

PEPS SYSTEM

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

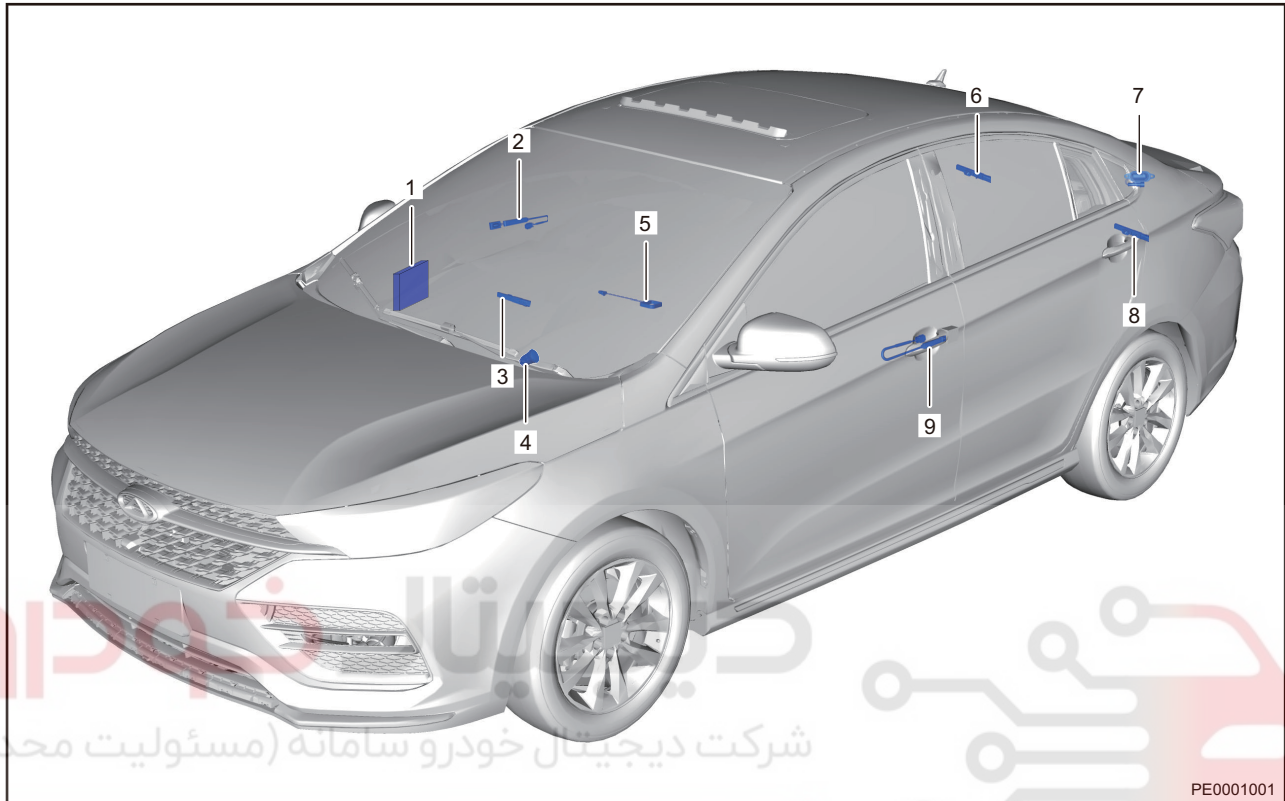
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Overview

E4T15B+CVT



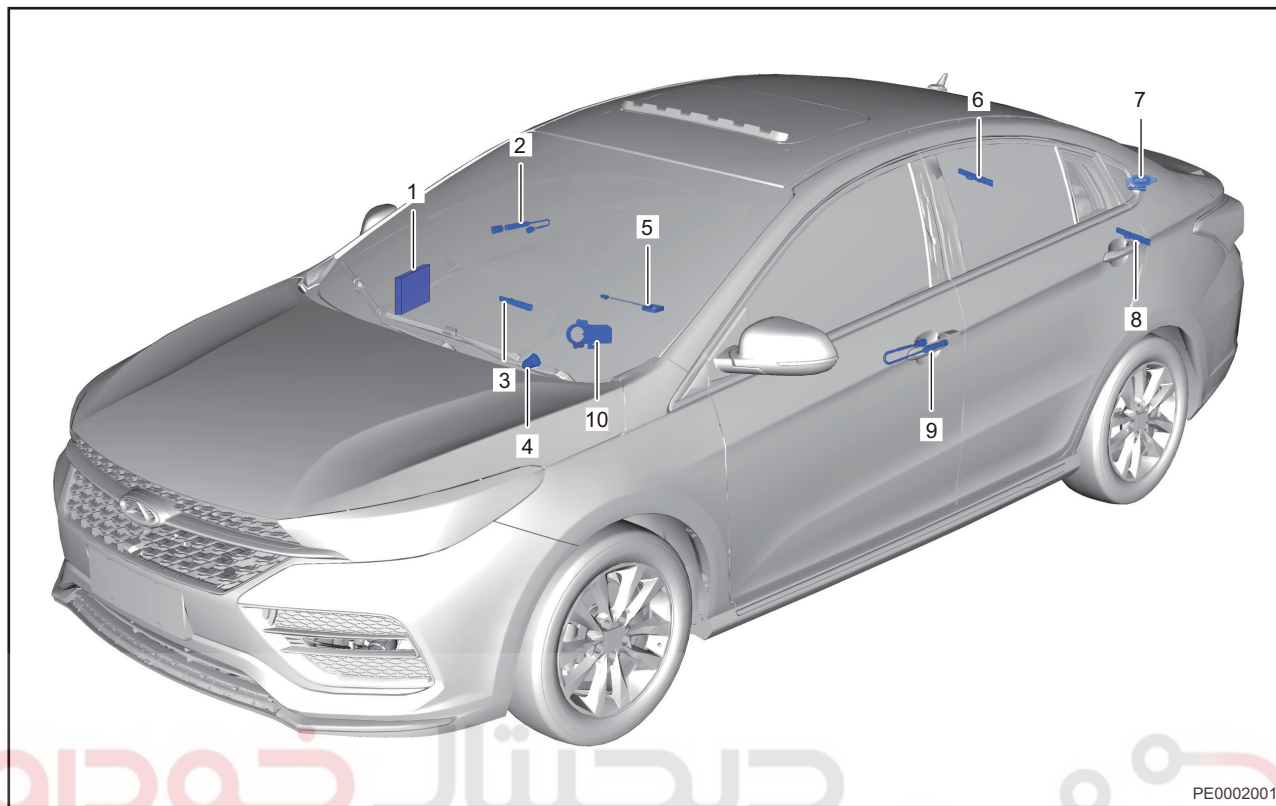
PE0001001

1 - PEPS Module	2 - Front Right Door Handle Sensor
3 - Front Internal Low Frequency Antenna	4 - ENGINE START STOP Switch
5 - Immobilizer Coil	6 - Rear Internal Low Frequency Antenna
7 - Luggage Compartment Door Release Switch	8 - Rear Low Frequency Antenna (on Rear Bumper Crossmember)
9 - Front Left Door Handle Sensor	

PEPS system consists of PEPS controller, ENGINE START STOP switch, built-in low frequency antenna (3 antennas are equipped in vehicle to detect key position), immobilizer coil for back up starting, front left/right door handle sensor (front left/right door handle), ESCL module (for MT models), luggage compartment door microswitch and remote controller (also called smart key).

E4T15B+MT

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PE0002001

1 - PEPS Module	2 - Front Right Door Handle Sensor
3 - Front Internal Low Frequency Antenna	4 - ENGINE START STOP Switch
5 - Immobilizer Coil	6 - Rear Internal Low Frequency Antenna
7 - Luggage Compartment Door Release Switch	8 - Rear Low Frequency Antenna (on Rear Bumper Crossmember)
9 - Front Left Door Handle Sensor	10 - ESCL Module (for MT Models)

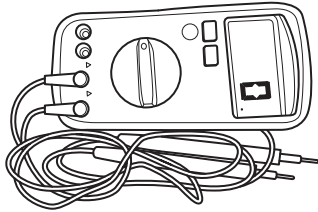
Specifications

Torque Specifications

Description	Torque (N·m)
Hexagon Flange Nut	7 ± 1

Tools

General Tool

Digital Multimeter	 002
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Special Tool

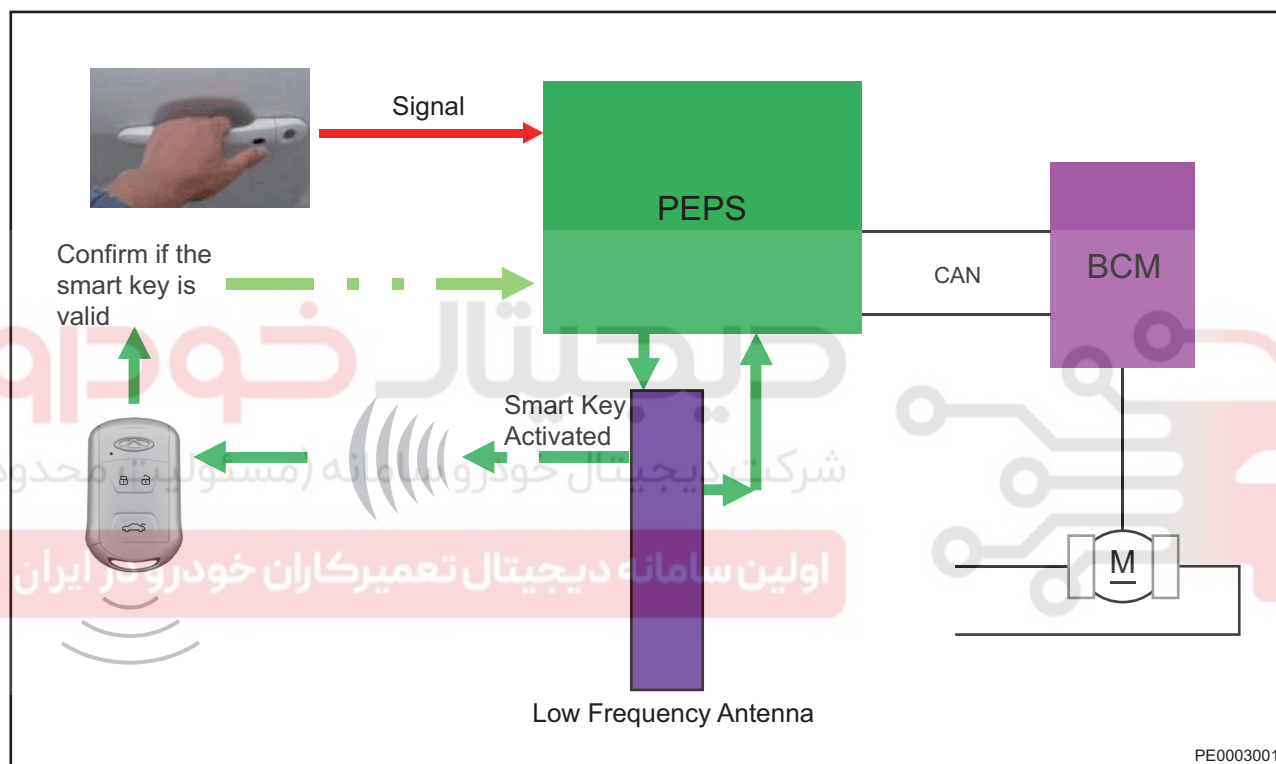
Diagnostic Tester	 001
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Function Description

PEPS Function Description

Function	
1 - Smart Entry Function	2 - Keyless Entry Function
3 - Mechanical Entry Function	4 - One-button Start Function
5 - One-button Stop Function	6 - Emergency Stop Function
7 - Back Up Start Function	8 - Emergency Start Function
9 - Starting Number Limit Function	10 - Electric Steering Column Lock Control Function
11 - Prompt Function	12 - Engine Immobilizer Function

Smart Entry Function



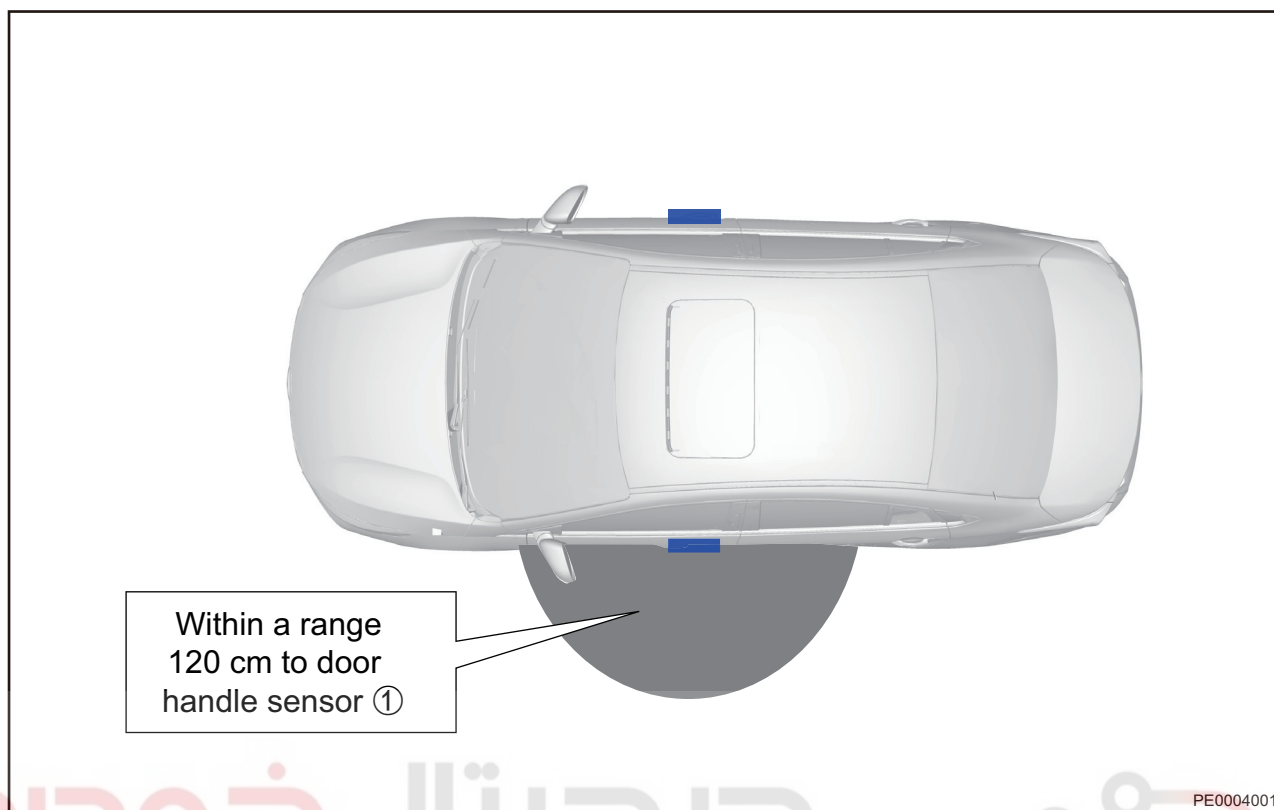
Smart Door Unlock (Keyless Fortifying Deactivation)

1. When bringing a smart key close to vehicle and pressing door handle switch with doors locked, vehicle will be unlocked.

Hint:

Only front left and right doors are equipped with switches.

2. No matter where the smart key is (put in pocket, hang in the belt or put in bag), as long as the key is within approximately 1.2 m of door handle sensor, if pressing door handle sensor, vehicle will enter fortifying deactivation mode (turn signal lights will flash twice and four doors will be unlocked).
3. If any of following operations is not performed within 30 seconds after pressing door handle sensor (fortifying deactivation) under fortifying mode, all doors will be locked automatically.
 - (a) Open any door
 - (b) Press ENGINE START STOP switch
 - (c) ENGINE START STOP switch is in ACC or ON position



Smart Door Lock (Keyless Fortifying)

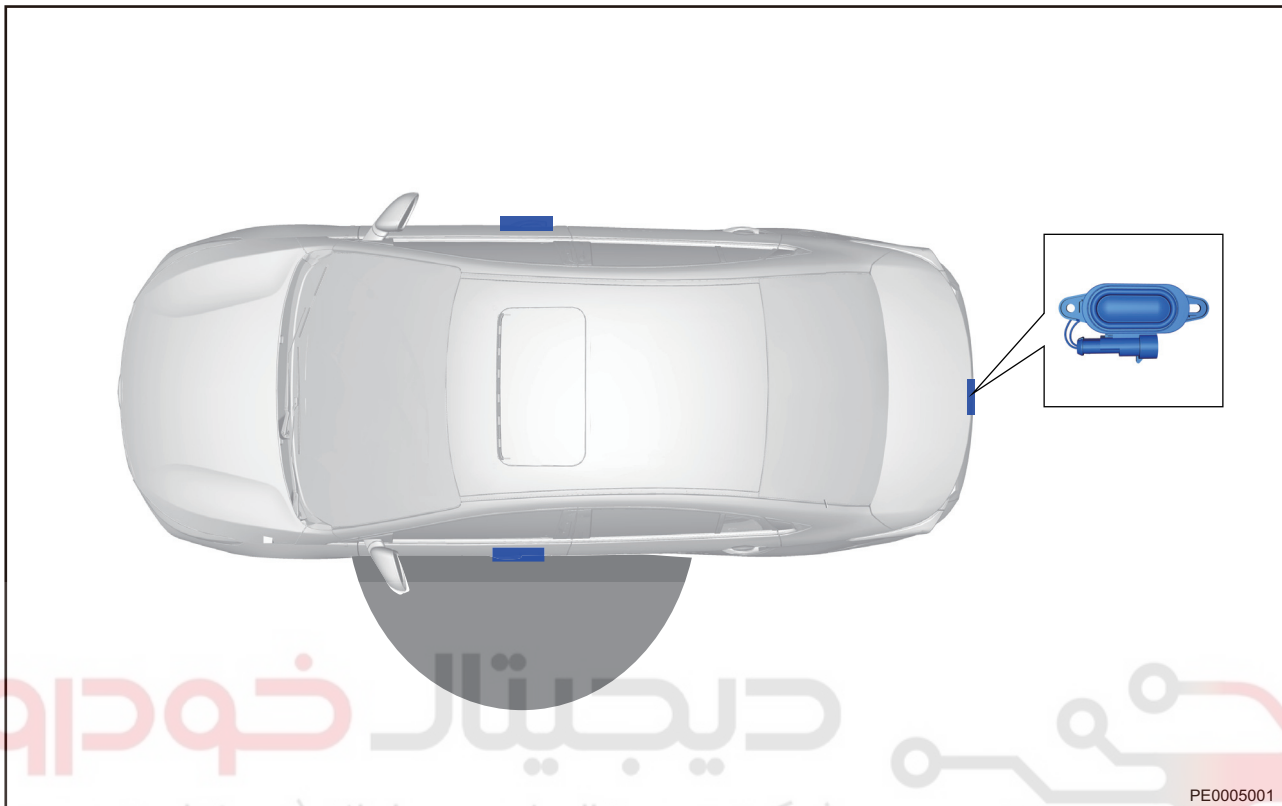
1. When exiting vehicle with smart key and pressing door handle switch with doors unlocked, vehicle will be locked.

Hint:

If any door is not closed properly, it will be unlocked automatically after locking to avoid leaving key inside vehicle.

- (a) Four doors, engine hood and luggage compartment door are closed, and ENGINE START STOP switch is in OFF position.
 - (b) Press door handle sensor when the smart key is outside the vehicle and within a 1.2 m semicircle area around the front left door handle.
 - (c) Vehicle enters fortifying mode (turn signal lights will flash once, horn sounds once and all doors will be locked).
2. Operation range
 - (a) Only distance between smart key and door handle sensor is within specified operation range, smart key function can be used.
 - (b) When smart key battery is discharged or there is strong radio wave in operation position, smart key system also will do not operate normally.
 - (c) It is recommended that do not place smart key together with mobile phone and other radio equipment.
 - (d) Operation range is within 120 cm of each door handle sensor.
 - (e) If smart key is too close to door glass, handle or rear bumper, door handle sensor may not be used.
 - (f) When smart key is within operation range, any one even without carrying smart key can press door handle sensor on corresponding side to lock/unlock door.
 3. When using smart key system, door handle sensor will invalid in following conditions
 - (a) When ENGINE START STOP switch is in following positions (ACC or ON position).
 - (b) Smart key is left in cab or luggage compartment (at this time, alarm will sound, turn signal lights will flash and "Smart Key inside Vehicle" will be prompted on instrument cluster if pressing door handle sensor.)

- (c) When smart key is not within exterior operation range.
- (d) When any door is opened or not closed properly.
- (e) When the smart key battery is discharged.

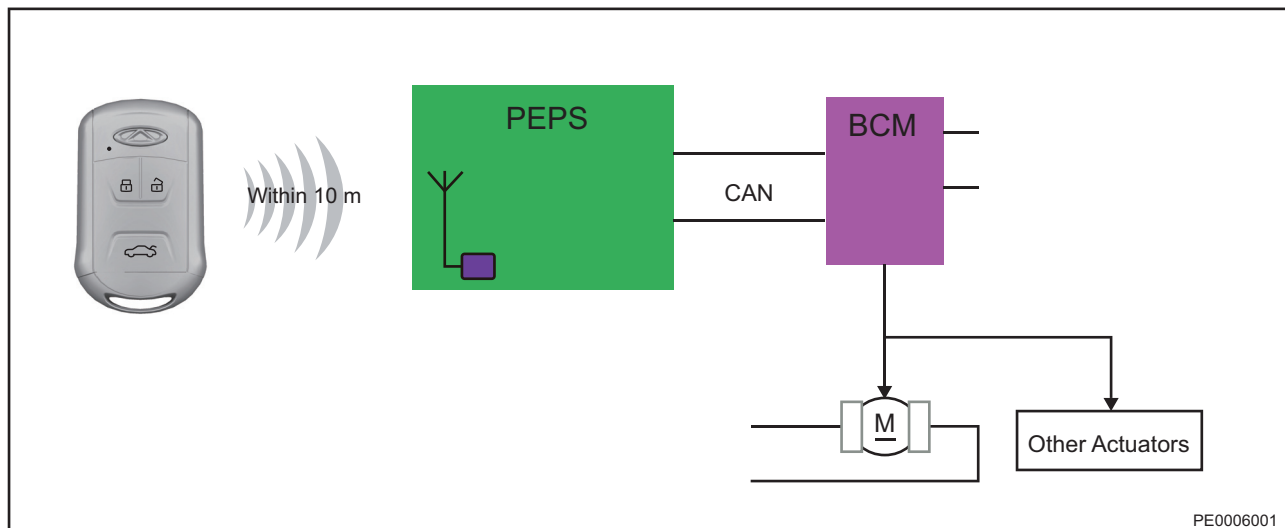


PE0005001

Smart Keyless Luggage Compartment Open

1. If all doors are unlocked, the luggage compartment external electronic switch is activated. At this time, press the switch to open luggage compartment without necessity of carrying smart key.
2. If door is under central lock state, luggage compartment external electronic switch will be disabled. At this time, it is necessary to bring smart key close to rear of vehicle and press electronic switch to open luggage compartment.
3. Precautions for smart entry function
 - (a) For safety, when remote control/central control or mechanical control is used to lock vehicle, if there is a smart key inside vehicle, system will disable door handle switch while remote control still can be used.
 - (b) In order to successfully perform door handle switch operation, do not rapidly operate door handle switch in succession within 0.5 second. and also do not rapidly operate luggage compartment external electronic switch.
 - (c) Smart keyless unlock and lock are only valid when power supply is shut off and four doors are closed properly, or system will not operate.
 - (d) For power saving purpose, after vehicle is parked for 15 days, smart entry for front right door handle will be invalid, only smart entry for front left door handle can be used (it will return to normal if performing remote control unlock once or front left door HSU (door handle sensor) unlock once).
 - (e) In some particular situations, such as smart key is too close to door, system may determine the key is inside vehicle, causing door handle sensor to be disabled. In this case, keyless entry function will not operate normally. At this time, it is necessary to use remote control to lock and unlock vehicle.

Remote Entry Function



1 - LED Indicator	2 - Lock Button
3 - Unlock Button	4 - Luggage Compartment Door Release Button
5 - Mechanical Key	6 - Mechanical Key Release Slider

Remote Lock (Fortifying) Function

1. Press lock button on smart key with power supply OFF, door will be locked, turn signal lights will flash (once), horn will sound (once) and vehicle will enter fortifying mode.
 - (a) Press lock button with four doors, hood and luggage compartment door closed properly, door will be locked, body anti-theft system will be turned on and vehicle will enter fortifying mode.
 - (b) If any door is not closed properly, lock system will not operate.
 - (c) If power supply is in ACC or ON position, remote lock function will not operate to avoid misoperation.
 - (d) If doors are closed properly while hood or luggage compartment door is not closed properly, lock system will lock doors, but body anti-theft system cannot be turned on and vehicle will not enter fortifying mode.

Remote Lock (Fortifying Deactivation) Function

1. Press the remote control unlock button, 4 door locks are unlocked, and turn signal light flashes twice, the vehicle enters the fortifying deactivation state.

Hint:

If any of following operations is not performed within 30 seconds after pressing remote unlock button (fortifying deactivation) under fortifying mode, all doors will be locked automatically.

- (a) Open any door
- (b) Press ENGINE START STOP switch
- (c) ENGINE START STOP switch is in ACC or ON position

Hint:

- Description

Press unlock button, so that door will be unlocked and luggage compartment door external switch will be activated (at this time, press luggage compartment external switch to open luggage compartment even if user does not bring valid key).

Under fortifying or anti-theft alarm mode, press unlock button to cancel body anti-theft alarm system.

Remote Luggage Compartment Function

1. Long press remote luggage compartment button (about 1.5 seconds), luggage compartment door will be unlocked, at this time, it is still necessary to press luggage compartment door release switch to open luggage compartment door (non-power luggage compartment door). If it is equipped with power luggage compartment door, luggage compartment door will open automatically.

Hint:

Open luggage compartment remotely cannot cancel vehicle fortifying.

Mechanical Key Entry Function

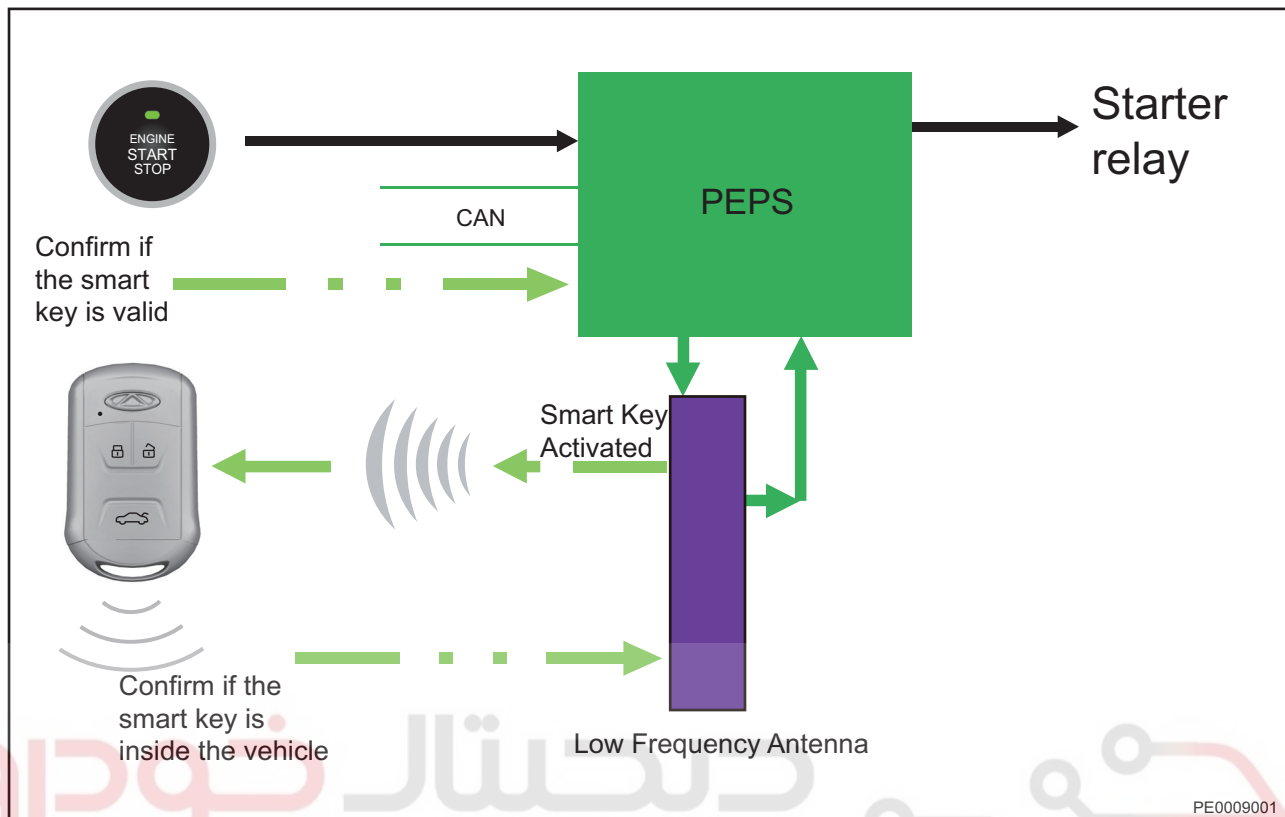


1. When key battery is weak or remote control function cannot operate normally caused by radio interference, it is possible to use mechanical key to lock and unlock vehicle.
2. Slide mechanical key release slider on back side of key and pull out mechanical key, then insert the key into front left door key cylinder and turn it clockwise or counterclockwise to lock or unlock vehicle.

Hint:

When vehicle fortifying is successful, mechanical key can be used to unlock, but it is illegal entry, and alarm will sound and turn signal lights will flash at that time.

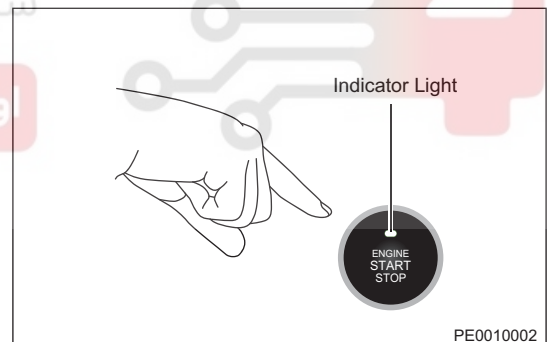
One-button Start Function



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1. Indicator does not come on

- (a) Power supply is OFF and brake pedal (for CVT models) or clutch pedal (for MT models) is not depressed, or engine has been started.



2. Amber

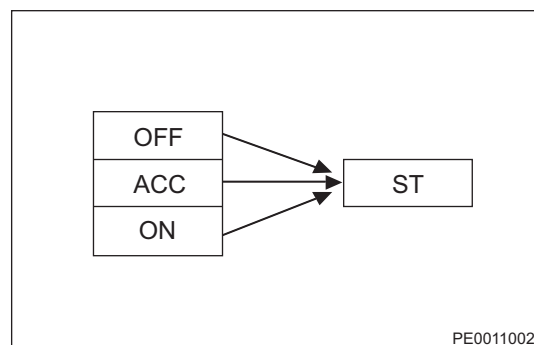
- (a) Power supply state: ACC or ON, brake pedal (for CVT models) or clutch pedal (for MT models) is not depressed.

3. Green

- (a) Brake pedal (for CVT models) or clutch pedal (for MT models) is depressed, and engine will start once press the button.

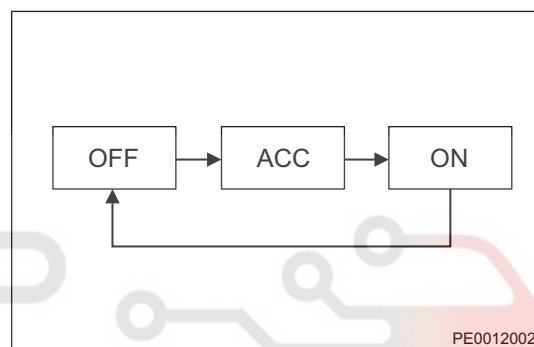
4. One-button start function: It is activated at any power supply state (OFF, ACC, IGN) with legal smart key inside vehicle. Depress brake pedal (for CVT models) or clutch pedal (for MT models), press ENGINE START STOP switch to start engine.

(a) Power supply state switching



5. There are four positions for vehicle power supply: OFF, ACC, ON, ST (ignition). Brake pedal (for CVT models) or clutch pedal (for MT models) is not depressed, press ENGINE START STOP switch:

(a) Power supply state switching



6. Precautions for one-button start function

- For MT models: If clutch pedal is not depressed fully, system will not perform starting operation. For CVT models, if it is not in P or N position, system will not perform starting operation.
- During starting, if brake pedal (for CVT models) or clutch pedal (for MT models) is released halfway, system will suspend starting.
- Press ENGINE START STOP switch then release it when starting, system will judge if starting is successful and stop starting properly.
- For AT models, if it is not in P position, vehicle power supply state (ACC, IGN) will not return to OFF state.

One-button Stop Function

1. For common engine stop mode, 4 km/h of vehicle speed must be met.

Hint:

- For CVT models, if it not in P position, vehicle power supply state will not return to OFF, you must shift to P position before leaving vehicle after stopping. And check if power supply state is in OFF. Make sure that vehicle power supply is in OFF state and then leave vehicle. Otherwise, door cannot be locked.
- Simple method for distinguishing power supply in ACC or OFF:
 - Judged by color of indicator on ignition switch.
 - Under ACC state, instrument cluster will illuminate center display edge of LCD.
 - Operate buttons on remote controller, if lock operation is failed and unlock operation is successful, it indicates that vehicle power supply is not in OFF position.

Emergency Stop Function

1. In order to stop engine in emergency, this system has emergency stop mode.

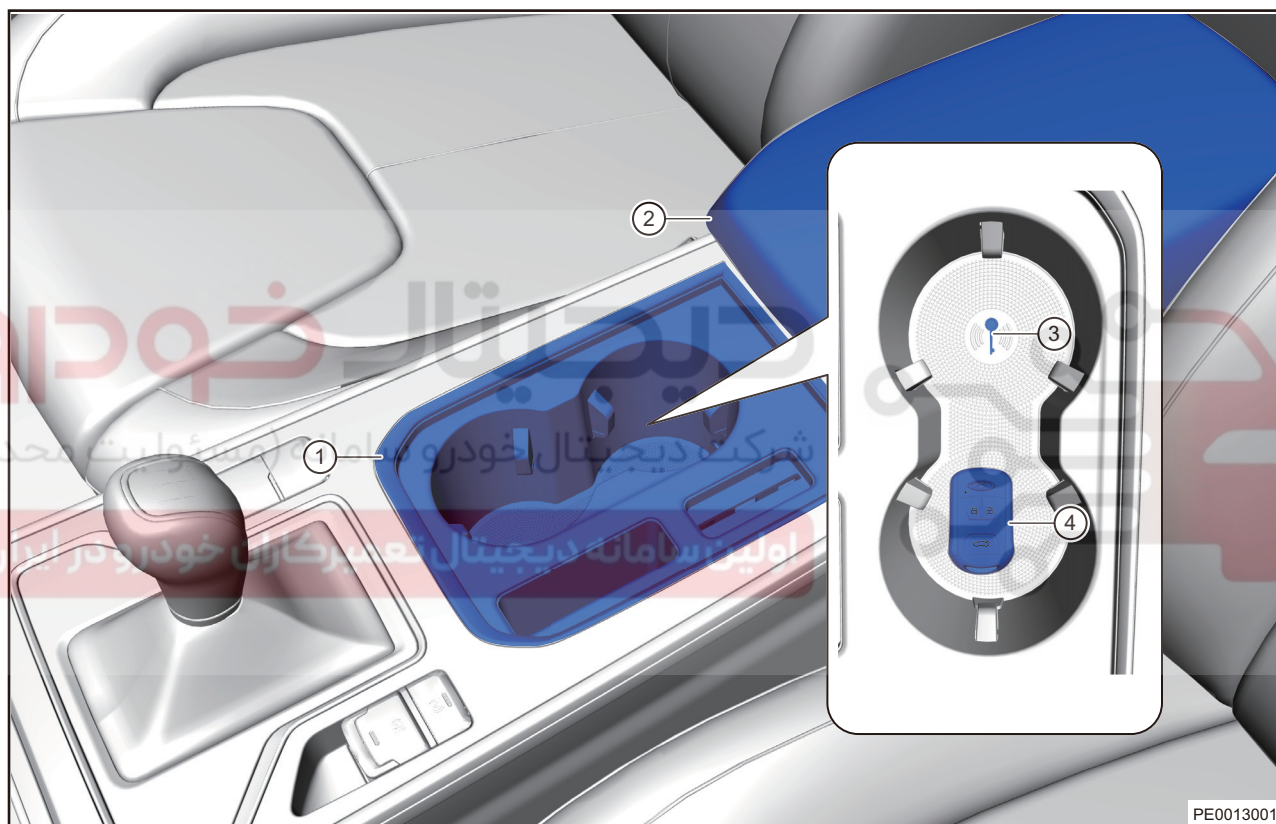
Hint:

- When vehicle speed is more than 4 km/h, press ENGINE START STOP switch for more than 3 seconds in succession.
- If pressing ENGINE START STOP switch for 3 times within 2 seconds with vehicle speed more than 4 km/h, engine will stop and power supply will return to ACC.

Caution:

- If this condition is not met, engine will not shut down and ignition switch is kept in ON.
- During driving, emergency stop will seriously affect normal driving. Do not use this function unless in emergency.

Back Up Start Function



1 - Cup Holder	2 - Armrest Box
3 - Bottom of Rear Cup Holder (Key Placing Mark for Back Up Start)	4 - Smart Key (Face up)

1. If key can not be recognized by system due to weak battery or interference, PEPS system will not operate normally. At this time, system provides a method to back up start engine, following method can be used to start engine or turn on power supply.
 - (a) Lay key on bottom of rear cup holder with face up, and do not depress brake pedal (for CVT models) or clutch pedal (for MT models).
 - (b) Press the ENGINE START STOP switch once. Power supply state will switch to ON, and "Verification is Successful, it is Possible to Start" is displayed on instrument cluster.

- (c) Depress brake pedal (for CVT models) or clutch pedal (for MT models) fully, press ENGINE START STOP switch to start engine.

Hint:

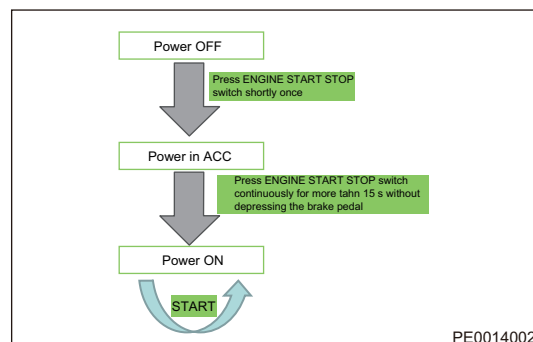
For MT models, communication between ESCL and PEPS is failed or verification does not pass, electric steering column lock cannot be unlocked successfully, power supply cannot switch to ON, engine cannot be started, so back up start function is invalid.

Emergency Start Function

- To prevent engine cannot be started due to signal failure of brake pedal position (for CVT models) or clutch pedal position (For MT models) detected, this system has emergency start mode.

Caution:

- Please contact service station for inspection and repair as soon as possible.



Starting Times Limit Function

- When serious damage occurs in system, in order to ensure driving safety and prevent steering system locking incorrectly, system will not allow user to start engine limitlessly and engine only can be started for 10 time. And each time engine starts successfully and travel, rest times will reduce one. Please contact Chery service station for repair as soon as possible.

Caution:

Only MT models have this function.

Hint:

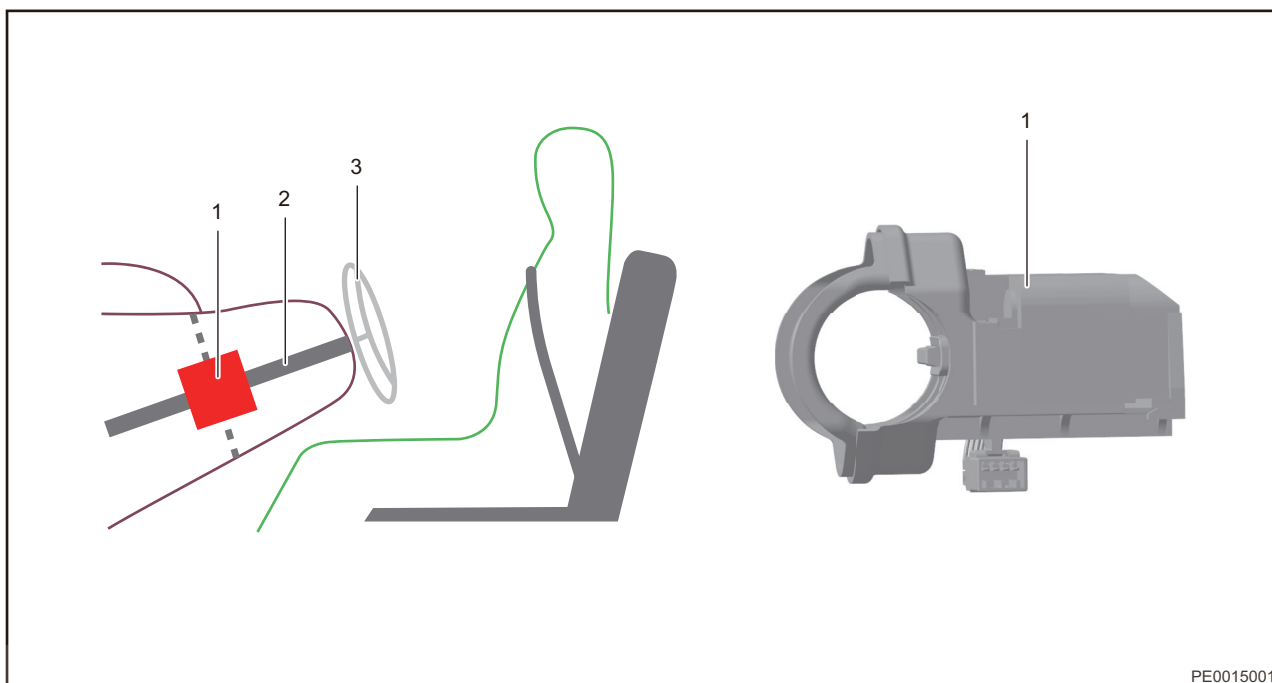
- This system malfunction may be caused by any or several of the following reasons:

- Serious malfunction in the electric steering column lock
- Speed signal malfunction of front right wheel
- Speed signal malfunction of other three wheels

- Precautions for starting times limit function

- Keyless entry and PEPS system obtains wheel speed signal from brake controller (ABS/ESP), if any wheel speed signal is malfunctioning, ABS/ESP system warning light in instrument cluster will come on.
- If malfunction does not be repaired and maximum start times is reached, it is not allowed to start vehicle. Please contact Chery service station for repair immediately and reset "rest start times" with diagnostic tester. Otherwise, if same malfunction occurs next time, start times offered by system will be less than 10 times. (Specific value depends on residual times last time malfunction occurs.)

Electric Steering Column Lock Control Function



PE0015001

1 - Electronic Steering Column Lock	2 - Steering Column
3 - Steering Wheel	

1. Electric steering column lock is actuator of vehicle anti-theft system, consisting of mechanical locking mechanism and electronic control unit. It performs lock and unlock operation according to command from controller.

Hint:

Only MT models have this function.

(a) Locking

- (1) If any door is opened or closed and vehicle speed is 0 within 10 minutes after power supply is turned from ON to OFF, electric steering column lock will be locked.
- (2) If any door is not operated within 10 minutes after power supply is turned from ON to OFF, electric steering column lock will not be locked. And even if a door is operated 10 minutes later, electric steering column lock also will not be locked.

(b) Unlocking

- (1) When pressing ENGINE START STOP switch with smart key in vehicle, steering column lock will be unlocked.
 - In some conditions, such as vehicle is parked on slope, large stress will apply to locking pin and steering column, so that, locking pin will be stuck. At this time:
 - (a) System will try to unlock for 3 times within 3 seconds.
 - (b) If steering column lock has not been successfully unlocked, perform related operation according to message "Please press ENGINE START STOP switch, restart power supply" and "Please press ENGINE START STOP switch and turn steering wheel to unlock steering column lock".

2. Precautions for electric steering column lock control function

- (a) If unlock is failed, try to shake steering wheel after pressing ENGINE START STOP switch, but do not forcibly turn steering wheel.
- (b) If electric steering column lock cannot be unlocked successfully, system power supply will not be turned on and engine cannot be started for safety, please contact Chery service station for repair in time.

- (c) After replacing electric steering column lock, it is necessary to use diagnostic tester to perform matching and learning.

Prompt Function

To reduce misunderstanding of PEPS features from users and to facilitate the daily diagnosis of simple problems, system will prompt corresponding message to users through instrument cluster display, buzzer and external horn. Regardless of power supply state (OFF, ACC or ON), once PEPS sends information, instrument cluster will handle and display it.

Text Message Prompt	Buzzer	External Horn	Possible Cause
Smart key is not detected	Sound	/	There is no key in vehicle
Smart key is not detected	Sound	/	If you are in vehicle, find smart key and place it in vehicle, or check if passenger brings the key outside
System malfunction, it is allowed to start X times	Sound	/	Please contact Chery Repair Shop for repair immediately.
Please check and repair PEPS system	Sound	/	Please Contact Chery Service Station for Repair Immediately
Please shift to P or N to start	Sound	/	If you want to start engine, shift to P or N
Please depress clutch pedal to start/depress brake pedal to start	Sound	/	If you want to start engine, depress brake pedal (for CVT models) or clutch pedal (for MT models)
Please turn steering wheel to unlock steering column	Sound	/	Turn power supply on while shaking steering wheel to help steering column unlock successfully
Please press ENGINE START STOP switch to turn power supply on again	Sound	/	Turn power supply on while shaking steering wheel to help steering column unlock successfully
Please shift to P	Sound	/	Please shift to P and press ENGINE START STOP switch to turn off power supply.
Please pay attention that smart key is in vehicle	Sound	Sound 6 times	Be sure to carry smart key on person when leaving vehicle. Caution: Door handle switch will be disabled by system temporarily, please use remote controller to lock and unlock
Verification is successful and it is possible to start	Sound	/	It is displayed only when performing back up start and verification passed, and key battery is fully discharged usually
Please turn off power supply	Sound	/	User may leave vehicle with shift position not in P and power supply not in OFF
Smart key battery is low	Sound	/	Key battery still can be used, but it comes to failure due to low voltage, it is necessary to replace battery

Engine and Vehicle Anti-theft Function

1. Anti-theft for models with PEPS can be divided into two types.
2. For CVT models, anti-theft can be divided into two separate parts - "PEPS and ECU encryption engine immobilizer".
3. For MT models, anti-theft can be divided into two separate parts - "PEPS and ECU encryption engine immobilizer" and "PEPS and ESCL encryption steering column lock anti-theft".
4. For CVT models
 - (a) After power supply is turned to ON, ECM will send one frame of validation data to PEPS via CAN bus to verify. Then PEPS will feedback one frame of validation data as response and send to ECM. If response from PEPS is correct, ECM will determine anti-theft can be canceled. Otherwise, ECM will not inject fuel and ignite.
5. For MT models
 - (a) After power supply is turned to ACC, PEPS will perform encrypted anti-theft validation with ESCL via special LIN line. If validation passes, ESCL will unlock, or ESCL keeps locking and steering wheel cannot be turned. And power supply cannot be turned to ON.
 - (b) After power supply is turned to ON, ECM will send one frame of validation data to PEPS via CAN bus to verify. Then PEPS will feedback one frame of validation data as response and send to ECM. If response from PEPS is correct, ECM will determine anti-theft can be canceled. Otherwise, ECM will not inject fuel and ignite.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Diagnostic Tester Menu Function and Datastream

PEPS System

1. Click "M1D/M1AFL2" to enter diagnostic menu

Show Menu	
CHERY (CUSTOMIZED) V58.80 > Diagnostic program	
T19	T18
M1D/M1AFL2	T15/T17
A13T	M1A
M16PHEV	A11
A15/A15FL	B11FL/B11
S11	T11/T11FL
A21FL/A21	S21FL/S21
Chery (Customized) M1D/M1AFL2	
PE0070001	

2. Click "PEPS (Passive Entry And Passive System)" to enter PEPS system

Show Menu	
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection	
EMS (Engine Management System)	TCM (Transmission Control Module)
ESP(EPB)(Electronic Stability Program)	ICM (Instrument Cluster Module)
IHU (Infotainment Head Unit)	T-BOX (Telematics Box)
SAM (Steering Angle Module)	ABM/ACU (Air Bag Module)
BCM (Body Control Module)	PEPS (Passive Entry And Passive Start System)
AVM/LDW (Around View Monitor Module / Lane Departure Warning)	BSD (Blind Spot Detection)
RADAR (Radar Module)	EPS (Electronic Power Steering)
Chery (Customized) M1D/M1AFL2	
PE0071001	

3. Display PEPS system diagnostic list

Show Menu   

CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)

Version Information	Read Fault Code
Clear Fault Memory	Read Data Stream
Special function	

Chery (Customized) M1D/M1AFL2

PE0072001

(a) Click "Version Information"

Show Menu   

CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)

Version Information

Clear Fault Memory

Special function

Version information

Vehicle Manufacturer Spare Part Number:
804000022AA

System Supplier Identifier: 9JF

Vehicle Manufacturer ECU Hardware Number:
2A4

System Supplier ECU Software Number: 15.6

ECU Manufacturing Date: 20180507

ECU Serial Number: 121

ESCL supplier Serial number: Not supported

ESCL SW version: Not supported

ESCL manufacturing Date: Not supported

OK

Chery (Customized) M1D/M1AFL2

PE0073001

(b) Click "Read Fault Code" to display "Read Current Fault Code" and "Read Current Fault Code"

CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)

Read Current Fault Code

Read History Fault Code

Chery (Customized) M1D/M1AFL2

PE0074001

- (1) Read Current Fault Code: Read stored DTC of current malfunction
- (2) Read History Fault Code: DTCs of previous malfunction have not been cleared, and these DTCs can be read by diagnostic tester

(c) Click "Read Data Stream"

(1) Vehicle configuration status of PEPS system

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
PS/PEPS	PS/PEPS		
ESCL	No ESCL		
Transmission Type	AT		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
		PE0077001	

- Vehicle configuration information (PEPS, MT model ESCL, AT or MT model)

(2) Software configuration code

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
Software Configuration Code1	03		
Software Configuration Code2	02BC01		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report Record Help
		PE0078001	

- Software Configuration Code 1: Number of interior low frequency antennas (such as "07" refers to 3, "03" refers to 2).
- Software Configuration Code 2: After-sales personnel do not need to write configuration, for reference only.

(3) Low frequency antenna current

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
FR HSU	0	mA	
FL HSU	0	mA	
Bumper LF Antenna	0	mA	
Front LF Antenna	0	mA	
Middle LF Antenna	0	mA	
Rear LF Antenna	0	mA	
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report Record Help
		PE0079001	

- After-sales personnel do not need to pay attention to this menu.

(4) Smart key number

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
Smart Key Number	1		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report Record Help
		PE0080001	

- Smart key number learned by PEPS module.

(5) Power management and start status

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
ACC status	Active		
IG1 status	Active		
IG2 status	Active		
Starter relay status	Inactive		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report Record Help
		PE0081001	

- Status of vehicle power activation.

(6) Vehicle lock status

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
Vehicle lock Status	Unlock		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
		PE0082001	

- Status of lock and unlock the vehicle.

(7) Engine switch backlight status

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
Engine Switch Backlight Status	Inactive		
Engine switch IND A status	Active		
Engine switch IND G status	Inactive		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
		PE0083001	

- Switching status of indicator light when pressing the ENGINE START STOP switch

(8) ESCL status

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
ESCL Bolt Status	Not supported		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report Record Help
		PE0084001	

- Displays the current ESCL status (unlocked or locked)

(9) ESCL operation status

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
ESCL Operation Status	Not supported		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report Record Help
		PE0085001	

- When the electronic steering column lock does not perform unlocking or locking operation, it displays that the electronic steering column lock is ready
- When the electronic steering column lock performs unlocking or locking operation, it displays that the electronic steering column lock is working

(10)ESCL learning status

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
ESCL Learning Status	Not supported		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
PE0086001			

- Displays whether the current electronic steering column lock has performed anti-theft matching and whether the key information is stored in it.

(11)ESCL engine start inhibition status

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
ESCL Engine Start Inhibition Status	Not supported		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
PE0087001			

- The system will not allow the engine to start when the electronic steering column lock is currently malfunctioning or does not perform anti-theft matching.

(12)ESCL thermal protection counter

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
ESCL Thermal Protection Counter	Not supported		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report Record Help
		PE0088001	

- When the temperature of executive motor inside electronic steering column lock is too high, the system will record corresponding number of times.

(13)ESCL low voltage inhibition counter

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)			
Name	Value	Unit	
ESCL Low Voltage Inhibition Counter	Not supported		
(1 / 1)			
Chery (Customized) M1D/M1AFL2		Graph	Report Record Help
		PE0089001	

- When the system voltage is too low, the electronic steering column lock may not work properly. The system will record corresponding number of times.

(14)ESCL fault status 1

- This function is temporarily not supported.

(15) ESCL fault status 2

- After-sales personnel do not need to pay attention to this data.

(d) Special operation

Show Menu	
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > PEPS (Passive Entry And Passive Start System)	
Write software configuration information (2 bits)	Write software configuration information (6 bits)
Write automatically software configuration information	Write LF antenna Current
Release PSE inhibition state	ESCL Exit anti-scanning
Chery (Customized) M1D/M1AFL2	
PE0095001	

(1) Write software configuration information (2 bits)

- After-sales personnel do not need to input

(2) Write software configuration information (6 bits)

- After-sales personnel do not need to input

(3) Write LF antenna Current

- Caution:**
- After-sales personnel are not allowed to set current

(4) Release PSE inhibition state

- When the system fails, the system will reserve 10 start times after the PSE inhibition is triggered. Once the number of times is exhausted, the function needs to be executed to resume the start times.

(5) ESCL Exit anti-scanning

- When the ESCL enters anti-scan state, this function can be used to exit anti-scan state.

IMMO system

1. Click "M1D/M1AFL2" to enter diagnostic menu

Show Menu	
CHERY (CUSTOMIZED) V58.80 > Diagnostic program	
T19	T18
M1D/M1AFL2	T15/T17
A13T	M1A
M16PHEV	A11
A15/A15FL	B11FL/B11
S11	T11/T11FL
A21FL/A21	S21FL/S21
Chery (Customized) M1D/M1AFL2	
PE0070001	

2. Click "IMMO (Immobilizer)" to enter IMMO system

Show Menu	
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection	
IHU (Infotainment Head Unit)	T-BOX (Telematics Box)
SAM (Steering Angle Module)	ABM/ACU (Air Bag Module)
BCM (Body Control Module)	PEPS (Passive Entry And Passive Start System)
AVM/LDW (Around View Monitor Module / Lane Departure Warning)	BSD (Blind Spot Detection)
RADAR (Radar Module)	EPS (Electronic Power Steering)
TPMS (Tire Pressure Monitor System)	IMMO (Immobilizer)
CLM (Climate Module)	
Chery (Customized) M1D/M1AFL2	
PE0096001	

3. Displays IMMO system diagnostic list

Show Menu	
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)	
Version Information	Read fault code
Erase fault code	Read data stream
write data	After sale function
Chery (Customized) M1D/M1AFL2	
PE0097001	

(a) Read fault code

Show Menu	
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)	
Read present fault code	Read history fault code
Read all fault code	
Chery (Customized) M1D/M1AFL2	
PE0098001	

- Displays "Read present fault code", "Read history fault code" and "Read all fault code".
 - Read present fault code: Read stored DTC of current malfunction
 - Read history fault code: DTCs of previous malfunction have not been cleared, and these DTCs can be read by diagnostic tester
 - Read all fault code (models without PEPS): the DTC library contains all DTCs of anti-theft system

(b) Read data stream

Show Menu

CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)

Immobilizer status	Transponder Statusd
ECM status	TCU status
ESCL status	

Chery (Customized) M1D/M1AFL2

PE0099001

• Immobilizer status

Data Stream

CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)

Name	Value	Unit	
Ignition	on		
Immobilizer condition	Immobilizer not in delivery condition		
Immobilizer security code	programmed		
Last time IMMO and Key authentication	failed		
Last time IMMO authentication ECM	succeeded		
Last time IMMO authentication TCU	succeeded		

(1 / 1)

Chery (Customized) M1D/M1AFL2

Graph

Report

Record

Help

PE0101001

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)			
Name	Value	Unit	
Last time IMMO authentication ECM	succeeded		
Last time IMMO authentication TCU	succeeded		
number of key was learnt	1		
The number of unsuccessful security access	0		
VIN	programmed		
Wait loop And Security code	Wait loop is inactive, the Security code can be en (1 / 1)		
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
		PE0102001	

- ENGINE START STOP switch status
- IMMO status (whether it has been matched)
- Vehicle identification number, anti-theft security code (whether it has been programmed)
- Number of key learning
- Whether IMMO and key, ECU certification is successful (TCU certification applies to CVT models)
- When the authorization code (PIN code) is incorrectly entered multiple times, the security access will be delayed and the authorization code cannot be entered. Wait for the specified time before you can enter again.
- The number of times security access has failed
- Transponder Statusd

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)			
Name	Value	Unit	
Last received transponder Id at a transponder position 4	not programmed		
Last received transponder Id at a transponder position 5	not programmed		
Legal Transponder	Legal Transponder detected		
Ring antenna	succeeded		
SK	correct		
Transponder	Transponder detected (1 / 2)		
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
		PE0103001	

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Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)			
Name	Value	Unit	
Transponder condition	Transponder not in delivery condition		
Transponder Id	At least one transponder Id is programmed		
Transponder ID	Transponder ID in the Immobilizer		
Transponder Id at transponderat transponder position 1	not programmed		
Transponder Id at transponderat transponder position 2	programmed		
Transponder Id at transponderat transponder position 3	(2 / 2) not programmed		
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
		PE0104001	

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)			
Name	Value	Unit	
Transponder ID	Transponder ID in the Immobilizer		
Transponder Id at transponderat transponder position 1	not programmed		
Transponder Id at transponderat transponder position 2	programmed		
Transponder Id at transponderat transponder position 3	not programmed		
Transponder Id at transponderat transponder position 4	not programmed		
Transponder Id at transponderat transponder position 5	(2 / 2) not programmed		
Chery (Customized) M1D/M1AFL2		Graph	Report
		Record	Help
		PE0105001	

- Antenna: Whether the coil works properly
- Transponder: Whether the transponder is detected
- Transponder condition: Whether the transponder is in the factory state, displays "Transponder not in delivery condition" after matching
- SK: Whether the SK written in the transponder is correct
- Transponder ID: Whether the Transponder ID information has been written to IMMO
- Last received transponder Id at a transponder position: Whether the last authenticated transponder (current transponder) ID is in the IMMO."programmed" indicates "in the IMMO".

- Last received transponder Id at a transponder position 1 - 5: Which location of IMMO is the last authenticated transponder (current transponder) ID stored, that is, which key is the current transponder. If position 1 of the figure shows "programmed", that is, the current transponder is position 1. If the customer loses one of the keys, as long as the customer takes the remaining key, it can be determined which key is lost, erase the ID of lost key transponder, and the lost key (transponder) cannot be used to start the vehicle.
- Transponder ID, Transponder Id at transponder position 1 - 5: These refer to the storage status of keys in BCM or PEPS, indicating that how many keys (transponders) have been matched, and three "not programmed" mean that three transponders can be added. If "Delete key" is executed, the datastream will show "not programmed".
- ECM status

Data Stream

CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)

Name	Value	Unit	
ECM Secret Key is programmed	YES		
ECM Security code is programmed	YES		
ECM staus	ECM is programmed		
ECM VIN code is programmed	YES		
Ignition staus	ON		
Immo-function is supported	YES		

(1 / 2)

Graph

Report

Record

Help

Chery (Customized) M1D/M1AFL2

PE0106001

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Data Stream

CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)

Name	Value	Unit	
Ignition staus	ON		
Immo-function is supported	YES		
Last ECM authentication IMMO failed	NO		
Latest level access(27 03) SecurityAccess is successful	NO		
Latest level access(27 05) SecurityAccess is successful	NO		
Numbers of failed level access(27 05) SecurityAccess	0		
(1 / 2)			

Chery (Customized) M1D/M1AFL2

Graph

Report

Record

Help

PE0107001

- Latest level access (27 05) SecurityAccess is successful: When PIN code is entered, if the result calculated by ECU with its own PIN code is inconsistent with the result calculated by diagnostic tester with PIN code, it is unsuccessful, "NO" will be displayed, indicating that the entered PIN code is inconsistent with the PIN code of ECU.
- Latest level access (27 03) SecurityAccess is successful: When writing VIN or PIN to ECU, the diagnostic tester and ECU will perform an algorithm calculation. If it is not successful, it will prompt "NO".
- ESCL status

Data Stream			
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)			
Name	Value	Unit	
ESCL status	not programmed		
Chery (Customized) M1D/M1AFL2 Graph Report Record Help PE0108001			

Caution:

Apply to PEPS+MT models

- Is ESCL programmed.

(c) Write data

Caution:

Apply to (models without PEPS)

- The "write data" menu can also be used in the following two conditions (provided that no new SK is learned in IMMO)
 - Misoperation (models without PEPS reset IMMO and ECM simultaneously);
 - The extreme situation of missing PIN code and VIN code caused by other unknown circumstances

(d) Immobilizer match

Show Menu	
CHERY (CUSTOMIZED) V58.80 > M1D/M1AFL2 > System Selection > IMMO (Immobilizer)	
Match all the systems.	Programming ECM
Programming IMMO(learn SK from EMS)	Programming IMMO(learn SK from TCU)
Reprogramming ECM	Reprogramming IMMO
Key match	Erase keys.
Write PIN	Programming TCU
Reset TCU	Programming ESCL
Erase ESCL	
Chery (Customized) M1D/M1AFL2	
PE0109001	

(1) "Programming IMMO (learn SK from EMS), Programming TCU, Reset TCU" are applied to CVT models.

Anti-theft Match

Smart Key Replacement After Vehicle Sold

1. Description

- (a) There are two match methods between smart key and system: "Replace with new key" and "Add old key".
- (1) "Add new key" refers to match blank key (never match with any system) with system. It usually happens when user would have additional new key on the basis of the old ones.
 - (2) "Add old key" refers to rematch learned key with system (it is must be previous system).

Caution:

- If user lost a smart key with one key left, when replacing with a new smart key, perform as follows to replace with a new one: Learn the new key by "Add new key" service, delete all smart keys by "Delete all keys" service, then learn the remain two smart keys in order by "Add old key" service. If user finds the lost key, it can be reactivated by "Add old key" service on diagnostic tester. If not, even if the lost one is found, it cannot be used normally.

2. Match Operation

- (a) Anti-theft match description for "Add new key" is as follows:

- (1) Technician reads VIN in EMS of user's vehicle with diagnostic tester, then obtain PIN through VIN.
- (2) Place the smart key to be matched on the key mark in cup holder, enter anti-theft control system program on diagnostic tester, select "Add new key" menu, input PIN, diagnostic tester will perform "Add new key" program automatically.
- (3) After that, press unlock button and check if left and right turn signal light indicators on instrument cluster blink. If the indicators blink, new key is matched successfully, otherwise, new key is not matched successfully.

- (b) Anti-theft match description for "Add old key" is as follows:

- (1) Technician reads VIN in EMS of user's vehicle with diagnostic tester, then obtain PIN through VIN.
- (2) Enter anti-theft control system program on diagnostic tester, select "Delete all keys" menu.
- (3) Place the smart key to be matched on the key mark in cup holder, enter anti-theft control system program on diagnostic tester, select "Add old key" menu, input PIN, diagnostic tester will perform "Add old key" program automatically.
- (4) After that, press unlock button and check if left and right turn signal light indicators on instrument cluster blink. If the indicators blink, new key is matched successfully, otherwise, new key is not matched successfully.

Caution:

- When performing "Add old key", it is necessary to carry previous matched smart key and perform match operation one by one according to match procedures, or previous matched key will be disabled.
- Regardless of "Add new key" or "Add old key", only one smart key can be kept in vehicle and keep key on key mark in cup holder. Make sure that there is no other key in vehicle. If there is other key, bring it to a position 2 m away from vehicle.

PEPS Module Replacement After Vehicle Sold

1. Technician reads VIN in EMS with diagnostic tester, then obtains PIN through VIN.
2. If vehicle is equipped with ESCL, make sure that ESCL is unlocked. After new PEPS is assembled successfully, press ignition switch (IG) to turn on power supply.
3. Enter anti-theft control system program on diagnostic tester, select "Program IMMO" menu; input PIN according to prompt on diagnostic tester, after "Program IMMO" is performed successfully, it will display "Program IMMO is successful".
4. Then match previous keys one by one according to instructions of "Add old key".

5. If vehicle is equipped with ESCL, enter anti-theft control system program on diagnostic tester and complete "Add old key", then keep power supply in OFF position, check state of ESCL with diagnostic tester, if ESCL is not in Anti-scanning state, replacement is completed, if ESCL is in Anti-scanning state, select "Delete ESCL", input PIN according to prompt on diagnostic tester, ESCL will be deleted successfully after about 10 minutes, then match ESCL according to description for ESCL replacement.

Caution:

- Please contact Chery service station to obtain PIN.
- Unmatched smart keyless entry and PEPS can switch power supply from IGN OFF to IGN ON for 50 times. Once it exceeds 50 times, PEPS cannot be used. So, do not turn on and off power supply at will with PEPS unmatched.
- If ESCL accidentally enters "Anti-scanning" protection mode, it is necessary to perform "Erase ESCL".

EMS Replacement After Vehicle Sold

1. Technician reads VIN in old EMS or smart keyless entry and PEPS unit with diagnostic tester, then obtains PIN through VIN.
2. After new EMS is assembled successfully, press ignition switch (IG) to turn on power supply.
3. Enter anti-theft control system program on diagnostic tester, select "Program EMS" menu; input VIN and PIN according to prompts on diagnostic tester. After "Program EMS" is performed successfully, it will display "Match EMS is successful".
4. Depress brake pedal (for CVT models)/clutch pedal (for MT models), press ignition switch once to check if vehicle can be started successful. If vehicle can be started successful, EMS replacement is completed, if vehicle cannot be started successful, EMS replacement is not completed.

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Electric Steering Column Lock (ESCL) Replacement After Vehicle Sold

Caution:

- Only apply to PEPS + MT models
1. Technician reads VIN in old EMS or smart keyless entry and PEPS unit with diagnostic tester, then obtains PIN through VIN.
 2. After new EMS is assembled successfully, keep power supply in OFF position.
 3. Enter anti-theft control system program on diagnostic tester, select "Program ESCL" menu; input PIN according to prompt on diagnostic tester, after "Program ESCL" is successful, "Match ESCL is successful" will be displayed.
 4. Press ignition switch to switch power supply to IGN OFF state, open driver door and close it again, check if lock sound can be heard, then check if steering wheel can be turned. If lock sound can be heard and steering wheel cannot be turned, electric steering column lock is locked successfully.
 5. Press ignition switch to switch power supply to IGN ON state, check if unlock sound can be heard, then check if steering wheel can be turned. If unlock sound can be heard and steering wheel can be turned, electric steering column lock is locked successfully, ESCL is matched successfully, or match is failed.

Caution:

- Please contact Chery service station to obtain PIN.

DIAGNOSIS & TESTING

Diagnosis Content

Problem Symptoms Table

Hint:

Use symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair, replace or adjust faulty components as necessary.

Symptom	Suspected Area
Remote controller fails	Remote controller battery is weak
	There is remote control signal interference
	Remote controller enters failure mode (it is necessary to exit)
	Code is lost (add old key)
	PEPS malfunction
	Wireless key malfunction
	BCM malfunction
Vehicle cannot enter fortifying mode	Four doors, hood or luggage compartment door is abnormal
	Power supply is not in OFF state
	Door lock malfunction
	PEPS malfunction
	BCM malfunction
Vehicle cannot be unlocked	Door lock malfunction
	PEPS malfunction
	BCM malfunction
Microswitch cannot enter fortifying mode and be unlocked	Smart key is not within range
	Open or sticking in microswitch
	Power supply is not in OFF state
	Four doors, hood or luggage compartment door is abnormal
	Smart key in vehicle
	Smart key battery is low
Luggage compartment cannot be opened	Luggage compartment door switch fails (open, water leakage or sticking)
	Luggage Compartment door lock malfunction
	PEPS malfunction
	Short or open in wire harness
	BCM malfunction
Vehicle cannot be started (PEPS) (starter runs)	Anti-theft verification does not pass
Vehicle cannot be started (PEPS) (starter does not run)	Gear position is not in P/N (for CVT models)
	Clutch (for MT models)/brake switch (for CVT models) is abnormal
	ENGINE START STOP switch malfunction
	Circuit or starter relay is abnormal
	Starter malfunction
	Start times limit is activated
ESCL cannot be locked or unlocked	Vehicle is parked on slope (lock pin is stuck)
	Door signal is abnormal
	ENGINE START STOP switch cannot be turned on or off
	Short or open in wire harness
	Anti-theft verification fails
	Network communication malfunction

Diagnosis Procedure

Hint

Use following procedures to troubleshoot the PEPS system.

1 Vehicle brought to workshop

Result

Proceed to
Next

Next

2 Check battery voltage

Check if battery voltage is normal.

OK

Standard Voltage: Not less than 12 V

Result

Proceed to
OK
NG

NG

Replace the battery

OK

3 Customer problem analysis

Result

Proceed to
Next

Next

4 Read DTCs

Result

Proceed to
No DTC
Current DTC
History DTC

History DTC

5 Problem Repair (No DTC)**Result**

Proceed to

Next

Next**Go to step 7****6 Troubleshoot according to Diagnostic Trouble Code (DTC) chart****Result**

Proceed to

Next

Next**Go to step 7****7 Troubleshoot according to Problem Symptoms Table****Result**

Proceed to

Next

Next**8 Conduct test and confirm malfunction has been repaired****Result**

Proceed to

Next

Next**End**

Problem Repair (No DTC)

If PEPS system has problems, but no DTC is stored in PEPS system, this problem is called a problem without DTC. Problems without DTC for PEPS system are divided into following types:

1. Indicator in instrument cluster does not come on or illuminate constantly (incorrect wire harness connection or indicator is damage).
2. Troubleshooting recommendation: check corresponding components according to problem symptom, and troubleshoot following the vehicle repair manual.

DTC Confirmation Procedure

Confirm that battery voltage is normal before performing following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect diagnostic tester (the latest software) to diagnostic interface.
- Turn ENGINE START STOP switch to ON.
- Using diagnostic tester, record and clear DTCs stored in PEPS control module assembly.
- Turn ignition switch to OFF and wait several seconds.
- Use diagnostic tester to read DTCs.
- If DTC is detected, malfunction indicated by DTC is current. Go to DTC chart, and perform troubleshooting.
- If no DTC is detected, malfunction indicated by DTC is intermittent Please refer to Intermittent DTC Troubleshooting.

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Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

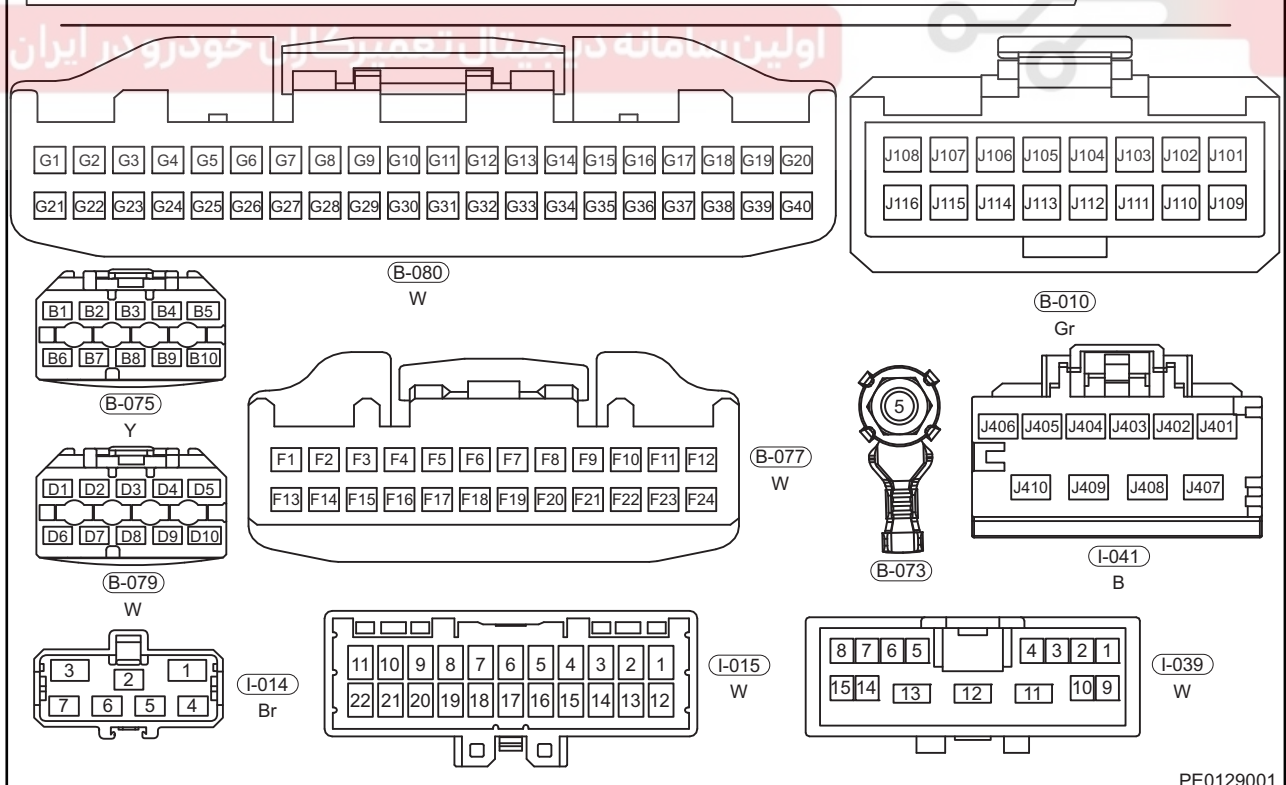
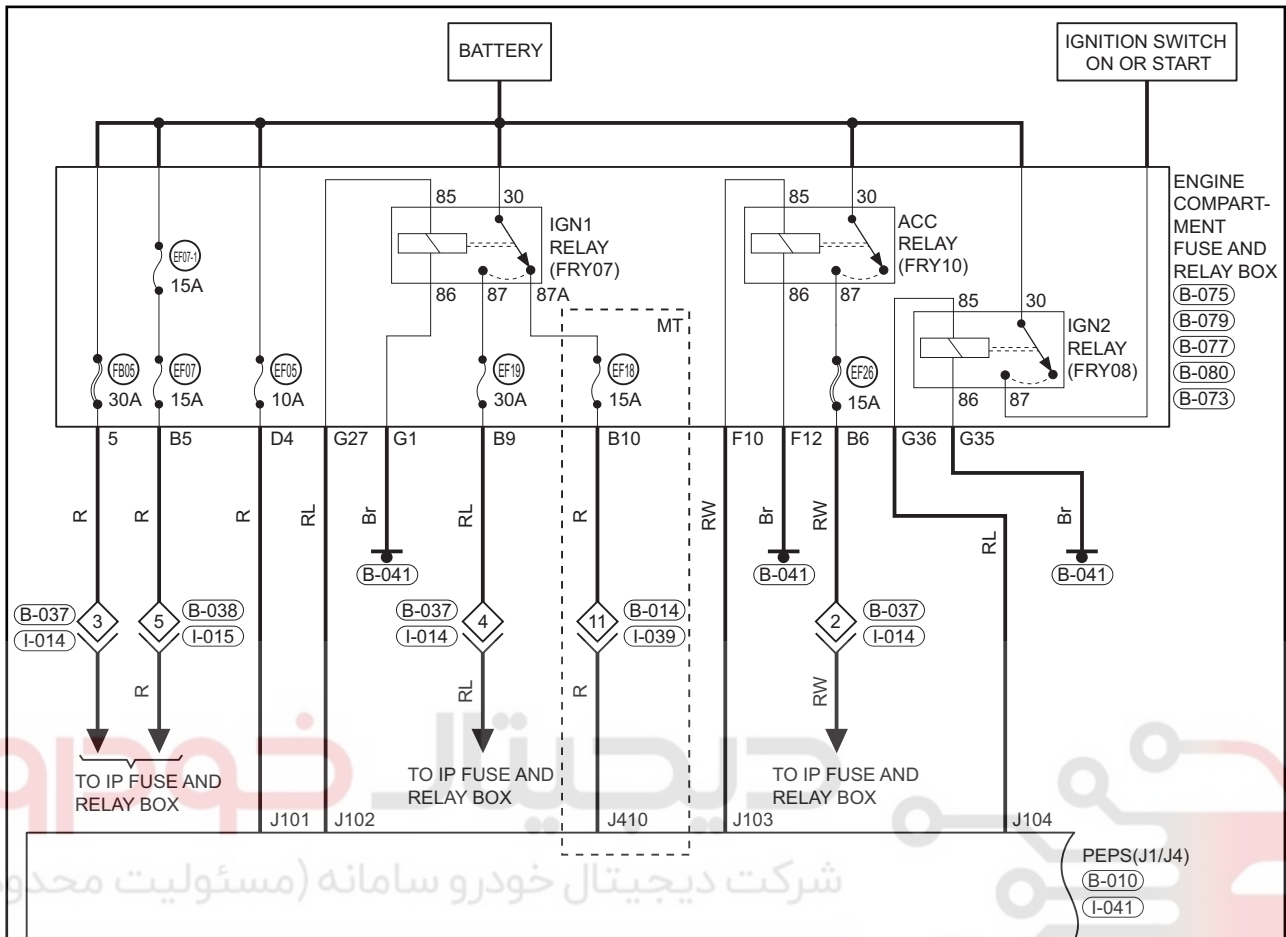
- Check if connector is loose.
- Check if wire harness is worn, pierced, pinched or partially broken.
- Wiggle related wire harness and connector and observe if signal in related circuit is interrupted.
- If possible, try to duplicate conditions under which DTC was set.
- Look for data that has changed or DTC to reset during wiggle test.
- Check for broken, bent, protruded or corroded terminals.
- Check and clean all wire harness connectors and body ground parts related to DTC.
- If multiple trouble codes were set, refer to circuit diagrams to look for any common body ground circuit or power supply circuit applied to DTC.
- Refer to any Technical Bulletin that may apply to this malfunction.

Body Ground Inspection

Body ground points are very important to the proper operation of circuits. Body ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) may increase load resistance. This situation may change the way in which a circuit works. Circuits are very sensitive to proper body grounding. A loose or corroded body ground can affect the control circuit. Check the body ground points as follows:

1. Remove body ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in good condition.
4. Reinstall body ground bolt or nut securely.
5. Check if there are add-on accessories that interfere with body ground circuit.
6. If several wire harnesses are crimped into one body ground terminal, check for proper crimps. Make sure all wire harnesses are clean, securely fastened with providing a good body ground path.

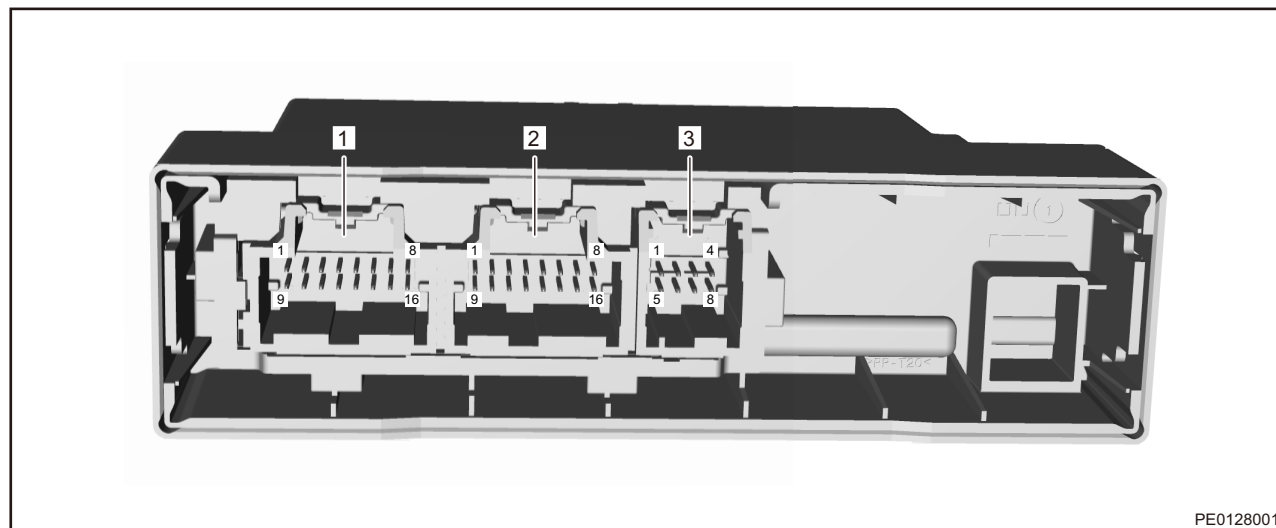
PEPS Circuit Diagram



PE0129001



PEPS Control Module Assembly Terminal List



PE0128001

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J101	Battery	J109	Clutch switch signal
J102	IG1 Relay Drive (High)	J110	Start relay detection
J103	ACC Relay Drive (High)	J111	Ignition signal
J104	IG2 Relay Drive (High)	J112	Starter Relay (High)
J105	High Speed CAN Low	J113	-
J106	High Speed CAN High	J114	-
J107	Hard Wire Wheel Speed Signal (Front Right Wheel)	J115	-
J108	-	J116	Ground

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J201	Spare Antenna Positive End	J209	-
J202	Spare Antenna Negative End	J210	Analog Ground
J203	PEPS Switch Indicator Output (Green)	J211	ENGINE START STOP Switch 1
J204	PEPS Switch Backlight Output (White)	J212	-
J205	PEPS Switch Indicator Output (Amber)	J213	ENGINE START STOP Switch 2
J206	Low Frequency Antenna 1 Negative	J214	Low Frequency Antenna 1 Positive
J207	Low Frequency Antenna 2 Negative	J215	Low Frequency Antenna 3 Negative
J208	Low Frequency Antenna 2 Positive	J216	Low Frequency Antenna 3 Negative

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J301	Luggage Compartment Unlock Switch	J305	-
J302	Left Door Handle Sensor Negative	J306	Right Door Handle Sensor Negative
J303	Luggage Compartment Low Frequency Antenna Negative	J307	Right Door Handle Sensor Negative
J304	Luggage Compartment Low Frequency Antenna Negative	J308	Luggage Compartment Low Frequency Antenna Positive

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J401	Electronic Steering Column Lock Module Control Ground	J406	Electronic Steering Column Lock Power Supply
J402	-	J407	-
J403	Electronic Steering Column Lock Ground	J408	Ground
J404	Electric Steering Column Lock Control Ground	J409	-

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J405	-	J410	IG1 Power Supply

Diagnostic Trouble Code (DTC) Chart

DTC	DTC Definition
B1300	Internal Control Module EEPROM Error
B1301	Immobilizer and ECM Authentication Failed
B1302	VIN Not Programmed
B1303	The Antenna Communication is Disturbed
B1304	None Transponder was Detected
B1305	Immobilizer Has None Key was Storage
B1306	Security Code was not Programmed
B1500	Driver Door Outside LF Antenna
B1501	Passenger Door Outside LF Antenna
B1502	Front Internal LF Antenna
B1503	Middle Internal LF Antenna
B1504	Rear Internal LF Antenna
B1505	Bumper LF Antenna
B1506	Abnormality on Switches of Engine Switch
B1508	Abnormality in ACC Circuit
B1509	Abnormality in Brake Signal
B150A	Abnormality in Vehicle Speed Signal
B150C	Clutch Switch Signal Error
B150F	ESCL Anti-scanning
B1510	Abnormality on Wheel Speed Signal
B1515	ROM Checksum Failure
B1516	HSU Overload
B1517	HSU Switch Continuously Pressed
U0073	CAN Bus Off
U0100	Lost of Communication with Engine Control System Module
U0101	Lost of Communication with Transmission Control Unit
U0129	Lost Communication with Brake System Module
U0140	Lost Communication with Body Control Module
U0329	Lost Communication with Electronic Steering Column Lock
U1300	Software Configuration Error
B1518	Trunk/Back Door Unlock Switch Stuck Failure
B1519	Back Door Lock Switch Continuously Pressed

DTC	B1300	Internal Control Module EEPROM Error
-----	-------	--------------------------------------

Description

DTC	DTC Definition
B1300	Internal Control Module EEPROM Error

Procedure

1	Check for DTCs
---	----------------

- (a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTC occurs again.

Result

Proceed to
OK
NG

OK

System is normal

NG

2	Check if vehicle PEPS control is normal
---	---

Result

Proceed to
OK
NG

OK

Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC again

NG

Replace PEPS module

DTC	B1301	Immobilizer and ECM Authentication Failed
------------	--------------	--

Description

DTC	DTC Definition
B1301	Immobilizer and ECM Authentication Failed

Procedure

1	Check for DTCs
----------	-----------------------

- (a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
 (b) Check if DTCs occur again.

Result

Proceed to
OK
NG

OK	System is normal
-----------	-------------------------

NG

2	Check if engine can be started normally
----------	--

Result

Proceed to
OK
NG

OK	Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC again
-----------	--

NG	Perform anti-theft match for PEPS and ECM module again
-----------	---

DTC	B1302	VIN Not Programmed
-----	-------	--------------------

Description

DTC	DTC Definition
B1302	VIN Not Programmed

Procedure

1	Check for DTCs
---	----------------

- (a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTCs occur again.

Result

Proceed to
OK
NG

OK

System is normal

NG

2	Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC
---	---

Result

Proceed to
OK
NG

OK

System is normal

NG

Input VIN into PEPS again

DTC	B1303	The Antenna Communication is Disturbed
------------	--------------	---

Description

DTC	DTC Definition
B1303	The Antenna Communication is Disturbed

Procedure

1	Check for DTCs
----------	-----------------------

- (a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
 (b) Check if DTCs occur again.

Result

Proceed to
OK
NG

OK	System is normal
NG	Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC

35

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



DTC	B1304	None Transponder was Detected
------------	--------------	--------------------------------------

Description

DTC	DTC Definition
B1305	Immobilizer Has None Key was Storage

Procedure

1	Check for DTCs
----------	-----------------------

- (a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
 (b) Check if DTCs occur again.

Result

Proceed to
OK
NG

OK

System is normal

NG

2	Check remote controller
----------	--------------------------------

- (a) Press remote controller and check if red LED indicator blinks normally

Result

Proceed to
OK
NG

NG

Go to step 4

OK

3	Check if smart key type is correct
----------	---

- (a) Check if smart key is original key.

Result

Proceed to
OK
NG

NG

Replace with original smart key and perform test

OK

4 Remove smart key and check remote controller

- (a) Check if remote controller battery voltage is less than 3 V.
 (b) Check remote controller chip for water corrosion or burn.

Result

Proceed to
OK
NG

NG

Replace smart key

OK

5 Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC

Result

Proceed to
OK
NG

OK

System is normal

NG

Replace smart key

35



اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

DTC	B1305	None Transponder was Detected
------------	--------------	--------------------------------------

Description

DTC	DTC Definition
B1304	None Transponder was Detected

Procedure

1	Check for DTCs
----------	-----------------------

- (a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
 (b) Check if DTCs occur again.

Result

Proceed to
OK
NG

NG

Enter anti-theft system and add key

OK

2	Reconfirm DTCs
----------	-----------------------

- (a) Use diagnostic tester to clear DTCs.
 (b) Check if the same DTCs are still output.

Result

Proceed to
OK
NG

OK

System operates normally

NG

Replace PEPS control module assembly

DTC	B1306	Security Code was not Programmed
------------	--------------	---

Description

DTC	DTC Definition
B1306	Security Code was not Programmed

Procedure

1	Check for DTCs
----------	-----------------------

- (a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
 (b) Check if DTCs occur again.

Result

Proceed to
OK
NG

NG	Rematch PEPS module
-----------	----------------------------

OK

2	Reconfirm DTCs
----------	-----------------------

- (a) Use diagnostic tester to clear DTCs.
 (b) Check if the same DTCs are still output.

Result

Proceed to
OK
NG

OK	System operates normally
-----------	---------------------------------

NG	Replace PEPS control module assembly
-----------	---

DTC	B1500	Driver Door Outside LF Antenna
DTC	B1501	Passenger Door Outside LF Antenna
DTC	B1516	HSU Overload
DTC	B1517	HSU Switch Continuously Pressed

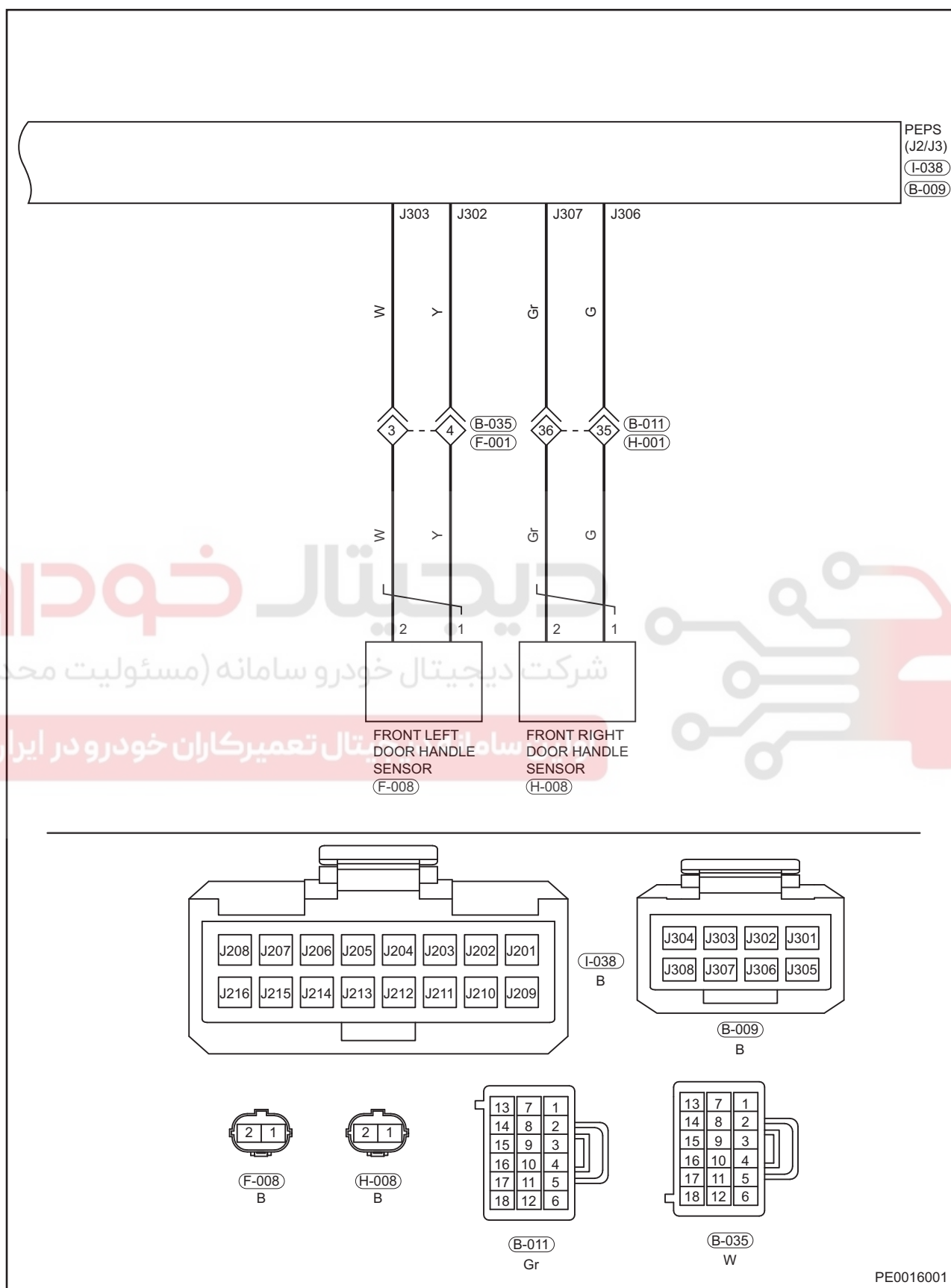
دیجیتال خودرو

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اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Circuit Diagram



Description

DTC	DTC Definition
B1500	Driver Door Outside LF Antenna
B1501	Passenger Door Outside LF Antenna
B1516	HSU Overload
B1517	HSU Switch Continuously Pressed

Caution:

Take driver side low frequency antenna as an example to explain troubleshooting procedures for reference.

When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure

1 Check if PEPS module output voltage is normal.

35

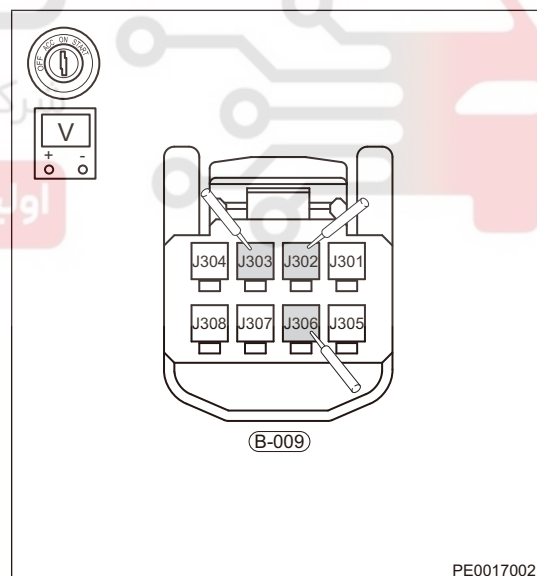
- Turn ENGINE START STOP switch to OFF.
- Disconnect the negative battery cable.
- Disconnect the PEPS module connector J3.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Check for broken, bent, protruded or corroded terminals.
- Check if related connector pins are in good condition.
- Connect the negative battery cable, turn ignition switch to ON, use DC voltage band of digital multimeter to measure if voltage between output terminals J303 and J302 of PEPS module is normal.

OK

Multimeter Connection	Condition	Specified Condition
J3-03 - J3-02	Always	12 V

Result

Proceed to
OK
NG



NG

Replace PEPS control module assembly

OK

2 Measure resistance of door handle sensor

- Turn ENGINE START STOP switch to OFF.
- Disconnect the negative battery cable.
- Disconnect the front left door sensor connector F-008.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Check for broken, bent, protruded or corroded terminals.
- Check if related connector pins are in good condition.
- Using ohm band of digital multimeter, measure if resistance of front left door handle sensor is normal.

OK

Multimeter Connection	Condition	Specified Condition
Front left door handle sensor terminal 1 - 2	Microswitch not pressed	∞
Front left door handle sensor terminal 1 - 2	Microswitch pressed	$\approx 1 \text{ K}\Omega$

Result

Proceed to
OK
NG

NG

Replace left door handle sensor

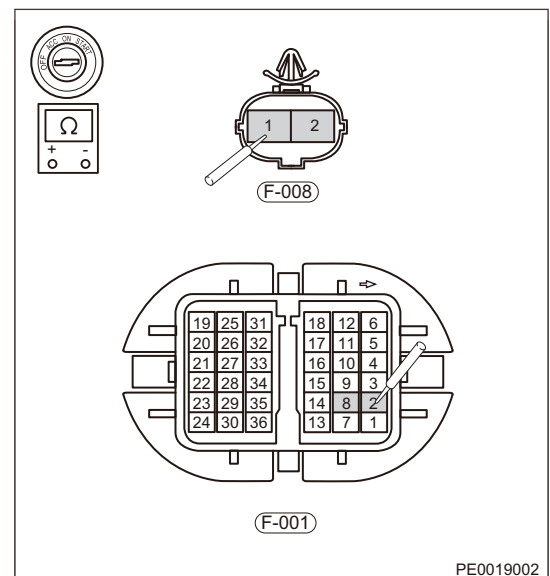
OK

3 Check front left door wire harness for open or short

- Disconnect the front left door wire harness connector F-001.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Check for broken, bent, protruded or corroded terminals.
- Check if related connector pins are in good condition.
- Using ohm band of digital multimeter, measure resistance between terminals 1, 2 of connector F-008 and terminals 2, 8 of connector F-001 to check front left door wire harness for open.

OK

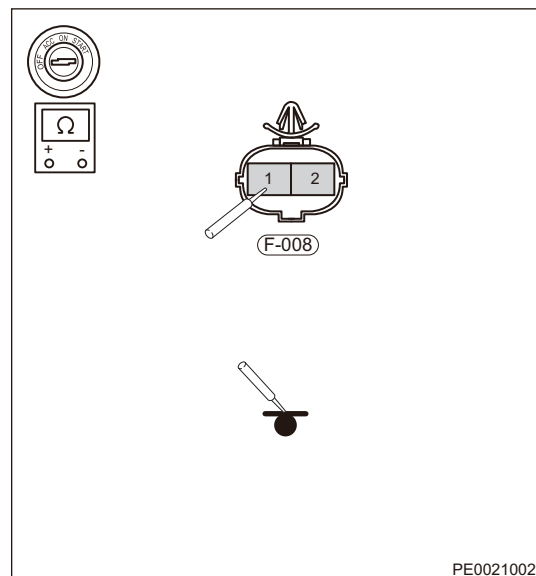
Multimeter Connection	Condition	Specified Condition
F-008-1 - F-001-2	Always	$\leq 1 \Omega$
F-008-2 - F-001-8	Always	$\leq 1 \Omega$



- (f) Using ohm band of digital multimeter, measure resistance between terminals 1, 2 of front left door wire harness connector F-008 and body ground to check front left door wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
F-008-1 - Body ground	Always	∞
F-008-2 - Body ground	Always	∞



35

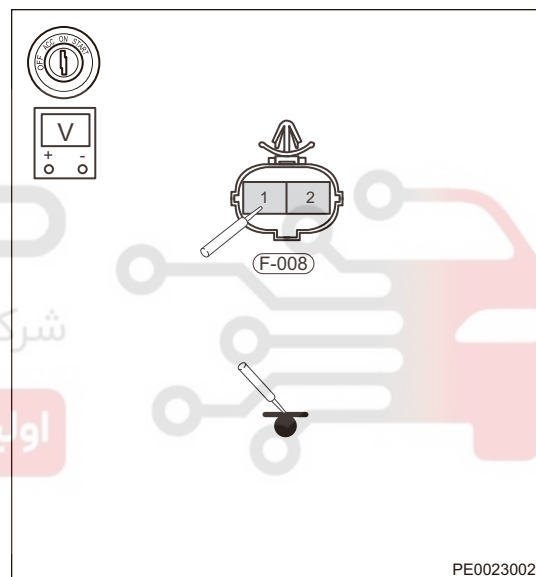
- (g) Connect the negative battery cable, turn ENGINE START STOP switch to ON, (confirm that connectors F-001 and B-035 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminals 1, 2 of front left door wire harness connector F-008 and body ground to check front left door wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
F-008-1 - Body ground	Always	0 V
F-008-2 - Body ground	Always	0 V

Result

Proceed to
OK
NG



NG

Replace front left door wire harness

OK

4

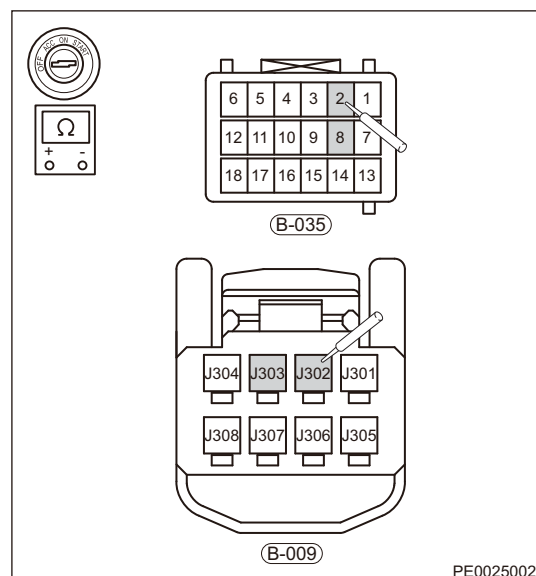
Check interior wire harness for open or short

- (a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.

- (c) Using ohm band of digital multimeter, measure resistance between terminals 2, 8 of connector B-035 and terminals J302, J303 of connector B-009 to check interior wire harness for open.

OK

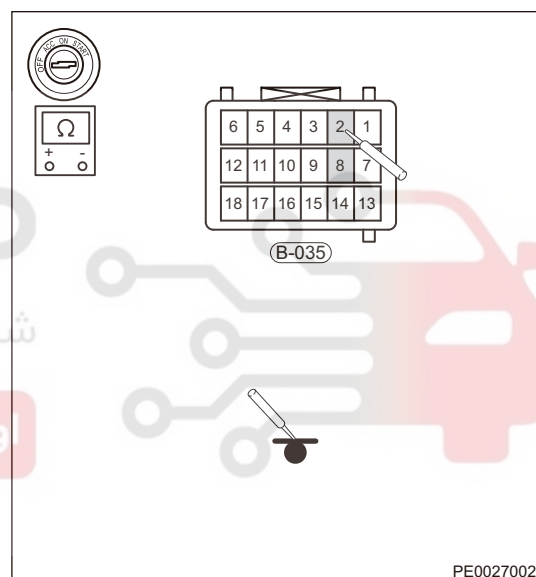
Multimeter Connection	Condition	Specified Condition
B-035-2 - B-009-J302	Always	$\leq 1 \Omega$
B-035-8 - B-009-J303	Always	$\leq 1 \Omega$



- (d) Using ohm band of digital multimeter, measure resistance between terminals 2, 8 of interior wire harness connector B-035 and body ground to check interior wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
B-035-2 - Body ground	Always	∞
B-035-8 - Body ground	Always	∞



35

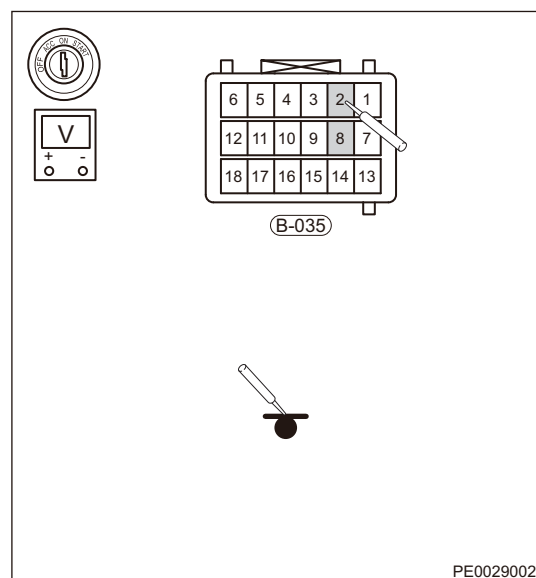
- (e) Connect the negative battery cable, turn ENGINE START STOP switch to ON, (confirm that PEPS module and connector J3 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminals 2, 8 of interior wire harness connector B-035 and body ground to check interior wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
B-035-2 - Body ground	Always	0 V
B-035-8 - Body ground	Always	0 V

Result

Proceed to
OK
NG



OK	Replace PEPS module
NG	Replace interior wire harness

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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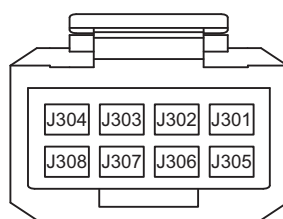
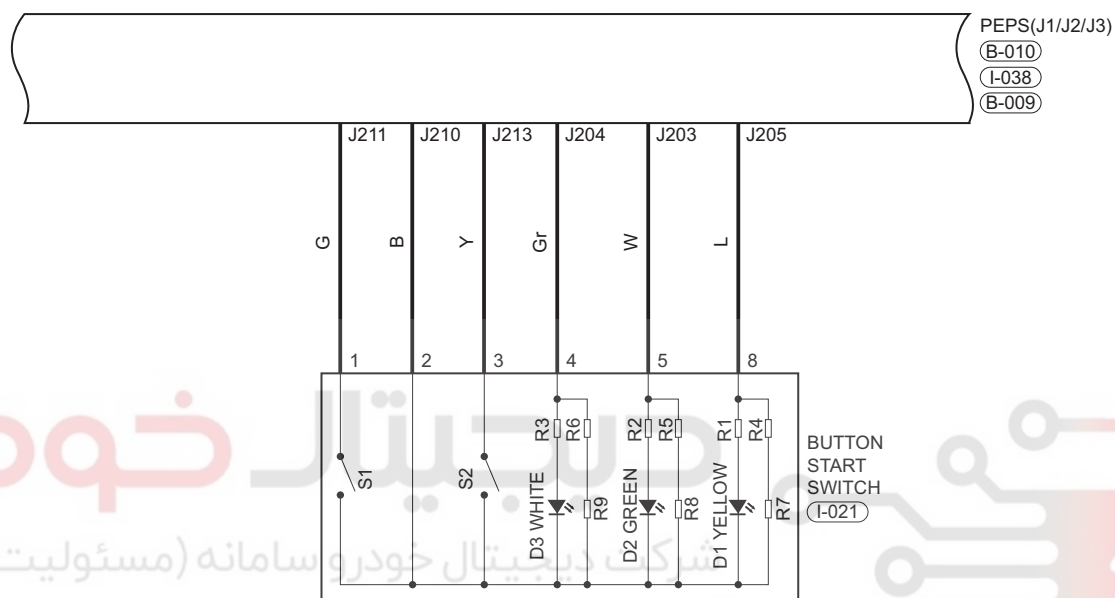
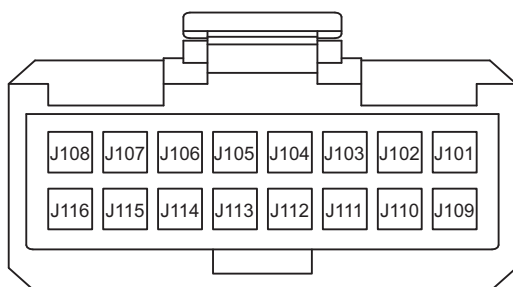
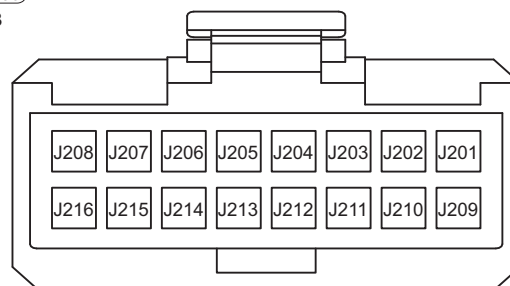


DTC

B1506

Abnormality on Switches of Engine Switch

Circuit Diagram

(B-009)
B(B-010)
Gr(I-038)
B

PE0036001

Description

DTC	DTC Definition
B1506	Abnormality on Switches of Engine Switch

Caution:

When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure**1 Enter PEPS system and read related datastream**

- Read datastream "Power Supply Management and Starting State" and "Engine Switch Backlight State".
- Press ENGINE START STOP switch, check datastream conversion activation state and backlight illumination state, to check if ENGINE START STOP switch input is normal.

Result

35

Proceed to
OK
NG

OK

Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC again

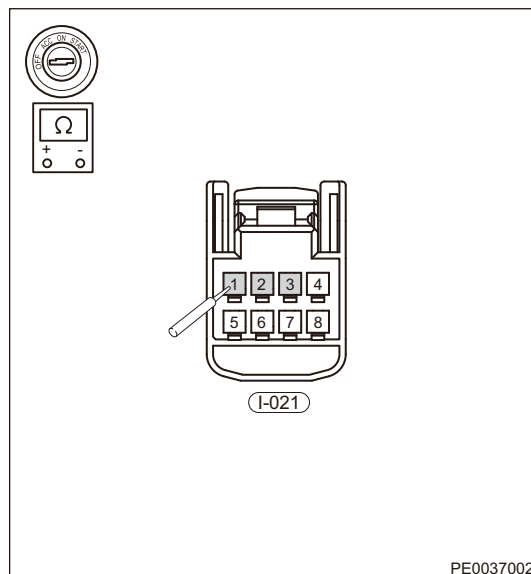
NG

2 Check the ENGINE START STOP switch

- Turn ENGINE START STOP switch to OFF.
- Disconnect the negative battery cable.
- Disconnect the ENGINE START STOP switch connector I-021.
- Using ohm band of digital multimeter, measure resistance of ignition switch to check if ignition switch is normal.

OK

Multimeter Connection	Condition	Specified Condition
ENGINE START STOP switch terminal 2 - 1	Not pressed	∞
ENGINE START STOP switch terminal 2 - 1	Pushed	$\leq 1 \Omega$
ENGINE START STOP switch terminal 2 - 1	Not pressed	∞
ENGINE START STOP switch terminal 2 - 3	Pushed	$\leq 1 \Omega$
ENGINE START STOP switch terminal 1 - 3	Not pressed	∞
ENGINE START STOP switch terminal 1 - 3	Pushed	$\leq 1 \Omega$
ENGINE START STOP switch terminal 4 - 2	Not pressed	$\approx 6.33 \text{ K}\Omega$



PE0037002

Multimeter Connection	Condition	Specified Condition
ENGINE START STOP switch terminal 5 - 2	Not pressed	$\approx 6.21 \text{ K}\Omega$
ENGINE START STOP switch terminal 8 - 2	Not pressed	$\approx 5.84 \text{ K}\Omega$

Result

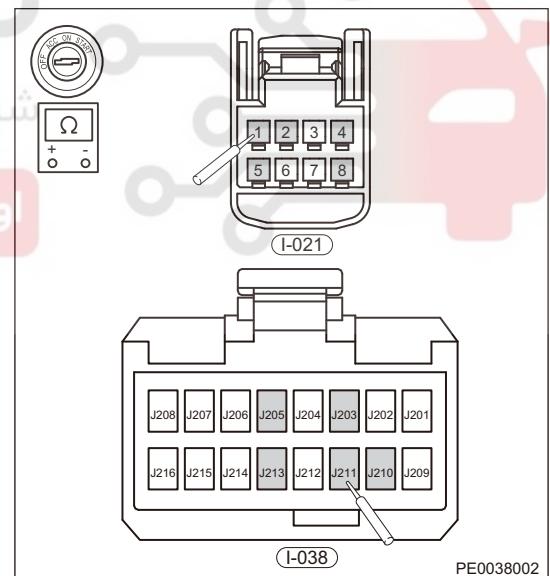
Proceed to
OK
NG

NG**Replace the ignition switch****OK****3 Check instrument cluster wire harness for open or short**

- Turn ENGINE START STOP switch to OFF.
- Disconnect the negative battery cable.
- Disconnect ENGINE START STOP switch connector I-021 and PEPS module connector I-038(J2).
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Check for broken, bent, protruded or corroded terminals.
- Check if related connector pins are in good condition.
- Using ohm band of digital multimeter, measure resistance between terminal 1 of connector I-021 and terminal 11 of connector J2, between terminal 2 of connector I-021 and terminal 10 of connector J2, between terminal 3 of connector I-021 and terminal 13 of connector J2, between terminal 4 of connector I-021 and terminal 4 of connector J2, between terminal 5 of connector I-021 and terminal 3 of connector J2, between terminal 8 of connector I-021 and terminal 5 of connector J2 to check instrument cluster wire harness for open.

OK

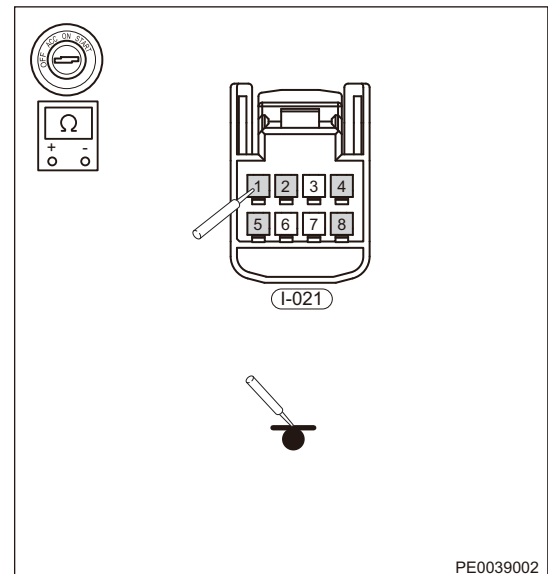
Multimeter Connection	Condition	Specified Condition
I-021-1 - J2-11	Always	$\leq 1 \Omega$
I-021-2 - J2-10	Always	$\leq 1 \Omega$
I-021-3 - J2-13	Always	$\leq 1 \Omega$
I-021-4 - J2-04	Always	$\leq 1 \Omega$
I-021-5 - J2-03	Always	$\leq 1 \Omega$
I-021-8 - J2-05	Always	$\leq 1 \Omega$



- (h) Using ohm band of digital multimeter, measure resistance between terminals 1, 2, 3, 4, 5, 8 of connector I-021 and body ground to check instrument cluster wire harness for short to body ground.

OK

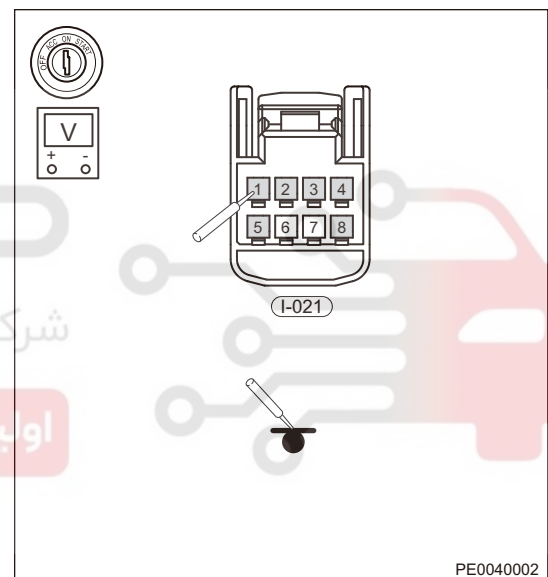
Multimeter Connection	Condition	Specified Condition
I-021-1 - Body ground	Always	∞
I-021-2 - Body ground	Always	∞
I-021-3 - Body ground	Always	∞
I-021-4 - Body ground	Always	∞
I-021-5 - Body ground	Always	∞
I-021-8 - Body ground	Always	∞



- 35 (i) Connect the negative battery cable (confirm that connectors I-021 and J2 are disconnected). Bridge joint ACC relay and IGN1 relay (ENGINE START STOP switch is disabled). Using DC voltage band of digital multimeter, measure voltage between terminals 1, 2, 3, 4, 5, 8 of connector I-012 and body ground to check instrument cluster wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
I-021-1 - Body ground	Always	0 V
I-021-2 - Body ground	Always	0 V
I-021-3 - Body ground	Always	0 V
I-021-4 - Body ground	Always	0 V
I-021-5 - Body ground	Always	0 V
I-021-8 - Body ground	Always	0 V



Result

Proceed to
OK
NG

OK

Replace PEPS module

NG

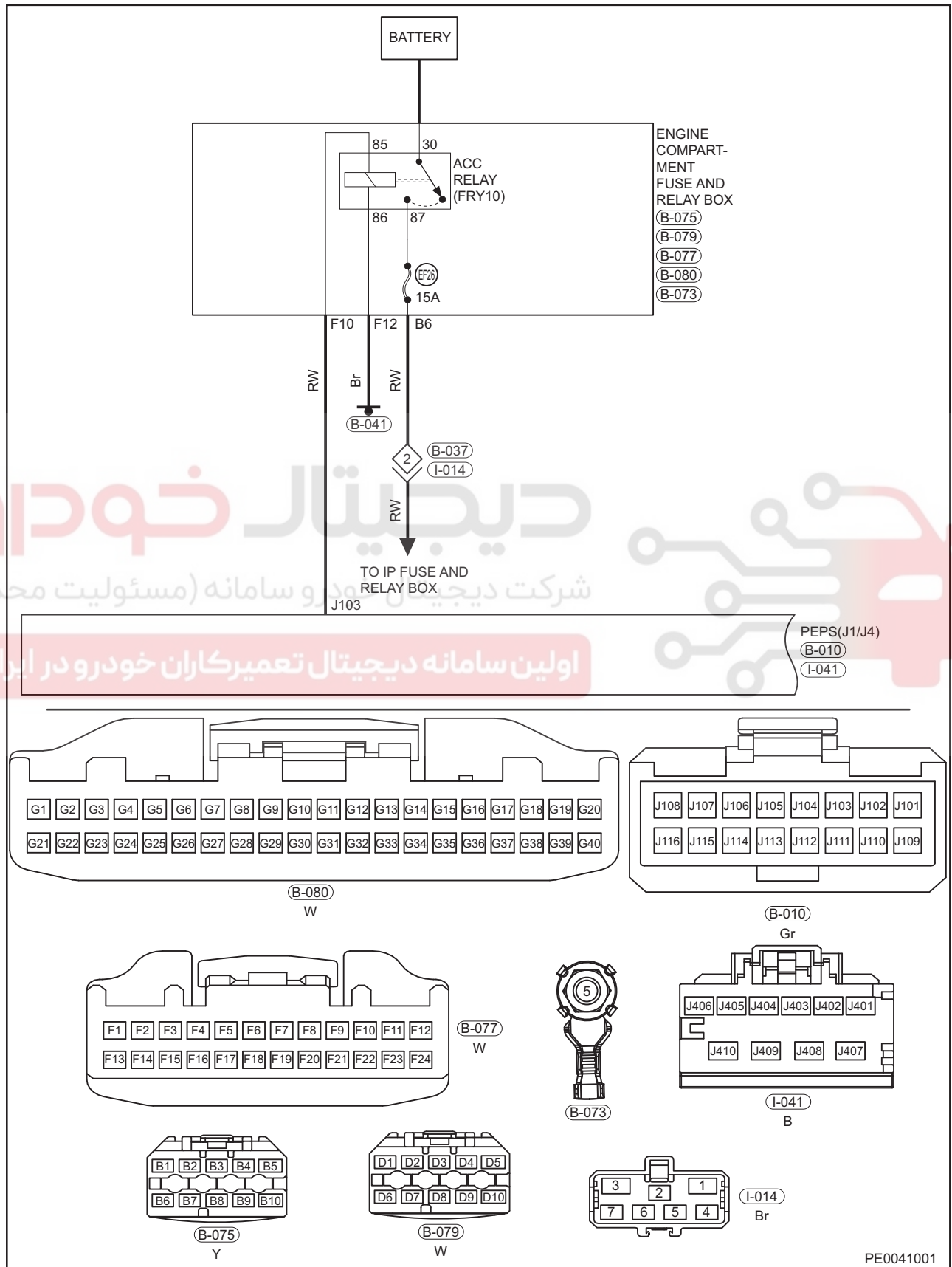
Replace instrument cluster wire harness

DTC

B1508

Abnormality in ACC Circuit

Circuit Diagram



Description

DTC	DTC Definition
B1508	Abnormality in ACC Circuit

Caution:

When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure

1 Check fuse

- (a) Measure fuse EF26(30A) in engine compartment fuse and relay box with 21 W test light to check if test light comes on.

Result

Proceed to
OK
NG

OK

Turn off vehicle power supply (disconnect the negative battery cable), then turn on power supply again and clear DTC.

NG

2 Check if fuse base jack is abnormal

- (a) Remove fuse EF26(30A) in engine compartment fuse and relay box and check fuse base jack for excessive clearance.

Result

Proceed to
OK
NG

NG

Adjust fuse base jack

OK

3 Adjust ACC relay

Result

Proceed to
OK
NG

OK

Replace ACC relay

NG

4 Check if relay switch power supply is normal

- (a) Unplug ACC relay (FRY10) in engine compartment fuse and relay box.
 (b) Using 21 W test light or digital multimeter, measure if power supply of ACC relay base No.30 jack is normal.

OK

Multimeter Connection	Condition	Specified Condition
ACC relay base 30 - Body ground (digital multimeter)	Always	Not less than 12 V
ACC relay base 30 - Body ground (21 W test light)	Always	ON

Result

Proceed to
OK
NG

35**NG****Replace wire harness****OK****5 Short connect the ACC relay base jack control switch**

- (a) Use a wire to bridge joint jacks 87 and 30 of relay ACC base in engine compartment fuse and relay box, and check engine compartment fuse and relay box for open.

Result

Proceed to
OK
NG

NG**Replace wire harness****OK****6 Check ACC relay control body ground**

- (a) Using ohm band of digital multimeter, measure resistance between jack 86 of ACC relay base and terminal F12 of engine compartment fuse and relay box to check engine compartment fuse and relay box for open.

OK

Multimeter Connection	Condition	Specified Condition
ACC relay base 86 - Engine compartment fuse and relay box F12	Always	$\leq 1 \Omega$

- (b) Using ohm band of digital multimeter, measure resistance between terminal F12 of engine compartment fuse and relay box and body ground to check if ground circuit is abnormal.

OK

Multimeter Connection	Condition	Specified Condition
Engine compartment fuse and relay box 86 - Body ground	Always	$\leq 1 \Omega$

Result

Proceed to
OK
NG

NG

Handle the GB-041 ground position or replace the wire harness.

OK

7 Check ACC relay control power supply side

- Disconnect the negative battery cable.
- Disconnect the PEPS module connector J1.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Check for broken, bent, protruded or corroded terminals.
- Check if related connector pins are in good condition.
- Using ohm band of digital multimeter, measure resistance between terminal F10 of engine compartment fuse and relay box and terminal 3 of connector J1.

OK

Multimeter Connection	Condition	Specified Condition
Engine compartment fuse and relay box F10 - J1-03	Always	$\leq 1 \Omega$

Result

Proceed to
OK
NG

OK

Replace PEPS module

NG

Replace wire harness

DTC	B150A	Abnormality in Vehicle Speed Signal
DTC	B1510	Abnormality on Wheel Speed Signal

دیجیتال خودرو

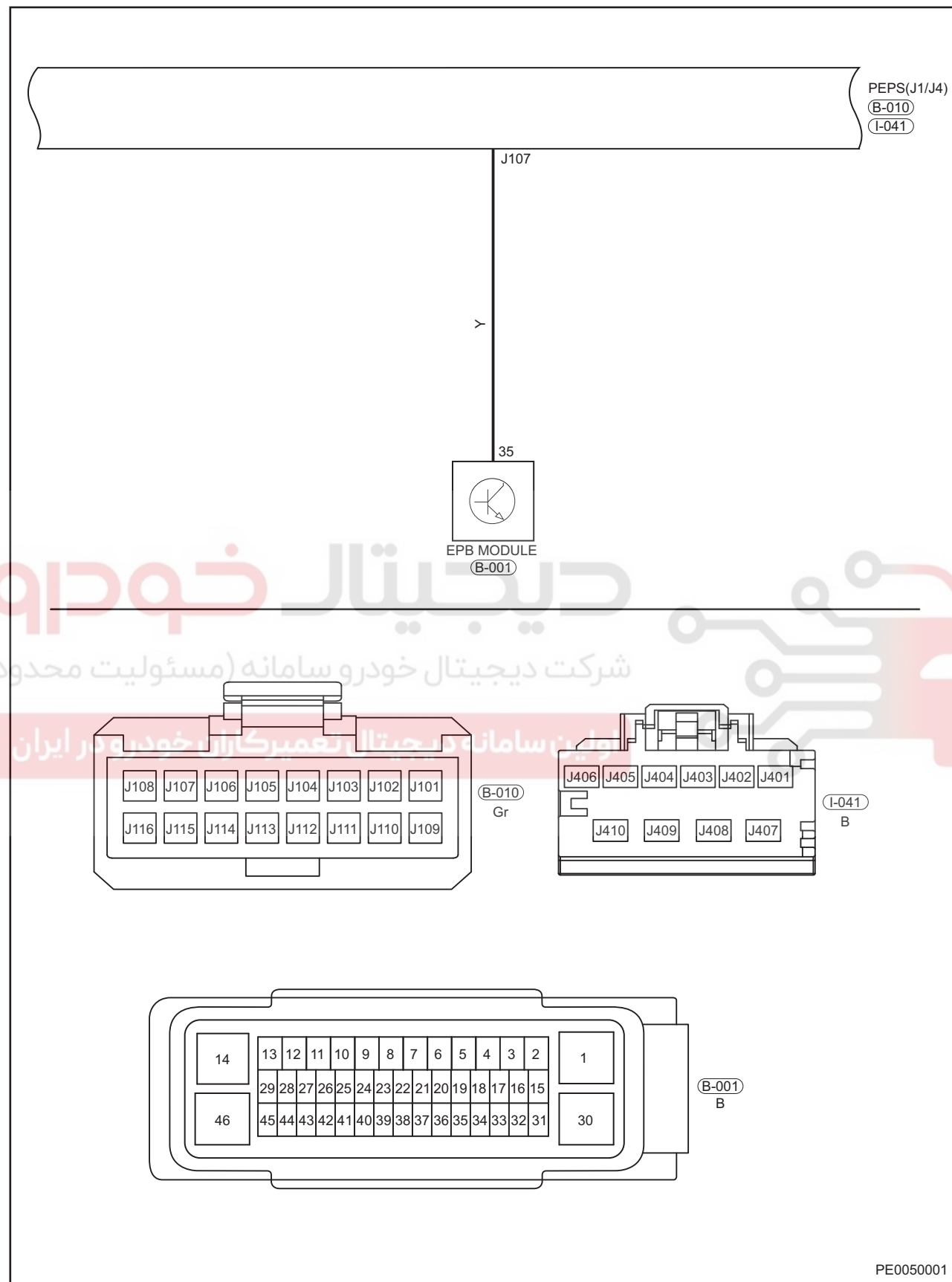
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Circuit Diagram

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Description

DTC	DTC Definition
B150A	Abnormality in Vehicle Speed Signal
B1510	Abnormality in Vehicle Speed Signal

Caution:

For above DTCs, refer to brake control system troubleshooting. If brake control system is normal, perform following diagnosis procedures.

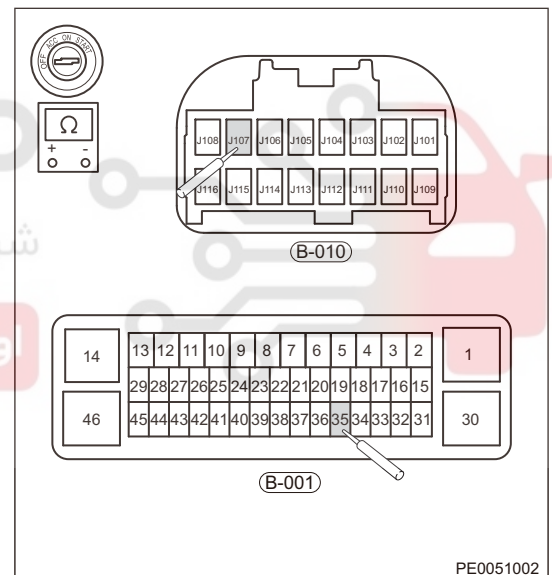
Procedure

1 Check interior wire harness for open or short

- Turn ENGINE START STOP switch to OFF.
- Disconnect the negative battery cable.
- Disconnect the PEPS module connector J1 and EPB module connector B-001.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Check for broken, bent, protruded or corroded terminals.
- Check if related connector pins are in good condition.
- Using ohm band of digital multimeter, measure resistance between terminal 7 of connector J1 and terminals 35 of connector B-001 to check interior wire harness for open.

OK

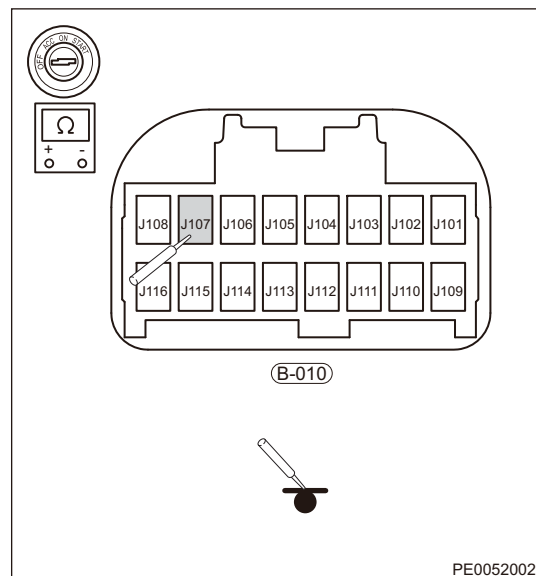
Multimeter Connection	Condition	Specified Condition
J1-07 - B-001-35	Always	$\leq 1 \Omega$



- (h) Using ohm band of digital multimeter, measure resistance between terminal 7 of connector J1 and body ground to check interior wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
J1-07 - Body ground	Always	∞



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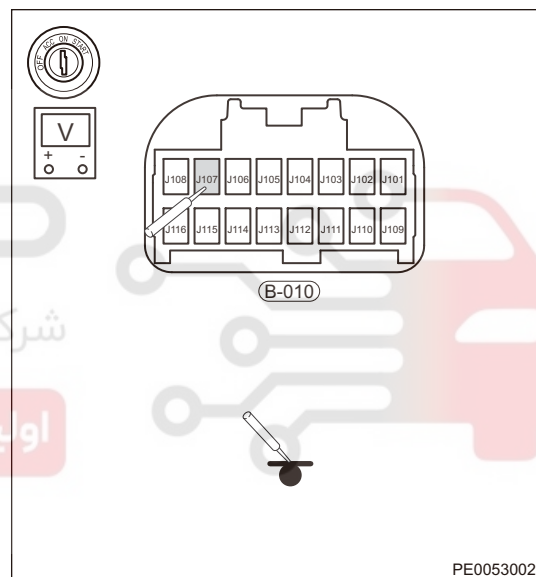
- (i) Connect the negative battery cable, turn ENGINE START STOP switch to ON, (confirm that connectors B-001 and J1 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminal 7 of connector J1 and body ground to check interior wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
J1-07 - Body ground	Always	0V

Result

Proceed to
OK
NG



OK

Replace PEPS module

NG

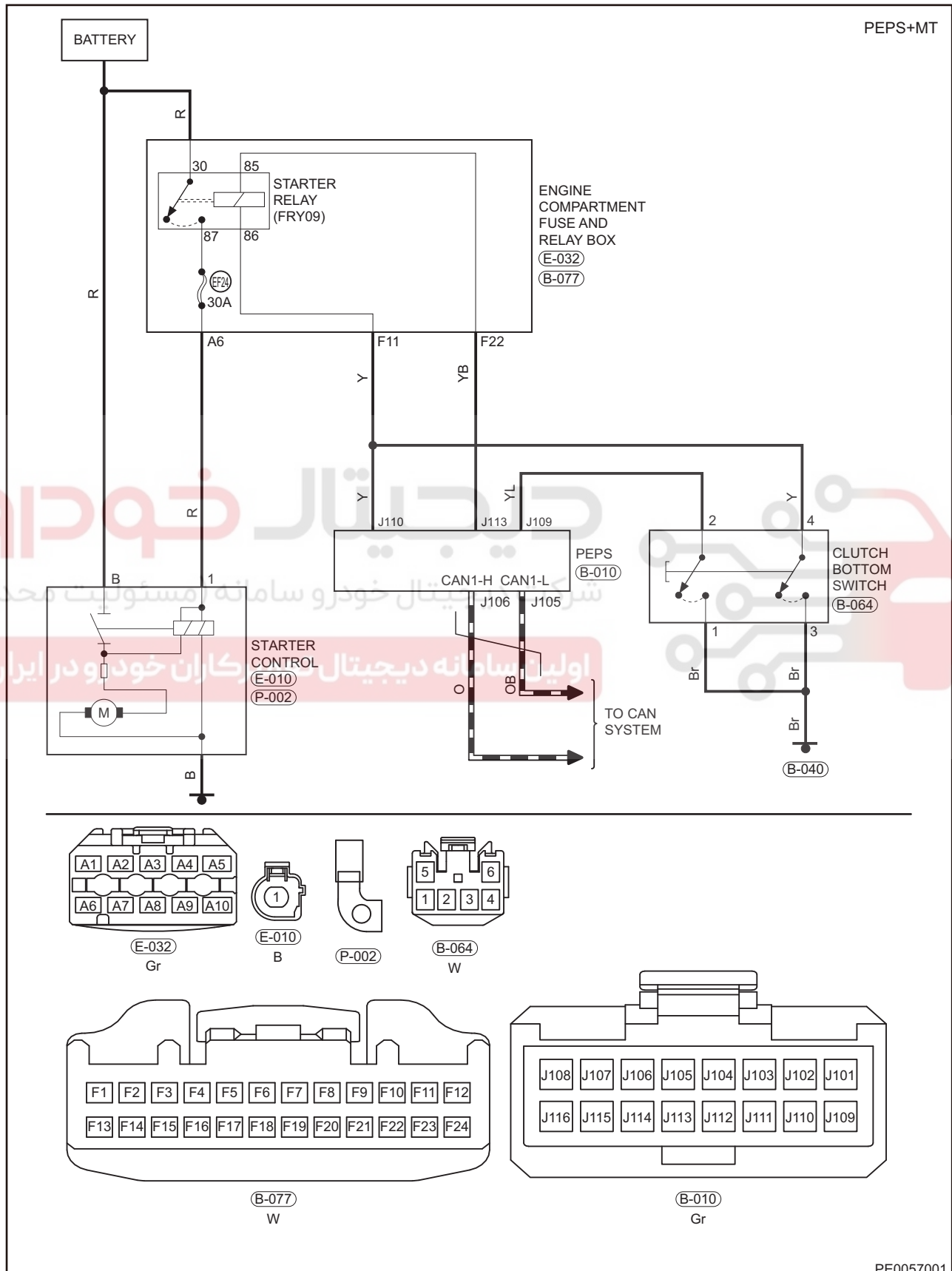
Check wire harness

DTC

B150C

Clutch Switch Signal Error

Circuit Diagram



Description

DTC	DTC Definition
B150C	Clutch Switch Signal Error

Caution:

When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure

1 Check for DTCs

- Using diagnostic tester, clear DTC and read PEPS control module assembly DTC again.
- Check if DTCs occur again.

Result

Proceed to
OK
NG

OK

System is normal

NG

2 Using diagnostic tester, enter other system

- Using diagnostic tester, enter other system (such as ECU control unit) and check if same DTC occurs

Result

Proceed to
OK
NG

NG

3 Check PEPS module connector

- Turn ENGINE START STOP switch to OFF.
- Disconnect the negative battery cable.
- Disconnect the PEPS module connector J1.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Check for broken, bent, protruded or corroded terminals.
- Check if related connector pins are in good condition.
- Connect the negative battery cable.
- Turn ENGINE START STOP switch to ON.

- (i) Using DC voltage band of digital multimeter, measure voltage at terminal 9 of connector J1, check if voltage jumps as clutch pedal is depressed (at this time, ECU monitors clutch switch signal at high level). So, check interior wire harness for open.

OK

Multimeter Connection	Condition	Specified Condition
J1-09 - Body ground	Clutch pedal not depressed	$\approx 12\text{ V}$
J1-09 - Body ground	Clutch pedal depressed	0 V

Result

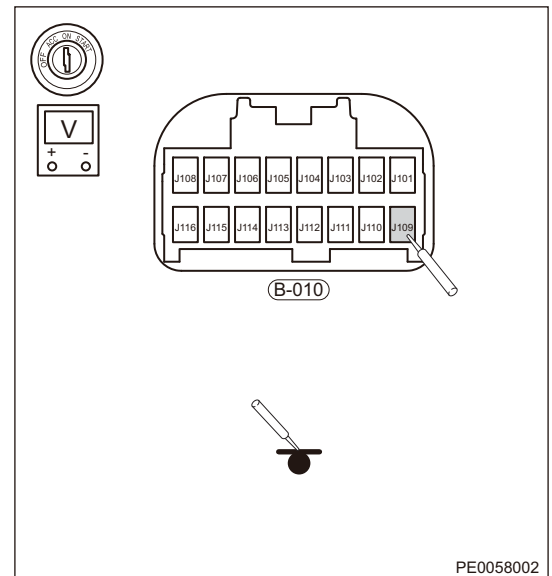
Proceed to
OK
NG

OK

Replace PEPS module

NG

Replace interior wire harness



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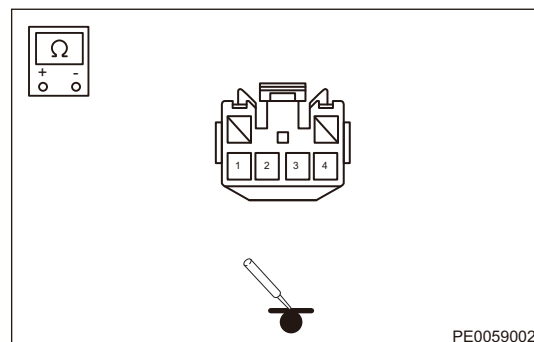


4 Check clutch switch

- Turn ENGINE START STOP switch to OFF.
- Disconnect the negative battery cable.
- Disconnect the clutch bottom switch connector B-064.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Check for broken, bent, protruded or corroded terminals.
- Check if related connector pins are in good condition.
- Using digital multimeter, measure internal resistance of clutch bottom switch to check if brake bottom switch is abnormal

OK

Multimeter Connection	Condition	Specified Condition
Clutch bottom switch 1 - 2	Brake pedal not depressed	∞
Clutch bottom switch 3 - 4	Brake pedal not depressed	∞
Clutch bottom switch 1 - 2	Brake pedal depressed	$\leq 1 \Omega$
Clutch bottom switch 3 - 4	Brake pedal depressed	$\leq 1 \Omega$



Result

Proceed to
OK
NG

NG

Replace clutch bottom switch

OK

5 Check clutch bottom switch ground signal

- Using ohm band of digital multimeter, measure resistance between terminal 1 of clutch bottom switch connector B-064 and body ground to check if clutch bottom switch ground signal is normal

OK

Multimeter Connection	Condition	Specified Condition
B-064-1 - Body ground	Always	$\leq 1 \Omega$

Result

Proceed to
OK
NG

OK

Replace interior wire harness

NG

Handle GB-040 ground signal

DTC	B1518	Trunk/Back Door Unlock Switch Stuck Failure
DTC	B1519	Back Door Lock Switch Continuously Pressed

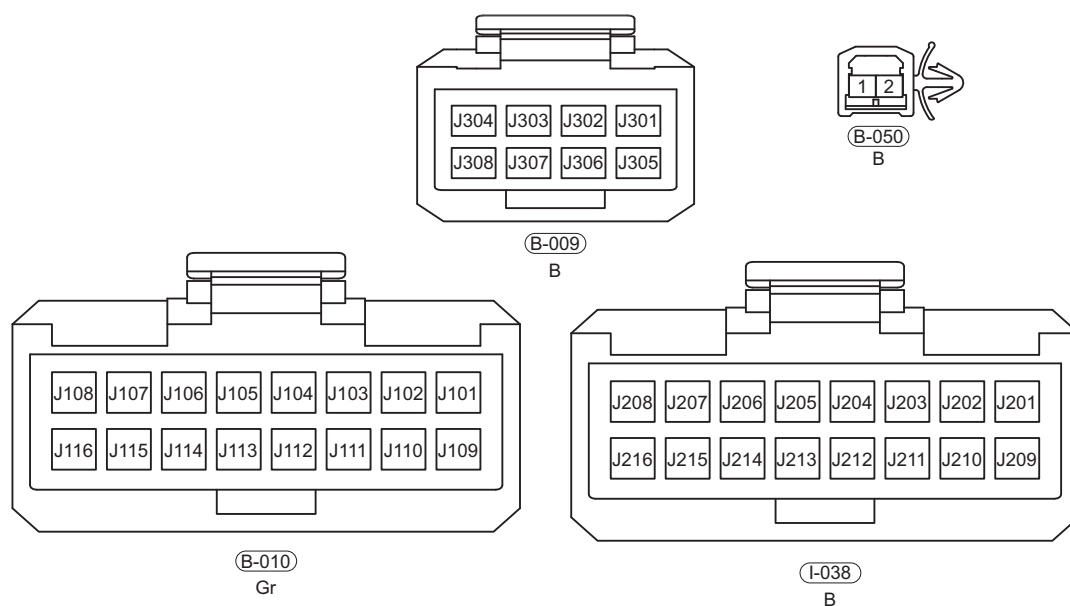
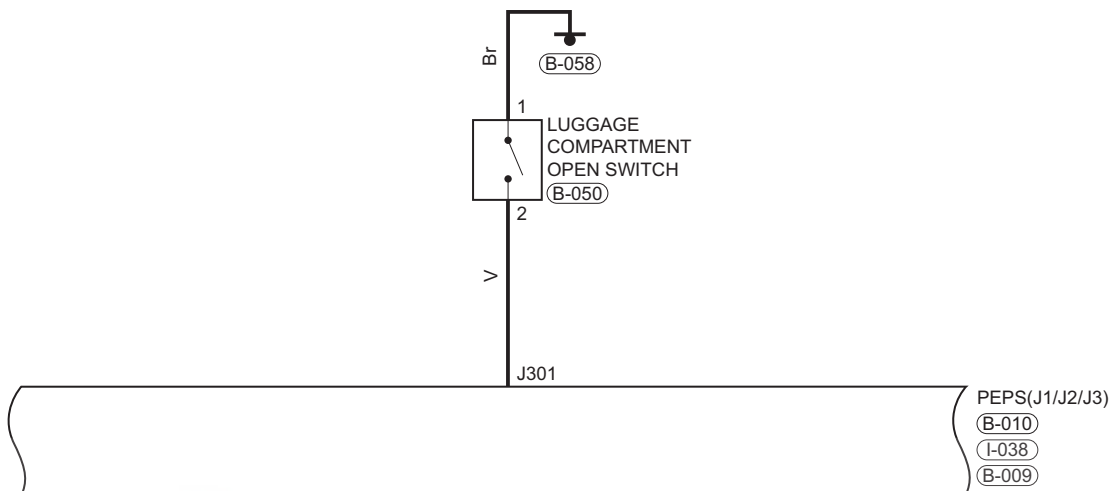
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Circuit Diagram



PE0060001

Description

DTC	DTC Definition
B1518	Trunk/Back Door Unlock Switch Stuck Failure
B1519	Back Door Lock Switch Continuously Pressed

Caution:

When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure**1 Check vehicle malfunction condition**

- (a) Press luggage compartment door release switch to check if luggage compartment door is opened.

Result

Proceed to
OK
NG

35

OK

Turn off vehicle power supply (disconnect the negative battery cable), then turn on power supply again and clear DTC.

NG

2 Check luggage compartment door release switch

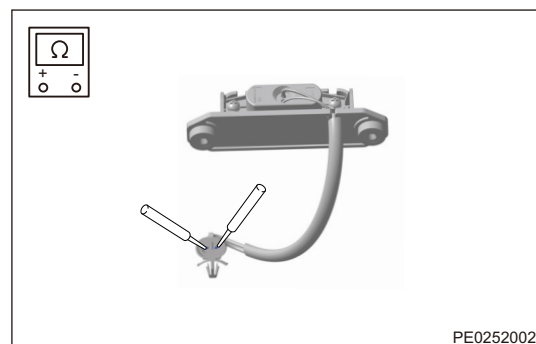
- (a) Turn ENGINE START STOP switch to OFF.
 (b) Disconnect the negative battery cable.
 (c) Disconnect luggage compartment door release switch connector B-050.
 (d) Check if wire harnesses are worn, pierced, pinched or partially broken.
 (e) Check for broken, bent, protruded or corroded terminals.
 (f) Check if related connector pins are in good condition.
 (g) Using ohm band of digital multimeter, measure if resistance of luggage compartment door release switch is normal to check if luggage compartment door release switch is damaged.

OK

Multimeter Connection	Condition	Specified Condition
Luggage compartment door release switch 1 - 2	Not pressed	∞
Luggage compartment door release switch 1 - 2	Pushed	$\leq 1 \Omega$

Result

Proceed to
OK
NG



NG

Replace luggage compartment door release switch

OK

3 Check luggage compartment door release switch ground side

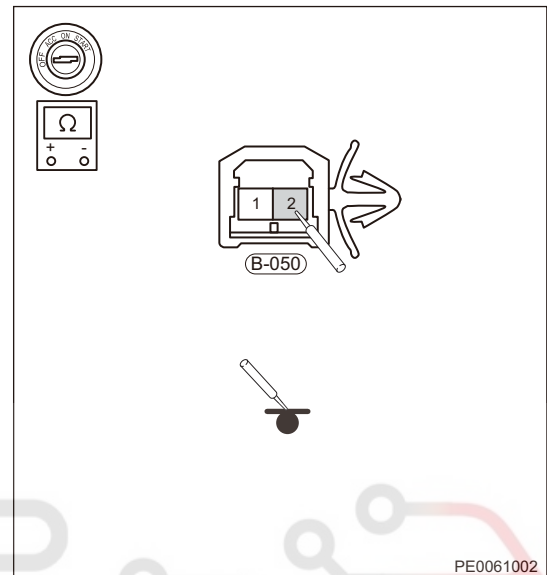
- (a) Using ohm band of digital multimeter, measure resistance between terminal 2 of connector B-050 and body ground to check ground side for normal.

OK

Multimeter Connection	Condition	Specified Condition
B-050-2 - Body ground	Always	$\leq 1 \Omega$

Result

Proceed to
OK
NG



NG

Handle GB-058 ground circuit

OK

4 Check luggage compartment door release switch circuit signal voltage

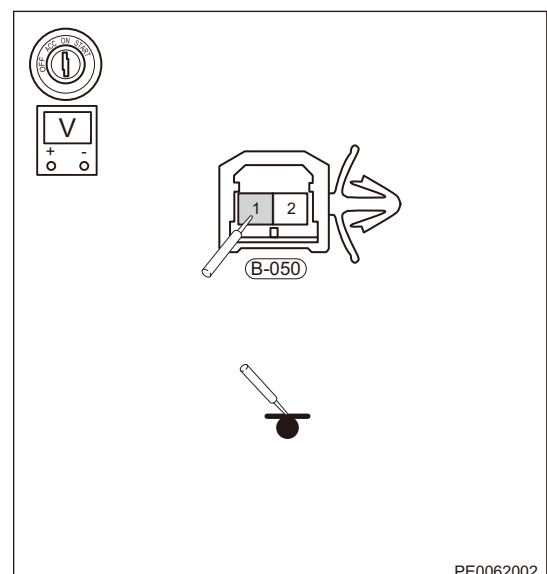
- (a) Connect the negative battery cable.
 (b) Turn ENGINE START STOP switch to ON.
 (c) Using DC voltage band of digital multimeter, measure if signal voltage at terminal 1 of connector B-050 is normal.

OK

Multimeter Connection	Condition	Specified Condition
M-001-1 - Body ground	ON state	Not less than 12 V

Result

Proceed to
OK
NG



OK

Handle poor connector contact

NG

5 Check luggage compartment door wire harness for open or short

- (a) Turn ENGINE START STOP switch to OFF.
- (b) Check if wire harnesses are worn, pierced, pinched or partially broken.
- (c) Check for broken, bent, protruded or corroded terminals.
- (d) Check if related connector pins are in good condition.
- (e) Using ohm band of digital multimeter, measure resistance between terminal 1 of connector B-050 and terminal J3-01 to check luggage compartment door wire harness for open.

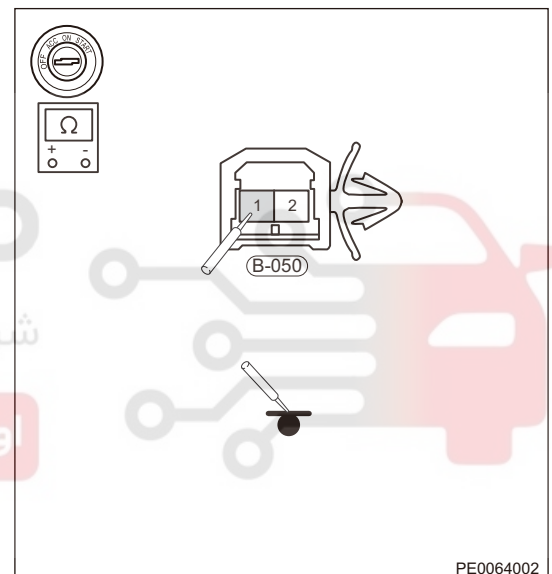
OK

Multimeter Connection	Condition	Specified Condition
B-050-01 - J3-01	Always	$\leq 1 \Omega$

- (f) Using ohm band of digital multimeter, measure resistance between terminal 1 of connector M-050 and body ground to check luggage compartment door wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
B-050-01 - Body ground	Always	∞



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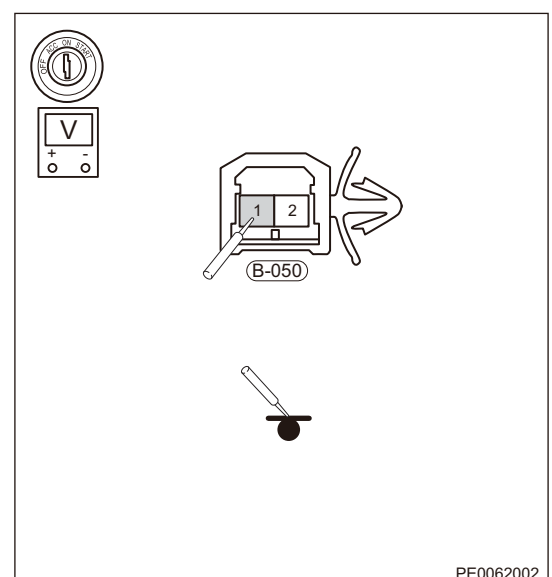
- (g) Connect the negative battery cable, turn ENGINE START STOP switch to ON. Using DC voltage band of digital multimeter, measure voltage between terminal 1 of connector M-001 and body ground to check luggage compartment door wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
B-050-01 - Body ground	Always	0 V

Result

Proceed to
OK
NG



OK	Replace PEPS module
NG	Replace interior wire harness

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DTC	B150F	ESCL Anti-scanning
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Description

DTC	DTC Definition
B150F	ESCL Anti-scanning

Procedure

1	Electric steering column lock enters anti-scanning state
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(a) Enter anti-theft control system, delete and learn ESCL.

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DTC	U0100	Lost of Communication with Engine Control System Module
DTC	U0129	Lost Communication with Brake System Module
DTC	U0140	Lost Communication with Body Control Module
DTC	U0329	Lost Communication with Electronic Steering Column Lock

Description

DTC	DTC Definition
U0100	Lost of Communication with Engine Control System Module
U0129	Lost Communication with Brake System Module
U0140	Lost Communication with Body Control Module
U0329	Lost Communication with Electronic Steering Column Lock

Procedure

1	Refer to "CAN COMMUNICATION" for troubleshooting
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ON-VEHICLE SERVICE

PEPS Control Module Assembly

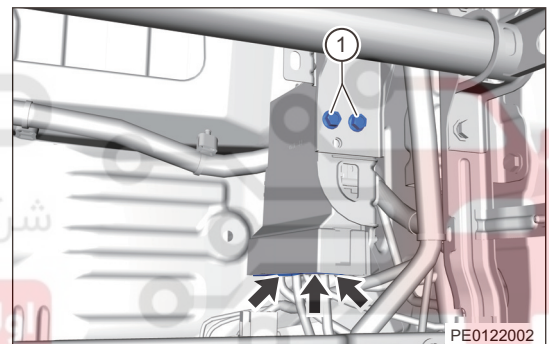
Removal

Warning/Caution/Hint

Caution:

- DO NOT separate PEPS controller and fixing bracket at will, or clamping structure of controller will be damaged, unless controller malfunction is confirmed by troubleshooting result, it can be removed and cannot be reused.
- DO NOT replace PCB board of PEPS controller at will, or it cannot be traced back and may be make abnormal sound.
- After replacing PEPS controller assembly, before performing key learning and anti-theft matching, do not press ignition switch at will if nor necessary (it is set that keyless start can be performed for 50 times), to prevent locking PEPS controller and vehicle power supply cannot be turned on.

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the glove box assembly (See page 48-13).
4. Remove the PEPS module.
 - (a) Disconnect the PEPS module connectors (arrow).
(If panoramic image system is configured, disconnect panoramic image module connector)



- (b) Remove 2 coupling bolts (1) between PEPS module mounting bracket and instrument panel crossmember.

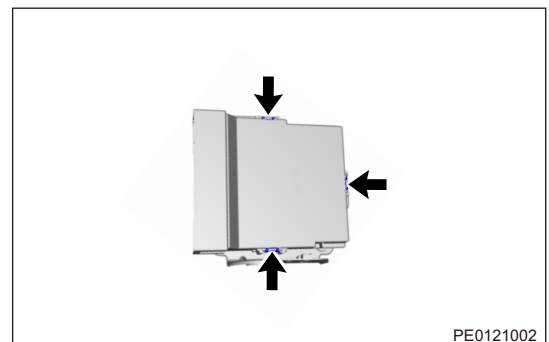
Tightening torque

$7 \pm 1 \text{ N}\cdot\text{m}$

- (c) Remove PEPS module and mounting bracket, use a screwdriver to carefully remove PEPS module from 3 fixing notches (arrow) of mounting bracket.

Caution:

- When using screwdriver, be careful not to damage 3 bayonets of PEPS module.



Installation

1. Installation is in the reverse order of removal.

Caution:

- When installing PEPS module to bracket, check if bayonets are well fitted with notches. If not, readjust them.

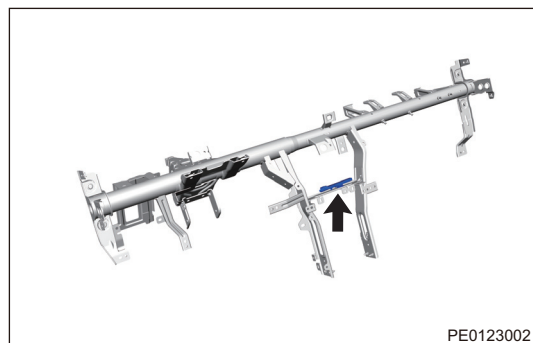
Front Low Frequency Antenna

Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the auxiliary fascia console assembly (See page 48-10).
4. Remove the front low frequency antenna.
 - (a) Disconnect the connector from front low frequency antenna.
 - (b) Remove the front low frequency antenna.

Caution:

- DO NOT repeatedly remove and install it, and dispose it if it becomes loosen.



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Installation

1. Installation is in the reverse order of removal.

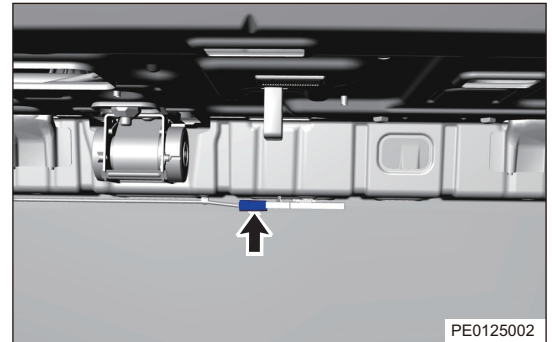


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Rear Low Frequency Antenna

Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Open the luggage compartment.
4. Remove the rear low frequency antenna assembly.
 - (a) Disconnect the connector (arrow) from rear low frequency antenna.



- (b) Using a tool, detach fixing clip from fixing hole.

Caution:

- DO NOT repeatedly remove and install it, and dispose it if it becomes loosen.

Installation

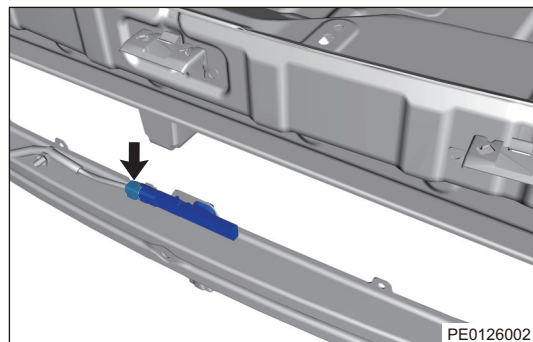
1. Installation is in the reverse order of removal.



Rear Bumper Low Frequency Antenna

Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the rear bumper assembly (See page 51-25).
4. Remove the rear low frequency antenna assembly.
 - (a) Disconnect the connector (arrow) from rear bumper low frequency antenna.



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- (b) Using a tool, detach fixing clip from fixing hole.

Caution:

- DO NOT repeatedly remove and install it, and dispose it if it becomes loosen.

Installation

1. Installation is in the reverse order of removal.

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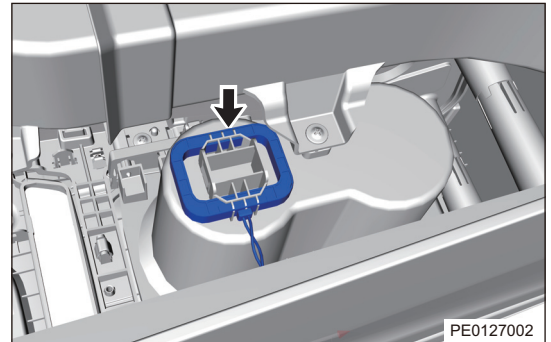
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Anti-theft Coil

Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the EPS panel assembly.
4. Remove the anti-theft coil.
 - (a) Press two clips with left hand while hold coil (arrow) with right hand, and unplug it in opposite direction of installation direction with large force.



Installation

1. Installation is in the reverse order of removal.

Caution:

- Align anti-theft coil with auxiliary fascia console assembly and card slot at the bottom of cup holder (the connector faces front passenger side). In order to avoid operating by mistake, there is no character on the surface close to bottom of cup holder, and the surface with character should be exposed after junction.
- The anti-theft coil must be installed with a smooth surface against the cup holder, and ensure it is installed in place, otherwise it may fall off from the bracket, thus failing to carry out normal key learning and anti-theft matching.

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