REFRIGERANT RECOVERY UNIT

INSTRUCTION MANUAL

Any changes of this manual that may occur in the future， notice to user will not be sent specially.

Thank you for selecting our product!

In order for correct installation and operation of this unit, Please read the instruction manual carefully in advance. If you resale or sell it with your other product series, please provide this instruction manual together with the unit so that the end user can learn application method and cautions.

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1.GENERAL SAFETY GUIDELINES

- Please read all safety, operating guidelines and instructions before operating this unit.
- Only qualified technicians or under their supervision are allowed to operate this Recovery unit.
- Always wear safety goggles and protective gloves when working with refrigerants to protect your skin and eyes from refrigerant gas and refrigerant liquid. Avoid getting in touch with corrosive liquid or gas.
- Do not expose the unit in the sun or rain.
- Be sure that any room where you are working is thoroughly ventilated.
- Use ONLY authorized refillable refrigerant tanks. It requires the use of recovering tanks with a minimum of 27.6bar working pressure.
- Do not overfill the storage tank.Tank is full at 80% volume.There should be enough space for liquid expanison----overfilling the tank may cause a violent explosion. A scale must be used to avoid overfilling the storage tank.
- Do not exceed the working pressure of Recovering Tank cylinder.
- Do not mix different refrigerants together in one tank, otherwise they could not be separated or used.
- Before recovering the refrigerant,the tank should achieve the vacuum level: -0.1mpa, which is for purging non-condensable gases. Each tank was full of nitrogen when it was manufactured in the factory, thus the nitrogen should be evacuated before the first use.
- When the unit is not used,all the valves should be closed. Because the air or the moisture of the air may harm the recovery result and shorten the service life of the unit.
- When using an extension cord, it should be a 14AWG minimum and no longer than 7.6meters,or it may depress the voltage and damage the compressor.
- A dry filter must always be used and should replaced frequently. And each type of refrigerant must have its own filter. For the sake of assuring the normal operation of the unit, please use the filter specified by our company. High quality dry filters will bring high quality services.
- Special care should be taken when recovering from a " burned-out " system. Use two high acid capacity filters in series. When you have finished recovering from the system, flush the unit with a small amount of clean refrigerant and refrigerant oil to purge off any foreign substances left in the unit.
- This unit has an Internal Pressure Shut Off Switch. If the pressure inside the system should go above 38.5bars, the system will automatically shut itself off. The shut off switch must be manually reset. (Access to the Shut-Off switch is through the hole located in the lower left front panel.)
- If the tank pressure exceeds 20.7bar, use the Storage Tank Cooling Method to

reduce the tank pressure.

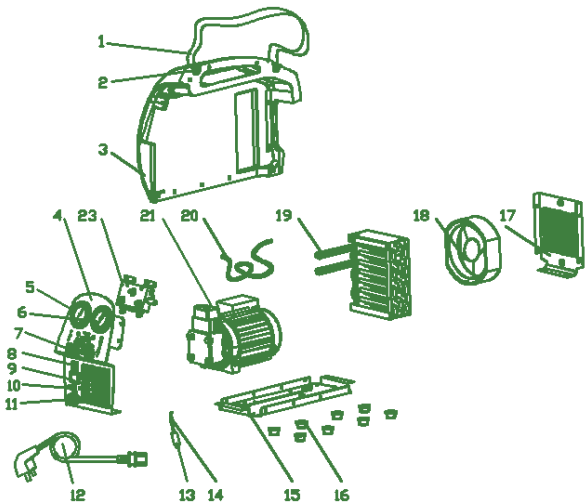
- To maximize recovery rates, use the shortest possible length and tube size 3⁄8″or larger hose. A hose no longer than 0.9meter is recommended.
- When recovering large amount of liquid, use the Liquid Push/Pull method.
- After recovering, make sure there's no refrigerant left in the unit. Read the Self-Purging Method carefully. Liquid refrigerant remained may be expanded and destroy the components.
- If the unit is to be stored and not used for long time, we recommend that it be completely evacuated off any residual refrigerant and purged with dry nitrogen.

2. SPECIFICATIONS

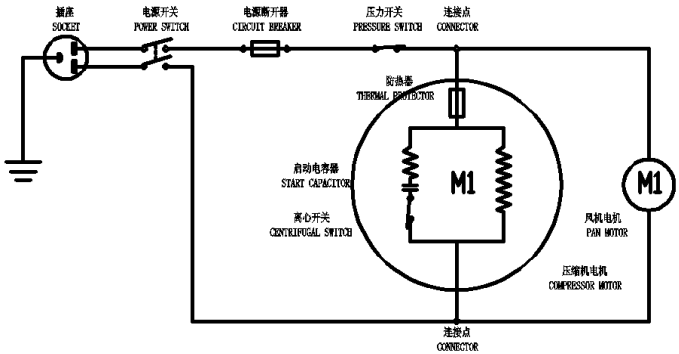
<table>
<tr><td colspan="2" rowspan="3">Refrigerants</td><td colspan="3">CAT.III:R-12,R-134a,R-401C,R-406A, R-500</td></tr>
<tr><td colspan="3">CAT.IV:R-22,R-401A,R-401B,R-402B,
R-407C,R-407D,R-408A,R-409A,
R-411A,R-411B,R-412A,R-502, R-509</td></tr>
<tr><td colspan="3">CAT.V:R-402A.R-404A,R-407A,R-407B,R-410,R-507</td></tr>
<tr><td colspan="2">Power Supply</td><td colspan="2">220-240vac 50Hz</td><td>110-120vac 60Hz</td></tr>
<tr><td colspan="2">Motor</td><td colspan="3">1⁄2HP</td></tr>
<tr><td colspan="2">Motor speed</td><td colspan="2">1450RPM@50Hz</td><td>1750rpm@60Hz</td></tr>
<tr><td colspan="2">Max. Current Draw</td><td colspan="2">4A@50Hz</td><td>8A@60Hz</td></tr>
<tr><td colspan="2">Compressor Type</td><td colspan="3">“Oil-less”air cooled</td></tr>
<tr><td colspan="2">High pressure shut off
High pressure Shut-Off</td><td colspan="3">38.5bar/385okpa(558psi)</td></tr>
<tr><td rowspan="4">Recovery
Rate</td><td></td><td>III</td><td>IV</td><td>V</td></tr>
<tr><td>Vapor</td><td>0.23 kg/min</td><td>0.25 kg/min</td><td>0.26 kg/min</td></tr>
<tr><td>Liquid</td><td>1.57 kg/min</td><td>1.81 kg/min</td><td>1.85kg/min</td></tr>
<tr><td>Push/Pull</td><td>4.64kg/min</td><td>5.57kg/min</td><td>6.22kg/min</td></tr>
<tr><td colspan="2">Operating Temp.</td><td colspan="3">0℃-40℃</td></tr>
<tr><td colspan="2">Dimensions</td><td colspan="3">515mm(L)*260mm(W)*370mm(H)</td></tr>
<tr><td colspan="2">Net Weight</td><td colspan="3">16.8 kg</td></tr>
</table>

3. PARTSDIAGRAM AND PARTS LIST

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	BELT	13	FILTER
2	PIN	14	HOSE
3	PLASTIC CASE	15	BASE
4	FRONT PANEL	16	RUBBER FOOT
5	INPUT GAUGE	17	BACK PANEL
6	OUTPUT GAUGE	18	AXIAL FAN
7	KNOB	19	CONDENSER
8	CIRCUIT BREAKER	20	COPPER HOSE
9	POWER SWITCH	21	COMPRESSOR
10	PRESSURE SWITCH	22	COPPER HOSE
11	SOCKET	23	CONTROL VALVE
12	POWER SUPPLY CORD		



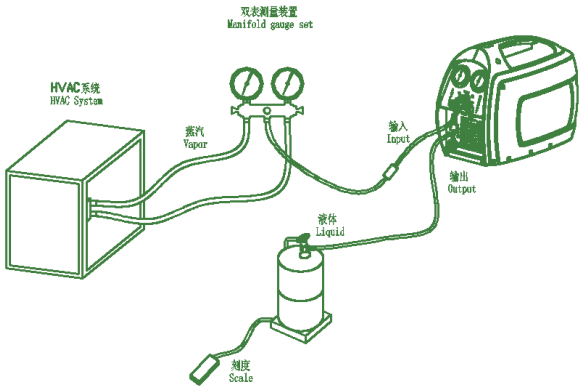
4. WIRING DIAGRAM



5. STANDARD LIQUID/VAPOR RECOVERY METHOD

a). Make sure the unit is in good working condition.

b). Make sure all connections are correct and tight fixed.



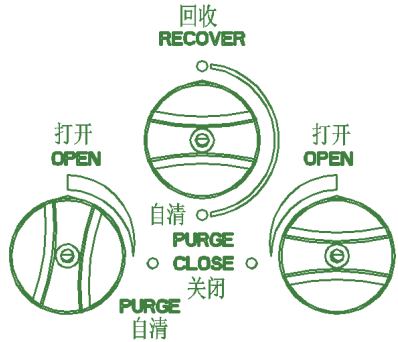
c). Open the liquid port of the storage tank.

d). Make sure the Recover/Purge valve is set on Recover position.

e). Open the output port of the unit.

f). Open the liquid port on your manifold gauge set; the liquid will be released from the system firstly. After the liquid has been removed, open the manfifold vapor port

to finish evacuating the system.



5.1 Connect the unit to a right outlet(refer the nameplate on the unit). Switch the powerswitch to the “on” position to start the compressor.

Note : If the unit fails to start, rotate the Input valve and the Recover/Purge valve to Purge position. Then rotate the Recover/Purge valve to Recover position, and open the Input valve.

5.2.open the input valve on the unit slowly:

1) If the compressor starts to knock, slowly throttle back the input valve until the knocking stops.

2) If the input valve was throttled back, it should be fully opened once the liquid has been removed from the system(the manifold gauge set vapor port should also be opened at this time)

5.3.Run until desired vacuum level is achieved.

1) Close the vapor and liquid ports of manifold gauge set.

2) Turn off the unit.

3) Close the unit’s input port and proceed with the Self-Purge Method.

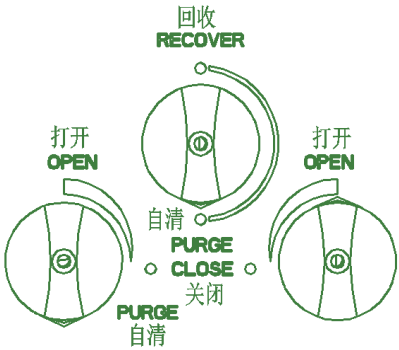
CAUTION: Always purge the unit after each use.Failure to purge the remaining refrigerant from the unit could result in the acidic degradation of internal components, ultimately cause corrosion.

6. SELF-PURGING METHOD

a). Close the ports of the system being serviced which are connected to the input port of the unit.

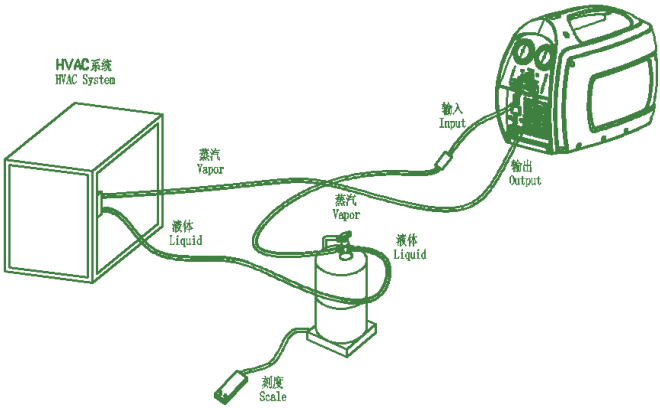
b). Turn off the unit.

c). Turn the input valve to the Purge position.
d). Turn the Recover/Purge valve to the Purge postion.
e). Restart the unit.
f). Run until desired vacuum level is achieved.
g). Close the ports on the recovery tank and the unit.
h). Turn off the unit.
i). Return the Recover/Purge valve to the Recover position.
j). Disconnect and store all hoses and dry filter.



7. LIQUID PUSH/PULL METHOD

Push/pull method only applicable to large systems where the liquid refrigerant is heavier than 10Kg.
Cautin: When using the“Push/pull”method,a scale must be used to avoid overfilling the storage tank, once the siphon is started, it can continue and overfill the storage tank even if the tank is equipped with a float level sensor.The siphon can continue even when the machines is turned off. You must manually close the valves on the tank and the unit to prevent overfilling of the recovery tank.
a). Put recover/Purge knob on Recover.
b). Open Output valve.
c). Open Input valve.
d). When the scale stops rising,close all ports.
e). Switch off the machine.



8. THE STORAGE COOLING METHOD

Pre-work Cooling Procedure

a). Must have a minimmum of 0.5Kg of liquid refrigerant in the tank in order to start.

b). Turn the Recover/Purge valve to the Recover position.

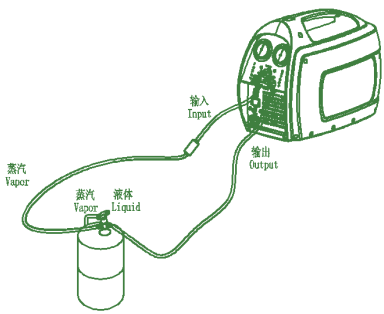
c). Open the Vapor and liquid valve of the storage tank.

d). Power turn on, and start the compressor.

e). Open the Input valve and Output valve of the unit.

f). Throttle the output valve of the unit so that the output pressure is 100psi bigger than the input pressure,but do not over 300psi.

g). Run until tank in cool.

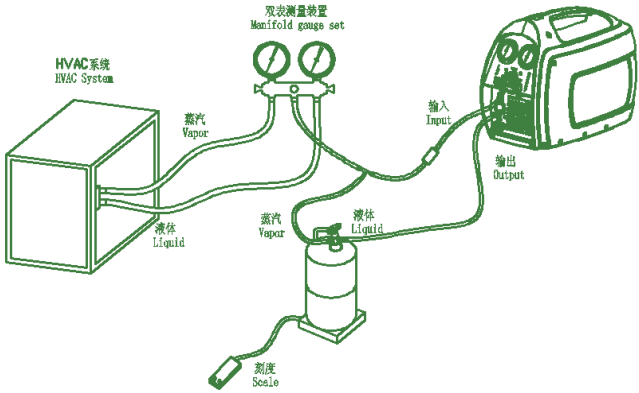


Tank Cooling Procedure in the recovering process.

a). Open the vapor valve of the storage tank（it is closed while recovering）.

b). Close the two valves of the manifold gauge set.

c). Follow the sixth and seventh items of the Pre-work Cooling Procedure.



9. TROUBLSHOOTING

Problem	Cause	Action
Fan dose not run when Power Switch is in"on" position.	Power supply cord did not insert socket. The circuit breaker has cut off.	Attach the power supply cord. Check the power supply at job site. Press the button to reset.
Fan runs, but compressor does not start when the Start Switch is in"ON"position.	The unit is in high pressure shut off. Output pressure is too high. Failure in motor, or other electrical components.	Reduce pressure and then press the button of the High Pressure Switch Rotate Input valve to"CLOSED", Purge valve to"PURGE", then rotate Input valve back to"OPEN", Purge valve to"RECOVER". Factory service required.
Compressor starts but cuts off within a few minutes.	Purge valve is in"PURGE" position Output valve is not open and high pressure activates Recovery tank valve is not open.	Rotate Purge valve to"RECOVER" Rotate Output valvet to "OPEN" Open recovery tank valve
Recovery process too slow	Head pressure is too high Compressor seals are worn	Reduce tank temperature with Storage Tank Cooling Method Factory service required
Unit does not pull out a vacuum	Connecting hoses are loose Leakage in unit	Tighten the connecting hoses Factory service required