



VACUUM PUMP HVAC REFRIGERATION AC MANIFOLD GAUGE

ITEM: 71098



OWNER'S MANUAL AND SAFETY INSTRUCTIONS

SAVE THIS MANUAL: KEEP THIS MANUAL FOR SAFETY WARNINGS, PRECAUTIONS, ASSEMBLY, OPERATING, INSPECTION, MAINTENANCE AND CLEANING PROCEDURES. WRITE THE PRODUCT'S SERIAL NUMBER ON THE BACK OF THE MANUAL NEAR THE ASSEMBLY DIAGRAM (OR MONTH AND YEAR OF PURCHASE IF PRODUCT HAS NO NUMBER).

FOR QUESTIONS PLEASE CALL OUR CUSTOMER SUPPORT: (909) 628 0880 MON-FRI 9AM TO 3PM PST



GENERAL SAFETY WARNINGS

Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. Save all warnings and instructions for future reference.

SAFETY

The warnings, precautions, 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.

- To avoid electric shock, the power cord protective grounding conductor must be connected to a properly grounded AC outlet.
- Use a proper A.C. outlet for the unit to operate correctly. See unit ID plate on back of unit. Extension cords are not recommended. If an extension cord must be used, use: 16 AWG for cords up to 50', and 14 AWG for cords greater than 50' but less than 100'.
- Connect the power cord to a properly grounded outlet. **DO NOT** remove or bypass the grounding pin. Electric shock and fire can cause injury or death.
- Risk of expelling refrigerant under pressure. Wear safety goggles and protective gloves. If any refrigerant gets into eyes, flush with water and seek a doctor's aid immediately, even though irritation may cease.
- Prevent refrigerant from contacting the skin. Expelled refrigerate can cause injury.
- Risk of explosion. **DO NOT** use compressed shop air for leak detection or to pressure test a system containing refrigerant. Refrigerant can form combustible mixtures at pressures above atmospheric and with air concentrations greater than 60% by volume.
- **DO NOT** heat a container of refrigerant above 125°F (52°C).
- **DO NOT** use this equipment in the vicinity of spilled or opened containers of gasoline.
- Avoid breathing air conditioning refrigerant and lubricant vapor or mist.
- **DO NOT** allow refrigerant to contact open flame or be drawn into a running engine. This can cause refrigerant to become poisonous phosgene gas.
- Use ECO to remove refrigerant from air conditioning systems. Exposure can irritate eyes, nose and throat.
- Engine systems can malfunction expelling fuel, oil vapors, hot steam, hot toxic exhaust gases, acid, refrigerant and other debris. Wear safety goggles and protective gloves, user and bystander. Engine systems that malfunction can cause injury.
- Engine compartment contains electrical connections and hot or moving parts. Keep yourself, test leads, clothing and other objects clear of electrical connections and hot or moving engine parts.
- **DO NOT** place test equipment or tools on fenders or other places in the engine compartment. Contact with electrical connections and hot or moving parts can cause injury.
- Service hoses can not withstand high temperatures or severe mechanical stress. Keep the service hoses away from moving or hot engine parts. Service hoses can split or burst causing injury.
- Removing tubing assemblies from the pump may discharge refrigerant. Wear safety goggles and protective gloves, user and bystander. Refrigerant may cause injury.

IMPORTANT SAFETY INFORMATION

- A test vehicle may move if not properly secured. Block the drive wheels before performing a test with the engine running. Unless instructed otherwise, set the parking brake and put the gear selector in neutral (manual transmission) or park (automatic transmission). If the vehicle has an automatic parking brake release, disconnect the release mechanism for testing and reconnect when testing is completed.
- **DO NOT** leave a running engine unattended. A moving vehicle can cause injury.
- Hose couplings are not self closing. Always close the valves on the gauge set before disconnecting a hose. Loosened hose couplings can leak refrigerant to the atmosphere.
- Misdiagnoses may lead to incorrect or improper repair and/or adjustment. Do not rely on erratic, questionable, or obviously erroneous test information or results. If test information or results are erratic, questionable, or obviously erroneous, make sure that all connections are correct and that the test procedure was performed correctly. Refer also to the Maintenance/Troubleshooting section and perform tests and make repairs as required. If test information or results are still suspicious, do not use them for diagnosis. Contact a qualified technician. Improper repair and/or adjustment may cause vehicle or equipment damage or unsafe operation.



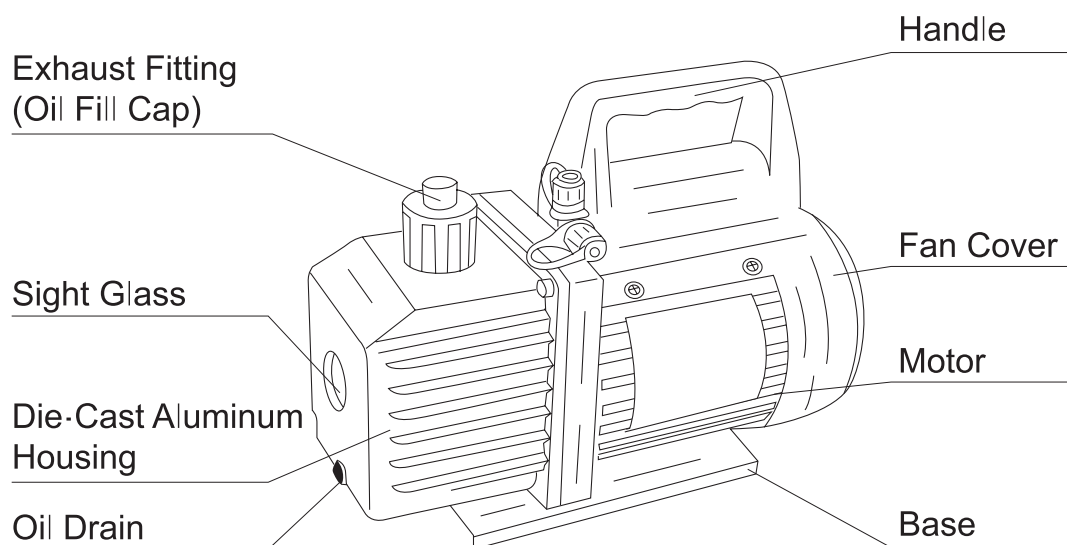
SAVE THESE WARNINGS

PRODUCT INFORMATION

SPECIFICATIONS

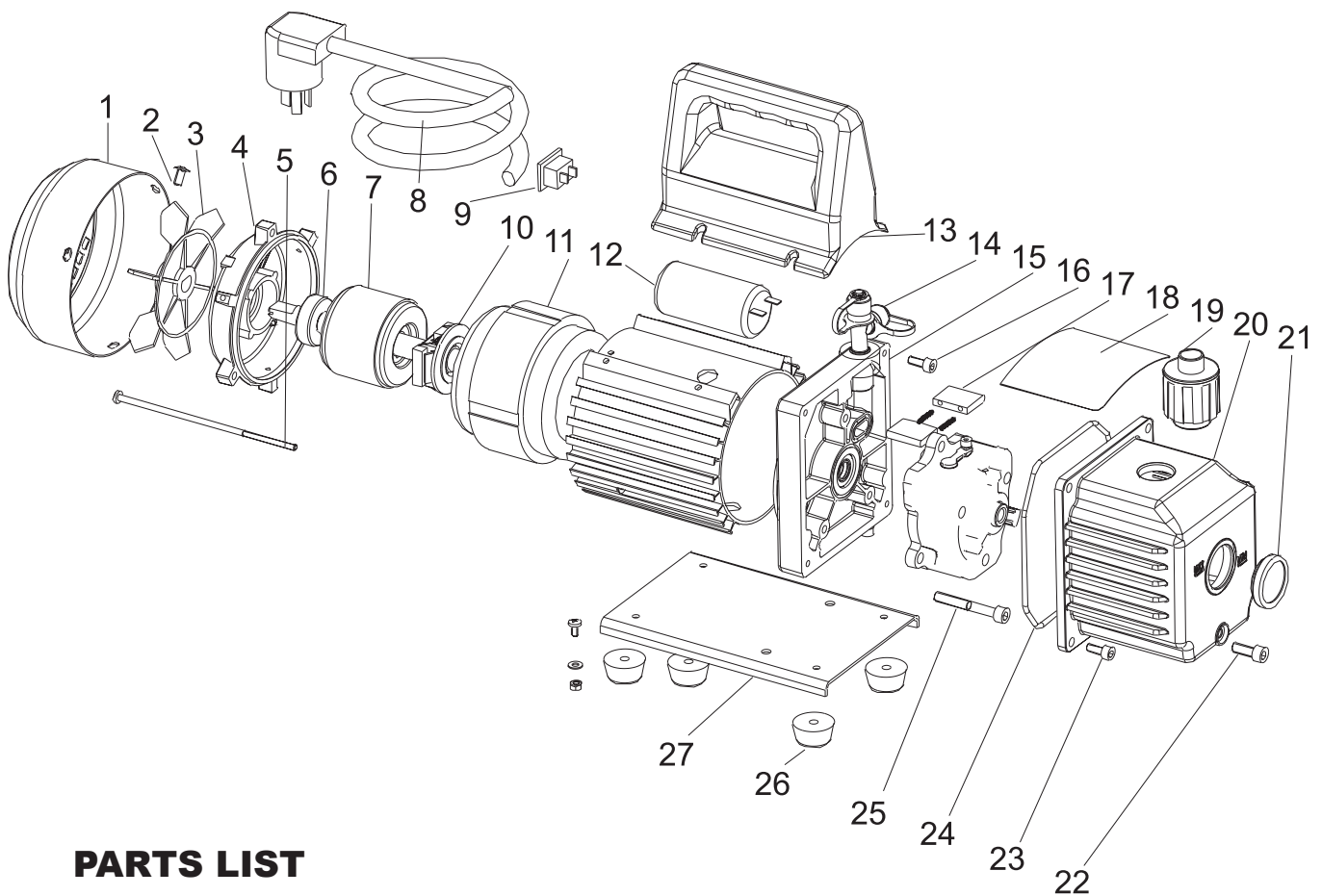
Voltage		110V/60Hz
Free Air Displacement	CFM	4.0
	L/min	114
Ultimate Vacuum	Pa	5
	Mbar	0.05
Motor		1/3
Intake Fitting		1/4"Flare
Oil Capacity(ml)		330
Dimensions(mm)		275x122x220
Pump Net Weight(Lbs)		11

PUMP COMPONENTS



PRODUCT PARTS LIST

PARTS DIAGRAM



PARTS LIST

1	Fan cover
2	Cross screw
3	Fan
4	Motor cover
5	Cross screw
6	Bearing
7	Motor rotor
8	Power supply cords
9	Power switch
10	Centrifugal switch
11	Motor stator
12	Capacitor
13	Handle
14	Inlet fitting
15	Trestle
16	Screw
17	Rotary-vane

18	Cap board
19	Exhaust fitting
20	Aluminum Housing
21	Sight glass
22	Oil drain cap
23	Screw
24	Seal
25	Screw
26	Rubber foot
27	Base

PRE-OPERATION

In all cases, motors are designed for operating voltages plus or minus 10% of the normal rating. Single voltage motors are supplied fully connected and ready to operate.

1. Check to be sure the voltage and frequency at the outlet match the specifications on the pump motor decal. Check the On/Off switch to be sure it is in the OFF position before you plug the pump into an outlet. Remove and discard the exhaust cap from the end of the pump's handle.

2. The pump is shipped without oil in the reservoir. Before starting the pump, fill it with oil. Remove the exhaust fitting cap and add oil until oil shows just at the bottom of the sight glass. The approximate oil capacity of the pump is 180-800ml. Reference the technical data.

3. Replace the exhaust fitting cap and remove the cap from one of the inlet ports. Turn the motor switch to ON. When the pump runs smoothly, replace the cap on the inlet port. This may take from 2-30 seconds depending on the ambient temperature. After the pump runs for approximately one minute, check the sight glass for proper oil level. The level should be even with the sight glass oil level line. Add oil if necessary.

NOTE: When the pump is running, the oil level should be even with the line on the sight glass. Under filling will result in poor vacuum performance, Over filling can result in oil blowing out from the exhaust.

To help prolong the pump life and promote easy starting. Follow these procedures for shutdown.

1. Close the manifold valve between the pump and the system.
2. Remove the hose from the pump inlet.
3. Cap the inlet port to prevent any contamination or loose particles from entering the port.

MAINTAINING YOUR HIGH VACUUM PUMP

Vacuum Pump Oil: The condition and type of oil used in any high vacuum pump are extremely important in determining the ultimate attainable vacuum. We recommend the use of High Vacuum Pump Oil. This oil has been specifically blended to maintain maximum viscosity at normal running temperatures to improve cold weather starts.

Oil Change Procedure: Be sure the pump is warmed up. Remove the oil drain cap. Drain contaminated oil into a suitable container and dispose of it properly. Oil can be forced from the pump by opening the inlet and partially blocking the exhaust with a cloth while the pump is running. Do not operate the pump for more than 20 seconds using this method.

When the flow of oil has stopped, tilt the pump forward to drain residual oil. Replace the oil drain cap. Remove the exhaust fitting and fill the reservoir with a new vacuum pump oil until the oil just shows at the bottom of the sight glass. The approximate oil capacity of the pump is 180-800ml.

Be sure the inlet ports are capped then turn off the pump. Allow it to run for one minute then check the oil level space. If the oil below the sight glass oil level line add oil slowly (with pump running) until the oil reaches the oil level line. Replace the exhaust fitting, making sure the inlet is capped and the drain cap is tight.

If the oil is badly contaminated with sludge that forms when the water is allowed to collect in the oil, you may need to remove the oil reservoir cover and wipe it out.

Another method of dealing with heavily contaminated oil is to force the oil from the pump reservoir. To do this, allow the pump to run until it is warmed up. While the pump is still running, remove the oil drain cap. Slightly restrict the exhaust. This will back-pressure the oil reservoir and force the oil from it, carrying more contamination. When the oil ceases to flow, turn off the pump. Repeat this procedure as required until the contamination is removed. Replace the oil drain cap and refill the reservoir to the proper level with fresh pump oil.

TROUBLESHOOTING

Failure To Start: Check the line voltage. The pump to start at $\pm 10\%$ line voltage (loaded) at 32 °F. At extremes, switching between and start and run windings may occur.

Oil Leakage: Be sure the oil is not a residual accumulation from spillage, etc. If leakage exists, the module cover gasket or the shaft seal may need replacing. If leakage exists in the area of the oil drain plug you may need to reseal the plug using a commercial pipe thread sealer.

Failure To Pull a Good Vacuum: Be sure the vacuum gauge and all connections are in good condition and leak free. You can confirm leakage by monitoring the vacuum the thermistor gauge while applying vacuum pump oil at all connections or suspected leak points. The vacuum will improve briefly while the oil is sealing the leak.

Be sure the pump oil is clean. A badly contaminated pump may require several oil flushes.

Be sure the oil is at the proper level. For maximum pump operation, the oil must not be even with oil level line on the sight glass when the pump is running. Do not overfill. Operating temperatures will cause the oil to expand, so it will appear at a higher level than when the pump is not running. To check the oil level, start the pump with the inlet capped. Check the oil level in the sight glass, add oil if necessary.



SAVE THESE INSTRUCTIONS.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

Questions, Problems or Missing Parts?

Before returning to a retailer, our exceptional customer service is available to help.

Call Us: 909.628.0880

Hours of Operation: 9 to 4pm PST, Monday - Friday

Email: customer@xtremepowerusa.com



PRODUCT MADE IN CHINA