smoke						X					X		X	X	X	
20	Fuel odor (in engine compartment)																
21	Engine noise																
22	Vibration concerns (engine)																
23	A/C does not work sufficiently																
24	A/C is always on or A/C compressor runs continuously																
25	A/C is not cut off under wide open throttle conditions														X		
26	Exhaust sulphur smell																
27	Spark plug condition																
28	ATX concerns	Upshift/downshift/engagement	See Section 05-03 TRANSMISSION/TRANSAXLE, SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]														

X: Applied

Possible factor			A/C system improper operation	Improper refrigerant charging amount	A/C relay (A/C control signal circuit) malfunction	A/C compressor magnetic clutch malfunction	Clutch slippage (MTX)	ATX related parts malfunction (ATX)	Improper ATF level (ATX)	Brake dragging	Loose parts	Improper balance of wheels and tires	Drive line malfunction	Suspension malfunction	Immobilizer system operating properly	Immobilizer system or related circuit malfunction	Advanced keyless entry system malfunction	i-stop system improper operation
Troubleshooting item																		
1	Blown fuses																	
2	Check engine light illuminates																	
3	Will not crank														X	X	X	X
4	Hard to start/long crank/erratic start/erratic crank																	
5	Engine stalls	After start/at idle	X	X	X													
6	Crank normally but will not start																	
7	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD																	
8	Engine runs rough/rolling idle		X	X	X													
9	Fast idle/runs on				X													
10	Low idle/stalls during deceleration		X			X					X							
11	Engine stalls/quits	Acceleration/cruise	X				X	X			X							
	Engine runs rough	Acceleration/cruise	X				X	X			X							
	Misses	Acceleration/cruise	X				X	X			X							
	Buck/jerk	Acceleration/cruise/deceleration	X				X	X			X							
	Hesitation/stumble	Acceleration	X				X	X			X							
	Surges	Acceleration/cruise	X				X	X			X							
12	Lack/loss of power	Acceleration/cruise	X		X		X			X								
13	Knocking/pinging	Acceleration/cruise																
14	Poor fuel economy		X				X		X	X								
15	Emission compliance																	
16	High oil consumption/leakage																	
17	Cooling system concerns	Overheating	X	X														
18	Cooling system concerns	Runs cold																
19	Exhaust smoke																	
20	Fuel odor (in engine compartment)																	
21	Engine noise										X							
22	Vibration concerns (engine)										X	X	X	X				
23	A/C does not work sufficiently		X	X	X	X												
24	A/C is always on or A/C compressor runs continuously		X		X	X												
25	A/C is not cut off under wide open throttle conditions																	
26	Exhaust sulphur smell																	
27	Spark plug condition																	
28	ATX concerns	Upshift/downshift/engagement	See Section 05-03 TRANSMISSION/TRANSAXLE, SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]															

X: Applied

Possible factor																
Troubleshooting item			i-stop OFF switch malfunction	Instrument cluster malfunction	Driver-side buckle switch malfunction	Door latch switch or liftgate latch switch malfunction	Bonnet latch switch malfunction	Battery malfunction (deterioration)	Ambient temperature sensor malfunction	ABS wheel-speed sensor malfunction	Clutch stroke sensor malfunction (MTX)	Steering angle sensor malfunction	Driver-side air mix actuator malfunction	Climate control unit malfunction	Battery fluid temperature sensor malfunction	Keyless antenna malfunction
1	Blown fuses															
2	Check engine light illuminates															
3	Will not crank															
4	Hard to start/long crank/erratic start/erratic crank															
5	Engine stalls	After start/at idle														
6	Cranks normally but will not start															
7	Engine oil warning light illuminates/message "Engine Oil Pressure Inspection Required" is indicated in TFT LCD			X												
8	Engine runs rough/rolling idle															
9	Fast idle/runs on															
10	Low idle/stalls during deceleration															
11	Engine stalls/quits	Acceleration/cruise														
	Engine runs rough	Acceleration/cruise														
	Misses	Acceleration/cruise														
	Buck/jerk	Acceleration/cruise/deceleration														
	Hesitation/stumble	Acceleration														
	Surges	Acceleration/cruise														
12	Lack/loss of power	Acceleration/cruise														
13	Knocking/pinging	Acceleration/cruise														
14	Poor fuel economy															
15	Emission compliance															
16	High oil consumption/leakage															
17	Cooling system concerns	Overheating														
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23	A/C does not work sufficiently															
24	A/C is always on or A/C compressor runs continuously															
25	A/C is not cut off under wide open throttle conditions															
26	Exhaust sulphur smell															
27	Spark plug condition															
28	ATX concerns	Upshift/downshift/engagement	See Section 05-03 TRANSMISSION/TRANSAXLE, SYMPTOM TROUBLESHOOTING [FW6A-EL, FW6AX-EL]													