GM-720A

A/C System Maintenance Centre

Safety

- The machine is designed to be used and repaired by qualified personnel only.
- The machine designed for use in recovering the R134a refrigerant fluid used in the air-conditioning (A/C) systems of motor vehicles. Fill the A/C system with the quantity of refrigerant recommended by the manufacturer.
- Check the vehicle use and maintenance manual for the type of refrigerant fluid used by the A/C system. Do not mix different type of refrigerant otherwise can easily lead to malfunction of the machine.
- Keep away from moving parts and rotating elements such as cooling fans, alternators and heating components, etc to avoid harm.
- Wear protective clothing gloves and goggles.
- As automotive air conditioning pipe flushing, the operator must be fully familiar with automotive air conditioning system and operation of the machine. Check whenever the engine is turned off that the ignition key is turned to the full OFF position!
- Do not expose the machine to direct sunlight or rain. Use only in well-ventilated work areas.
- Never exceed 30 ° tilt in transit process upside down is strictly prohibited.
- Do not touch the machine high voltage power supply section, and do not maintain the machine as power on.
- Care of the manual.

CONTENTS

1、Introduction

1) Outline

GM series A/C system maintenance equipment is with the latest design technique which uses the best control principle and the manufacturing process.
GM-720A A/C System Maintenance Centre is intelligent equipment collecting of the A/C flushing, recovery, recycling, recharging and other functions in one. It's with the beautiful shape, humanized operation interface, and advanced manufacturing processes to make the A/C maintenance professional and simple.

2) Features

A、Fully automatic, easy to operate.
B、Internal pipeline of A/C system flushing, effectively cleared the internal greasy and fouling, to restore the A/C system performance.
C、With forward flushing, reverse flushing, and pulse flushing functions, which greatly improve the cleaning effect.
D、Using large-size glass tube with LED backlighting, can effectively observe the entire cleaning process.
E、Vertically installing the HP & LP gauges let the operator be able to observe the pressure parameters timely even in the car.
F、Unique design of the pipeline to achieve the high recycling rate no matter with the gas or the liquid.
G、 Easy to operate with the concise operating interface.
H、Designed with large size LCD.
I、 Database.
J、Program and database can be updated.
K、With printer.
L、Designed with auxiliary load cell for recharging by the external refrigerant tank. (GM-720A)

3) Specifications

A、Working conditions:
Ambient temperature: 0~50°C
Relative humidity: ＜85%
B、Voltage input: □AC220V±10％~50/60Hz □AC110V±10％~60Hz
C、Compressor：12.12cm^3
D、Vacuum pump: 7.2m^3/h，10Pa

E、Load cell for tank: ±10g
F、Auxiliary load cell: ±10g (GM-720A)
G、 Load cell for oil bottle: ±5g
H、Tank: 12L
I、 Oil bottle: 250ml,double
J、 LCD display: 240*128
K、Working pressure: max. 20bar
L、HP gauge: -1bar~3.5MPa
M、 LP gauge: -1bar~1.5MPa
N、P gauge: -1bar~3.5MPa
O、Backlighting：LED

2、Functions

1) Primary functions

A、Automatic flushing
B、Automatic recovering/recycling
C、Automatic/manual used oil drain
D、Automatic vacuum
E、Automatic/manual new oil injection
F、Automatic recharging with load cell
G、 Automatic recharging via the secondary recharging tank (880A)
H、Auto mode
I、 Database

2) Subsidiary functions

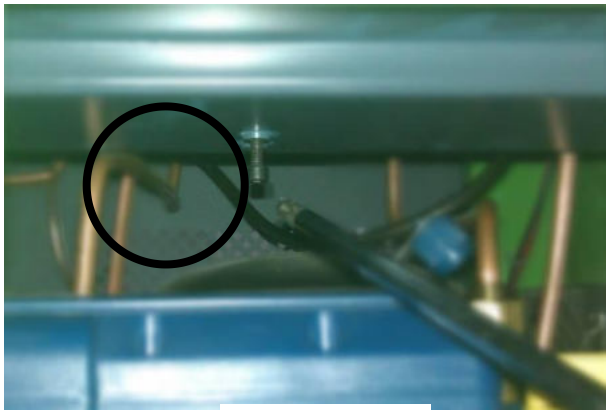
A、Parameter setting
B、Supply refrigerant
C、Electric scale calibration
D、Maintenance procedures (dry-filter exchange, vacuum pump maintenance)
E、Printer checking
F、System inquiry
G、 Equipment info
H、Help

3. Operation

1) Parts descriptions

2) First use

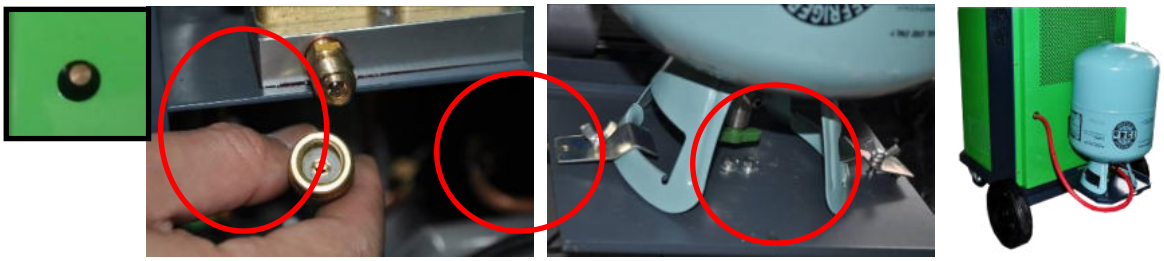
A、Unscrew the electronic scale support screw before using the equipment.



From the back.

B、Please supply about 4 kg refrigerants into the tank of equipment so that all of the functions can be run normally. Please refer to the chapter of "**Refrigerant supply**".

C、Fix the refrigerant tank (Recharging tank) on the load cell. (GM-720A)



1st Connect the Recharging Tank port of the machine and the port of the refrigerant tank with the recharging refrigerant hose.

2nd Open the valve of the refrigerant tank and place it upside down on the load cell pan.

3rd Fix it with the accessories.

Note: If you need not using the auxiliary load cell, please fix it as the manufactory.

Warning: Non-pedal the auxiliary load cell!

D、Please read this user manual carefully before operating.

3) Preparations before Operation

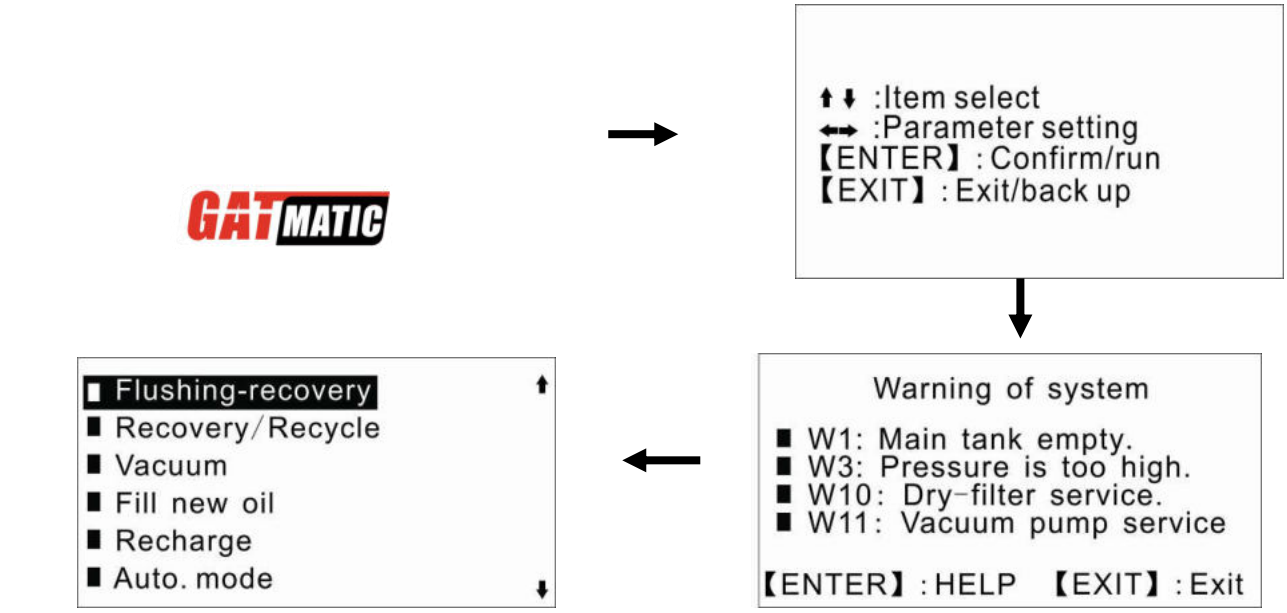
A、To check if there has enough refrigerant in the tank. The volume should be 4~6 kg.

B、Empty the used oil bottle.

C、Check the automotive A/C system. If there has any leakage, it must be repaired firstly to avoid refrigerant leak during flushing process.

D、Check if the automotive air-conditioning can run normally.

4) Power On



Note: the descriptions for keys just be shown 5 times.

5) Flushing & Recovery

A、 By this function, it will be able to clean out the refrigerant oil and oil sludge to exchange the refrigerant entirely to improve the performance of compressor. And also it will recover the refrigerant remained in the A/C system.

B、 Before flushing the pipeline of automotive A/C system, please turn on A/C system and run it for 5 to 10 minutes. And set it as the lowest temperature and medium wind.

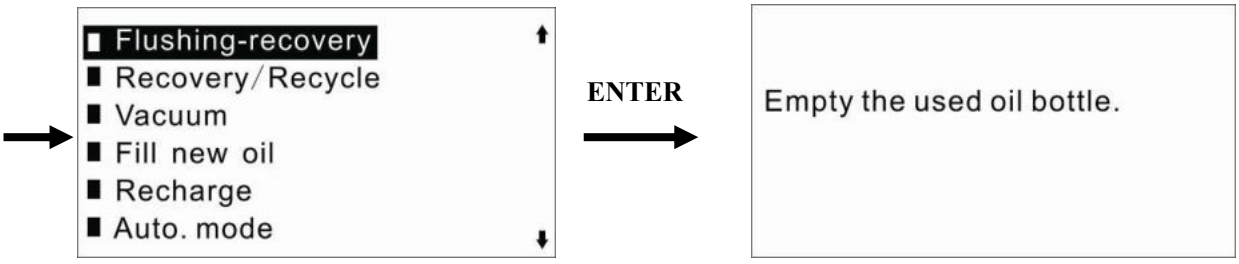
C、 Turn off the automotive air conditioning.

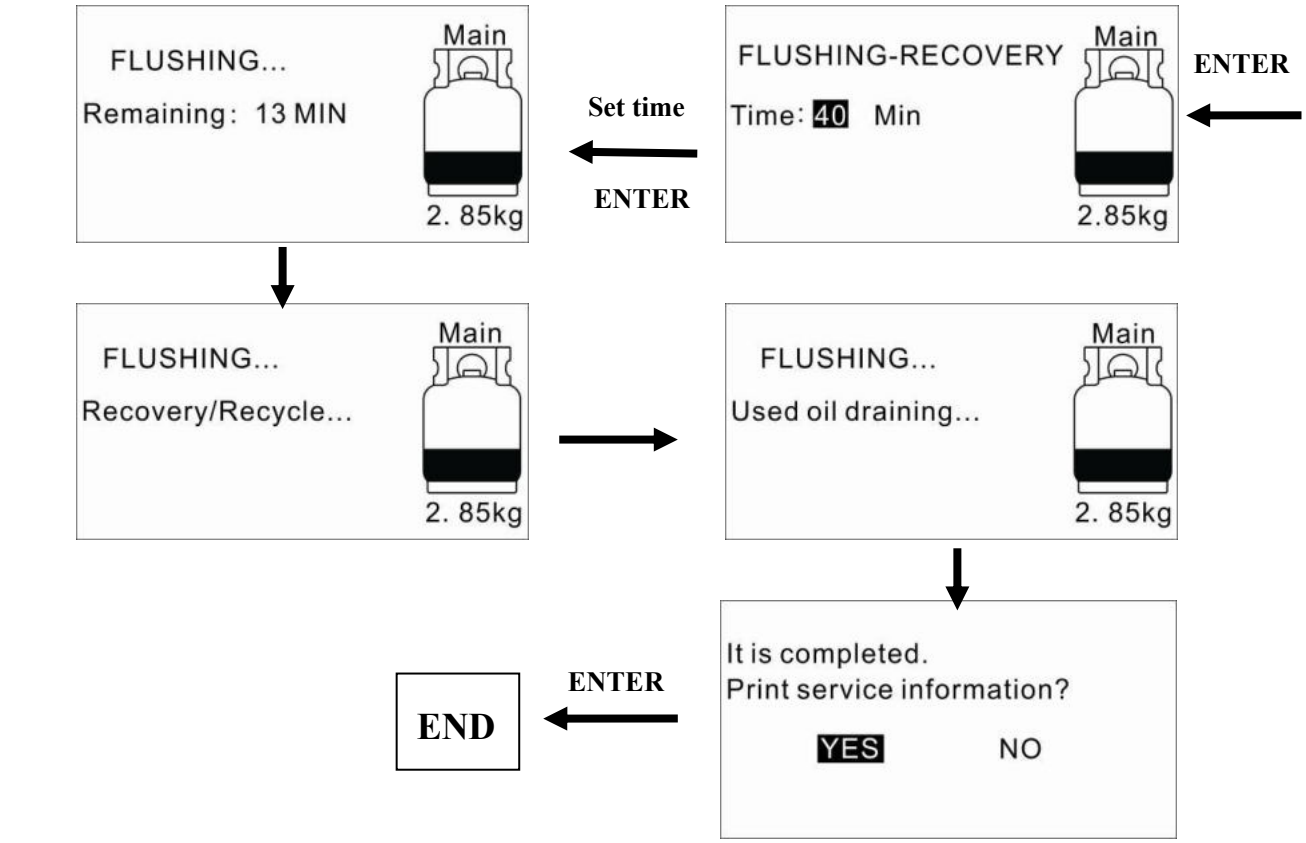
Warning: do not start the air conditioning during the flushing process! Otherwise, it easily causes damages to the air-conditioning and risk of accident!

D、 In order to achieve good flushing performance, the flushing time should be more than 30 minutes. Normally, the good flushing time is about 45 minutes for car.

Note: The flushing time does not include the time of recovery process. Once the flushing is finished, the machine will run the recovery function automatically.

E、 Operations:





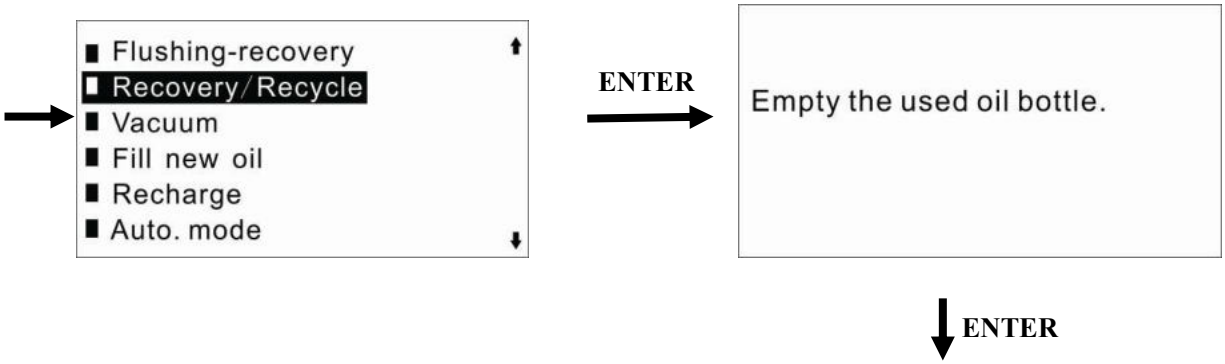
F、 If it displays code as F00- during the process, please deal with it according to prompt information.

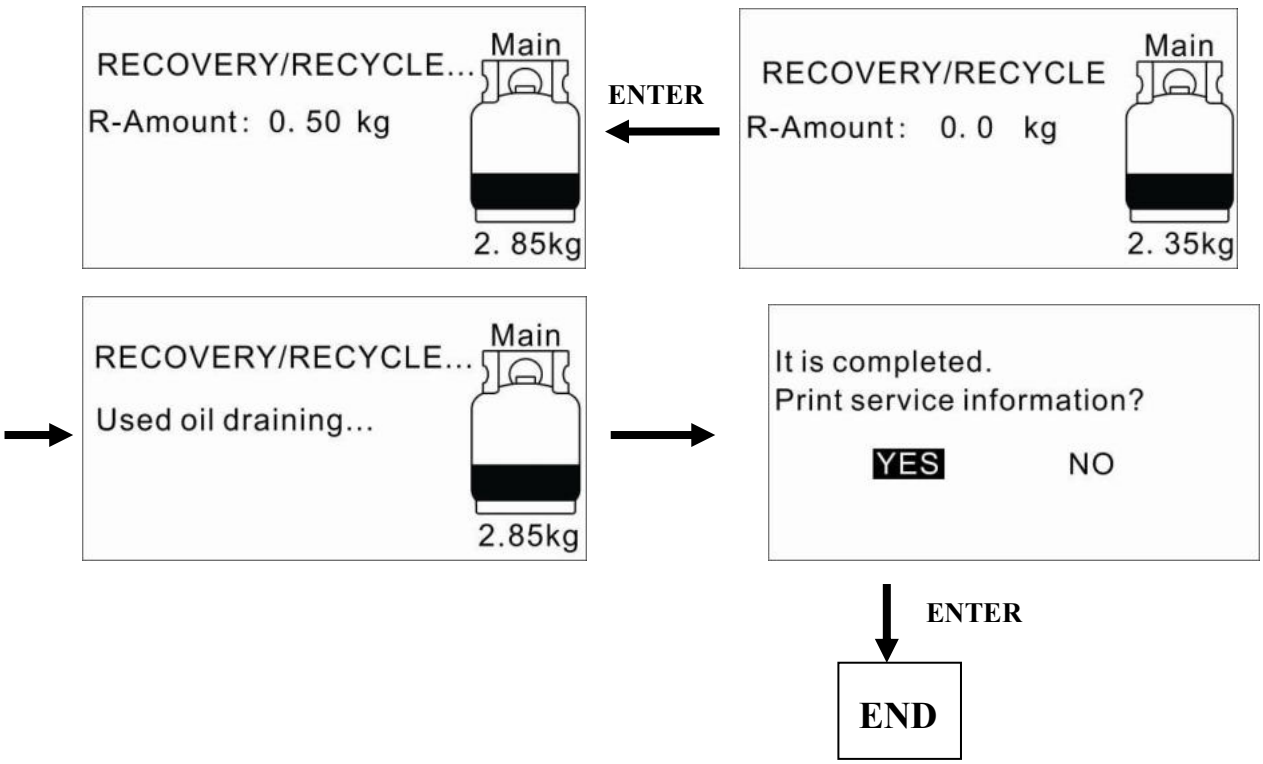
G、 **Notice: it's normal for that there have action sound of the solenoid valve during the working process. Please do not stop it. The used oil can be drained out automatically or by manual.**

6) Recovery/Recycling

A、By this function, it will recover the refrigerant remained in the A/C system.

B、Operations:





C、If it displays code as F00- during the process, please deal with it according to prompt information.

D、**Notice: The used oil can be drained out automatically or by manual.**

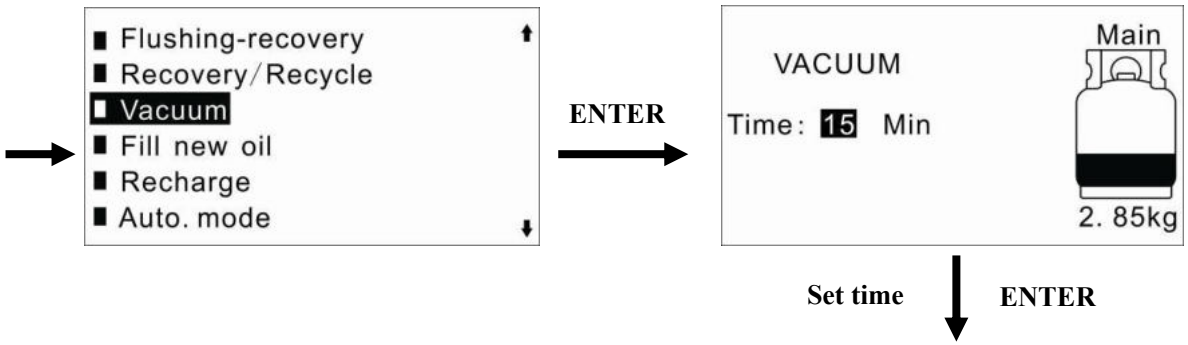
Note: Press ↑ and ↓ key in recovery function. It will purify the non-condensable gas automatically.

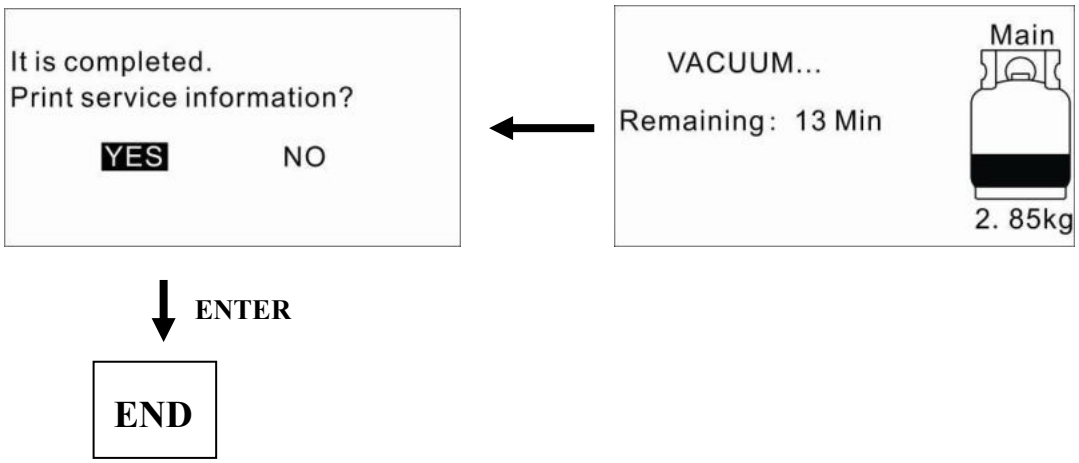
7) Vacuum

A、By this function, it will clean the water vapor out from the A/C system.

B、It should be more than 15 minutes. Generally, it needs 15 minutes at least for the air conditioning only with front wind and 20 minutes for with the front and rear wind.

C、Operations:





D、If it displays code as F00- during the process, please deal with it according to prompt information.

8) New oil adding

A、Pour new oil into the new oil bottle.

Note: add new oil more 20ml than the used oil drained out to avoid the air into the air conditioning system.

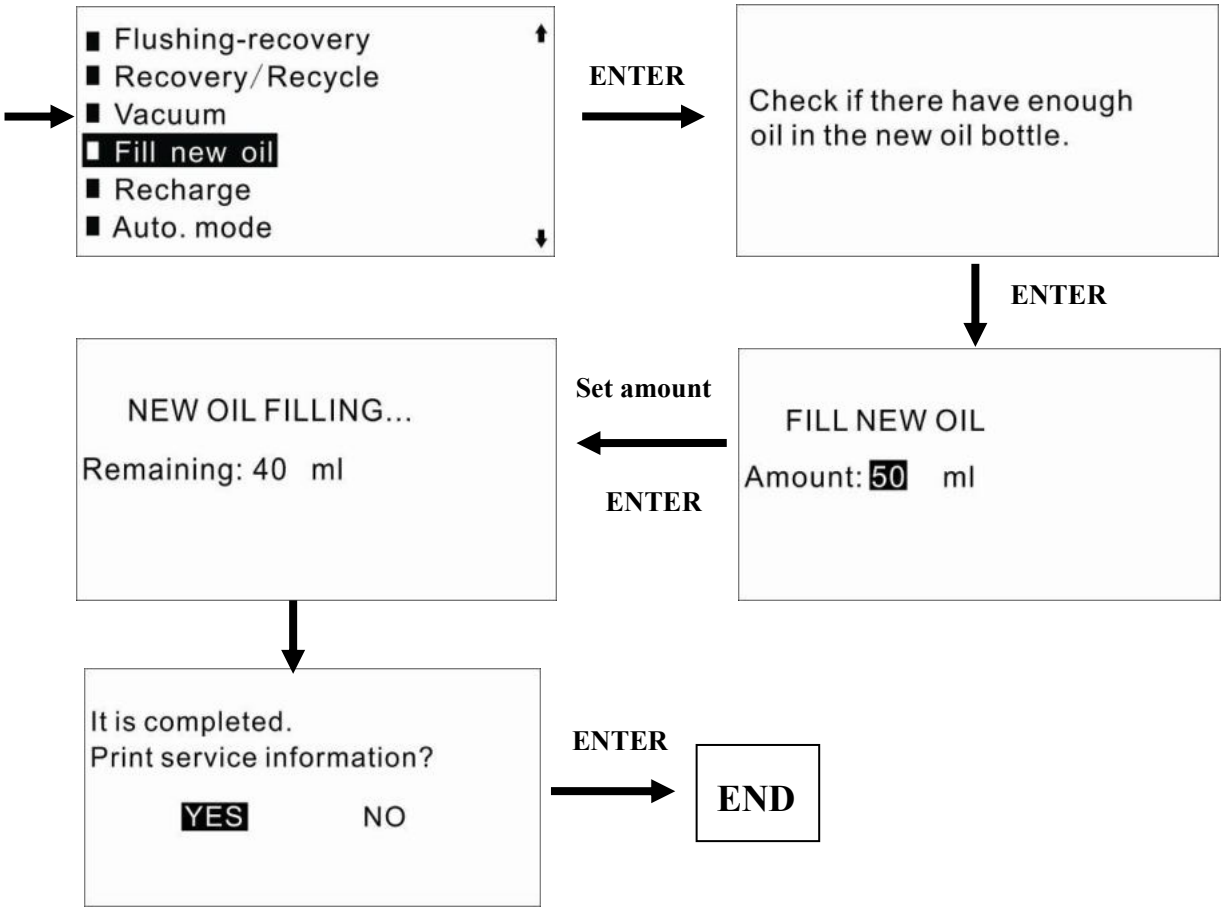
Warning: please do not press the switch of the new oil bottle anytime when the automotive air conditioning system is not in vacuum state, otherwise it have the risk of explosive bottles!

B、Method 1: Control by manual.

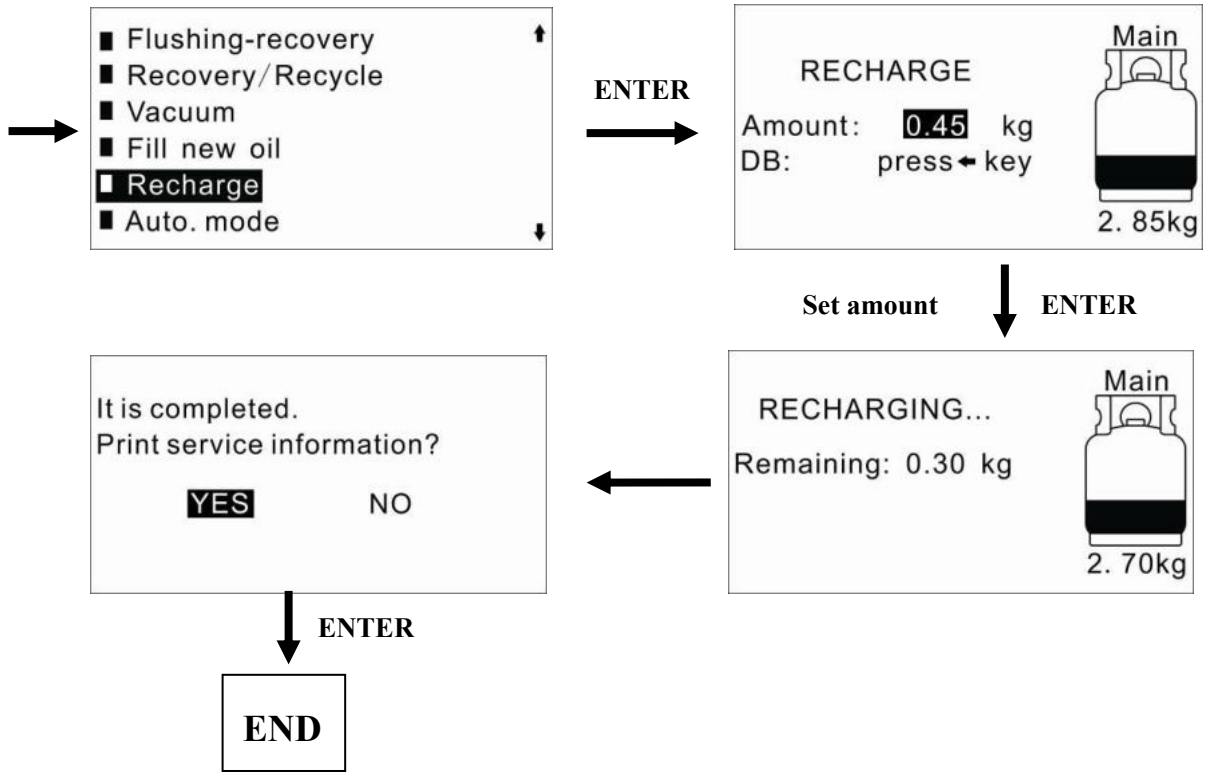
After vacuum, press the switch of the new oil bottle to control the new oil adding.

C、Method2：Control automatically.

After vacuum, operate by following.



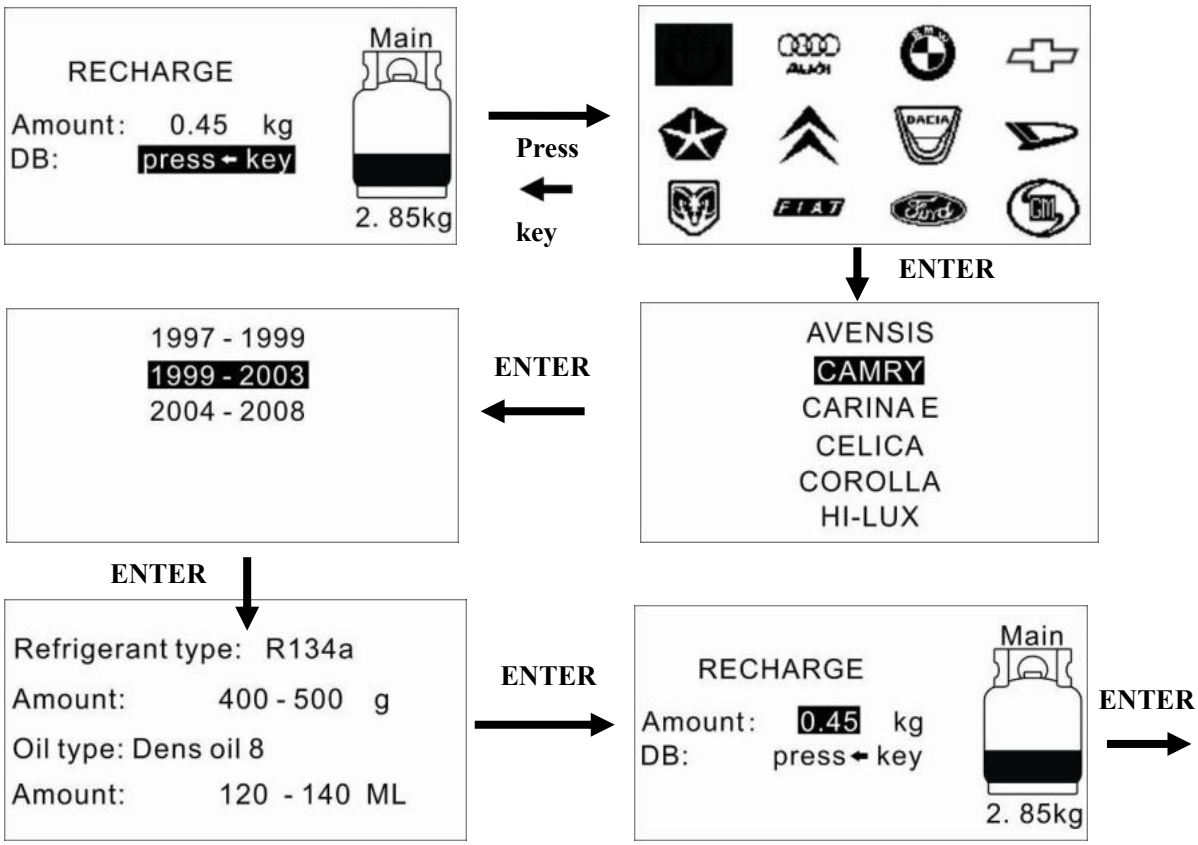
9) Recharging



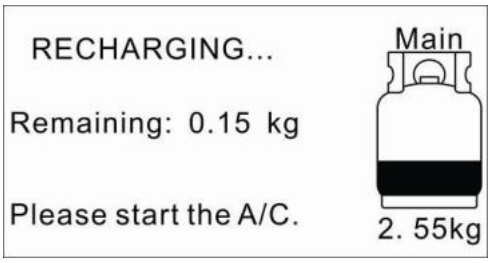
A、**The recharging amount setting:**

Method 1: Set the amount directly.

Method 2: Set the amount by the database. Steps as following:



B、**Note: In the recharging process, if shows the menu, it means that you need to turn on the car air-conditioning to complete the recharging process. Later, you should supply new refrigerant into the tank.**

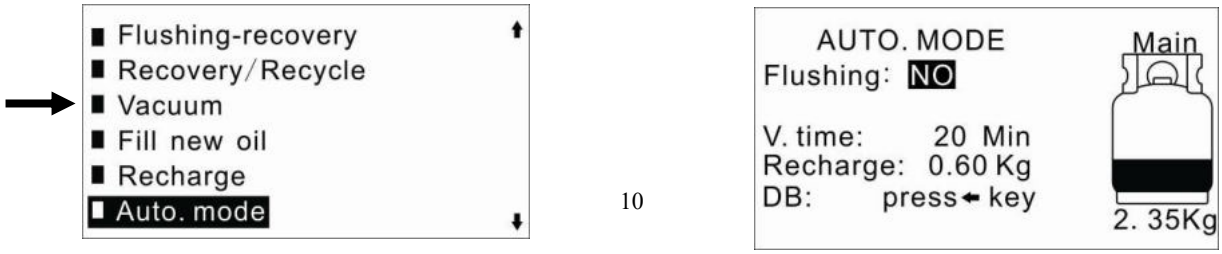


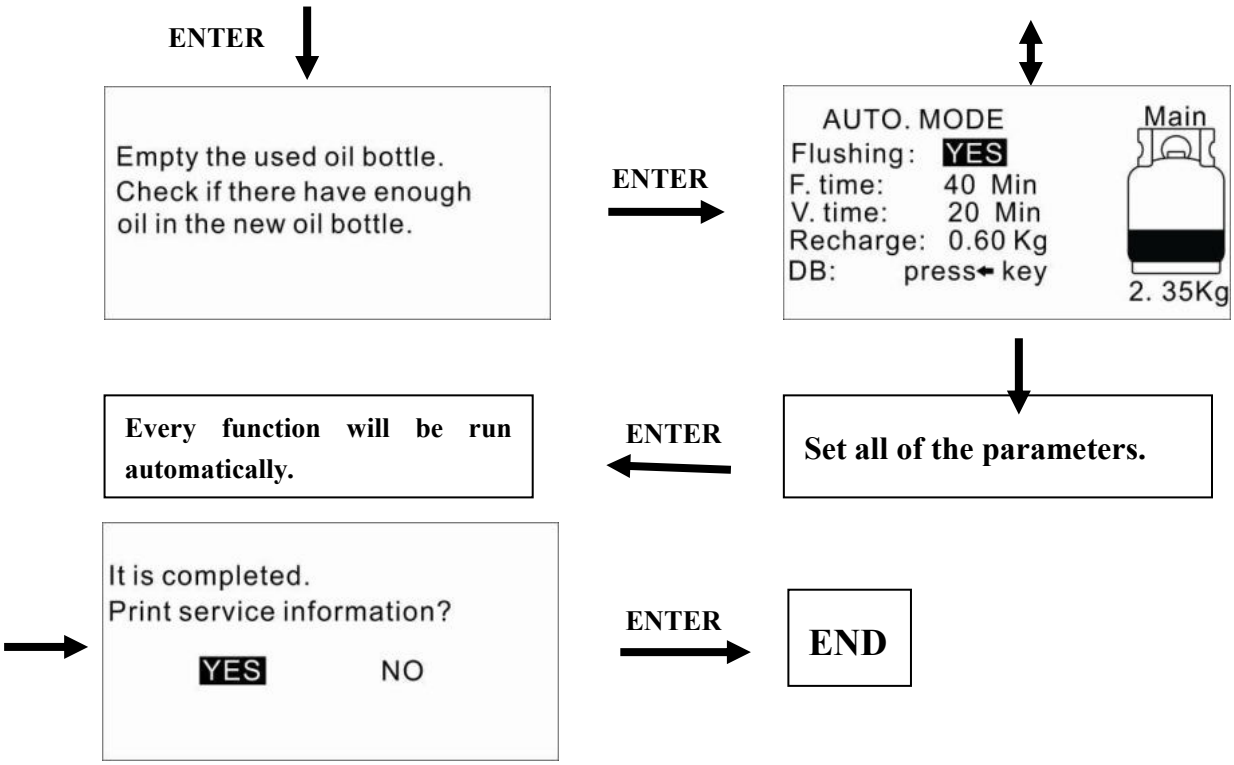
10) Auto. Mode

A、Under this mode, all of the functions can be run full automatically after setting the parameters.

B、Before running, must drain out the used oil entirely and fill enough new oil into the new bottle.

C、Operations:



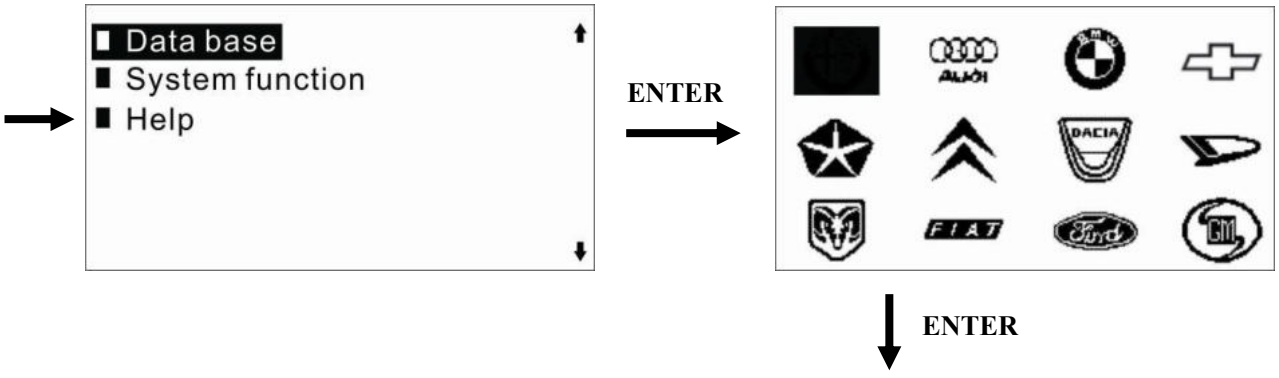


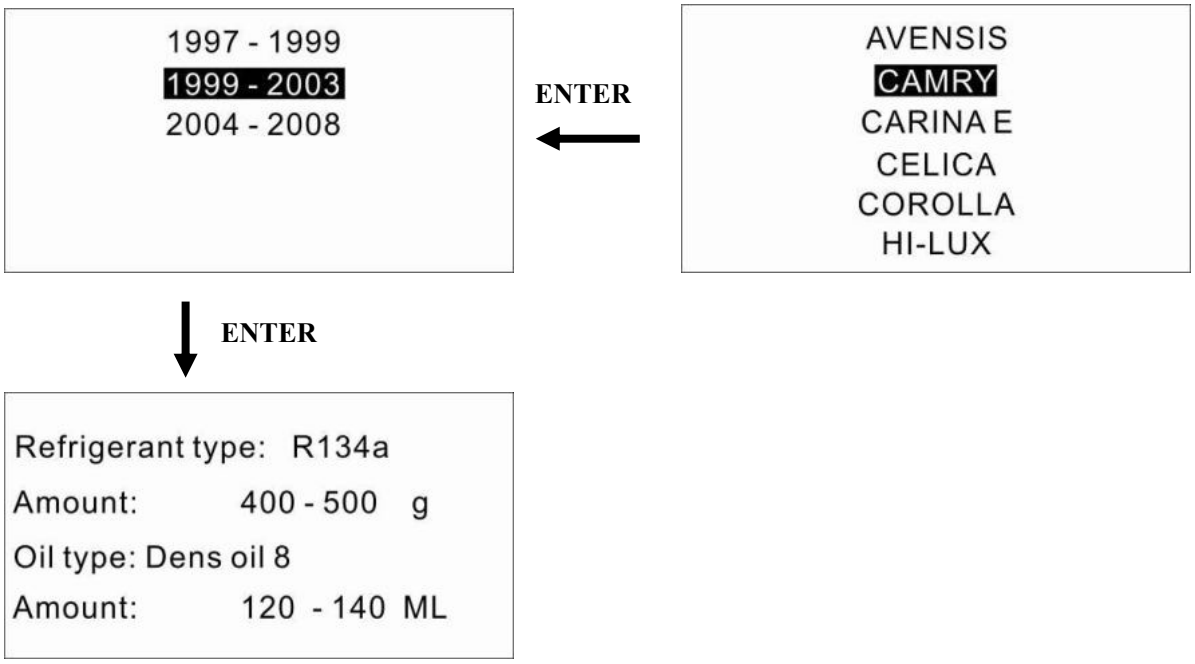
D、If it displays code as F00- during the process, please deal with it according to prompt information.

11) Database

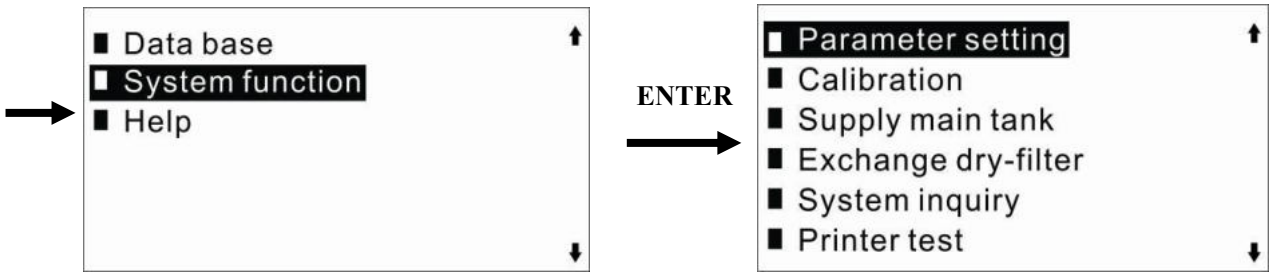
A、Here you can read the refrigerant type and filling amount and the refrigerant oil type and filling amount of the automotive.

B、Operations:





12) Subsidiary functions



A- Usage of the Auxiliary Port

✓ **Leak checking by N2**

a) Remove the cap of auxiliary port after the equipment stop working entirely.

b) Connect the N_2 to the auxiliary port.

Note: the connector to the auxiliary port must be with thimble. Do not open the valve of N_2 during this process.

c) Adjust the N_2 pressure to a suitable value and open the valve of N_2. When the pressure is stable, please close the valve of N_2. Normally, the pressure is adjusted to about 12~15bar.

d) Check if there has any leakage in the A/C system. After checking, please press the needle in the auxiliary port to relive the N_2.

e) After finished, re-back the cap to the auxiliary port.

✓ **Recharging from cans**

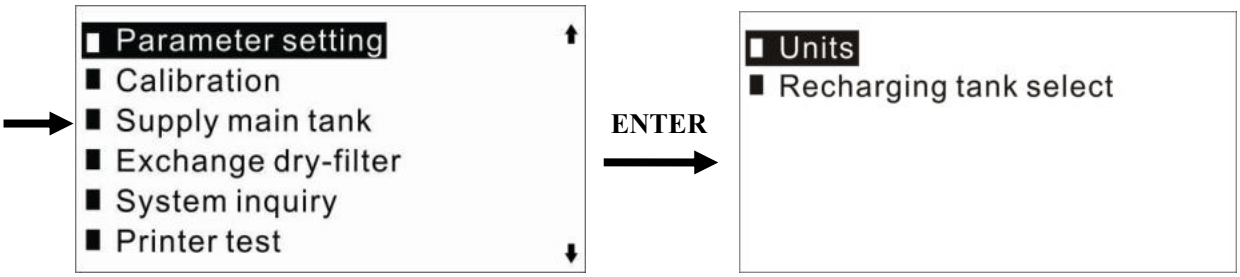
a) Before vacuum, connect the pipe with the external tank to the auxiliary port.
Note: the connector to the auxiliary port must be with thimble. Do not open the valve of external tank during this process.

b) Run vacuum function.

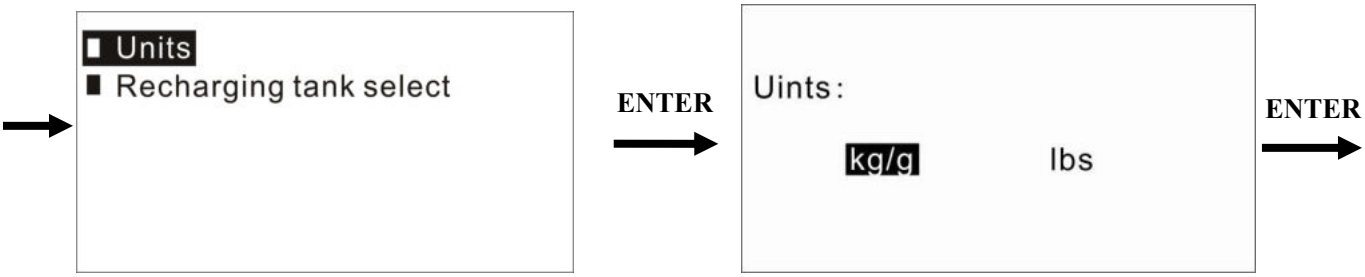
c) Open the valve of external tank to recharge the right amount refrigerant into A/C system. And then close the valve of external tank.

d) After finished, disconnect the pipes and re-back the cap to the auxiliary port.

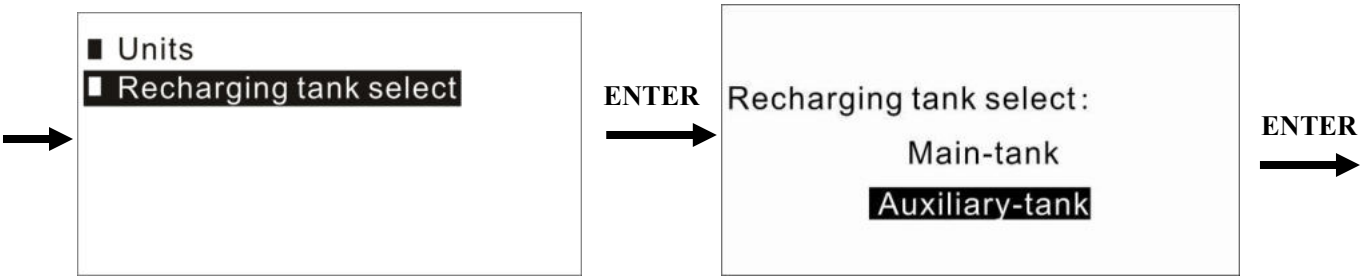
B- Parameter setting



✓ **Weight units**



✓ **Recharging Tank (GM-720A)**



Note:

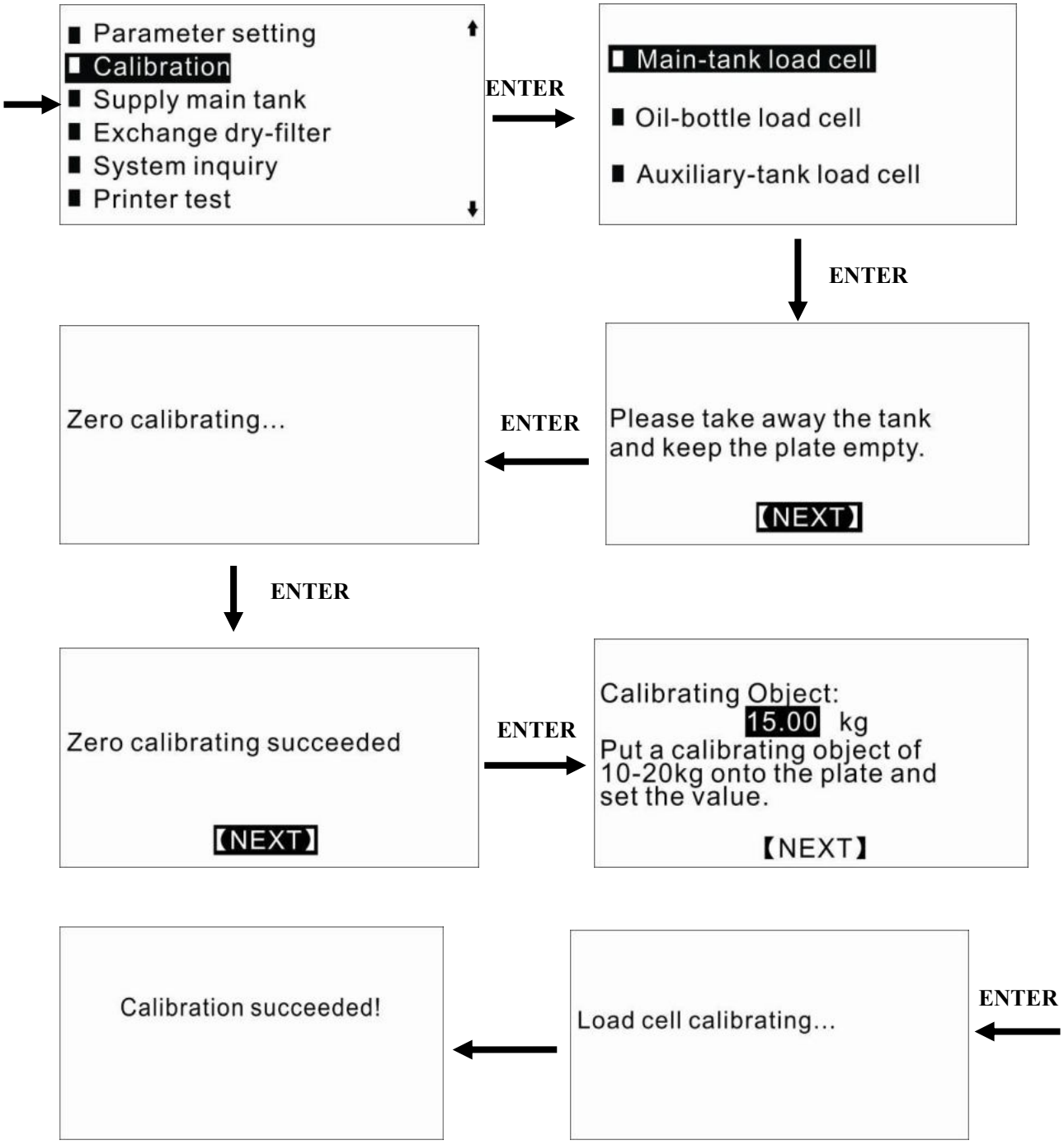
Main Tank: the tank is installed in the machine which is used for the flushing, recovery, recharging functions.

Auxiliary Tank: the refrigerant tank is installed by user which is just used for the recharging.

C- Calibration of load cell

When the load cell is not precise, it needs to be calibrated.

✓ **Calibration of main tank load cell**



✓ **Calibration of oil bottle load cell**

The steps are similar to above. And it shall use the 1kg weight.

✓ **Calibration of auxiliary tank load cell (GM-720A)**

The steps are same to above

Note: if here have some programs, please check according to the messages.

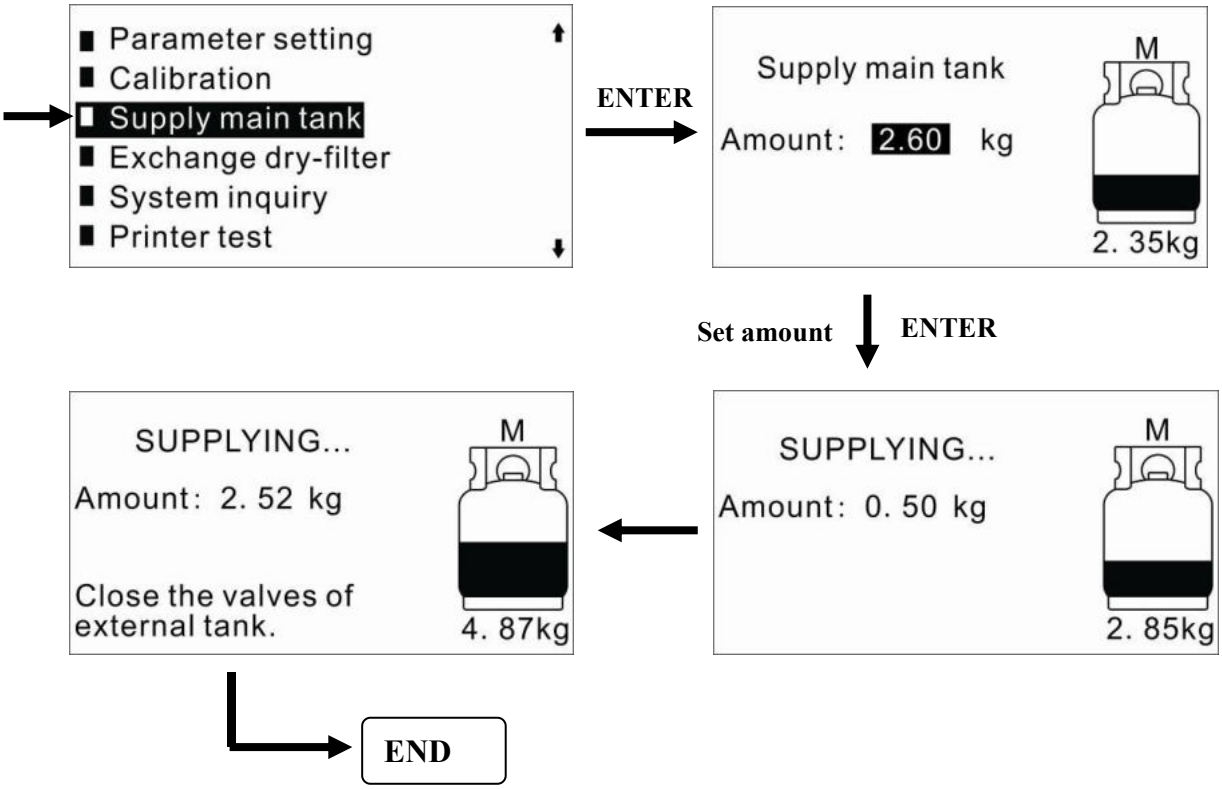
D- Refrigerant supply for the cleaning tank (internal tank)

A、If the refrigerant amount in the cleaning tank is less 4kg, the flushing function will not be run until supply the refrigerant.

B、Connect the port of fresh refrigerant tank to the LP port of equipment. Block the HP port of equipment with a cap or HP coupler.

Note: it should connect to the liquid port of fresh refrigerant tank. If has no liquid port, please invert the fresh refrigerant tank.

C、Operations:



Note:

- ✓ Amount of supplying： Setting the supplying amount according to the in the tank. Suggestion: supplying amount = (4.5~5)-amount remained.
- ✓ When finished, please close the valve of the refrigerant tank and run the recovery function.

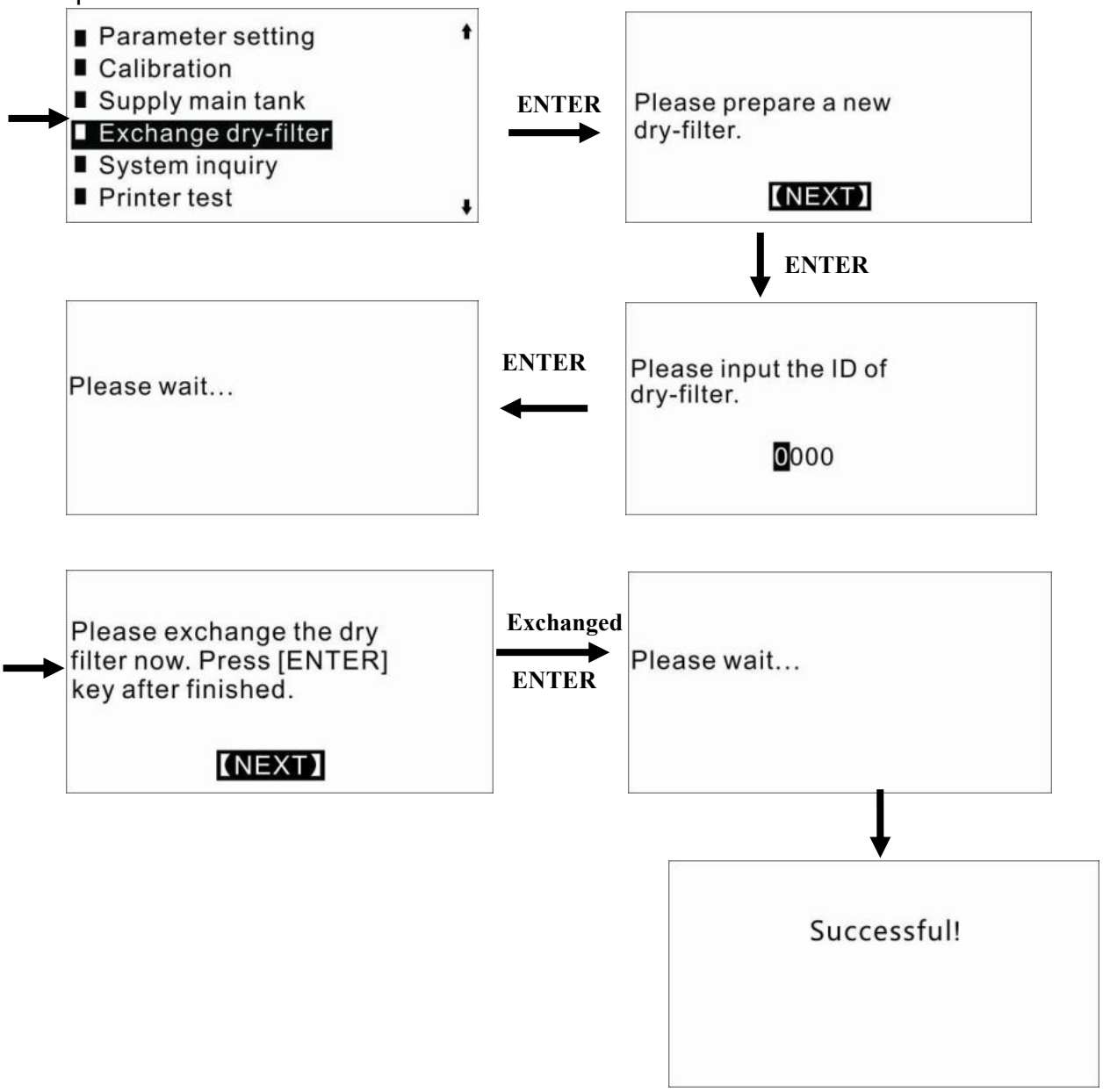
E-Exchange dry filter

A、The dry filter must be exchange when it reaches the life time. There will give a message.

B、If not exchange the dry-filter timely, it will not be able to run the recovery, flushing and

supplying functions.

C、Operations:



Note:

- ✓ Please read the ID of the dry-filter at the label. Which is the value followed by letter SN.
- ✓ Please attention the mounting direction of the dry-filter.

F-Change vacuum pump oil

A、When the pump oil became cream or the unit displays maintenance message, the vacuum pump oil must be changed.

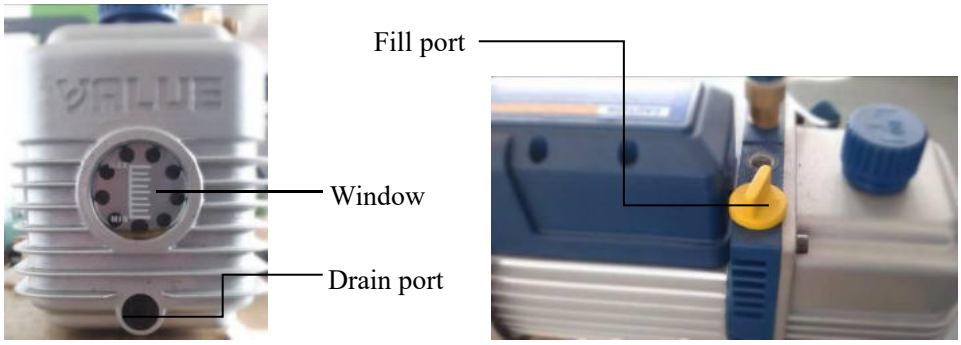
B、If not change the pump oil, the vacuum function will not be able to run.

C、Steps:

Step1: open the back cover.

Step2: Unscrew the block of the drain port to drain entirely out the old oil. Then re-back the block to the drain port.

Step3: Unscrew the cap of the fill port and then fill the new oil slowly into the vacuum pump until the oil level reach at the center site. Then re-back the cap to the fill port.

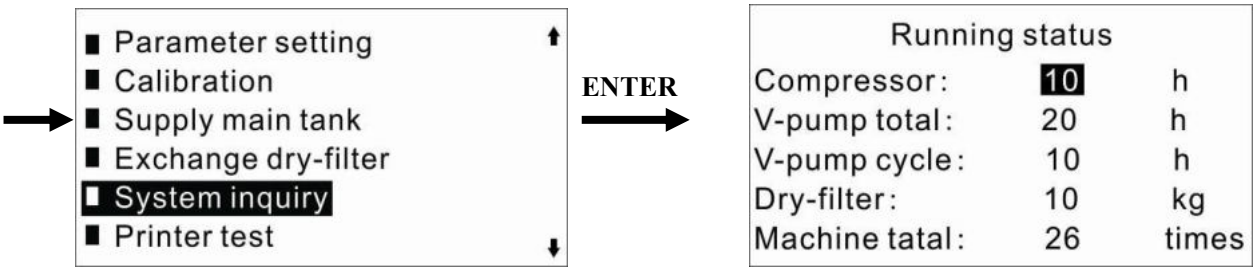


Note: the new vacuum pump oil cannot be filled too much into the vacuum pump otherwise it will spray out when working.

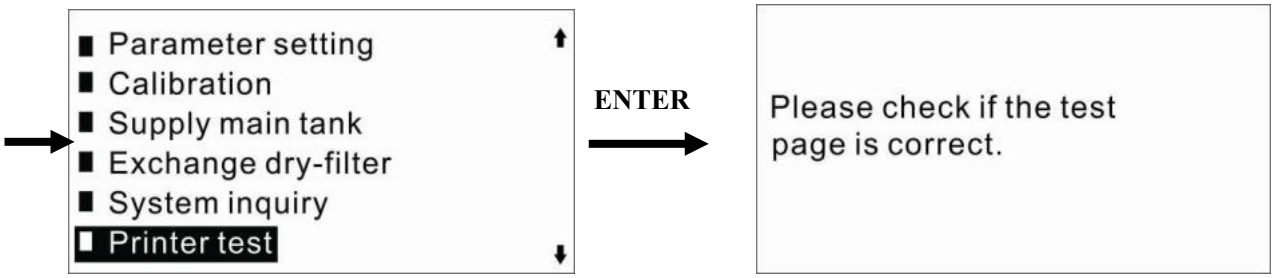
Step4: Re-back the cover.

G-System inquiry

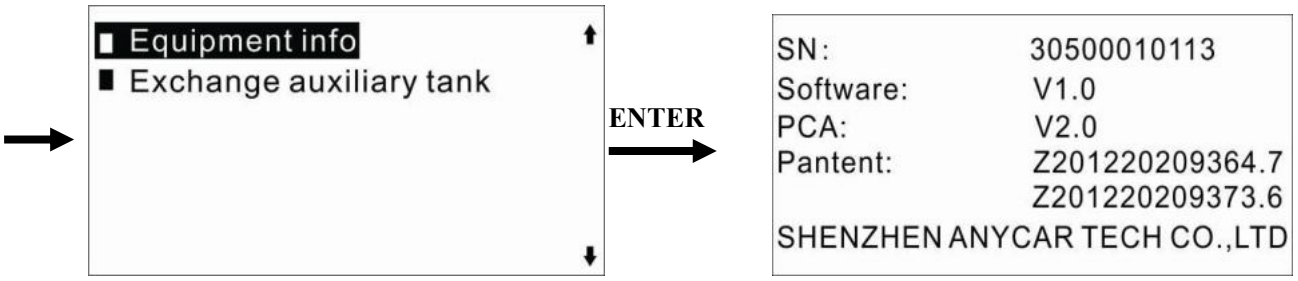
Here you can check the working status of the machine.



H-Printer Test

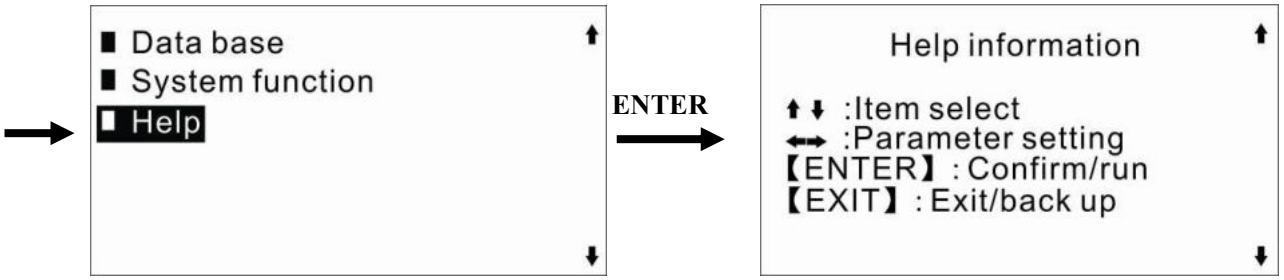


I-Equipment info



13) Help

Here you can check all of the help messages.



By press ↓ keys to change the page and press **EXIT** key to exit.