

# Vacuum Pump with Manifold Gauge Set User Manual



Read Carefully Before Use  
Keep for Future Reference

# Safety Information

## Warning!

- **DO NOT** let children or persons with compromised physical or mental capabilities use this product. **DO NOT** allow people unfamiliar with this product or these instructions to operate it.
- **ONLY** use with R1234yf refrigerant.
- Turn your air-conditioning system off before evacuation.
- **DO NOT** leave it unattended during use.
- **ALWAYS** use with proper personal protective equipment such as a dust mask, goggles, and work gloves in a well-ventilated place, as these refrigerants can irritate your eyes, nose, throat, and skin or cause frostbite, heart arrhythmia, unconsciousness, and even death. Further, operating your vehicle in a closed environment may result in carbon monoxide poisoning and other problems. If you begin to develop symptoms such as headaches, dizziness, or nausea during use of this product, turn off your vehicle and get fresh air **IMMEDIATELY**. Do not continue work until the vehicle has been moved to an area with better ventilation.
- Use **EXTREME** caution when disconnecting the hoses after use as they may still contain some refrigerant under pressure.
- **DO NOT** operate this product if it is damaged or malfunctions. Repair or replace damaged components before further use.
- Store this product out of the reach of children.

# Specifications

Input Power	110V/60Hz
Evacuation Speed	4 cfm (0.11 m <sup>3</sup> /m)
Low-Pressure Gauge Range	-15* to 348 psi (-1 to 24 Bars)
High-Pressure Gauge Range	0 to 500 psi (0 to 34 Bars)
Compatible Refrigerants	R1234yf
Hose Length	4.9 ft. (1.5 m) ea.
Max. Hose Pressure	3000 psi (207 Bars)

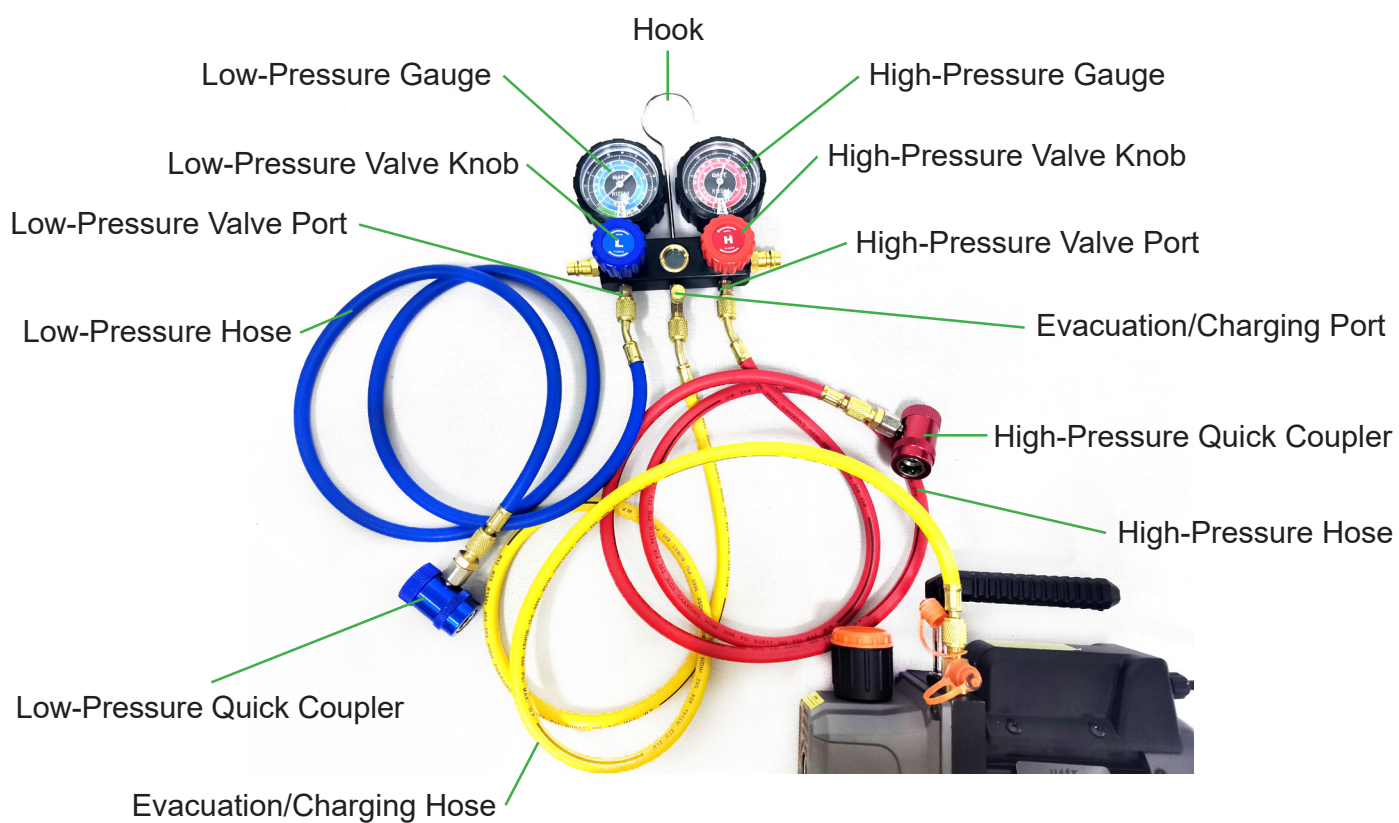
\* Note that negative readings are given in inches of mercury (inHg) roughly equal to half the equivalent value in psi.

# Product Diagram

## Vacuum Pump



## Gauge Set



# Package List

No.	Part	Qty.
1	Vacuum Pump	1
2	Gauge Set	1
3	¼" or ½" Evacuation/Charging Hose	1
4	Low-Pressure Hose	1
5	High-Pressure Hose	1
6	Low-Pressure Quick Coupler	1
7	High-Pressure Quick Coupler	1
8	¼" to ½" Adapter	1
9	½" to ¼" Adapter	1
10	Vacuum Pump Oil	1
11	Work Gloves	2
12	Tape	1
13	Bag	1
14	R134a Tap (Puncture Style)	1
15	Leak Detector	1

## Necessary but Not Included:

- Micron Gauge × 1
- M4 Hex Wrench × 1

# Installation

1. Place the vacuum pump on a level surface and make sure the oil drain is tightly closed by screwing its cap into place with your M4 hex wrench.
2. Remove the pump's oil inlet cap by unscrewing it by hand. Add the provided oil until the reservoir window is completely covered. Replace the cap.
3. If a  $\frac{1}{4}$ " evacuation/charging hose is provided, remove the vacuum pump's  $\frac{1}{4}$ " gas inlet cap, attach one end of the hose to the inlet, and screw it into place.

In the event that the inlet malfunctions, connect the hose with the  $\frac{3}{8}$ " gas inlet using a  $\frac{3}{8}$ " to  $\frac{1}{4}$ " adapter (not included) and repair or replace the problematic inlet as needed.

If a  $\frac{1}{2}$ " evacuation/charging hose is provided, attach it to the  $\frac{1}{4}$ " gas inlet using the provided  $\frac{1}{4}$ " to  $\frac{1}{2}$ " adapter and secure it in the same fashion.

In the event that the inlet malfunctions, connect the hose with the  $\frac{3}{8}$ " gas inlet using a  $\frac{3}{8}$ " to  $\frac{1}{2}$ " adapter (not included) and repair or replace the problematic inlet as needed.

4. To evacuate a system, unscrew the evacuation port cap by hand and connect your micron gauge with the evacuation port and the other end of the evacuation hose. (The port's diameter is  $\frac{1}{4}$ ". Use the provided  $\frac{1}{4}$ " to  $\frac{1}{2}$ " adapter or any other necessary adapter if needed.) Make sure they are tightly joined and turn the micron gauge on.

To charge your system, connect the hose directly to the port.

5. Make sure the low and high-pressure valves are tightly closed by twisting their knobs completely clockwise. Unscrew the valve port caps by hand, connect the low and high-pressure hoses to their matching valve ports, and screw their corresponding ends into place by hand.
6. Make sure your air-conditioning system is turned off.

For vehicular air-conditioning systems, attach the low and high-pressure quick couplers to the low and high-pressure hoses respectively and screw them into place by hand. Pull back the couplers' sleeves, push them onto their corresponding service ports of your system, and release the sleeves.

For home air-conditioning systems, connect the low and high-pressure hoses to their corresponding service ports on the outdoor unit, using the provided  $\frac{1}{2}$ " to  $\frac{1}{4}$ " adapter or other necessary adapters if needed.



# Operation

## Evacuation

1. Ensure that everything is correctly installed for evacuation as explained above.
2. Connect the vacuum pump to a stable compatible power supply using a grounded outlet. Do not use a 3-to-2 prong adapter or ungrounded power strip.
3. Open the low-pressure valve by twisting its knob completely counterclockwise.
4. Turn on the pump by pressing the power switch above the fan.
5. When the micron gauge reads less than 500 microns, your air-conditioning system is fully cleared. Close the valve by twisting its knob completely clockwise, turn off the pump, and disconnect the evacuation hose.

## Charging

1. Ensure that everything is correctly installed for charging as explained above.
2. Connect the outlet of the R134a tap to the charging hose and its inlet to your refrigerant can. Twist its handle clockwise to open the can and then counterclockwise to allow the refrigerant to flow into the hose.
3. Start your air-conditioning system and turn it to the maximum cooling and fan speed.
4. Check for any leakage along your line. Open the high-pressure valve by twisting its knob completely counterclockwise. If the high-pressure gauge's pointer keeps swinging, turn the leak detector on by pressing its power button and place it close to any joint or hose. It will begin to buzz if there is any leakage. Close the valve by twisting its knob completely clockwise. If any loose joints or worn parts are detected, repair or replace them before further use.
5. When there is no leakage, close the high-pressure valve. Open the low-pressure valve by twisting its knob completely counterclockwise and system recharging will begin.
6. When the low-pressure gauge reads 25–80 psi (2–6 bars), the system is fully charged. To stop charging the system, close the low-pressure valve by twisting its knob completely clockwise and then disconnect the tap from the refrigerant can.

# Maintenance

- Disconnect the pump from its power supply before any cleaning, maintenance, or repair.
- The exterior of the pump can be cleaned with a soft damp cloth. Do not use abrasive cleaners or caustic chemicals.
- When the oil turns turbid or its level falls near the bottom of the reservoir window, replace it using the following procedure:
  1. Make sure the remaining oil is warm. If you are unsure of your oil's temperature, plug in and turn on your pump, running it for about 10 minutes to heat the oil sufficiently. Turn off the pump and unplug it before continuing.

2. Remove the oil drain cap using your M4 hex wrench. Grip the handle of the pump and tilt it down to drain the remaining oil into a suitable container.
  3. Screw the cap into place and start filling it as instructed above. Once the initial oil can has been used up, only use oil of equivalent weight (ISO 100 or SAE 30) as a replacement.
- **NEVER** scrape or abrade the hoses or drop the pump or gauges on hard or rough surfaces.
  - If any part of the pump or gauge set is damaged or worn, have it repaired or replaced before further use.
  - Unplug the pump, disassemble all parts, and store them in a cool, dry, and clean place after use.

## Troubleshooting

Problems	Possible Solutions
The vacuum pump cannot be turned on.	Check your power supply and the pump's power cord. Correct any problems as needed.
	Move the pump to a warmer location, wait a while, and activate your pump.
The vacuum pump turns off automatically during use.	The thermal protector will deactivate your pump if its motor reaches 160°F (70°C). Wait about 15 minutes to let it cool down and restart your pump.

## Contact Us

Thank you for choosing our products! If you have any questions or comments, contact us at [help@cs-supportpro.com](mailto:help@cs-supportpro.com) and we'll resolve your issue ASAP!

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