NO.5 i-stop FUNCTION OPERATES UNDER NO ENGINE-STOP CONDITIONS [SKYACTIV-D 2.2]

id1103a2001000

5 i-stop FUNCTION OPERATES UNDER NO ENGINE-STOP CONDITIONS	
	• i-stop function operates even though system is turned off by pressing i-stop OFF switch.
DESCRIPTION	• i-stop function operates even though vehicle conditions are for non-operation.
	i-stop function operates frequently while parking vehicle.

5 i-stop FUNCTION OPERATES UNDER NO ENGINE-STOP CONDITIONS

i-stop warning light (amber) false illumination

- i-stop warning light (amber) illumination circuit malfunction in instrument cluster
- CAN communication line malfunction between PCM and instrument cluster

False detection of i-stop function operation conditions

- False detection of brake pedal depressed
- Brake switch No.1 malfunction
- Short to power supply in wiring harness between brake switch terminal D and PCM terminal 2AA
- Brake fluid pressure sensor (built-into DSC HU/CM) malfunction
- False detection of ATF temperature within operable range (20 to 120 °C {68 to 248 °F}) (ATX)
- TFT sensor malfunction
- False detection of external vehicle temperature within operable range (-10 to 50 °C {14 to 122 °F})
 - Ambient temperature sensor malfunction (sensor specific malfunction)
 - Short or open circuit in wiring harness between ambient temperature sensor terminal A and PCM terminal 2AX
 - Open circuit in wiring harness between ambient temperature sensor terminal B and PCM terminal
 2AY
- Climate control unit falsely detects that internal vehicle temperature is within operation range. (with full-auto air conditioner)
 - 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)
- 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

False detection of steering wheel rotation speed

- 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
 - False detection of closed bonnet
 - 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
 - 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
 - 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)
 - 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
 - Power brake unit vacuum sensor malfunction
 - Short or open circuit in wiring harness between power brake unit vacuum sensor terminal C and PCM terminal 2BB
 - Short or open circuit in wiring harness between power brake unit vacuum sensor terminal B and PCM terminal 2BC
 - Short or open circuit in wiring harness between power brake unit vacuum sensor terminal A and PCM terminal 2BD

POSSIBLE CAUSE

Diagnostic Procedure

STEP	stic Procedure INSPECTION	RESULTS	ACTION
1	VERIFY DTC	Yes	Go to the applicable DTC inspection.
'	• Retrieve the PCM, TCM, front body control	res	
	l		(See DTC TABLE [SKYACTIV-D 2.2].)
	module (FBCM), rear body control module		(See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE
	(RBCM), DSC HU/CM, SAS control module,		[GW6A-EL, GW6AX-EL].)
	instrument cluster and climate control unit DTCs		(See DTC TABLE [FRONT BODY CONTROL MODULE
	using the M-MDS.		(FBCM)].)
	(See ON-BOARD DIAGNOSTIC TEST		(See DTC TABLE [REAR BODY CONTROL MODULE
	[SKYACTIV-D 2.2].)		(RBCM)].)
	(See ON-BOARD DIAGNOSTIC SYSTEM DTC		(See ON-BOARD DIAGNOSIS [DYNAMIC STABILITY
	INSPECTION [GW6A-EL, GW6AX-EL].)		CONTROL (DSC)].)
	(See DTC INSPECTION FRONT BODY		(See DTC TABLE.)
	CONTROL MODULE (FBCM)].)		(See DTC TABLE [INSTRUMENT CLUSTER].)
	(See DTC INSPECTION [REAR BODY		(See DTC TABLE [FULL-AUTO AIR CONDITIONER].)
	CONTROL MODULE (RBCM)].)	No	Go to the next step.
	(See ON-BOARD DIAGNOSIS [DYNAMIC	110	Co to the next step.
	STABILITY CONTROL (DSC)].)		
	(See DTC INSPECTION.)		
	(See DTC INSPECTION [INSTRUMENT		
	CLUSTER].)		
	(See DTC DISPLAY [FULL-AUTO AIR		
	CONDITIONER].)		
	Are any DTCs present?		
2*	DETERMINE IF MALFUNCTION CAUSE IS	Yes	Go to Step 4.
	AMBIENT TEMPERATURE SENSOR SIGNAL	No	Go to the next step.
	OR OTHER		
	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?		
3	INSPECT AMBIENT TEMPERATURE SENSOR	Yes	Replace the ambient temperature sensor.
	Inspect the ambient temperature sensor.		(See AMBIENT TEMPERATURE SENSOR
	(See AMBIENT TEMPERATURE SENSOR		REMOVAL/INSTALLATION [FULL-AUTO AIR
	INSPECTION [FULL-AUTO AIR		CONDITIONER].)
	CONDITIONER].)	No	Inspect the following:
	• Is there any malfunction?	110	Short or open circuit in wiring harness between
	lo there any mananetern.		ambient temperature sensor terminal A and PCM
			terminal 2AX
			Open circuit in wiring harness between ambient
			temperature sensor terminal B and PCM terminal 2AY
			If there is any malfunction:
A 4	DETERMINE IS MALEUNOTION OATIOS :	V : -	• Repair or replace the suspected wiring harness.
4*	DETERMINE IF MALFUNCTION CAUSE IS	Yes	Go to Step 6.
	DOOR LATCH SWITCH AND LIFTGATE	No	Go to the next step.
	LATCH SWITCH SIGNAL OR OTHER		
	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)].)		

See INSPECT DOOR LATCH SWITCH AND LIFTGATE LATCH SWITCH	STEP	INSPECTION	RESULTS	ACTION
LIFTGATE LATCH SWITCH Inspect the PID-related switch in which the malfunction occurred in Step 4. (See LIFTCATE LATCH SWITCH INSPECTION.) (See READ DOOR LATCH AND LOCK ACTUATOR REMOVALINISTALLATION.) (See PROMT BUCKLE SWITCH SWITCH SIGNAL OR OTHER SHAPPORT OF THE SAME SHAPPORT OR SWITCH SAME SWITCH SWI				
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(See PID/DATA MONITOR TABLE [REAR				
DOD! CONTINUE MODULE (NDOM)].)		BODY CONTROL MODULE (RBCM)].)		

STEP	INSPECTION	RESULTS	ACTION
11	INSPECT BONNET LATCH SWITCH	Yes	Replace the bonnet latch switch.
	Inspect the bonnet latch switch.		(See BONNET LATCH AND RELEASE LEVER
	(See BONNET LATCH SWITCH		REMOVAL/INSTALLATION.)
	INSPECTION.)	No	Repair or replace the wiring harness between bonnet
	Is there any malfunction?		latch switch terminal A and rear body control module
			(RBCM) terminal 3L for a possible short to ground.
12	DETERMINE IF MALFUNCTION IS CAUSED	Yes	Go to Step 14.
	BY STEERING ANGLE (ESTIMATED	No	Go to the next step.
	ABSOLUTE ANGLE) SIGNAL ERROR		
	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?		
13	INSPECT EPS CONTROL MODULE FOR	Yes	Perform the following procedure:
	MALFUNCTION		1. Switch the ignition off, and after 2 min or more have
	• Inspect the EPS control module.		elapsed, switch the ignition ON.
	(See EPS CONTROL MODULE		2. Start the engine and drive the vehicle 10 m {33 ft}
	INSPECTION.)		or more in a straight line at a speed of 10 km/h (6.2
	• Is the EPS control module normal?		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.
			• If the STR_ANG value is normal, go to Step 20.
			(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 20.
			(See STEERING WHEEL AND COLUMN
			REMOVAL/INSTALLATION.)
		No	Replace the EPS control module, then go to Step 20.
			(See STEERING WHEEL AND COLUMN REMOVAL/
			INSTALLATION.)
14	DETERMINE IF MALFUNCTION CAUSED BY	Yes	Go to Step 16.
	BRAKE OPERATION SIGNAL ERROR	No	Go to the next step.
	Switch the ignition ON (engine off).		
	Access the PCM PID BOO using the M-MDS.		
	(See ON-BOARD DIAGNOSTIC TEST		
	[SKYACTIV-D 2.2].)		
	Does the BOO PID value change according to		
	the brake pedal operation?		
	(See PCM INSPECTION [SKYACTIV-D 2.2].)		
15	INSPECT BRAKE SWITCH	Yes	Replace the brake switch.
	• Inspect the brake switch.		(See BRAKE PEDAL REMOVAL/INSTALLATION
	(See BRAKE SWITCH INSPECTION.)		[L.H.D.].)
	Is there any malfunction?		(See BRAKE PEDAL REMOVAL/INSTALLATION
		N1-	[R.H.D.].)
		No	Open circuit in wiring harness between brake switch
			terminal D and PCM terminal 2AA.
			If there is any malfunction: Papair or replace the suspected wiring harness.
		<u> </u>	Repair or replace the suspected wiring harness.

STEP	INSPECTION	RESULTS	ACTION
16	DETERMINE IF MALFUNCTION CAUSE IS	Yes	With manual air conditioner:
	POWER BRAKE UNIT VACUUM SENSOR		Go to Step 20.
	SIGNAL OR OTHER		With full-auto air conditioner:
	Turn off the i-stop system with i-stop OFF		Go to Step 18.
	switch.	No	Go to the next step.
	Start the engine and run it is idling. Outlieb the implicant off.		
	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-D 2.2].)		
	• Does the monitor value decrease every time the		
	brake pedal is depressed?		
17	INSPECT POWER BRAKE UNIT VACUUM	Yes	Replace the power brake unit vacuum sensor.
	SENSOR		(See POWER BRAKE UNIT VACUUM SENSOR
	 Inspect the power brake unit vacuum sensor. (See POWER BRAKE UNIT VACUUM 	No	REMOVAL/INSTALLATION.) Inspect the wiring harness between the following
	SENSOR INSPECTION [SKYACTIV-D 2.2].)	INO	terminals for a short or open circuit:
	• Is there any malfunction?		Power brake unit vacuum sensor terminal C—PCM
	io anoto any mananona		terminal 2BB
			Power brake unit vacuum sensor terminal B—PCM
			terminal 2BC
			Power brake unit vacuum sensor terminal A—PCM
			terminal 2BD
			If there is any malfunction:
			Repair or replace the suspected wiring harness. If the are in a constitution of the suspected wiring harness. If the are in a constitution of the suspected wiring harness.
			If there is no malfunction: Replace the RCM.
			Replace the PCM. (See PCM REMOVAL/INSTALLATION
			[SKYACTIV-D 2.2].)
18	DETERMINE IF MALFUNCTION CAUSE IS	Yes	Repeat the inspection from Step 1.
	DRIVER-SIDE AIR MIX ACTUATOR SIGNAL		If the malfunction is not resolved, replace the PCM.
	OR OTHER		(See PCM REMOVAL/INSTALLATION [SKYACTIV-D
	Measure the voltage at the following terminal		2.2].)
	(wiring harness-side) when the driver-side		Go to Step 20.
	temperature setting is MAX HOT and MAX	No	Go to the next step.
	COLD. — Climate control unit terminal 1N (L.H.D.)		
	Climate control unit terminal 1P (R.H.D.)		
	• Is the voltage normal?		
	(See CLIMATE CONTROL UNIT INSPECTION		
	[FULL-AUTO AIR CONDITIONER].)		
19	INSPECT DRIVER-SIDE AIR MIX ACTUATOR	Yes	Replace the driver-side air mix actuator.
	• Inspect the driver-side air mix actuator.		(See AIR MIX ACTUATOR REMOVAL/INSTALLATION
	(See AIR MIX ACTUATOR INSPECTION	N	[FULL-AUTO AIR CONDITIONER].)
	[FULL-AUTO AIR CONDITIONER].)	No	Inspect the air mix actuator and linkage for sticking.
	Is there any malfunction?		(See A/C UNIT DISASSEMBLY/ASSEMBLY.) • If there is any malfunction:
			Repair or replace the malfunctioning part
			according to the inspection results.
20	Verify the test results.	1	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	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.		
	 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].)		