A/C Service Station

Operating Instructions

Model: AC636HC

 Please Read the Manual Carefully before Operation

Contents

Safety Instructions and Precautions

This equipment is a professional automotive air conditioning service equipment, can perform refrigerant recovery, air conditioning system vacuum, vacuum leak detection, refrigeration oil filling and refrigerant charging and air conditioning system pipeline cleaning and other operations, please read the instructions carefully before any operation or maintenance.

	Please read the instructions carefully
	The maximum volume of the canister is 14 liters, up to 10 kg of refrigerant, overshooting will cause danger
	Wear eye protection when using
	Dangerous inhalation of refrigerant
	No open flames in the vicinity of the unit
	No air mixing into the car air conditioning system
	The device is only suitable for R134A refrigerant.
	Non-professionals are not allowed to operate the device, otherwise it can be dangerous.
	Uneven ground conditions can lead to large measurement errors.
	Do not store or use the device in a humid environment.

Wear eye protection when using the unit. All pipes may have liquid refrigerant under high pressure. Use extreme caution when disconnecting fittings. Read and follow the warning messages at the beginning of the manual when operating the appliance.

Do not overcharge the built-in storage tank with refrigerant. Excessive charging could result in an explosion and serious personal injury, even death. The LCD screen will give a maximum recovery amount to prompt the user before each recovery, please ask the operator to follow this recovery amount. During the recovery process, please pay close attention to the change of TP pressure gauge, when it reaches 17.5Bar, the equipment will terminate all operations.

Do not recover or refill refrigerant into a fully charged container. Do not overcharge the refrigerant. Excessive charging may result in an explosion and serious personal injury or death.

This equipment can only operate on R134a refrigerant, so please make sure that the user uses one refrigerant. Do not use the equipment with another refrigerant. Do not mix different types of refrigerants through a system or in a container. Mixed refrigerants will cause serious damage to the equipment and air conditioning system.

Notes:

△ Before using this equipment, please read the instruction manual carefully for proper operation.
△ This equipment is only intended for use with **R134a air conditioning systems in electric or hybrid vehicles.**
△ Check the type of refrigerant used for automobile air conditioning and turn off the engine of the automobile before operation.
△ The actual capacity of the refrigerant tank should be 80% of its effective capacity to avoid serious accidents due to extra pressure generated by external factors.
Keep the hose away from rotating parts and heat generating parts of the vehicle, such as the electronic fan and radiator.
△ Check the oil level and oil quality of the vacuum pump before use, and do not operate without oil.
△ The maximum number of starts of the recovery program should be less than 10 per hour, otherwise the compressor may be damaged.
△ Do not allow children or mentally retarded persons to approach or touch the equipment when it is running.
△ The user of this equipment must be familiar with the repair and maintenance of automobile air conditioners to avoid damaging the equipment and the automobile air conditioning system.
△ This equipment contains precision control components, do not disassemble or repair without authorization.
△ The equipment should be placed vertically upwards, do not place it upside down.
△ The right power input part of the equipment has high voltage, please be careful to operate.
△ In order to ensure better charging function, the liquid storage tank should not be less than 1Kg refrigerant, otherwise it cannot be charged.

Functional Description

●Recycling: The residual refrigerant in the automobile air conditioning system is recycled,

purified and stored in the equipment container for later use.
●Vacuum and negative pressure leakage detection of air-conditioning system: discharging other gases and water vapors in the automobile air-conditioning system and conducting vacuum leakage detection.
●Automatic Quantitative Charging of Refrigerant: Pure liquid refrigerant is quantitatively charged into the automobile air-conditioning system.
●Oil refueling: Quickly replenish the refrigeration oil of the air conditioning system.
●Equipment self-cleaning: allowing the refrigerant in the refrigerant tank of the equipment to automatically circulate and clean to further remove impurities and water from the refrigerant in the tank, or to effectively clean the pipelines in the equipment.
●Air-conditioning pipe cleaning: Flush the automobile air-conditioning pipeline with refrigerant to remove contaminated refrigerant oil and dirt in the pipeline.
●Large-screen LCD display, can be single-step recovery, vacuuming, refueling, filling operations, or set the parameters and then automatically complete the recovery, vacuuming, refueling, refilling and other operations with one key, without the need to wait for the operator to operate next to the operation
●Good man-machine interface, the operator can operate and maintain according to the on-screen prompts.
●Intelligent maintenance function

Technical Parameters

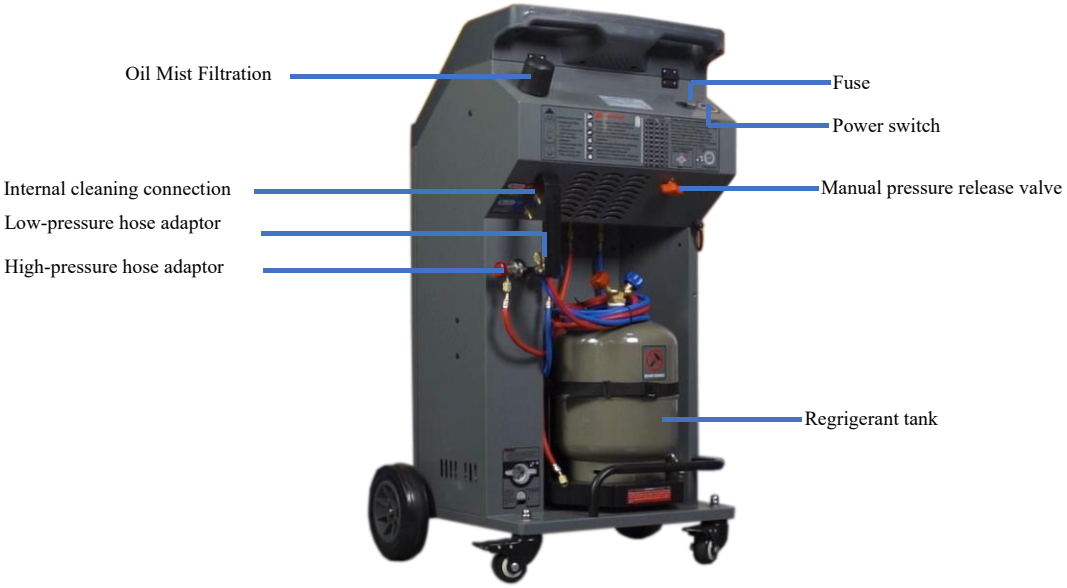
Working Power Supply:	AC 220V/50Hz
Vacuum Pump Evacuation Speed:	60L/min.
Vacuum Pump Power.	180W
Ultimate vacuum:	2Pa
Compressor Power.	3/8HP
Applicable refrigerant type.	R134a
Precision of Electronic Weighing:	+/-5g
Electronic Weighing.	60kgs
Tank Refrigerant Capacity:	10kgs
Recycling Speed	180~420g/min.
Charging Speed:	800~1500g/min.
Working Tank Maximum Pressure.	17.5bar

Packing and Transportation

1. Please refer to the labeling on the outer box for packaging and transportation, and do not allow it to get wet or put it upside down.

2. Please use a forklift for transportation

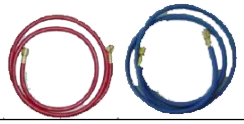
Appearance and Operating Interface



Operation Buttons

	Upper key: for selecting menu items and model databases
	Down key: for selecting menu items and model database
	Left key: for turning pages or entering data
	Right key: for turning pages or entering data
	Return key: to stop or return to the upper menu
	Enter key: for confirmation

Accessories

Accessories	name	quantity
	Instruction manual	1
	2.5m high and low pressure refrigerant hose	2 pcs
	High and low pressure quick connector	2 pcs

	8 inch wheel with axle	2 pcs

Preparation for first use

1. Install the two wheels

2. Remove the protective screws on the scale as shown in the picture below, take off the protective bracket, if transported over long distances these screws and brackets must be installed back

Electronic scale protective screws

2. Check whether the vacuum pump oil is emulsified or contaminated, whether the oil level is within 3mm above and below the scale line, if it is insufficient, please replenish it.

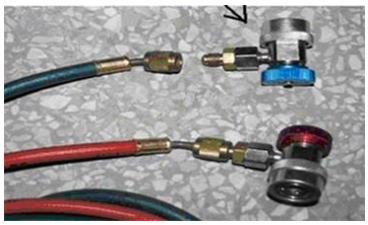
4. Add appropriate amount of new refrigeration oil to new refrigeration oil bottle of type required for automotive air conditioning system to be serviced.

5. Introduce refrigerant into the working tank of the machine.

★ For newly purchased equipment or when the remaining amount of refrigerant in the reservoir is close to 1Kg, it is necessary to add refrigerant to the reservoir.

The method is as follows

a. Connect one end of the high pressure hose to the quick coupling.
Connect one end of the high pressure hose to the quick coupling and the other end to the high pressure connection of the machine as follows

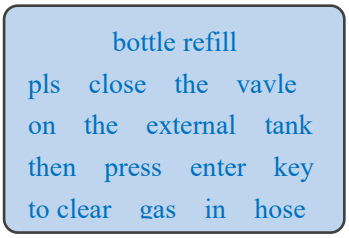


b. Take a can of refrigerant of the same type as the refrigerant used in the equipment (R134a) and connect it to the blue low-pressure hose, with the other end of the hose connected to the low-pressure connector at the back of the machine; do not open the valve on the can yet.

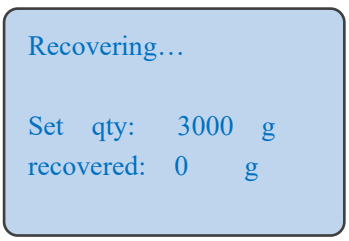
c. Run the evacuation program (running for 1 minute is sufficient)

d.then fully open the valve on the external refrigerant tank and invert the tank as shown below

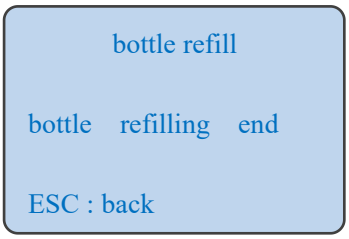
e. Turn on the machine and enter the additional function, then select the refrigerant tank conduction, set the recovery amount to 3000 grams, and then press the confirmation button, to 300 grams from the set amount when the machine will automatically stop, and prompted "please close the valve of the external tank, and then press the confirmation button to clean up the pipeline", at this time, close the valve on the external tank and then press the confirmation button.



f. At this point the machine starts to clean the lines and displays the amount of refrigerant that has been recovered (what is left in the lines) as follows



g. When the refrigerant recovery in the pipeline is completed, the machine will automatically stop, showing the end of the liquid-conducting program, and the whole liquid-conducting process is completed.



Operating Instructions

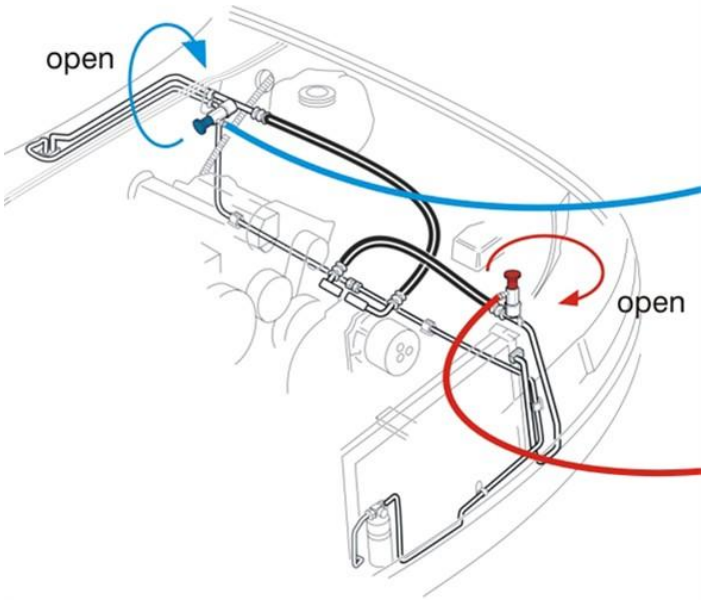
Manual Mode

In manual mode, recovery, evacuation, refueling and refrigerant addition can be carried out individually.

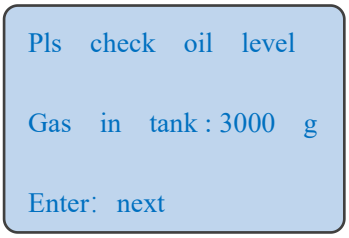
Recycle:

Recover and filter the refrigerant from the car air-conditioning system and then store it in the working tank of the machine, the operation is as follows

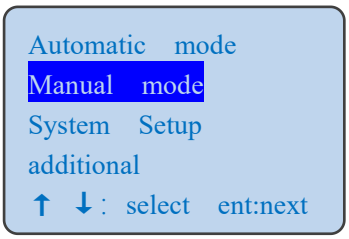
1. Check the volume of used oil, if it is more than 250 ml, please empty the used oil bottle.
2. Run the air conditioner for 5 minutes.
3. **Connect the high and low pressure hoses to the high and low pressure ports of the air conditioning system, the red pipe connects to the high pressure port and the blue pipe connects to the low pressure port, and then turn clockwise to open the quick connector connected to the high and low pressure hoses as follows**



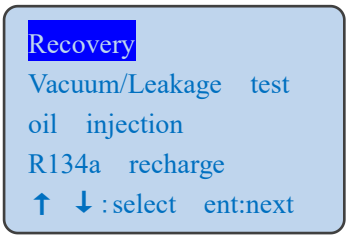
4. Turn on the power switch of the machine, the device displays as follows.,



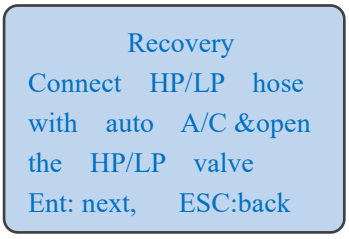
5. Press ENTER to display the main menu:



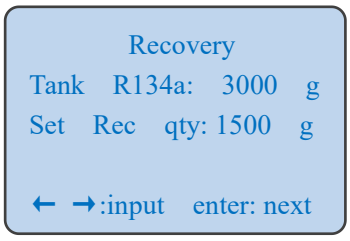
6. Select Manual with the ↑ ↓ keys and press ENTER, the display will look as follows



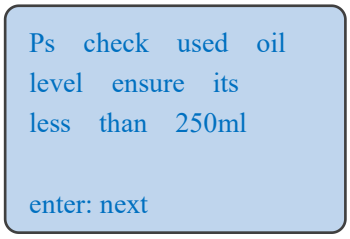
7. Select Recovery "recovery" then press ENTER to display the following



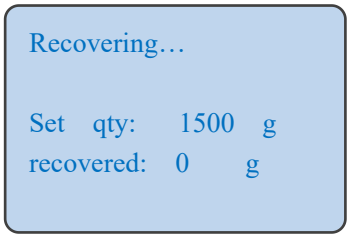
8. Then press enter and the machine displays



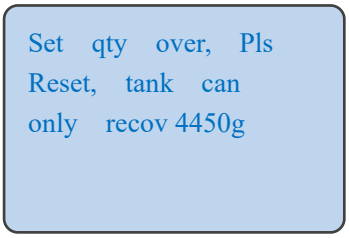
9. Set the amount to be recycled with the ← or → key, and then press the ENTER key, the display will show as follows



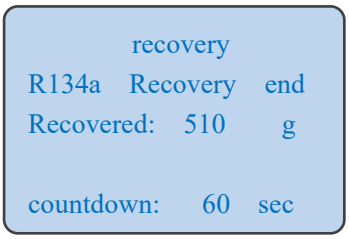
Check the amount of waste oil if it exceeds 250 ml please empty the waste oil bottle, then press ENTER to display the following to start the recovery of refrigerant



Note that if the following screen is displayed, the setting amount is too large, please reset the setting.

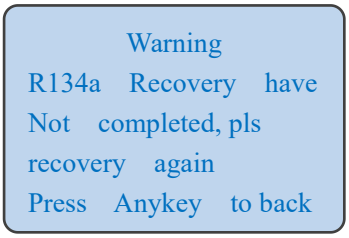


10. When the recycling is completed, the machine displays the following interface and delays the recycling for 60 seconds.

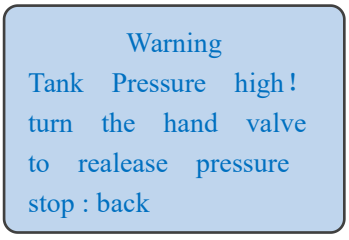


Attention.

a. If the set amount is too small, the recovery amount reaches the set amount but there is still refrigerant equipment in the air-conditioning system will be displayed as follows, then please press ESC to return to the recovery setting interface; if you want to recover, please continue to the next step of the operation, otherwise, press ESC to return to the upper level of the menu

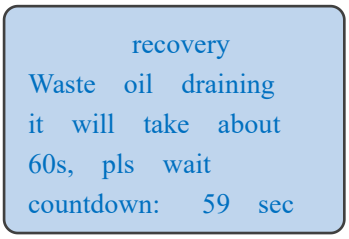


b In the recovery process if the equipment system pressure ≥ 17.5bar, the recovery work is forced to stop, at this time should wait for the equipment to cool down or press the enter button to unpressurize; when the system pressure is reduced to 12kg can continue to recover

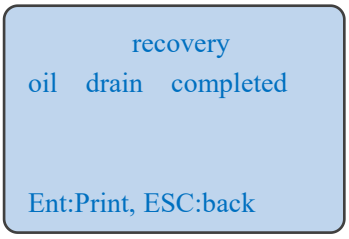


11. After one minute, the machine displays the following, and enters the 1-minute automatic

waste oil discharge program



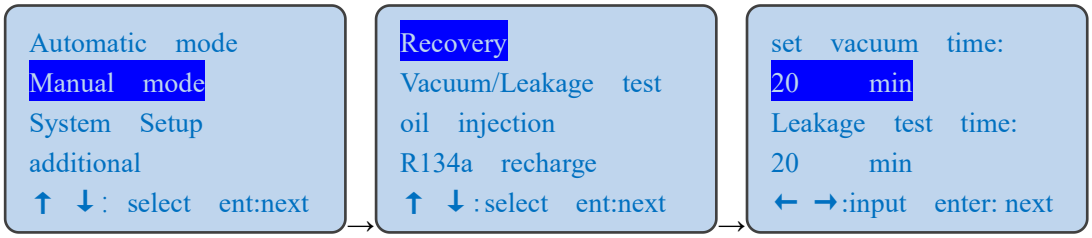
12. 1 minute after the oil discharge is completed, please note down the amount of oil discharged, the display is as follows, if you need to print the results, please press enter to print, otherwise press STOP to return



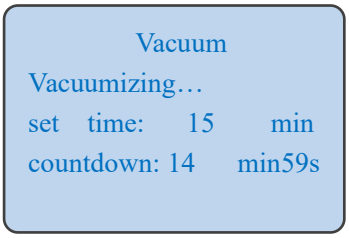
Evacuation/Leak Detection

Vacuuming after refrigerant recovery can clean the residual water in the system to form a vacuum system for refrigerant refilling later; leakage checking is used to observe whether there is any leakage in the system after vacuuming, the operation process is as follows

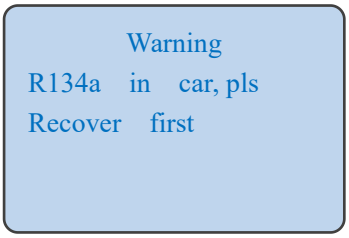
1. Confirm that the machine is well connected with the air conditioning system and the valve of the quick connector on the pipe has been opened.
2. Enter the main menu and select manual mode, then select vacuum/leakage detection, and then press ENTER to confirm.



3. Set the time through the left and right keys (generally 5~10 minutes for the trolley), confirm with the enter key, and the screen will display as below to start vacuuming.



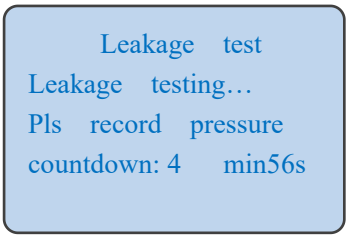
Note: If the vacuum pump is not working and the following screen is displayed, it means that there is refrigerant in the air-conditioning system, please recover the refrigerant first before vacuuming.



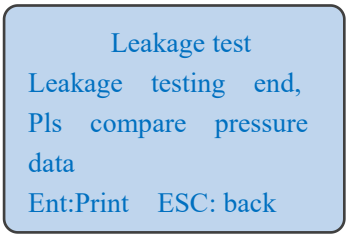
4. When the set time is up, the vacuuming ends and the device automatically enters the leakage detection interface.

Note: **You can end the vacuuming operation by ESC key at any time during the vacuuming process.**

5. the following is the leakage checking interface, then please note down the reading of the vacuum gauge.



6. After the countdown is over the device displays the following, please compare the vacuum gauge reading before and after the leakage check, if the reading drops by more than 0.01MPA, it is judged that the air conditioning system has a leak.



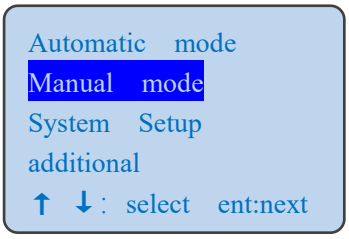
Refuel.

Refueling is to replenish the refrigerant oil for the air conditioning system of the car; since some refrigerant oil will be taken out when the refrigerant is recovered, it is necessary to compensate accordingly.

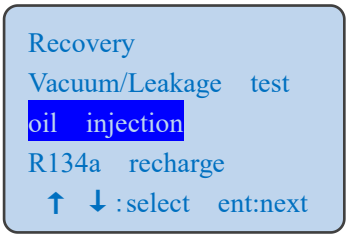
Before refueling, please make sure that the air conditioning system has been evacuated, otherwise it will not be able to refill the refrigerant oil.

1. **Make sure there is enough POE oil in the new bottle.**

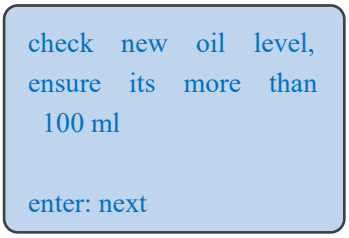
2. Press ENTER to enter the main menu and then use ↑ ↓ to select manual mode.



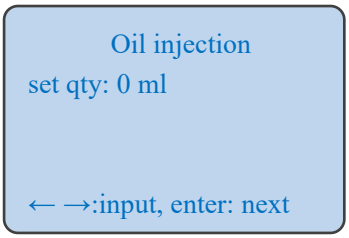
3. Press enter and the screen will display as follows, select "oil injection" by ↑ ↓ key to add oil.



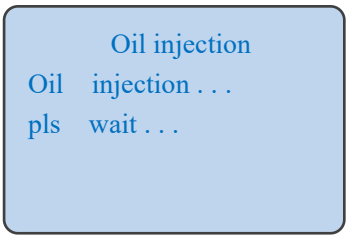
4. Press ENTER to display the following, please confirm that the amount of new refrigeration oil is more than 100 ml



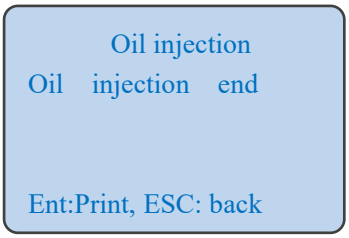
5. Press ENTER and then enter the amount of oil to be refueled via the left and right arrow keys (generally the amount of oil to be refueled is 20 milliliters more than the amount of waste oil recovered earlier)



6. Press ENTER to start refilling with refrigeration oil.



7. After adding the machine automatically stops to display the following interface prompts the completion of refueling, to print please press the enter key, otherwise press the ESC key return

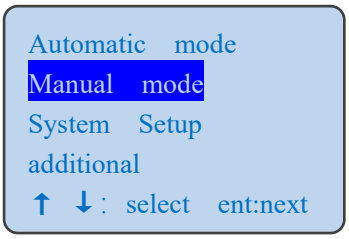


Refueling Refrigerant

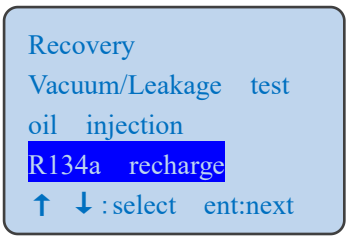
This function is to refer to the automobile factory instructions to add the appropriate amount of refrigerant to the automobile air conditioning system. The air conditioning system must be evacuated before the refrigerant is charged, otherwise the refrigerant cannot be charged.

1. Press the ENTER key to enter the main menu and then select manual mode

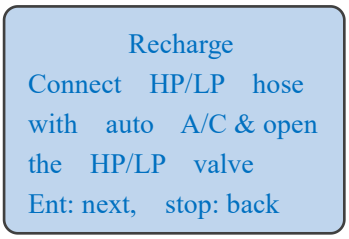
through the ↑ ↓ keys.



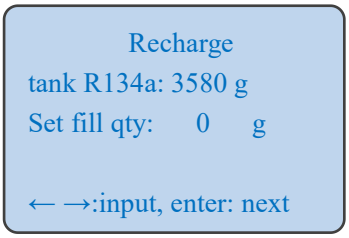
2. Press the enter key and the screen displays as follows,, use the ↑ ↓ key to select "R134a recharge" to refill the refrigerant.



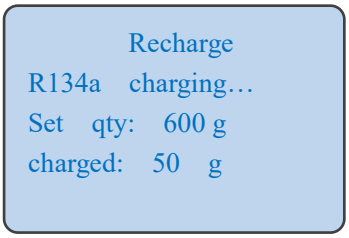
Then press enter and the screen displays the following prompt.



After confirming and pressing enter the screen displays as follows.

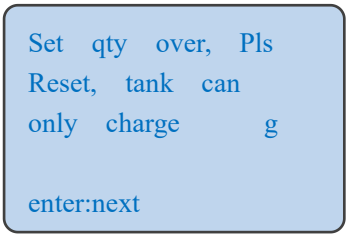


3. Enter the refill amount by using the left and right arrow keys ← →, then press ENTER to start refilling, the device screen displays

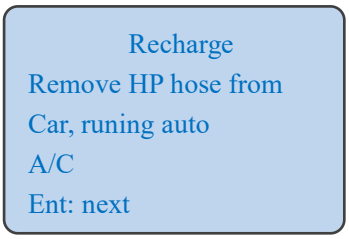


Note:

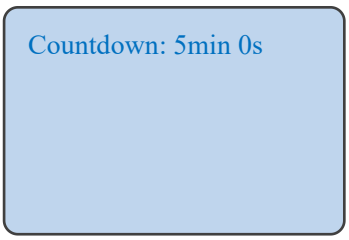
If the following interface is displayed after pressing the enter key, it means that the setting amount is too large, press the enter key and reset it.



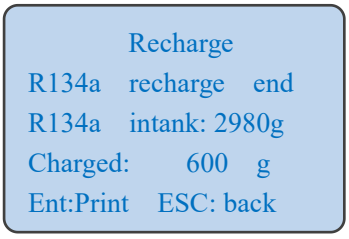
4. When the filling is completed, the device displays the following and alarm prompts, then please remove the machine connected to the high-pressure tube of the high-pressure connector from the car, start the air conditioner



5. Then press the enter key and the device will display the following, countdown for 5 minutes



6. After 5 minutes the refilling is finished, turn off the car air conditioner; if you want to print the result please press the enter key otherwise press the ESC key to return



Tips

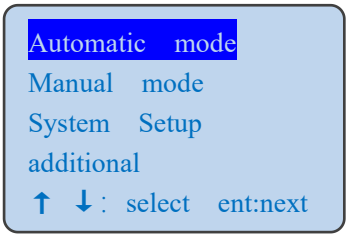
If you feel that the filling is too slow, you can remove the high-pressure connector with the high-pressure pipe from the car, and then start the car air conditioner.

Automatic mode

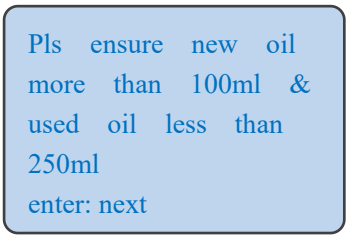
(can be used if there is no leakage in the air-conditioning system)

In automatic mode, you can complete all the operations including recovery, evacuation, refrigeration oil filling, refrigerant filling, etc. with one key after setting the parameters, and the whole operation process does not require the operator to stay in front of the equipment all the time.

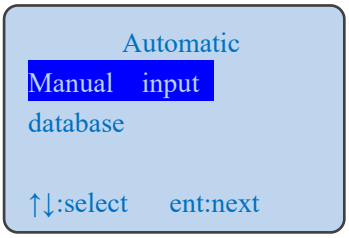
1. Press ENTER to enter the main menu and then select "Automatic mode" through ↑ ↓ arrow key.



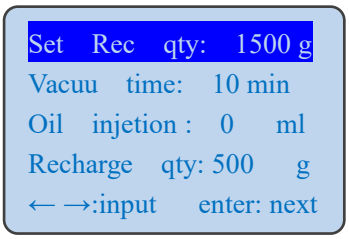
2. Then press “**Enter**” and the screen displays as follows.



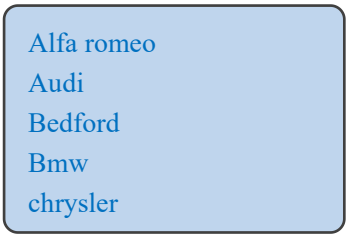
3. After confirming and pressing “**Enter**” the screen displays as follows.



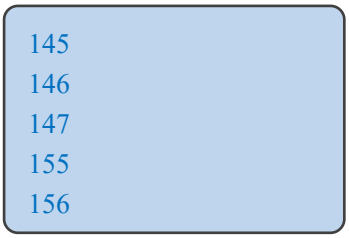
4. Select "Manual input" manual input after pressing the enter button the screen displays the following, and then through the up and down keys to select parameters, through the left and right keys to set the number of parameters, set the last parameter after pressing the enter button



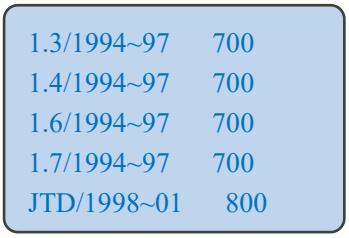
When you don't know the refrigerant charge amount, you can select "database" to enter it from the database, and then press the ENTER key to display the screen as follows,



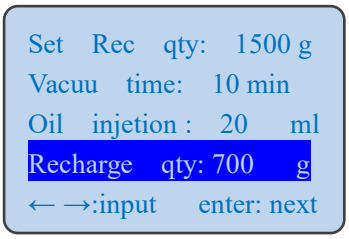
Select model by up and down keys, turn page by left and right keys



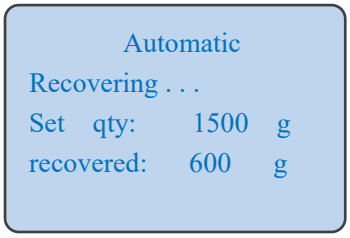
Select factory date by up and down keys, turn page by left and right keys

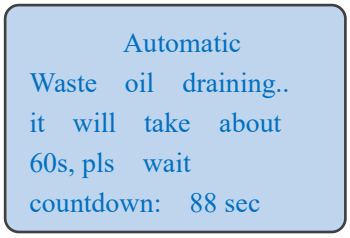


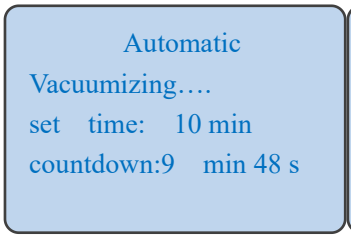
Then press enter to automatically enter the refill amount such as "Recharge qty: 700 g".

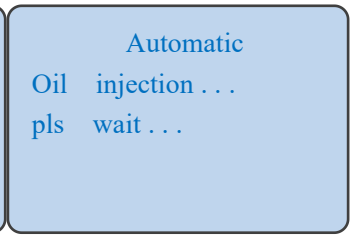


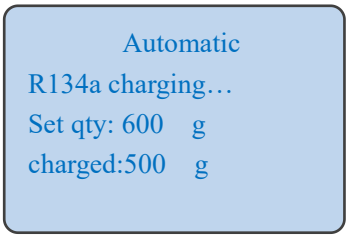
1. 5 Then press the enter button and the machine will carry out the recovery, evacuation, refueling, and refrigerant addition process as shown below.



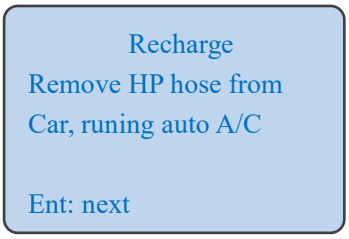




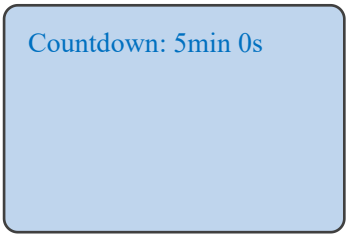




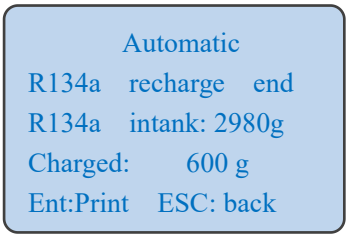
In the whole process without the operator in front, when the refrigerant filling machine will sound a loud beep and prompt the following interface. **The operator is prompted to remove the high-pressure connector with the high-pressure tube from the vehicle and start the air conditioner.**



6. Then press enter to display the following, start the countdown 5 minutes



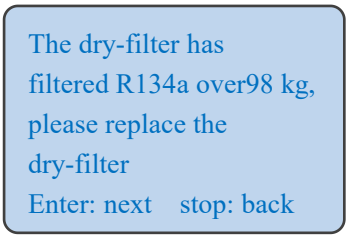
5 minutes after the countdown is complete the display is as follows, the entire automatic process is complete, please turn off the car air conditioning; if you want to print the results, please press the enter key otherwise press the ESC key back



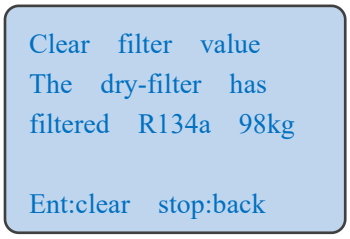
System Settings

1.**Filter Dryer Zeroing**..

If the recycling process displays the following interface, this is a hint that it is time to change the filter, then you can press the enter button to continue recycling until the recycling is complete and then shut down to replace the filter.



Open the rear door of the equipment to find the filter drier, note down the installation direction of the filter, then use two wrenches to remove the copper nuts on both ends of the filter and then use two wrenches to install the new filter drier according to the direction of the original filter.

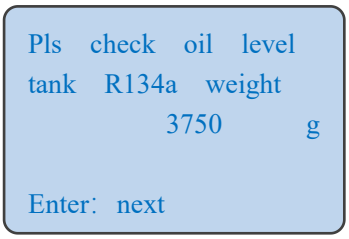


Press enter to clear, then press ESC to return.

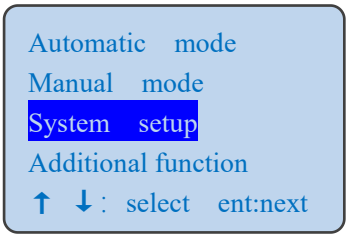
When replacing the filter, please note:

1. Use the same type of filter drier
2. Don't mistake the direction when disassembling the filter drier.
3. Please use two wrenches when disassembling, and tighten the screws to avoid leakage after installation.

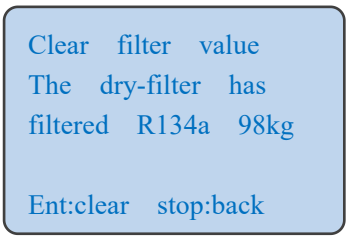
1.1 After replacing the filter, turn on the power of the machine and the display will be as follows



1.2. Press ENTER to enter the main menu and then select "System Settings" with the ↑ ↓ keys.



1.3. Then press ENTER to display the following, select filter dry zeronig

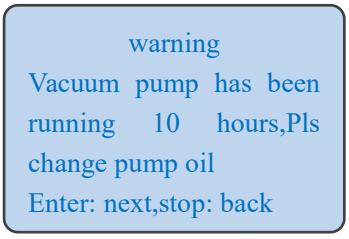


1.4 Pressing enter displays the following

1.5 Press the ENTER key to clear, then press ESC to return.

Vacuum Accumulation Time Zeroing.

1. When the following screen appears during vacuum pumping, it indicates that the vacuum pump oil needs to be changed.



Press the enter button to continue the vacuum operation, after the vacuum is completed, you can replace the vacuum pump oil.

3. Put an oil box under the vacuum pump drain port.

4. Remove the plug on the drain pipe of the vacuum pump and let the waste oil flow into the oil box.

5. Replace the drain plug after the oil is drained.

1. 6. rotate the top cover of the vacuum pump oil mist filter (at the back of the unit) counterclockwise by 20 degrees to remove the cover, and then rotate it counterclockwise to remove the vacuum pump oil mist filter cartridge, then you can see the vacuum pump refueling port (the oil mist filter is screwed to the vacuum pump refueling port)

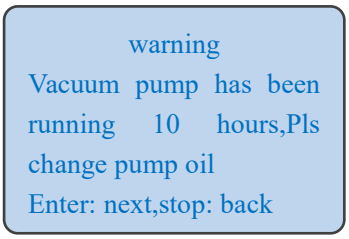
7. Slowly add new vacuum pump oil through the funnel to the oil level mark. (Please add No. 100 vacuum pump oil.) 8.

8. Attach the oil mist filter cartridge to the oil filler by turning it clockwise.

9. Put back the vacuum pump oil mist filter cover.

10. Plug in the power cord and turn on the power switch.

11. Enter the system setup interface and select the pumping cumulative time to clear the zero, then press the enter key to display the following interface

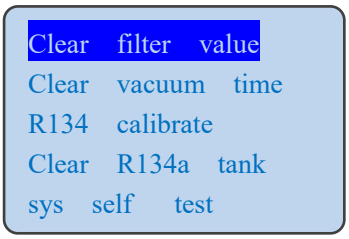


12. Press enter to zeroing, then ESC to return.

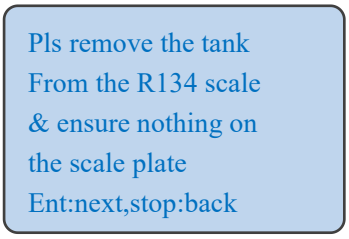
Electronic Scale Calibration.

When found that the electronic scale is not allowed to enter the electronic scale calibration program to calibrate, the method is as follows

a. Enter the system setup interface, and then press the enter key to enter the following interface

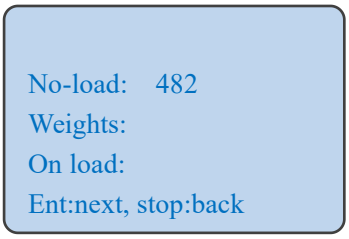


b. Select "R134 calibrate" and press enter to display the following message

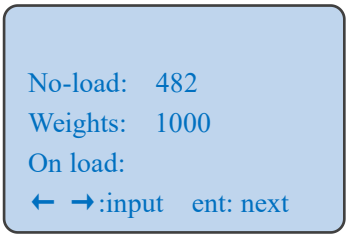


Then remove the three screws holding the working canister, take away the working canister (no need to remove the tube on the canister), make sure there is nothing else on the scale

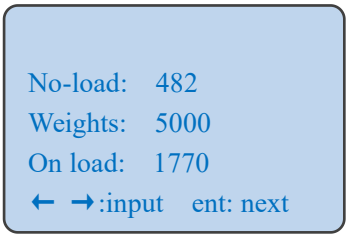
c. Then press the ENTER key to display the following



d. Place a known weight such as 5 kilograms and enter the weight ,such as 5000 grams using the left and right keys.



e. Then press enter to display the following, then press enter to save, calibration is complete

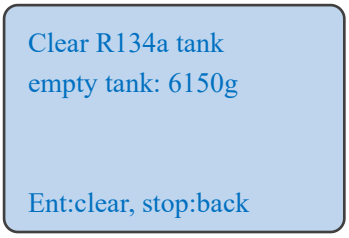


Electronic Scale Calibration and Zeroing.

The zeroing procedure is used to remove the weight of the working tank (tare) after putting it back after calibration so that the displayed weight is the actual weight of the refrigerant

a. Remove the weights from the pan and secure the working tank to the pan.

b. Then enter the system setup interface and select "Clear R134a tank" to clear the **electronic scale**, and then press the enter key to display as follows



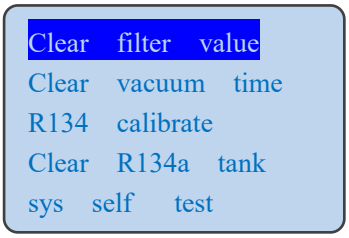
C. Press enter to clear and return to the previous menu.

Note: There is no need to empty the working tank, even if there is refrigerant in the tank, because the weight of the refrigerant tank is already stored in the computer at the factory.

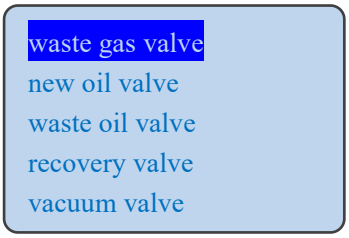
System Self-test.

The system self-test is used to check whether the solenoid valve, vacuum pump and compressor are working normally or not when checking the machine.

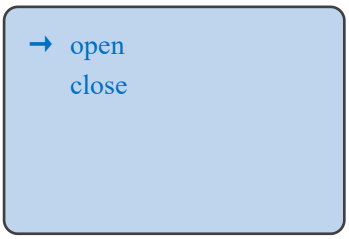
a. Enter the system setting interface, and then press enter to enter the following interface



b. Select "sys selftest" system self-test by up and down keys, then press enter to enter the following interface, left and right keys can turn the page



a. Select the solenoid valve you want to test and press enter to enter the following screen.



d. ↑ ↓ select on or off and press enter to test, ESC to return.

Replace Vacuum Pump Oil Mist Filter.

The filter is installed at the back of the unit to filter out the oil mist discharged from the vacuum pump, and is recommended to be replaced every six months as follows:

1. Turn the upper cover of the vacuum pump oil mist filter counterclockwise by 20 degrees and remove the cover.
2. then rotate counterclockwise to remove the vacuum pump oil mist filter element.
3. Install the new oil mist filter element by rotating it clockwise.
4. Replace the oil mist filter cover.

Additional Features

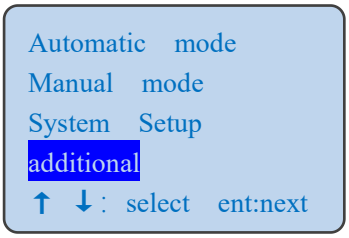
Refrigerant Tank Fluid Guide.

This program is used to replenish the refrigerant in the machine's refrigeration tank when there is insufficient refrigerant in the tank (insufficient refrigerant will result in failure to complete the refrigerant charge when filling the air conditioning system), as described on page 9 ..... **Introducing refrigerant into the machine's working tank**

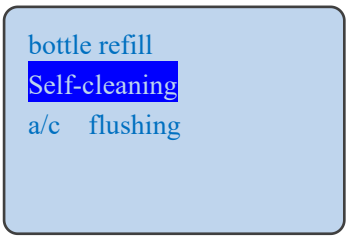
Equipment Self-cleaning

This function allows the refrigerant in the refrigerant tank of the equipment to automatically circulate and clean to further remove impurities and water from the refrigerant in the tank, or to effectively clean the pipelines in the equipment.

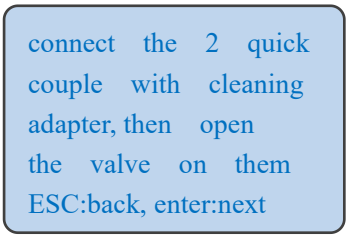
2.1 Press the enter key after power on and select additional function in the main menu.



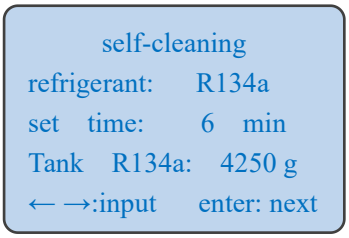
2.2 Press enter and select "Self-cleaning" in the menu as shown below.



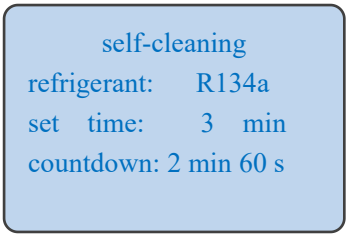
2.3 Press enter, the device prompts the red and blue quick connectors are connected to the cleaning connector of the device , turn the valve on the quick connector clockwise



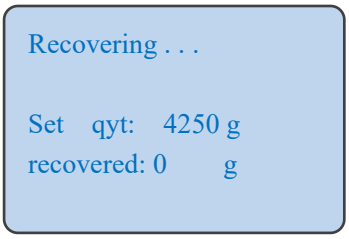
2.3 Press enter, the device displays the following, press the left and right keys to enter the cleaning time, for example, 6 minutes



2.4 Then press enter to confirm, the device starts self-cleaning

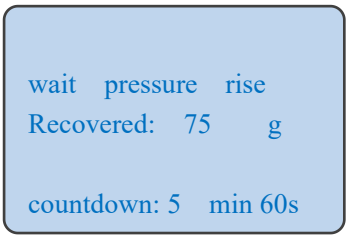


2.5 When the cleaning time is up, the unit enters the line refrigerant recovery program in order to clean the refrigerant out of the unit's lines, which is displayed as follows

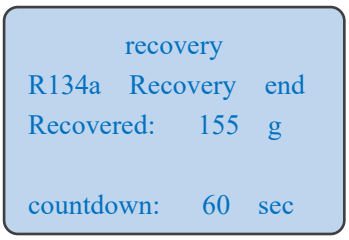


2.6 When the refrigerant recovery in the pipeline is completed, the equipment enters a 5-minute delayed pressure stage to allow the residual refrigerant in the pipeline to

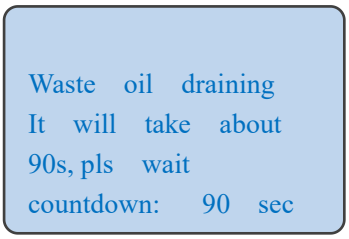
evaporate into gas.



2.7 After the delay time, the device will delay the recovery of the residual gaseous refrigerant in the line



2.8 After one minute, the unit goes into a 90-second oil drain and displays the following



Air conditioning line Cleaning

Automotive air conditioning systems often require line cleaning when parts are replaced or repairs are made. This ensures good system function and discharges contaminated refrigeration oil, greasy debris and metal particles from the lines.

3.1 Disclaimer:

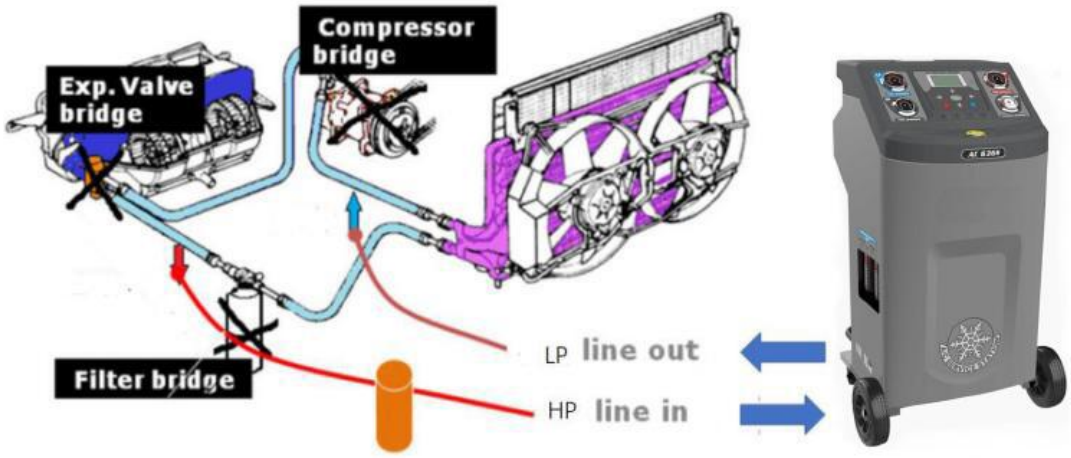
Currently on the domestic market with the cleaning of the refrigerant machine is mostly air conditioning pipeline cleaning, that is, without any changes to the air conditioning pipeline, just through the equipment of high and low pressure hose and automobile air conditioning high and low pressure interface connection on the cleaning, this cleaning may lead to automobile air conditioning pipeline expansion valve clogging, resulting in serious consequences, so we do not support the customer to use this way of air conditioning pipeline cleaning, if the So we do not support customers to use this way to clean the air-conditioning pipeline, if customers through this way to clean the pipeline and cause damage to our company will not bear any responsibility!

3.2 Cleaning methods

For our equipment, the normal cleaning is divided into two ways, one is the **overall flushing**, the other way is **segmented cleaning**

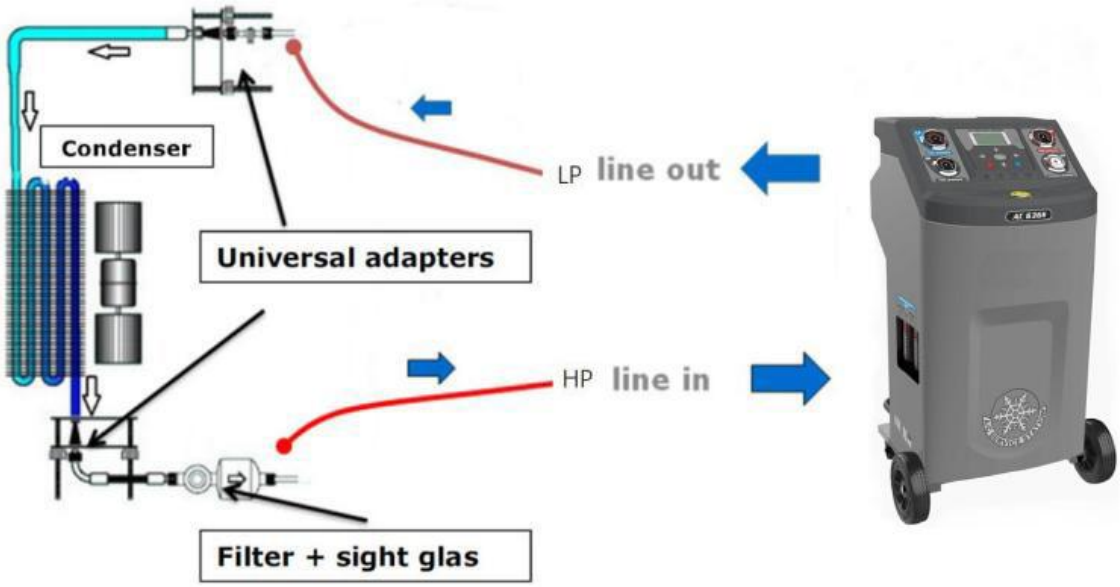
Integral cleaning: this cleaning method does not need to remove the various units in the pipeline, but the compressor, expansion valve, dry reservoir must be bridged (short-circuit connection) before cleaning, so as not to cause blockage of the above components. The bridging of the above parts requires some special connectors, which need to be purchased by the customer, and the cleaning requires special filters (also need to be purchased by the customer). **The pipeline connection diagram of the**

overall cleaning is as follows



Segmented cleaning: this cleaning method is to separate the pipeline needs to be cleaned parts and equipment connected to the separate rinse, this cleaning method will use a special adapter (need to be purchased by the customer)

The piping connections for segmented cleaning are shown as follows



3.3 The cleaning steps for the integral cleaning method are as follows

3.3.1 Confirm that the weight of the refrigerant in the equipment is more than 4 kg.

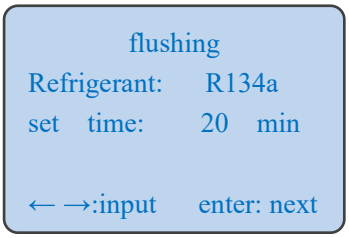
3.3.2 Connect the high and low pressure hoses of the equipment to the high and low pressure ports of the automobile air-conditioning system, and then open the valve on the quick connector clockwise.

3.3.3 After recovering the refrigerant from the vehicle, bridge (short-circuit) the compressor, expansion valve and drying reservoir of the air-conditioning system to avoid clogging caused by dust particles.

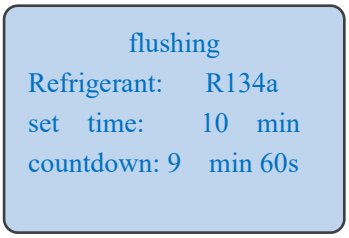
3.3.4 Connect an additional filter between the red hose and the high-pressure quick coupling of the unit.

3.3.5 Run the evacuation program for 10 minutes and make sure that there are no leaks in the MAC system.

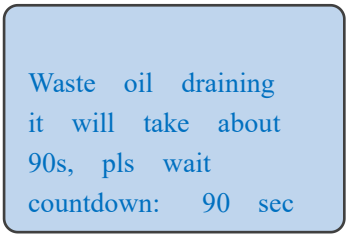
3.3.6.1 Enter the air-conditioning pipe cleaning program and set the rinsing time (usually 20 minutes).



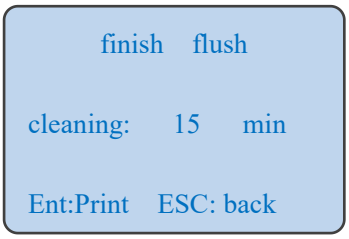
3.3.6.2 Press ENTER and then in the display as follows, start the air conditioning duct cleaning



3.3.6.3 When the cleaning is completed, the machine will automatically recover the refrigerant in the equipment and automobile air-conditioning lines and then enter the waste oil discharge program.



3.3.6.4 After the oil drain is complete, the device displays the following, self-cleaning is complete



3.3.6.5 If necessary, you can carry out another reverse flushing, reverse flushing just from the high and low pressure quick connector will be high and low pressure pipe interchangeable (no need to move additional filters), that is, high-pressure quick connector connected to the low-pressure pipe, low-pressure quick connector connected to the high-pressure pipe (additional filters do not have to move), as shown in the figure below, of course, the reverse cleaning of air-conditioning system before the same should be vacuumed, and the completion of the reverse cleaning of the high and low-pressure pipe restore

3.3.6.6 Restore the compressor, expansion valve and filter drier lines in the pipeline, then evacuate for more than 30 minutes (because air enters the pipeline when restoring the above components), and then refill the refrigeration oil and refrigerant according to the air-conditioning label.

3.4 Method and procedure for sectionalized cleaning

3.4.1 Confirm that the weight of refrigerant in the equipment is greater than 4 kg

3.4.2 Connect the low-pressure hose of the equipment to the parts of the air-conditioning system to be cleaned

3.4.3 Connect one end of the additional filter to the red hose and the other end to the part of the air-conditioning system to be cleaned

3.4.4 Run the evacuation program for 5 minutes and make sure there are no leaks in the cleaned parts.

3.4.5.1 Enter the air conditioning line cleaning program and set the rinsing time (usually 10 minutes).

flushing
Refrigerant: R134a
set time: 10 min

←→:input enter: next

3.4.5.2 Press ENTER and then in the display as follows, start the air conditioning duct cleaning

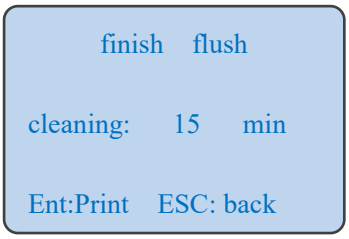
flushing
Refrigerant: R134a
set time: 10 min
countdown: 9 min 60s

3.4.5.3 When the cleaning is completed, the machine will automatically equipment and automotive air conditioning lines in the refrigerant recovery is complete after entering the waste oil discharge program

Waste oil draining
it will take about
90s, pls wait
countdown: 90 sec

3.4.5.4 After the oil drain is complete, the device displays the following, self-cleaning is

complete



3.4.5.5 If necessary, a backflush can be carried out again, when backflushing, simply swap the two lines connected to the interface of the cleaned component (without moving additional filters), of course, the air-conditioning system should also be evacuated before backflushing.

3.4.6 Restore the cleaned parts to the automobile air-conditioning pipeline, and then clean the next part to be cleaned.

3.4.7 When all the parts need to be cleaned are cleaned, the entire air conditioning system for vacuum 30 minutes to confirm that there is no leakage of air conditioning system in accordance with the system calibration to the air conditioning system to fill the refrigerant oil and refrigerant.