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XHINKCAR THINKCAR

LEADING TECH IN DIAGNOSTICS



THINKCAR AC100

User Manual

XHINKCAR THINKCAR

LEADING TECH IN DIAGNOSTICS

Version: V1.00.001

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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.
- We reserve the right to modify the contents of this document without prior notice to our customers.

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1 Introduction

1.1 Outline

THINKCAR AC100 A/C Service Station is with the latest design technique which uses the best control principle and the manufacturing process.

THINKCAR AC100 A/C Service Station 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.

1.2 Features

- Fully automatic, easy to operate.
- Internal pipeline of A/C system flushing, effectively cleared the internal greasy and fouling, to restore the A/C system performance.
- With forward flushing, reverse flushing, and pulse flushing functions, which greatly improve the cleaning effect.
- Using large-size glass tube with LED backlighting, can effectively observe the entire cleaning process.
- Vertically installing the HP & LP gauges let the operator be able to observe the pressure parameters timely even in the car.
- Unique design of the pipeline to achieve the high recycling rate no matter with the gas or the liquid.
- Easy to operate with the concise operating interface.
- Designed with large size LCD.
- Database.
- Program and database can be updated.
- With printer.

1.3 Specifications

- Working conditions:
 - Ambient temperature: 0~50°C
 - Relative humidity: <85%
- Voltage input: AC220V~50Hz AC220V~60Hz AC110V~60Hz (see as nameplate)
- Compressor: 12.12cm³
- Vacuum pump: 7.2m³/h, 3Pa
- Load cell for tank: 30kg
- Load cell for oil bottle: 6kg
- Tank: 12L
- New Oil bottle: 250ml
- Used Oil bottle: 500ml
- LCD display: 240*128
- Working pressure: max. 20bar
- HP gauge: -1bar~3.5MPa

- LP gauge: -1bar~2.0MPa
- Backlighting: LED

2 Functions

2.1 Primary functions

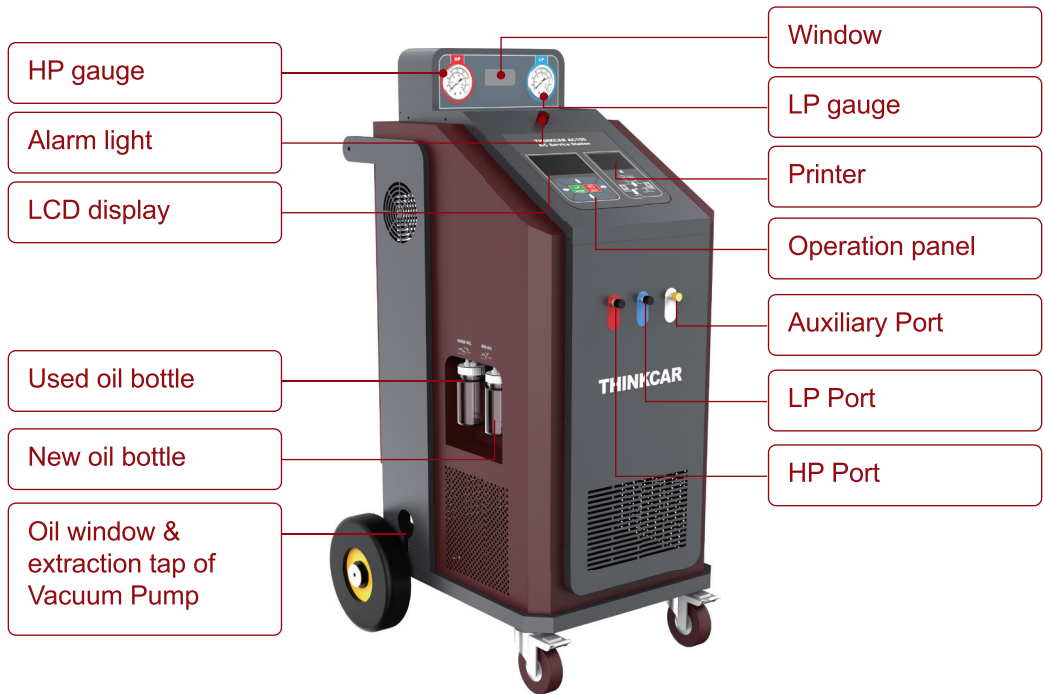
- Flushing
- Recovering/Recycling
- Used oil draining automatic
- Timing vacuum
- New oil injection automatic
- Recharging quantitative
- Each function can be operated independently
- Fully automatic mode
- Database
- Printer

2.2 Subsidiary functions




- Parameter setting
- Supply refrigerant
- Electric scale calibration
- Maintenance procedures (dry-filter exchange, vacuum pump maintenance)
- Printer checking
- System inquiry
- Equipment info
- Help





3 Operation

3.1 Parts descriptions



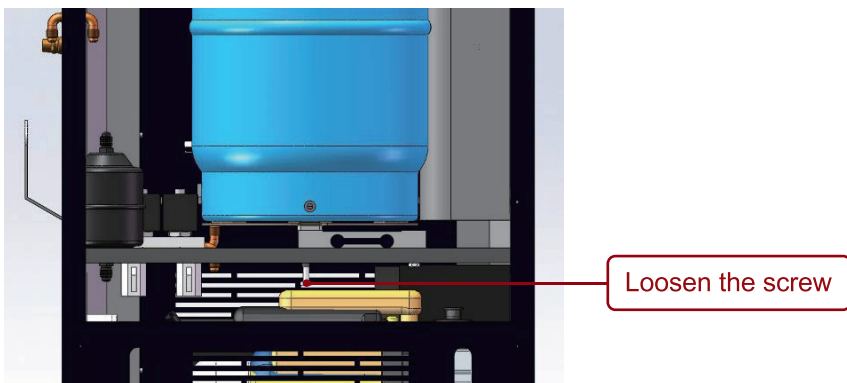
Packing List

| No. | Name | Picture | Num |
|-----|--------------------------------|---|------|
| 1 | Main unit |  | 1pcs |
| 2 | Couplers High & Low pressure |  | 1pcs |
| 3 | Working tubes(3m) Red and Blue |  | 1set |

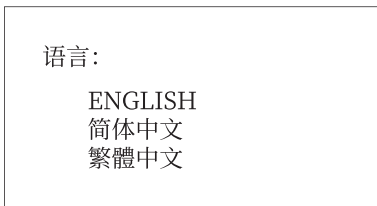
| | | | |
|---|-----------------|---|------|
| 4 | Seal for tube |  | 4pcs |
| 5 | Power cable |  | 1pcs |
| 6 | Expansion joint |  | 1pcs |
| 7 | User manual |  | 1pcs |

3.2 First use

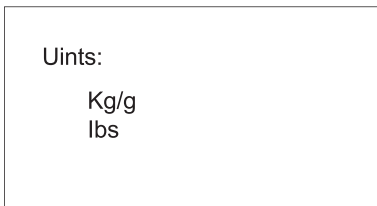
1. In order to avoid damage to the electronic scale during transportation, the electronic scale is protected when the equipment leaves the factory. Open the back door, take out all the fillers on both sides of the cylinder and under the scale pan, so that the scale pan is suspended.



2. Set the language: press ENTER key to confirm.



3. Set the language: press ENTER key to confirm.



4. Set the language: press ENTER key to confirm.

5. Please supply refrigerants. Refer to the chapter of "Refrigerant supply".



Note:

As the new equipment is empty, the Flushing and Recharging functions will not be performed. Please supply about 4 kg refrigerants into the tank of equipment so that all of the functions can be run normally.

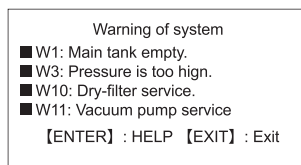
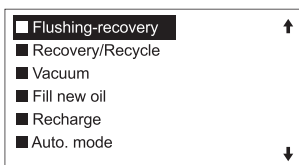
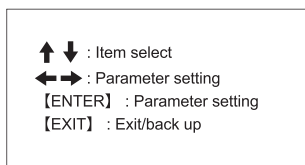
If it is not necessary to use the Flushing function, supply refrigerants at least 2kg.


6. Please read this user manual carefully before operating.

3.3 Preparations before Operation

- Connect the red & blue couplers to the HP & LP ports of automobile air-conditioner respectively, and open them. Start the car, turn on the air conditioner and run at idle speed for about 5 minutes.
- Check if the automotive air-conditioning can run normally. Check if there has any leakage, it must be repaired firstly to avoid refrigerant leak during flushing process.
- Turn off the air conditioner and turn off the engine.
- Empty the used oil bottle.

3.4 Power On



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

3.5 Flushing & Recovery

 **Note:**

The Flushing function can only improve the refrigeration performance of automobile air conditioner and prolong the working life of automobile compressor. For the damaged automobile compressor, the cleaning function cannot repair it.

1. 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.
2. 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.
3. 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!

4. 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.

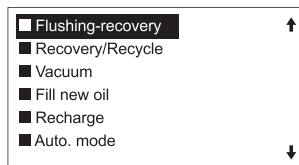
 **Note:**

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

5. Operations:

 **Note:**

After the operation of the equipment, there is no need for personnel to take care of it until it is finished by itself.



6. Select the Flushing-recovery function, and operate according to the equipment prompts.
7. If it displays code as F00- during the process, please deal with it according to prompt information.

 **Note:**

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.

 **Warning:**

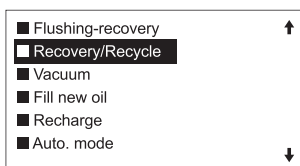
In case of sudden power failure or accidental termination during the Flushing process, please re-select the Flushing function. The time can be set shorter and then run again. Do not operate other functions!

3.6 Recovery/Recycling

1. By this function, it will recover the refrigerant remained in the A/C system.
2. Operations:

 **Note:**

After the operation of the equipment, there is no need for personnel to take care of it until it is finished by itself.



3. Select the Recovery/Recycle function and press ENTER key to run it.
4. If it displays code as F00- during the process, please deal with it according to prompt information.
5. When recovery finished, the used oil will be drained out automatically.

 **Note:**

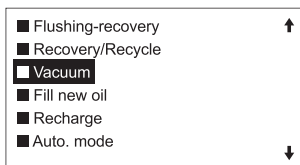
Press “ ↑ ” and “ ↓ ” keys in recovery function. It will purify the non-condensable gas automatically.

3.7 Vacuum

1. By this function, it will clean the water vapor out from the A/C system.
2. 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.
3. Operations:

 **Note:**

After the operation of the equipment, there is no need for personnel to take care of it until it is finished by itself.



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

3.8 New oil adding

1. Pour new oil into the new oil bottle.

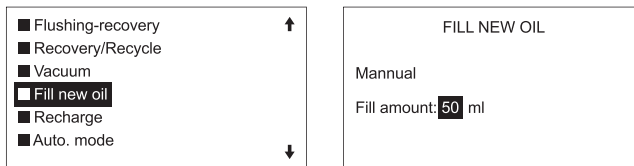
 **Note:**

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

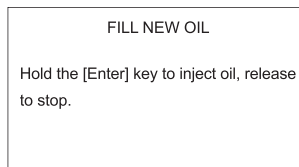
 **Warning:**

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!

2. Operations:



3. Select the Fill new oil function. It can be filled by manual control or by setting the filling amount.
4. If the manual filling mode is selected, press the ENTER key once to fill about 5 ~ 10ml; or press and hold it to continuously fill.

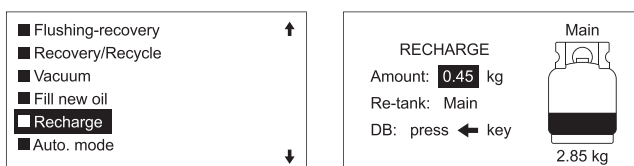


5. If the automatic filling mode is selected, set the filling amount, and then press ENTER to run.
6. After end, the equipment stops automatically.

 **Note:**

In the process of new oil filling, do not take the oil bottle and shake the equipment, otherwise it will lead to inaccurate filling!

3.9 Recharging



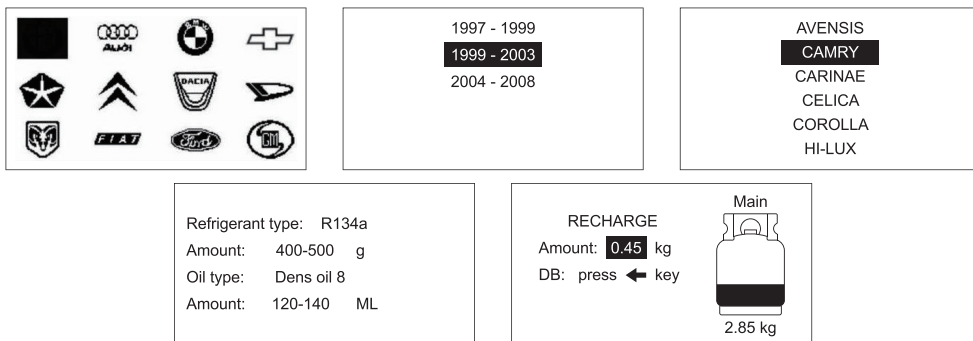
1. Select Recharge function and set parameter.

2. The recharging amount setting:

Method 1: Set the amount directly.

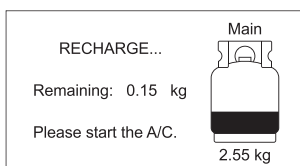
Method 2: Set the amount by the database. Steps as following:

Under the setting interface, press " ← " key to enter the database interface



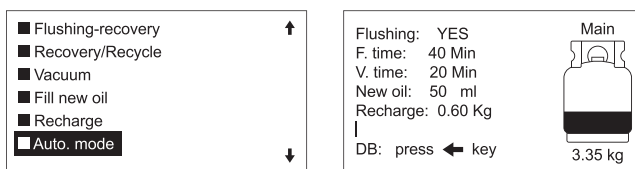
⚠ Note:

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.



3.10 Auto. Mode

1. Under this mode, all of the functions can be run full automatically after setting the parameters.
2. Before running, must empty the used oil bottle entirely and fill enough new oil into the new bottle.
3. Operations:



4. Select Auto. Mode function and set parameter.
5. The parameter setting method is the same as the single function setting method mentioned above.
6. If it displays code as F00- during the process, please deal with it according to prompt information.

3.11 Database

1. Here you can read the refrigerant type and filling amount and the refrigerant oil type and filling amount of the automotive.
2. Operations:

Date base
 System function
 Help

1997 - 1999
 1999 - 2003
 2004 - 2008

AVENSIS
 CAMRY
 CARINAE
 CELICA
 COROLLA
 HI-LUX

Refrigerant type: R134a
 Amount: 400-500 g
 Oil type: Dens oil 8
 Amount: 120-140 ML

3.12 System functions

Date base
 System function
 Help

Parameter setting
 Calibration
 Supply main tank
 Exchange dry-filter
 Drain used oil
 Self-purify

A. Usage of the Auxiliary Port

Note: if the connector is not used, it must be plugged with copper nut.

- a) It can recharge refrigerant via this port.
- b) Before vacuum, connect the pipe with the external tank to the auxiliary port.

Note: Do not open the valve of external tank during this process.

- c) Run vacuum function.
 - d) Open the valve of external tank to recharge the right amount refrigerant into A/C system. And then close the valve of external tank.
- e) After finished, disconnect the pipes and re-back the cap to the auxiliary port.

B. Parameter setting

Units
 Recharging tank select

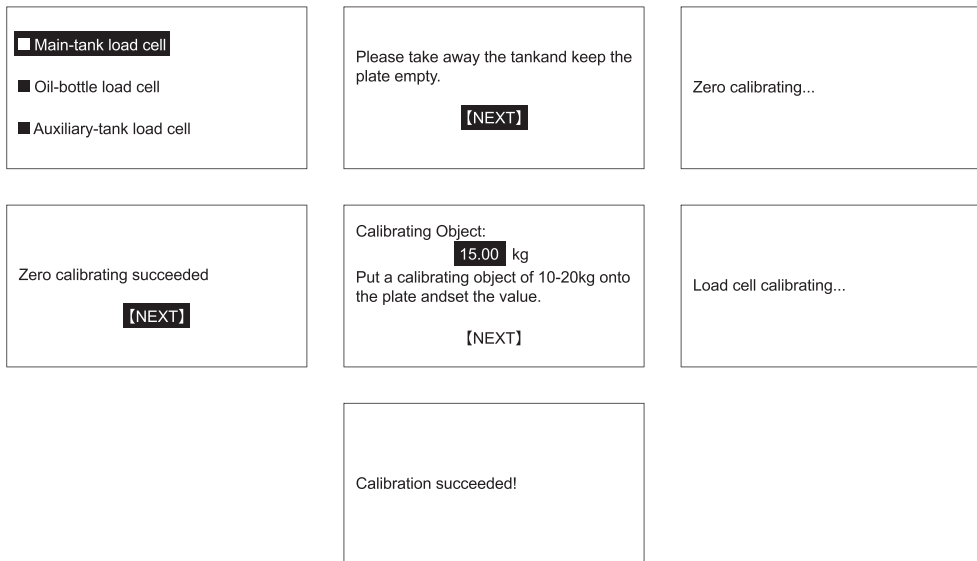
Weight units




C. Calibration of load cell

When the load cell is not precise, it needs to be calibrated. Operated by professionals only!

Calibration of main tank load cell



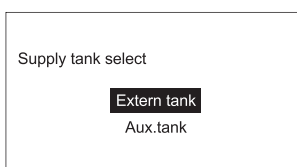
 *Note: if here have some programs, please check according to the messages.*

Calibration of oil bottle load cell

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

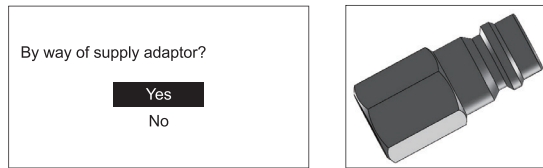
D. Refrigerant supply (to internal tank)

1. If the refrigerant amount in the cleaning tank is less 4kg, the flushing function will not be run until supply the refrigerant.
2. Operations:
 - B-1: Select Supply main tank function.
 - B-2: Select the refrigerant route needed for supplement: the fresh tank or the auxiliary tank.



B-3: If select the fresh tank, please set:

B-3-1: Choose whether to use supply adaptor or not.



B-3-1-1: If use the adaptor, the pipeline connection is as follows:

Connect the adaptor to the port of fresh refrigerant tank.

Connect the coupler to the supply adaptor and open it.

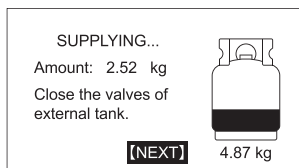
B-3-1-2: If don't use the adaptor, the pipeline connection is as follows:

Connect blue pipe to the port of fresh refrigerant tank.

B-3-2: Open the valve of fresh refrigerant tank.

B-3-3: Set the amount of supplying and press ENTER to run.

B-3-4: When the equipment prompts to close the valve of the external tank, please close it in time, put the refrigerant tank upright, and press enter to confirm.



B-3-5: When finished, the equipment stops automatically. Then restore the line.

B-4: If select the auxiliary tank, do as following.

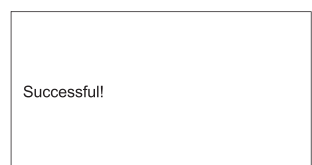
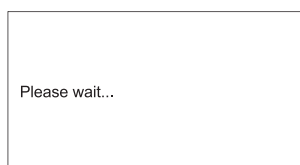
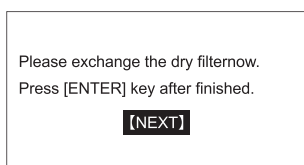
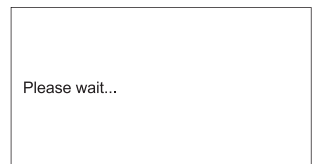
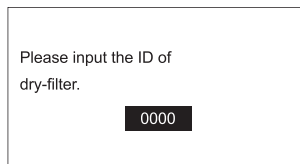
B-4-1: Set the amount of supplying and press ENTER to run.

B-4-2: When finished, the equipment stops automatically.

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

E. Exchange dry filter

1. The dry filter must be exchange when it reaches the life time. There will give a message.
2. If not exchange the dry-filter timely, it will not be able to run the recovery, flushing and supplying functions.
3. Operations:

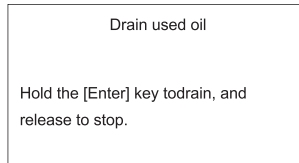


 **Note:**


- 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. Drain used oil

Normally, the equipment will automatically drain the used oil after flushing and/or recovery function. In case of power failure and artificial termination of operation, this function can be used to discharge the used oil separated from the equipment.



Press ENTER key once, it will drain oil once. Press and hold ENTER key to drain used oil continuously.

 *Note: in order to avoid bottle explosion due to high internal pressure, it is strongly recommended to use point by point method to drain oil!*

G. Self-purify

For a period of time, there will be a small amount of frozen oil residue in the glass window, internal pipeline and other parts. At this time, it can be treated by the self-purify function of the equipment. The operation steps are as follows:

1. Recovery the refrigerant in the pipeline.
2. Remove the blue low-pressure refrigerant pipe from the equipment and the high-pressure quick coupling from the red high-pressure pipe.
3. Use red high-pressure pipe to short-circuit the high-pressure and low-pressure interfaces.
4. Run it and will stop automatically.

H. Change vacuum pump oil

1. When the pump oil became cream or the unit displays maintenance message, the vacuum pump oil must be changed.
2. If not change the pump oil, the vacuum function will not be able to run.
3. Steps:
 - Step 1: open the back cover.
 - Step 2: Unscrew the block of the drain port to drain entirely out the old oil. Then re-back the block to the drain port.
 - Step 3: 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.

Step 4: Re-back the cover.

I. System inquiry

Here you can check the working status of the machine.

| Running status | | |
|----------------|----|-------|
| Compressor: | 10 | h |
| V-pump total: | 20 | h |
| V-pump cycle: | 10 | h |
| Dry-filter: | 10 | kg |
| Machine total: | 26 | times |

J. Printer Test

Please check if the test page is correct.

K. Equipment info

| | |
|-----------|------------------------------------|
| SN: | 300000000000 |
| Software: | V1.0 |
| PCA: | V2.0 |
| Pantent: | Z201220209364.7 Z201220209373.6 |

3.13 Help

Here you can check all of the help messages.

Date base
 System function
 Help

↑
↓

Help information

↑ ↓ : Item select
 ← → : Parameter setting
 [ENTER] : Parameter setting
 [EXIT] : Exit/back up

↑
↓

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

4. Warning code

| Code | Message | Method |
|------|--------------------------------------|--|
| W01 | Refrigerant not enough | Supply refrigerant to main tank. |
| W02 | Full of tank | Transfer some refrigerant out from the tank. |
| W03 | Pressure higher | purify the non-condensable gas 5-8 times |
| W04 | No gas in A/C system | Needn't recovery. |
| W05 | Still have refrigerant in A/C system | Recovery firstly. |
| W06 | No oil in the bottle | Fill enough oil to the new oil bottle. |
| W07 | Full of the bottle. | Empty the used oil bottle. |
| W08 | There is pressure in A/C system | Recovery and vacuum firstly, then add the new oil. |
| W09 | There is no refrigerant in the tank. | Change a new fresh refrigerant for the auxiliary tank. |
| W10 | Dry-filter is invalid. | Change a new one. |
| W11 | Vacuum pump needs maintenance | Exchange the pump oil. |
| W12 | No printer paper | Change a new one. |
| W13 | Printer exception | Check the printer cable. |

5. Maintenance

- a) The equipment should be regularly treated with exhaust air at least once a week.
- b) Clean the filter connector in the old oil bottle regularly, at least once a week, otherwise the hose will break due to blockage.
- c) When the equipment is not in use, please cover it with dust cover.
- d) Keep the display screen clean and do not wipe it with volatile or corrosive liquid.
- e) Clean up the residue in the old oil bottle of the equipment in time.
- f) Equipment to avoid rain, direct sunlight.
- g) Equipment should be used or stored in a flat, cool, clean and ventilated place.
- h) The maintenance items indicated by the equipment should be done in time.
- i) When the equipment is not in use for a long time, or when it is loaded and transferred to another site, it shall be protected with supports under the electronic scale.
- j) When pushing the equipment, it should be light and slow.

Warranty Terms

- This warranty applies only to users and distributors who purchase THINKCAR products through normal procedures.
- Within one year from the date of delivery, THINKCAR warrants its electronic products for damages caused by defects in materials or workmanship.
- Damages to the equipment or components because of abuse, unauthorized modification, use for non-designed purposes, operation in a manner not specified in the instructions, etc. are not covered by this warranty.
- The compensation for dashboard damage caused by the defect of this equipment is limited to repair or replacement. THINKCAR does not bear any indirect and incidental losses.
- THINKCAR will judge the nature of the equipment damage according to its prescribed inspection methods. No agents, employees or business representatives of THINKCAR are authorized to make any confirmation, notice or promise related to THINKCAR products.

Thinkcar Tech Inc

Service Line: 1-909-757-1959

Customer Service Email: support@thinkcar.com

Official Website: www.thinkcar.com

Products tutorial, videos, Q&A and coverage list are available on Thinkcar official website.

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