

All rights reserved! Any company or individual person shall not copy or backup this user manual in any format (electronic, mechanical, photocopying, recording or other formats) without written permission from Shenzhen SmartSafe Tech Co., Ltd (hereinafter referred to as "SmartSafe"). The manual is for the use of the products manufactured by SmartSafe, which shall not assume any responsibility for the consequences arising from the use of it to guide the operations of other equipment.

SmartSafe and its branches will not bear any liability for the fees and expenses incurred by equipment damage or loss due to accidents caused by users or third parties, misuses and abuses, unauthorized modifications and repairs, or operations and services not following SmartSafe's instructions.

SmartSafe assumes no responsibility for device damages or problems resulted from the usage of other parts or consumables, rather than original products of SmartSafe or products approved by the company.

Official statement: the mentioning of the names of other products in this manual is to illustrate how to use the device, with the ownership of the registered trademarks belonging to the owners.

The device is intended for the use of professional technicians or maintenance and repair personnel.

Registered Trademark

SmartSafe has registered its trademark in China and several other countries, and the logo is **SmartSafe**. Other trademarks, service marks, dot names, icons, company names of SmartSafe mentioned in the user manual all belong to SmartSafe and its subsidiaries. In those countries where trademarks, service marks, dot names, icons, company names of SmartSafe have not been registered yet, SmartSafe declaims the right for its unregistered trademarks, service marks, dot names, icons, and company names. Trademarks of other products and company names mentioned in this manual are still owned by the original registered companies. Without written agreement from the owner, no person is allowed to use the trademarks, service marks, domain names, icons and company names of SmartSafe or of other mentioned companies. You can visit www.newsmartsafe.com, or write to Customer Service Center of Shenzhen SmartSafe Tech Co., Ltd at 3310, Building 11, Tianan Cloud Park, Bantian Street, Longgang District, Shenzhen, Guangdong, China, to get contact with SmartSafe for the written agreement on the usage of the user manual.



Safety Precautions

- This equipment is for professional use only. Read this manual carefully before use.
- Check which refrigerant the equipment is configured to use (R134a or R1234yf). Do not use the wrong refrigerant.
- Charge the A/C system with the quantity of refrigerant recommended by the vehicle manufacturer.
- Refer to the vehicle owner's manual for the refrigerant type. Do not mix refrigerant types, as this may cause equipment failure.
- Keep clear of moving and hot vehicle components during operation to avoid injury.
- Wear safety goggles, protective clothing, protective gloves and a protective mask. Do not allow liquid refrigerant to contact any part of the body, as it can readily cause frostbite.
- Avoid inhaling A/C refrigerant vapor, lubricating oil vapor or mist.
- Before flushing vehicle A/C lines, the operator must be thoroughly familiar with the vehicle A/C system and this equipment.

WARNING: Do not start the vehicle or switch on the A/C while flushing the vehicle A/C lines. Doing so will damage the vehicle A/C system!

- Unqualified personnel must not disassemble or repair this equipment.
- Store and use the equipment on level ground in a cool, well-ventilated area. Do not expose it to direct sunlight or rain.
- Do not tilt the equipment more than 30° during transport. Never lay it on its side or turn it upside down.
- Do not touch the equipment's high-voltage power components. Never service the equipment while it is powered on, to prevent electric shock.
- Keep this manual for future reference.

Contents

1. Product Introduction	1
1.1 Overview	1
1.2 Features	1
1.3 Technical Specifications	1
1.4 Components	2
1.5 Wiring Diagram	3
2. Initial Setup	4
3. Preparation Before Operation	7
4. System Self-Check	8
5. A/C Diagnose	10
5.1 First-Time Use	10
5.2 A/C Diagnostic Procedure	13
5.3 Personal Center	17
6. A/C Service	22
6.1 System Database	22
6.2 My Database	31
6.3 Manual Setting	31
6.4 Function Settings and Operation	33
7. Pressure Adjustment	37
8. Report	39
9. Device Maintenance	41
9.1 Non-condensable Gas Emission	41
9.2 Replace Dry Filter	41
9.3 Device Self-Cleaning	44
9.4 Electronic Scale Calibration	45
9.5 Vacuum Pump Maintenance	47
9.6 Device Leak Detection	49
9.7 Density Setting	50
9.8 Refrigerant Type Switch	51
9.9 Database	52
10. Device Status	55
11. System Settings	58

11.1 WLAN	58
11.2 Location Services	58
11.3 Unit Settings	59
11.4 Display	59
11.5 Device Information	60
11.6 Upgrade Center	60
11.7 Developer Mode	60

1. Product Introduction

1.1 Overview

The AC719+ is professional equipment designed for servicing automotive A/C systems. It integrates refrigerant recovery, evacuation, charging and system flushing. Its modular design and intuitive interface help technicians service vehicle A/C systems efficiently, accurately and safely.

1.2 Features

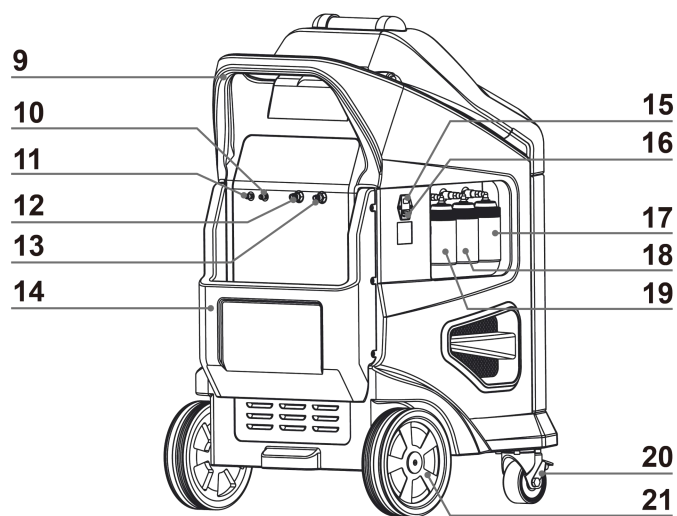
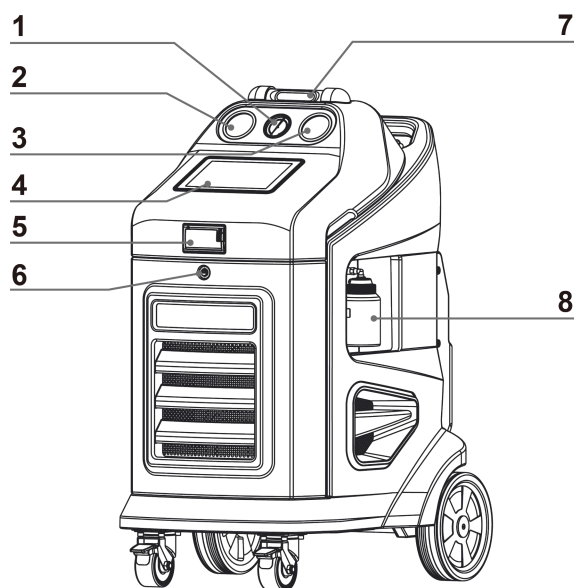
- A. Fully automatic equipment with easy operation.
- B. Flushes internal vehicle A/C lines to remove sludge and deposits and restore cooling performance.
- C. Forward and reverse flushing functions for effective cleaning.
- D. Vertically mounted high- and low-pressure gauges are visible from the driver's seat, allowing one-person operation.
- E. A distinctive fluid circuit design provides fast recovery of both vapor and liquid refrigerant.
- F. Built-in, up-to-date vehicle refrigerant database with automatic matching.
- G. Built-in A/C diagnostics: reads fault codes and collects pressure, temperature and operating-status data when used with the diagnostic accessory kit.
- H. A/C pressure testing and operating-status verification improve service reliability.
- I. A two-stage vacuum pump significantly improves evacuation efficiency.
- J. Supports R134a or R1234yf refrigerant for mainstream vehicles.
- K. One-touch automatic operation throughout the A/C service process.
- L. PAG and POE refrigerant oil injection for a wider range of vehicles.
- M. UV A/C leak detection helps locate refrigerant leaks.
- N. Calibration system for electronic scales (main tank/oil bottles/pressure sensors) to ensure measurement accuracy.
- O. Built-in Android operating system with touch control and online updates for continued function improvements and expansion.
- P. Built-in compact printer for printing service time, materials used and other information.

1.3 Technical Specifications

Parameter	Description
Model	AC719+
Operating system	Android 8.1
CPU	Quad-core Cortex-A35
Internal storage	64 GB
RAM	2 GB
Display	10.1 inches
Wireless communication	Wi-Fi
Power supply	AC 110 V / AC 220 V, 50/60 Hz
Operating temperature	10 to 50 °C
Storage temperature	-20 to 70 °C

Operating humidity	<85%
Storage humidity	<90%
Operating atmospheric pressure	86 to 106 kPa
Compressor power	1/2 HP
Vacuum pumping capacity	≥128 L/min (220 V, 50 Hz); ≥142 L/min (110 V, 60 Hz)
Refrigerant cylinder scale accuracy	±10 g
Main tank capacity	22 kg
Filter processing capacity	120 kg
UV dye bottle	250 ml
PAG oil bottle	250 ml
POE oil bottle	250 ml
Used oil bottle	500 ml
Product dimensions (H × W × D)	1149 × 803 × 670 mm
Package dimensions (H × W × D)	1296 × 866 × 733 mm

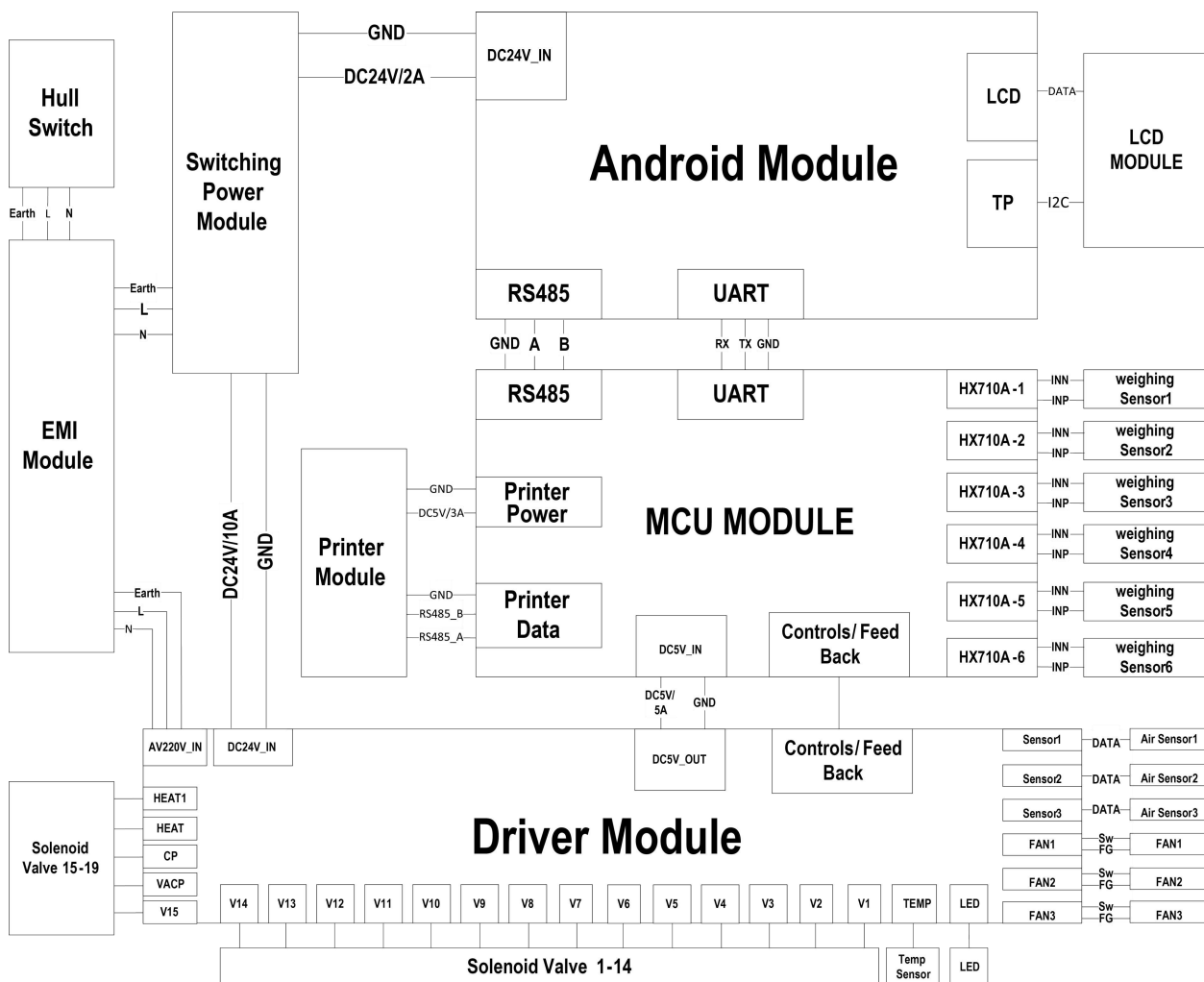
1.4 Components



- | | |
|-----------------------------|-------------------------------------|
| 1. Main tank pressure gauge | 12. Hose Hanger Adapter (Low Side) |
| 2. High-pressure gauge | 13. Hose Hanger Adapter (High Side) |
| 3. Low-pressure gauge | 14. Rear Cover |
| 4. Display | 15. Power switch |
| 5. Printer | 16. Power inlet |
| 6. Top cover lock | 17. PAG oil bottle |
| 7. Sight glass | 18. POE oil bottle |
| 8. Used oil bottle | 19. UV dye bottle |

- 9. Handle
- 10. HP Hose Port
- 11. LP Hose Port
- 20. Front wheel
- 21. Rear wheel

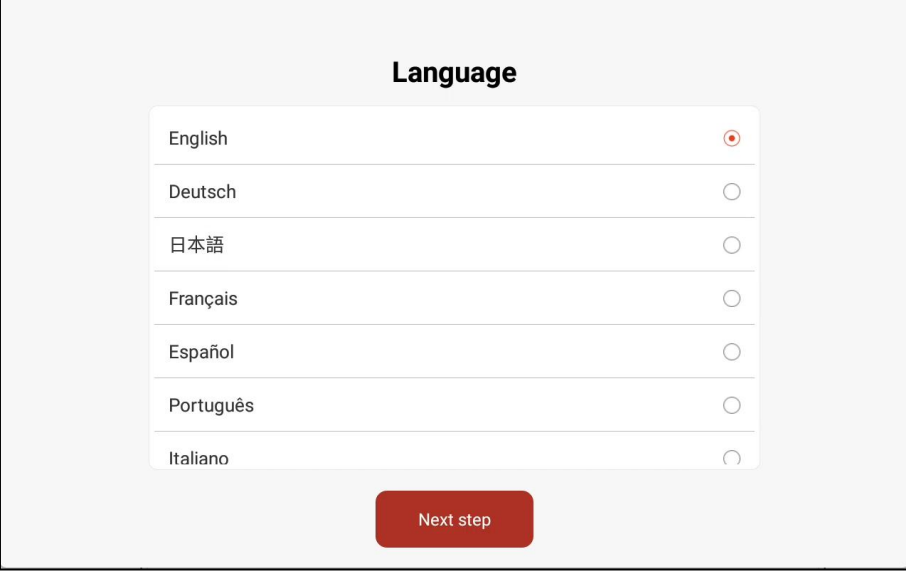
1.5 Wiring Diagram



2. Initial Setup

After the device is powered on for the first time or restored to factory settings, follow the guidelines to complete the necessary initial configuration.

- A. Select the required language, then tap **Next Step**.

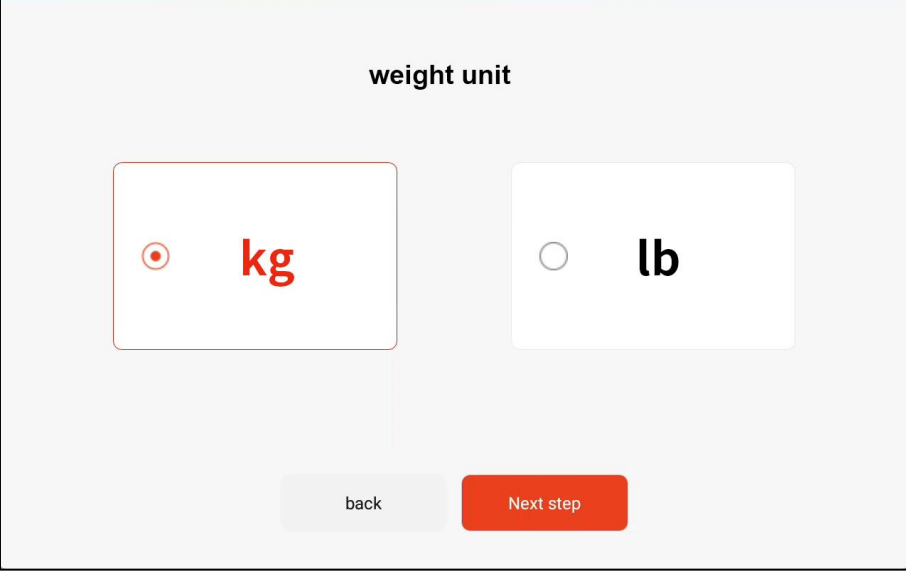


The screenshot shows a 'Language' selection screen. It features a list of languages with radio buttons next to them. 'English' is selected, indicated by a red dot in the radio button. Below the list is a red 'Next step' button.

Language	Selected
English	☒
Deutsch	☐
日本語	☐
Français	☐
Español	☐
Português	☐
Italiano	☐

Next step

- B. Select the required weight unit, then tap **Next Step**.



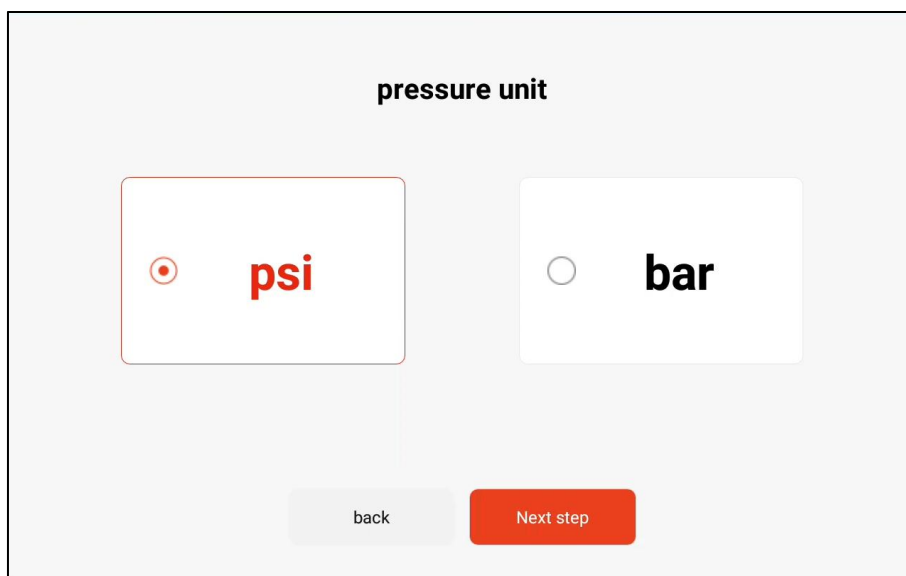
The screenshot shows a 'weight unit' selection screen. It features two large buttons: 'kg' and 'lb'. The 'kg' button is selected, indicated by a red dot in the radio button. Below the buttons are 'back' and 'Next step' buttons.

weight unit

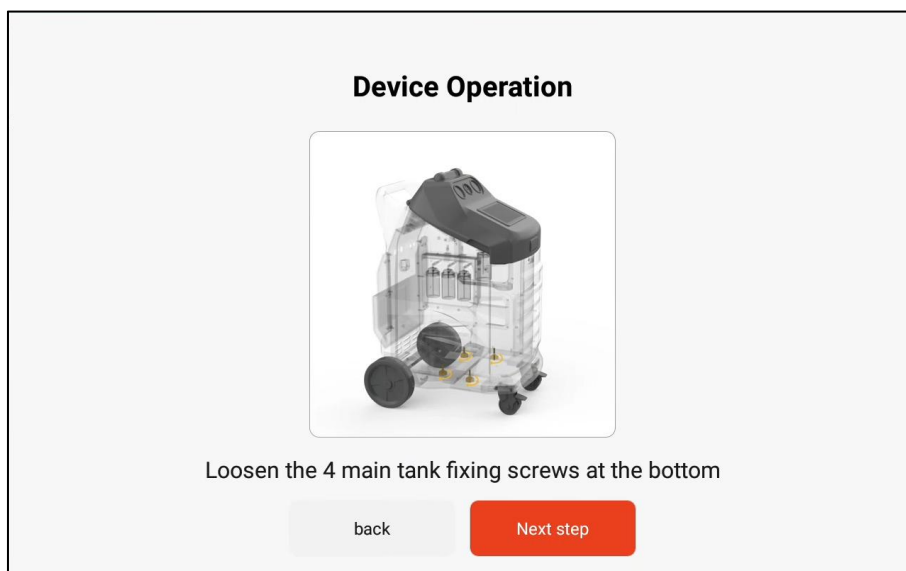
☒ kg ☐ lb

back Next step

- C. Select the required pressure unit, then tap **Next Step**.



- D. Follow the on-screen instructions to loosen the four main tank retaining screws on the bottom of the equipment, then tap **Next Step**.



- E. Select the required refrigerant type, then tap **Next Step**.

Refrigerant Type

☒ **R134a**

☐ **R1234yf**

This operation is irreversible! Once confirmed, the hardware will be permanently bound and cannot be changed.

backNext step

- F. Select the wireless network to connect to, then tap **Next Step** to return to the home screen and complete initialization.

WIFI

F-2.4-5F✓

ChinaNet-EYYG📶

REDMI K80📶

YGW_2_4📶

000000000001📶

backNext step

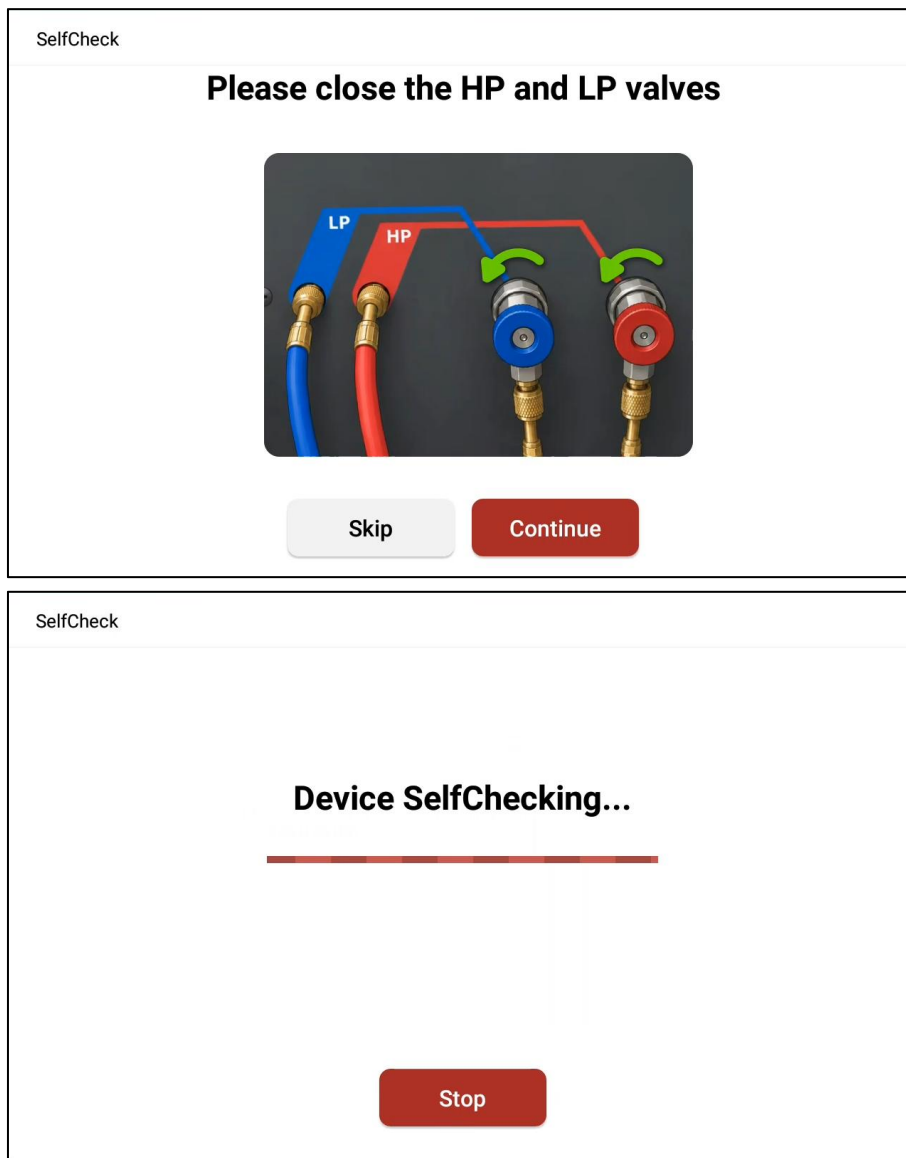
3. Preparation Before Operation

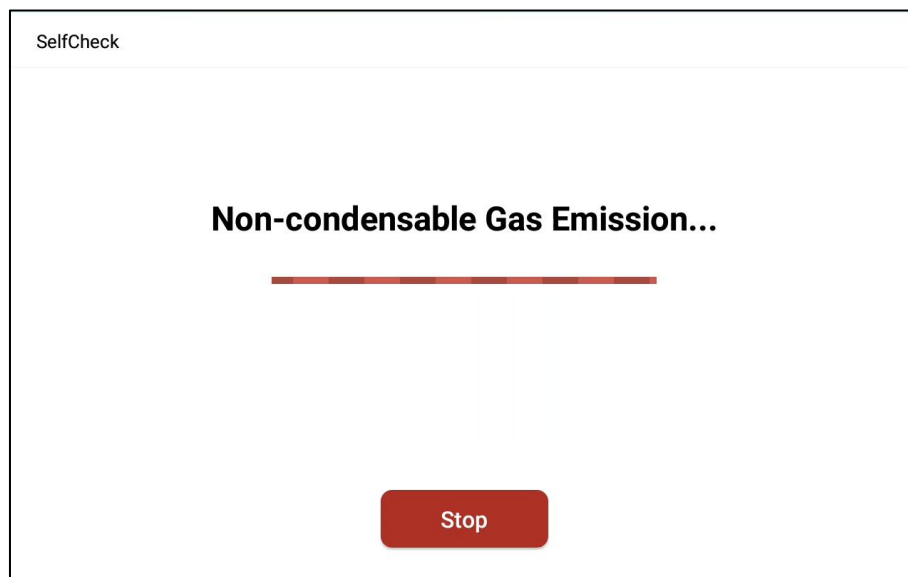
- A. Connect the equipment's high- and low-pressure refrigerant hoses to the corresponding service ports on the vehicle A/C system. Open both service couplers. Start the vehicle, switch on the A/C and let the engine idle for approximately 5 minutes.
- B. Check that the vehicle's high- and low-side A/C pressures are normal and that the compressor does not make abnormal noises. Repair any faults before proceeding.
- C. Switch off the A/C and stop the engine.
- D. Empty the equipment's used oil bottle. Switch on the equipment and prepare to begin work.

4. System Self-Check

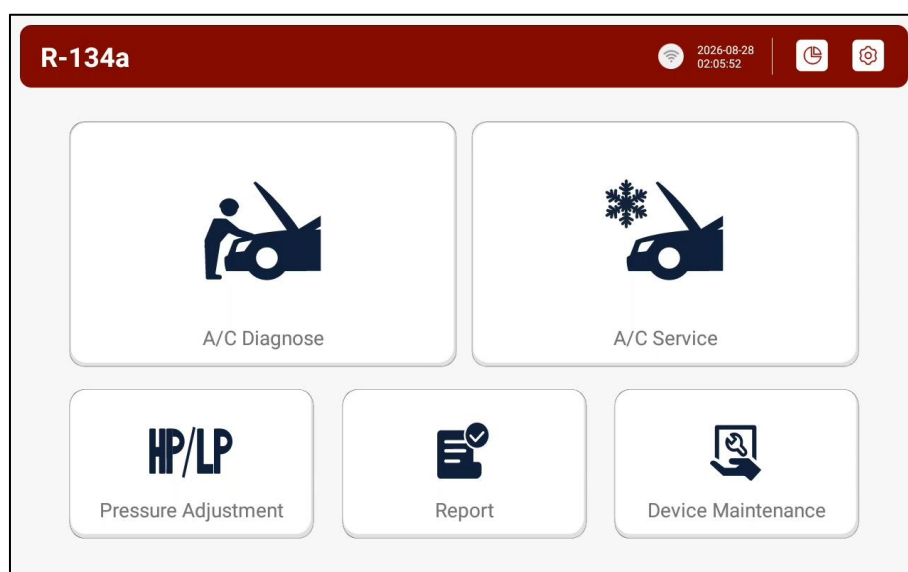
After the device starts up, it automatically performs system checks and necessary preparatory operations to ensure that the device meets normal operating conditions.

Turn on the equipment's power switch. The equipment starts up and enters the self-test procedure. Follow the on-screen instructions to close the HP and LP valves, then tap **Continue** to start the self-test.





After the self-test is complete, the home screen appears. It contains **A/C Diagnose**, **A/C Service**, **Pressure Adjustment**, **Report** and **Device Maintenance**.



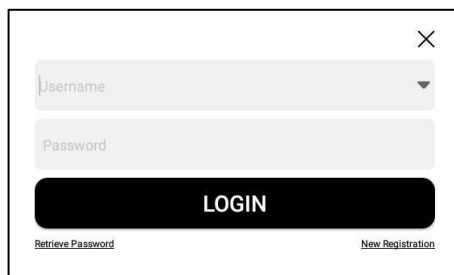
5. A/C Diagnose

This function connects to the vehicle A/C system to read fault codes and collect electrical and operating data, including pressure, temperature, flow and compressor operating status, to support repair and maintenance.

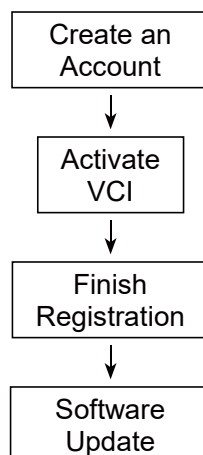
5.1 First-Time Use

5.1.1 Registration and Updating

A/C Diagnose requires the A/C system diagnostic communication access kit. When "A/C Diagnose" is selected for the first time, the following login window appears.

A login window with a close button (X) in the top right corner. It contains two input fields: "Username" and "Password". Below the fields is a large black button labeled "LOGIN". At the bottom left is a link "Retrieve Password" and at the bottom right is a link "New Registration".

Complete the following sequence:



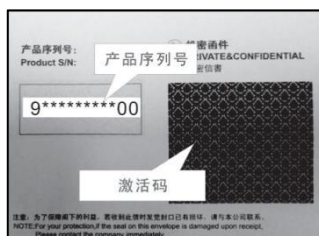
NOTE: Before registering, make sure the equipment has a stable network connection.

- **New users:** follow Part A.
- **Registered users:** follow Part B to log in.
- **Forgotten password:** follow Part C to reset it.

A. If you are a new user, tap **New Registration** to open the registration page.

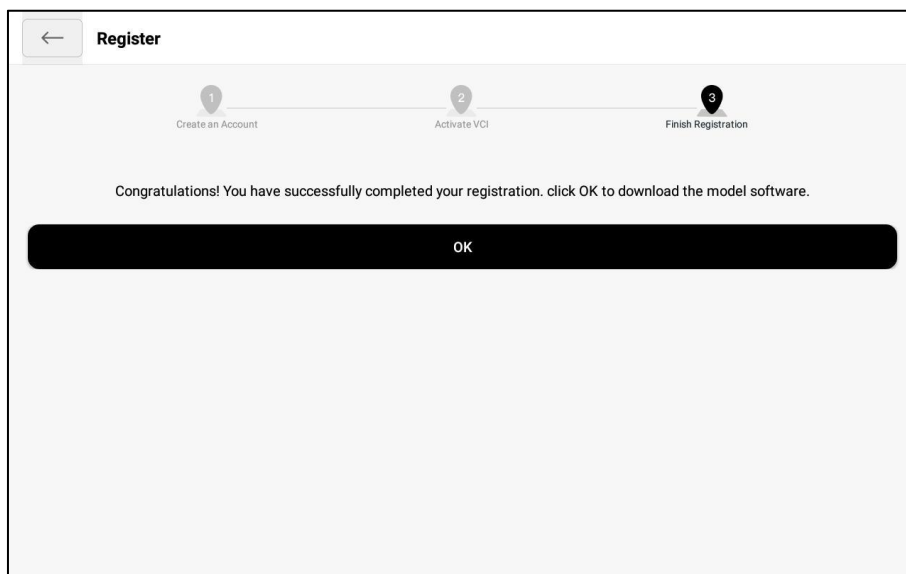
Enter the registration information shown above. Fields marked * are required. Enter a valid email address so that you can receive verification codes later. After entering the account information, tap **Register** to open the VCI activation page.

Enter the product serial number and activation code. Both are provided in the password envelope included in the package.

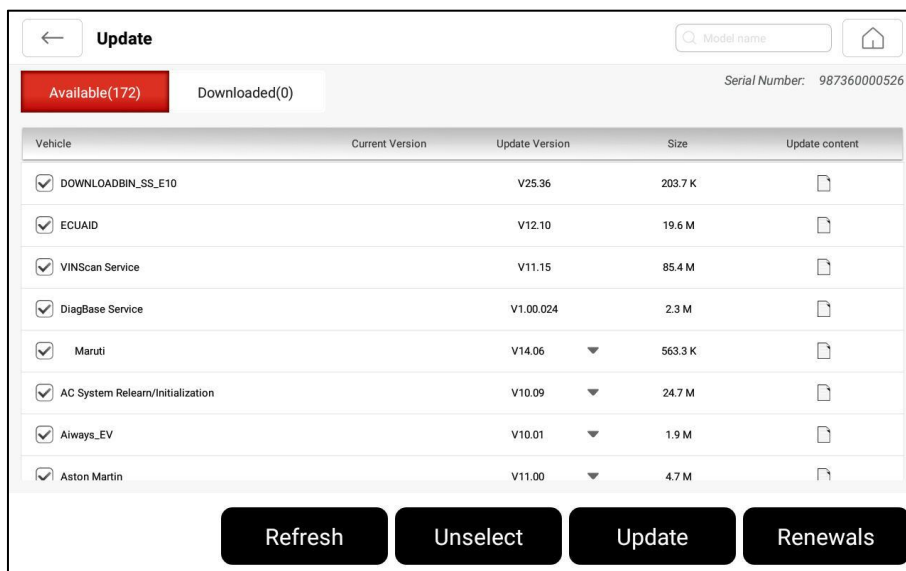


NOTE: If you skip activation at this stage, you can activate the VCI later under **Personal Center** → **Activate VCI**.

Tap **Activate** to complete registration.



Tap **OK** to open the software update screen.



On the software update screen, select the software to update and tap **Update** to download it. The software is installed automatically after downloading.

NOTE: Keep the network connection available throughout the update. Downloading multiple software packages may take some time, depending on network speed. Please wait.

B. If you are already registered, enter your username and password, then tap **Login**.

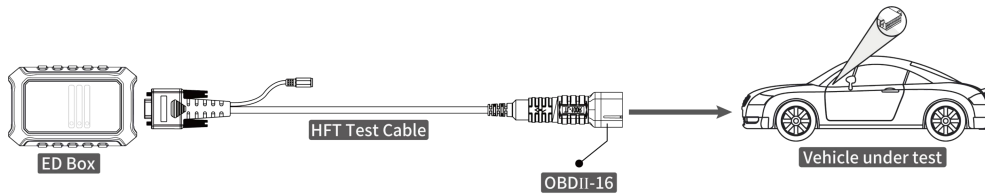
TIP: The equipment remembers account information. If several accounts have been used on it, tap the drop-down arrow beside the username field to select the required account.

C. If you forget your password, tap **Retrieve Password**. Receive a verification code by email and enter it to reset your password.

5.1.2 Vehicle Connection

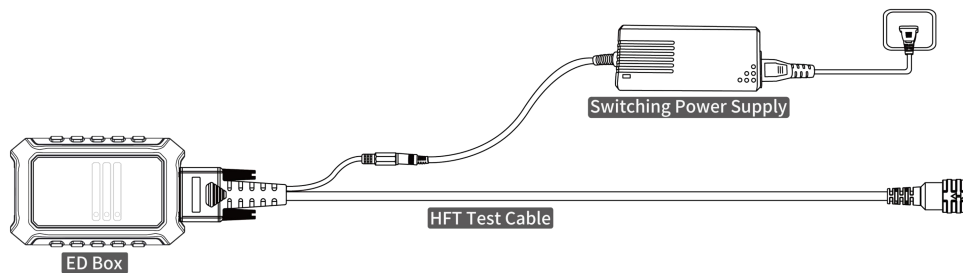
A. Connect the diagnostic OBD (On-Board Diagnostics) interface.

Connect one end of the HFT diagnostic main cable to the ED BOX (VCI) and the other end to the OBDII-16 diagnostic connector suitable for the vehicle. Plug the connector into the vehicle's OBD port, usually below the driver's seat. The ED BOX can then communicate with the A/C electronic control unit (AC ECU) to read real-time data and diagnose faults.



B. Connect the power adapter.

Connect the power adapter securely to the ED BOX power inlet. After power is connected, the power indicator should remain on, indicating that the ED BOX is powered and in standby.



C. Establish a Bluetooth connection between the main unit and ED BOX.

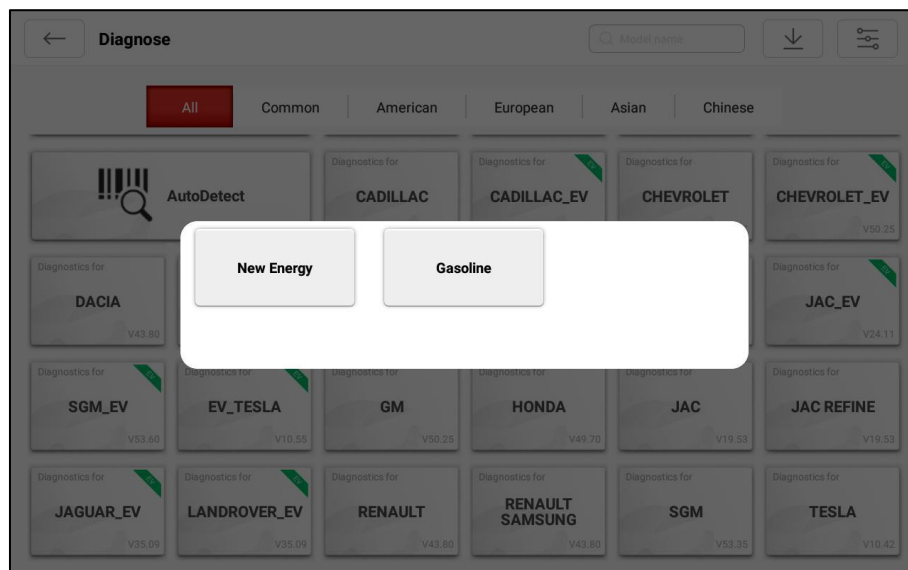
Enter the main unit's operation interface. The system will automatically search for Bluetooth signals. Select the Bluetooth signal of the ED BOX to be connected and establish the connection.

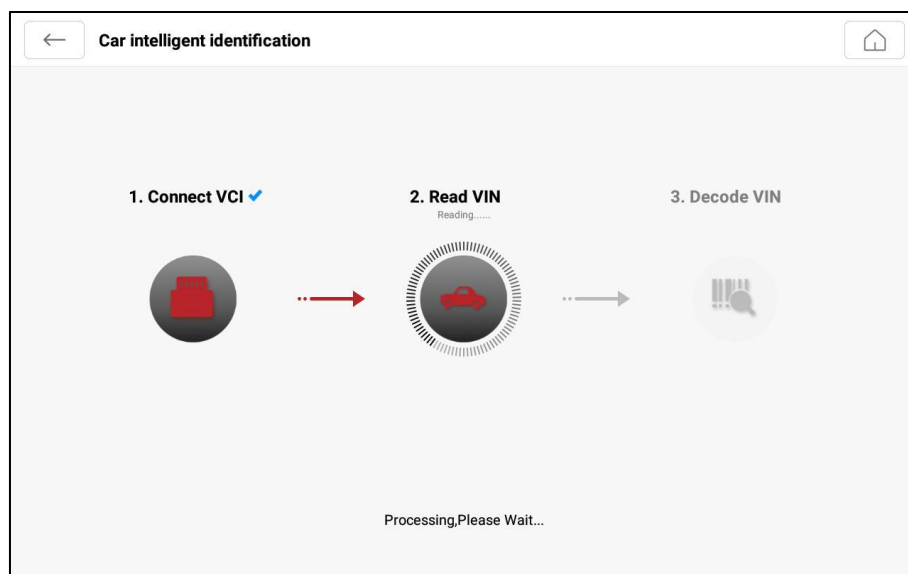
5.2 A/C Diagnostic Procedure

Tap **A/C Diagnose** on the home screen to start the built-in A/C diagnostics. Use "AutoDetect" to identify the vehicle quickly and enter diagnostics, or select the vehicle and system manually.

5.2.1 AutoDetect

"AutoDetect" identifies vehicle information and starts testing without manual vehicle selection. From the home screen, select **A/C Diagnose** → **AutoDetect** → **New Energy / Gasoline**.

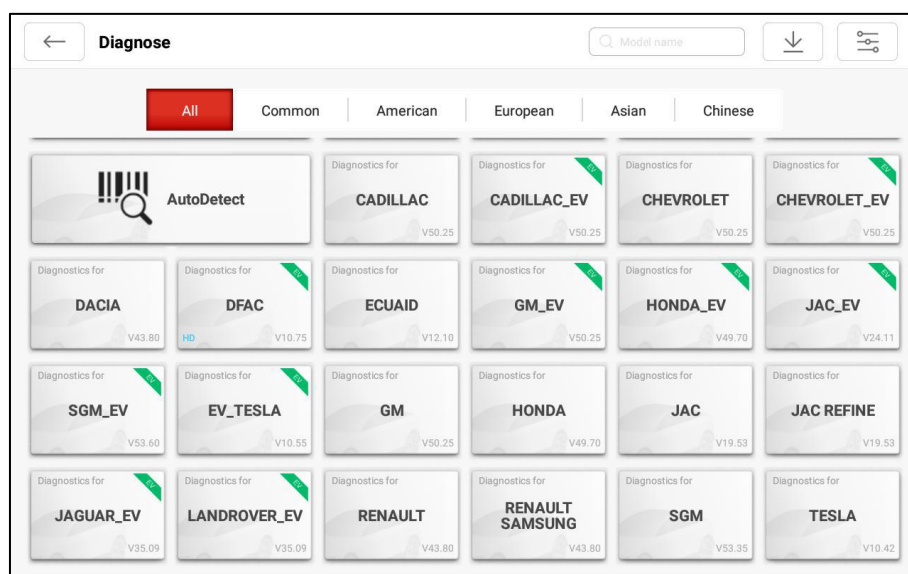




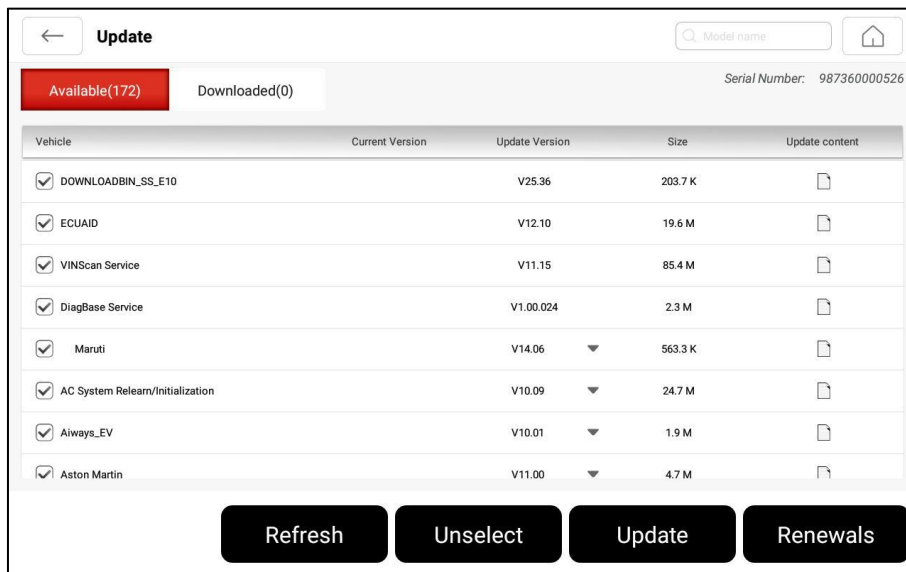
Some vehicles cannot be identified using AutoDetect. A dialog then allows you to scan the VIN or enter it manually using the keyboard.

5.2.2 Manual Selection

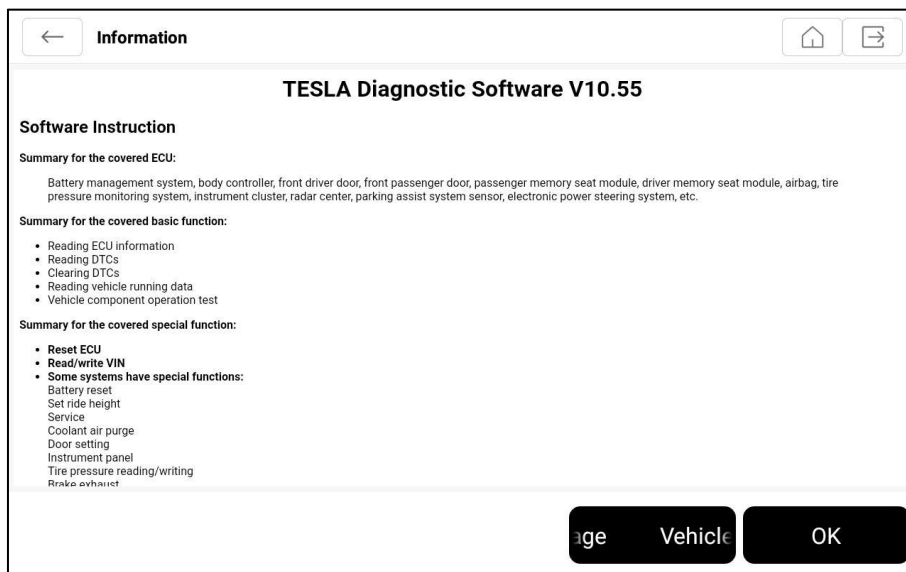
- A. Tap **A/C Diagnose** on the home screen to open the vehicle brand selection screen. If the required vehicle is already listed, tap its button to begin A/C diagnostics.



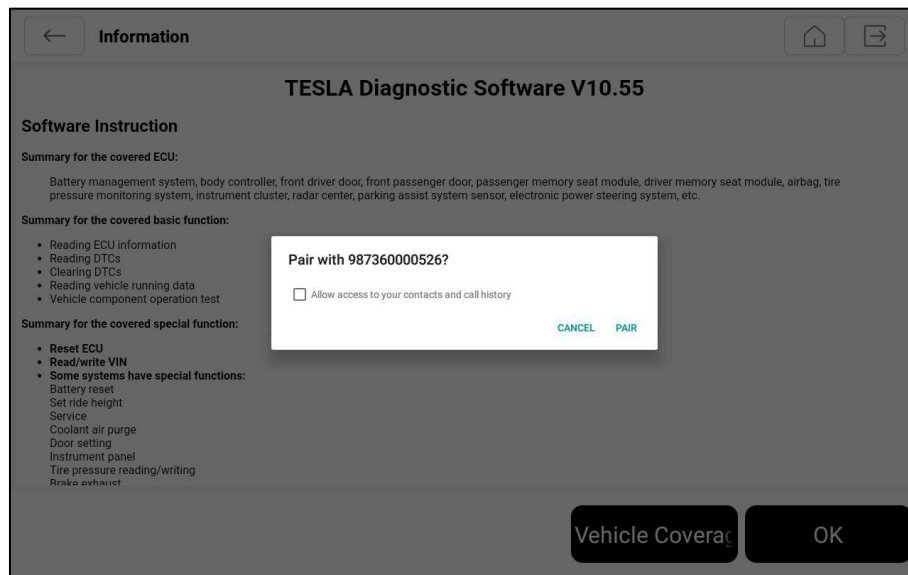
- B. If the required vehicle is not listed, tap the update icon to open the software update screen. Download and install the corresponding software, then return to the diagnostics home screen and select the vehicle to begin diagnosis.



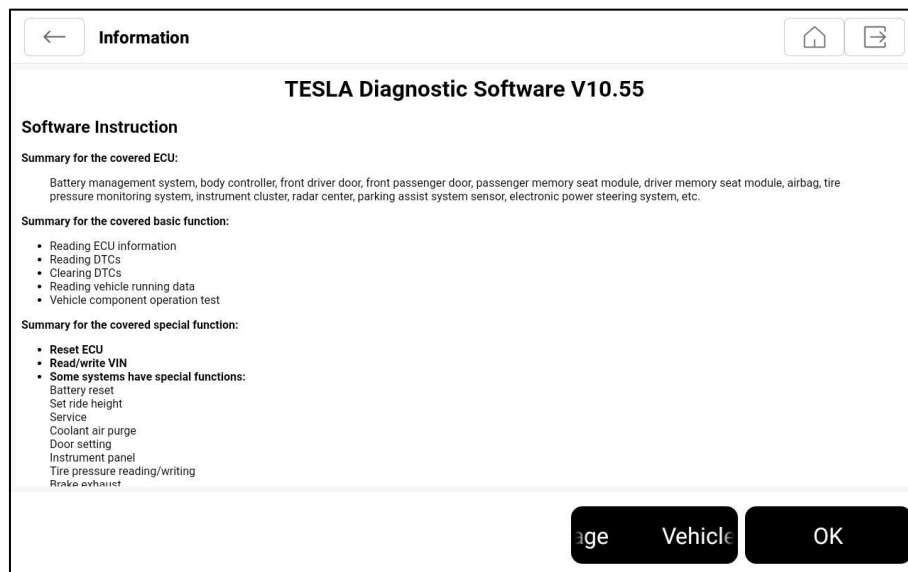
- C. On the vehicle software version screen, tap **Vehicle Coverage** at the bottom to view supported vehicles. Tap **OK** to continue.



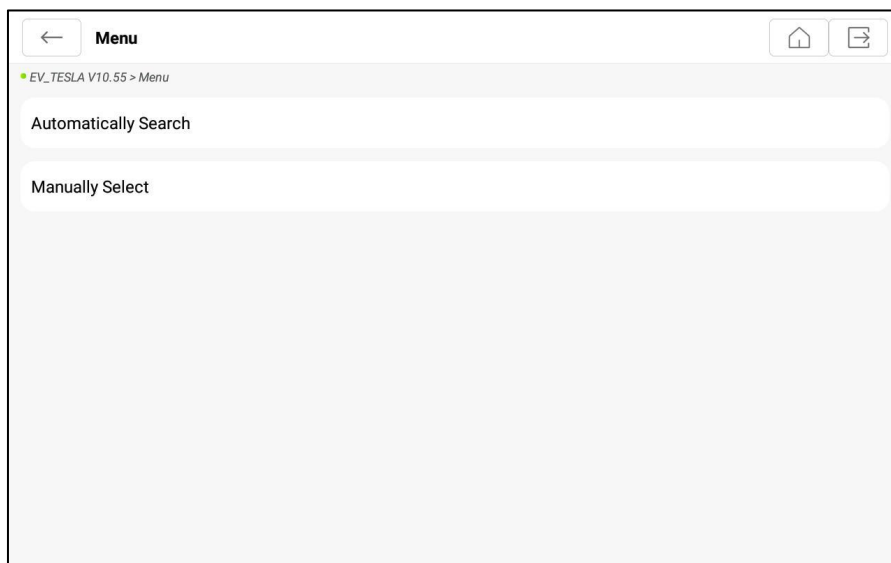
- D. If the equipment has not previously connected to the VCI (ED BOX) via Bluetooth, it automatically scans for the VCI's Bluetooth signal. Then follow the on-screen instructions to establish the Bluetooth connection.



- E. After connecting, the vehicle software version screen appears. Tap **Vehicle Coverage** at the bottom to view supported vehicles. Tap **OK** to continue.



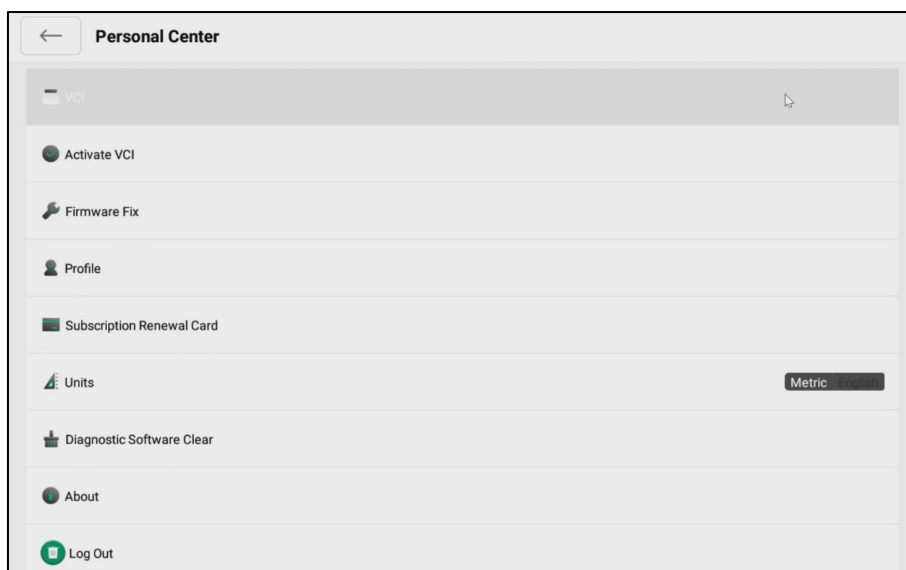
- F. Tap **Automatically Search** to identify the vehicle model, model year and VIN automatically, or tap **Manually Select** to choose the model, model year and other information.



- G. Select the required test, then wait for the diagnostic results. After the diagnosis is completed, a diagnostic report can be generated. Users can save, print, and share the report.

5.3 Personal Center

Tap the Personal Center icon  on the A/C Diagnose screen to open Personal Center.

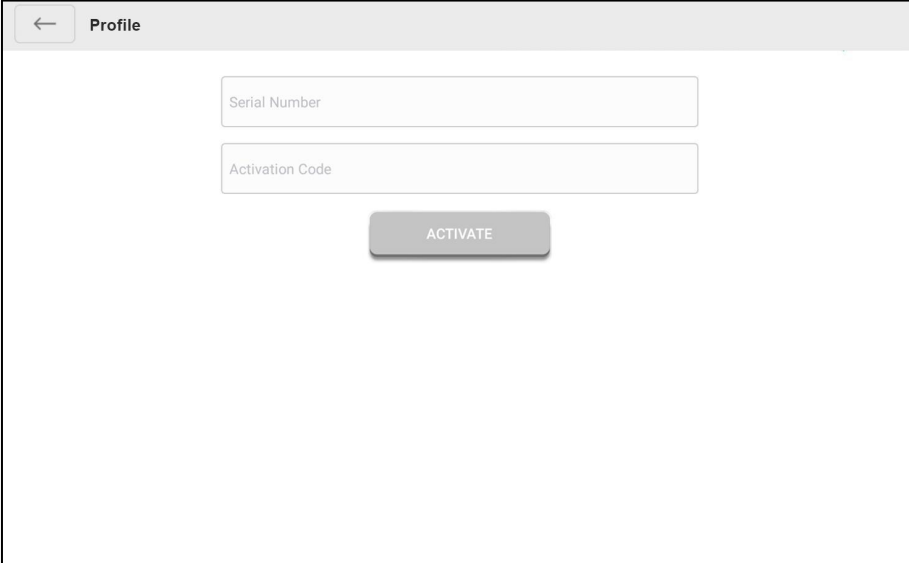


5.3.1 VCI

Manage all VCI devices (ED BOX units) linked to this equipment. If multiple VCIs are linked, use this option to select the required VCI.

5.3.2 Activate VCI

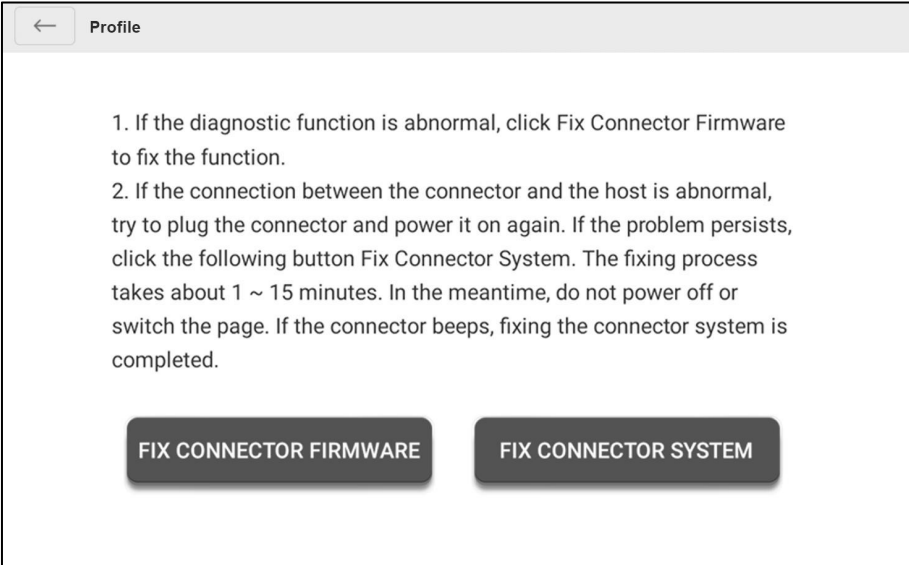
Use this option to activate a VCI if it was not activated during registration.



The screenshot shows a mobile application interface titled "Profile" with a back arrow icon. It contains two input fields: "Serial Number" and "Activation Code". Below these fields is a grey button labeled "ACTIVATE".

5.3.3 Firmware Fix

Repair the firmware of the connector/detection gun. Do not disconnect power or switch screens during the update.



The screenshot shows a mobile application interface titled "Profile" with a back arrow icon. It contains two numbered instructions:

1. If the diagnostic function is abnormal, click Fix Connector Firmware to fix the function.
2. If the connection between the connector and the host is abnormal, try to plug the connector and power it on again. If the problem persists, click the following button Fix Connector System. The fixing process takes about 1 ~ 15 minutes. In the meantime, do not power off or switch the page. If the connector beeps, fixing the connector system is completed.

Below the instructions are two buttons: "FIX CONNECTOR FIRMWARE" and "FIX CONNECTOR SYSTEM".

5.3.4 Personal Information

Set and manage personal information.

← Profile

Profile workshop information

Username: hhhhggbguhbjhuhnjj

Nickname hhhhggbguhbjhuhnjj >

Gender ☒ ☐

Country Albania >

Email jj@qq.com(unbound) >

Change Password >

5.3.5 Subscription Renewal Card

Check the status of a subscription renewal card.

← Profile

Please enter 12 Subscription Renewal Card Number

SEARCH

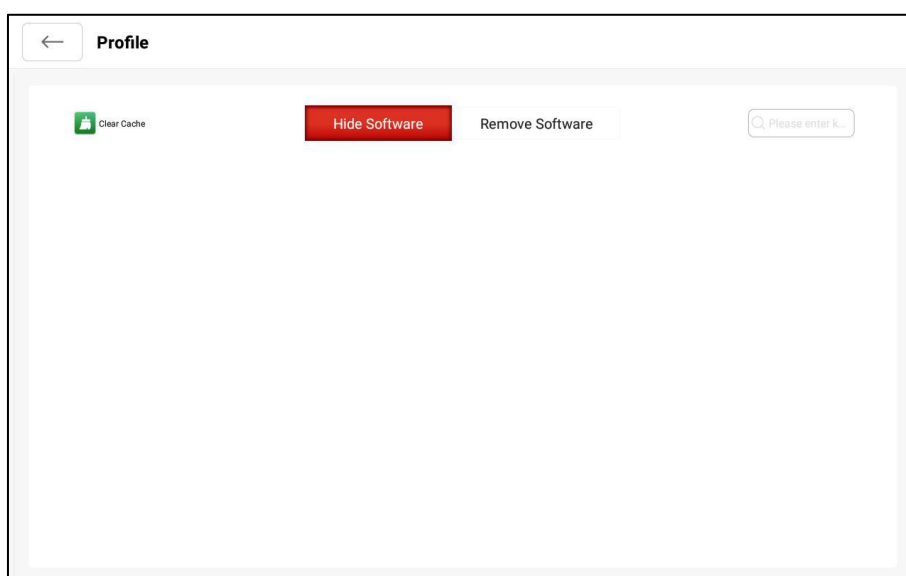
5.3.6 Diagnostic Unit Settings

Switch between metric and imperial units.



5.3.7 Diagnostic Software Cleanup

Delete or hide diagnostic software that is not frequently used.



NOTE: Deleting diagnostic software removes it completely from the equipment. Use this option if software has not been used for a long time or storage space is insufficient. To download it again, tap the update icon  on the A/C diagnostics screen to open the software download center.

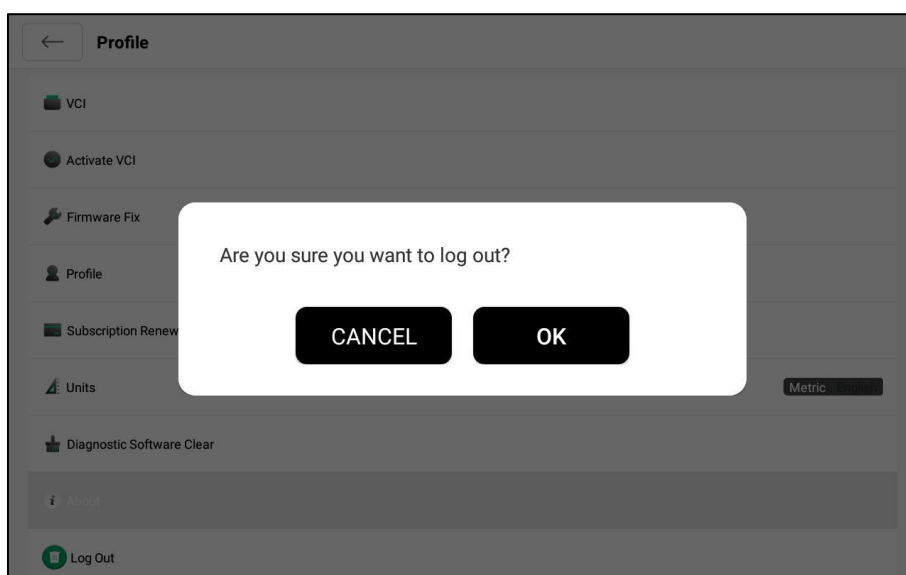
5.3.8 About

View software version information, the service agreement and privacy policy, and configure the network connection used for automatic application downloads.



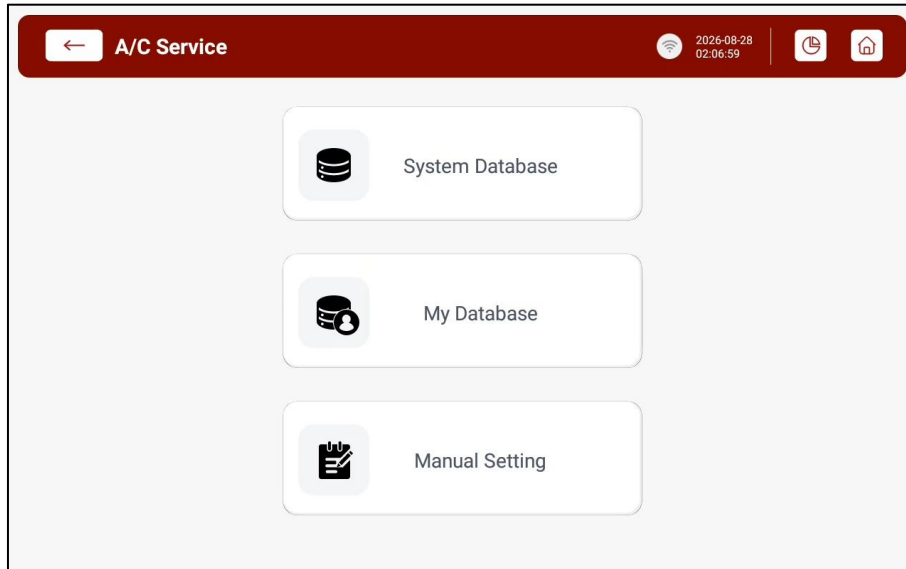
5.3.9 Log Out

Tap **Log Out** to sign out of the diagnostics account.



6. A/C Service

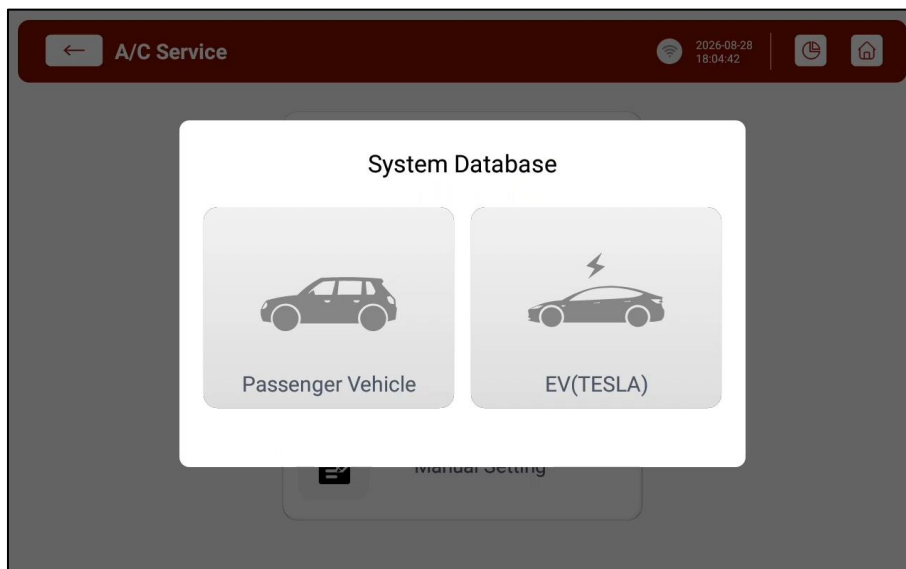
Tap **A/C Service** on the home screen. Select **System Database**, **My Database** or **Manual Setting** as required to begin A/C service.



6.1 System Database

Look up vehicle A/C specifications by make, model, engine and model year, and load them for quick setup.

On the A/C Service screen, tap **System Database**, then select "Passenger Vehicle" or "EV(TESLA)".



6.1.1 Passenger Vehicle

Service vehicle A/C systems using the passenger car models covered by the system database.

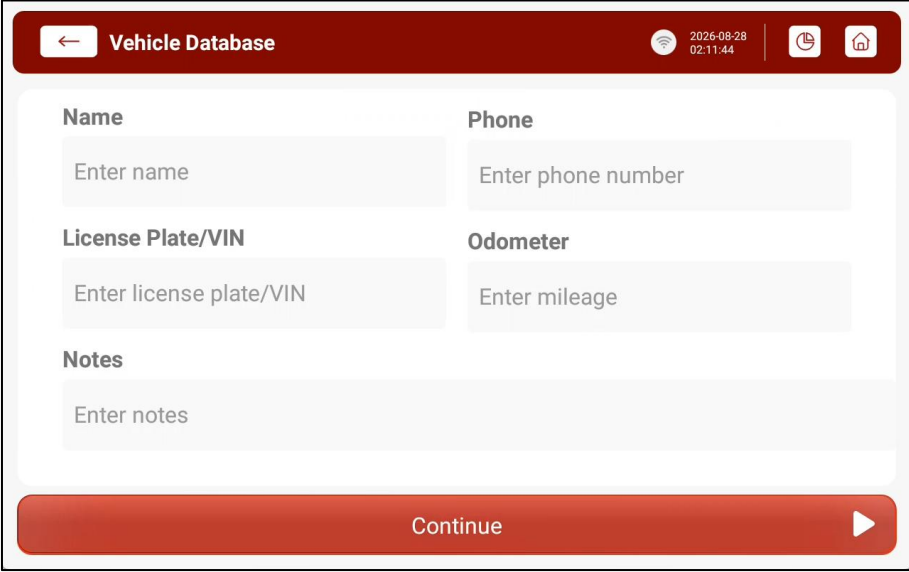
Tap **Passenger Vehicle**, then select **Brand** → **Model** → **Engine** → **Year** to open the vehicle's A/C specifications. Alternatively, tap **Manual Setting** at the bottom to enter the information manually. See the Manual Setting section for details.

The screenshot shows the 'System Database' screen. At the top, there is a red header bar with a back arrow, the title 'System Database', and status icons (signal, time 2026-08-28 02:09:17, battery, and home). Below the header is a search bar with the placeholder text 'Search vehicle model (e.g., Porsche 911)'. The main area contains a grid of 16 buttons, each representing a car brand: ABARTH, ACURA, ALFA ROMEO, ALPINE, ASTON MARTIN, AUDI, BEDFORD, BENTLEY, BMW, BYD, CADILLAC, CASE IH, CHALLENGER, CHEVROLET, CHRYSLER, and CITROEN. At the bottom is a red button labeled 'Manual Setting' with a play icon.

The screenshot shows the 'Vehicle Database' screen. The top header is identical to the previous screen. Below the header, there are four red buttons for selection: 'Brand KIA', 'Model', 'Engine', and 'Year'. The 'Model' button is highlighted with a red border. Below these buttons is a list of models: Bongo III, Bongo III Coach, Bongo III Van, CADENZA 3.3 GDI, and CADENZA 3.3 MPI. At the bottom is a red button labeled 'Manual Setting' with a play icon.

The screenshot shows the 'Vehicle Database' screen with all four selection buttons ('Brand KIA', 'Model OPTIMA', 'Engine Other', and 'Year 2012-2019') highlighted in red. Below the buttons, there are four input fields for A/C specifications: 'Refrigerant Type' with the value 'R-134a', 'Refrigerant Quantity (g)' with the value '570', 'Oil Type' with the value 'PAG', and 'Oil Quantity (ml)' with the value '90'. At the bottom is a red button labeled 'Confirm' with a play icon.

Check that the specifications are correct, then tap **Confirm** to enter customer information. This information appears on the report.



The **Vehicle Database** form is displayed with a red header bar. It contains input fields for Name, Phone, License Plate/VIN, Odometer, and Notes. A red **Continue** button is at the bottom right.

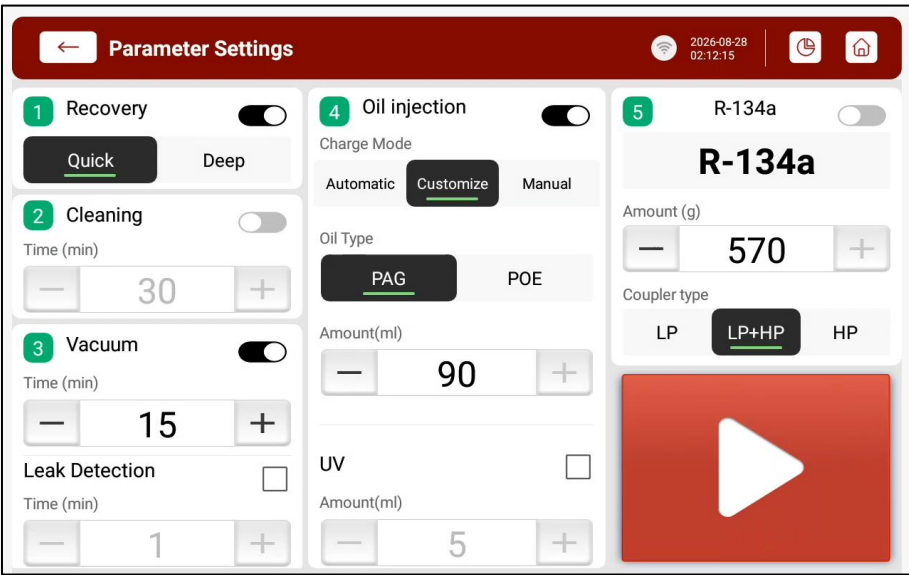
Name	Phone
Enter name	Enter phone number

License Plate/VIN	Odometer
Enter license plate/VIN	Enter mileage

Notes
Enter notes

Continue

Tap **Continue** to open Parameter Settings. This screen contains the A/C service functions and their parameters. Use the switch at the top right of each function card to enable or disable that function for the service process.



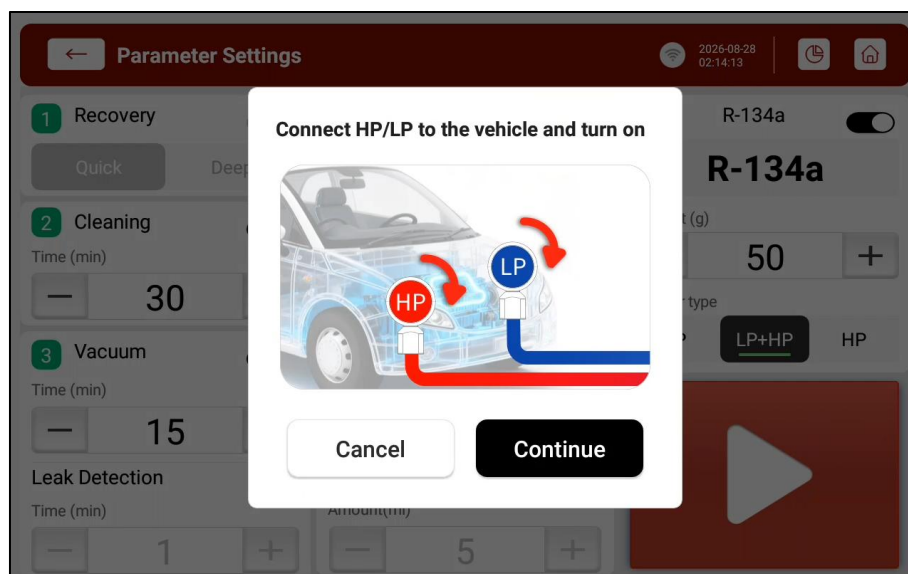
The **Parameter Settings** screen is displayed with a red header bar. It contains five function cards (1-5) for Recovery, Cleaning, Vacuum, Oil injection, and R-134a. Each card has a toggle switch and various parameter settings. A large red **Start** button is at the bottom right.

1 Recovery	4 Oil injection	5 R-134a
Quick Deep	Charge Mode: Automatic Customize Manual	R-134a
2 Cleaning	Oil Type: PAG POE	Amount (g): 570
Time (min): 30	Amount (ml): 90	Coupler type: LP LP+HP HP
3 Vacuum	UV	
Time (min): 15	Amount (ml): 5	
Leak Detection		
Time (min): 1		

Start

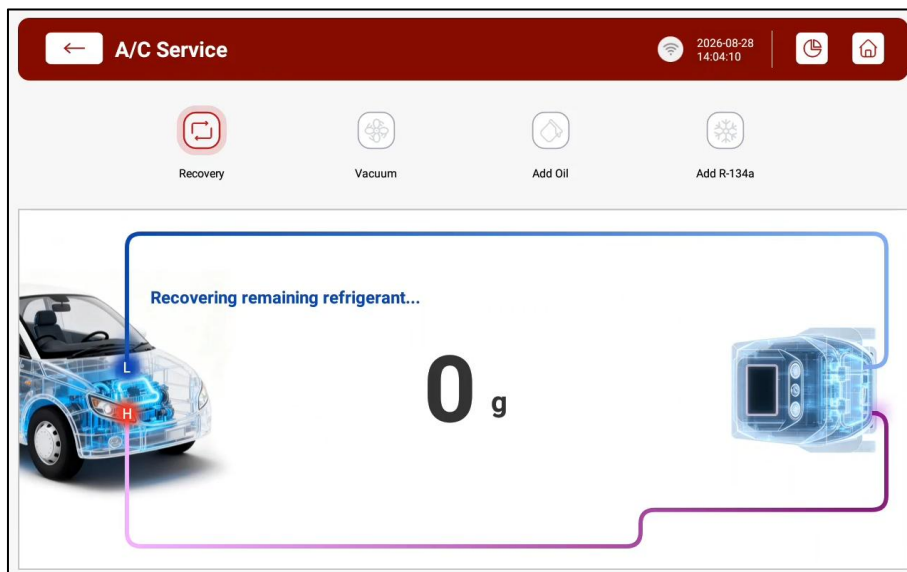
After setting the parameters, tap the Start icon, then tap **Continue** in the dialog to start A/C service.

NOTE: The equipment performs a self-test before starting A/C service. If it displays outstanding items, abnormal conditions or corrective instructions, resolve them as directed before continuing.

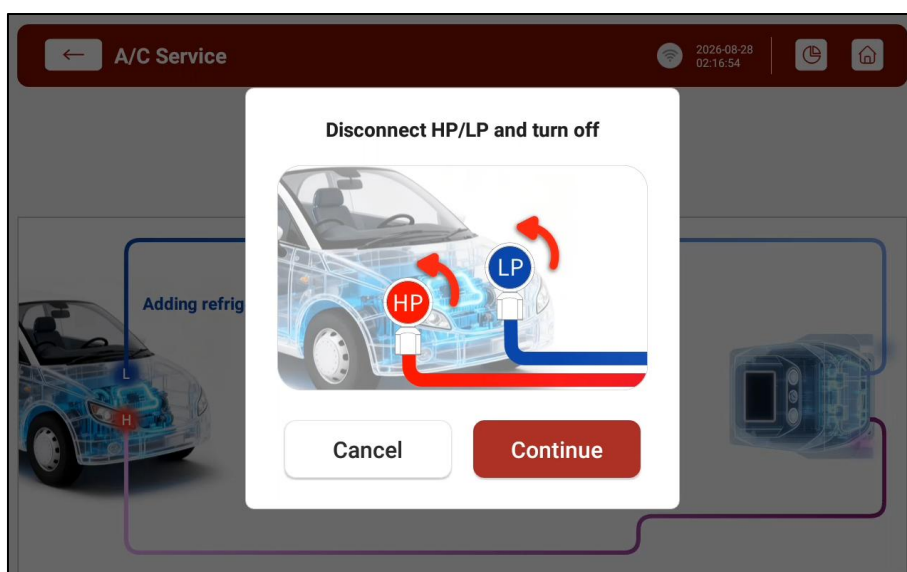


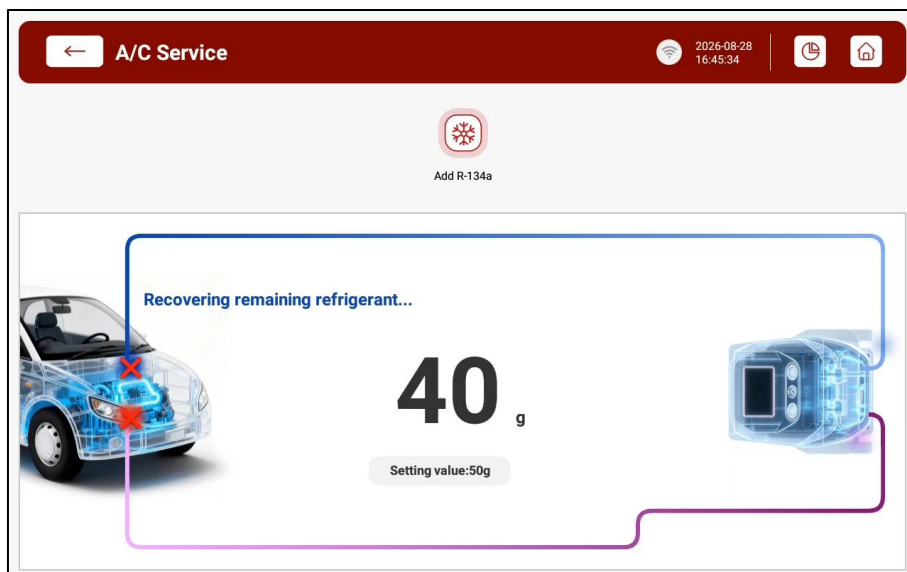
NOTE: Before the service process starts, the system prompts you to connect the vehicle and open the high- and low-pressure valves. Complete these operations before tapping "Continue" to ensure correct service operation.

The service progress screen displays the sequence of steps corresponding to the functions selected earlier.

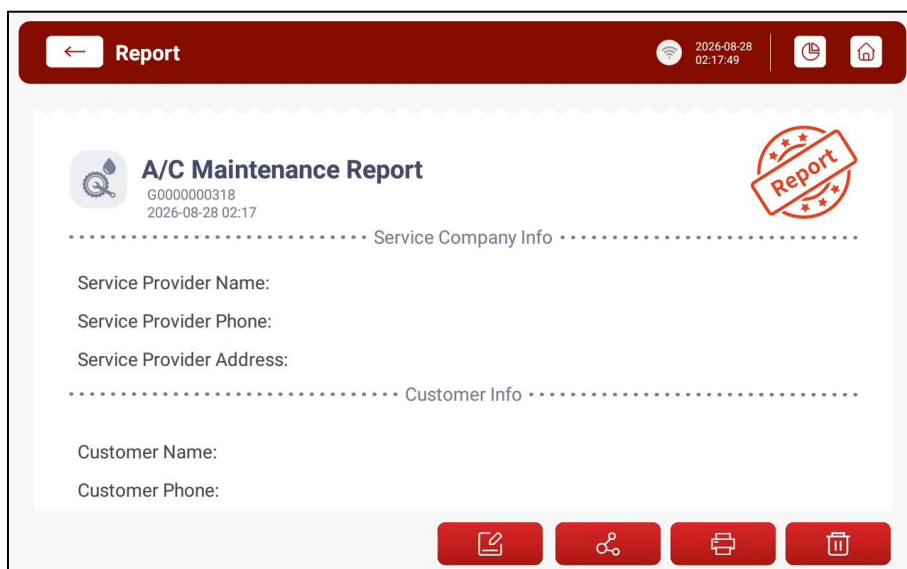


When the service process finishes, follow the dialog instructions to disconnect the high- and low-pressure hoses from the vehicle A/C system and close both valves. Then tap **Continue** to recover refrigerant remaining in the hoses after charging.





After all steps are complete, the system automatically generates a service report. Tap  button to print it.



6.1.2 EV(TESLA)

Service vehicle A/C systems using the TESLA electric vehicle models covered by the system database.

Tap **EV(TESLA)**, then select **Model** → **Displacement** → **Year** → **Other** to open the vehicle's A/C specifications.

EV(TESLA)

Model Models Displacement 100D Year 2017-2019 Other Other

Refrigerant Type: **R-134a** Refrigerant Quantity (g): **770**

Oil Type: **POE** Oil Quantity (ml): **150**

Confirm

Check that the specifications are correct and tap **Confirm** to enter customer information. Follow **Section 6.1.1, Passenger Vehicle**, until Parameter Settings appears.

Parameter Settings

1 Recovery ☒ Quick Deep

2 Cleaning ☒ Time (min) 30

3 Vacuum ☒ Time (min) 15 Leak Detection ☐ Time (min) 1

4 Oil injection ☒ Charge Mode Automatic Customize Manual Oil Type PAG **POE** Amount(ml) 10 UV ☐ Amount(ml) 5

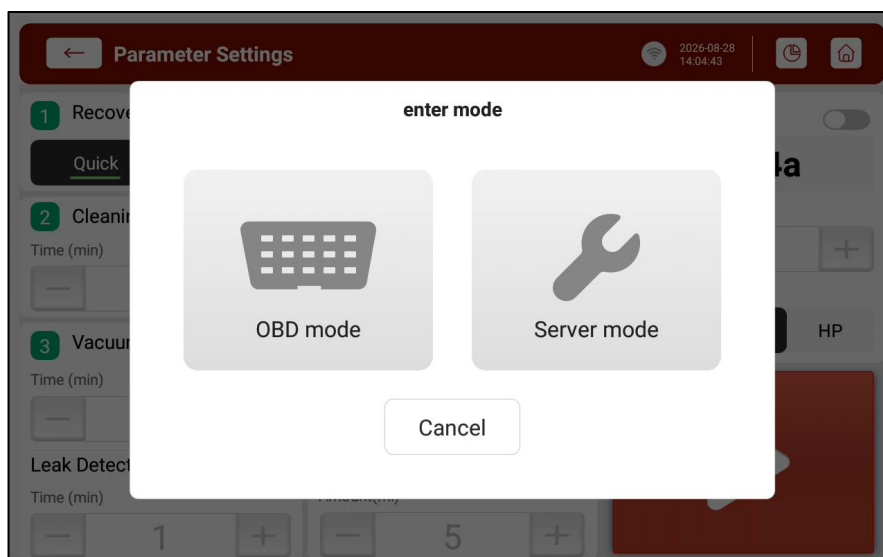
5 R-134a ☒ **R-134a** Amount (g) 770 Coupler type LP **LP+HP** HP

Start

After setting the parameters, tap the **Start** icon . A mode selection dialog displays "OBD Mode" and "Server Mode".

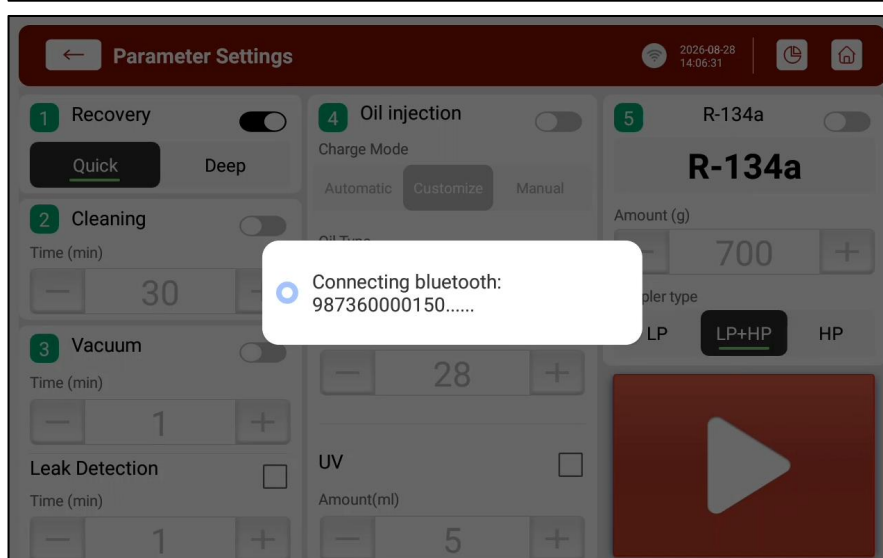
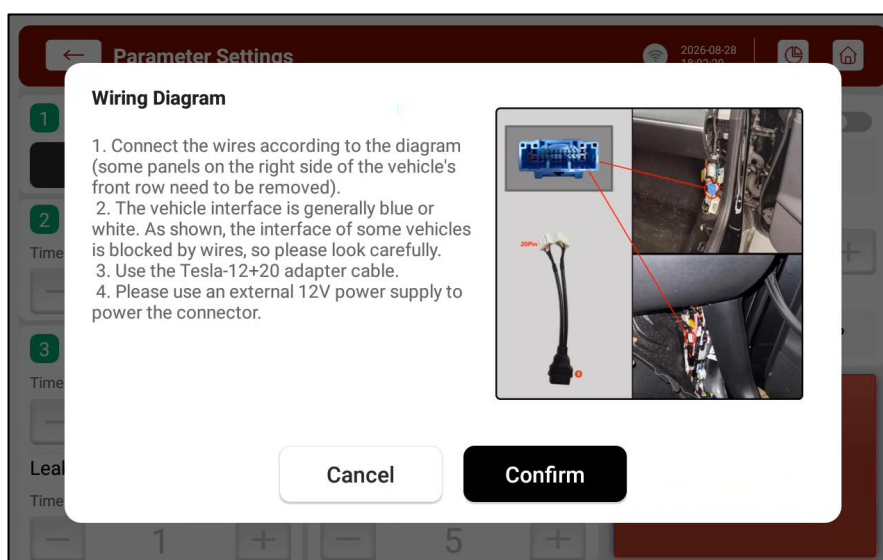
OBD Mode: Connects to the vehicle through its OBD interface and communicates with its control system. It automatically controls relevant vehicle components according to the A/C service process so that they work with the equipment. This mode requires the VCI (ED BOX) and a dedicated adapter cable (optional).

Server Mode: Uses the vehicle's service mode or an external diagnostic device to control relevant vehicle components manually and place the vehicle in the state required for A/C service. This mode does not require the VCI or dedicated adapter cable.

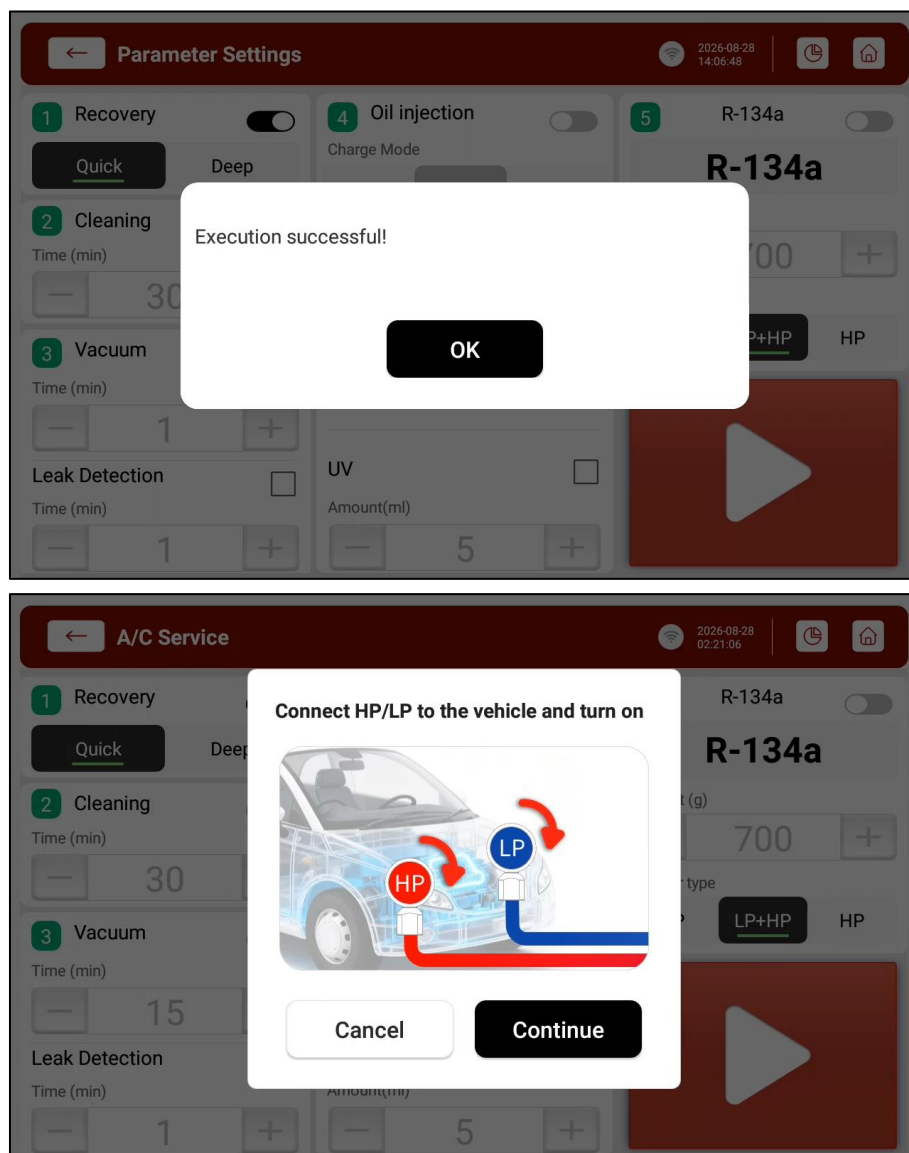


6.1.2.1 OBD Mode

Select **OBD Mode**. Complete the cable connections as shown on screen, then tap **Confirm**. The system connects to the VCI to perform diagnostics.

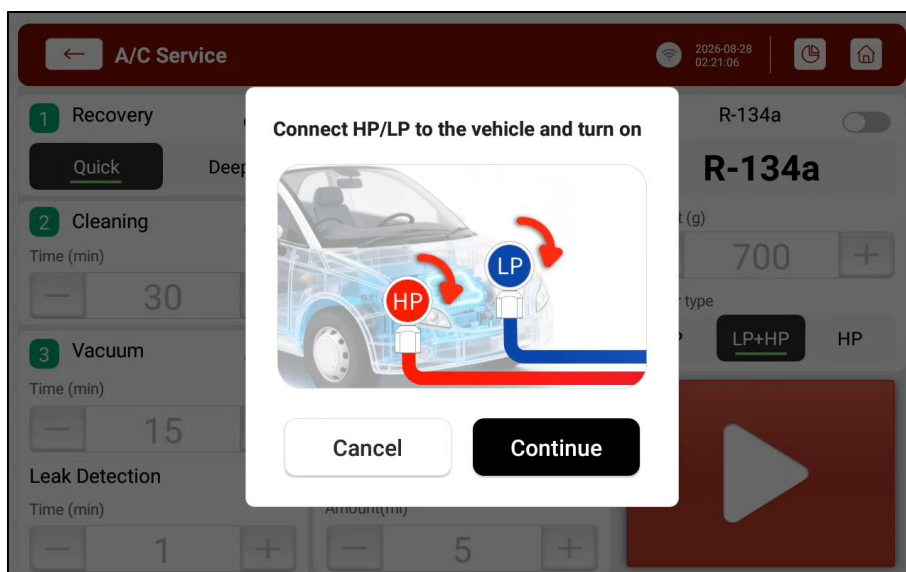


After diagnostics, tap **Confirm** to continue A/C service. See **Section 6.1.1, Passenger Vehicle**, for the detailed procedure.



6.1.2.2 Service Mode

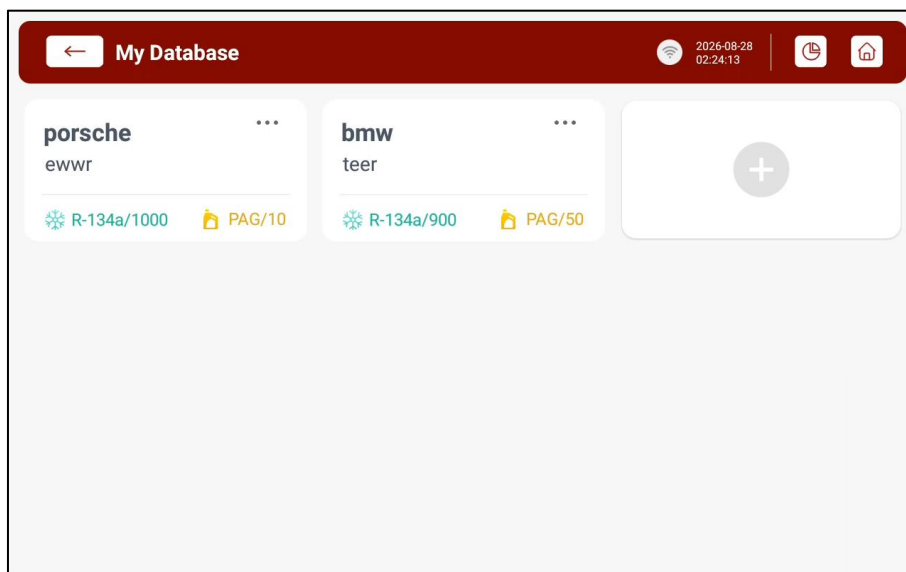
Select **Server Mode** to perform A/C service. See **Section 6.1.1, Passenger Vehicle**, for the detailed procedure.



6.2 My Database

Create and manage custom vehicle A/C specification records. Add, search, edit or delete records, and load saved specifications for quick setup during A/C service.

Tap **My Database** on the A/C Service screen to open the custom database. Select the required record to service the vehicle A/C system.

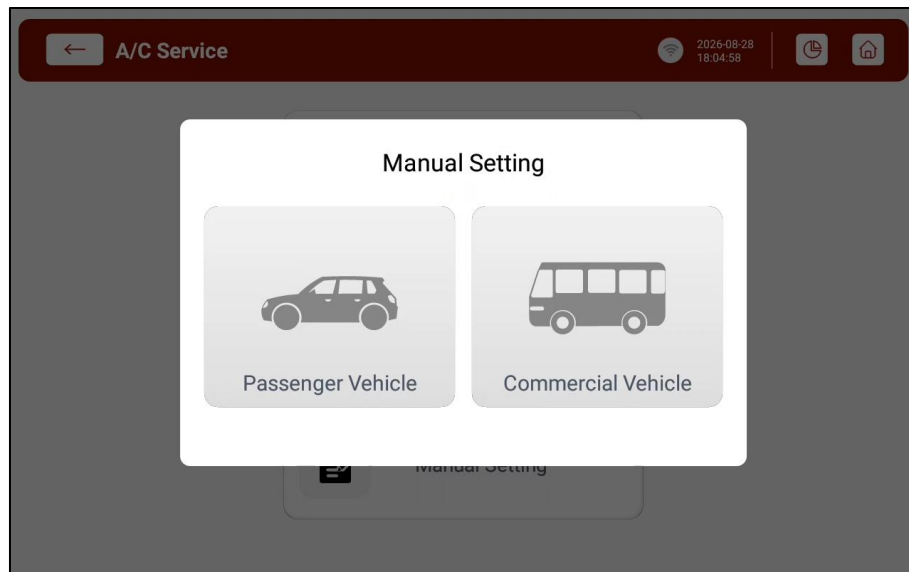


See **Section 6.1.1, Passenger Vehicle**, for the detailed procedure.

6.3 Manual Setting

Service the vehicle A/C system by entering the required parameters manually.

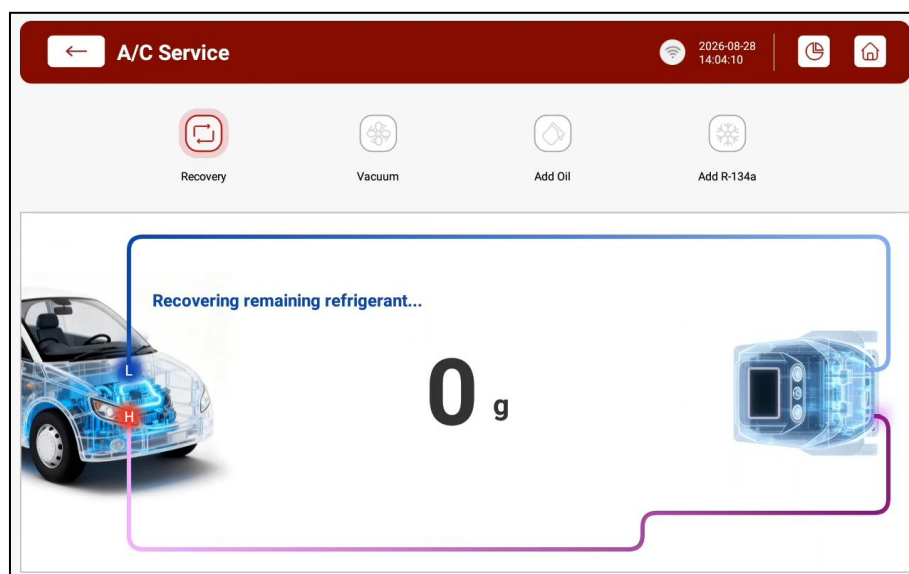
Tap **Manual Setting** on the A/C Service screen, then select "Passenger Vehicle" or "Commercial Vehicles".



6.3.1 Passenger Vehicle

Select "Passenger Vehicle" to open the customer information screen. Enter the customer information and tap **Continue** to open Parameter Settings.

Set the parameters, then tap **Start** icon  to begin A/C service.



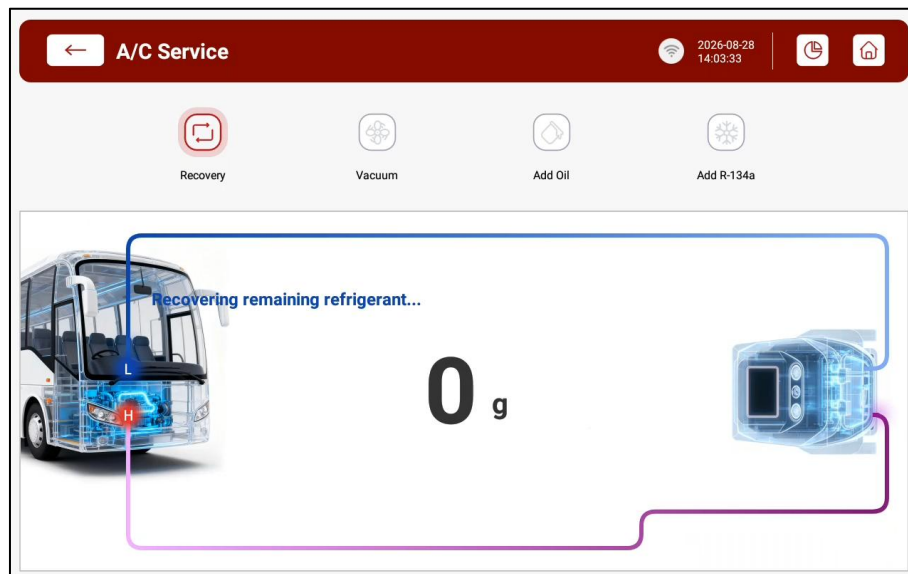
A service report is generated automatically when A/C service finishes. Tap  button to print it.

See **Section 6.1.1, Passenger Vehicle**, for the detailed procedure.

6.3.2 Commercial Vehicles

Tap **Commercial Vehicles** on the A/C Service screen to enter customer information. Complete the information and tap **Continue** to open Parameter Settings.

Set the parameters, then tap the **Start** icon  to begin A/C service.



A service report is generated automatically when A/C service finishes. Tap  button to print it.

See **Section 6.1.1, Passenger Vehicle**, for the detailed procedure.

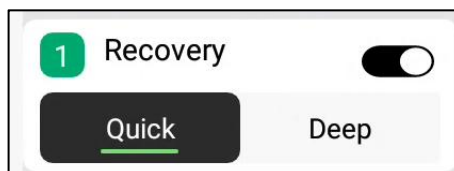
6.4 Function Settings and Operation

6.4.1 Recovery

- A. Recovers used refrigerant from the vehicle A/C system and purifies it for reuse.
- B. Select "Quick" or "Deep" using the buttons at the bottom of the function card.

Quick: Completes refrigerant recovery rapidly for routine recovery work.

Deep: Uses staged recovery, with pauses for refrigerant to vaporize before recovery resumes, to reduce residual refrigerant and improve recovery completeness.



6.4.2 Flushing

NOTE: Flushing can only improve A/C cooling performance and extend compressor service life. It cannot repair a compressor that is already damaged.

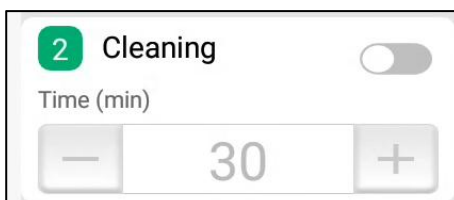
- A. Flushes A/C lines to remove sludge and contaminants, improve refrigerant oil replacement, enhance lubrication and improve cooling efficiency.
- B. Before flushing, run the vehicle A/C for 5-10 minutes and perform the following preliminary checks. Set the temperature to minimum and the blower to medium; increase engine speed moderately during this period.
 - a. Are the high- and low-side pressures normal?
 - b. Does the vehicle A/C operate normally?
 - c. Does the compressor make abnormal noises?
 - d. Rectify any faults before proceeding.
- C. Switch off the vehicle A/C.

WARNING: Never switch on the A/C while flushing its lines. Doing so can damage the A/C system and cause hazardous incidents!

- D. For effective flushing, at least one cycle is generally recommended for systems with front outlets only and at least two cycles for systems with rear outlets. More cycles and a longer flushing time improve flushing results.

NOTE: One flushing cycle takes approximately 30 minutes, excluding refrigerant recovery before and after flushing.

- E. Set the flushing duration with +/-, or tap the value and enter it using the on-screen numeric keypad.

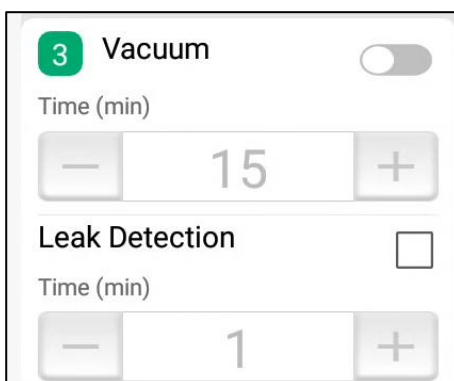


NOTE: Solenoid valves make operating sounds while the equipment is running. This is normal; do not stop the operation.

WARNING: If power fails or flushing stops unexpectedly, run the flushing function again. Do not operate any other function.

6.4.3 Evacuation

- A. Removes air and moisture from the A/C system to prepare it for refrigerant charging.
- B. To remove as much residual moisture as possible, evacuation must last at least 15 minutes. Recommended settings: more than 15 minutes for systems with front outlets only, and more than 20 minutes for systems with front and rear outlets.
- C. Parameter settings:
- C-1. Adjust evacuation time with +/-, or tap the value and enter it using the numeric keypad.
 - C-2. Select or clear the checkbox beside "Leak Detection" to enable or disable it. When enabled, adjust its duration with +/-, or tap the value and use the numeric keypad.



6.4.4 New Oil Injection

- A. Adds refrigerant oil as required for A/C service. An electronic scale controls the injected quantity accurately to meet compressor lubrication needs.

WARNING: Do not activate new oil injection unless the vehicle A/C system is under vacuum. Otherwise, oil may spray out or the bottle may burst!

- B. Fill the new oil bottle with fresh refrigerant oil.

NOTE: During injection, keep the oil level above the pickup tube inlet to prevent air from entering the A/C system.

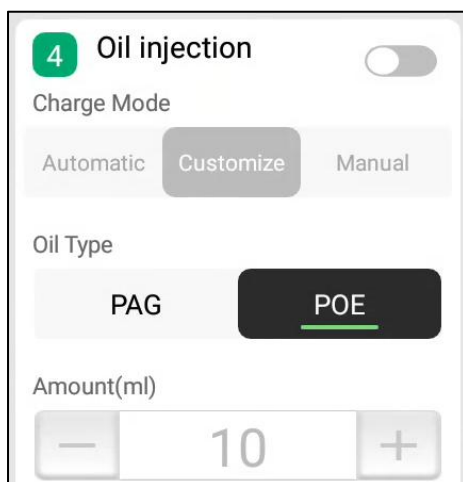
C. Parameter settings:

C-1. Select "Automatic", "Customize" or "Manual". Automatic injects the same amount of oil as was drained during recovery. Customize allows a specified quantity: use +/- or tap the value and use the numeric keypad. Manual requires no preset quantity; press and hold **Hold to Inject** to inject oil.

C-2. Select "PAG" or "POE" to change the refrigerant oil type.

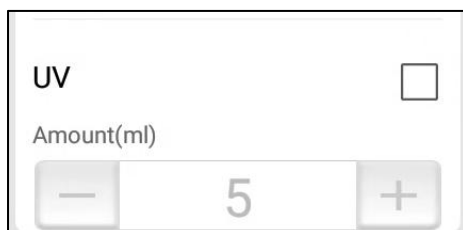
NOTE: Run Device Self-Cleaning after changing the refrigerant oil type before further use.

C-3. Adjust the new oil quantity with +/-, or tap the value and use the numeric keypad.



6.4.5 UV Dye Injection

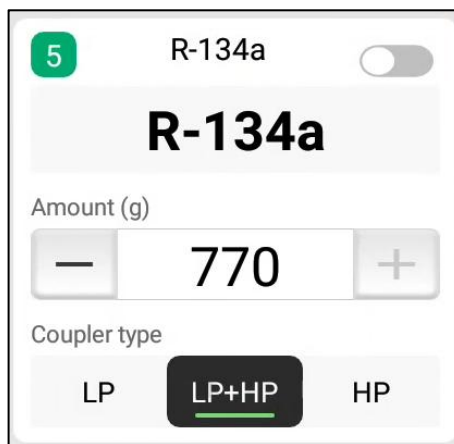
- A. Injects fluorescent UV dye to help locate refrigerant leaks in vehicle A/C systems.
- B. Select or clear the checkbox beside "UV" to enable or disable UV dye injection.
- C. Adjust the UV dye quantity with +/-, or tap the value and use the numeric keypad.



6.4.6 Refrigerant Charging

- A. Adds the quantity of refrigerant required to restore the A/C system's normal charge and maintain cooling performance. LP, HP and LP+HP charging modes support different vehicle A/C service requirements.
- B. Adjust refrigerant quantity with +/-, or tap the value and use the numeric keypad.

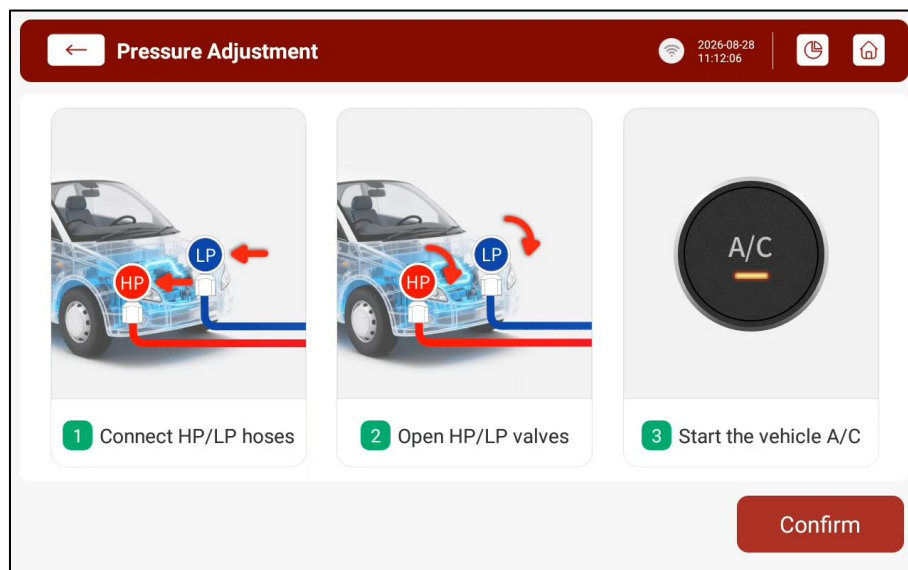
C. Tap **LP**, **LP+HP** or **HP** to select the charging hose.



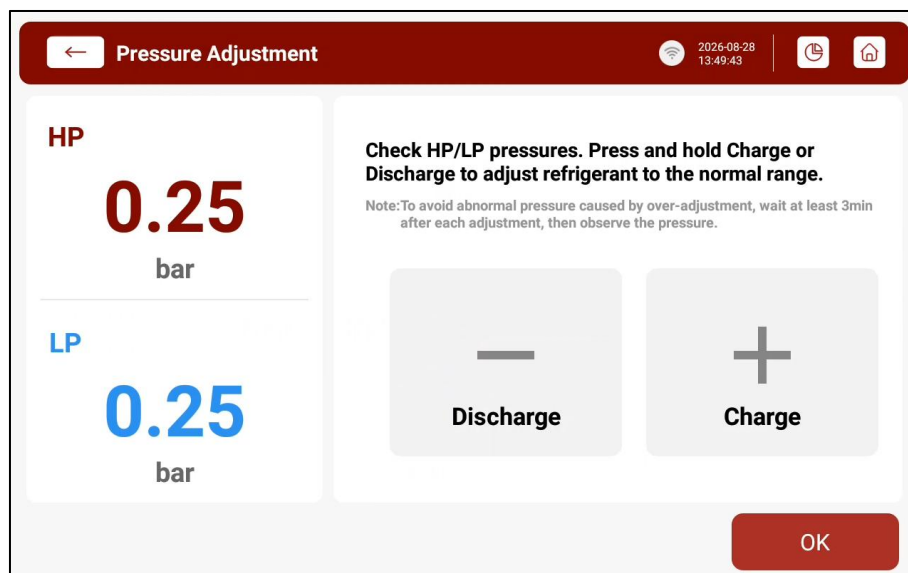
7. Pressure Adjustment

This function monitors the vehicle A/C system's high- and low-side pressures. If the pressures are abnormal, charging and removal functions allow real-time adjustment to return them to the normal range.

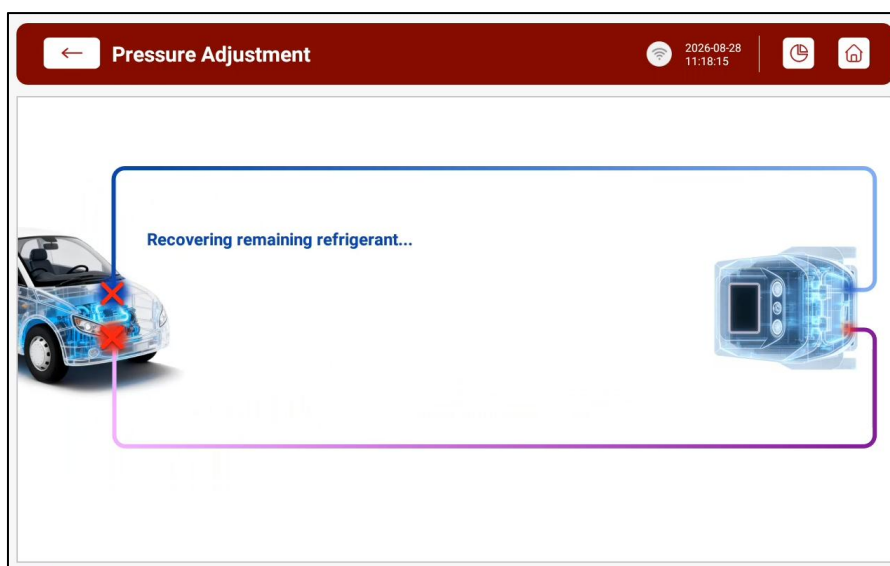
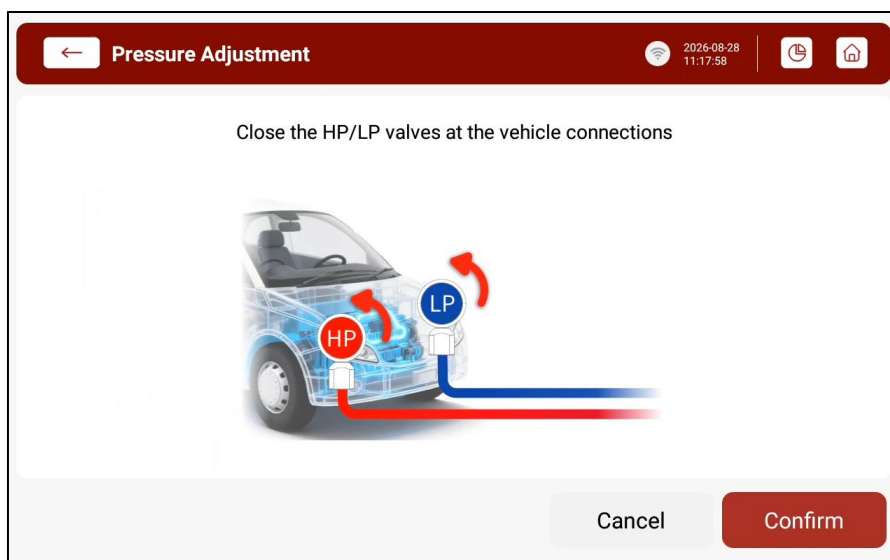
- A. Tap **Pressure Adjustment** on the home screen. Complete the preparations shown on screen.
- A-1. Connect the equipment's red high-pressure hose and blue low-pressure hose to the corresponding vehicle A/C service ports.
 - A-2. Open the valves on the service couplers.
 - A-3. Start the vehicle and switch on the A/C.
 - A-4. Tap **Confirm**.



- B. Observe the displayed high- and low-side pressures. Press and hold "Charge" or "Discharge" to add or remove refrigerant and bring the pressures into the normal range.

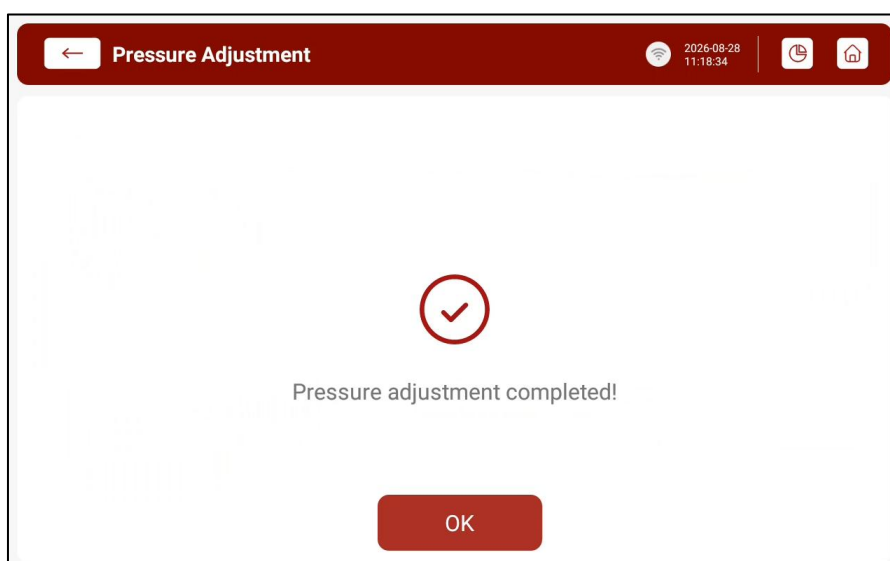


- C. When pressure adjustment is complete, tap **OK** to continue.



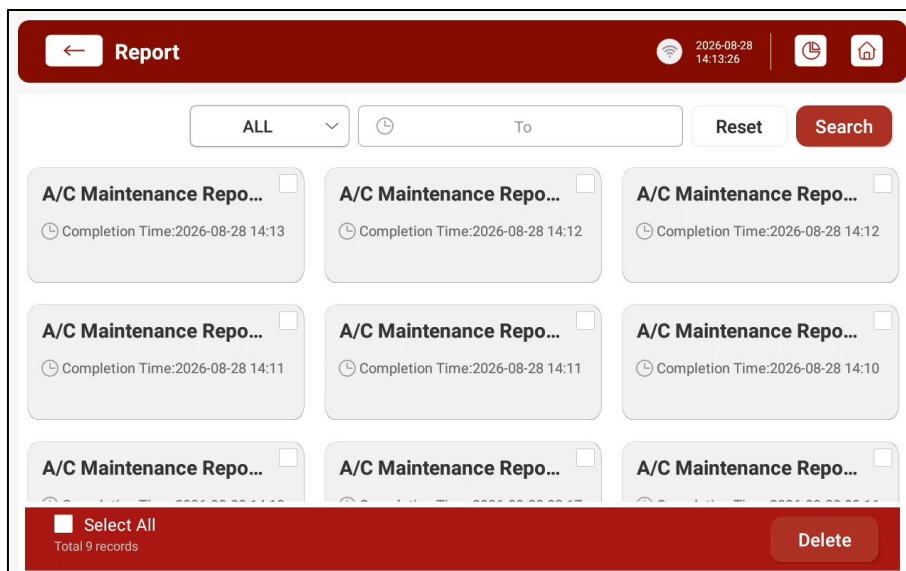
NOTE: Closing the high- and low-pressure valves and recovering residual refrigerant clears the hoses and prevents refrigerant waste.

D. When pressure adjustment is complete, tap **OK** to return to the home screen.

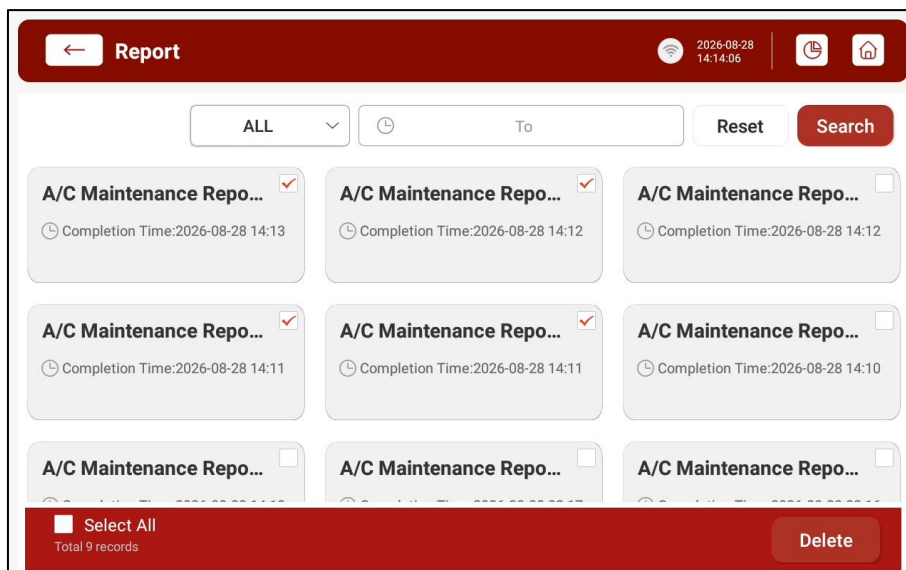


8. Report

- A. Tap the drop-down arrow at the top to select a report category. Set the start and end dates, then tap **Search** to filter matching records.



- B. Select one or more reports, or tap **Select All** to select every report, then tap **Delete** to remove the selected reports.



- C. Tap an individual report to view its details.

Tap **Report** on the home screen.

The screenshot shows a mobile application interface for a report titled "A/C Maintenance Report". At the top, there is a red header bar with a back arrow, the word "Report", a signal strength indicator, the date and time "2026-08-28 14:14:31", and icons for a clock and a home screen. Below the header, the report title "A/C Maintenance Report" is displayed next to a water drop icon. Underneath the title, the text "G0000000325" and "2026-08-28 14:13" are shown. To the right of the title is a red circular stamp with the word "Report" and three stars. The form is divided into two sections by dotted lines: "Service Company Info" and "Customer Info". The "Service Company Info" section contains three labels: "Service Provider Name:", "Service Provider Phone:", and "Service Provider Address:". The "Customer Info" section contains two labels: "Customer Name:" and "Customer Phone:". At the bottom of the form, there are four red buttons with white icons: a pencil (Edit), a share icon (Share), a printer (Print), and a trash can (Delete).

C-1. Tap **Edit**  to edit customer information.

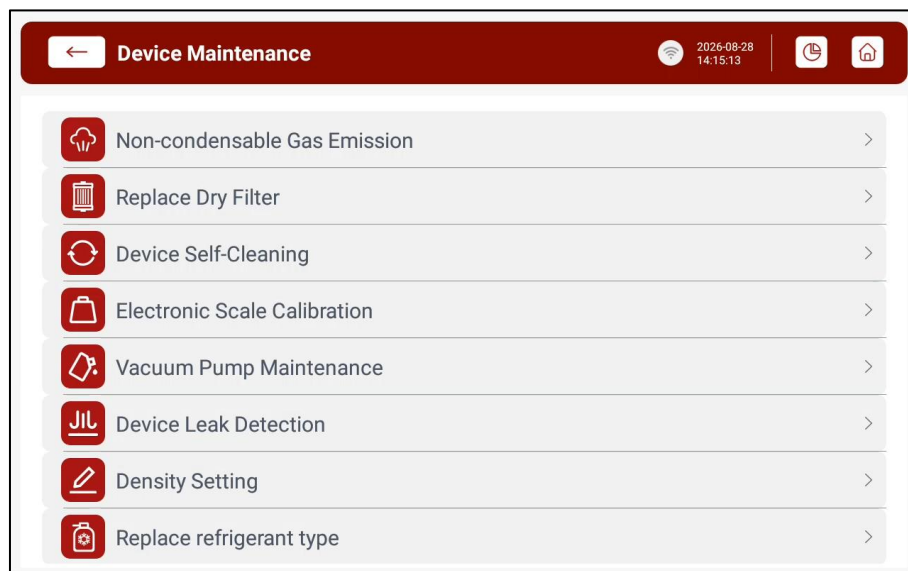
C-2. Tap **Share**  to share the report by email.

C-3. Tap **Print**  to print the report.

C-4. Tap **Delete**  to delete the report.

9. Device Maintenance

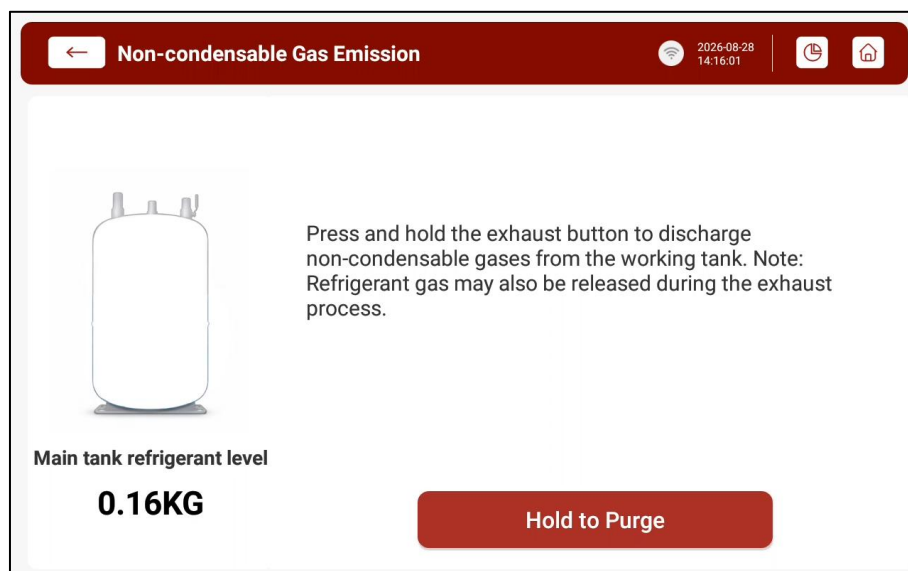
Tap **Device Maintenance** on the home screen. Available options include **Non-condensable Gas Emission**, **Replace Dry Filter**, **Device Self-Cleaning**, **Electronic Scale Calibration**, **Vacuum Pump Maintenance**, **Device Leak Detection**, **Density Setting**, **Replace Refrigerant Type** and **Database**.



9.1 Non-condensable Gas Emission

Select "Non-condensable Gas Emission", then press and hold **Hold to Purge** to release non-condensable gases from the main tank.

NOTE: Refrigerant vapor in the main tank may also be released during purging.

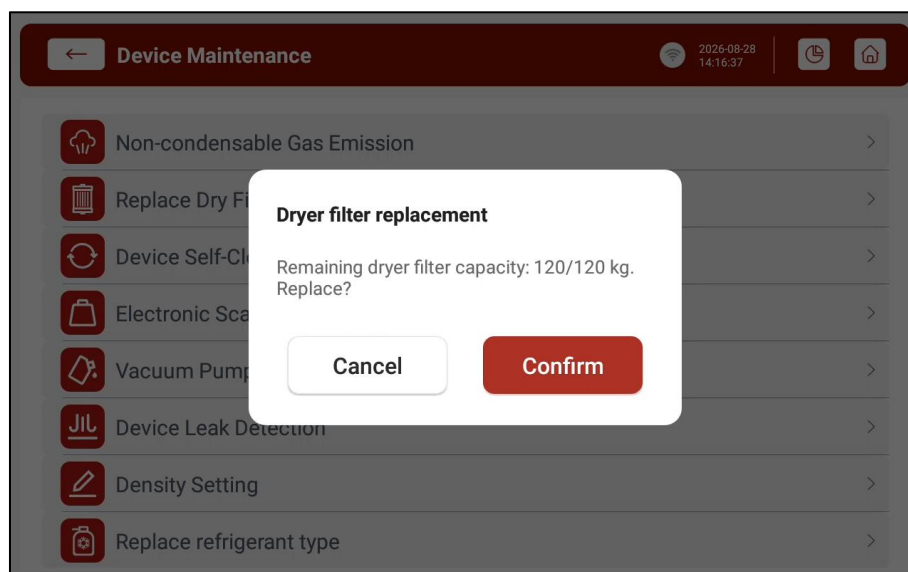


9.2 Replace Dry Filter

Guides Replace Dry Filter and the associated system preparation and checks, ensuring correct recovery, flushing and charging operation.

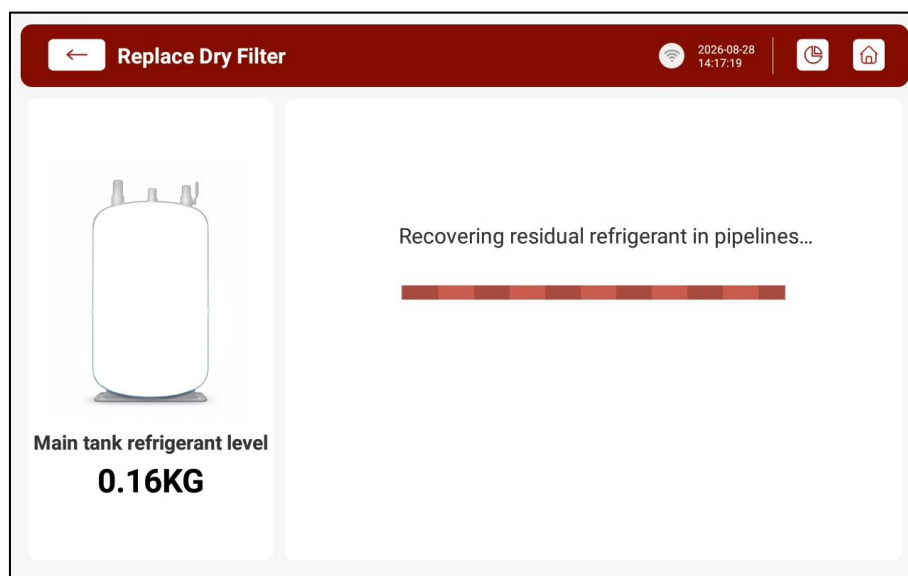
Procedure:

- A. Select "Replace Dry Filter". In the message window shown below, tap **Confirm** to continue.



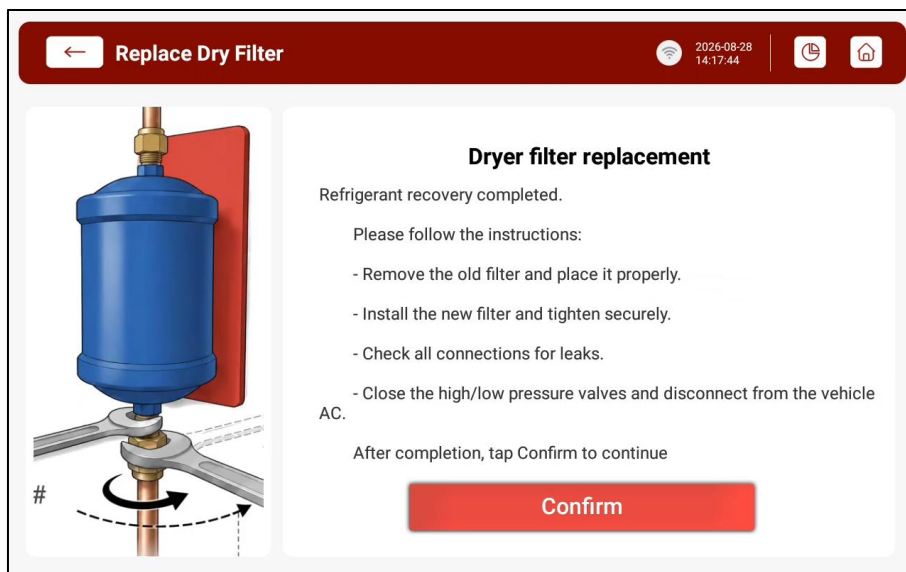
- B. Recover refrigerant from the filter.

WARNING: Accidental refrigerant release can seriously injure the skin and eyes. Wear protective gloves and goggles.

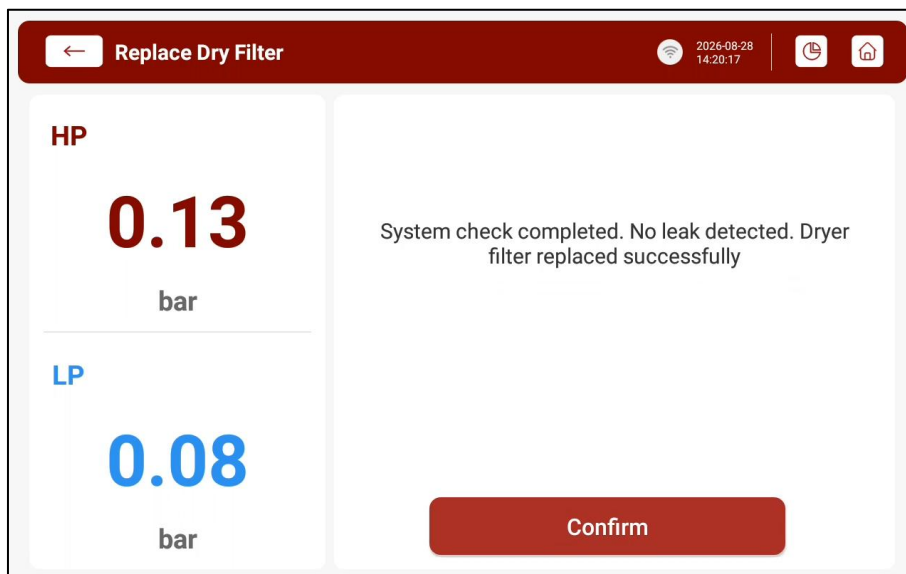
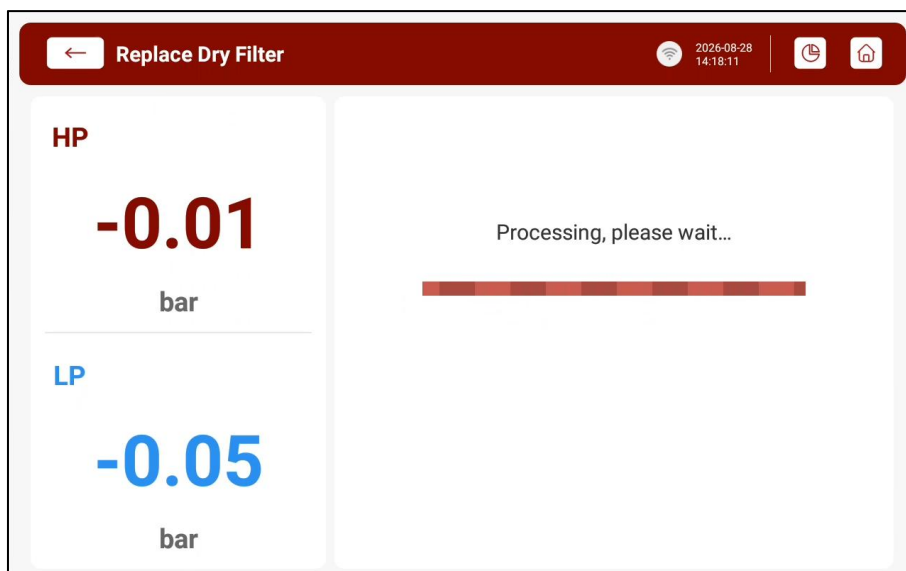


- C. Replace the filter-drier as instructed on screen.

NOTE: Check the filter-drier's installation direction.



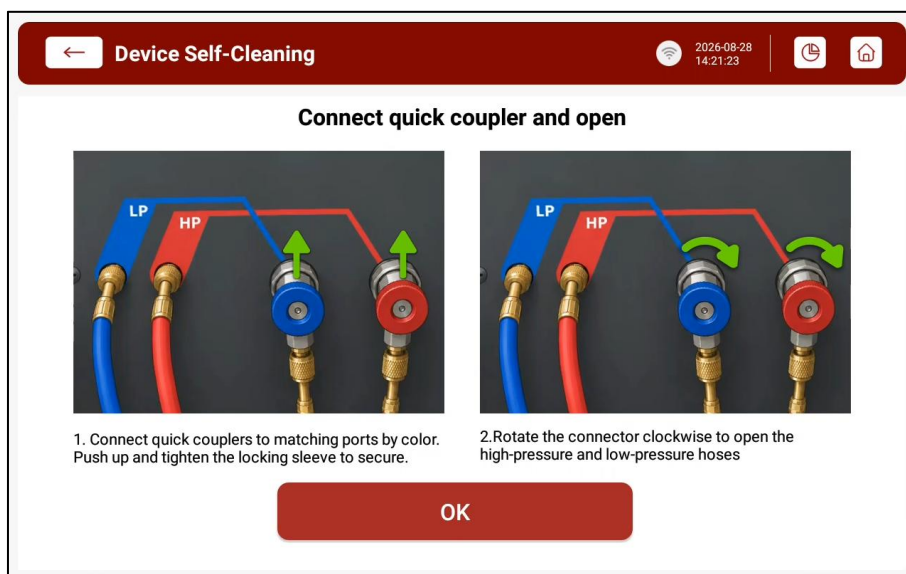
- D. After replacement, the equipment automatically performs a system leak test. When the test finishes, tap **Confirm** to return to the home screen.



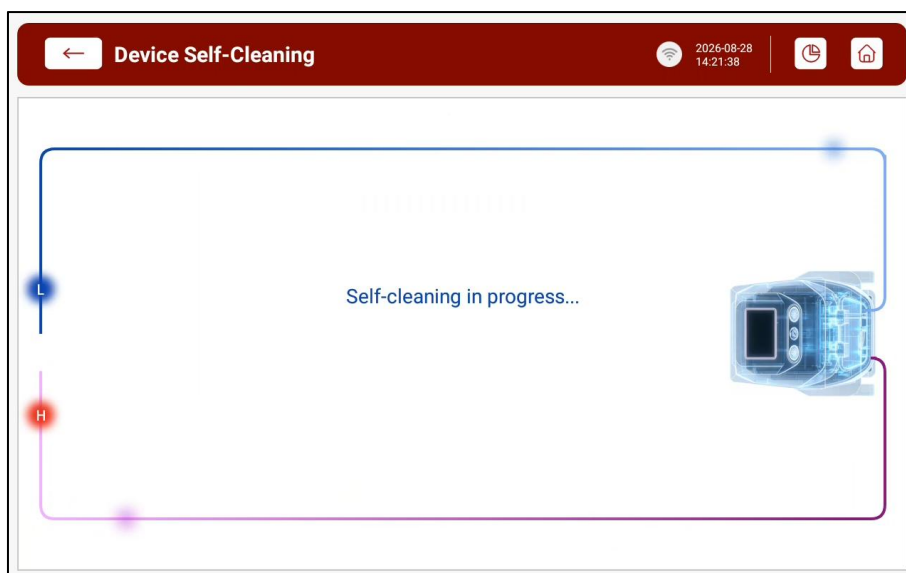
9.3 Device Self-Cleaning

Cleans internal lines and fluid passages to remove residual refrigerant, oil and contaminants, keeping the equipment clean for subsequent service operations.

- A. Select "Device Self-Cleaning". A prompt appears asking you to connect the HP and LP hoses.
- A-1. Connect each service coupler to the matching color-coded port on the equipment.
- A-2. Turn the couplers clockwise to open the HP and LP hoses. Push up and secure the locking sleeves to ensure they are fully engaged.

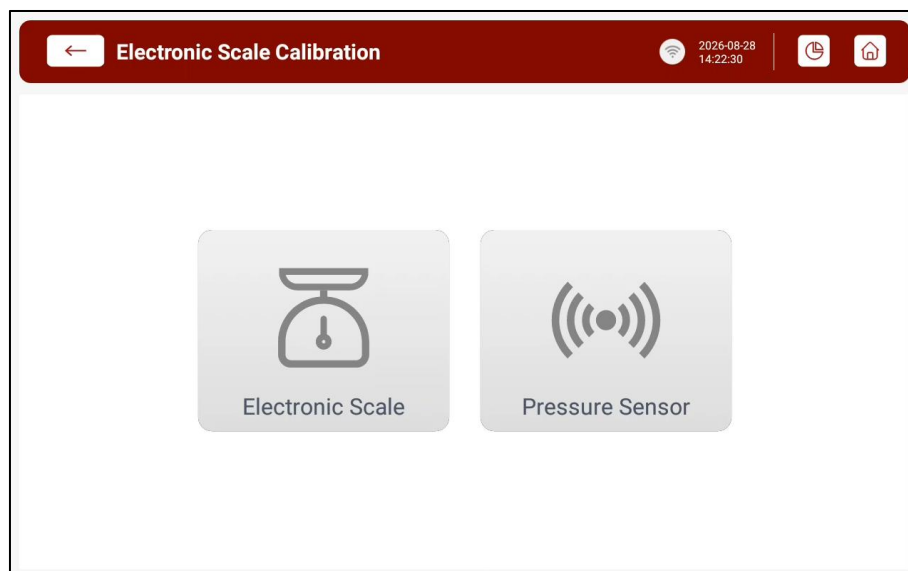


- B. Tap **OK** to start Device Self-Cleaning.



9.4 Electronic Scale Calibration

Calibrates the equipment's main measuring components (Electronic scale and Pressure sensor) to prevent measurement errors caused by prolonged use or changes in the environment.



9.4.1 Scale Calibration

Zero drift may occur after prolonged use, causing inaccurate weighing. Recalibrate the electronic scales when this occurs.

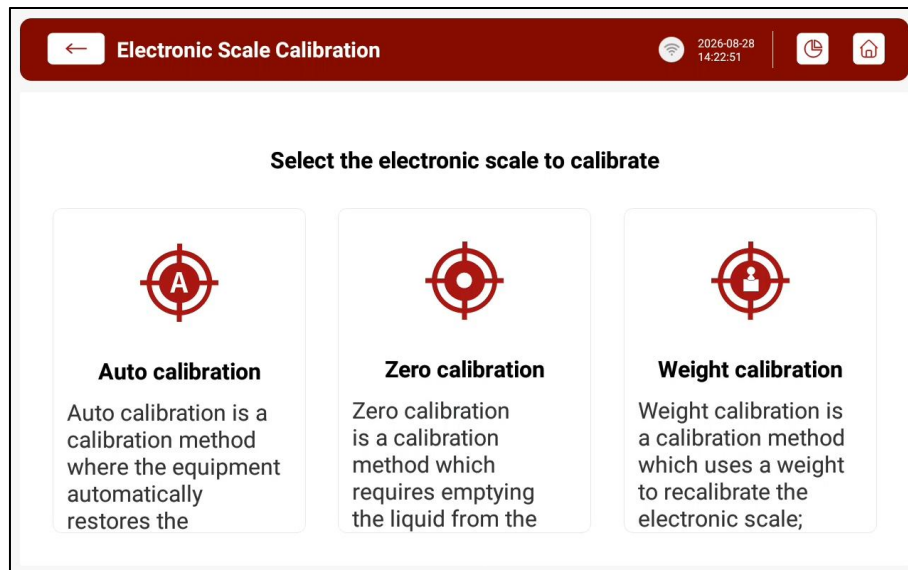
Select "Electronic Scale" to open the calibration screen. Choose one of three modes (Auto Calibration, Zero Calibration or Weight Calibration), tap its icon and follow the on-screen steps.

Auto Calibration: Restores the factory calibration parameters for the main tank, PAG oil bottle, POE oil bottle, UV bottle and used oil bottle scales. This corrects measurement errors caused by abnormal parameters and restores weighing accuracy.

Zero Calibration: Recalibrates the zero point of the main tank, PAG oil bottle, POE oil bottle, UV bottle and used oil bottle scales with no load. It corrects zero offsets caused by sensor drift or environmental changes and ensures an accurate starting point for weight measurement.

Weight Calibration: Uses standard weights to calibrate the main tank, PAG oil bottle, POE oil bottle, UV bottle and used oil bottle scales, correcting weighing errors to ensure accurate metering of refrigerant, refrigerant oil, UV dye and used oil during injection and recovery.

NOTE: A verification code is required. Contact our after-sales service department to obtain it.



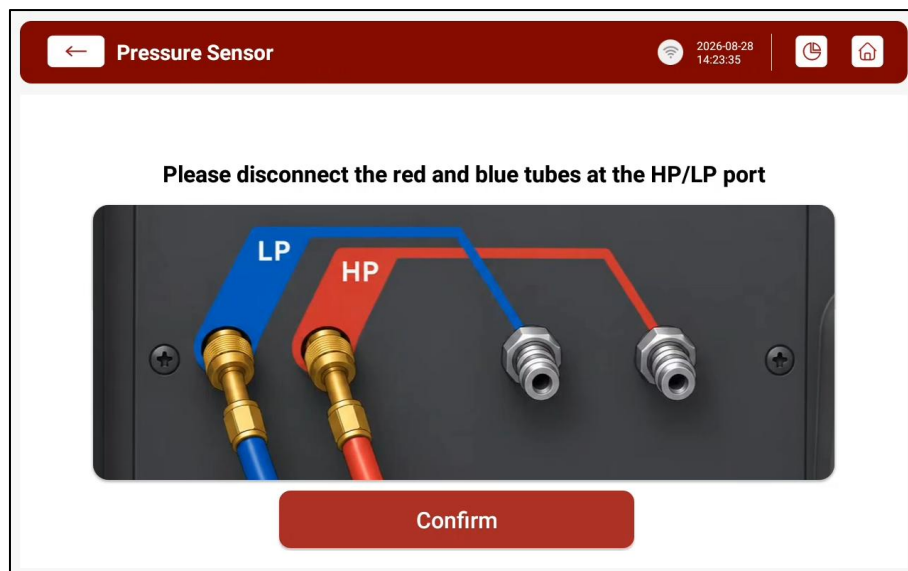
9.4.2 Pressure Sensor Calibration

Corrects differences between measured and actual pressure so the displayed readings are accurate, helping technicians assess A/C operating conditions reliably.

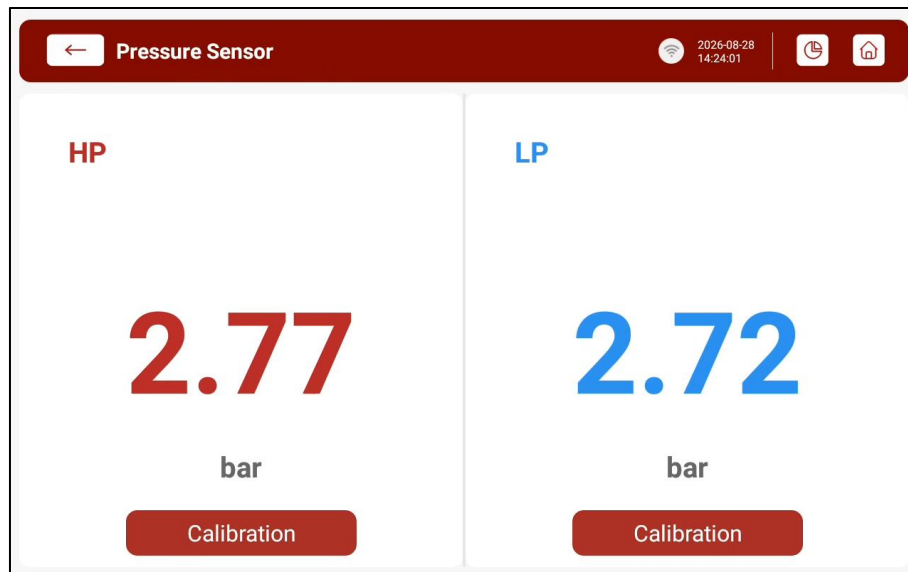
Select "Pressure Sensor" to open the calibration screen. The procedure includes three modes: Automatic Calibration, Zero Calibration and Weight Calibration. Select a method, tap its icon and follow the on-screen steps.

NOTE: A verification code is required. Contact our after-sales service department to obtain it.

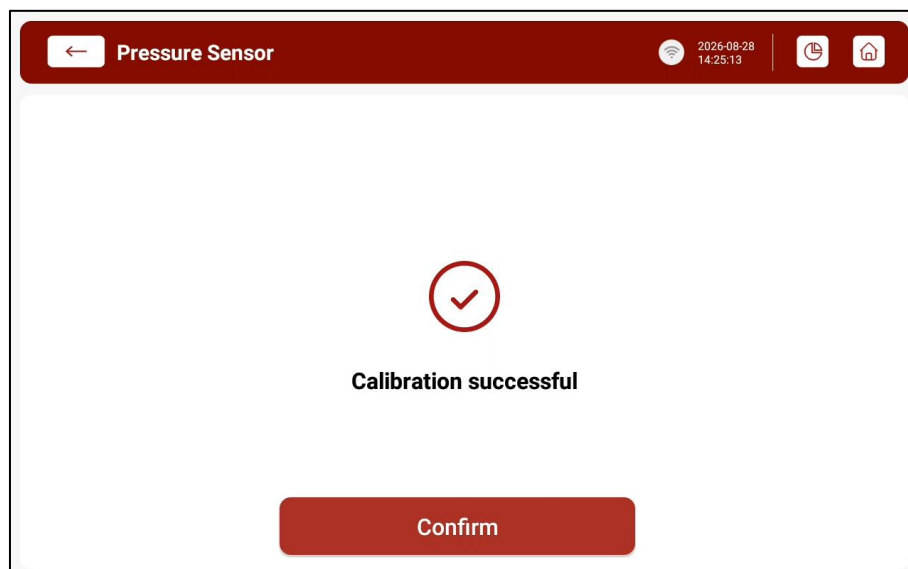
- A. Select "Pressure Sensor" to open the calibration screen. Follow the on-screen instructions to disconnect the HP and LP hoses from the ports.



- B. After removing the HP and LP hoses, tap **Confirm**. On the following screen, tap **Calibration** below HP and LP respectively to calibrate each pressure sensor.



C. When "Calibration successful" appears, tap **Confirm**.

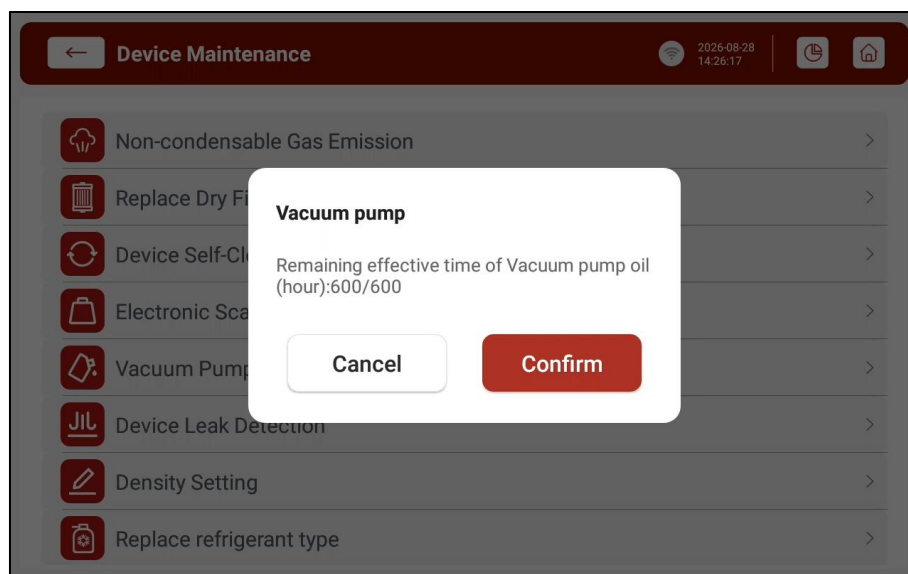


9.5 Vacuum Pump Maintenance

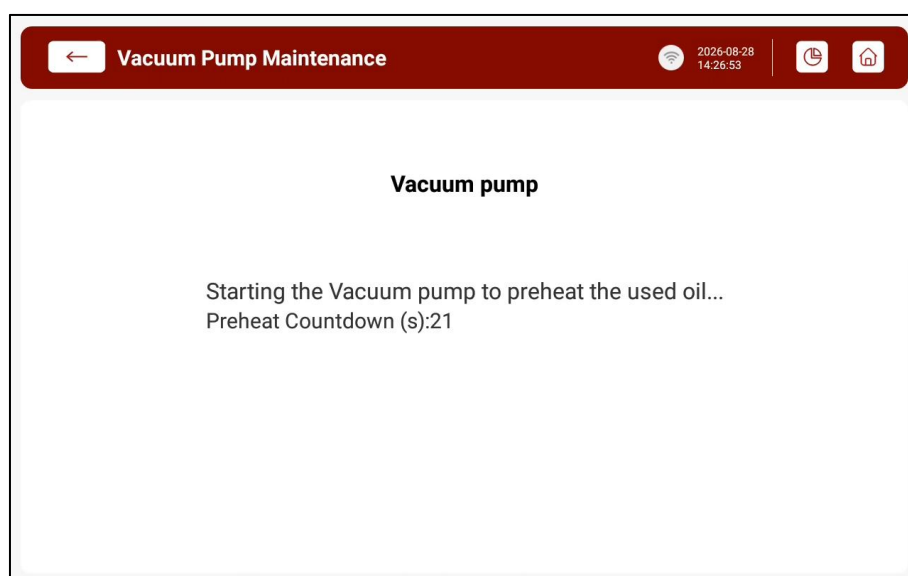
Guides vacuum pump oil replacement to restore pump performance, prevent poor evacuation or pump damage caused by degraded oil, and ensure stable evacuation operation.

Procedure:

- A. Select "Vacuum Pump Maintenance". A message displays the remaining vacuum pump oil service time.

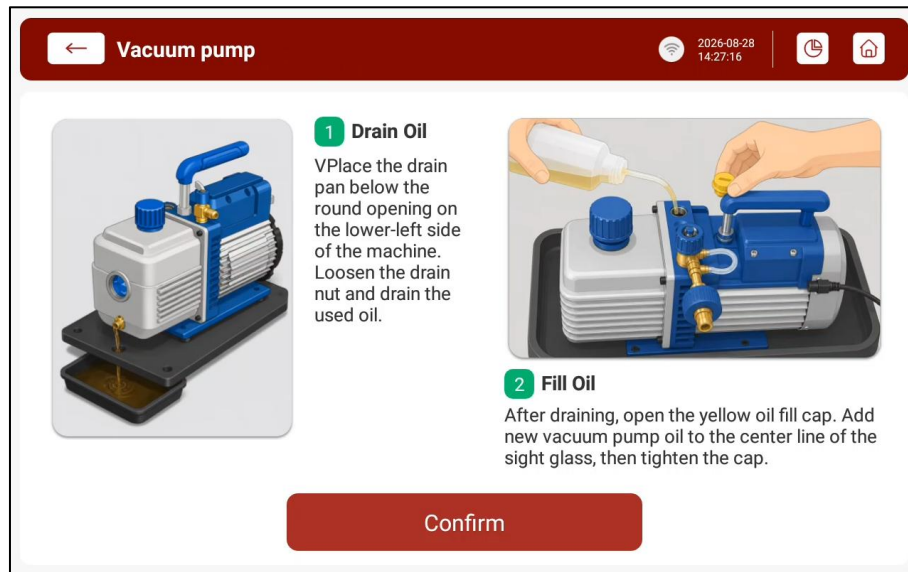


- B. Tap **Confirm** to start the vacuum pump and warm the used oil.



- C. Replace the vacuum pump oil once the used oil has warmed up.
- C-1. Place a drain pan under the circular opening on the bottom left of the equipment. Loosen the drain nut to drain the used oil, then retighten it.
 - C-2. Remove the vacuum pump oil filler cap. Add fresh vacuum pump oil to the midpoint of the sight glass, then tighten the cap.

NOTE: Fill to the center mark of the sight glass. Do not overfill, as oil may spray out during operation.

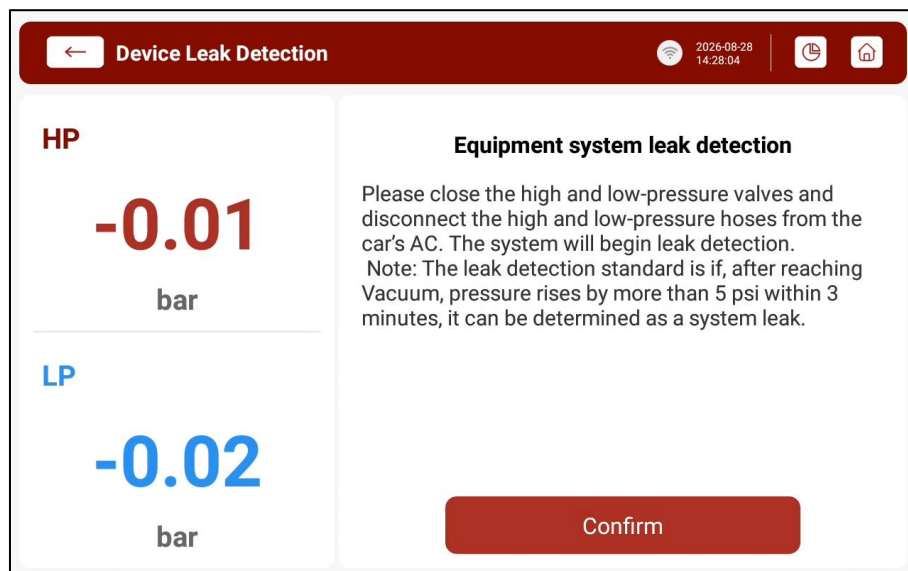
C-3. Tap **Confirm**.

9.6 Device Leak Detection

Checks the sealing of internal lines and connections. Pressure changes indicate possible leaks and help verify equipment reliability.

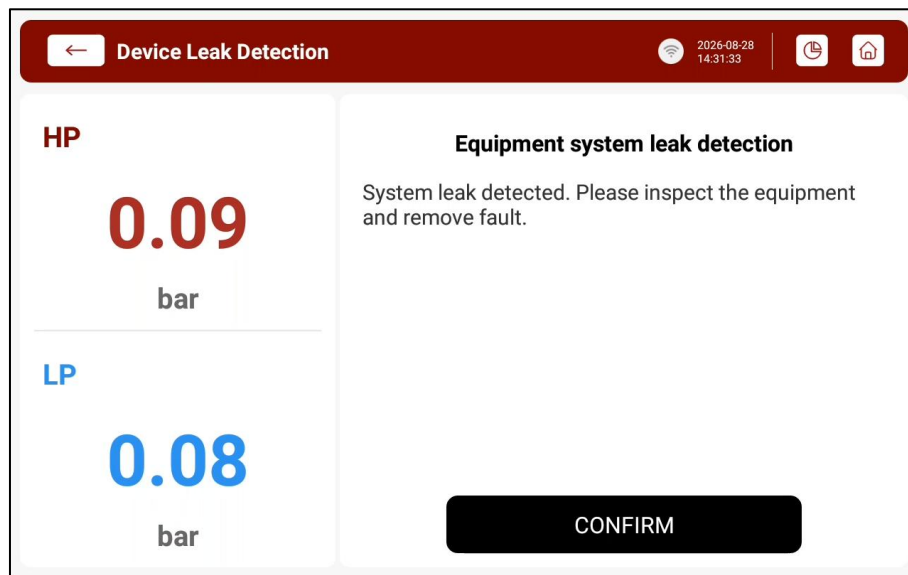
Procedure:

- Select "Device Leak Detection".
- Follow the on-screen instructions to close the high- and low-pressure valves and disconnect the hoses from the vehicle A/C system. Tap **Confirm** to start the system leak test.



- After evacuation, the equipment automatically checks for leaks by monitoring pressure changes and issues an alarm if an abnormal condition is detected.

NOTE: Evacuation lasting less than 15 minutes may result in an inaccurate leak test.

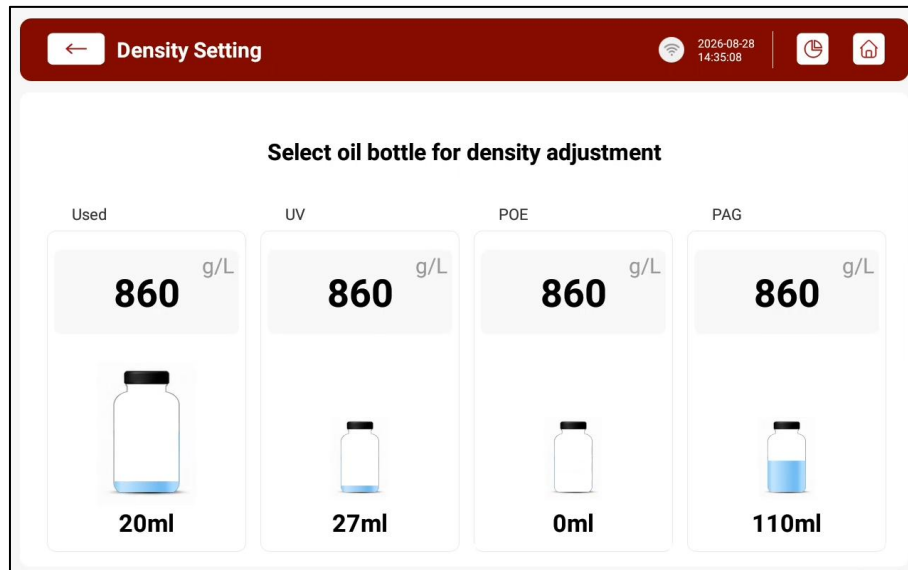


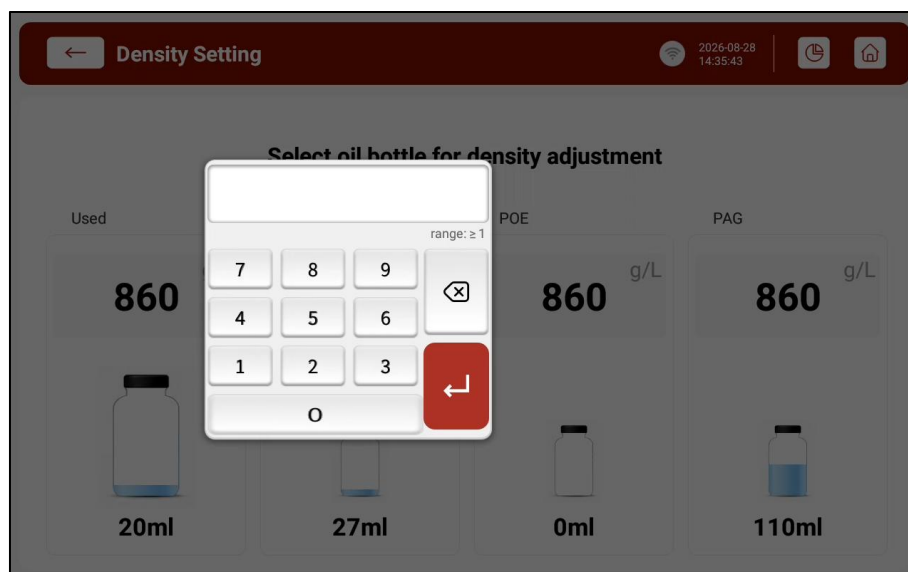
9.7 Density Setting

Set density values for PAG, POE, UV dye and used oil. The equipment converts measured mass to liquid volume, allowing conversion between g and ml and improving volume display accuracy.

NOTE: A verification code is required. Contact our after-sales service department to obtain it.

Select the bottle to adjust, tap the displayed value and enter the new value using the numeric keypad.



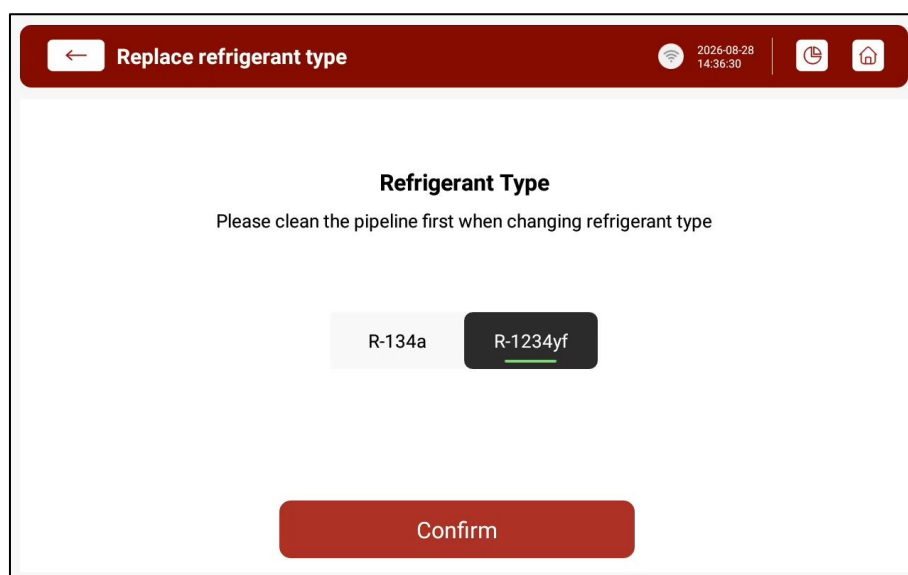


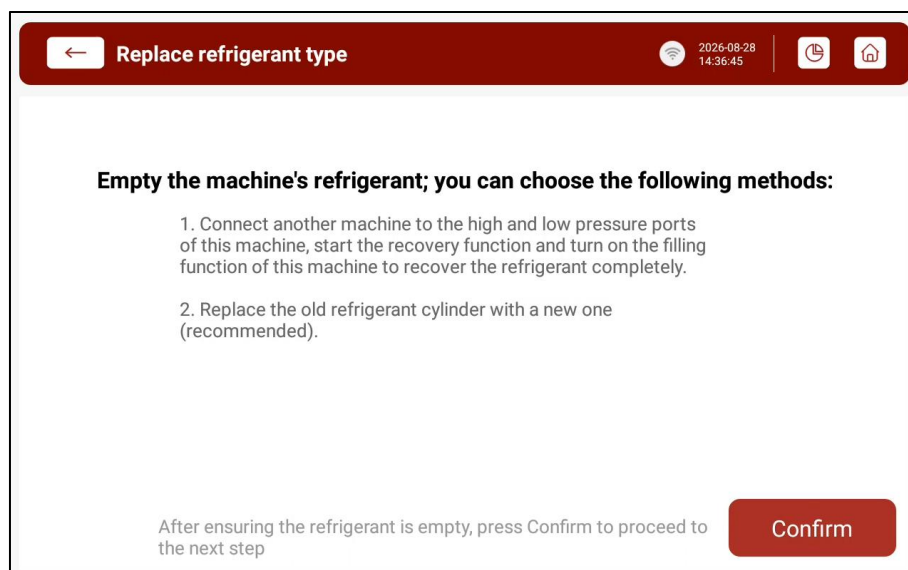
9.8 Refrigerant Type Switch

Evacuate the original refrigerant from the device and clean the internal pipelines, then replace the corresponding refrigerant connectors to prepare the device for use with another refrigerant.

NOTE: A verification code is required. Contact our after-sales service department to obtain it.

After cleaning and recovering the refrigerant, select the required refrigerant type to switch to it.

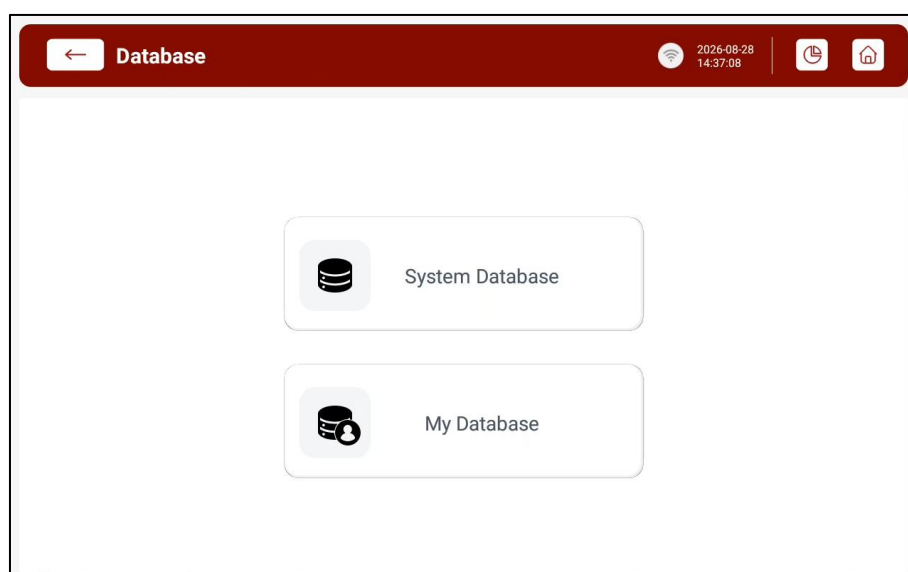




9.9 Database

Look up vehicle A/C specifications by make, model, engine and model year.

Tap **Database** On the Device Maintenance interface to open the Database, which includes "System Database" and "My Database".



Tap **System Database**, then select the relevant filters for the vehicle to open its A/C specification page.

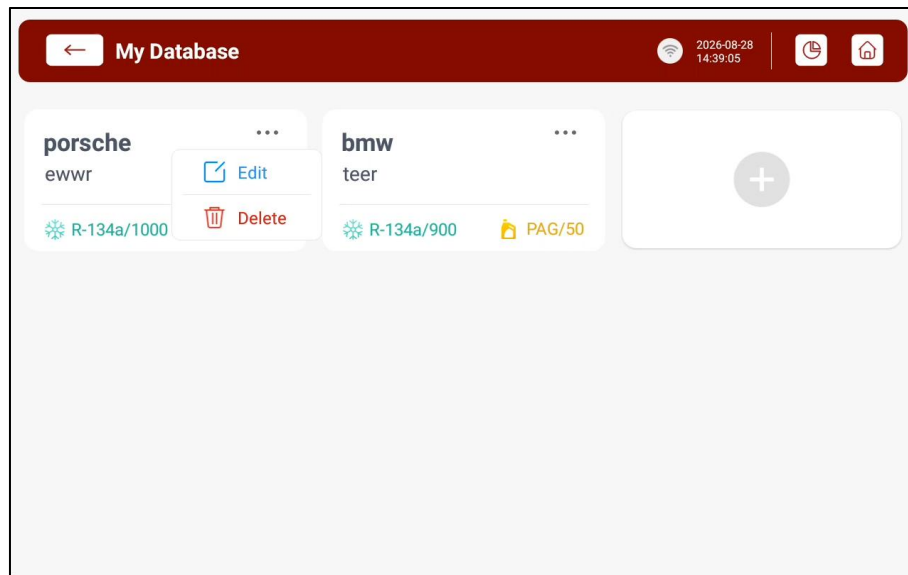
The screenshot shows the 'Vehicle Database' screen. At the top, there is a red header bar with a back arrow, the title 'Vehicle Database', and status icons (Wi-Fi, signal, time 2026-08-28 14:38:05, and home). Below the header, there are four red buttons for 'Brand KIA', 'Model OPTIMA', 'Engine Other', and 'Year 2012-2019'. The main content area has four white boxes: 'Refrigerant Type: R-134a', 'Refrigerant Quantity (g): 570', 'Oil Type: PAG', and 'Oil Quantity (ml): 90'.

Tap **My Database** to view and manage custom records.

The screenshot shows the 'My Database' screen. At the top, there is a red header bar with a back arrow, the title 'My Database', and status icons (Wi-Fi, signal, time 2026-08-28 14:38:33, and home). Below the header, there are two database cards. The first card is for 'porsche' with the identifier 'ewwr' and shows 'R-134a/1000' and 'PAG/10'. The second card is for 'bmw' with the identifier 'teer' and shows 'R-134a/900' and 'PAG/50'. Each card has a three-dot menu icon at the top right. To the right of the cards is a large white button with a plus sign (+).

Tap the  icon at the top right of a database card to manage that record. Tap the  icon to edit the record or tap the icon  to delete it.

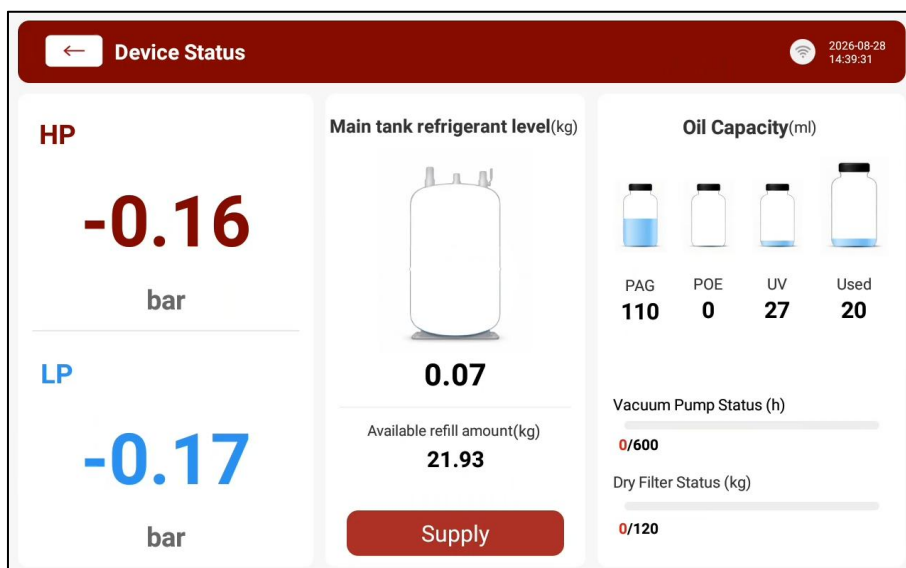
Tap the  icon to create a custom record.



10. Device Status

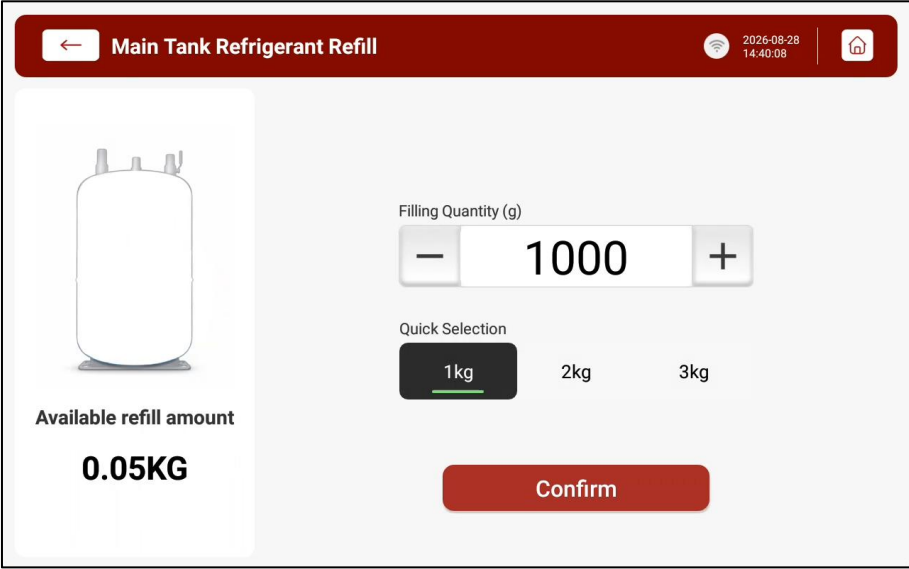
View current operating conditions and key resources, including high- and low-side pressure, main tank refrigerant quantity, refrigerant oil/UV dye/used oil quantities, and vacuum pump and filter-drier usage. This provides an overview of operation and maintenance status.

On the main interface, Tap the  icon to enter the device status interface.



Tap **Supply** on the Device Status screen to refill the main tank with refrigerant.

NOTE: Perform this operation if the main tank contains less than 4 kg of refrigerant for flushing or if "Insufficient Main Tank Refrigerant!" is displayed.



The Main Tank Refrigerant Refill screen displays the following information:

- Available refill amount:** 0.05KG
- Filling Quantity (g):** A numeric input field set to 1000, with minus and plus buttons.
- Quick Selection:** Buttons for 1kg (selected), 2kg, and 3kg.
- Confirm:** A red button to confirm the refill.

- The refill setup screen displays the current main tank refrigerant quantity. Set the refill quantity as required.
- There are two refill methods.

Method 1:

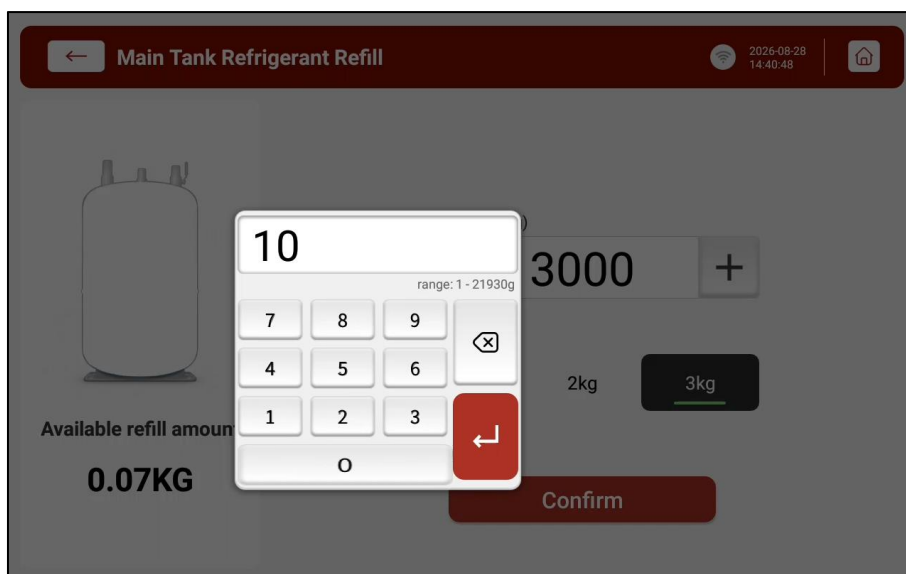
M1-1. Connect the external refrigerant cylinder to the equipment's low-pressure hose port.

NOTE: Use the cylinder's liquid port. If there is no liquid port, invert the cylinder.

M1-2. Plug the equipment's high-pressure hose port.

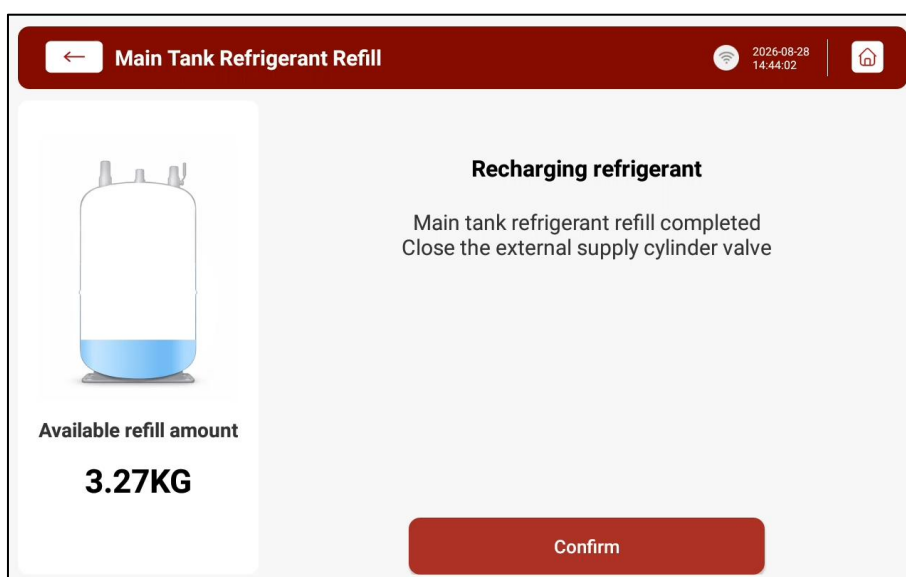
M1-3. Set the quantity using a quick-selection option or the numeric keypad.

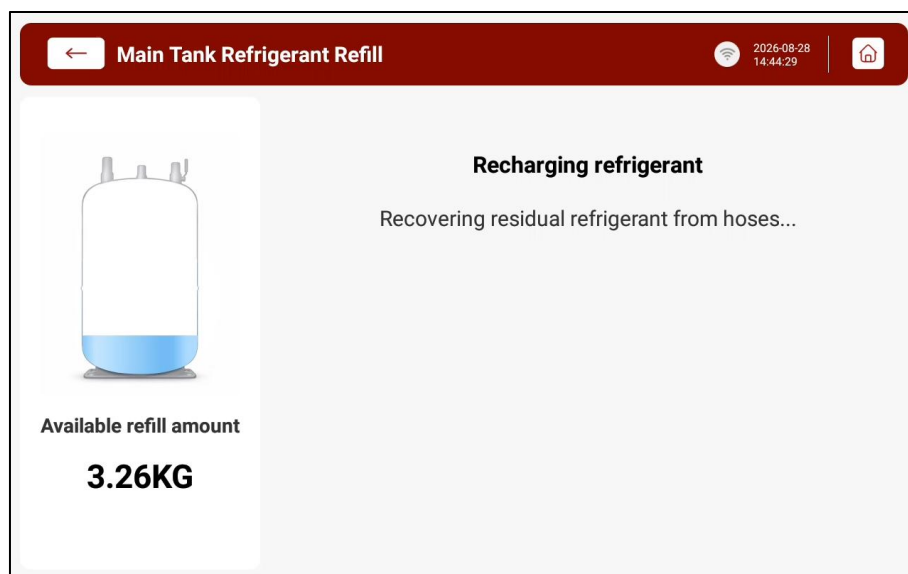
NOTE: Set the refill quantity according to the refrigerant quantity already in the main tank.



M1-4. Tap **Confirm** to begin refilling.

M1-5. When the system alarm appears, close the external cylinder valve as instructed, then tap **Confirm**. The equipment completes the refill automatically.



**Method 2:**

Use the refill adapter illustrated below.



M2-1. Install this adapter on the external refrigerant cylinder port.

NOTE: Use the cylinder's liquid port. If there is no liquid port, invert the cylinder.

M2-2. Connect the external cylinder to the equipment's high-pressure (or low-pressure) hose port.

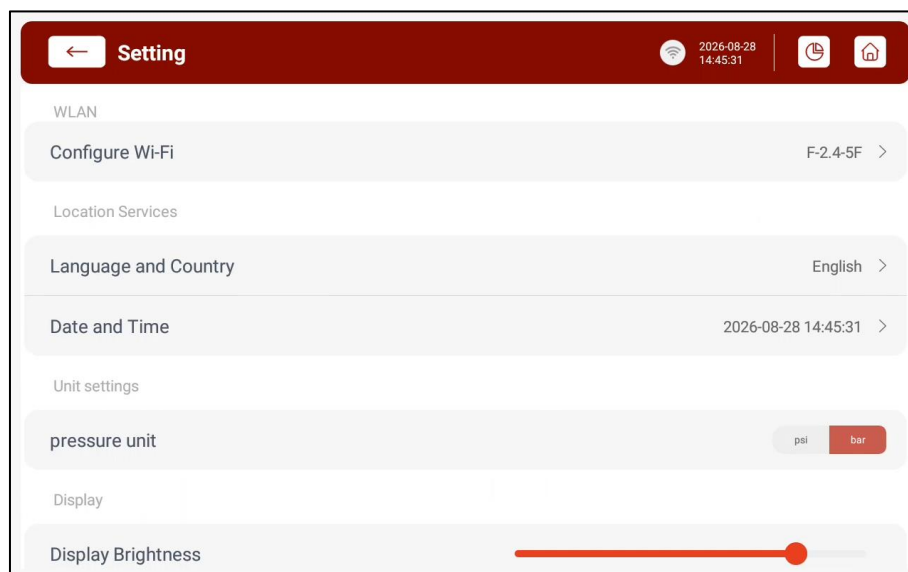
M2-3. Run "Recovery".

M2-4. When the main tank refrigerant quantity exceeds 4 kg, close the external cylinder valve. The equipment stops automatically.

NOTE: The main tank is installed inside the equipment and is used for flushing, recovery and charging.

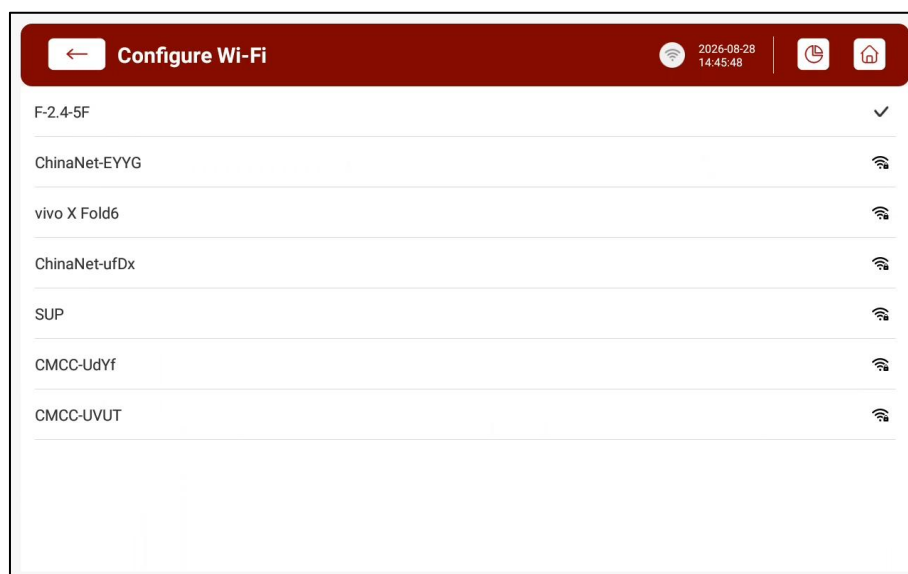
11. System Settings

Tap the  icon on the home screen to open System Settings.



11.1 WLAN

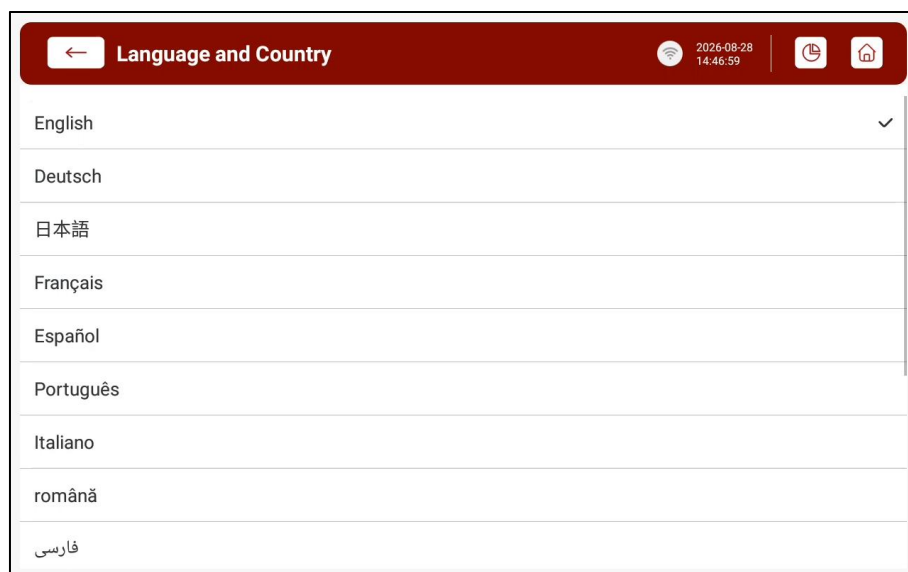
Configure the wireless network to connect to.



11.2 Location Services

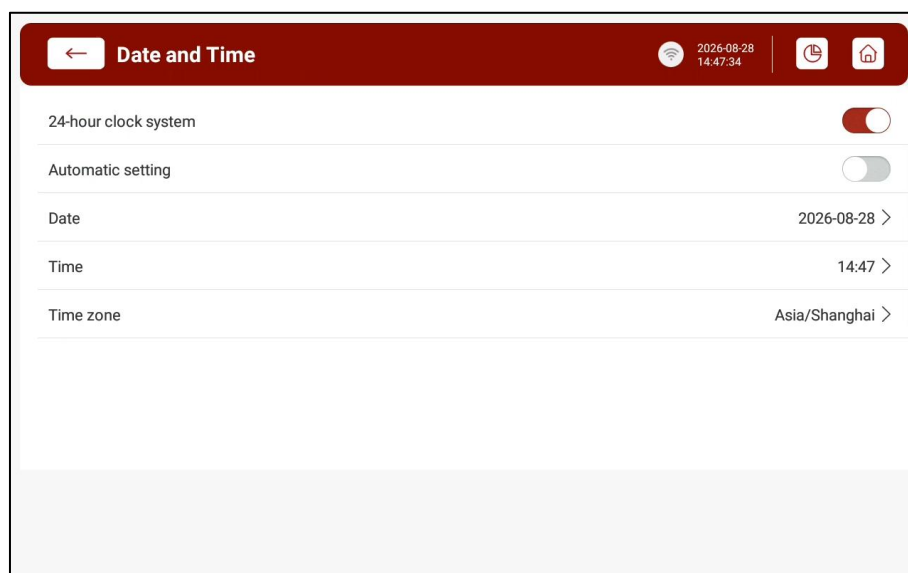
11.2.1 Language and Country

Select the required language and country.



11.2.2 Date and Time

Set the date, time and time zone.



11.3 Unit Settings

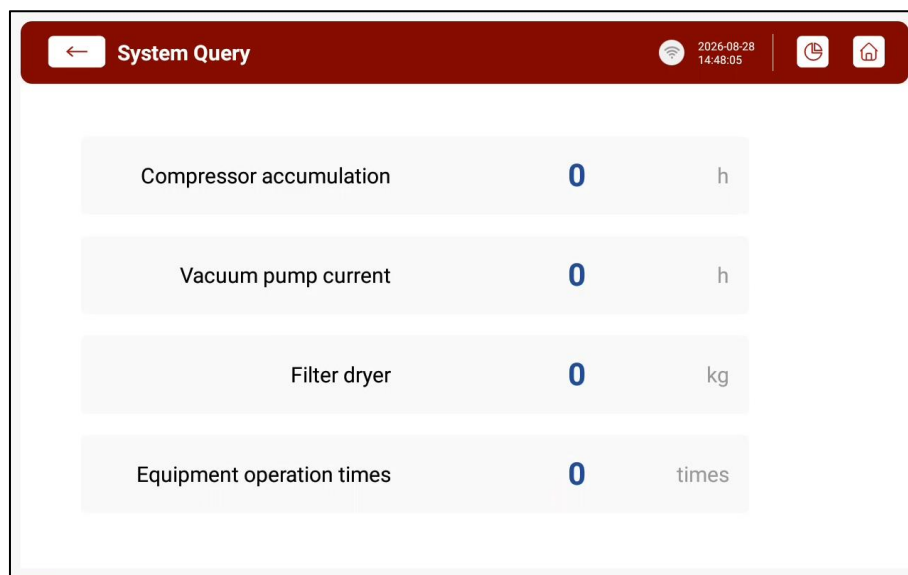
Set pressure and weight units.

11.4 Display

Adjust display brightness.

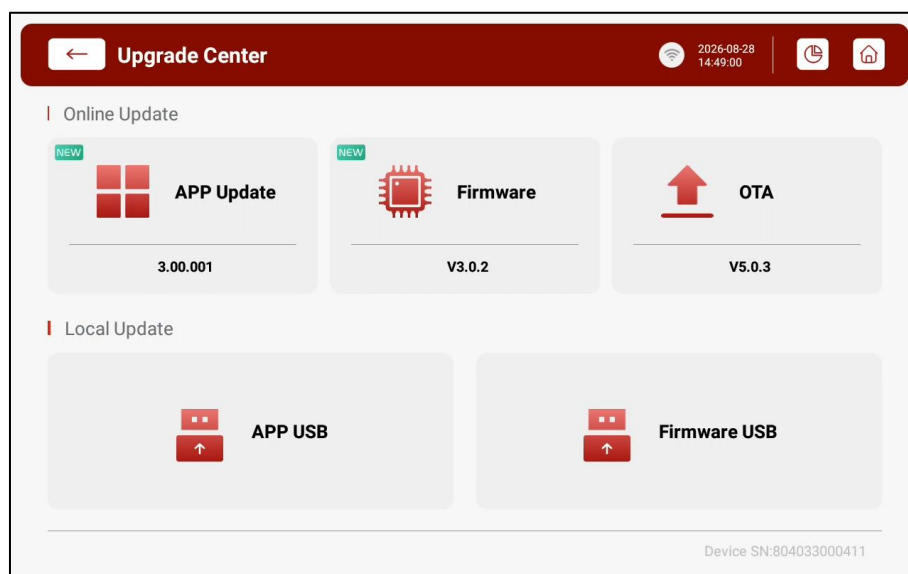
11.5 Device Information

View equipment usage information.



11.6 Upgrade Center

View the current application, firmware and system versions. Update them to the latest versions online or locally.



11.7 Developer Mode

Restore factory settings will reset the system and clear all configured parameters, saved reports, and other data. Please use this function with caution!

Warranty

This warranty applies only to users who have purchased SmartSafe's products through regular procedures.

SmartSafe shall provide a warranty against material or craftsmanship defects for 12 months from the date of purchase on its products. Damages to the device or its components caused by abuses, unauthorized modifications, uses for a purpose other than for which it is intended, or operations not following the manner specified in the manual, etc. are not covered by this warranty. Compensation for the damage to instrument of the automobile due to the defect of the device is limited to repair or replacement, SmartSafe is not responsible for any indirect or accidental loss. SmartSafe will judge the attributes of the equipment damage according to its specified test method. None of SmartSafe's dealers, employees and business representatives has the authority to make any confirmations, reminders or promises related to the company's products.

Disclaimer Statement

The above warranty can substitute warranties in any other forms.

Order Notice

Replaceable and optional parts can be ordered directly from SmartSafe authorized distributors. Your order should include the following information:

Order quantity

Part number

Part name

Customer Service Center

When the device requires maintenance, please first contact the SmartSafe after-sales department to obtain repair instructions. After confirming that the device needs to be returned to the factory, please send the equipment along with the relevant warranty documents to the designated address. If the device is still within the warranty period, SmartSafe will provide free repair service. If the device is out of warranty or damaged due to human error, SmartSafe will provide paid repair service. In such cases, the repair cost and shipping fees shall be borne by the customer.

SmartSafe address:

3310, Building 11, Tianan Cloud Park, Bantian Street, Longgang District, Shenzhen, Guangdong, P. R. China

Zip code: 518110

SmartSafe Website: <http://www.newsmartsafe.com>

Statement:

SmartSafe reserves the rights to make any change to product designs and specifications without notice. The actual object may differ a little from the descriptions in the manual in physical appearance, color and configuration. We have tried our best to make the descriptions and illustrations in the manual as accurate as possible, and defects are inevitable, if you have any question, please contact local dealer or after-sale service center of SmartSafe, SmartSafe does not bear any responsibility arising from misunderstandings.