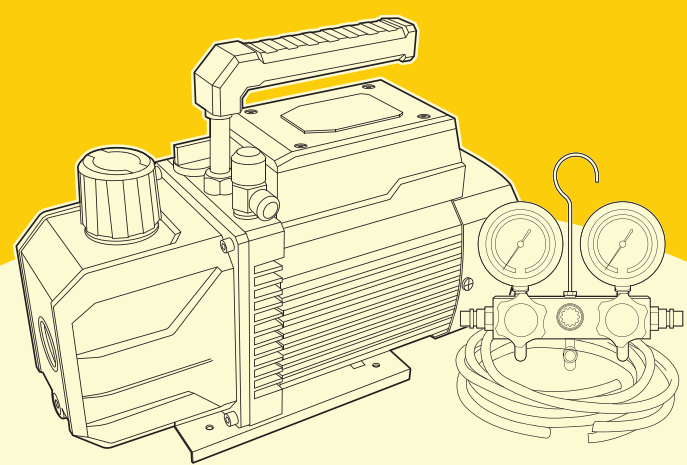


# HOW-TO

## USER MANUAL



### R1234yf AC Gauges and Vacuum Pump

Assembly is EASY!

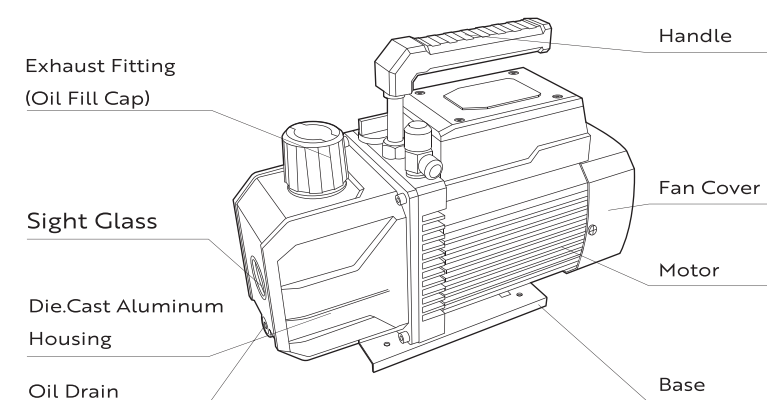
# WE WANT YOU TO ENJOY LIFE AT HOME

GO TO THE PRODUCT LISTING PAGE FOR AN INSTRUCTIONAL VIDEO!

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### SECTION A Pump Components



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### SECTION B Operating Manual

#### 1. Before using your vacuum pump

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 just shows at the bottom of the sight glass. The approximate oil capacity of the pump is 180-200 ml (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 two to 30 seconds, depending on the ambient temperature. After the pump runs for approximately one minute, check the sight glass for the 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. Underfilling will result in poor vacuum performance. Overfilling can result in oil blowing from the exhaust.

#### 2. To shut down your pump after use

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

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### SECTION C To Maintain Your High Vacuum Pump

#### 1. 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 and to improve cold weather starts.

#### 2. Oil change procedure

- (1) Be sure the pump is warmed up.
- (2) Remove the OIL DRAIN cap. Drain the 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.
- (3) When the flow of oil has stopped, tilt the pump forward to drain any residual oil.
- (4) Replace the OIL DRAIN cap. Remove the exhaust fitting and fill the reservoir with new vacuum pump oil until the oil just shows at the bottom of the sight glass. The approximate oil capacity of the pump is 180-200 ml (reference the technical data).
- (5) Be sure the inlet ports are capped, then turn on the pump. Allow it to run for one minute, then check the oil level. If the oil is below the sight glass OIL LEVEL line, add oil slowly (with the 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.
- (6) a) If the oil is badly contaminated with sludge that forms when water is allowed to collect in the oil, you may need to remove the oil reservoir cover and wipe it out.  
b) 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 backpressure the oil reservoir and force the oil out of it, resulting in more contamination. When the oil ceases to flow, turn off the pump. Repeat this procedure as required until the contaminant is removed. Replace the OIL DRAIN cap and refill the reservoir to the proper level with fresh pump oil.

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### SECTION D Troubleshooting Guide

Your pump has been for dependable use and a long life. If something should go wrong, the following guide will help you get the pump back into service as quickly as possible. If disassembly of the pump is required, please check your warranty. The warranty may be voided by misuse or customer tampering, which results in the pump being inoperable.

#### 1. Failure to start

Check the line voltage. The pump needs to start at +10% line voltage (loaded) at 32°F. At extremes, switching between the start and run windings may occur.

#### 2. Oil leakage

- (1) Be sure the oil is not a residual accumulation from spillage, etc.
- (2) 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 reseat the plug using a commercial pipe thread sealer.

#### 3. Failure to pull a good vacuum

- (1) Be sure the vacuum gauge and all connections are in good condition and leak-free. You can confirm leakage by monitoring the vacuum with a thermistor gauge while applying vacuum pump oil at connections or suspected leak points. The vacuum will improve briefly while the oil seals the leak.
- (2) Be sure the pump oil is clean. A badly contaminated pump may require several oil flushes.
- (3) Be sure the oil is at the proper level. For maximum pump operation, the oil must be even with the 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.

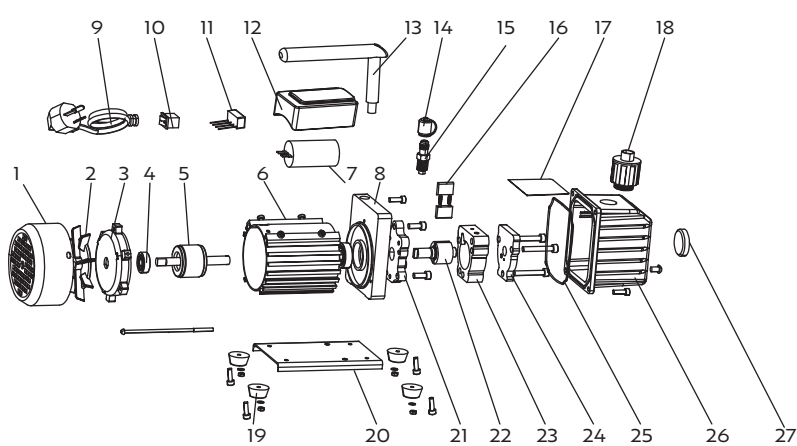
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### SECTION E Technical Parameter

Model	Single Stage Vacuum Pump			Double Stages Vacuum Pump
	VB130	VB140	VB150	VB240
Rated Power Supply	110V-60Hz	110V-60Hz	110V-60Hz	110V-60Hz
Flow Rate	CFM	3.5	4.5	5
	L/min	100	128	142
Ultimate Vacuum	Pa	2	2	2x10 <sup>1</sup>
	Micron	150	150	15
Motor Power (HP)	1/4	1/3	1/3	1/2
	Intake Fittings	1/4SAE +1/2ACME	1/4SAE +1/2ACME	1/4SAE +1/2ACME
Dimensions (mm)	295*123*230	295*123*230	305*123*230	332*129*242
Oil Capacity (ml)	280	280	280	410
N.W.(kg)	5.7	6	7.5	9

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### SECTION F Exploded Drawing

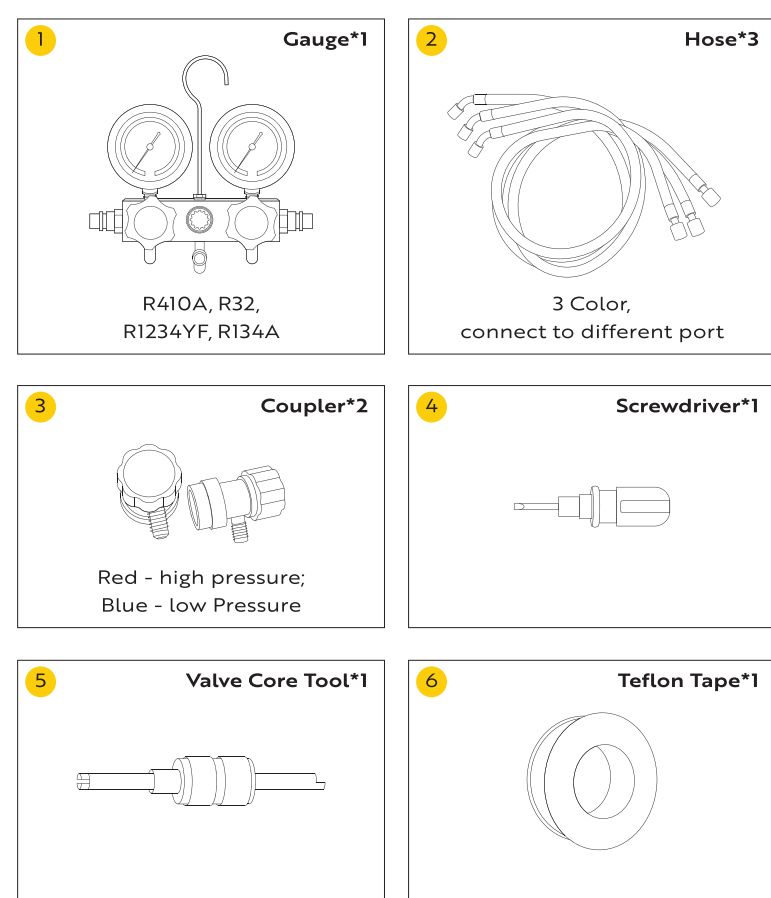


1 Fan cover	10 Switch	19 Rubber foot
2 Fan	11 Centrifugal switch	20 Base
3 Motor cover	12 Capacitor box	21 Front cover
4 Bearing	13 Handle	22 Rotor
5 Motor rotor	14 Inlet cap	23 Stator
6 Casting	15 Inlet fitting	24 Vear cover
7 Capacitor	16 Rotary vane	25 O-ring
8 Trestle	17 Tank baffle	26 Oil tank
9 Power cord	18 Exhaust cap	27 Sight glass

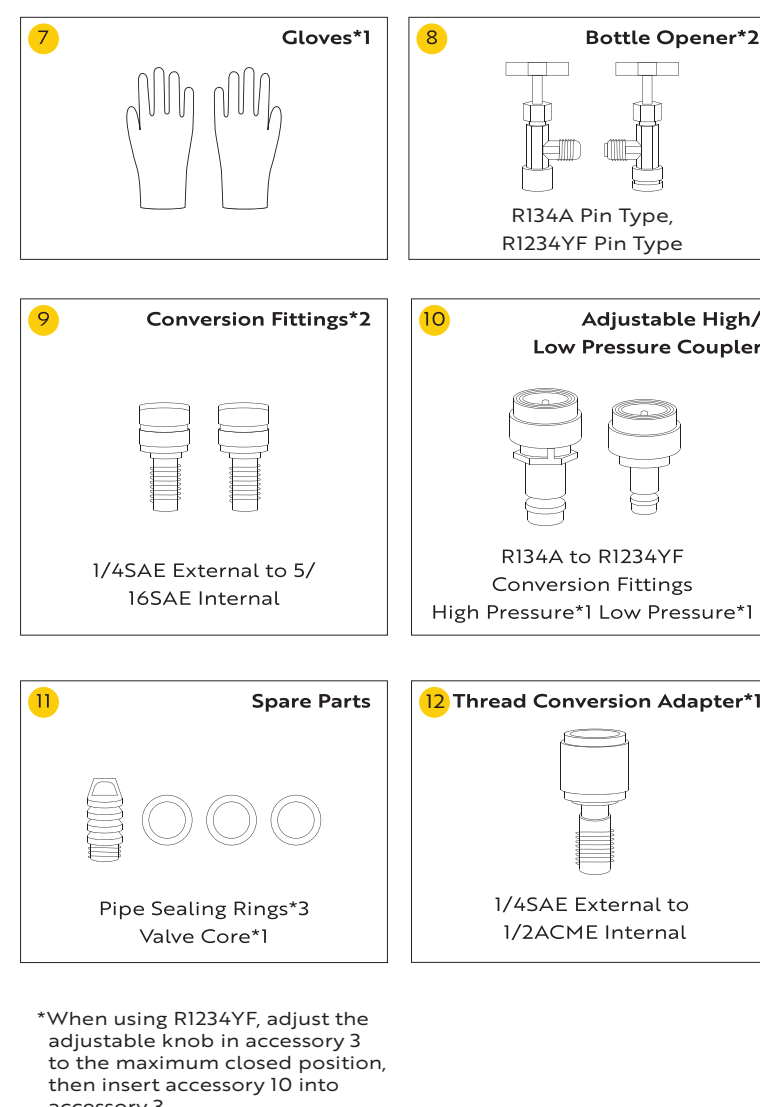
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### SECTION G Manifold Gauge Set Instructions

#### Parts List



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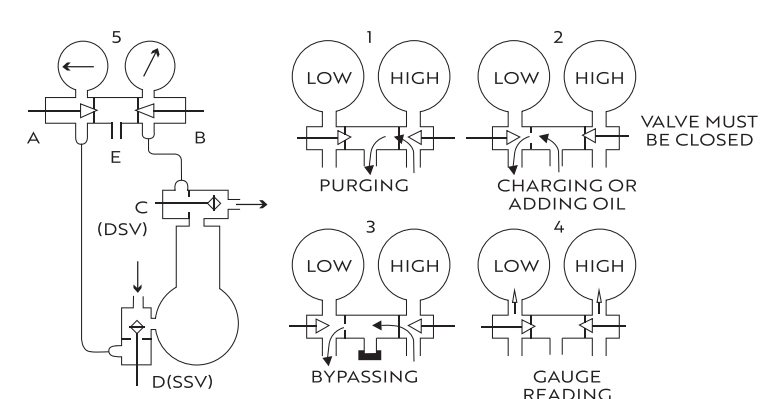


\*When using R1234YF, adjust the adjustable knob in accessory 3 to the maximum closed position, then insert accessory 10 into accessory 3.

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#### Operating Instructions

Schematic of gauge manifold installation on an external drive compressor with valves. A - Manifold Suction Valve. B - Manifold Discharge Valve. C - Compressor Discharge Service Valve (DSV). D - Compressor Suction Service Valve (SSV). E - Service Opening. 1 - Purging. 2 - Charging or Adding Oil. 3 - Bypassing. 4 - Gauge Reading. 5. Both manifold valves are turned all the way in. The system is pumping vapor, and both low- and high-side pressure readings are being displayed.

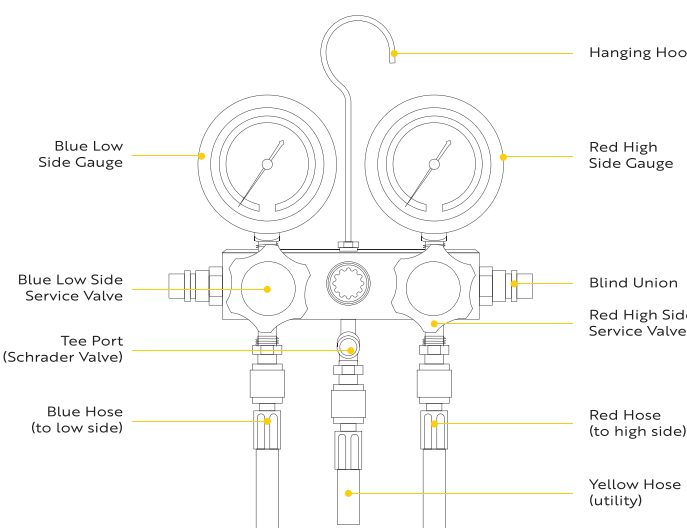


Lines from the manifold are attached to the SSV at D and should be left one to two turns loose, while the line to the DSV should be tightened. Then open both of the manifold valves at A and B 1/4 turn to 1/2 turn and cap the middle opening. E. Now turn the (DSV) C stem in 1/8 to 1/4 turn for just a moment (crack the valve). A surge of high-pressure refrigerant will then rush through the lines and the manifold and purge to the atmosphere at the loose connection at D the SSV. This connection may then be tightened. Purging is necessary to remove air and moisture from the manifold and lines.

NOTE: Purging must be held to a minimum to avoid damage to the atmosphere. Carefully test for leaks while the manifold and its lines are under high pressure. Correct any leak immediately. Various service and testing operations may be performed after the testing manifold has been installed:

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1. Observe operating pressures by: Closing valve A by turning all the way in. → Closing valve B by turning all the way in. → Cracking open back seat of valve C. → Cracking open the back seat of valve D.
2. Charge refrigerant into the system by: Connecting the refrigerant cylinder to E (vapor only). → Opening valve A. → Closing valve B. → Closing the front seat of valve D slowly.
3. Purge the condenser by: Closing valve A. → Closing valve B. → Cracking open valve C.
4. Charge liquid refrigerant into the high side by: Connecting the refrigerant cylinder to E. → Closing valve A. → Opening valve B. → Mid-positioning valve C.
5. Build up pressure on the low side for control settings or to test for leaks by: Sealing E with a seal cap. → Opening valve A. → Close valve C.



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### SECTION G Warranty

The VIVOHOME warranty program is our commitment to you. We are committed to providing you with a high-quality product that meets your needs and expectations. To demonstrate our confidence in the durability and performance of our products, we offer the following warranty.

#### WARRANTY COVERAGE

This warranty program applies to all orders, purchases, receipts, or use of any products sold by VIVOHOME and is valid for a period of 1 year from the date of purchase. However, please note that this warranty period is only valid for the original order. If you receive a replacement order during the warranty period, it will not include a separate warranty period.

#### WARRANTY EXCLUSIONS

This warranty does not cover damage resulting from misuse, accident, unauthorized modification, or any other circumstances not directly related to the manufacturing and design of the product, including but not limited to:

- Parts lost during use.
- Normal wear and tear of products or parts.
- Incorrect installation (such as using the wrong voltage) or assembly.
- Exceeding the bearing capacity of the product.
- Use under extremely harsh conditions.
- Improper cleaning or maintenance.
- Damage caused by any reason other than the intended use of the product.
- Indirect loss or damage caused by the product.

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#### HOW TO MAKE A WARRANTY CLAIM

If you find any defects that affect the use of the product or if the product stops working and cannot be repaired during the warranty period, please contact our customer service team at our email or via Amazon & app's direct messaging service as soon as possible. Provide the following information to expedite the process:

- Order number
- Images and/or videos illustrating the issue
- A detailed description of the problem

VIVOHOME will provide technical support, replacement, refund, or other solutions based on the nature of the issue. If you wish to return the original package for any reason, please contact us for confirmation before proceeding. You can expect to receive a response within 48 hours.

Thank you for choosing VIVOHOME. We are committed to ensuring the quality and satisfaction of your purchase. If you have any questions or need assistance, please do not hesitate to contact our customer service team.

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# THANK YOU!

#### NOTE:

To continuously improve its products, VIVOHOME reserves the right to modify this information without prior notification.

For any questions regarding assembly, please watch the video on the product page or contact our customer service. Our customer service will gladly assist you with any additional questions, comments, or concerns.

Thank you for using VIVOHOME products in your home!

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