	GROUP	NUMBER					
	CAMPAIGN	17-01-010-1					
	DATE	MODEL(S)					
Technical Service Bulletin	FEBRUARY 2017	Santa Fe (NC) Tucson (TL)					
SUBJECT: ELECTRONIC STABILITY CON	trol (esc) moe	DULE					
lot # INSPECTION AND REPAIR (SERVICE CAMPAIGN T1J)							
This TSR supersedes 17-01-010 to clarify the tool tyr	e must he Tory Plus						

***** IMPORTANT

*** Dealer Stock and Retail Vehicles ***

Dealers must perform this Service Campaign on all affected vehicles prior to customer retail delivery and whenever an affected vehicle is in the shop for any maintenance or repair.

When a vehicle arrives at the service department, access Hyundai Motor America's "Warranty Vehicle Information" screen via WEBDCS to identify open Campaigns.

Description: This bulletin describes the service procedure to inspect the lot number of the electronic stability control (ESC) module of certain Santa Fe (NC) and Tucson (TL) vehicles. Parts from the affected LOT number may have damaged bolts which hold the ECU to the solenoid block. Vehicles with affected LOT number ESC modules must be inspected for damaged bolts. If the bolts are intact, they must be replaced. If the bolts are damaged, the HECU assembly must be replaced.



Applicable Vehicles: Certain 2017MY Santa Fe (NC) vehicles Certain 2017MY Tucson (TL) vehicles **Parts Information:**

PART NAME	FIGURE / PART NUMBER	REMARK
BOLT		1 part number required per vehicle (2 bolts)
	58960-HEXBOLT	
HECU		
	58920-B8AC0 (NC)	ABS/ESC
	58920-B8BC0 (NC)	ABS/ESC/SCC/AEB
	58920-D3100 (TL)	
Brake Fluid	Part number: 00232-19053	Need about 1.5 bottles per vehicle when replacing HECU

Tools Required:

Torque Wrench	TP15 Bit
• 1/4" drive with torque setting range from 20 inch pounds minimum.	The second se

1/4" drive extensions	Bit Holder
Vorious longths, doponding on TD16	
• various lengths, depending on TPTS bit length	1/4" drive bit holder for 1/4" hex shankHolds the T15 bit securely

Warranty Information:

Model	Op Code	Operation		Causal Part	Nature Code	Cause Code		
Santa Fe (NC)	60C117R0	HECU Lot No. Inspection –	0.2	58920-B8BC0 (NC)				
Tucson (TL)	00011710	PASS ONLY		PASS ONLY N		58920-D3100 (TL)		
	60C117R1	HECU Lot No. Inspection, Bolt Inspection and Replacement	0.6 M/H		I3B			
Tucson (TL)	60C117R2	HECU Lot No. Inspection, Bolt Inspection and HECU Replacement	1.6 M/H	58920-D3100		ZZ1		
Santa Eo	60C117R3	HECU Lot No. Inspection, Bolt Inspection and Replacement	nt No. Inspection, Bolt 2.3 on and Replacement M/H					
Santa Fe (NC)	60C117R4	HECU Lot No. Inspection, Bolt Inspection and HECU Replacement	2.5 M/H	58920-B8BC0				

NOTE 1: Submit Claim on Campaign Claim Entry Screen

NOTE 2: Brake fluid will be reimbursed via sublet amount on the campaign claim.

NOTE 3: If a part is found in need of replacement while performing Service Campaign T1J and the affected part is still under warranty, submit a separate claim using the same Repair Order. If the affected part is out of warranty submit a Prior Approval Request for goodwill consideration prior to performing the work.

Service Procedure Flow Chart



Service Procedure HECU Lot Number Inspection:

1. Open the hood and locate the ESC module. Find the label, as shown in the table below.



2.

Check the first 3 digits of the LOT number. These digits indicate the part production date.



SUBJECT: ESC MODUL

3.

ESC MODULE LOT # INSPECTION AND REPAIR (SERVICE CAMPAIGN T1J)

- If the first 3 digits of the LOT number are NOT found in the applicable tables below, no further action is required. Submit a claim using labor operation code 60C117R0. Release the vehicle for retail sale if still in dealer stock.
 - If the first 3 digits of the LOT number are found in the applicable tables below, <u>continue to the next service procedure to inspect the bolts (page 5 for Santa Fe, page 14 for Tucson).</u>

LOT # Table for Santa Fe (NC):

LOT #	LJ2	LJ3	LJ4	LJ5	LKA	LKB	LKC	LKD	LKE	LKF	LKG	LKH	LKI	LKJ
Production Date	10/28	10/29	10/30	10/31	11/1	11/2	11/3	11/4	11/5	11/6	11/7	11/8	11/9	11/10

LOT # Table for Tucson (TL):

LOT #	LJ2	LJ3	LJ4	LJ5	LKA	LKB	LKC
Production Date	10/28	10/29	10/30	10/31	11/1	11/2	11/3

NOTICE

Use the table below to decode the LOT # first 3 digits

1 st digit means YEAR	H : 2012, I : 2013, J : 2014, K : 2015, L : 2016
2 nd digit means MONTH	A : January ~ L : December
2 rd digit means DAV	A ~ Z : 1 ~ 26^{th} day of the month
5 digit means DAT	$1 \sim 5:27 \sim 31^{st}$ day of the month

Service Procedure: Santa Fe (NC) HECU Bolt Inspection and HECU Replacement

1. Open the hood and remove the engine cover.



2. Remove the fastener clips, and the air intake duct.







3. Disconnect the negative battery terminal.

Tightening torque: 3.9 ~ 5.8 N.m (0.4 ~ 0.6 kgf.m, 2.8 ~ 4.3 lb-ft)

Remove the battery mounting bolt and bracket.

Tightening torque: 8.8 ~ 13.7 N.m (0.9 ~ 1.4 kgf.m, 6.5 ~ 10.1 lb-ft)

Move the battery forwards, towards the front of the vehicle to create clearance for the air cleaner box.

4. Loosen and remove the air cleaner box mounting bolts.

Tightening torque: 7.8 ~ 9.8 N.m (0.8 ~ 1.0 kgf.m, 5.7 ~ 7.3 lb-ft)

5. Disconnect the barometric pressure sensor connector.

Remove the brake vacuum hose.

Loosen the intake hose clamps at the air cleaner box, and at the throttle body.

Tightening torque: 2.9 ~ 4.9 N.m (0.3 ~ 0.5 kgf.m, 2.1 ~ 3.6 lb-ft)

6. Disengage the wire harness cable tie for the barometric pressure sensor by releasing the cable tie with a flat screwdriver, and pulling the opposite side with pliers.

7. Remove the air cleaner box from the vehicle.

Remove the intake hose from the throttle body, and set aside out of the way.







8. Remove the 3 bolts for the engine wiring harness.

Tightening torque: 9.8 ~ 10.7 N.m (1.0 ~ 1.1 kgf.m, 7.2 ~7.9 lb-ft)

9. Disconnect the sensors on the driver's side of the intake manifold, as shown.





NOTICE

Remove this connector by prying the blue tab upwards, then squeezing the release and pulling.



10. Disengage the harness cable tie using the method described in step 6.

11. Disengage the harness cable tie using a pair of needle nose pliers to squeeze the sides of the clip, and then pushing it out.

12. Remove the connectors on the passenger side of the intake manifold.









13. Disengage the wire harness cable tie using needle nose pliers, as before.

14. Move the wiring harness away from the intake manifold, towards the front of the vehicle.

15. Remove the bolts/nuts from the upper intake manifold.

LONG bolts (circled in red) *Tightening torque:* 9.8 ~ 10.7 N.m (1.0 ~ 1.1 kgf.m, 7.2 ~7.9 lb-ft)

Short bolts and nuts (circled in yellow) *Tightening torque:* 9.8 ~ 11.7 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.6 lb-ft)





16. Remove the bolt on back of the upper intake manifold, located by the engine bay wall.

Tightening torque: 27.4 ~ 31.3 N.m (2.8 ~ 3.2 kgf.m, 20.2 ~ 23.1 lb-ft)

17. Lift the upper intake manifold, and turn it about 30 degrees counter-clockwise.

Set the upper manifold aside, making space to access the HECU.

Place a clean shop towel over the intake ports.

18. Remove the two HECU hex bolts with a long TP15 bit.

Tightening torque: 3.2 ~ 3.8 Nm (0.3 ~ 0.4 kgfm, 2.3 ~ 2.8 lb-ft, 27.6 ~ 33.6 inch-lb)

NOTICE

It may be necessary to slightly push the wire harness leading to the passenger compartment to gain access to the rear bolt.







SUBJECT:

Upon removal, inspect the bolts for damage:

- If the bolt heads are damaged, replace the HECU continue to step 19.
- If the bolt heads are not damaged, replace the bolts with new ones and reassemble the vehicle in reverse order of removal to complete the service procedure. Use labor operation code 60C117R3.



If new bolts are needed, use a small inch-lb torque wrench to install and torque the bolts to spec. 27.6 ~ 33.6 inch-lb.

Tightening torque: 3.2 ~ 3.8 Nm (0.3 ~ 0.4 kgfm, 2.3 ~ 2.8 lb-ft, 27.6 ~ 33.6 inch-lb)

19. Continue from this step only if the HECU hex bolts are damaged.

Remove the mounting bolt for the horn, and set the horn assembly aside out of the way.

Tightening torque:

9.8 ~ 11.7 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.6 lb-ft)







20. Loosen and disconnect the 6 brake lines going to the HECU.

BRAKE TUBE (4) Tightening torque: 13.7 ~ 16.6 N.m (1.4 ~ 1.7 kgf.m, 10.1 ~12.2 lbft)

ESC TUBE (2) Tightening torque: 18.6 ~ 22.5 N.m (1.9 ~ 2.3 kgf.m, 13.7 ~16.6 lbft)



Clean any spilled brake fluid immediately with a rag and water.

21. Disconnect the HECU connector by pressing the tab inwards, then pulling the release lever.





22. Remove the 2 HECU assembly mounting nuts, and remove the HECU from the vehicle.

Tightening torque: 16.7 ~ 25.5 N.m (1.7 ~ 2.6 kgf.m, 12.3 ~ 18.8 lb-ft)



23. Remove the mounting bracket from the HECU, and transfer onto the new HECU.

Tightening torque: 10.8 ~ 13.7 N.m (1.1 ~ 1.4 kgf.m, 8.0 ~ 10.1 lbft)



- 24. Install the new HECU assembly into the vehicle, and install the rest of the removed components in reverse order of removal.
- 25. Perform the **Brake Bleeding** and the **HECU Calibrations Following HECU Replacement** procedures, starting on page 20. Use labor operation code **60C117R4**.

Service Procedure: Tucson (TL) HECU Bolt Inspection and HECU Replacement

1. Open the hood, and locate the HECU (rear passenger side of the engine compartment).



2. Remove the two HECU hex bolts with a long TP15 bit.

Tightening torque: 3.2 ~ 3.8 N.m (0.3 ~ 0.4 kgf.m, 2.3 ~ 2.8 lb-ft, 27.6 ~ 33.6 inch-lb)

- 3. Upon removal, inspect the bolts for damage:
 - If the bolt heads are damaged, replace the HECU continue to step 4.
 - If the bolt heads are not damaged, replace the bolts with new ones to complete the service procedure. Use labor operation code 60C117R1.





NOTICE

If new bolts are needed, use a small inch-lb torque wrench to install and torque the bolts to spec. 27.6 ~ 33.6 inch-lb.

Tightening torque: 3.2 ~ 3.8 Nm (0.3 ~ 0.4 kgfm, 2.3 ~ 2.8 lb-ft, 27.6 ~ 33.6 inch-lb)



4. Continue from this step only if the HECU hex bolts are damaged.

Disconnect the negative (-) battery terminal.

Tightening torque: 3.9 ~ 5.8 N.m (0.4 ~ 0.6 kgf.m, 2.8 ~ 4.3 lb-ft)

5. Loosen the air conditioner tube mounting bolt, located near the washer tank.

Tightening torque: 7.8 ~ 11.7 N.m (0.8 ~ 1.2 kgf. m, 5.7 ~8. 6 lb-ft)

6. Loosen the air conditioner tube mounting bolt, located near the HECU to create some clearance to the HECU.

Tightening torque: 7.8 ~ 11.7 N.m (0.8 ~ 1.2 kgf. m, 5.7 ~8. 6 lb-ft)



7. Loosen and disconnect the 6 brake lines going to the HECU.

BRAKE TUBE (4) tightening torque: 13.7 ~ 16.6 N.m (1.4 ~ 1.7 kgf.m, 10.1 ~12.2 lbft)

ESC TUBE (2) tightening torque: 18.6 ~ 22.5 N.m (1.9 ~ 2.3 kgf.m, 13.7 ~16.6 lbft)



Clean any spilled brake fluid immediately with a rag and water.

8. Unlock the HECU connector by pulling the tab upwards, then pulling the release lever.





9. Remove the HECU mounting nut.

Tightening torque: 19.6 ~ 29.4 N.m (2.0 ~ 3.0 kgf.m, 14.4 ~ 21.6 lb-ft)

10. Remove the HECU mounting bolts.

Tightening torque: 19.6 ~ 29.4 N.m (2.0 ~ 3.0 kgf.m, 14.4 ~ 21.6 lb-ft)

11. Remove the HECU from the vehicle.







12. Loosen the HECU bracket mounting bolts.

Tightening torque: 10.7 ~ 13.7 N.m (1.1 ~ 1.4 kgf.m, 7.9 ~ 10.1 lbft)



13. Install the existing bracket to new HECU.

Tightening torque: 10.7 ~ 13.7 N.m (1.1 ~ 1.4 kgf.m, 7.9 ~ 10.1 lbft)



- 14. Install the new HECU assembly into the vehicle, and install the rest of the removed components in reverse order of removal.
- 15. Perform the **Brake Bleeding** and the **HECU Calibrations Following HECU Replacement** procedures, starting on page 20. Use labor operation code **60C117R2**.

SUBJECT:

1.

ESC MODULE LOT # INSPECTION AND REPAIR (SERVICE CAMPAIGN T1 J)

Service Procedure: Brake Bleeding Procedure – All Models

- Lift the vehicle to bleed the brakes
 - 2. Start at the *right rear* caliper
 - 3. Remove the rubber bleeder cap
 - 4. Attach a bleed line, and bleed out all of the air.
 - 5. Move to the *left front* caliper and bleed out all of the air.
 - 6. Move to the *left rear* caliper and bleed out all of the air.
 - 7. Move to the *<u>right front</u>* caliper and bleed out all of the air.



2. Connect a GDS (or G-Scan) tool to the vehicle to perform the **HCU Air Bleeding Mode.**

From the **S/W Management** screen, select **HCU Air Bleeding Mode**.





NOTICE

Always keep the brake fluid reservoir topped off. Do not let the level drop below the MIN line.

КМНG34JA8HU021151	12/13/16 10:5
G90(HI)/2017/G 3.3 T-G	vci 🏛 😽 😥
S/W Management	
Systems Components	Unfold All
Electronic Stability Control	1
 System Identification 	
HCU Air Bleeding Mode	8
Auto Detected Configuration Reset(ESP(ESC) Only)	
Longitudinal G Sensor Calibration(HAC/DBC Only)	
Steering Angle Sensor(SAS) Calibration	Ξ
Variant Coding	8
SCC/AEB	۲
Airbag(Event #1)	۲
Airbag(Event #2)	٩
Occupant Classification System	
Air Conditioner	
4WD Control	٩
Motor Driven Power Steering	٩
Electronic Control Suspension	۹
Multi-View Camera System	٩
Parking Guide System	٠

3. Read the summary screen and then select **OK.**

Select **OK** when ready to begin.

КМНСЗ4ЈА8	HU021151				12	2/13/1	6 10:55
HOME Online	G90(HI)/2	2017/G	3.3 T-G		VCI 🚌	1	3-5
	s/w M	anag	ement				₽
HCU Air Bleeding Mod	le						
Purpose	To bleed air Control Unit done on bra	in the (HECU ike sys	brake syst) after HE0 tem.	em and CU is rep	Hydrauli blaced or	c Elect work i	ric s
Enable Condition	1.Solenoid 2.Motor Pur	Valve S np Sta	tatus : Clo tus : OFF	sed			
Concerned Component	Hydraulic E	lectric	Control Un	nit(HECU	l)		
Concerned DTC	-						
Fail Safe	-						
Etc	-						
l		ок]			
КМНСЗ4ЈА8	HU021151				12	/13/16	10:56
HOME Online	G90(HI)/2	2017/G	3.3 T-G		VCI 🙃	H	543
	S/W M	lanag	ement				6.5
HCU Air Bleeding Mod	le						
• [HCU Air Bleeding N	Mode]						
1. Solenoid Valve St	atus : Close						_
2. Motor Pump State	us : Off						
Press <mark>[OK]</mark> button, if	you are ready						

4.

5. The HECU motor will begin operating.

When the motor is operating, press and hold the brake pedal.

When the motor stops operating, release the brake pedal.

Continue this procedure for 60 seconds until the process is complete.



6. After the **HCU Air Bleeding Mode** is complete, perform step 1 of the service brakes bleeding procedure again.

Service Procedure: HECU Calibrations Following HECU Replacement – All Models

- After HECU replacement and brake bleeding has been completed, there are four calibrations that must be done using a GDS tool.
 - 1) Auto Detected Configuration
 - 2) Longitudinal G Sensor Calibration
 - 3) Steering Angle Sensor Calibration
 - 4) Variant Coding
- 2. Start with <u>Auto Detected Configuration</u>.

Electronic Stability Control	
System Identification	
HCU Air Bleeding Mode	
Auto Detected Configuration Reset(ESP(ESC) Only)	
Longitudinal G Sensor Calibration(HAC/DBC Only)	
Steering Angle Sensor(SAS) Calibration	
Variant Coding	

Electronic Stability Control	•
System Identification	
HCU Air Bleeding Mode	
 Auto Detected Configuration Reset(ESP(ESC) Only) 	
 Longitudinal G Sensor Calibration(HAC/DBC Only) 	
Steering Angle Sensor(SAS) Calibration	
Variant Coding	

3. Read the summary description and click **OK** to continue.

Purpose	To reset the configuration such as engine and transmission type, EPB, 4WD and others that set to HECU during vehicle assembly and allow PCM/ECM t re-configure.
Enable Condition	1. Engine Off 2. Ignition Switch On 3. Other Modules properly secured
Concerned Component	Hydraulic Electric Control Unit(HECU)
Concerned DTC	C1702
Fail Safe	Warning Lamp On
Etc	Perform this function when DTC C1702 and ABS/EBD/VDC warning indicator lamp is present or HECU is installed on to another same vehicle with different options.
	OK
Auto Detected Conf	OK iguration Reset(ESP(ESC) Only) onfiguration Reset]
Auto Detected Conf [Auto Detected C The automatically	OK iguration Reset(ESP(ESC) Only) onfiguration Reset] y detected variant code into HECU from
Auto Detected Conf [Auto Detected Co The automaticall; assembly factory	OK iguration Reset(ESP(ESC) Only) onfiguration Reset] y detected variant code into HECU from like engine type,transmission type,EPB,4WD
Auto Detected Conf E [Auto Detected C The automatical! assembly factory may be initialized	guration Reset(ESP(ESC) Only) onfiguration Reset] y detected variant code into HECU from like engine type,transmission type,EPB,4WD by this function.
Auto Detected Conf [Auto Detected Co The automatically assembly factory may be initialized Perform this func	OK Iguration Reset(ESP(ESC) Only) onfiguration Reset] / detected variant code into HECU from like engine type,transmission type,EPB,4WD lby this function. tion when you replace HECU with other
Auto Detected Conf E [Auto Detected Conf The automatical! assembly factory may be initialized Perform this func- vehicle's one or o	OK iguration Reset(ESP(ESC) Only) onfiguration Reset] / detected variant code into HECU from like engine type,transmission type,EPB,4WD by this function. tion when you replace HECU with other ccur C1702 with MIL On. (ABS/EBD/ESP)
Auto Detected Conf (Auto Detected Conf The automatical) assembly factory may be initialized Perform this func vehicle's one or o (Condition] 1. Before reset has set up pro	OK Iguration Reset(ESP(ESC) Only) onfiguration Reset] y detected variant code into HECU from like engine type,transmission type,EPB,4WD by this function. tion when you replace HECU with other ccur C1702 with MIL On. (ABS/EBD/ESP) ting the Variant Code, please check all the controller perfy
Auto Detected Conf [Auto Detected C The automatical! assembly factory may be initialized Perform this func vehicle's one or o [Condition] 1. Before reset has set up pro 2. Ignition key	OK Iguration Reset(ESP(ESC) Only) onfiguration Reset] y detected variant code into HECU from like engine type,transmission type,EPB,4WD lby this function. tion when you replace HECU with other ccur C1702 with MIL On. (ABS/EBD/ESP) ting the Variant Code, please check all the controller perly ON & Engine Stop
Auto Detected Conf (Auto Detected Conf The automatically assembly factory may be initialized Perform this func vehicle's one or o (Condition] Before reset has set up pro Lignition key Press [RESET] b	OK Iguration Reset(ESP(ESC) Only) onfiguration Reset] / detected variant code into HECU from like engine type,transmission type,EPB,4WD by this function. tion when you replace HECU with other ccur C1702 with MIL On. (ABS/EBD/ESP) ting the Variant Code, please check all the controller perly ON & Engine Stop utton, if you are ready
Auto Detected Conf Extended Configuration Interaction The automatically assembly factory may be initialized Perform this func vehicle's one or o efform this func vehicle's one or o efform this func vehicle's one or o condition 1. Before reset has set up pro 2. Ignition key Press [RESET] b Press [CANCEL]	OK Iguration Reset(ESP(ESC) Only) onfiguration Reset] / detected variant code into HECU from like engine type,transmission type,EPB,4WD by this function. tion when you replace HECU with other ccur C1702 with MIL On. (ABS/EBD/ESP) ting the Variant Code, please check all the controller perfy ON & Engine Stop utton, if you are ready button to exit.
Auto Detected Confi [Auto Detected C The automatically assembly factory may be initialized Perform this func- vehicle's one or o •[Condition] 1. Before reset has set up pro 2. Ignition key Press [RESET] b Press [CANCEL]	OK Iguration Reset(ESP(ESC) Only) onfiguration Reset] / detected variant code into HECU from like engine type,transmission type,EPB,4WD lby this function. tion when you replace HECU with other ccur C1702 with MIL On. (ABS/EBD/ESP) ting the Variant Code, please check all the controller perfy ON & Engine Stop utton, if you are ready button to exit.

4. Read the conditions, and select **Reset** to continue.

5. Select **OK** to confirm reset completion.

nformation			
It has been complet	ed !!!		
Press [OK] button.			
	·		

6. Select Longitudinal G Sensor Calibration.

Electronic Stability Control	
System Identification	
HCU Air Bleeding Mode	
Auto Detected Configuration Reset(ESP(ESC) Only)	
 Longitudinal G Sensor Calibration(HAC/DBC Only) 	
Steering Angle Sensor(SAS) Calibration	
Variant Coding	

7. Read the summary description and click **OK** to continue.

Longitudinal G Sense	or Calibration(HAC/DBC Only)
Purpose	To reset sensor value of longitudinal G sensor.
Enable Condition	1. Engine Off 2. Ignition Switch On 3. HAC Condition : Enabled 4. Max. Incline Angle : within ±0.57 deg 5. Straighten Steering Wheel position 6. Normal Tire Pressure 7. No excessive load on vehicle
Concerned Component	Hydraulic Electric Control Unit(HECU), Longitudinal G Sensor
Concerned DTC	C1285
Fail Safe	Warning Lamp On
Etc	Must be performed after sensor or ECU is replaced.
	ок

8. Continue reading the summary description and click **OK** to continue.

[Longitudinal G Sensor Calibration]
This function needs to be applied to vehicles with DBC, HAC.
Reset the studied values of ECU and Calibrate offset of
the AX sensor to zero again.
Must be fulfilled when the YAW sensor or ESC H/UNIT is replaced.
Confirming Method : Check DTC after the process
▲ [Warning] C1285, illuminating ESC warning lamp, insensitive/sensitive working cause to misjudge of the gradient might occur if the process is not fulfilled.
OK Cancel

9. Read the conditions, and select **OK** to continue.

• [Longitudinal G Sensor Calibration]
1. No DTC related to Longitudinal G Sensor.
2. Car must be stopped longer than 1 sec.
3. On the flat ground.
4. Maximum range of the slope must be within \pm 1% (0.57°)
5. Straighten up the steering wheel.
6. Tire pressure must be under the regulation.
7. IG. ON or Engine Idle.
OK Cancel
Information
Reset Complete !!!
Turn IG off for 10 seconds and then back on.

10. Turn the ignition OFF for 10 seconds, then back ON again.

Select **OK** to continue.

11. Select <u>Steering Angle Sensor (SAS)</u> <u>Calibration.</u>

Electronic Stability Control	1
System Identification	
HCU Air Bleeding Mode	
 Auto Detected Configuration Reset(ESP(ESC) Only) 	
Longitudinal G Sensor Calibration(HAC/DBC Only)	
Steering Angle Sensor(SAS) Calibration	
Variant Coding	

ок

Press the [OK] button.

12. Read the summary description and click **OK** to continue.

Purpose	To initialize ECU and reset the Steering Angle Sensor(SAS) value to zero-set.
Enable Condition	1. Straighten the front wheels 2. Straighten Steering Wheel position 3. Engine Off 4. Ignition Switch On
Concerned Component	Steering Angle Sensor(SAS), Steering Column
Concerned DTC	1. SAS related DTC: C1260, C1623 2. Steering Column related DTC: C1261
Fail Safe	Warning Indicator Lamp "ON
Etc	In case vehicle is equipped with Electric Power Steering(EPS), SAS calibration must be performed ir EPS system.
	ок

13. Read the conditions, and select **Reset** to continue.

- 14. With the ignition ON, engine not running, select **OK**.
- 15. Turn the ignition OFF for 10 seconds, then back ON again.

Select **OK** to continue.

=[Condition]	
1. Straighten the front tire.	
2. Arrange the steering wheel at t	he center position.
3. Ignition key On	
4. Engine Stop	
A	
Caution]	
n case of the vehicle EPS is equippe	ed, perform Steering Angle
sensor Calibration at the EPS syster	n.
Press Reset button If you are read	v.
Deven	Connel

This function resets the studied value of ECU and SAS value to zero-set



ок

Turn IG off for 10 seconds and then back on

Press the [OK] button.

16. Select <u>Variant Coding.</u>

- Electronic Stability Control

 System Identification

 HCU Air Bleeding Mode

 Auto Detected Configuration Reset(ESP(ESC) Only)

 Longitudinal G Sensor Calibration(HAC/DBC Only)

 Steering Angle Sensor(SAS) Calibration

 Variant Coding
- 17. Read the summary description and click **OK** to continue.

• Variant Coding	
Purpose	This function resets variant code and input the new one in ESP. Perform this function when you replace ESP occur C1702 with MIL On.(ESP/EBD/ABS)
Enable Condition	1. Engine Off 2. Ignition Switch On
Concerned Component	Hydraulic Electric Control Unit(HECU)
Concerned DTC	C170204
Fail Safe	Warning Lamp On
Etc	-
	ок

18. Read the conditions, and select **OK** to continue.

Variant Coding
• [Variant Coding]
This function resets variant code and input the new
one in ESP. Perform this function when you replace ESP or
occur C1702 with MIL On.(ESP/EBD/ABS)
•[Condition]
2. Engine Stop
Press <mark>[OK]</mark> button, if you are ready Press <mark>[CANCEL]</mark> button to exit.
ОК Сапсеі

- 19. Select **OK** to continue.
- 20. Select **OK** to complete calibration procedures.

	ок	Cancel
RIA	ANT CODING	
***	Variant Coding is completed ***	
HE (ES	CU information corresponds with the real o (S/HAC/SPAS/AVH) before delivery. When this HAC is in "Enabled" mode, the ver	ar information rtical G sensor must be zero
adj The set	usted. erefore if you press [OK] button, it will be di ting. Item	rected to Zero Adjustment
adj The set	usted. erefore if you press <mark>[OK]</mark> button, it will be di ting. Item ESS (Emergency Stop Signal)	rected to Zero Adjustment Applied Value DISABLE
adj The set	usted. erefore if you press [OK] button, it will be di ting. Item ESS (Emergency Stop Signal) HAC (Hill-start Assist Control)	Applied Value DISABLE Coding not applied
adj The set	usted. erefore if you press [OK] button, it will be dir ting. Item ESS (Emergency Stop Signal) HAC (Hill-start Assist Control) SPAS (Smart Parking Assist System)	Applied Value DISABLE Coding not applied Coding not applied

21. Start engine to confirm normal operation.

Check and clear any DTCs. Verify no warning lamps on in the instrument cluster.