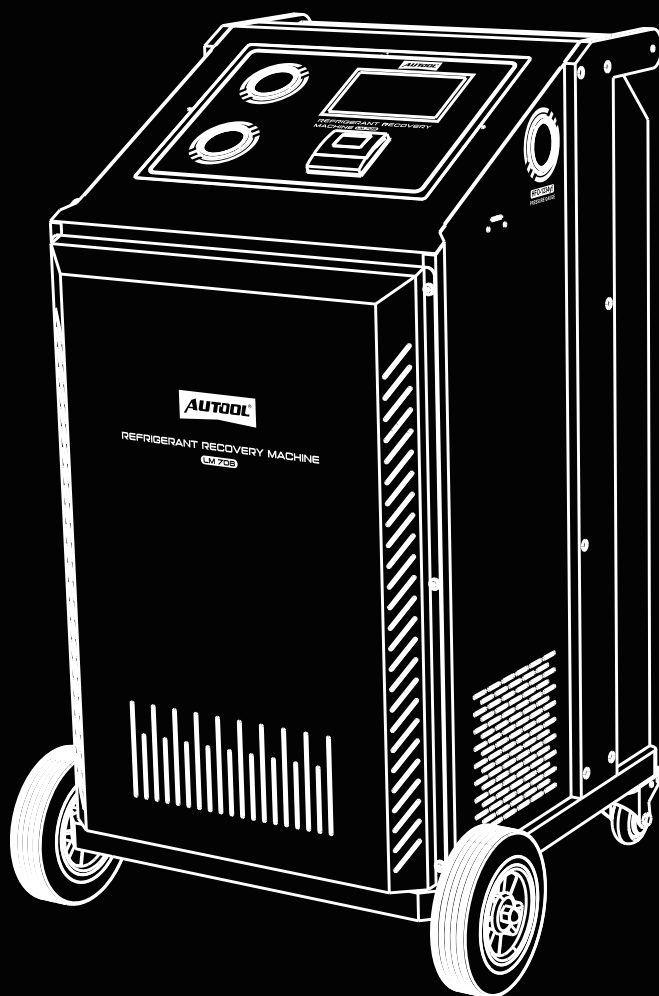


AUTOOL LM708

Refrigerant Recovery Machine

User Manual

用户手册





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PRECAUTIONS

Safety Precautions



Before operating the machine, read and follow this manual's instructions and warnings. Operators must be familiar with the hazards of air conditioning and refrigeration systems, refrigerants, and pressurized components.

- ▶ Follow this manual's instructions for proper equipment use. Failure to comply may compromise functionality and safety.
- ▶ Avoid inhaling refrigerant and lubricant vapors or mists, which can irritate eyes, nose, and throat. Use certified equipment to remove refrigerants from the air conditioning system and operate in a well-ventilated area with at least four air changes per hour. Ventilate the work area after accidental discharge before re-operating.
- ▶ To reduce fire risk, do not use this machine near open containers of gasoline, flammable materials, or leaks.
- ▶ Do not use an extension cord.
- ▶ Avoid using this machine near flames or hot surfaces. Refrigerants decompose at high temperatures, releasing harmful substances.
- ▶ Do not use this machine in environments with explosive gases or vapors.
- ▶ Avoid using this machine in ATEX classified areas. Prevent hazards that could cause electrical failures or other interactions with the environment.
- ▶ Do not use compressed air for pressure or leak testing of the machine or vehicle air conditioning systems.
- ▶ Air and 1234yf refrigerant mixtures are flammable when pressurized and may cause fire or explosion, resulting in personal injury and property damage.
- ▶ The machine's internal voltage is very high, posing an electric shock risk. Exposure to high voltage can cause personal injury. Disconnect power before maintenance.
- ▶ Do not turn on the machine if you are not going to use it immediately. Disconnect power when not using the machine for extended periods or performing maintenance.
- ▶ Do not modify the pressure reducing valve or system settings.
- ▶ The hose may contain pressurized liquid refrigerant. Contact with refrigerant can cause personal injury, including blindness and frostbite.
- ▶ Wear protective equipment, including goggles and gloves, and exercise extreme caution when disconnecting the hose.
- ▶ Ensure the program is complete before disconnecting the machine to prevent refrigerant release into the atmosphere.

- The pressure vessel contains liquid refrigerant. Do not overfill the Internal Service Vessel (ISV). Overfilling may cause explosion and lead to personal injury or death. Do not recover refrigerant into containers that are not approved for secondary recharging. Only use rechargeable containers that are certified and equipped with pressure reducing valves.

**Equipment
safety label
instructions**

	Read instructions carefully
	Do not use outdoors in rain or high humidity
	Wear gloves
	Wear goggles
	Ground protection
	Electric shock hazard

PRODUCT INTRODUCTION

Equipment functions

- Compatible with R134a and 1234yf refrigerants for vehicle air conditioner repair and maintenance.
- Automatically performs recovery, vacuuming, recharging, and leak detection for R134a and 1234yf refrigerants.
- Suitable for gasoline, diesel, hybrid, and pure electric vehicles.
- Automatically cleans internal hoses to prevent mixing of different refrigerants and compressor oils.
- Features a 7-inch touch screen with fully digital display and step-by-step prompts.
- Equipped with five high-precision electronic scales for accurately weighing the internal tank storing R134a refrigerant, the internal tank storing 1234yf refrigerant, PAG, POE, and waste oil.
- Enhanced deep recovery function increases recovery efficiency to over 95%.
- Offers three recharging methods: HP, LP, and HP+LP.
- Built-in refrigerant database with over 20,000 models, allowing for customization.
- Equipped with a printer for maintenance data printing as needed.
- Powerful query functions provide access to operation records at any time.
- Patented new oil bottle prevents oil from absorbing moisture and deteriorating when in contact with the outside air.
- High-sensitivity sensors detect leaks in air conditioning systems and equipment.
- Intelligent reminders for filter and vacuum pump oil replacement.

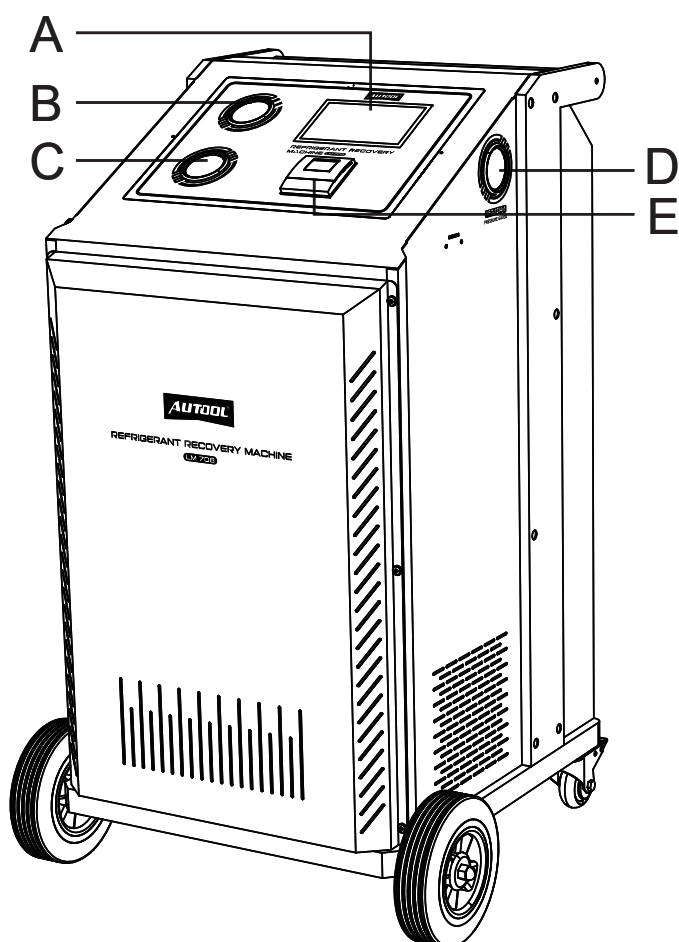
Technical parameters

Applicable refrigerant types	R134a, 1234yf
Power	1100W
Working environment temperature	-20°C~+60°C
Display screen	7-inch touch screen
Recovery efficiency	95% or more
Vacuuming capacity	180L/min (Bipolar)
Internal tank capacity	15kg (2 units)

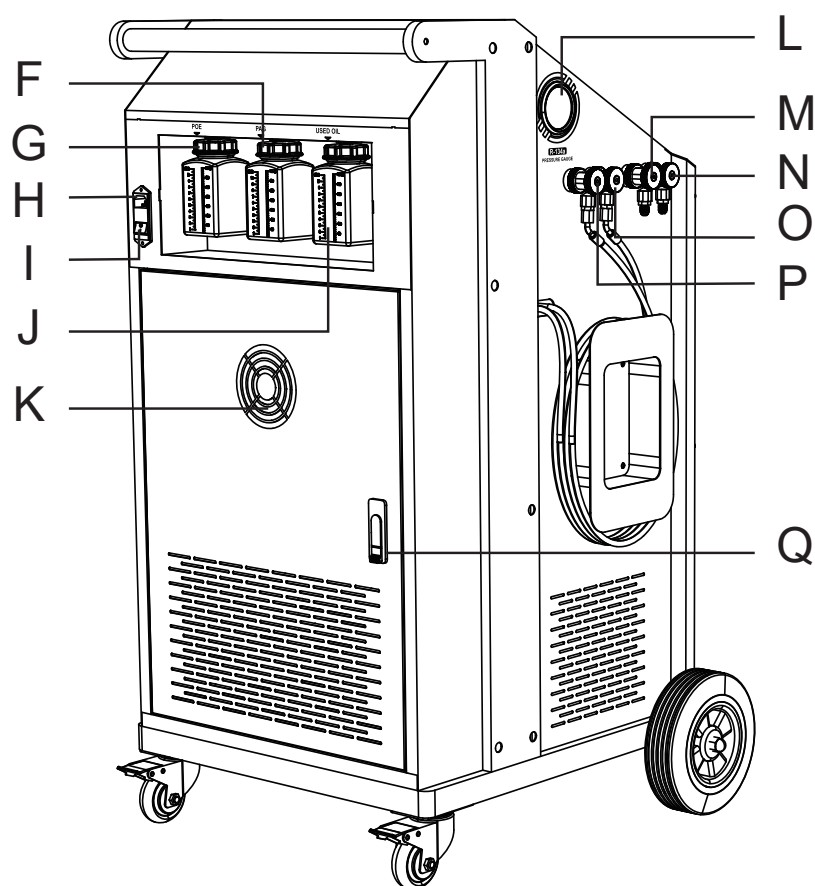
Electronic scale accuracy	10g
Recovery capacity	3/8HP
Filter processing capacity	100KG
Oil bottles	3 units of 350ml each, (PAG/POE/Waste oil)
Electronic scales	5 units (Internal tank storing R134a/Internal tank storing 1234yf/PAG/POE/waste oil)

PRODUCT STRUCTURE

Structural
diagram



A	Touch screen	B	High pressure gauge
C	Low pressure gauge	D	HFO-1234yf pressure gauge
E	Printer		



F	PAG new oil bottle	G	POE new oil bottle
H	Power socket	I	Power switch
J	Waste oil bottle	K	Cooling fan
L	R134a pressure gauge	M	1234yf high-pressure quick-connect fitting
N	1234yf low-pressure quick-connect fitting	O	R134a high-pressure quick-connect fitting
P	R134a low-pressure quick-connect fitting	Q	Door lock

PROCEDURE INSTRUCTIONS

Equipment and vehicle connection

- Connect the red and blue quick connectors to their corresponding hoses.
- Connect the red and blue hose quick connectors to the high-pressure and low-pressure ports of the vehicle air conditioner respectively.

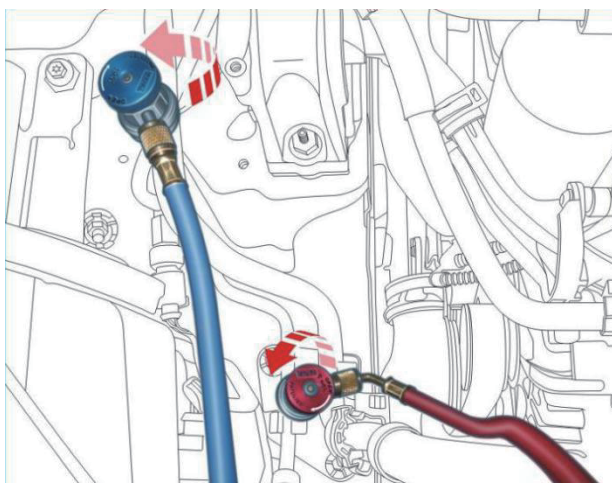
High and low pressure valve operation guide

While using the equipment, the system will prompt you to "Close" and "Open" the high and low pressure valves repeatedly. Here's what each operation entails:

Close the High and Low Pressure Valves

- As shown in the diagram below, closing the high and low-pressure valves refers to turning the valves counterclockwise(the arrow on the valves is labeled "open"), opposite to the direction indicated by the arrow on the valves.

Diagram illustrating closing the A/C quick connector

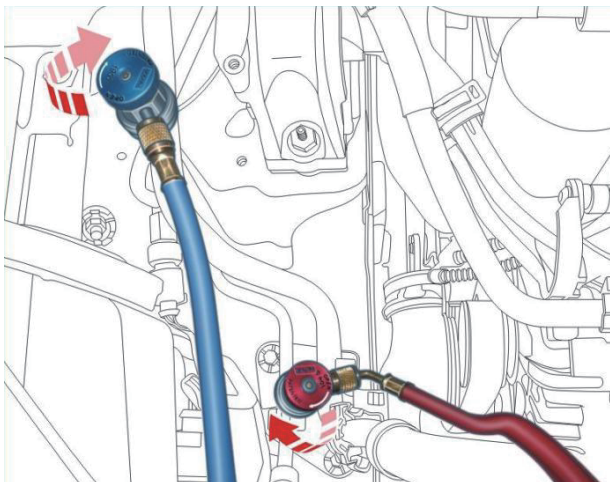


Counter-clockwise tightening of the A/C quick connector

Open the high and low pressure valves

- As shown in the diagram below, opening the high and low-pressure valves involves turning the valves clockwise(the arrow on the valves is labeled "open"), following the direction indicated by the arrow on the valves.

Diagram illustrating opening the A/C quick connector



Clockwise tightening of the A/C quick connector

Initial setup

Before first use, please follow the instructions to complete the preparatory steps.

Unlocking the electronic scale

- After opening the rear door lock of the equipment, locate the electronic scale protective device as shown in the diagram.
- Unscrew the screw to disengage the scale tray locking hole and unlock it. Otherwise, the electronic scale will be inoperable and unable to function properly.

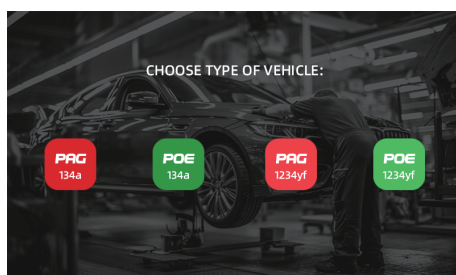


UNLOCKING SCREW

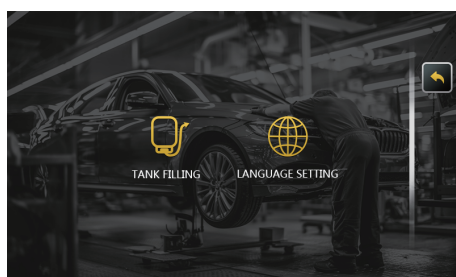
Internal tank recharging

Upon leaving the factory, the equipment's internal tank does not contain refrigerant and must be recharged before use. The recommended recharge amount is between 3-6kg. Follow these steps:

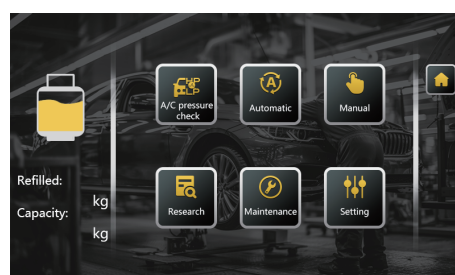
Operation Flowchart



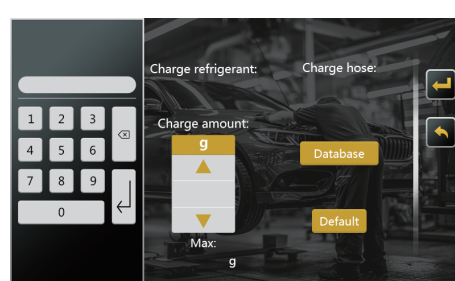
Start the machine and select the desired refrigerant type.



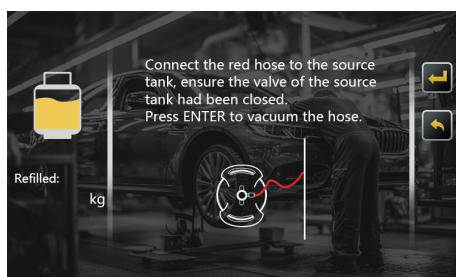
Click on "Internal Tank Recharging" to enter the program.



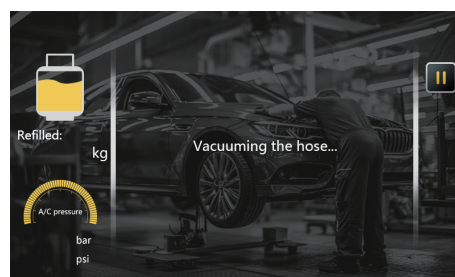
Select "Maintenance" on the main interface and click to enter.



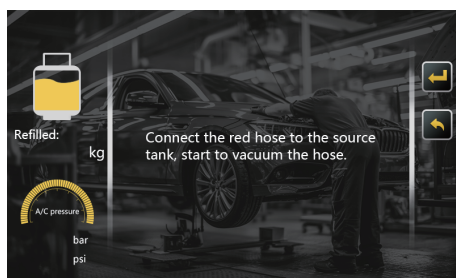
Set the refrigerant parameters as needed and click "↩" to continue.



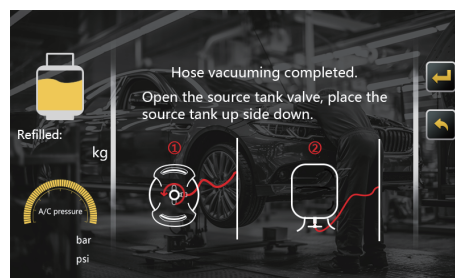
Follow system prompts and click "↩" to continue.



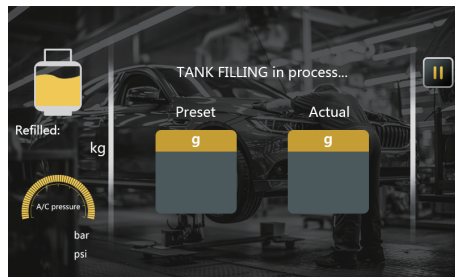
The hose is being vacuumed, please wait patiently.



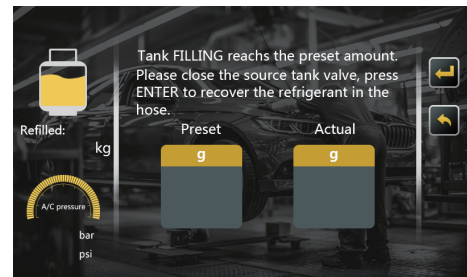
Follow system prompts and click "↩" to continue.



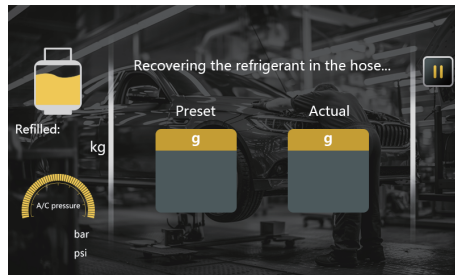
The hose vacuuming procedure is completed. Follow system prompts and click "↩" to continue.



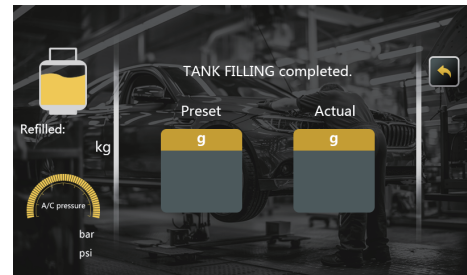
The internal tank is being recharged. Please wait patiently.



Once the internal tank reaches the preset level, click "  " to continue.



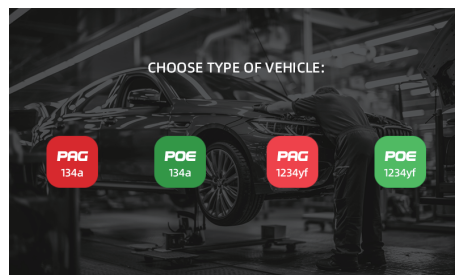
System is Recovery refrigerant from the hose. Please wait. Patiently.



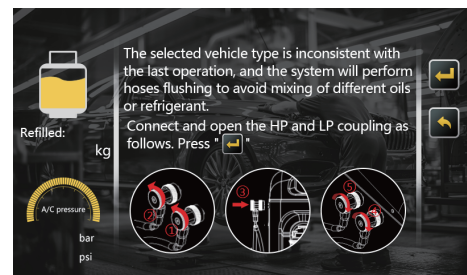
The internal tank is completely recharged. The equipment is now ready for normal operation. Click "  " to return to the main interface. continue.

Procedure introduction

Procedure Flowchart

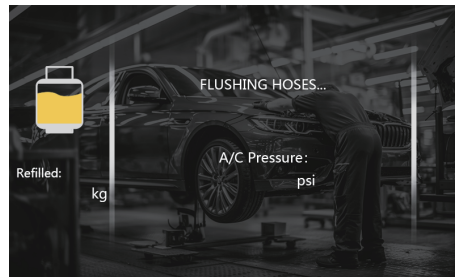


The equipment is compatible with the repair and maintenance of vehicle air conditioners storing R134a and 1234yf refrigerants. Before use, please select the refrigerant type.

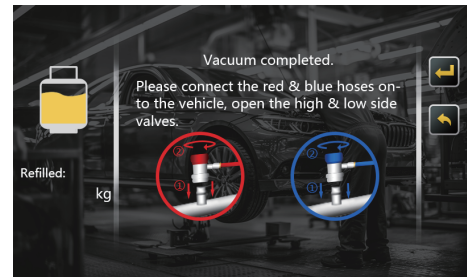


Follow on-screen instructions and click "  " to continue. (If the previously selected refrigerant type remains unchanged, it can be used directly.)





The internal hoses are being cleaned. Please wait patiently.



The system completes cleaning, and equipment operation commences.



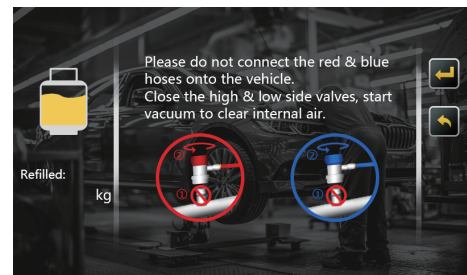
To change the refrigerant type selection, click "  " to return to the refrigerant selection interface.

Air conditioning pressure test

Procedure Flowchart



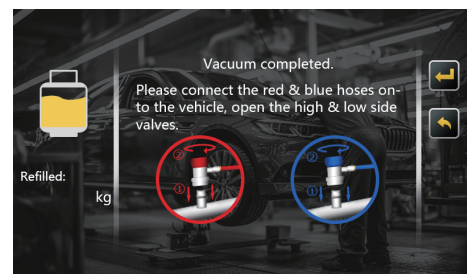
Select "A/C pressure check" on the main interface.



Enter the program, follow system prompts and click "  " to continue.

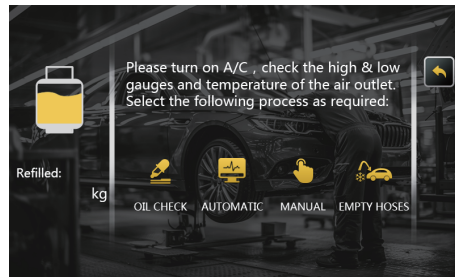


The hose is being cleaned. Please wait patiently.



The hose cleaning is complete. Please follow system prompts and click "  " to continue.

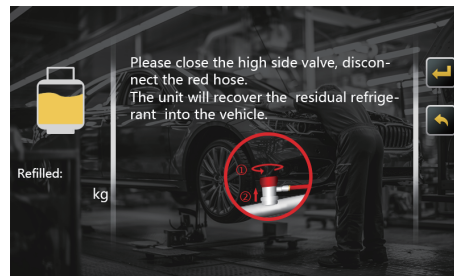




Follow system prompts to select the required program operation as needed:

For automatic operation, refer to the "Automatic Operation" Instructions.

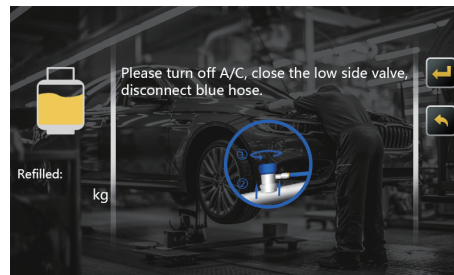
For manual operation, refer to the "Manual Operation" Instructions.



Begin refrigerant recovery from the hose. Follow system prompts and click "↩" to continue.



Refrigerant recovery is in progress. Please wait patiently.



Follow system prompts and click "↩" to continue.



Refrigerant recovery is in progress. Please wait patiently.



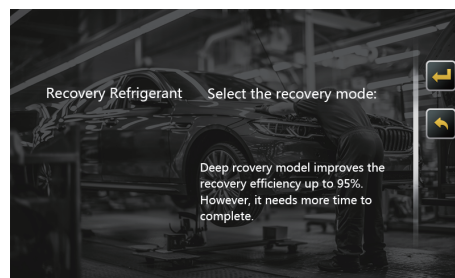
Air conditioning pressure detection is complete. Click "↩" to return to the main interface.

Automatic operation

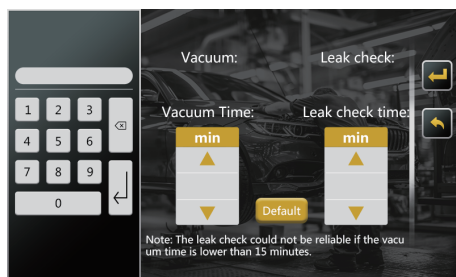
Procedure Flowchart



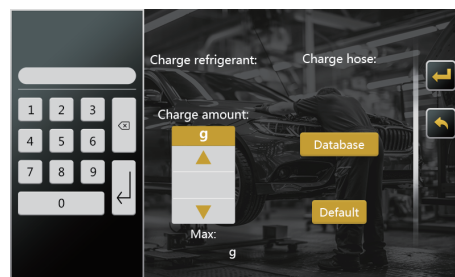
Click "Automatic" on the main interface.



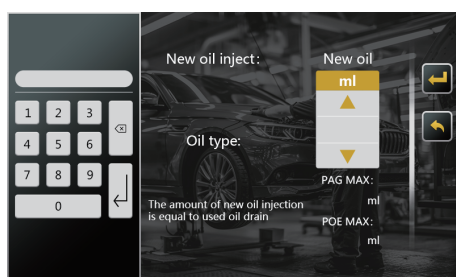
Choose whether to recover refrigerant as needed, and click "↩" to continue for selecting the recycling method.



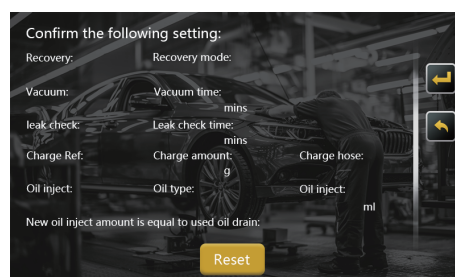
Set vacuuming and air conditioner leak detection as needed. Adjust vacuum and leak detection times, or use default settings. Click "↩" to continue.



Choose whether to recharge refrigerant. Set the amount and choose between large/small tank and the recharging port. Use database reference or default values. After setting, click "↩" to continue.

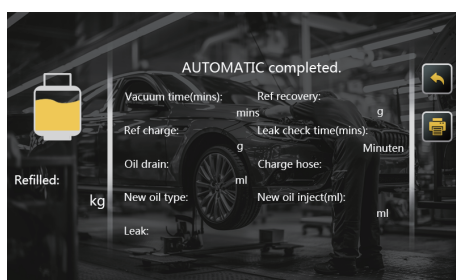


Choose whether to replenish compressor oil and select its type. Specify if the new oil amount equals the discharged oil amount or set as needed. Click "↩" to continue.



Verify the entered values are correct and click "↩" to continue. If there's an error, click "Re-enter" to reset following system prompts. Follow system prompts to select the required program operation as needed.





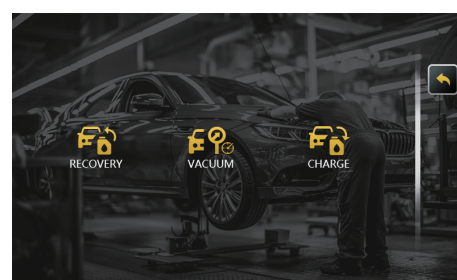
The automatic operation is complete, and various data can be reviewed. Click "🖨️" to print data or "⬅️" to return to the main interface.

Manual operation

Procedure Flowchart

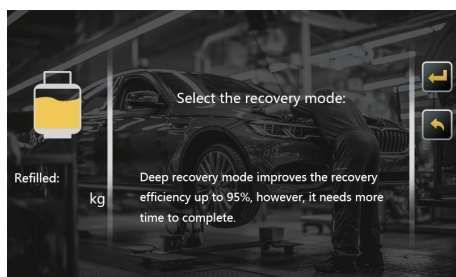


Select "A/C Pressure check" on the main interface.

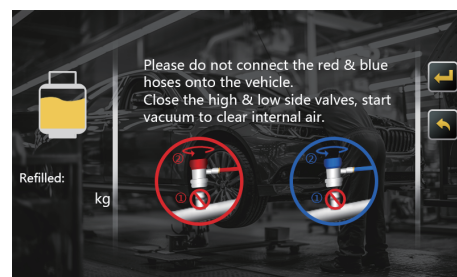


Enter the program and select as required.

Recovery



Select the recovery method as needed and click "⬅️" to continue.



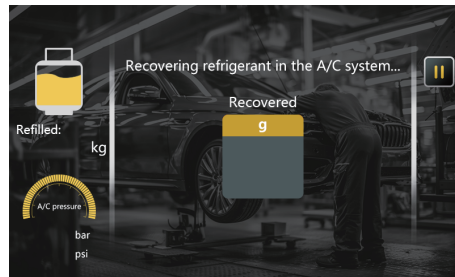
Follow system prompts and click "⬅️" to continue.



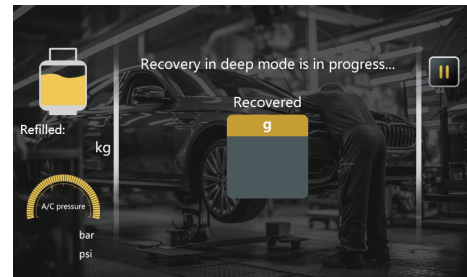
The hose is being vacuumed. Please wait patiently.



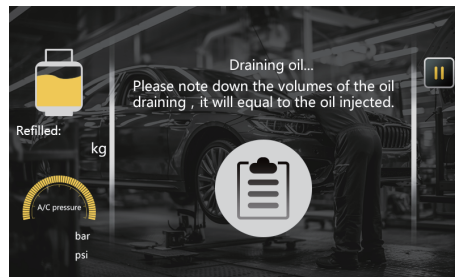
The hose vacuuming is complete. Click "⬅️" to continue.



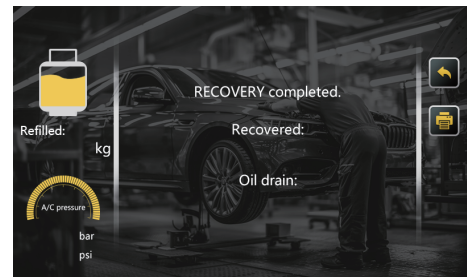
Refrigerant recovery from the air conditioner is in progress. Please wait patiently.



If deep recovery is chosen, please await completion patiently.



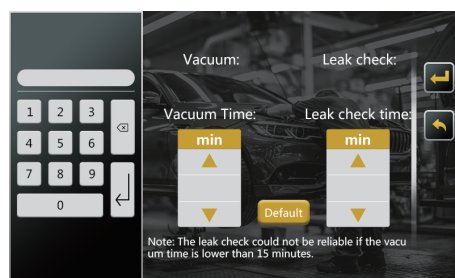
The compressed oil is being discharged. Please wait patiently.



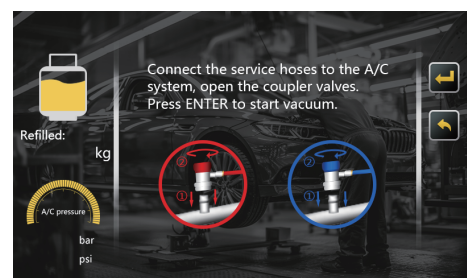
The Recovery program is complete, and the Recovery and oil discharge volume can be reviewed. Click "🖨️" to print data or "⬅️" to return to the main interface.

Vacuumping

Procedure Flowchart

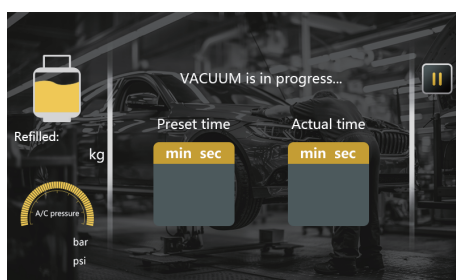


Enter vacuum mode and set vacuum time as needed, or use system prompt values. Choose whether to detect air conditioner leaks. Set leak detection time as needed or click "Default value" Click to continue.

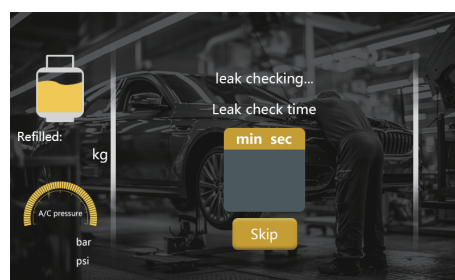


Follow system prompts and click "⬅️" to continue.

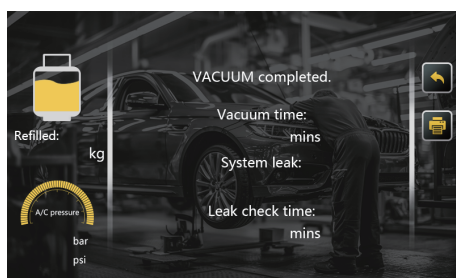




Vacuumping program is in progress. Please wait patiently.



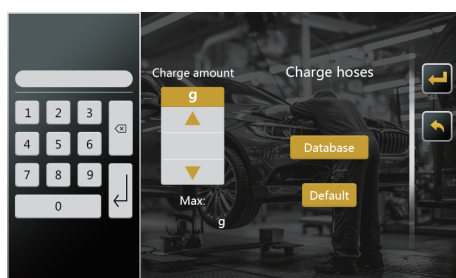
If leak detection for air conditioner is selected, system will perform it. Please wait patiently.



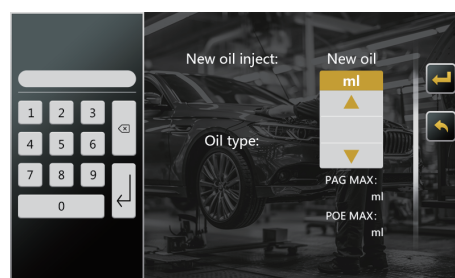
The vacuuming program is complete, and various data can be reviewed. Click "🖨️" to print data or "⬅️" to return to the main interface.

Refilling

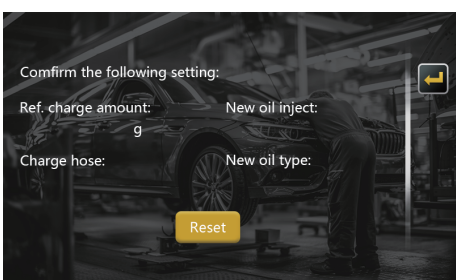
Procedure Flowchart



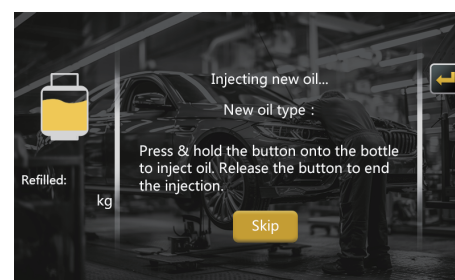
Enter the "Refilling Program" and set the refrigerant amount, port, and other parameters as needed. Use database reference or default values. After setting, click "⬅️" to continue.



Choose whether to replenish compressor oil, select its type, and set its amount. Click "⬅️" to continue after setting.

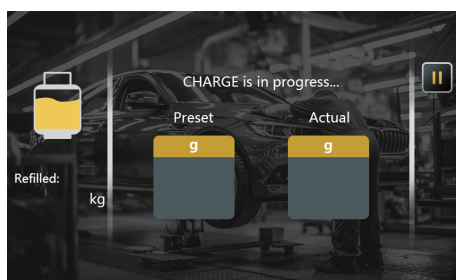


Confirm input values are correct and click "⬅️" to continue. If there's an error, click "Re-enter" to reset.

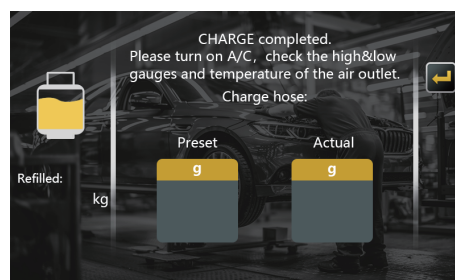


Refilling program in progress and the compressor oil is being replenished. Please wait patiently.





Refilling program in progress and the refrigerant is being recharged. Please wait patiently.



Follow system prompts and click "↩" to continue.



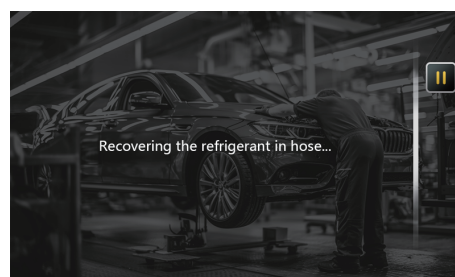
Follow system prompts and click "↩" to continue.



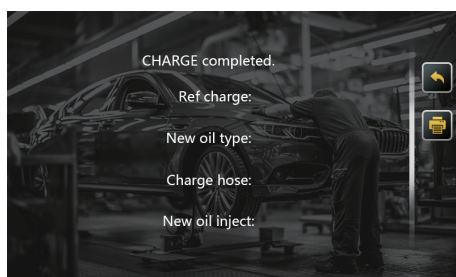
Pressure balancing in progress. Please wait patiently.



Follow system prompts and click "↩" to continue.



The refrigerant in the hose is being recovered. Please wait patiently.



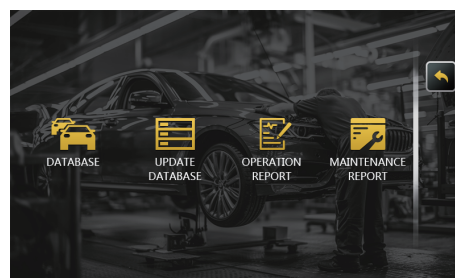
Refilling program is complete and various data can be reviewed. Click "🖨" to print data or "↶" to return to main interface.

Data query

Procedure Flowchart



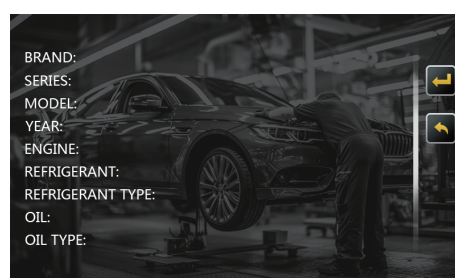
Select "Research" on the main interface.



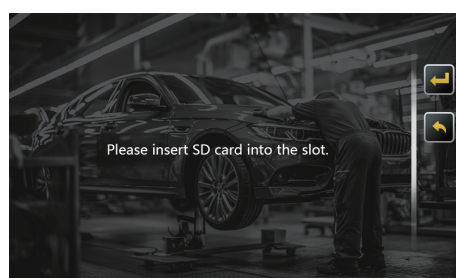
Choose the required function upon entering the program.



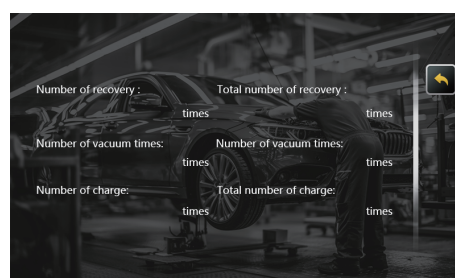
Query data based on country or car series.



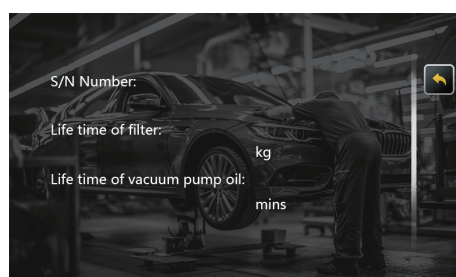
View various data.



Automatically update the data-base for manufacturer updates without user intervention.



The equipment operation report enables querying the usage frequency of various equipment operational data.



Access equipment maintenance records to monitor remaining filter and vacuum pump oil usage time.

Equipment maintenance

Procedure Flowchart



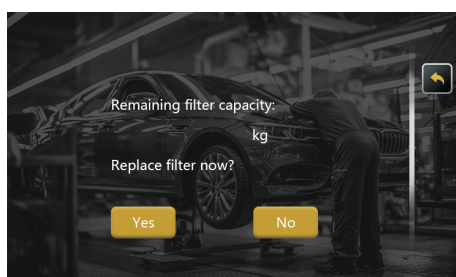
Select "Maintenance" on the main interface.



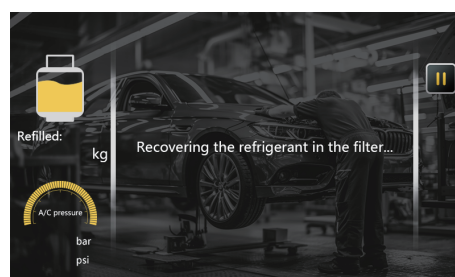
Enter the program and select the required function.

Filter replacement

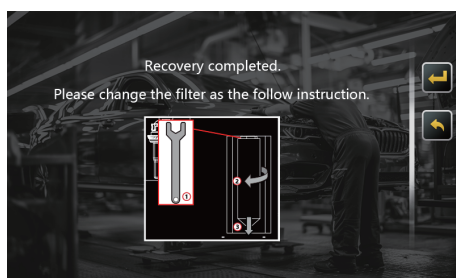
Procedure Flowchart



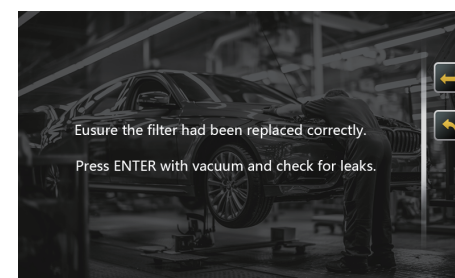
Check remaining filter usage time. If replacement is needed, select "Yes."



The refrigerant from the filter is being recovered. Please wait patiently.

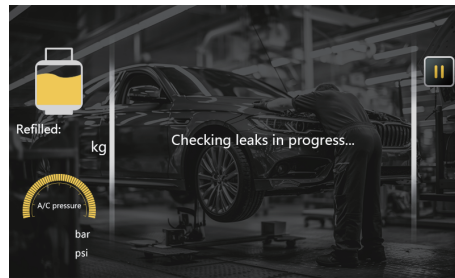


The refrigerant recovery from the filter is complete. Follow system prompts and click " " to continue.

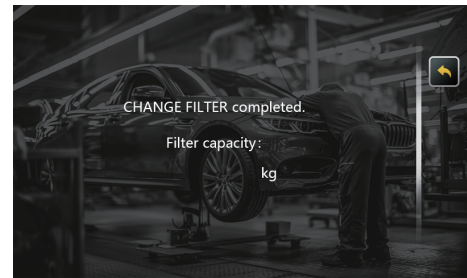


Ensure the filter is replaced and securely tightened. Click " " to initiate the leak detection program.





The leak detection program is in progress. Please wait patiently.



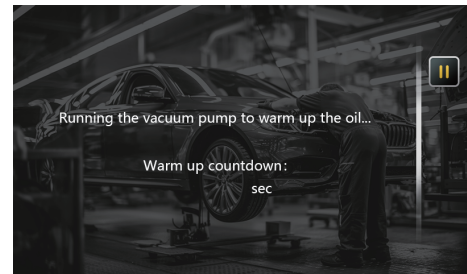
The filter replacement program is complete. Exit the program.

Vacuum pump oil replacement

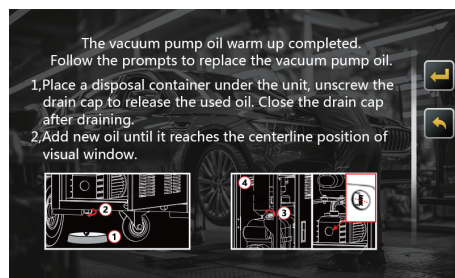
Procedure Flowchart



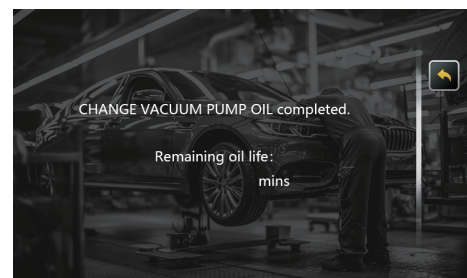
Check remaining vacuum pump oil usage time. If replacement is necessary, click "↶" to continue.



The vacuum pump is heating the used-oil. Please wait patiently.



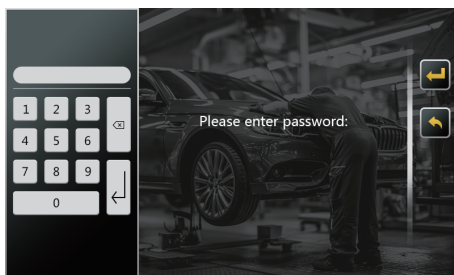
After heating, follow the system prompts and click "↶" to continue.



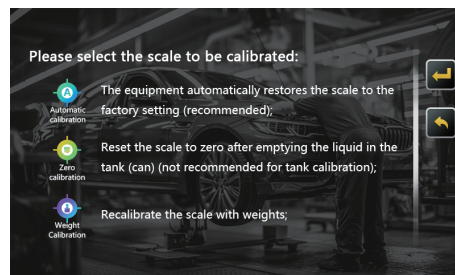
Vacuum pump oil replacement is complete, and the new oil running time can be viewed.

Electronic scale calibration

Procedure Flowchart



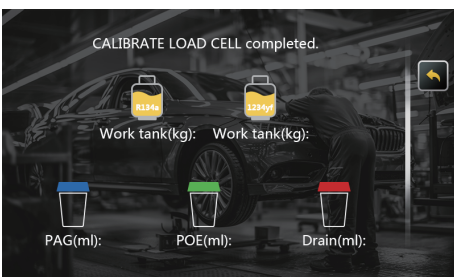
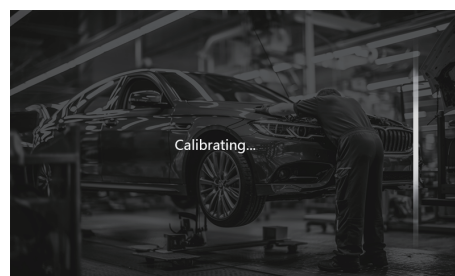
Obtain the password from the manufacturer to access the program.



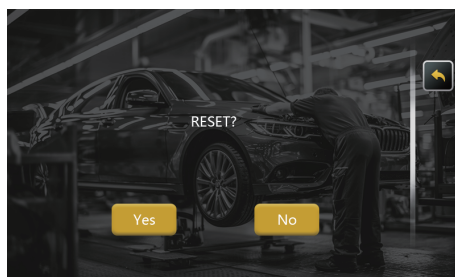
Select the calibration method and container as required.



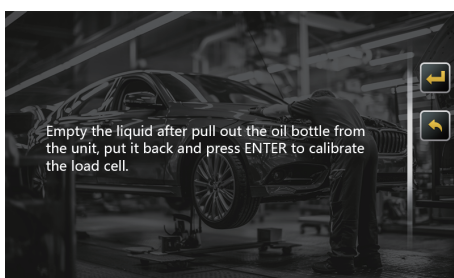
After selecting the electronic scale for calibration, it will proceed with automatic calibration (recommended).



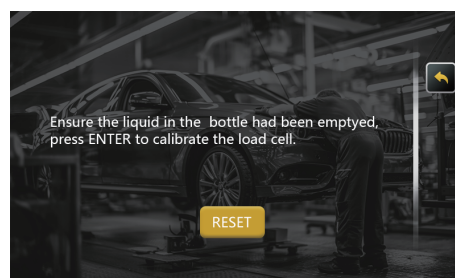
Calibration is complete and various data can be reviewed to verify successful calibration.



Zero calibration: Please choose whether to reset. If necessary, click "Yes."

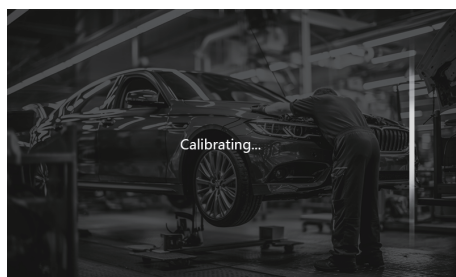


Follow the system prompts and click " " to continue.

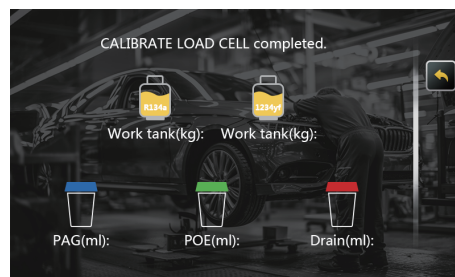


Verify that the container is empty. Click "Reset."

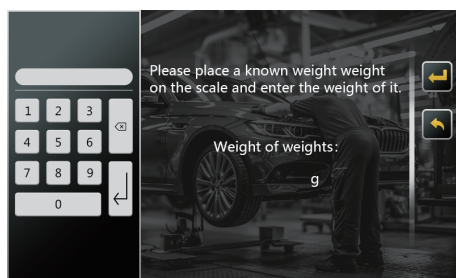




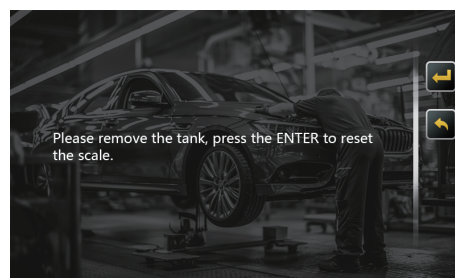
The scale is resetting. Please wait patiently.



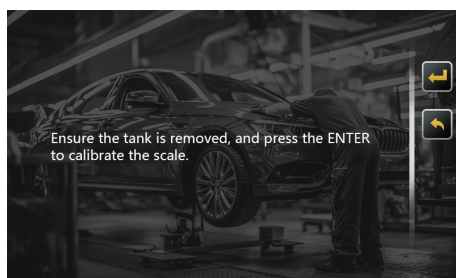
Calibration is complete and various data can be reviewed to verify successful calibration.



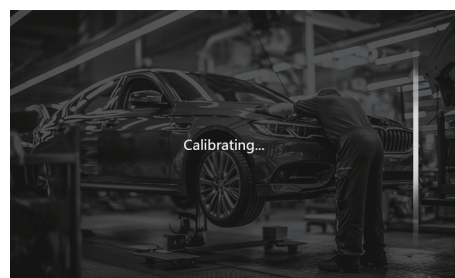
For weight calibration, prepare a known weight and input its value. Click "↩" to continue.



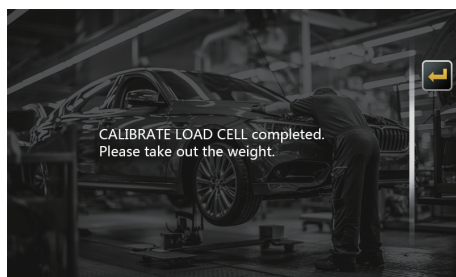
Follow the system prompts and click "↩" to continue.



Follow the system prompts and click "↩" to continue.



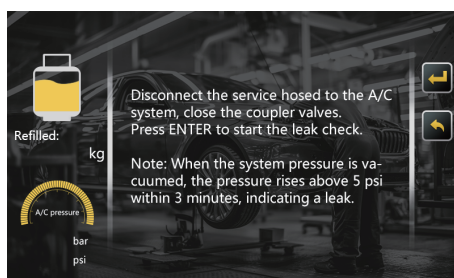
Calibration is in progress. Please wait patiently.



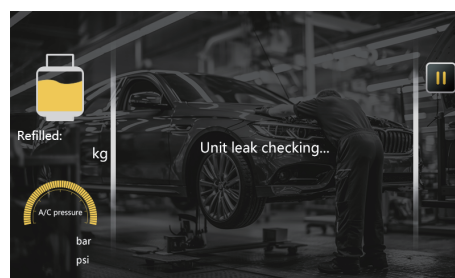
Calibration is complete. Please remove the weight.

System leak detection

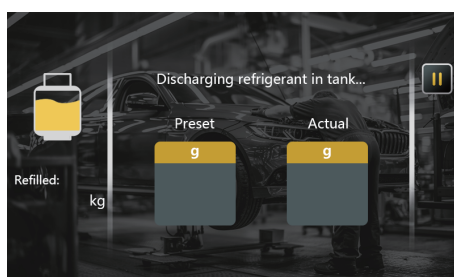
Procedure Flowchart



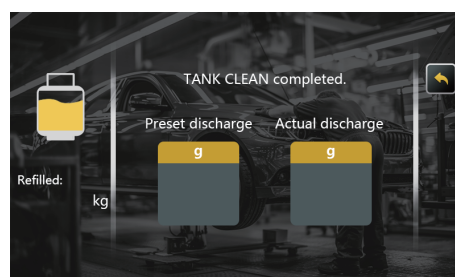
Follow the system prompts and click " ← " to continue.



System leak detection is in progress. Please wait patiently.



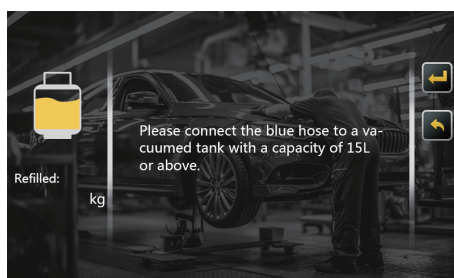
If a leak is detected, check the equipment and troubleshoot.



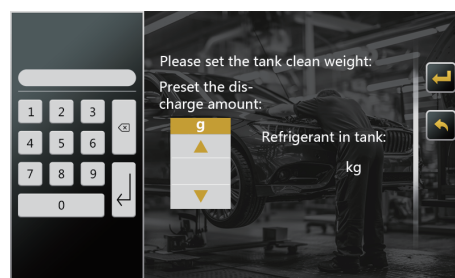
If no leaks are found, system leak detection is complete.

Internal tank cleaning

Procedure Flowchart



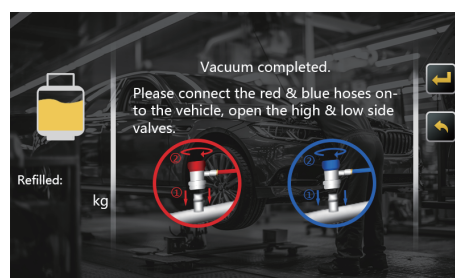
Follow the system prompts and click " → " to continue.



Enter the weight data for internal tank cleaning as needed and click " ← " to continue.



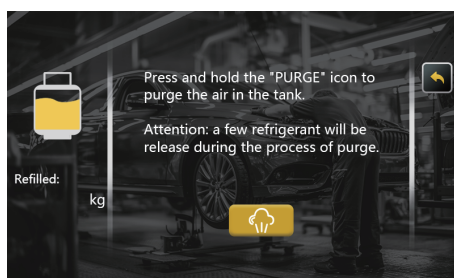
Cleaning refrigerant from the internal tank. Please wait patiently.



Internal tank cleaning is complete.

Manual exhaust

Procedure Flowchart



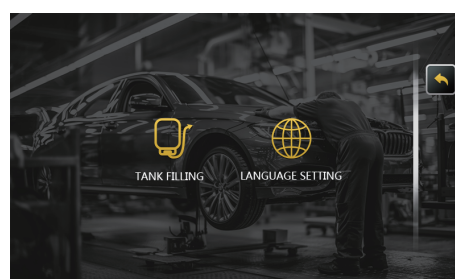
➔ Please click "  " to initiate exhaust.

Maintenance settings

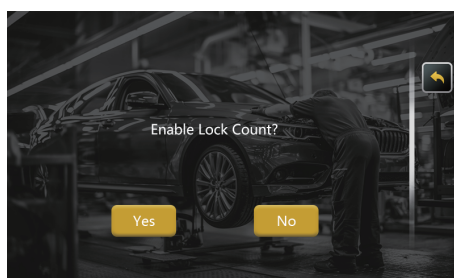
Procedure Flowchart



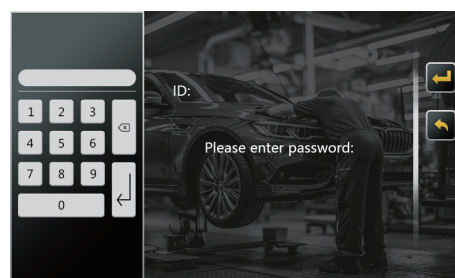
Access "Maintenance" on the main interface.



Enter the program and select internal tank recharging. Follow initial settings for recharging the internal tank.

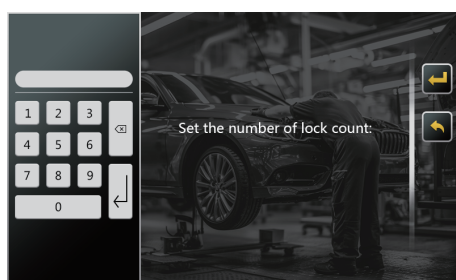


Locking the machine requires entering a password to unlock it for continued use after activation. It's not recommended for regular users to enable this feature.

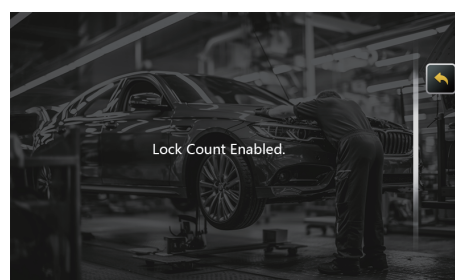


After the equipment manager sets the password, click "  " to continue.





Set the number of uses before locking the equipment. Click "  " to continue.



Calibration is complete and various data can be reviewed to verify successful calibration.

TROUBLESHOOTING

Common Faults	Causes	Solutions
Cannot Recover Refrigerant	High internal tank pressure: Tank is full or poor refrigerant quality	Enter Equipment Maintenance -> Manual Exhaust
	Compressor aging or damage	Replace
	Relay failure	Replace
	Oil return valve leak	Clean the debris from the oil return valve or replace with a new one
	Main board failure: The main board is malfunctioning, causing the device to fail to execute the recovery command, although it can still perform vacuuming and recharging operations	Replace
	Poor line contact	Check the wiring
Screen Touch Failure	One-way valve or recovery solenoid valve blockage.	Clean the debris from the oil return valve or replace with a new one
	Clicking the touch screen produces no sound	Replace the touch screen
	Screen cracked due to heavy impact	Replace the touch screen
	Screen does not display and is black, possibly a main board power issue	Repair the main board and check the screen
Inaccurate Electronic Scale	Button sound is present, and the interface changes, but the equipment does not act	Repair the main board
	Incorrect operation, zeroing out recovered refrigerant	Enter Equipment Maintenance -> Electronic Scale Calibration -> bration
	Chassis screws, weighing sensor screws, and internal tank fixing screws are loose	Re-tighten the screws

Common Faults	Causes	Solutions
Inaccurate Electronic Scale	Transportation or loose fixing screws cause the internal tank to contact other parts	Adjust and tighten the fixing screws on the scale tray
	If disassembled for maintenance, ensure the electronic scale arrow is facing down	Adjust and correct if installed upside down
	Weighing sensor damage	Replace
	Main board damage	Replace
Cannot Recharge Refrigerant	Less than 1kg of refrigerant in the internal tank	Recover more than 1kg refrigerant into the internal tank
	Recharging valve blockage or valve core damage	Clean the debris from the oil return valve or replace with a new one
	Main board damage	Replace
	Manually closed internal tank valve	Replace
	Recharging refrigerant in the small bottle into the machine's internal tank	Some auto repair technicians, for convenience, use small refrigerant bottles (less than 1KG) to refill the recovery machine's tank for recharging. This practice is incorrect and not cost-effective. Standard large refrigerant tanks (commonly 13.6KG) should be used instead
	Incorrectly set recharging amount to "zero"	Replace
Cannot Vacuum	Vacuum pump failure	Replace
	Relay failure	Replace
	Main board damage	Repair
	High hose pressure prevents vacuuming	Recover or manually deflate the external hose to below 0.5KG/CM2

Common Faults	Causes	Solutions
Cannot Vacuum	Cannot perform pressure leak test	Check for air conditioning system leaks, refrigerant machine quick connector and hose leaks, or vacuuming hose leaks. Check for leaks in solenoid valves used for adding new oil like PAG oil, POE oil, and UV dye
	Recharging valve leak	Replace
Vacuum Pump Smoking	Degraded vacuum pump oil	Replace
	Excessive vacuum pump oil. Long vacuuming times for vehicle air conditioning systems can accumulate oil in the vacuum pump	Drain oil using the vacuum pump oil drain screw until the oil level reaches the middle mark.
	Loose hose connections causing leaks	Check the related connections for looseness and tighten them to resolve the issue
	Prolonged vacuuming has caused the oil inside the vacuum pump to evaporate excessively due to overheating	No action needed
	Vehicle air conditioning system retaining excess gas for long periods	No action needed
High Noise from Vacuum Pump	Loose vacuum pump fixing screws	Re-tighten the screws

MAINTENANCE SERVICE

Our products are made of long-lasting and durable materials, and we insist on perfect production process. Each product leaves the factory after 35 procedures and 12 times of testing and inspection work, which ensures that each product has excellent quality and performance.

- Maintenance** To maintain the performance and appearance of the product, it is recommended that the following product care guidelines be read carefully:
- Be careful not to rub the product against rough surfaces or wear the product, especially the sheet metal housing.
 - Please regularly check the product parts that need to be tightened and connected. If found loose, please tighten it in time to ensure the safe operation of the equipment. The external and internal parts of the equipment in contact with various chemical media should be frequently treated with anti-corrosion treatment such as rust removal and painting to improve the corrosion resistance of the equipment and extend its service life.
 - Comply with the safe operating procedures and do not overload the equipment. The safety guards of the products are complete and reliable. Unsafe factors are to be eliminated in time. The circuit part should be checked thoroughly and the aging wires should be replaced in time.
 - Adjust the clearance of various parts and replace worn (broken) parts. Avoid contact with corrosive liquids.
 - When not in use, please store the product in a dry place. Do not store the product in hot, humid, or non-ventilated places.

WARRANTY

From the date of receipt, we provide a three-year warranty for the main unit and all the accessories included are covered by a one-year warranty.

Warranty access

- The repair or replacement of products is determined by the actual breakdown situation of product.
- It is guaranteed that AUTOOL will use brand new component, accessory or device in terms of repair or replacement.
- If the product fails within 90 days after the customer receives it, the buyer should provide both video and picture, and we will bear the shipping cost and provide the accessories for the customer to replace it free of charge. While the product is received for more than 90 days, the customer will bear the appropriate cost and we will provide the parts to the customer for replacement free of charge.

These conditions below shall not be in warranty range

- The product is not purchased through official or authorized channels.
- The product breakdown because the user does not follow product instructions to use or maintain the product.

We AUTOOL pride ourselves on superb design and excellent service. It would be our pleasure to provide you with any further support or services.

Disclaimer

- All information, illustrations, and specifications contained in this manual, AUTOOL reserves the right of modify this manual and the machine itself with no prior notice. The physical appearance and color may differ from what is shown in the manual, please refer to the actual product. Every effort has been made to make all descriptions in the book accurate, but inevitably there are still inaccuracies, if in doubt, please contact your dealer or AUTOOL after-service centre, we are not responsible for any consequences arising from misunderstandings.

RETURN & EXCHANGE SERVICE

Return & Exchange

- If you are an AUTOOL user and are not satisfied with the AUTOOL products purchased from the online authorized shopping platform and offline authorized dealers, you can return the products within seven days from the date of receipt; or you may exchange it for another product of the same value within 30 days from the date of delivery.
- Returned and exchanged products must be in fully saleable condition with documentation of the relevant bill of sale, all relevant accessories and original packaging.
- AUTOOL will inspect the returned items to ensure that they are in good condition and eligible. Any item that does not pass inspection will be returned to you and you will not receive a refund for the item.
- You can exchange the product through the customer service center or AUTOOL authorized distributors; the policy of return and exchange is to return the product from where it was purchased. If there are difficulties or problems with your return or exchange, please contact AUTOOL Customer Service.

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Facebook	https://www.facebook.com/autool.vip
YouTube	https://www.youtube.com/c/autooltech

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-

注册商标

偶然公司已在中国及海外若干国家进行了商标注册, 其标志为 **AUTOTOL®**。本手册所提及之偶然公司其它商标、服务标志、域名、图标、公司名称均属偶然及其下属公司之产权。在偶然公司之商标、服务标志、域名、图标、公司名称还未注册之国家, 偶然公司声明其对未注册商标、服务标志、域名、图标、公司名称之所有权。本手册所提及之其它产品及公司名称的商标仍属于原注册公司所有。在未得到拥有人的书面同意之前, 任何人不得使用偶然公司或所提及的其它公司之商标、服务标志、域名、图标、公司名称。

您可以访问偶然网址: www.autooltech.com, 或发送邮件至: aftersale@autooltech.com, 与偶然公司进行联系, 征得其手册使用权之书面同意。

注意事项

安全预防措施



操作机器前，请仔细阅读并遵循本手册中的指南和警告。操作人员必须熟悉空调和制冷系统、制冷剂 and 受压元件的危险性。

- ▶ 按照本手册所述使用本机。不按照要求使用本机会损害其功能并使其配备的保护措施失效。
- ▶ 请勿呼吸制冷剂和润滑剂产生的蒸汽或迷雾。否则会刺激眼睛、鼻子和喉咙。若要从空调系统中清除制冷剂，仅可使用经认证的设备。在有机械通风的地方使用本机器，至少一个小时换四次气。如果发生意外系统排放，在重新操作前须给工作场所通风。
- ▶ 为减少火灾风险，请勿在含有汽油或其他易燃物的开放式容器或有泄漏位置的附近使用本机器。
- ▶ 请勿使用延长线。
- ▶ 请勿在火焰附近或热表面使用本机器。制冷剂在高温下会分解，并向大气释放对使用者有害的有毒物质。
- ▶ 请勿在含有爆炸性气体或蒸汽的环境中使用本机器。
- ▶ 请勿在ATEX分类的区域内使用本机器。避免本机器发生可能导致电气故障或其他与周围环境交互产生的危险。
- ▶ 请勿使用压缩空气对机器或车辆空调系统进行气压测试或密封性测试。
- ▶ 空气和1234yf制冷剂的混合物在加压的情况下容易燃烧。这些混合物存在潜在危险，可能引发火灾或爆炸，造成人身伤害和财产损失。
- ▶ 机器内电压很高，有触电危险。暴露在高压下会造成人身伤害。维护机器前请先断开电源。
- ▶ 如果不准备马上使用，请勿开启机器。长时间不使用机器或进行内部维护前请先断开机器的电源。
- ▶ 请勿修改减压阀或系统的主要设置。
- ▶ 软管内可能包含受压的液态制冷剂。接触制冷剂可能导致人身伤害，包括眼睛失明和皮肤冻伤。
- ▶ 请穿上防护设备，包括护目镜和手套，断开软管时请十分小心。
- ▶ 在断开机器连接前请确保程序运行完毕，以防止制冷剂释放到大气中。
- ▶ 压力容器内装有液态制冷剂。切勿过量充注内部充注罐(ISV)。过量充注会引起爆炸，导致人身伤亡。请勿将制冷剂回收至不可二次充注的容器内。只能使用经式认证且配备减压阀的再充注式容器。

设备安全
贴标说明

	仔细阅读说明
	在下雨或高湿度环境下, 请勿在室外使用
	佩戴手套
	佩戴护目镜
	接地保护
	电击危险

产品简介

设备功能

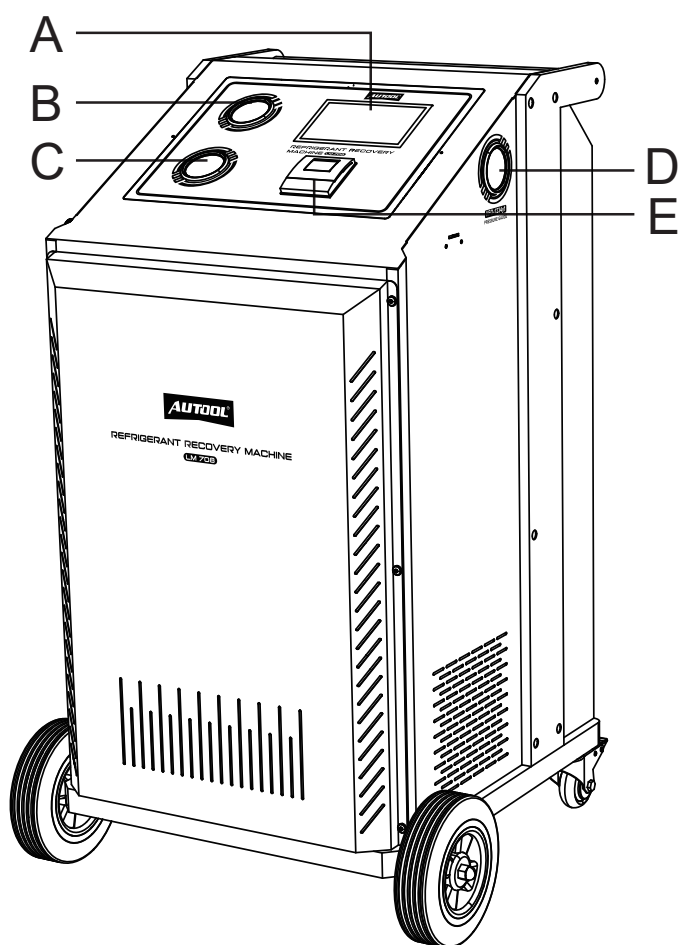
- 同时兼容R134a和1234yf汽车空调的维修及保养；
- 全自动实现R134a和1234yf制冷剂的回收、抽真空、加注、检漏；
- 适用于汽柴油车/混合动力/纯电动车；
- 设备内管路自动清理操作，避免不同制冷剂及压缩机油的混合；
- 7寸触摸屏配置，全数字化显示及控制，操作步骤逐一提示；
- 配置5个高精度电子秤，精准称量R134a工作罐、1234yf工作罐、PAG、POE、废油；
- 升级深度回收功能，将回收效率提高至95%以上；
- 可选择从HP/LP/HP+LP三种加注方式；
- 内置2万+车型制冷剂数据库，并可根据需要自行添加及编辑；
- 配置打印机，可根据需要将维修数据打印出来；
- 强大的查询功能，随时掌握设备的操作记录；
- 专利设计的新油瓶，避免新油与外部空气接触吸收水分而变质；
- 采用高灵敏度传感器实现空调系统及设备的检漏功能；
- 更换过滤器及真空泵油智能化提示；

技术参数

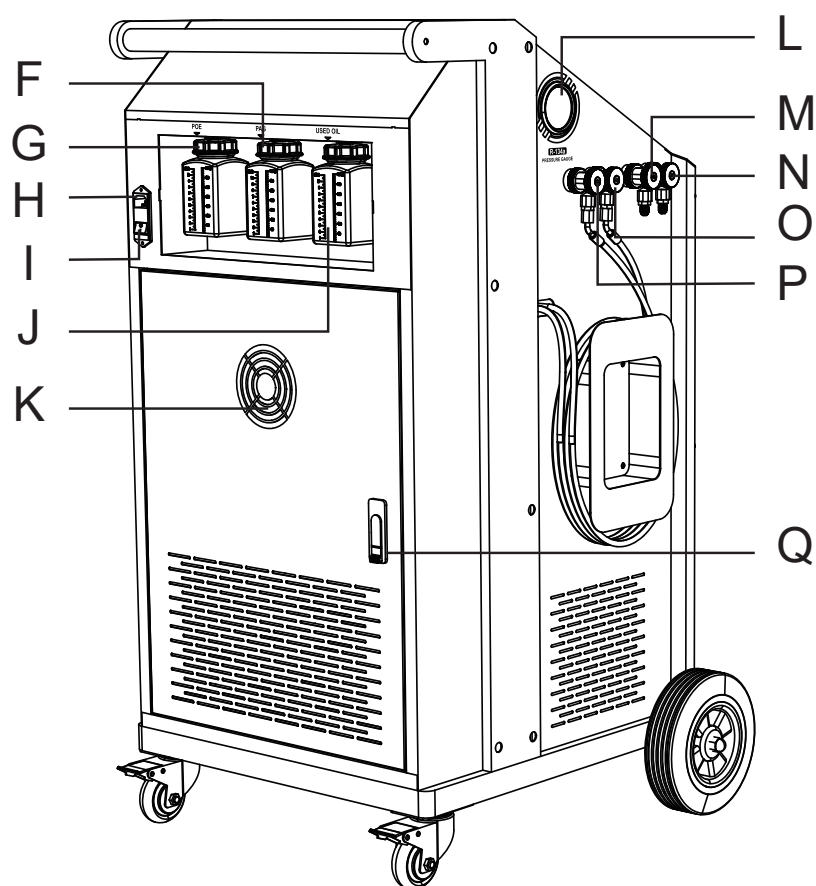
适用制冷剂类型	R134a、1234yf
功率	1100W
工作环境温度	-20°C~+60°C
显示屏	7寸触摸屏
回收效率	95%以上
抽真空能力	180L/min(双极)
工作罐容量	15kg(2个)
电子称精度	10g
回收能力	3/8HP
过滤器处理能力	100KG
油瓶	3个350ml, (PAG/POE/废油)
电子称	5个(R134a工作罐/1234yf工作罐/PAG/POE/废油)

产品结构

结构图



A	触控屏	B	高压表
C	低压表	D	HFO-1234yf压力表
E	打印机		



F	PAG新油瓶	G	POE新油瓶
H	电源插口	I	电源开关
J	废油瓶	K	散热风扇
L	R134a压力表	M	1234yf高压快速接头
N	1234yf低压快速接头	O	R134a高压快速接头
P	R134a低压快速接头	Q	门锁

操作说明

设备与汽车 连接

- 把红蓝色快速接头分别连接到红蓝色软管上。
- 把红色、蓝色软管的快速接头分别连接到汽车空调相对应的高压及低压接口。

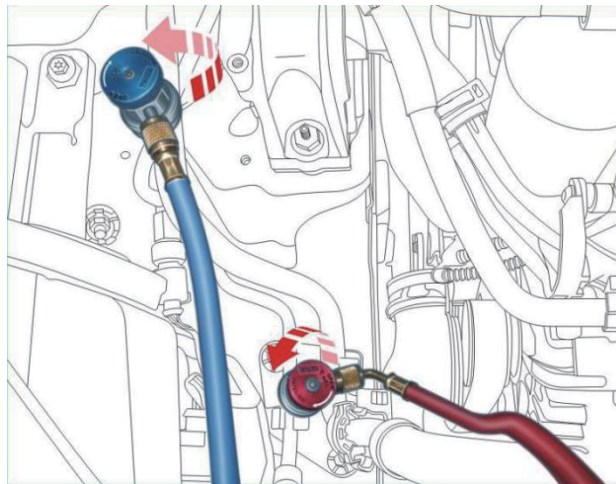
高低压阀门 操作指引

设备在操作过程，系统会多次提示“关闭高低压阀门”和“打开高低压阀门”，其操作定义以下：

关闭高低压阀门

- 以下图所示，关闭高低压阀门是指按高低压阀门上箭头的反方向（高低压阀门上有标注“open”的箭头），逆时针拧紧高低压阀门的操作。

关闭空调快接示意图

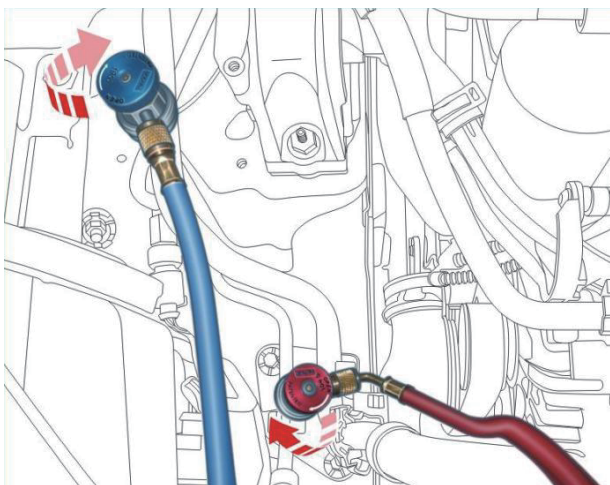


逆时针拧紧空调快接

打开高低压阀门

- 以下图所示，打开高低压阀门是指按高低压阀门上箭头方向（高低压阀门上有标注“open”的箭头），顺时针拧紧高低压阀门的操作。

打开空调快接示意图



顺时针拧紧空调快接

初始设置

首次使用前，请按照提示，完成使用前的准备。

电子秤解锁

- 打开设备后方门锁找到如图的电子秤保护装置。
- 需拧开螺丝，脱离秤盘锁止孔解锁。否则电子称会处于失灵状态，无法正常使用。



解锁螺丝

源罐加注

设备在出厂时，储液罐是没有制冷剂的，必须在使用前向设备内储液罐充注制冷剂。建议的充注重量3-6kg之间，操作如下：

操作流程



启动机器选择所需使用的制冷剂类型。



主界面上选择“设备维护”，点击进入下一步。



点击“工作罐加注”进入程序。



用户根据需求设置制冷剂参数，点击 进入下一步。



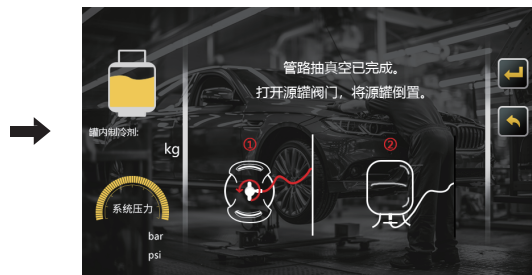
根据系统提示操作后，点击 进入下一步。



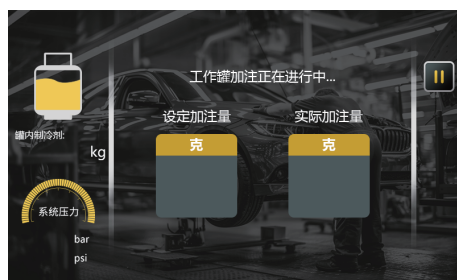
正在对管路抽真空，请耐心等待。



根据系统提示操作后，点击 进入下一步。



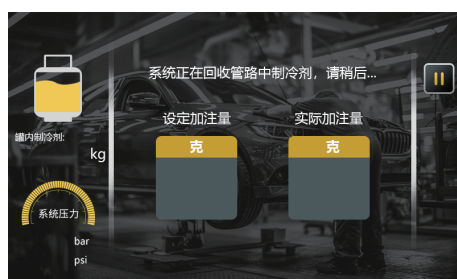
管路抽真空程序完成。根据系统提示操作点击 进入下一步。



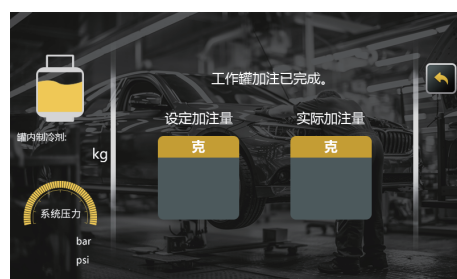
工作罐正在加注，请耐心等待。



工作罐已加注至预设值，请点击  进入下一步。



系统正在回收管路中制冷剂。请耐心等待。



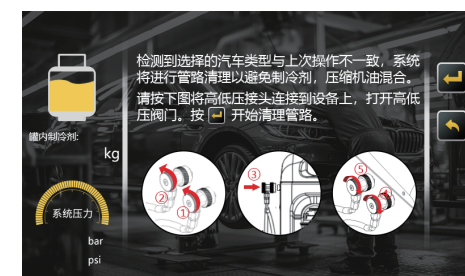
工作罐加注完成。设备开始正常使用。点击  返回主界面。

操作介绍

操作流程圖



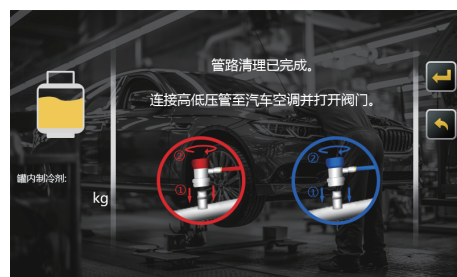
设备兼容R134a和1234yf汽车空调的维修及保养，使用前请选择所需使用的制冷剂类型。



请根据屏幕提示操作后，点击  下一步。（如选择上次的制冷剂型号一致，则可直接使用。）



正在清理内部管路，请耐心等待。



系统清理完成，开始操作设备。



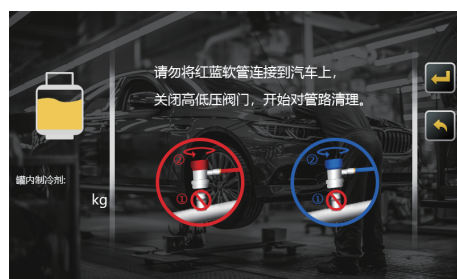
如需重新选择制冷剂类型, 可点击
🏠, 返回选择制冷剂的界面。

空调压力检测

操作流程



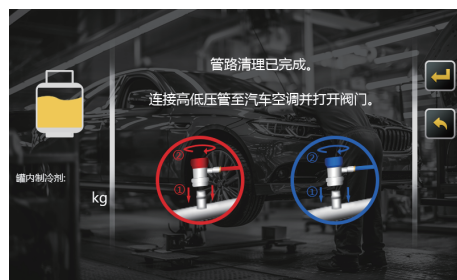
主界面点击“空调压力检测”。



进入程序, 根据系统提示操作后, 点击 ➡ 进入下一步。



正在清理管路, 请耐心等待。



管路清洗已完成, 请根据系统提示操作后, 点击 ➡ 进入下一步。



根据系统提示操作后, 根据用户
需要选择所需程序操作。
自动操作, 请参考“自动操作”
说明。
手动操作, 请参考“手动操作”
说明。





回收管路内的制冷剂，请根据系统提示操作后，点击 进入下一步。



正在回收制冷剂，请耐心等待。



根据系统提示操作后，点击 进入下一步。



正在回收管路中的制冷剂，请稍等。



空调检测已完成，点击 返回主界面。

自动模式

操作流程图



主界面点击“自动模式”。



根据用户需求选择是否回收制冷剂，回收方式点击 进入下一步。





根据用户需求设置是否抽真空，对空调检漏。分别设置抽真空时长与空调检漏时长，可直接点击默认值。点击 进入下一步。



选择是否加注制冷剂，设置加注量数值。选择大/小罐加注，加注端口。可点击从数据库中加注，也可点击默认值。设置完成后，点击 进入下一步。



选择是否加注压缩机油，选择压缩机油类型。选择是否新油加注量=排油量，或根据用户需求设置加油量。点击 进入下一步。



确认数值不误后，点击 进入下一步，如有误点击“重新输入”，返回重新设置。只需根据系统提示，按步骤操作即可。



自动操作程序运行完成。可观察各项数据。可点击 打印出数据，或点击 返回主界面。

手动模式

操作流程图



主界面点击“手动模式”。

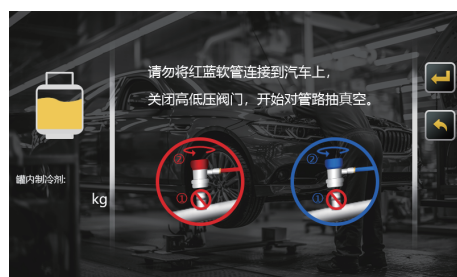


进入程序，根据用户需要选择。

回收



根据用户需求选择所需回收方式后，点击 进入下一步。



根据系统提示操作后点击 进入下一步。



正在对管道抽真空，请耐心等待。



管路抽真空已完成，根据提示操作后点击 进入下一步。



正在回收空调内的制冷剂，请耐心等待。



如有选择深度回收，请耐心等待深度回收。



回收程序完成后，正在排出压缩机油，请耐心等待。



回收程序已完成，可观察回收量与排油量，点击 ，可打印出数据。或点击 返回主界面。

抽真空

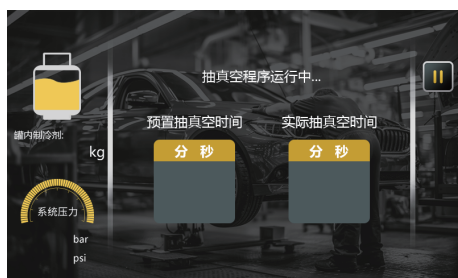
操作流程圖



进入抽真空模式后，可根据用户需求设置抽真空时间数值，参考系统提示数值。请选择是否需要空调检漏，是则根据需求设置空调检漏时间数值。或直接点击“默认值”。点击 继续。



根据系统提示操作后，点击 进入下一步。



抽真空程序运行中，请耐心等待。



如有选择对空调检漏，则进入检漏程序。请耐心等待。





抽真空程序已完成，可观察各项数据。点击 ，可打印出数据。或点击  返回主界面。

冷媒加注

操作流程图



进去“加注程序”后。用户可自行设置加注量，加注端口等，可点击数据库参考。或直接点击默认值。设置完成后点击  进入下一步。



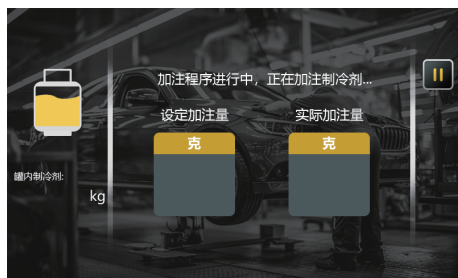
根据用户需求选择是否加注压缩机油，压缩机油类型或加注量等。设置完成后点击  进入下一步。



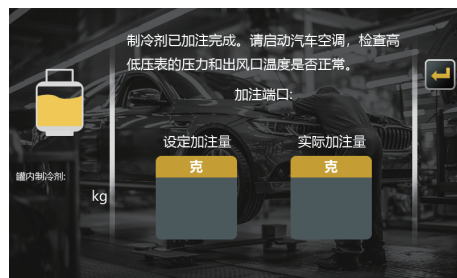
确认数值无误后，点击  进入下一步，如有误点击“重新输入”，返回重新设置。



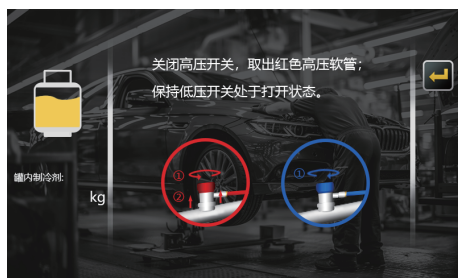
加注程序正在运行中，正在加注压缩机油，请耐心等待。



加注程序正在运行中, 正在加注制冷剂。请耐心等待。



请根据系统提示操作后, 点击 进入下一步。



请根据系统提示操作后, 点击 进入下一步。



正在平衡压力, 请耐心等待。



请根据系统提示操作后, 点击 进入下一步。



正在回收管路中的制冷剂, 请耐心等待。



加注正常完成, 可观察各项数据。可点击 打印出数据, 或点击 返回主界面。

数据查询

操作流程图



主界面点击“数据查询”。



进入程序后, 选择所需功能。



根据每个车型所属国家系列查询数据。



可查看各项数据。



更新数据库, 用于厂家更新, 用户无需操作。



设备运行报告, 可查询设备运行各项数据使用次数。



设备维护查询, 可观察过滤器剩余工作重量与真空泵油剩余使用时间。

设备维护

操作流程图



主界面点击“设备维护”。



进入程序后, 选择所需功能。

更换过滤器

操作流程图



查询过滤器剩余过滤能力。如需更换请点击“是”。



正在回收过滤器中的制冷剂, 请耐心等待。



回收过滤器中的制冷剂已完成, 请根据系统提示操作后, 点击  进入下一步。



确保过滤器已更换, 并拧紧后。点击 , 进入下一步检漏程序。



检漏程序正在进行中, 请耐心等待。



更换过滤器已完成, 退出程序。

更换真空泵油

操作流程图



可查询真空泵油剩余有效时间，如需更换。请点击 进入下一步。



正在启动真空泵对旧油进行预热，请耐心等待。



真空泵预热结束，请根据系统提示操作后，点击 进入下一步。



更换真空泵油已完成，可查看新油运行时间。

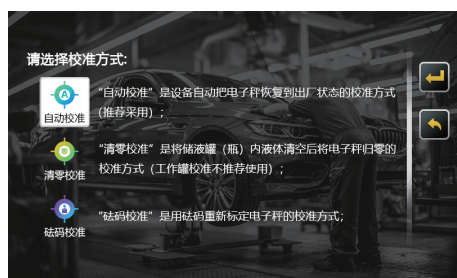


电子秤校准

操作流程图



进入程序需联系厂家取得密码。



根据用户需求选择所需校准方式与校准容器。



自动校准，(建议使用)。





校准已完成，可观察各项的数据。参考是否校准成功。



清零校准，请选择是否需要清零，点击“是”。



请根据系统提示操作后，点击  进入下一步。



请再次确认液体已清空。点击“清零”。



电子秤正在清零，请耐心等待。



校准完成。可观察各项的数据，参考是否校准成功。



砝码校准，需准备一个已知重量砝码，并输入砝码重量后。点击  进入下一步。



根据系统提示操作后，点击  进入下一步。



根据系统提示操作后，点击  进入下一步。



校准运行中，请耐心等待。



校准已完成，请取出砝码。

系统检漏

操作流程圖



请根据系统提示操作后，点击  进入下一步。



系统检漏正在进行中，请耐心等待。



如系统有泄漏，请检查设备，排除故障。



如无泄漏，系统检漏正常完成。

工作罐清理

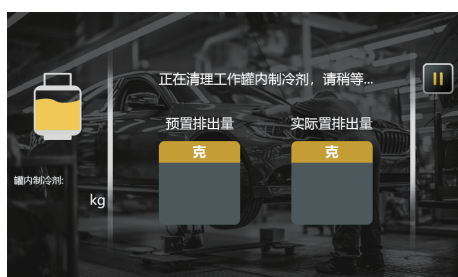
操作流程图



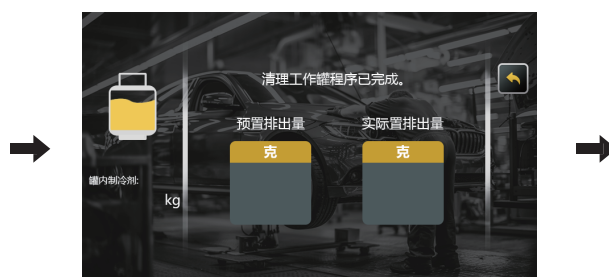
请根据系统提示操作后，点击  进入下一步。



根据用户需求设置工作罐清理重量数据后，点击  进入下一步。



正在清理工作罐内的制冷剂，请耐心等待。



清理工作罐已完成。

手动排气

操作流程图



请点击 ，进行排气。

设备设置

操作流程图



主界面点击“设备设置”。



进入程序选择所需功能。工作罐加注，请参考初始设置，原罐加注。



锁机设置，锁后设备，要输入密码才能解锁继续使用。常规用户不建议设置。



设备的管理者设置密码后，点击  进入下一步。



设置使用次数，后锁机。点击  进入下一步。



设备设置锁机成功。

故障排除

常见故障	故障原因	解决方案
不能回收	储液罐压力高: 罐满或者制冷剂的品质差	进入设备维护-手动排气
	压缩机老化或者损坏	更换
	继电器故障	更换
	回油阀的泄漏	清除脏物或者更换新的回油阀
	主板故障, 只是不执行回收指令, 但可以抽真空, 加注等指令	维修
	线路接触不良	检查线路
	单向阀或者回收电磁阀堵塞	清除脏物或者更换新阀门
屏幕触控失灵	点击触控屏幕无按键音	更换触屏
	异物重击碎裂	更换触屏
	屏幕不显示成黑屏状态可能主板供电问题	维修主板和检查屏
	有按键音界面有跳转设备无动作	维修主板
电子称不准	错误操作, 将已回收的制冷剂归零	进入设备维护-电子秤校准-自动校准
	底盘螺丝松动、固定稳重传感器螺丝, 储液罐固定螺丝松动	重新加固收紧螺丝
	运输或者固定螺丝松动使储液罐罐壁接触到设备其它部件	调整后收紧称盘固定螺丝
	如私自拆开维修需注意电子秤箭头方向朝下	如装反需调整纠正
	称重传感器损坏	更换
	主板损坏	维修
不能加注	储液罐里面的制冷剂少于1kg	回收大于1KG的制冷剂到储液罐
	加注阀阻塞或者阀心损坏	清洗异物或者更换

常见故障	故障原因	解决方案
不能加注	主板损坏	维修
	人为关闭储液罐手阀	重开
	小瓶制冷剂倒罐	某些汽修厂技术员贪图方便，使用小瓶制冷剂（重量小于1KG的制冷剂）回收冷媒机的储液罐中储存，以实现加注的目的，此做法是错误的，经济效益也不是最佳的，应该使标准的大罐（常见为重量13.6KG）制冷剂
	错误把加注量设定为“零”	重新设置
不能抽真空	真空泵故障	更换
	继电器故障	更换
	主板损坏	维修
	提示软管压力过高不能进行抽空操作	进行回收或者人工对外部软管放气减压到0.5KG/CM2以下
	不能保压检漏	检查空调系统是否有泄漏。冷媒机的快速接头和软管是否泄漏，或者抽真空管路的泄漏。加新油PAG、POE以及UV的电磁阀是否泄漏。
	加注阀泄漏	更换
真空泵冒烟	真空泵油变质	更换
	真空泵油过量，对汽车空调抽真空时间长会在真空泵内积累真空泵油	从真空泵放油螺丝排放到中间刻度线
	连接管路接头可能松动漏气会导致冒烟	检查相关连接紧固解决
	抽真空时间过长发热导致真空泵油蒸发	不需要理会
	汽车空调系统长时间保持过多气体	不需要理会
真空泵噪音大	真空泵固定螺丝松动	重新固定

维修保养服务

您所拥有的AUTOOL产品选用持久耐用的材料，AUTOOL坚持精益求精的生产工艺，每一件产品出厂都经过35道工序及12次质检工作，从而确保每一件产品都拥有卓越的品质及性能。所以您的AUTOOL产品值得您定期维护保养，使其产品将能够长期稳定地工作。

维修保养

维护保养是为了保持产品性能和外观，我们建议您仔细阅读以下产品保养指南：

- 注意不要将产品与粗糙表面摩擦或揉搓产品，特别是钣金外壳。
- 对产品中需要紧固和连接的部位经常进行检查，如发现松动应及时紧固，以保证产品的安全运行。对与各种化学介质接触的产品外部和内部零件要经常进行除锈、喷漆等防腐处理，以提高产品的抗腐蚀能力，延长产品的使用寿命。
- 遵守安全操作规程，不超负荷使用产品。产品的安全防护装置齐全可靠，及时消除不安全因素。电路部分彻底检查，老化电线要及时更换。
- 定期清洗和更换易耗部件；调整各部位配合间隙和更换磨损（已坏）部件清洁时，避免产品接触带腐蚀性的液态物品。
- 不使用时，请将产品存放于干燥的位置。不要将产品存放在高温、潮湿或不通风的地方。

保修服务

AUTOTOL主机自客户签收日起享有3年保修期。其所含附件自客户签收日起享有1年保修期。

保修方式

- 根据具体的故障情况对产品进行免费修理或更换；
- 我方保证所有更换的部件、附件或产品都是全新；
- 在客户收到产品90天内出现故障同时提供视频和图片，我方承担运费并免费提供相应配件给客户更换。收到产品超过90天，客户承担相应的费用，我方免费提供配件给客户更换；

以下情况不在免费保修范围：

- 非正规渠道购买AUTOTOL的产品；
- 未按产品说明书要求使用和维护造成的损坏；

在AUTOTOL，我们为精湛的设计和卓越的服务感到自豪。我们很乐意为您提供更多的支持或服务。

声明

- 偶然公司保留更改产品设计与规格的权利，届时恕不另行通知。实物外观与颜色可能与说明书中显示的有差别，请以实物为准。我们已尽最大努力力求使书中所有描述准确，但仍难免有不妥之处。如有疑问，请联系经销商或偶然售后服务中心。本公司对产品拥有最终解释权，不承担任何因误解而产生的后果。

退换货服务

退换货

- 如果您对从线上授权购物平台和线下授权经销商所购买的AUTOTOL产品不满意, 根据《AUTOTOL全球销售条款》, 您可以自收到产品之日起七日内退货; 或者在产品交付之日起的30日内调换等值的其他产品。
- 退回及调换的产品必须处于完全可销售状态, 并附上相关销售单单据, 所有相关配件、纸质发票 (如有)。
- AUTOTOL将会对寄回退货的商品进行检查, 以确保其处于完好无损的状态并且符合条件, 相关条件详情请参阅《AUTOTOL全球销售条款》。任何未通过检查的商品将退还给您, 您将不会获得商品退款。
- 您可以通过客户服务中心或AUTOTOL授权经销商调换产品; 退换货原则为从哪里购买, 就从哪里退换货。如果您退换货遇见困难或者阻碍, 请联系AUTOTOL客户服务中心。通过客户服务中心退换货时, 我们建议您通过下面的方式进行:

中国区域致电	400-032-0988 / 18929303778
售后微信号	18929303778
海外区域致电	+86 0755 23304822
E-mail	aftersale@autooltech.com
Facebook	https://www.facebook.com/autool.vip
YouTube	https://www.youtube.com/c/autooltech

- 如您的退换货得到确认, 您将收到确认信息和邮件。