

NO.5 i-stop FUNCTION OPERATES UNDER NO ENGINE-STOP CONDITIONS [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

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5	i-stop FUNCTION OPERATES UNDER NO ENGINE-STOP CONDITIONS
DESCRIPTION	<ul style="list-style-type: none"> • i-stop function operates even though system is turned off by pressing i-stop OFF switch. • i-stop function operates even though vehicle conditions are for non-operation. • i-stop function operates frequently while parking vehicle.
POSSIBLE CAUSE	<p>i-stop warning light (amber) false illumination</p> <ul style="list-style-type: none"> • i-stop warning light (amber) illumination circuit malfunction in instrument cluster • CAN communication line malfunction between PCM and instrument cluster <p>False detection of i-stop function operation conditions</p> <ul style="list-style-type: none"> • False detection of external vehicle temperature within operable range (-10 to 50 °C {14 to 122 °F}) <ul style="list-style-type: none"> — Ambient temperature sensor malfunction (sensor specific malfunction) — Short or open circuit in wiring harness between ambient temperature sensor terminal A and PCM terminal 2I — Open circuit in wiring harness between ambient temperature sensor terminal B and PCM terminal 2AJ • Climate control unit falsely detects that internal vehicle temperature is within operation range. (with full-auto air conditioner) <ul style="list-style-type: none"> — Cabin temperature sensor malfunction (sensor specific or motor malfunction) — Short or open circuit in wiring harness between cabin temperature sensor terminal A and climate control unit terminal 1J — Open circuit in wiring harness between cabin temperature sensor terminal B and climate control unit terminal 1X • Falsely detects that climate control unit detects that driver-side air mix door is not in MAX HOT or MAX COLD position even though driver-side air mix door is in MAX HOT or MAX COLD position (with full-auto air conditioner) <ul style="list-style-type: none"> — Driver-side air mix actuator malfunction — Driver-side air mix actuator position sensor malfunction — Driver-side air mix door or linkage stuck • False detection of vehicle not being parked <ul style="list-style-type: none"> — False detection of steering wheel rotation speed <ul style="list-style-type: none"> • Steering angle sensor initialization malfunction • Steering angle sensor malfunction • Short or open circuit in wiring harness between steering angle sensor and start stop unit terminals 1U, 1T, 1W or 1S • Falsely detects that vehicle is under safety condition <ul style="list-style-type: none"> — False detection of closed bonnet <ul style="list-style-type: none"> • Bonnet latch switch malfunction (stuck closed) • Short to ground in wiring harness between bonnet latch switch terminal A and rear body control module (RBCM) terminal 3L — False detection of closed door, liftgate <ul style="list-style-type: none"> • Door latch switch malfunction • Liftgate latch switch malfunction • Short to ground in wiring harness between door latch switch and rear body control module (RBCM) • Open circuit in wiring harness between liftgate latch switch and rear body control module (RBCM) — False detection of fastened driver seat belt <ul style="list-style-type: none"> • Driver-side buckle switch malfunction • Open circuit in wiring harness between driver-side buckle switch terminal 4A and SAS control module terminal 2U — False detection of inclination angle (false detection of 7 % or less) <ul style="list-style-type: none"> • Low-G (XY) sensor (built-into SAS control module) malfunction (In this case, the SAS control module records DTCs C0061:29 and C0062:29.) • Low-G (XY) sensor (built-into SAS control module) initialization malfunction — False detection of low power brake unit load <ul style="list-style-type: none"> • Power brake unit vacuum sensor malfunction • Short or open circuit in wiring harness between power brake unit vacuum sensor terminal C and PCM terminal 2BG • Short or open circuit in wiring harness between power brake unit vacuum sensor terminal B and PCM terminal 2Q • Short or open circuit in wiring harness between power brake unit vacuum sensor terminal A and PCM terminal 2AH

Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	VERIFY DTC <ul style="list-style-type: none"> Retrieve the PCM, TCM, front body control module (FBCM), rear body control module (RBCM), DSC HU/CM, SAS control module, instrument cluster and climate control unit DTCs using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FW6A-EL, FW6AX-EL].) (See DTC INSPECTION [FRONT BODY CONTROL MODULE (FBCM)].) (See DTC INSPECTION [REAR BODY CONTROL MODULE (RBCM)].) (See ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)].) (See DTC INSPECTION.) (See DTC INSPECTION [INSTRUMENT CLUSTER].) (See DTC DISPLAY [FULL-AUTO AIR CONDITIONER].) Are any DTCs present? 	<p>Yes</p> <p>No</p>	<p>Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FW6A-EL, FW6AX-EL].) (See DTC TABLE [FRONT BODY CONTROL MODULE (FBCM)].) (See DTC TABLE [REAR BODY CONTROL MODULE (RBCM)].) (See ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)].) (See DTC TABLE.) (See DTC TABLE [INSTRUMENT CLUSTER].) (See DTC TABLE [FULL-AUTO AIR CONDITIONER].)</p> <p>Go to the next step.</p>
2*	DETERMINE IF MALFUNCTION CAUSE IS AMBIENT TEMPERATURE SENSOR SIGNAL OR OTHER <ul style="list-style-type: none"> Switch the ignition ON (engine off). Compare the ambient temperature sensor on the LCD with the actual ambient temperature. Does the ambient temperature on the LCD correspond to the actual ambient temperature? 	<p>Yes</p> <p>No</p>	<p>Go to Step 4.</p> <p>Go to the next step.</p>
3	INSPECT AMBIENT TEMPERATURE SENSOR <ul style="list-style-type: none"> Inspect the ambient temperature sensor. (See AMBIENT TEMPERATURE SENSOR INSPECTION [FULL-AUTO AIR CONDITIONER].) Is there any malfunction? 	<p>Yes</p> <p>No</p>	<p>Replace the ambient temperature sensor. (See AMBIENT TEMPERATURE SENSOR REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].)</p> <p>Inspect the following:</p> <ul style="list-style-type: none"> Short or open circuit in wiring harness between ambient temperature sensor terminal A and PCM terminal 2I Open circuit in wiring harness between ambient temperature sensor terminal B and PCM terminal 2AJ <ul style="list-style-type: none"> If there is any malfunction: <ul style="list-style-type: none"> Repair or replace the suspected wiring harness.
4*	DETERMINE IF MALFUNCTION CAUSE IS DOOR LATCH SWITCH AND LIFTGATE LATCH SWITCH SIGNAL OR OTHER <ul style="list-style-type: none"> Switch the ignition ON (engine off). Access the following rear body control module (RBCM) PIDs using the M-MDS: (See PID/DATA MONITOR INSPECTION [REAR BODY CONTROL MODULE (RBCM)].) — TRUNK — DOOR_D — DOOR_ALL Are the PID values congruent with the opening and closing of the doors and liftgate? (See PID/DATA MONITOR TABLE [REAR BODY CONTROL MODULE (RBCM)].) 	<p>Yes</p> <p>No</p>	<p>Go to Step 6.</p> <p>Go to the next step.</p>

STEP	INSPECTION	RESULTS	ACTION
5	INSPECT DOOR LATCH SWITCH AND LIFTGATE LATCH SWITCH <ul style="list-style-type: none"> Inspect the PID-related switch in which the malfunction occurred in Step 4. (See LIFTGATE LATCH SWITCH INSPECTION.) (See FRONT DOOR LATCH SWITCH INSPECTION.) (See REAR DOOR LATCH SWITCH INSPECTION.) Is there any malfunction? 	Yes	Replace the applicable switch. (See LIFTGATE LATCH AND LOCK ACTUATOR REMOVAL/INSTALLATION.) (See FRONT DOOR LATCH AND LOCK ACTUATOR REMOVAL/INSTALLATION.) (See REAR DOOR LATCH AND LOCK ACTUATOR REMOVAL/INSTALLATION.)
		No	Inspect the following in which the malfunction occurred in Step 4: <ul style="list-style-type: none"> Short to ground in wiring harness between door latch switch and rear body control module (RBCM) Open circuit in wiring harness between liftgate latch switch and rear body control module (RBCM) <ul style="list-style-type: none"> If there is any malfunction: <ul style="list-style-type: none"> Repair or replace the suspected wiring harness.
6*	DETERMINE IF MALFUNCTION CAUSE IS DRIVER-SIDE BUCKLE SWITCH SIGNAL OR OTHER <ul style="list-style-type: none"> Switch the ignition ON (engine off). Access the SAS control module PID SEAT_B_D using the M-MDS. (See PID/DATA MONITOR INSPECTION.) Is the SEAT_B_D PID value congruent with the seat belt condition? (See PID/DATA MONITOR TABLE.) 	Yes	With manual air conditioner: <ul style="list-style-type: none"> Go to Step 10. With full-auto air conditioner: <ul style="list-style-type: none"> Go to Step 8.
		No	Go to the next step.
7	INSPECT DRIVER-SIDE BUCKLE SWITCH <ul style="list-style-type: none"> Inspect the driver-side buckle switch. (See BUCKLE SWITCH INSPECTION.) Is there any malfunction? 	Yes	Replace the driver-side buckle switch. (See FRONT BUCKLE REMOVAL/INSTALLATION.)
		No	Repair or replace the wiring harness between driver-side buckle switch terminal 4A and SAS control module terminal 2U for a possible open circuit.
8	DETERMINE IF MALFUNCTION CAUSE IS CABIN TEMPERATURE SENSOR SIGNAL OR OTHER <ul style="list-style-type: none"> Access the climate control unit PID INC_TMP_SEN using the M-MDS. (See PID/DATA MONITOR DISPLAY [FULL-AUTO AIR CONDITIONER].) Does the INC_TMP_SEN PID value indicate the actual cabin temperature of the vehicle? 	Yes	Go to Step 10.
		No	Go to the next step.
9	INSPECT CABIN TEMPERATURE SENSOR <ul style="list-style-type: none"> Inspect the cabin temperature sensor. (See CABIN TEMPERATURE SENSOR INSPECTION [FULL-AUTO AIR CONDITIONER].) Is there any malfunction? 	Yes	Replace the cabin temperature sensor. (See CABIN TEMPERATURE SENSOR REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].)
		No	Inspect the wiring harness between the following terminals for a short or open circuit: <ul style="list-style-type: none"> Cabin temperature sensor terminal A—Climate control unit terminal 1J Cabin temperature sensor terminal B—Climate control unit terminal 1X <ul style="list-style-type: none"> If there is any malfunction: <ul style="list-style-type: none"> Repair or replace the suspected wiring harness.
10*	DETERMINE IF MALFUNCTION CAUSE IS BONNET LATCH SWITCH SIGNAL OR OTHER <ul style="list-style-type: none"> Switch the ignition ON (engine off). Access the rear body control module (RBCM) PID HOOD using the M-MDS. (See PID/DATA MONITOR INSPECTION [REAR BODY CONTROL MODULE (RBCM)].) Is the HOOD PID value normal? (See PID/DATA MONITOR TABLE [REAR BODY CONTROL MODULE (RBCM)].) 	Yes	Go to Step 12.
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
11	INSPECT BONNET LATCH SWITCH <ul style="list-style-type: none"> Inspect the bonnet latch switch. (See BONNET LATCH SWITCH INSPECTION.) Is there any malfunction? 	Yes	Replace the bonnet latch switch. (See BONNET LATCH AND RELEASE LEVER REMOVAL/INSTALLATION.)
		No	Repair or replace the wiring harness between bonnet latch switch terminal A and rear body control module (RBCM) terminal 3L for a possible short to ground.
12	DETERMINE IF MALFUNCTION IS CAUSED BY STEERING ANGLE (ESTIMATED ABSOLUTE ANGLE) SIGNAL ERROR <ul style="list-style-type: none"> Start the engine and idle it. Using the M-MDS, display EPS control module PID STR_ANG. (See ELECTRIC POWER STEERING (EPS) ON-BOARD DIAGNOSIS.) Are the monitoring values normal? 	Yes	Go to Step 14.
		No	Go to the next step.
13	INSPECT EPS CONTROL MODULE FOR MALFUNCTION <ul style="list-style-type: none"> Inspect the EPS control module. (See EPS CONTROL MODULE INSPECTION.) Is the EPS control module normal? 	Yes	Perform the following procedure: <ol style="list-style-type: none"> Switch the ignition off, and after 2 min or more have elapsed, switch the ignition ON. Start the engine and drive the vehicle 10 m {33 ft} or more in a straight line at a speed of 10 km/h {6.2 mph} or more. Stop the vehicle with the wheels in the straight-ahead position. Using the M-MDS, display EPS control module PID STR_ANG. <ul style="list-style-type: none"> If the STR_ANG value is normal, go to Step 18. (Because the steering angle (estimated absolute angle) has returned to normal) If the STR_ANG value is not normal, replace the EPS control module, then go to Step 18. (See STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION.)
		No	Replace the EPS control module, then go to Step 18. (See STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION.)
14	DETERMINE IF MALFUNCTION CAUSE IS POWER BRAKE UNIT VACUUM SENSOR SIGNAL OR OTHER <ul style="list-style-type: none"> Turn off the i-stop system with i-stop OFF switch. Start the engine and run it is idling. Switch the ignition off. Switch the ignition ON (engine off). Access the PCM PID BBP using the M-MDS while the brake pedal has been depressed several times. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) Does the monitor value decrease every time the brake pedal is depressed? 	Yes	With manual air conditioner: <ul style="list-style-type: none"> Go to Step 18. With full-auto air conditioner: <ul style="list-style-type: none"> Go to Step 16.
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
15	INSPECT POWER BRAKE UNIT VACUUM SENSOR <ul style="list-style-type: none"> Inspect the power brake unit vacuum sensor. (See POWER BRAKE UNIT INSPECTION.) Is there any malfunction? 	Yes	Replace the power brake unit vacuum sensor. (See POWER BRAKE UNIT VACUUM SENSOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Inspect the wiring harness between the following terminals for a short or open circuit: <ul style="list-style-type: none"> Power brake unit vacuum sensor terminal C—PCM terminal 2BG Power brake unit vacuum sensor terminal B—PCM terminal 2Q Power brake unit vacuum sensor terminal A—PCM terminal 2AH <ul style="list-style-type: none"> If there is any malfunction: <ul style="list-style-type: none"> Repair or replace the suspected wiring harness. If there is no malfunction: <ul style="list-style-type: none"> Replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
16	DETERMINE IF MALFUNCTION CAUSE IS DRIVER-SIDE AIR MIX ACTUATOR SIGNAL OR OTHER <ul style="list-style-type: none"> Measure the voltage at the climate control unit terminal 1N (wiring harness-side) when the driver-side temperature setting is MAX HOT and MAX COLD. Is the voltage normal? (See CLIMATE CONTROL UNIT INSPECTION [FULL-AUTO AIR CONDITIONER].) 	Yes	Repeat the inspection from Step 1. <ul style="list-style-type: none"> If the malfunction is not resolved, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) Go to Step 18.
		No	Go to the next step.
17	INSPECT DRIVER-SIDE AIR MIX ACTUATOR <ul style="list-style-type: none"> Inspect the driver-side air mix actuator. (See AIR MIX ACTUATOR INSPECTION [FULL-AUTO AIR CONDITIONER].) Is there any malfunction? 	Yes	Replace the driver-side air mix actuator. (See AIR MIX ACTUATOR REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].)
		No	Inspect the air mix actuator and linkage for sticking. (See A/C UNIT DISASSEMBLY/ASSEMBLY.) <ul style="list-style-type: none"> If there is any malfunction: <ul style="list-style-type: none"> Repair or replace the malfunctioning part according to the inspection results.
18	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-G 2.0, SKYACTIV-G 2.5].) 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-G 2.0, SKYACTIV-G 2.5].) 		