

1. Overview and safety

This equipment is inspection equipment that digitally measures the leakage pressure for a certain period after applying appropriate pressure to the battery pack coolant channel and case to accurately and precisely check the airtightness required to maintain the stability of the high-voltage battery pack.

Be sure to read this user guide before using it to ensure the safe and correct use of the product.

● Product overview

Purpose of diagnosis

It is used to check the high-voltage battery pack cooling channel and maintenance of internal air tightness of the pack case.

Purpose of use

This equipment focuses on accurately diagnosing airtight conditions through pressurization.

Since the high-voltage battery pack installed in the electrified vehicle must be protected from external factors (water, moisture, and other foreign substances), air tightness status should always be maintained.

If the high-voltage battery pack case is replaced in the workshop or partial maintenance(pack/module/self) is performed after the case is opened, be sure to use this equipment to finally check the air tightness.

● Safety information



Warning: It is very dangerous when handling high-voltage parts, so you must follow them.
Violation of instructions can result in serious injury or death.

1. Before checking or servicing the voltage system, be sure to disconnect the high voltage by disconnecting the safety plug.
2. Be sure to remove metallic substances from your body as they can cause high-voltage short circuits that can damage people and vehicles. (Watches, rings, other metallic products, etc.)
3. Before working related to high voltage, wear personal protective equipment to prevent safety accidents.
4. Except for workers wearing protective equipment, never touch parts related to high voltage parts.



Caution: Violation of instructions may result in minor personal injury or damage to equipment and property damage.

1. Before/after using the equipment, remove foreign substances from the components and keep them clean.
2. Before using it, be sure to read the manual and follow the procedures and instructions.
3. Before using it, be sure to familiarize yourself with the vehicle management safety guidelines issued by the vehicle manufacturer.
4. Use the equipment only in well-ventilated areas and wear protective equipment (Safety glasses, protective gloves, etc.).
5. If the device is damaged due to external impact, stop using it immediately, and if repair is required, be sure to repair it from the manufacturer.
(Abnormal repair may cause equipment damage)
6. Do not expose the equipment to rain or snow.
7. Do not use equipment for any purpose other than manufacturing.
8. Do not leave the equipment unattended while installed in the vehicle.
9. If the equipment is not used within the operating temperature range (0~40 °C), it may cause a malfunction.

2. Product specification and movement

● Product specification

Item			Data
Display			LCD: 240*128(DOT) / BLU
Status display LED			4 Color LED
Radio communication			Bluetooth V5.0(BLE)
Alarm			Buzzer (75db / 2600Hz)
Pressure Sensor	Cooling channel	Injection/measurement	Measuring range : 0 ~ 4bar Accuracy : $\pm 0.25\%$ FS
	Battery pack	Injection	Measuring range: -0.5 ~ + 0.5bar Accuracy : $\pm 0.25\%$ FS
		Measurement	Measuring range : 0 ~ 5Kpa Accuracy : $\pm 0.25\%$ FS
Power input			DC 12V / 10A
Maximum power consumption			MAX. 60W
Operating temperature			0°C ~ 40°C
Product certification			KC / CE / FCC

● Connecting/separating/moving the case



[Protrusion
Groove]

&



[Before connecting]



[Connecting ring]



[After connecting]



[Connecting completion]



1. some protrusions and grooves help fasten the top/bottom of the case.
Stack the bumps so that they fit into the grooves.
2. There are connecting hooks on the left and right sides of the case.
Raise the hook in the lower case and connect it to the upper case.
3. It can be connected and separated and can be moved according to the user's environment or purpose.

3. Product components and names of each part of the main body

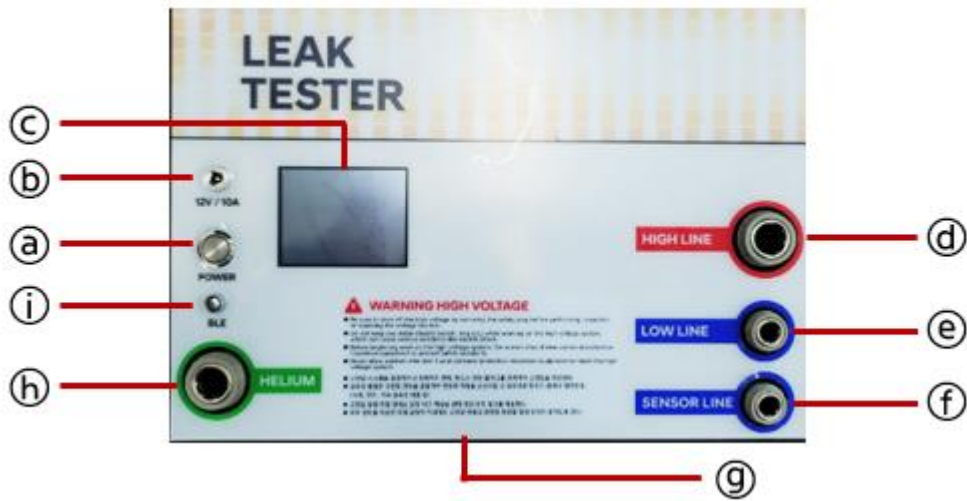
● Product components

Number	Name	Product number	Amount	Image
1	Main case [Main test unit]	G1DTDHA001	1EA	
2	Inspection equipment body	G0DTDNN002	1EA	
3	Accessory case	G1DTDHA003	1EA	
4	Power adapter	G0DDDCP001	1EA	
5	For battery pack Air hose [blue]	G1DTDMK161	2EA	
6	For battery pack Magnet adapter	G1DTDMK162	2EA	
7	For cooling channel Air hose [red]	G1DTDMK155	1EA	
8	For cooling channel discharge Hose [transparent]	G1DTDMK156	1EA	

9	Cooling channel coupler Before E-GMP: A-180 After E-GMP: A-189	A-180 :G1DTDMK151 A-189 :G1DTDMK152	2 species Each 2EA	
10	Self-test adapter	A-180 :G1DTDMK153 A-189 :G1DTDMK154	1EA	
11	Sealing connector [Main] [E001]	G7DTDNN001	1EA	
12	Sealing connector [Main] [E002]	G7DTDNN001	1EA	
13	Sealing connector [Main] [E003]	G7DTDNN002	1EA	
14	Sealing connector [Communication] [E004]	G7DTDNN003	1EA	
15	Sealing connector [Quick Charge] [E005]	G7DTDNN004	1EA	
16	Sealing connector [FR DC]	G7DTDNN005	1EA	

	[E006]			
17	Sealing connector [FR DC] [E007]	G7DTDNN006	1EA	
18	Sealing connector [ICCU DC] [E008]	G7DTDNN007	1EA	

● Names of each part of the body



Sign	Name	Description of function
(a)	POWER	Body power switch (ON/OFF)
(b)	DC IN	Body power jack (12V 10A)
(c)	LCD	Driving information display
(d)	HIGH-PRESSURE AIR OUTPUT	Cooling channel air discharge part
(e)	LOW-PRESSURE AIR OUTPUT	Battery pack air discharge part
(f)	LOW-PRESSURE SENSOR INPUT	Battery pack pressure measuring part
(g)	High voltage precautions	Instructions when using high voltage
(h)	HELIUM INPUT	Helium gas inlet
(i)	BLE LED	Show Bluetooth connection status

4. Test preparation

● Power supply



1. Connect the power adapter to the body of the inspection equipment.

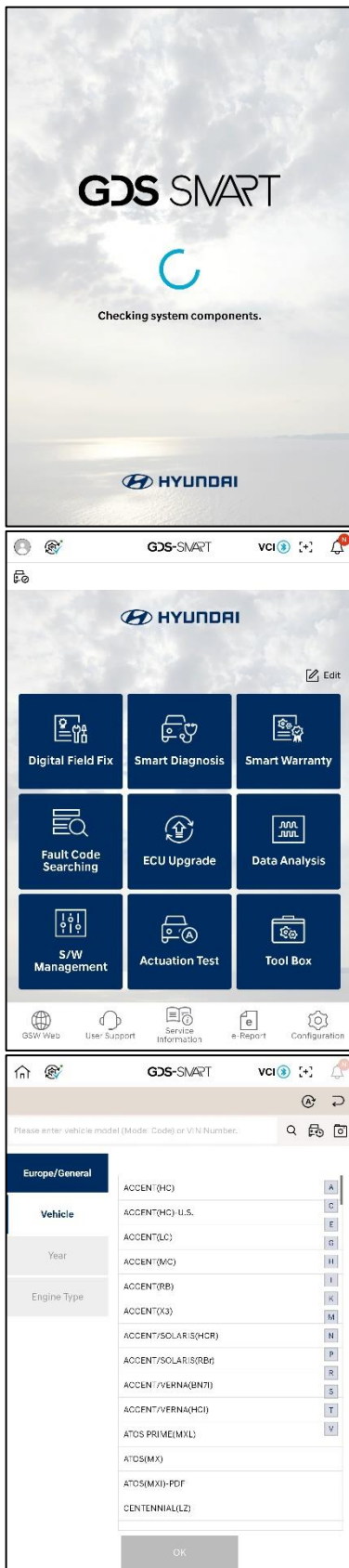
2. Press the POWER button on the main unit once until you hear a 'click' sound.

3. Check the red LED on the POWER button of the main body lights up and the LCD screen turns on.

Serial number

Mac address

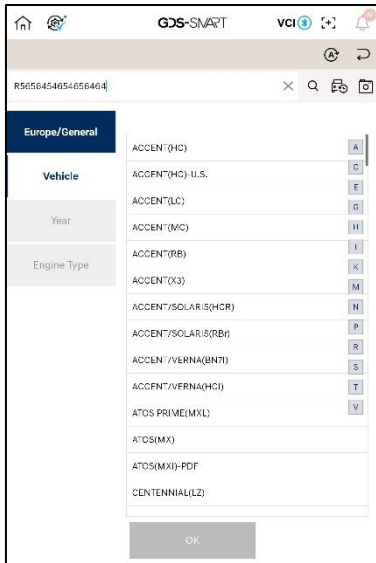
● Vehicle type selection



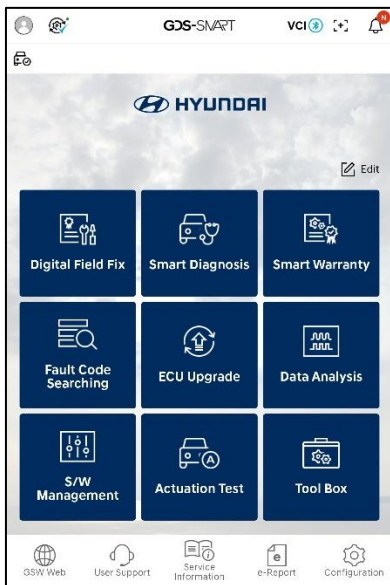
1. Run the diagnostics on the prepared tablet.

2. Click select vehicle type at the top of the screen.

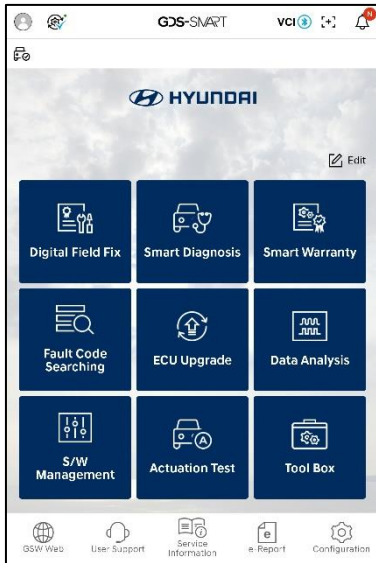
3. The vehicle model selection screen is executed.
Select the vehicle type to start the inspection.



4. You can manually enter the vehicle's VIN (VIN: a 17-digit combination of English letters and numbers), or, if there is a vehicle you have previously searched for, you can search for past vehicles with the Search History Button.

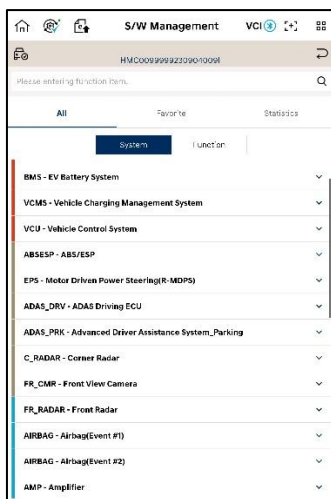


5. You can check the selected vehicle model information at the top of the main screen.
 (※ If the VCI connection message appears, click the Cancel button.
 A VCI connection is not required for the air tightness test.)

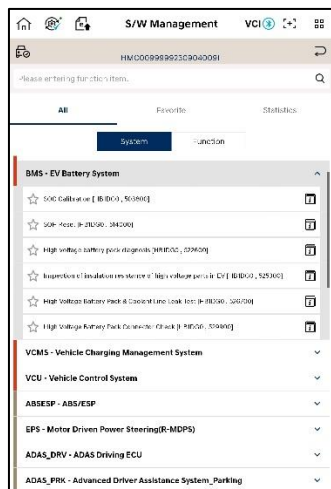


6. On the main screen, click 'Add-ons'.

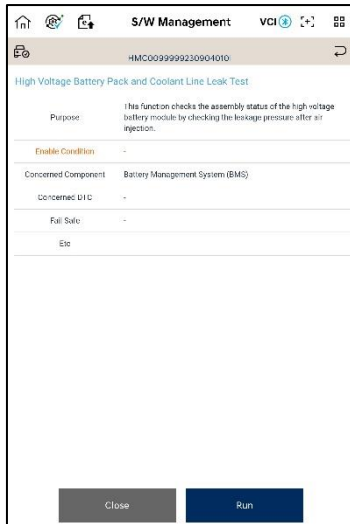
● Preparation for the air tightness test



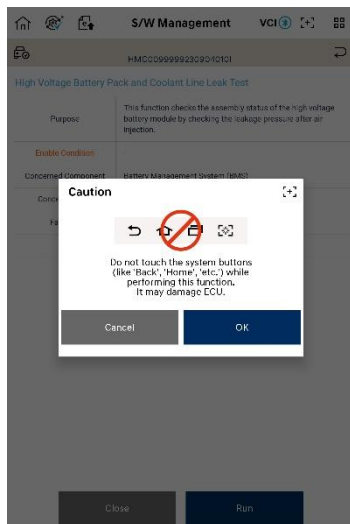
1. Select the 'BMS-battery' control system.



2. 'High Voltage Battery Packs and Cooling Water Line' Run the air tightness test.

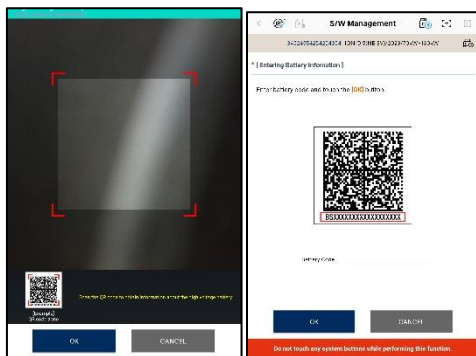


3. This is the explanation screen for the 'High Voltage Battery Pack and Cooling Water Line' air tightness test. After checking, click the Run button.



4. Please check the warning text. Be careful not to operate other functions, such as system buttons, while performing functions.

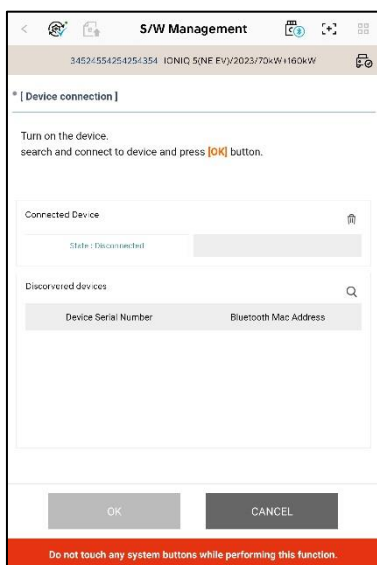
● Battery information input and BLE connection



[Camera] [written by hand]

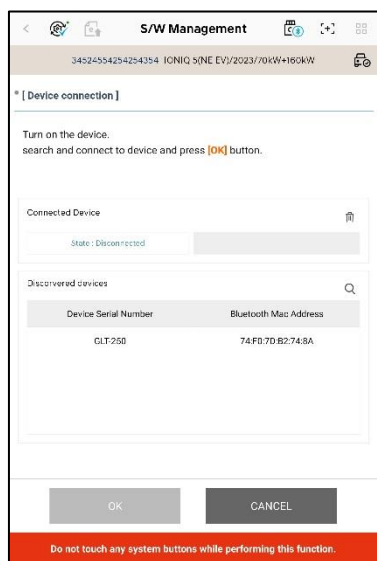
1. Please recognize the QR code of the high-voltage battery. If recognition is difficult, click the OK button to manually enter the code number.

※ Since the location of each battery is different, check the appearance of the battery.



2. Press the 'Search' button to search the main body's Bluetooth.

When the main body's Bluetooth is detected, it is displayed in the 'Searched Device List.'

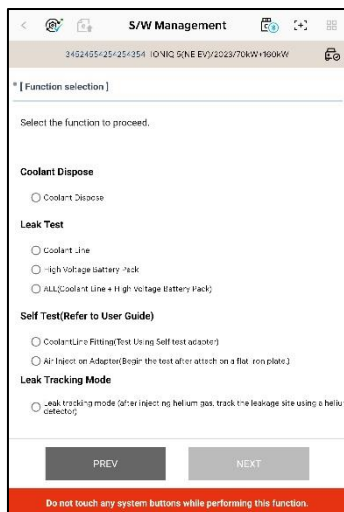


3. If you click the searched main body information, the main body and tablet are connected and displayed in 'connected devices.'

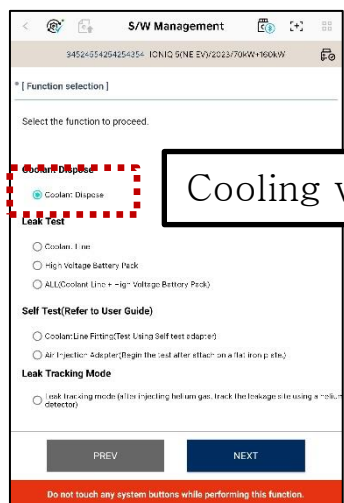
In the main body, a beep sounds while the blue LED operates on the BLE LED.

5. Air tightness inspection test

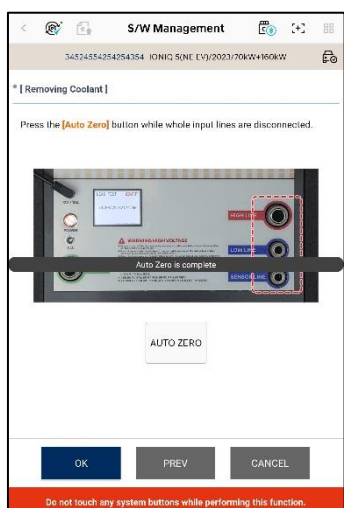
● Cooling water emission



1. This is the additional function item screen.
Select 'air tightness inspection.'



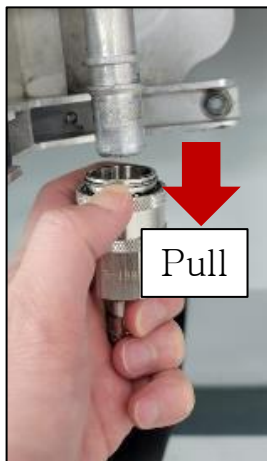
2. After selecting 'cooling water emission', click the next button.



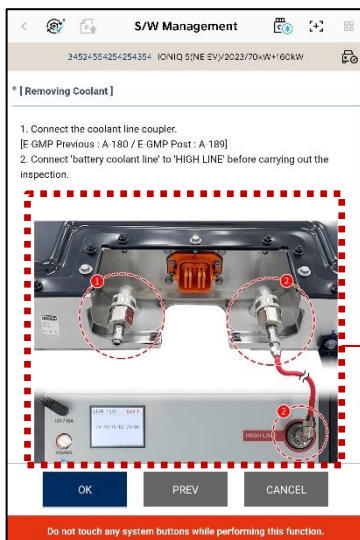
3. With the hoses disconnected, click the 'Zero Adjustment' button. When zero-point adjustment is completed, Click the 'OK' button.



4. Connect the power adapter to the main body.

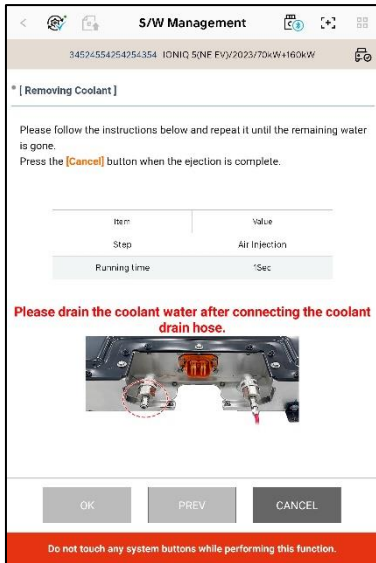


5. Connect two couplers to the cooling water pipe
On the front side of the battery.
※ Be careful as the edge of the battery is sharp.

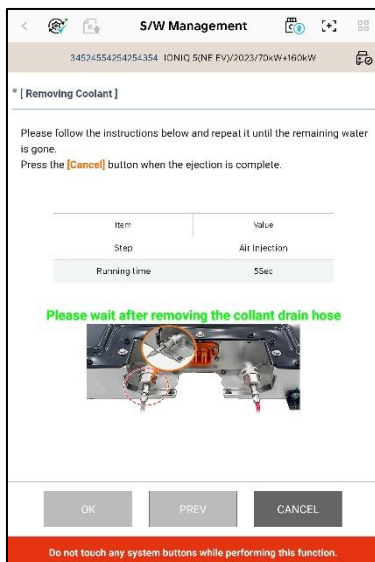


6. As shown on the tablet screen, connect the air hose for the cooling channel to the HIGH LINE and the coupler, and then click the 'confirm' button to inject air in the following order.
※ Check whether the coupler is fully engaged.

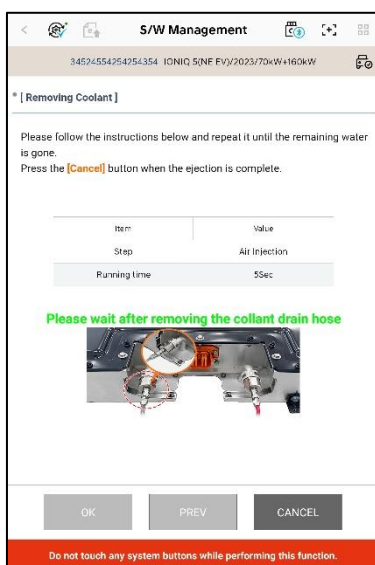
Connecting completion



7. Wait while the cooling channels are pressurized.

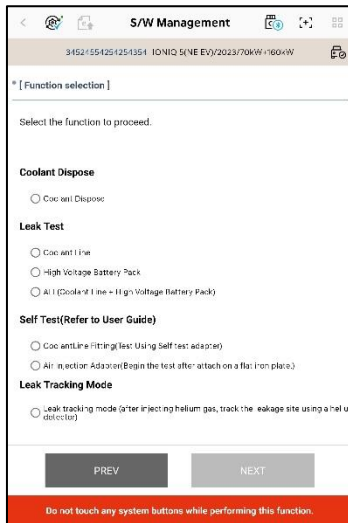


8. When the reference pressure is reached, the cooling water emission message is displayed on the screen. Drain the cooling water by connecting a coupler that does not inject air into the cooling water emission hose.



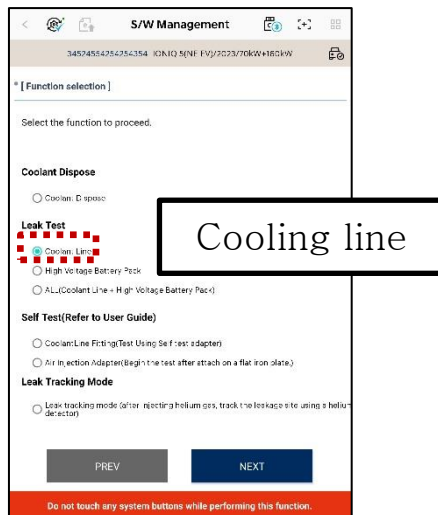
9. When checking the discharged cooling water with the naked eye, if no more is discharged, repeat the procedure 7 to 8 times. (Approximately 7 to 8 times) When the discharge is completed, press the cancel button. Cooling water emission is finished.

● Cooling water line

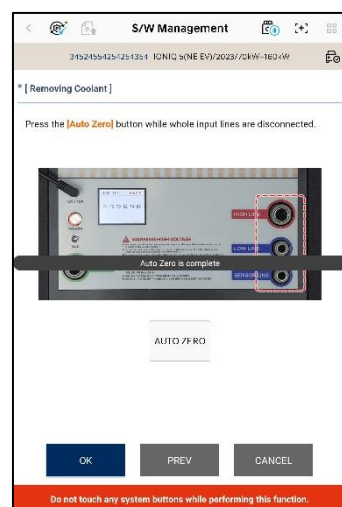


1. This is the additional function item screen.

Select 'air tightness inspection.'



2. After selecting 'cooling line', click the next button.



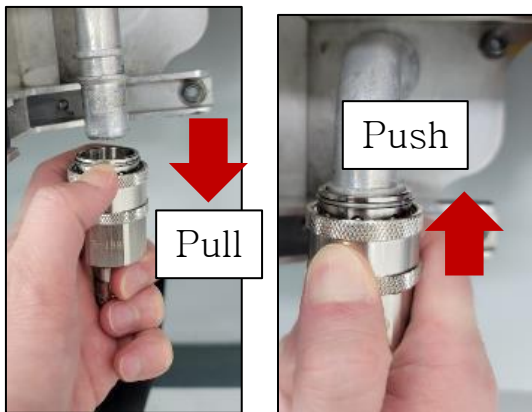
3. With the hoses disconnected, click the 'Zero Adjustment.'

When zero point adjustment is completed, click the 'OK' button.



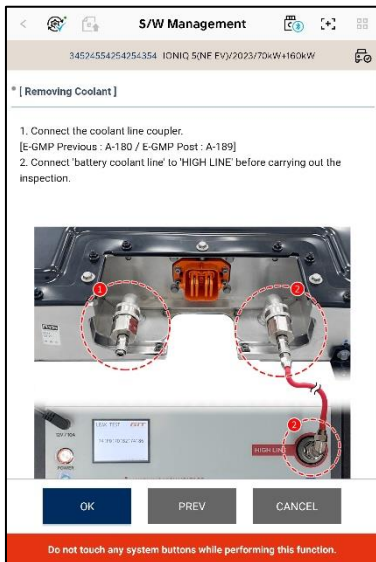
4. Cooling water line air tightness inspection preparation screen. In the accessory case, prepare the cooling channel coupler, the air hose for the cooling channel, and the hose for the cooling channel emission.

※ Apply A-180 before E-GMP
A-189 after E-GMP



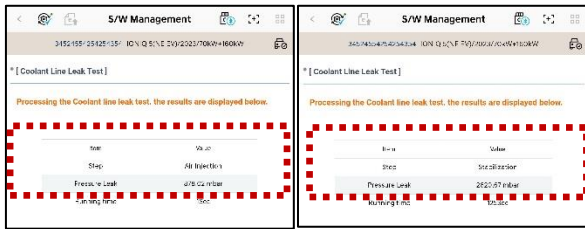
5. Connect two couplers to the cooling water pipe
On the front side of the battery.

※ Be careful as the edge of the battery is sharp.

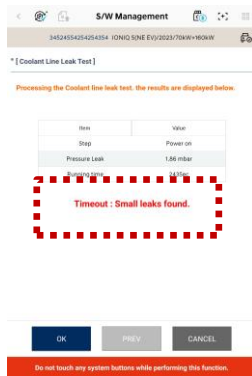


6. As shown on the tablet screen, connect the air hose for the cooling water channel to the HIGH LINE and the coupler, and click the 'OK' button to inject air in the following order.

※ Check whether the coupler is fully engaged.



1) Air injection stage 2) Stabilization stage



3) Judgment - pass/fail

7. Wait while air is injected into the cooling channel.

The test automatically proceeded according to the order below.

- 1) Air injection
- 2) Stabilization
- 3) Judgment

8. When the judgment is completed, pass/fail is displayed according to the set specifications.

After checking the result value, click the OK button.

※ In the case of failure, check for abnormalities in air tightness equipment through a 26P self-test.

9. When the inspection is complete, the order of separation is as follows:

1) Exhaust the air from the cooling water line through the cooling water emission hose.

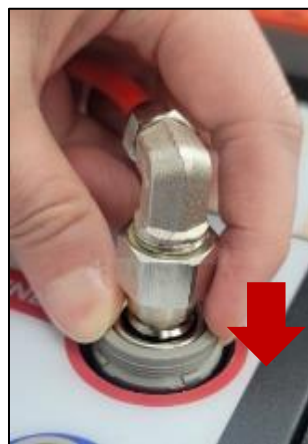
2) Separate the coupler and the two hoses to which the coupler is connected.

3) Separate the air hose installed on the equipment.

※ When the hose attached to the equipment is disconnected first, be careful as it may flow backward due to pressure.

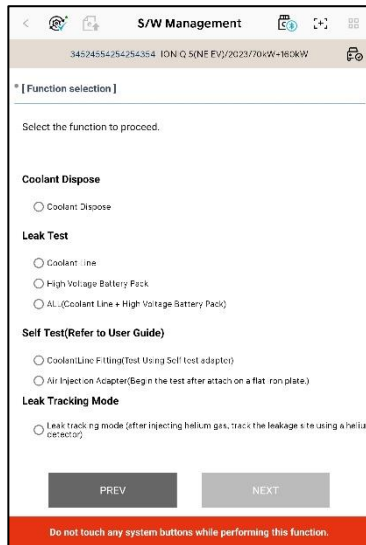


Separation of coupler-hose



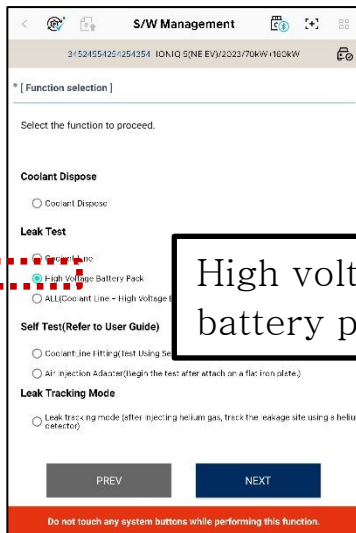
Separation while pressing

● High voltage battery pack



1. This is the additional function item screen.

Select 'air tightness inspection.'



2. After selecting 'High voltage battery pack', click the Next button.



3. After checking the blocking connector that meets the battery specification in the accessory case, install it. Click the OK button.

※ There is a risk of damage when a connector that does not fit is forcibly installed.



4. With the hoses disconnected, click the 'Zero Adjustment' button. When zero-point adjustment is completed, Click the 'OK' button.



5. Prepare an air hose for the battery pack and a magnetic adapter for the battery pack. Connect the hose and adapter as shown in the picture on the left.

※ Connect until the 'click' sound occurs.



6. Connect the assembled hose and adapter to the battery and equipment according to the instructions.

1) Mount the adapter on the pressure regulator of the battery so that it does not interfere.

2) After connecting the hoses to the LOW LINE and SENSOR LINE in each piece of equipment, click the OK button.



[Normal connection] [Abnormal connection]



7. For vehicles with safety plugs, connect with plugs that meet the specifications.

Click the OK button.

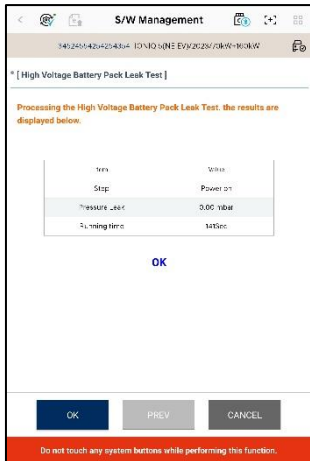
8. Check the battery pack pressure regulator status. Please wait for a moment. Air is pumped in as soon as it shuts off.



- 1) Air injection stage
- 2) Stabilization stage

9. Wait while the battery pack Is being pumped with air. The test will automatically proceed according to the order below.

- 1) Air injection
- 2) Stabilization
- 3) Judgment

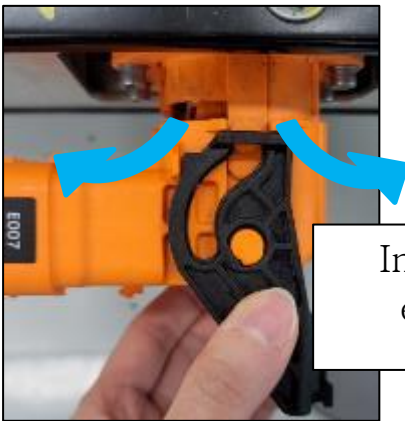


10. When the judgment is completed, pass/fail is displayed according to the set specifications.

After checking the result value, click the OK button.

※ In the case of failure, check for abnormalities in air tightness equipment through the 26P self-test.

3) Judgment



Internal air emission

11. When the inspection is complete, the order of separation is as follows:

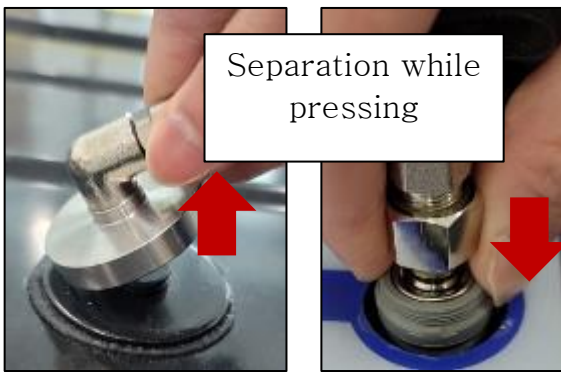
1) Remove all blocking connectors.

At this time, the air inside is discharged.

2) Disconnect the adapter from the battery.

3) Separate the air hose installed on the equipment.

4) Separate the air hose and magnetic adapter.

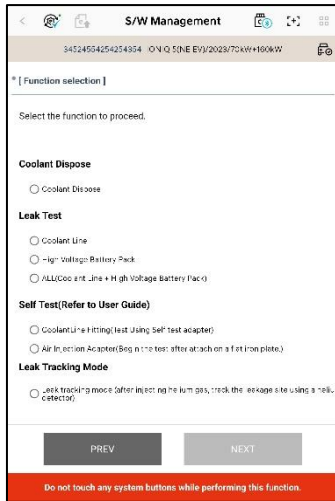


Separation while pressing

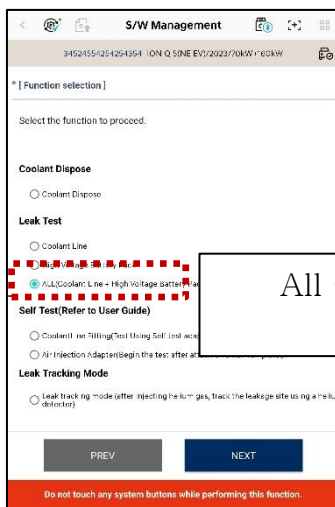


Separation while pulling

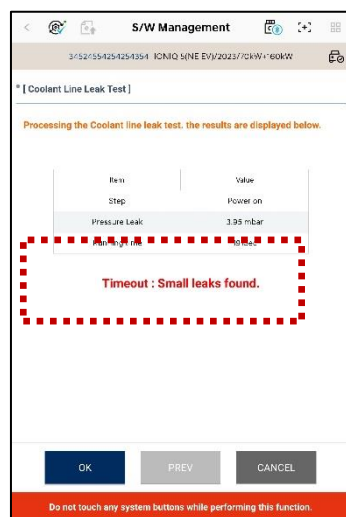
● Air tightness inspection – all (cooling water + battery pack)



1. This is the additional function item screen.
 Select 'air tightness inspection.'



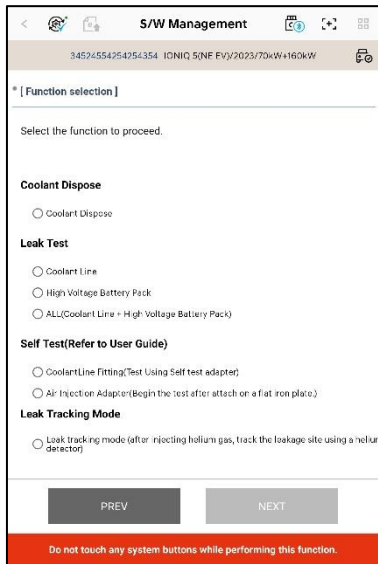
2. After selecting all (cooling water line + high voltage battery pack) click the Next button.



3. From cooling water line inspections to high voltage battery pack inspections, the process is automated.
 When the result is completed, you can check the overall result as shown on the left screen.

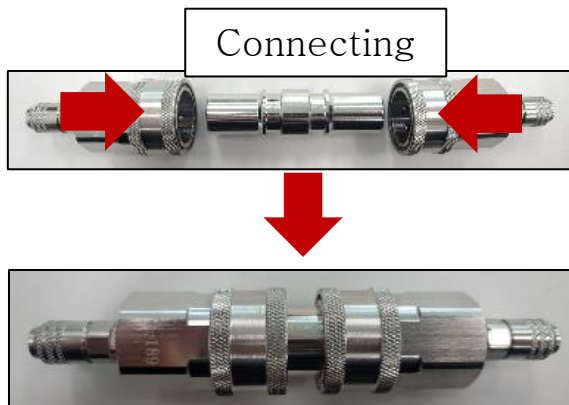
6. Self-test

● Self-test – Cooling water fitting



1. This is the additional function item screen.

Select 'self-test.'

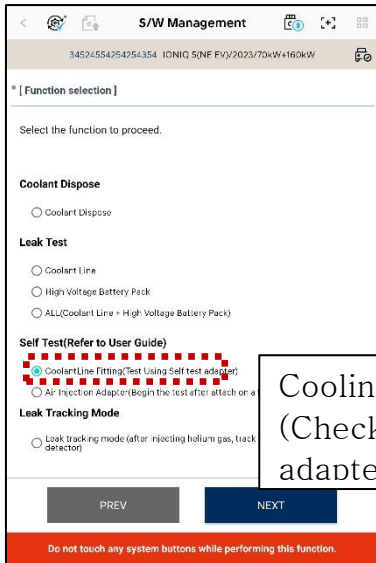


2. To perform the 'self-test – cooling channel fitting' item, connect the self-test adapter and the cooling channel coupler as shown in the picture on the left.



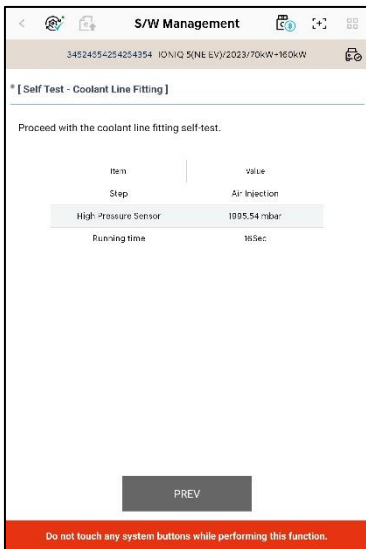
3. Connect the air hose for the cooling channel

To the HIGH LINE and the coupler.

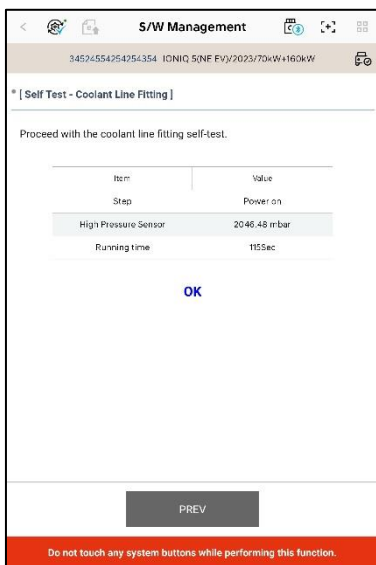


Cooling channel fitting
(Check using the self-test adapter)

4. After selecting 'fitting with cooling channel (check using a self-test adapter)', click the Next button.



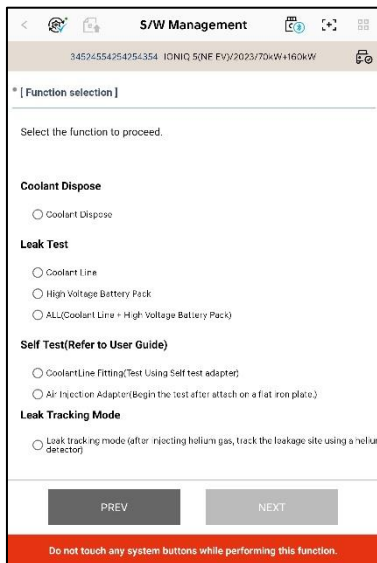
5. Zero adjustments begin, and air injection begins immediately after completion. Please wait for a moment while this is in progress.



6. When the inspection is complete, a pass/fail message is displayed.

※ In case of failure, please contact the place where you purchased the product.

● Self-test – Air injection adapter



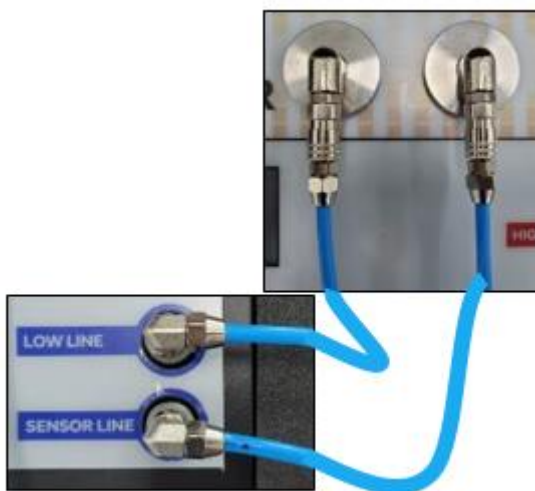
1. This is the additional function item screen.

Select 'self-test.'



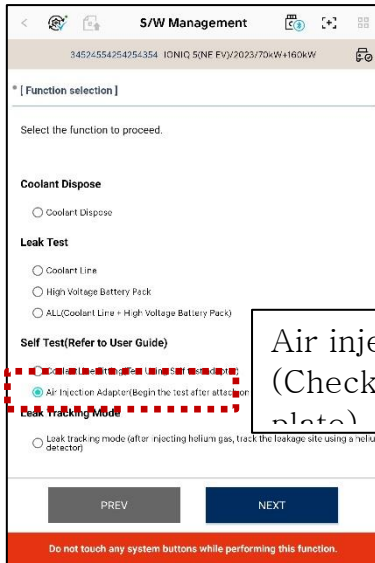
Connect until the 'click' sound occurs.

2. After preparing the air hose and magnet adapter for the battery pack to execute the 'self-test- air injection adapter', connect them as shown in the picture on the left.



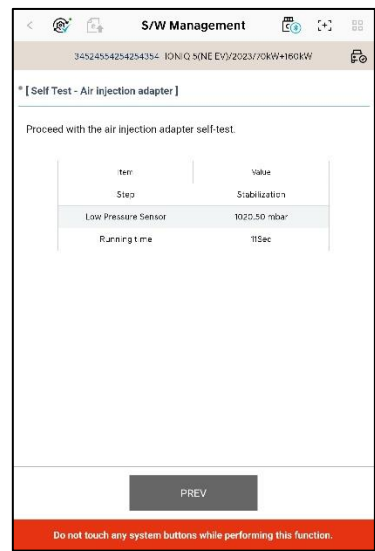
3. After connecting the hoses to the LOW LINE and SENSOR LINE on the equipment, attach the opposite magnetic adapter to the flat iron plate.

※ Refer to the photo on the left



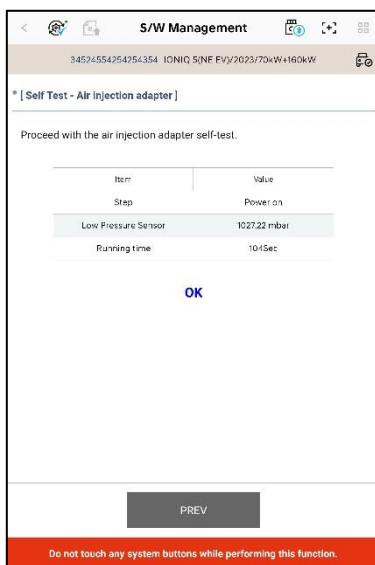
4. Click the air injection adapter (Attach it to a flat steel plate and check it) button. And click the Next button.

Air injection adapter
(Check after attaching on a flat steel plate)



5. Zero adjustments begin, and air injection begins immediately after completion.

Please wait a moment while this is in progress.

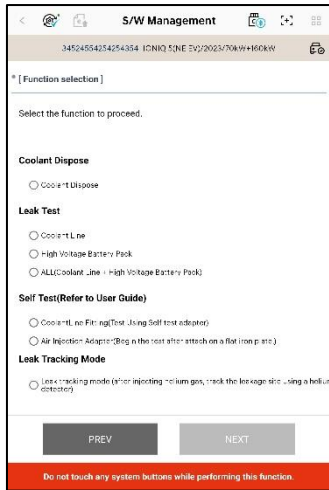


6. When the inspection is complete, a pass/fail message is displayed.

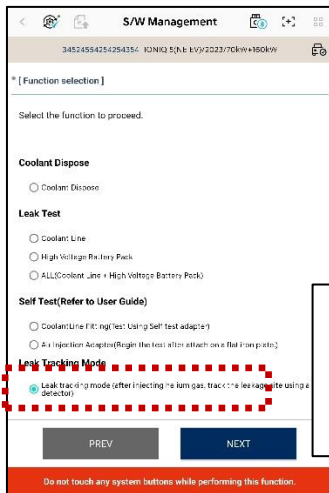
※ In case of failure, please contact the place where you purchased the product.

7. Leak trace mode

● Leak trace mode

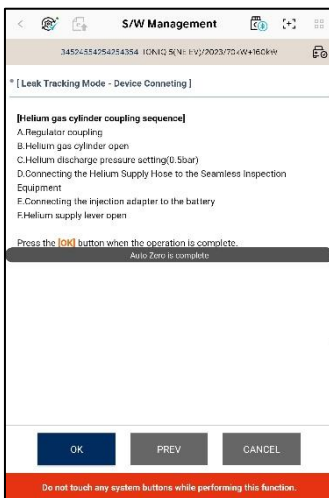


1. This is the additional function item screen.
Select 'leak trace mode.'



2. Select 'leak trace mode.'
Click the Next button.

Leak trace mode
(After injecting helium gas,
Use a helium detector to track the leaked area)

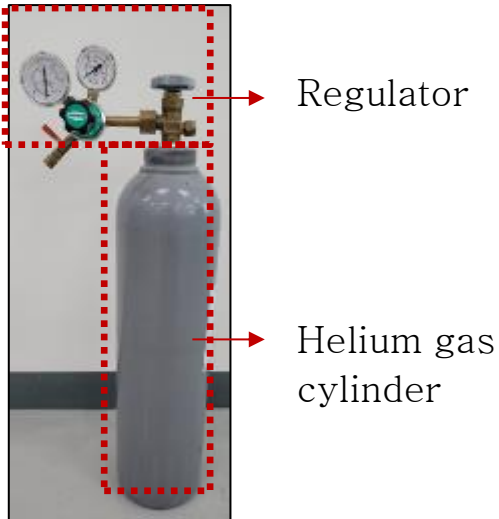


3. Prepare according to the instructions on the tablet.

Zero adjustments are performed automatically.

The detailed preparation process will be explained on the next page.

※ Helium, regulator, and detector
Are purchased separately.



4. Mount the regulator on the helium gas cylinder.

※ When using a helium cylinder, work in a well-ventilated space and be careful of accidents caused by high pressure.



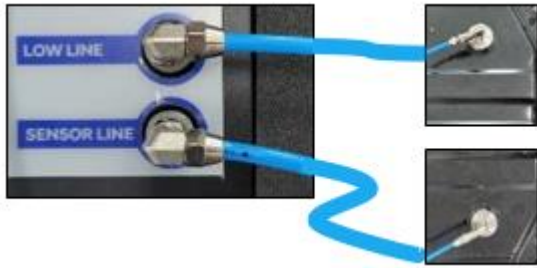
5. Connect using the regulator and Helium connector hose.

Set the helium discharge pressure to 0.5 bar.



Connect until the 'click' sound occurs.

6. Prepare an air hose for the battery pack and a magnetic adapter for the battery pack. Connect the hose and adapter as shown in the picture on the left.



7. Connect the assembled hose and adapter to the battery and equipment according to the instructions.

1) Mount the adapter on the pressure regulator of the battery so that it does not interfere.

2) Connect the hoses to the LOW LINE and SENSOR LINE in each piece of equipment



[Normal connection] [Abnormal connection]



8. Open the helium supply lever and supply helium gas to the equipment.

(The shape and usage of parts such as levers may differ depending on the operator's regulator.)

9. Click the OK button.

10. Using a helium gas detector, sequentially rotates around the battery to search for leaking parts.

11. After the exploration is complete, disassemble in the reverse order of assembly.

※ Be sure to release the residual pressure from the regulator.



8. certification





● Product certification



Certification number: R-R-UJA-ULT-M100
RF Module: R-C-csi-BoT-LE521



User guide
<p>The device has been evaluated for sustainability for use in a business environment, and there is a risk of radio interference when used in a home environment.</p>

 <p>Product : BEV Leak Tester Model : GLT-250 P/No. : G1DMDM100 Manufacturer : GIT Co., Ltd.</p>	<p>인증번호 : R-R-TMG-GLT-250 INPUT(동작입력전원) : DC12V 10A Contains FCC ID : 2APDI-BCM-LA100-AS RF Module : R-C-BC0-BCM-LA100-AS</p> <p>This device complies with part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.</p>	 <p>Made in Korea</p> 	<p>S/No. GBN00101</p> <p>제조년월 : YYYY. MM.</p> 
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