

A/C Service Station

Operating instructions



Model : CT4106



Please read the manual carefully before operation

*This unit is special for electric or hybrid
vehicle

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Important Safety Information's

This equipment is designed to be operated by qualified and trained personnel. Which should have enough knowledge of air conditioning repair & maintenance, refrigeration and electronics w/high pressure. It should only be operated after reading and understanding the safety warnings and operating procedures in this instruction manual and the vehicle's service manual.

When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.

The unit is extremely simple and reliable in selecting and performing all its functions. Therefore, the user is not exposed to any risk, if the general safety guidelines reported below are followed, in association with proper use and maintenance of the unit (improper use and maintenance will reduce the safety of the unit).

1. Checking the unit PAG oil always before operation. Avoid working process without enough oil or with bad quality oil.
2. The refrigerant tank must be only filled to 80% of maximum effective capacity in order to avoid the serious accident caused by the additional pressure arising from environmental factors.
3. Keep all soft tubes/hoses away from hot parts and rotating elements, such as: cooling fans, radiators and etc.
4. Always checking the vacuum oil pump, run/work without oil is strictly prohibited.
5. Checking power switch under normal working condition or not. The machine must be well connected with earth and installed against electric leakage to avoid high voltage hurt.
6. Do operate under the instruction to avoid refrigeration from polluted.
7. Polluted refrigeration is avoided from adding into the automobile A/C system.
8. Do avoid too high pressure of refrigerant tank caused by too much refrigeration or too high environmental temperature, which will cause damage of the tank and compressor

9. Make sure to place the vehicle's in "PARK"(if automatic) or "NEUTRAL" (if manual). Then, set the emergency parking brake and block the tires with chocks.
10. Warning: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.
11. This unit is an advanced electromechanical product including precision control components. Never allow operator to make disassembly and service.

WARNINGS



ALLOW ONLY QUALIFIED PERSONNEL TO OPERATE THE UNIT. Before operating the unit, read and follow the instructions and warnings in this manual. The operator must be familiar with air conditioning and refrigeration systems, refrigerants, and the dangers of pressurized components. If the operator cannot read this manual, operating instructions and safety precautions must be read and discussed in the operator's native language. **This unit can only used for R134a of electric or hybrid vehicles. It is forbidden to be used to non-hybrid vehicles for maintenancing.**



PRESSURIZED TANK CONTAINS LIQUID REFRIGERANT. Do not overfill the internal storage vessel, because overfilling may cause explosion and personal injury or death. Do not recover refrigerants into nonrefillable containers; use only federally authorized refillable containers



HOSES MAY CONTAIN LIQUID REFRIGERANT UNDER PRESSURE. Handle refrigerant with care as serious injury may occur. Wear protective equipment, including safety goggles, rubber gloves.



DO NOT BREATHE REFRIGERANT AND LUBRICANT VAPOR OR MIST. Exposure

may cause personal injury, especially to the eyes, nose, throat, and lungs. Use the unit in locations with mechanical ventilation that provides at least four air changes per hour. If accidental system discharge occurs, ventilate the work area before resuming service.



DO NOT USE AN EXTENSION CORD. An extension cord may overheat and cause fire. If you must use an extension cord, use the shortest possible cord with a minimum size of 14 AWG. TO REDUCE THE RISK OF FIRE, do not use the unit in the vicinity of spilled or open containers of gasoline or other flammable substances.



DO NOT USE COMPRESSED AIR TO PRESSURE TEST OR LEAK TEST THE UNIT OR VEHICLE AIR CONDITIONING SYSTEM. Some mixtures of air and R-134a refrigerant are combustible at elevated pressures. These mixtures are potentially dangerous and may result in fire or explosion causing personal injury or property damage



to prevent cross-contamination, **USE THIS UNIT WITH R-134a REFRIGERANT ONLY.** The unit is designed to recover, recycle, and recharge only R-134a refrigerant. Do not attempt to adapt the unit for another refrigerant. Do not mix refrigerant types through a system or in the same container; mixing of refrigerants will cause severe damage to the unit and the vehicle air conditioning system



HIGH VOLTAGE ELECTRICITY INSIDE THE UNIT HAS A RISK OF ELECTRICAL SHOCK. Exposure may cause personal injury. Disconnect the power before servicing the unit



HORIZONTAL HOLD. During operation, the device must be on a level, flat surface so that the measurement can be made correctly



Protect the device against rain Do not expose this machine to direct sunlight or rain. Used in a well ventilated area

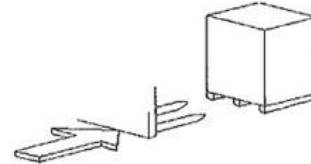
Transport and packing

1. No pressure in the working tank and system after packing

2. Storage and transport must refer to the marks on the box. Avoid rain, and notice the placed direction.



3. Use a forklift to transport goods. Avoid violent transport



4. Make sure the product and accessory in box should be complete and identical with the part list, if not please contact with the local distributor in time
5. the proper disposal of the packaging is the responsibility of the customer
6. Recommended service life of 6 years for machinery
7. Disposal of machine scrapping according to local policies, laws and regulations

Accessories

Check the accessories according to the packing list. If any missing parts or damaged parts found, please contact the dealer in time.

Pic	Name	Qty
	Manual	1 set
	Power line	1 pc
	2.5m HP/LP hose	Each for 1pc
	HP/LP quick coupler	Each for 1pc

Technical data

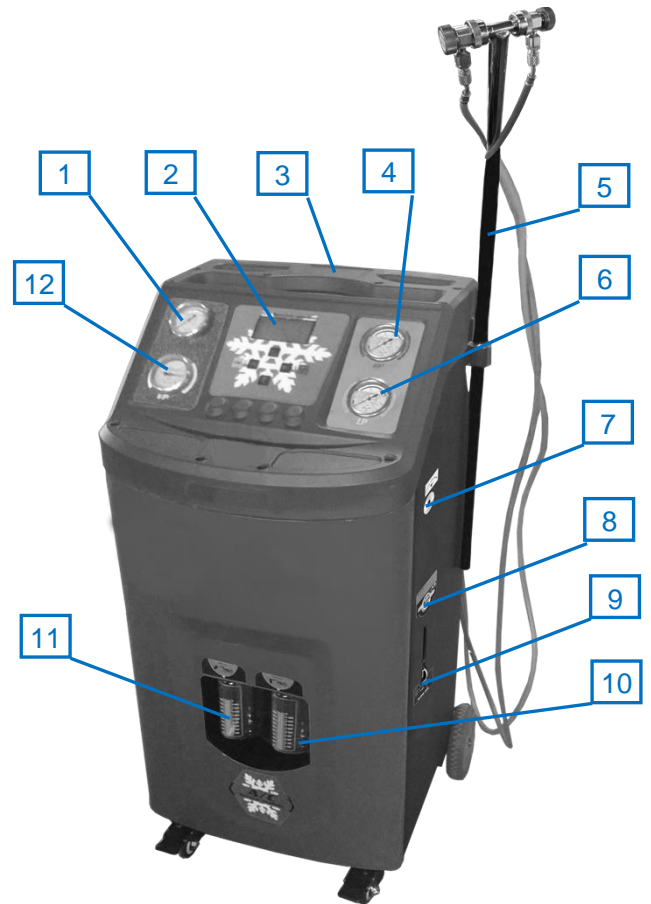
Parameter	Value
Power Supply:	220V 50Hz 1PH
Vacuum Generated Speed:	60L/Min.
Compressor Power:	1/3+ (HP)
Refrigerant Recovery:	R134a
Accuracy of electronic scale:	+/-5gs
Max. Weight of the electronic scale:	40kgs
Capacity of Refrigerant Tank:	10Kg
Recovery Speed:	180~350g/min.
Refilling Speed:	800~1500g/min.
Max. Pressure for HP:	35kgs/cm ²
Max. Pressure for LP:	35kgs/cm ²
Max. Pressure for BP:	35kgs/cm ²
Max. Working Pressure:	1.75Mpa

Product description

1. Function features :

- 1.1. Testing air-conditioning system
- 1.2. Recover the waste R134a refrigerant from **electric or hybrid** vehicle A/C system
- 1.3. Electronically gauge amount of refrigerant recovered from air-conditioning system
- 1.4. Vacuum the vehicle A/C system and leakage test
- 1.5. Recycle the wasted refrigerant with the professional oil-water separation system
- 1.6. Refrigerant and frozen oil recharge for the **electric or hybrid** vehicle A/C system
- 1.7. LCD screen, clear control panel and humanized notice
- 1.8. **This unit is specially used for the maintenance of electric or hybrid vehicle air conditioning.**

2. Appearance description

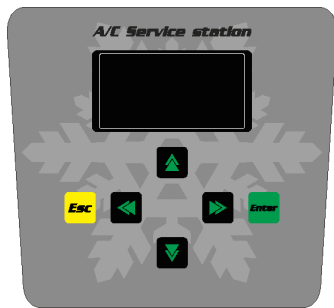


1	Tank pressure gauge: Show the tank R134a pressure gauge
2	LCD display: to display the operating information
3	HP gauge: Show the high side pressure of the a/c
4	Printer: to print the service result
5	Lift pocker: to hung the hose in a proper high
6	LP gauge: Show the low side pressure of the a/c
7	Relief valve vent: Relief valve overpressure exhaust outlet
8	Oil level window: to observe the pump oil level
9	Oil drain valve: to drain the vacuum pump oil
10	Waste oil bottle: to store the waste cooling oil
11	New oil bottle: to store the new cooling oil
12	VP gauge: To shows the vacuum degree



13	LP connector
14	HP connector
15	Vacuum oil inlet: add vacuum pump oil from here
16	Fuse
17	Power line
18	Power switch

3. Control panel



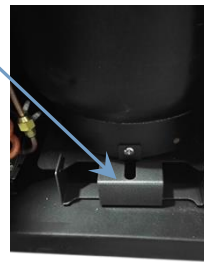
	For selecting function or items or select car data
	For selecting function or items or select car data
	For page up or parameter setting(for all items)
	For page down or parameter setting(for all items)
	Quits current page and returns to previous menu
	To start a procedure or enter the next screen

Preparing the Machine for the First Use

Perform the following steps to prepare the unit before the first use.

1. **Unpack the equipment you will find the accessories aforementioned**
2. **Open the rear door, remove the *electronic Scale protection bracket***(Reference follow

picture).
the protection bracket



For far distance transport, the protection bolt should be recover on the machine to protect the Electronic Scale.

3. Check the vacuum pump oil level

Check the vacuum pump oil level , oil level should between with the line on the vacuum pump sight glass when the pump is not running.



4. Fill up refrigerant into refrigerant tank.

4.1. Prepare a refrigerant R134a larger than 5Kg



4.2. Connect the red high pressure pipe and the blue low pressure pipe of the machine to the high and low pressure ports of the machine respectively.



4.3. Connect the red high-voltage quick connector to the other end of the red high-pressure pipe. The blue low-pressure pipe does not need to be connected to the blue quick connector.



4.4. Connect the other end of the blue low pressure pipe to the external refrigerant tank. **Do not open the hand valve on the tank.**



4.5. Enter the machine manual mode vacuum function, vacuum the machine pipeline and red and blue hose for 2 minutes.

```
Pls check oil level !
tank R134a weight
          0      g
Enter: next
```

```
Main menu
Automatic mode
Manual mode
System setup
↑ ↓ : select,ent:next
```

```
Main menu
Automatic mode
Manual mode
System setup
↑ ↓ : select,ent:next
```

```
Recovery
Vacuum/Leakage test
oil injection
R134a recharge
↑↓:select, ent:next
```

```
Recovery
Vacuum/Leakage test
oil injection
R134a recharge
↑↓:select, ent:next
```

```
set vacuum time:
20 min
Leakage test time:
20 min
←→:input, Ent: next
```

```
set vacuum time:
2 min
Leakage test time:
1 min
←→:input, Ent: next
```

```
vacuum
Vacuumizing...
set time: 2 min
countdown: 1 min56s
```

4.6. After the vacuum is over, the leak is automatically checked for 1 minute. Observe whether the pressure gauge of the vacuum gauge is stable and does not return to zero. It means red and blue hoses are not connected to the machine if the zero return indicates that the , and there is a leak. Please check where is the leak. Leak may caused from the connection of red and blue hoses to machine, connect between quick connector and red hose, or disconnect between blue low pressure tube and the outer tank connection piece. After checking the leaked position, reconnect it, and then perform the vacuum leak detection as step 5. **Make sure there is no leak before proceeding to the next step**

4.7. After vacuuming to ensure that no leaks are present, fresh refrigerant can be supplied to the tank inside the machine. Return to the machine boot interface, open the outer jar handle valve, and then turn the jar upside down

Pls check oil level
 tank R134a weight
 0 g
 Enter: next



4.8. Enter the manual mode recovery function of the machine, and use the recycling function to add 3Kg of refrigerant to the external refrigerant tank to the machine.

Pls check oil level!
 tank R134a weight
 1 g
 Enter: next

Main menu
 Automatic mode
 Manual mode
 System setup
 ↑ ↓ : select,ent:next

Main menu
 Automatic mode
 Manual mode
 System setup
 ↑ ↓ : select,ent:next

Recovery
 Vacuum/Leakage test
 oil injection
 R134a recharge
 ↑↓:select, ent:next

Recovery
 Connect HP/LP hose
 with auto A/C & open
 the HP/LP valve
 Ent: next, stop: back

Recovery
 Tank R134a: 0 g
 Set Rec qty: 1500 g
 ← →:input, Ent: next

Recovery
 Tank R134a: 0 g
 Set Rec qty: 3000 g
 ← →:input, Ent: next

Recovering.....
 Set qty: 3000 g
 recovered: 0 g

recovery
 R134a Recovery end
 Recovered: 3000 g
 Countdown: 56 sec

4.9. After recovering to the 3Kg refrigerant as setting,the machine automatically enters the 1-minute delay recovery program. At this time, the outer tank hand valve is closed, the pipe is not taken off the can, and the machine automatically recycles the refrigerant in the pipe to the machine.



4.10. After the 1 minute delay recovery, the machine automatically performs the oil drain interface. At this time, press ESC to exit the oil draining program.

recovery
 Waste oil draining..
 it will take about
 60s, pls wait.....
 countdown: 59 sec

4.11. After exiting the oil drain, remove the blue hose from the outer tank and connect the blue quick connector to complete the new refrigerant added to the machine for operation. The machine can be used normally.

4.12. Now the procedure is completed

4.13. Now the machine is already to use

5. Fill new POE coolant oil

Unscrew the new POE oil bottle then Add about 250cc of new POE coolant oil into the new oil bottle, the oil type should meet the requirements of maintenance of automotive air conditioning system.

6. Connect the power

Connect the power supply and switch it on. now the equipment is ready to use

7. Turn the printer switch to on position

Operation instructions

Manual mode

With this procedure, all functions (Refrigerant Recovery & Recycling, Recovered Oil Drain, A/C System evacuation, New Oil Injection and Refrigerant Charge) can be performed individually (step by step).

1. Recover refrigerant from a Electric or Hybrid Vehicle

The purpose of the Recovery mode is to recover refrigerant from the air conditioning system, which will condense, purify and store the liquid refrigerant in the storage cylinder ready for re-use.

1.1 Empty the oil drain bottle before starting a recovery. unscrew the oil drain bottle from the machine

Note: The machine gives an alert while enter the recovery process, but it is a good practice to completely empty the oil drain bottle before recovering an A/C system

12 Connecting to the A/C system

Use the service hose quick-connect couplers to

connect the hoses to the A/C system service ports, bearing in mind that BLUE must be connected to the low-pressure (suction) side and RED to high pressure (discharge) side.

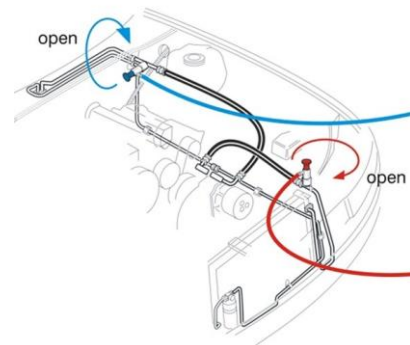
NOTE: Before connecting the quick couplers, clean the a/c ports of any foreign material

13 Open the coupler valves on the hoses by turning the collars clockwise.

Winding the quick coupler hand wheel clockwise, will allow the refrigerant to flow through the hoses. Turning hand wheel in opposite direction, the flow will be closed. If there is any refrigerant in the air-conditioning system, the pressure gauges will indicate a pressure rise.

IMPORTANT:

The unit gauges are important and useful instruments. The operator should have basic understanding between gauge reading and air-conditioning system operation, in order to correctly diagnose any possible system malfunction.



14 Turn on the power switch, the unit will show.

Pls check oil level!
 tank R134a weight:
 *****g
 enter: next

15 Press ENTER key to enter the main menu page :

Main menu
 Automatic mode
 Manual mode
 System Setup
 ↑↓:select, ent:next

16 Select manual mode by ↑↓ keys, then press enter key it will show

Recovery
 Vacuum/Leakage test
 oil injection
 R134a recharge
 ↑↓:select, ent:next

1.7 Select "recovery" then press enter key, the unit shows

Recovery
 Connect HP/LP hose
 with auto A/C & open
 the HP/LP valve
 Ent: next, stop: back

1.8 While Connect the two hose with the car and opening the two quick coupler valves then press enter key, it shows

Recovery
 Tank R134a: *****g
 Set Rec qty: *****g
 ← →:input, Ent: next

1.9 Set the recovery qty (normally set maximum qty) by ← or → keys, then press enter key, the unit shows

check used oil level,
 ensure its less than
 250ml
 enter: next

check used oil level, if it is over 250ml, please empty the used oil bottle.

Note: it is a good practice to completely empty the used oil bottle before recovery

1.10 Then press enter key, machine start recovering and it will show the set qty and has recovered qty

Recovering.....
 Set qty: *****g
 recovered: *****g

Note: maybe it will give an alert as followed, point out a max recovery qty, please press enter key and re-set the recovery qty

Set qty over, Pls
 Reset, tank can
 only recov *****g

1.11 When the refrigerant of A/C system is completely recycled or recovered qty reached set qty, the unit will continue recovery 1min. and it display as figure followed,

recovery
 R134a Recovery end
 Recovered: *****g
 Countdown: **min**s

Note:

a) If the set recover qty less than the qty of R134a exist in the auto A/C system, the unit will stop recovering automatically while recovered qty reached the set qty. and it display as followed, press any key back to recovery page

Warning
 R134a Recovery have
 Not completed, pls
 recovery again
 Press Anykey to back

b) During the recovery process, if the machine stop working with BP sound and shows as followed fig, it means the unit tank pressure is equal to or more than 17.5bar, you can press enter key to release the tank pressure till 14 bar (by view BP gauge), then press stop key and the unit can perform recovery again

Warning
 Tank Pressure high!
 Press enter key to
 release tank pressure

1.12 One minute later, the unit begin to drain the waste oil out automatically, the unit shows as followed

recovery
Waste oil draining..
it will take about
60s, pls wait.....
countdown: **sec

1.13 One minutes later, oil drained completed and the unit shows, if necessary press enter key to print the result, otherwise press stop key back to the manual page

recovery
oil drain completed

Ent:Print, stop:back

2. Evacuate the A/C System & leakage test

In the evacuation mode the air and moisture in the air conditioning system is removed and exhausted to the atmosphere. The evacuation mode runs for a predetermined time selected by the operator.

- 21 Ensure service hoses are connected to the **electric or hybrid** vehicle A/C system, and coupler valves are OPEN.
- 22 Enter the manual mode and select vacuum/leakage test by ↑↓ keys, then press enter key, unit shows

Main menu
Manual mode
Automatic mode
System Setup
↑↓:select, ent:next

Recovery
Vacuum/ Leakage test
oil injection
R134a recharge
↑↓:select, ent:next

set vacuum time:
*****min
Leakage test time:
*** min
←→:input, Ent: next

- 23 Set vacuum time by←and→keys, then press ENTER key to ensure, then set the Leakage test time by←and→keys, then pPress enter key to start the proses, now the display shows as followed

vacuum
Vacuumizing....
set time: *****min
countdown: **min**s

Note: If the a/c system exist refrigerant, the unit will refuse to perform the vacuumizing and gives an alert as followed, press enter key back to the recovery page

Warning
R134a in car,pls
Recover first

- 24 The unit evacuates the A/C system and stops when the specified amount of time has elapsed. the unit enter the leakage test procedure

Note: At any time the evacuation can be paused or cancelled by pressing the stop key

- 25 After the vacuum the unit will automatic enter the leakage testing under the manual mode, and the machine display as figure, pls record the vacuum degree(view HP/LP gauge)

Leakage test
Leakage testing....
Pls record pressure,
countdown:*****min

- 26 While the specified amount of time has elapsed the unit display as followed fig, pls ciompare the read of HP and LP gauge, if the read become higher , it means that leakage exist in A/C system, pls repair first.

Leakage test
Leakage testing end,
Pls compare pressure
data
Ent:Print,stop: back

3. Oil injection

The purpose of this function is fill refrigerant oil from the oil reservoir to the electric or hybrid vehicle air-conditioning system.

Important: The unit requires that the air conditioning system has previously been evacuated to a maximum vacuum before this function can be carried out. Please noted that the new oil only use POE refrigerant oil. Otherwise, it may cause damage to the automobile air conditioner.

- 31 Make sure there is enough new oil in the oil bottle
- 32 Press enter key enter the main menu,then select maual mode by ↑↓ key

```
Main menu
Automatic mode
Manual mode
System Setup
↑↓:select, ent:next
```

- 33 Press enter key, LCD shows as figure, select "oil injection" by ↑↓ keys

```
Recovery
Vacuum/Leakage test
oil injection
R134a recharge
↑↓:select, ent:next
```

- 34 Press enter key, LCD shows as figure, pls ensure the new oil level is more than 100 ml

```
check new oil level,
ensure its more than
100 ml

enter: next
```

- 3.5 Press enter key, LCD shows as figure, set the oil qty by ← or →keys

```
Oil injection

set qty: ***ml

←→:input, Ent: next
```

- 3.6 Then press enter key, LCD shows as figure, And the unit begin to adding oil

```
Oil injection
Oil injection.....
Pls wait
```

- 3.7 After completion of oil injection, the unit will show as followed fig

```
Oil injection
Oil injection end

Ent:Print,stop: back
```

Conditions that will prevent oil injection

- The unit will not inject oil if the following conditions exist:
- Insufficient vacuum.
- Quick coupler valve on service hose are closed

4. Recharge the A/C System

The purpose of this function is to batch a user defined weight amount of refrigerant into the air-conditioning system.

It is recommended that the A/C system is always properly evacuated before refrigerant is charged in to the A/C system.

- 4.1 Press enter key enter the main menu,then select maual mode by ↑↓ key

```
Main menu
Automatic mode
Manual mode
System Setup
↑↓:select, ent:next
```

- 4.2 Press enter key, LCD shows as figure,

```
Recovery
Vacuum/Leakage test
oil injection
R134a recharge
↑↓:select, ent:next
```

- 4.3 Select "R134a recharge" by↑↓keys, press enter key LCD will show:

Recharge
 Connect HP/LP hose
 with auto A/C & open
 the HP/LP valve
 Ent: next, stop: back

44 Press enter key LCD will show

Recharge
 tank R134a: *****g
 Set fill qty: *****g
 ← →:input, Ent: next

45 Set the amount of refrigerant to be charged into the a/c system by ← → keys, then press enter key, machine start recharge and it will shows the set qty and has recharged qty

Recharge
 R134a charging...
 Set qty: *****g
 charged:*****g

Note:

Maybe the screen display the followed fig pointing the max charging weight, it means there is not enough R134a in tank, pls recovery more into the tank or re-set the charging qty

Set qty over, Pls
 Reset, tank can
 only charge *****g

46 When R134a recharged qty reached set amount, the equipment stops recharge with BP sound and screen display as figure followed, pls remove the HP hose from car and running auto ac to suction the refrigerant exist in the service hose

Recharge
 Remove HP hose from
 Car, runing auto A/C
 Ent: next

47 Then press enter key the unit display as followed,

Countdown: 5min 0s

4.8 5 min later, the unit shows

Recharge
 R134a recharge end
 R134a intank: *****g
 Charged: *****g
 Ent:Print stop: back

Operating tips

Anytime when recharging slowly or stop rechaging but no any indicator, you can remove the HP service hose from A/C system and running car A/C system to accelerate recharging speed

Automatic mode

In the Automatic cycle mode, all the operations will be performed one after the other.

(Refrigerant Recovering and Recycling, Recovered Oil Drain, System Evacuation, New Oil Injection and Refrigerant Charging) are performed automatically, in one cycle.

1. Press enter key enter the main menu, then select "Automatic mode" by ↑↓ key

Main menu
 Automatic mode
 Manual mode
 System Setup
 ↑↓:select, ent:next

2. Press enter key The LCD display

Pls ensure new oil
 more than 100ml &
 used oil less than
 250ml
 enter: next

3. Press enter key The LCD display

Automatic mode
 Manual input
 database
 ↑↓:select, ent:next

4. Select "Manual input" by arrow key, followed enter key, it will show

```
Set Rec qty: 3000g
Vacuum time: ****min
Oil injection : ***ml
Recharge qty: ***** g
← →:input, Ent: next
```

5. If select "database" then press enter key the unit shows as followed,

```
Alfa romeo
Audi
Bedford
Bmw
chrysler
```

6. Press← → keys For page up/page down, press ↑↓key to select car brand ,then press enter key, it will shows the car model :

```
145
146
147
155
156
```

7. Select model then press enter key, the unit display

```
1.3/1994~97 700
1.4/1994~97 700
1.6/1994~97 700
1.7/1994~97 700
JTD/1998~01 800
```

8. Select the the displacement and year, then press enter, it shows

```
Set Rec qty: 3000g
Vacuum time: 10min
Oil injection : 0ml
Recharge qty: 700 g
← →:input, Ent: next
```

9. Pls set parameter by ← → key then press enter key to conform, machine will enter automatic cycle, then the unit runs recovering, discharging oil, vacuum, adding oil , recharging automatically by sequence.

```
Automatic
Recovering.....
Set qty: ****g
recovered: ****g
```

```
Automatic
Waste oil draining..
it will take about
60s, pls wait.....
countdown: **sec
```

```
Automatic
Vacuumizing....
set time: **min
countdown:**min**s
```

```
Automatic
Oil injection...
Pls wait
```

```
Recharge
R134a charging...
Set qty: *****g
charged:*****g
```

In this procediure there is no need the person stay front of the unit, while the machine stop automatically, the unit display as followed with BP sounds; pls remove the HP hose from car and running auto ac to suction the refrigerant existed in the service hose

```
Recharge
Remove HP hose from
Car, runing auto A/C

Ent: next
```

10. Then press enter key the unit display as followed,

```
Countdown: 5min 0s
```

5 min later, the unit shows

```
Automatic
R134a recharge end
R134a intank: *****g
Charged: *****g
Ent:Print,stop: back
```

the hole automatic cycle completed

System Setup

Turn on the unit, the LCD display as figure, pls the new oil and used oil level

```
Pls check oil level!
tank R134a weight:
*****g

enter: next
```

Enter the main menu and select "system setup" then press enter key

```
Main menu
Automatic mode
Manual mode
System Setup
↑↓:select, ent:next
```

Press enter key The LCD display

```
Clear filter value
Clear vacuum time
R134 calibrate
Clear R134a tank
sys self test
```

1. Replace the dry filter

System will calculate and record total quantity of refrigerant recovered automatically. When total recovered R134a amount over 98kgs, the unit will display

```
The dry-filter has
filtered R134a over98 kg,
please replace the dry-
filter
Enter: next,stop: back
```

Dismantle the cover of the unit and remove the old dry filter, replacing with a new one.

After replace the dry filter, press enter key enter system set up, then select clear filter then press enter key the unit shows

```
Clear filter value
The dry-filter has
filtered R134a
*****kg
Ent:clear,stop:back
```

then press enter key to clear the value, then press stop key to save

note:

- should apply dry filter of same specification as original parts
- note mount direction of dry filter
- use two wrenches at removing/mounting dry filter adaptors

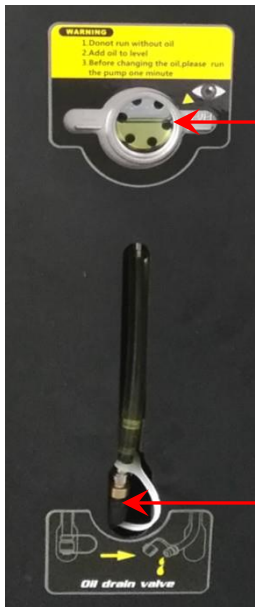
2. Change Vacuum Pump Oil

For maximum vacuum pump performance, change the vacuum pump oil after every 10 hours of operation. System will calculate and record total time of "vacuum" operation

And it will remind you to replace oil after 10 hours accumulated working times since the last oil change, when the followed figure display means that you should change the pump oil, follow is the changing step

```
warning
Vacuum pump has been
running 10 hours,Pls
change pump oil
Enter: next,stop: back
```

- Press ENTER button to continue operation. Replace the vacuum pump oil
- After finishing vacuum operation, Place an oil container under the oil drain outlet of vacuum pump
- Unscrew the oil drain plug, the wasted vacuum pump oil will flow to the oil container



Oil level window

Oil drain valve



filter



Vacuum oil inlet

- 24 Recover the oil drain plug after finish draining wasted oil
- 25 Turn the filter top cover anticlockwise about 1cm then take it away
- 26 Turn the filter cartridge anticlockwise and take it away
- 27 Pour the new pump oil into the vacuum pump from the filter fixed hole. (use 100# vacuum pump oil)
- 28 Screw down the filter cartridge when the oil exceed the oil level line. then recover the filter top cover
- 29 Turn on the power switch and press enter key enter system set up, then select clear vacuum

Clear filter value
 Clear vacuum time
 R134 calibrate
 Clear R134a tank
 sys self test

Clear vacuum time

The vacuum pump has running: ****h
 Ent:clear,stop:back

then press enter key to clear the value,then press stop key to save

3. Calibrate the refrigerant scale

Any time you doubt the R134a scale's accuracy, you may do a calibration as followed steps

- 3.1 Press enter key enter system set up, then select R134a calibrate

Clear filter value
 Clear vacuum time
 R134 calibrate
 Clear R134a tank
 sys self test

- 3.2 Press enter key the unit display

Pls remove the tank From the R134 scale & ensure nothing on the scale plate
 Ent:next,stop:back

Then remove the refrigerant tank from scale plate by unscrew the three fixing screws(no need to dismantle the two hose fixed on the tank) and make sure there is nothing on the scale plate

- 3.3 Then press enter key LCD displays

No-load: *****
 Weights:
 On load:
 Ent:next,stop:back

- 3.4 Press enter key then Input the value of the weight which you have(for example 8000g), then put the weight (which whight equqals you input value) on the scale plate

No-load: *****
 Weights: 8000g
 On load:
 ← →:input, Ent: next

3.5 Then press enter key LCD displays as followed, the calibration is completed, then press stop key to back previous menu

No-load: *****
 Weights: 8000g
 On load: *****
 Press ent then stop

4. Clear R134a tank

The function is used for Eliminate tank weight of the refrigerant scale after the calibration finish, step as follow

4.1 Remove the weight and put the empty refrigerant tank on the scale plate then fixed the three screws on

4.2 Enter the "system setup", then select "Clear R134a tank", press enter key LCD as fig followed

Clear R134a tank
 Empty tank: *****g

 Ent:clear,stop:back

4.3 Then press enter key to clear the value, then press stop key to save

Note: if the tank contains refrigerant, the clear function will not be effected unless replaced with a different tank

5. System self-test

it is convenient for the rapairer to sevice the unit while the unit emerge any problems

it is used for diagnostic the 8pcs of magnetic valve and 2 motors wether works normally

5.1 Turn on the unit, press enter key enter system set up, the unit display as follow

Clear filter value
 Clear vacuum time
 R134 calibrate
 Clear R134a tank
 sys self test

5.2 Select "system self-test" by ↑↓key press enter key LCD display as followed

or page down by press →key

waste gas valve
 new oil valve
 waste oil valve
 recovery valve
 vacuum valve

HP valve
 charge valve
 UV valve
 compressor
 vacuum pump

5.3 Select an item then press enter key the unit display

Open
 close

5.4 Select the valve state by ↑↓key then press enter key to open or close the parts

6. Replace the vacuum pump oil mist separator

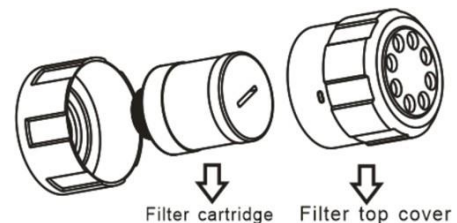
Replace the vacuum pump oil mist filter
 the vacuum pump oil mist filter is mounted on the rear of the equipment, It is recommended that to replace the vacuum pump oil mist filter every half a year, please refer the follow description to replace the filter

6.1 Turn the filter top cover anticlockwise about 1cm then take it away

6.2 Turn the filter cartridge anticlockwise and take it away

6.3 Screw down a new filter cartridge instead previous

6.4 Then recover the filter top cover



Trouble shooting

	Fault	Cause	Remedy
A	LCD CAN NOT LIGHT	A1- no power	- check the power supply
		A2- power connector fech away	- connect well
		A3- fuse melt	- replace a new one
		A4- cpu board or LCD WRONG	- replace a new one
B	Cant display the refrigerant weight	B1- scale protection bolt has not remove	- take off the protection bolt
		B2- sensor connector fetch away	- connect well
		B3- sensor fault	- replace a new one
		B4- cpu board fault	- replace a new one
C	Cant perform recovery	C1- solenoid valve not work	- check the relative relay - change the solenoid valve
		C2- expansion valve jam	- reversed flush - ice jam, 30min later recovery again
		C3- compressor no power	- check the relative relay
		C4- compressor fault	- replace a new one
D	No oil drain	D1- solenoid valve not work	- check the relative relay
E	Cant vacuumize	E1- solenoid valve not work	- check the relative relay - replace a new one
		E2- pump can not work	- check the relative relay - replace a new vacuum pump -change the pump oil
F	No display	F1- power connector fech away	- connect well
		F2- transformer	- change a new one

		fault	
		F3-cant see any character	- adjusting the potentiometer of cpu board
G	Cant charge refrigerant	G1- refrigerant not enough	-Fill refrigerant into refrigerant tank
		G2- weight scale fault	- change a scale
		G3- solenoid valve not work	- check the relative relay - replace a new solenoid valve
H	Too much noise	Vacuum Pump lack oil	- add enough pump oil
		Pump screws loose	- tighten the screws
		dirty in solenoid valve	- change a new solenoid valve
		Fan blade touched rear cover	- check and repair

Pipeline schematic diagram

