V20241108

Vacuum Pump and Manifold Gauge Set
User Manual

Orion Motor Tech

Read Carefully Before Use
Keep for Future Reference

Disclaimer

Read this disclaimer completely and carefully before proceeding with the rest of the manual content.

1. **As-Is**

   This Orion Motor Tech (OMT) product is sold 'as is' and without any express or implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.

2. **Product Modifications**

   Any modifications or alterations to OMT products void any warranties and may result in damage or injury. OMT shall not be liable for any damages resulting from such modifications or alterations.

3. **Compliance with Laws**

   Customers shall be liable for ensuring that the use of OMT products complies with all applicable laws and regulations in their respective jurisdictions. OMT assumes no responsibility for any violations of laws or regulations resulting from the use of OMT products.

4. **Correct Use**

   Always use OMT products only as directed in the accompanying manuals. Failure to follow instructions may result in injury or damage.

   Always ensure the assembly, installation, operation, maintenance, or repair of OMT products is carried out by a competent person.

   Always make maintenance regularly throughout OMT products' lifecycles; you have the liability to keep the products operating as intended.

   Always wear appropriate protective gear.

5. **Third-Party Products**

   OMT shall not be liable for any damages or losses resulting from the use of third-party products in conjunction with OMT products. Customers shall refer to the third-party's guidelines or/and warranties (if any) for any third-party products used.

6. **Limitation of Liability**

   OMT shall not be liable for any direct, indirect, punitive, incidental, special, or consequential damages to property or life, whatsoever arising out of or connected with the use or misuse of OMT products. In no event shall OMT's liability exceed the value of the products sold.

This disclaimer states the entire obligation of OMT with respect to OMT products. If any part of this disclaimer is determined to be void, invalid, unenforceable, or illegal, including but not limited to the warranty disclaimers, liability disclaimers, and liability limitations set forth above, the invalid or unenforceable provision will be deemed superseded by a valid and enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall remain in full force and effect.

Contents

1. Safety Information

1.1 General Instructions

Danger

- This product is **NOT** suitable for people under the age of **18**.
- Read **ALL** these instructions carefully **BEFORE** setup, use, and maintenance.

  Follow **ALL** these instructions strictly **DURING** setup, use, and maintenance.

  Failure to do so can bring about severe property damage and personal injury.
- **ONLY** use this product for its intended purpose, evacuating and charging vehicular air-conditioning (A/C) systems using **R1234yf** refrigerant.

  NEVER use it with **ANY** other refrigerants, which can damage this product and pose safety hazards.

  It is **NOT** a toy and should **NOT** be used playfully or carelessly.

  Any other use **NOT** specified herein could potentially pose risks and void **ALL** warranties stated or implied.
- These instructions are **ONLY** an introduction to this product.

  For specifics on particular tasks, consult the service manual provided by your A/C system's manufacturer as well.

1.2 Workspace Safety

Danger

- **ALWAYS** ensure that your work area is clean and well-lit.

  Cluttered or dark areas invite accidents.
- **ALWAYS** ensure adequate ventilation for your work area.

  Working on refrigerant in closed environments may result in carbon monoxide poisoning and other problems.
- **NEVER** place **ANY** flammables, explosives, or heat sources in your work area.

  Firecrackers, open flames, and other similar things may cause fires or explosions.
- To prevent risks arising from intervention, restrict access to your work area as needed.

1.3 Personal Safety

Danger

- **DO NOT** use this product while you are tired or under the influence of drugs, alcohol, or strong medication.

1. Safety Information

- **DO NOT** allow use by children, anyone **WITHOUT** specialized **HVAC** training, persons unfamiliar with this product and its compatible A/C system, or people whose physical or mental condition precludes safe use.
- **ALWAYS** keep bystanders, children, and pets away during work.
- **ALWAYS** wear ANSI or OSHA-approved personal protective equipment (PPE) including breathing, eye, and hand protection.

  Refrigerants can irritate your eyes, nose, throat, and skin or cause frostbite, heart arrhythmia, unconsciousness, and **EVEN** death.

  Hearing protection is also necessary due to the noise generated by this device during operation.
- **ANY** helpers allowed nearby **MUST** wear equivalent PPE.

1.4 Electrical Safety

⚠ Warning

- **ALWAYS** check that the vacuum pump's power cord is undamaged **BEFORE** evacuation.

  NEVER use electrical devices with **ANY** problematic power cords.

  ONLY use identical replacements for the provided power cord.
- **ONLY** use the vacuum pump with stable, compatible, and well-grounded power sources.
- **DO NOT** use damaged power outlets, 3-to-2 prong adapters, ungrounded extension cords, or extension cords of insufficient gauge for the pump's expected electrical load.
- In case of power loss during operation, unplug the vacuum pump **IMMEDIATELY** until power is restored.
- **DO NOT** move the vacuum pump by pulling on its power cord.
- **DO NOT** attempt to dismantle or modify the power cord.
- **DO NOT** get the vacuum pump wet or operate it with wet hands or in highly humid environments.

  DO NOT rinse the entire pump with tap water, immerse it completely in water, or expose it to rain.

  In the event of any signs indicating that any electrical component accidentally becomes wet, disconnect the pump from power **IMMEDIATELY** and wait for it to completely dry **BEFORE** resuming use.
- **DO NOT** leave the vacuum pump connected to power when undertaking **ANY** maintenance or repair tasks.

  For tests or other purposes that require power to be restored, wear **INSULATED** hand protection **ALL** the way.

1. Safety Information

1.5 Operational Safety

Danger

- **ALWAYS** check that **ALL** parts of this product are intact, correctly installed, and securely tightened **BEFORE** each use.
- **NEVER** operate this product if any parts are damaged or display signs of malfunction.

  Repair or replace problematic parts **BEFORE** resuming use.

  ONLY use identical or authorized replacements.
- **ALWAYS** turn off your A/C system **BEFORE** performing evacuation with this product.
- **ALWAYS** avoid **ALL** direct contact with the vacuum pump oil.

  If contact accidentally occurs with the skin, remove contaminated clothing and flush with copious amounts of water.

  If contact accidentally occurs with the eyes, **IMMEDIATELY** flush them with copious amounts of water for at least 15 minutes while seeking medical attention.

  NEVER swallow the oil, which may cause **FATAL** problems.
- **ALWAYS** apply the correct attachments and connections.

  Failure to do so may result in severe equipment damage and personal injury.

To	From
Low-pressure service port of A/C system	Blue hose, blue coupler, blue valve
High-pressure service port of A/C system	Red hose, red coupler, red valve
Vacuum pump	Yellow hose, middle port between the valves
Refrigerant can (self-sealing style only)	Yellow hose, round-pin tap, middle port between the valves

- **ALWAYS** perform leak tests for this product and your A/C system **BEFORE** charging.

  Address the issue(s) in time and ensure that everything is leak-free before continuing on your way.
- **DO NOT** make threaded connections **WITHOUT** the provided tape or other leak-proof equivalents.
- **DO NOT** charge your A/C system **BEYOND** the pressure range specified in the system's service manual.
- Stay alert, watch what you are doing, and use common sense when using this product.

1. Safety Information

- If you begin to develop symptoms such as headaches, dizziness, or nausea during use, stop work and get fresh air **IMMEDIATELY**.

  DO NOT continue work until better ventilation is provided for your work area.
- **DO NOT** leave this product unattended as long as it is connected to power, your A/C system, and a refrigerant can.
- Use **EXTREME** caution when disconnecting the quick couplers and hoses after use.

  They may still contain some refrigerant under pressure.

⚠ Warning

- **DO NOT** run the vacuum pump **WITHOUT** the provided oil **(ISO 100 or SAE 30)** or **WITH** any oil of inequivalent weight.
- **DO NOT** run the vacuum pump when the oil inside turns turbid.
- **DO NOT** run the vacuum pump with its oil inlet open or drain cap loose.
- **ALWAYS** maintain the oil level between the **MIN** and **MAX** height marks on the reservoir window during use.

  DO NOT overfill the reservoir or allow the vacuum pump to run dry.
- **DO NOT** maintain this product with harsh abrasives or caustic chemicals.
- **NEVER** disassemble the vacuum pump or pressure gauge set **WITHOUT** professional training.
- **ONLY** allow trained technicians to access and service the internal components.
- Disposal of this product **MUST** comply with **ALL** applicable local and national laws and regulations.

2. Specifications

Vacuum Pump

Input Voltage & Frequency	110–120 (V) AC, 60 Hz	
Rated Power	⅓ HP	245 W
Evacuation Speed	4 cfm	0.11 m^3/m
Oil Capacity	7.6 fl. oz.	225 mL
Overheat Protection	160°F	70°C
Dimensions	10.6×4.3×8.5 (in.)	27×11×21.5 (cm)
Net Weight	11 lb.	5 kg

Gauge Set

Compatible Refrigerant		R1234yf	
Low Pressure Gauge	**Pressure Range**	−15* to 348 (psi)	−1 to 24 (bar)
	Temp. Range	0 to 90 (°F)	−18 to 32 (°C)
High Pressure Gauge	**Pressure Range**	0 to 500 (psi)	0 to 35 (bar)
	Temp. Range	0 to 190 (°F)	−18 to 88 (°C)
Hoses	**Length**	4.9 ft.	1.5 m
	Max. Pressure	3000 psi	206 bar
Net Weight		4.9 lb.	2.2 kg

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

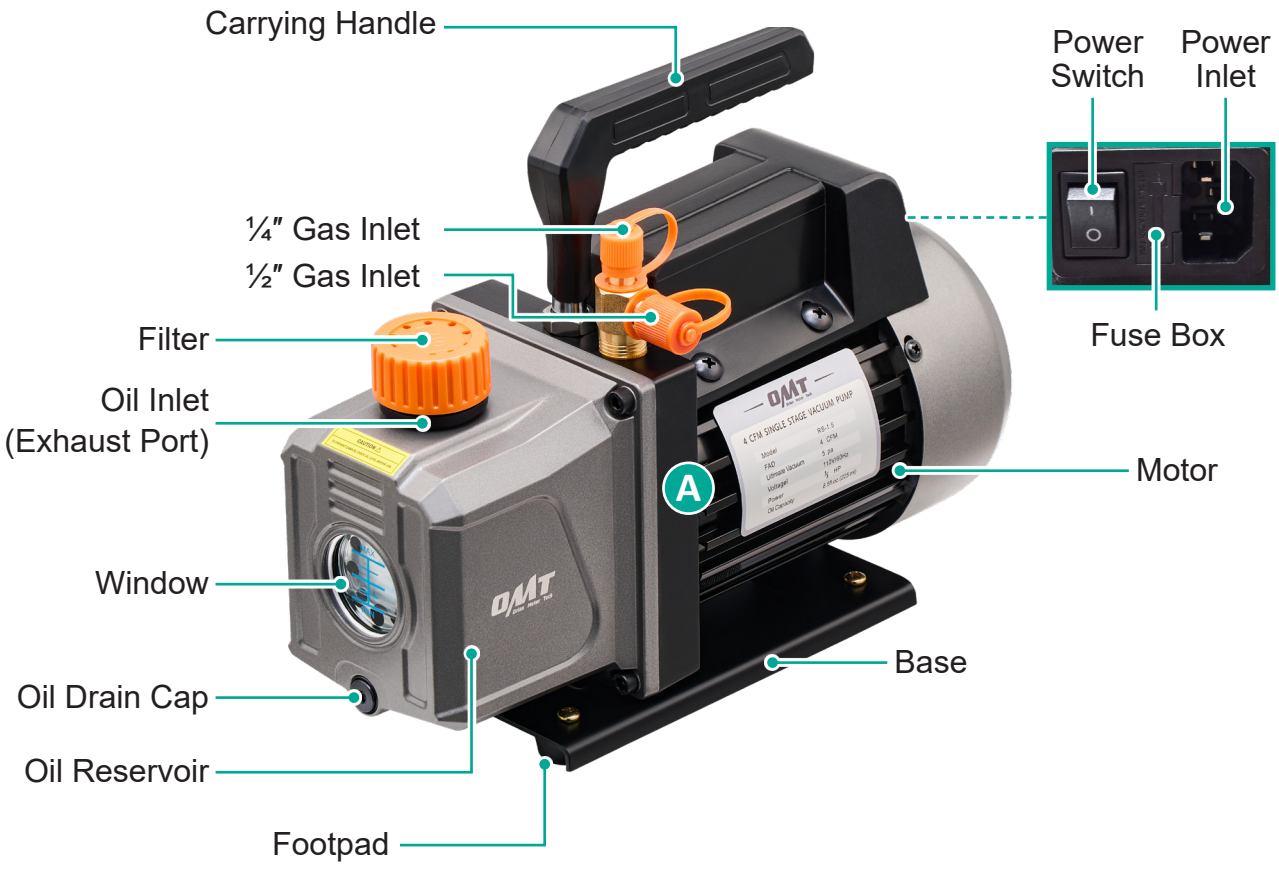
3. Package List

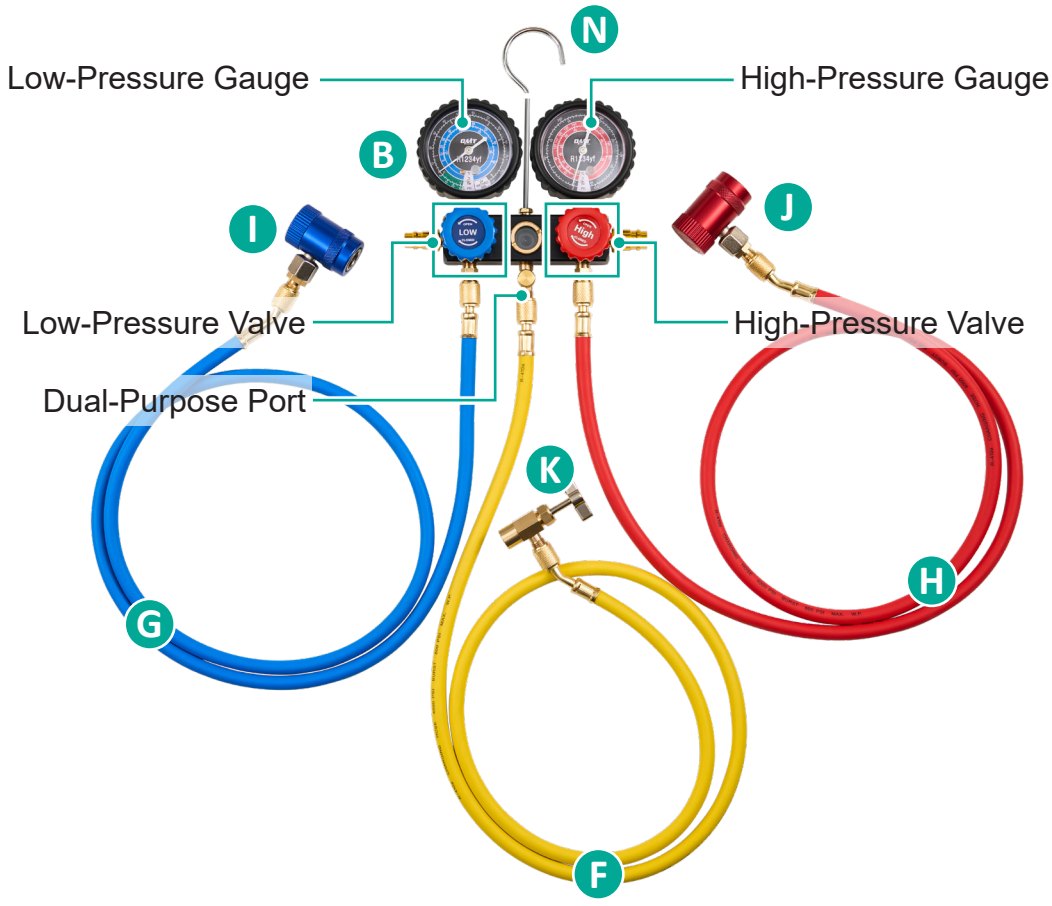
A Vacuum Pump  ×1	B Pressure Gauge Set  ×1	
C Power Cord  ×1	D Vacuum Pump Oil  ×1	E Tape Roll  ×1
F Dual-Purpose Hose (Yellow)  ×1	G Low-Pressure Hose (Blue)  ×1	H High-Pressure Hose (Red)  ×1
I Low-Pressure Quick Coupler (Blue)  ×1	J High-Pressure Quick Coupler (Red)  ×1	K R1234yf Tap (Self-Sealing Style)  ×1
L ½″ Male to ¼″ Female Adapter  ×1	M ⅝″ Male to ¼″ Female Adapter  ×1	N Hook  ×1
O Leak Detector  ×1	P Work Gloves  ×1	Q Bag  ×1

Not Included but Necessary or Helpful:

- R1234yf Refrigerant Can
- Micron Gauge
- 4 mm Hex Wrench
- Flathead Screwdriver
- Funnel
- AAA Batteries (×2)
- Dust Mask
- Goggles

4. Product Diagram





5. Preparation

Danger

*Refrigerant can irritate your eyes, nose, throat, and skin or cause frostbite, heart arrhythmia, unconsciousness, and **EVEN** death.*

Insufficient preparations can invite accidents and lead to serious consequences.

5.1 Clearing the Work Area

Make sure your work area meets the following requirements:

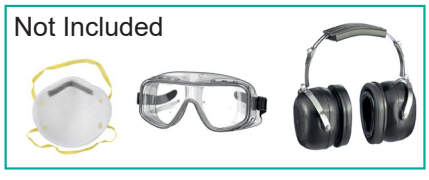
- No bystanders, children, or pets
- Helpers wearing necessary PPE
- Well-lit and ventilated but adequately protected from the elements
- Clean and clear of clutter that may interfere with your work or pose safety hazards
- Free from flammables, explosives, and heat sources such as firecrackers and open flames

5.2 Putting on Proper PPE

Breathing, eye, and hand protection are required and should meet the standards by ANSI (American National Standards Institute) or OSHA (Occupational Safety and Health Administration).

Hearing protection is also necessary for the use of the vacuum pump.

Recommended PPE:



5.3 Checking This Product

Check that **ALL** parts of this product **ARE** present and intact **AFTER** unpacking and **BEFORE** setup or operation.

If any of them is damaged, ask your local dealer or contractor for a new identical replacement.

Danger

*Use with missing, broken, nonidentical, or unauthorized parts **WILL** pose a series of safety hazards.*

5.4 Familiarizing with Your A/C System

For optimal safety, be sure to know your A/C system and take sufficient training **BEFORE** using this product.

Failures and accidents could happen due to a lack of training.

6. Initial Setup

6.1 Installing the Hook

1. Attach the hook **(N)** to the central hole of the pressure gauge set **(B)**.
2. Slide down the locking nut and screw it into place.
3. Hang the gauge set using the hook as needed.

6.2 Connecting the Pressure Hoses to the Gauge Set

1. Turn the knobs on the gauge set completely clockwise, **FULLY** closing its low-pressure (LP) and high-pressure (HP) valves.
2. Pull away the protective caps from the valve ports under the knobs.
3. Wrap the port threads with the provided tape **(E)**.

Danger

*Use **WITHOUT** tape may result in refrigerant leaks.*

***Note:** Take care **NOT** to block the ports.*

6. Initial Setup

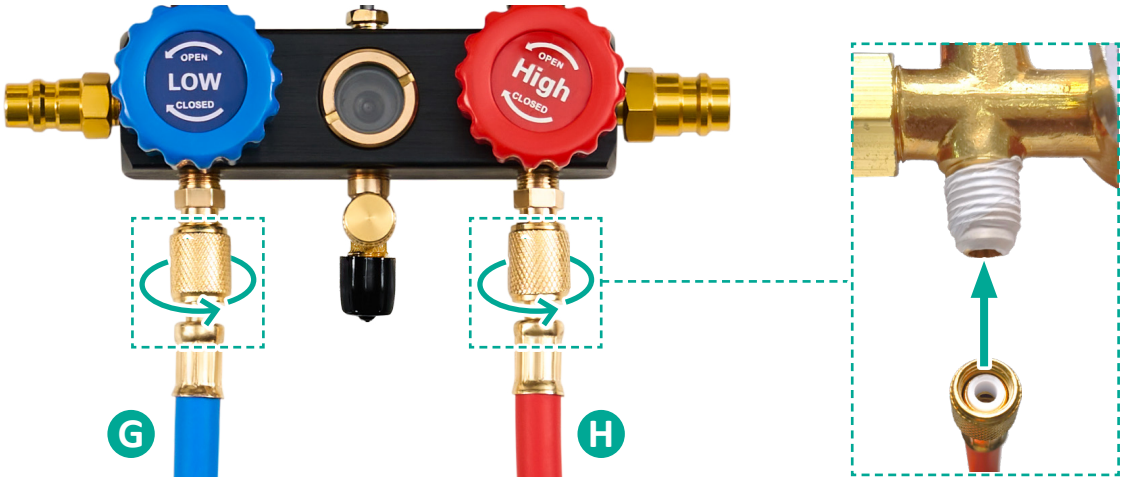
4. Connect the pressure hoses to these ports.

> **Danger**
>
> ***DO NOT** mix up the two hoses in different colors, as they are **NOT** interchangeable.*

> ***Note:** Use the hose ends **WITHOUT** copper cores inside.*

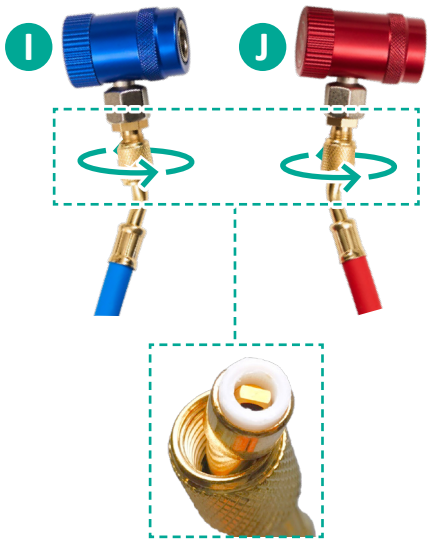
- Connect the blue LP hose **(G)** to the port below the blue knob (**LOW**).
- Connect the red HP hose **(H)** to the port below the red knob (**HIGH**).

5. Tighten these connections using the hoses' locking nuts.



6.3 Connecting the Quick Couplers to the Pressure Hoses

1. Wrap the tape around the threads of the blue LP coupler **(I)** and red HP coupler **(J)**.
2. Connect the blue and red hoses to their identically colored quick couplers.



> **Danger**
>
> ***DO NOT** mix up these hoses and couplers, as they are **NOT** interchangeable.*

> ***Note:***
>
> *Use the hose ends **WITH** copper cores inside.*

3. Tighten these connections using the hoses' locking nuts.

6. Initial Setup

6.4 Connecting the Quick Couplers to Your A/C System

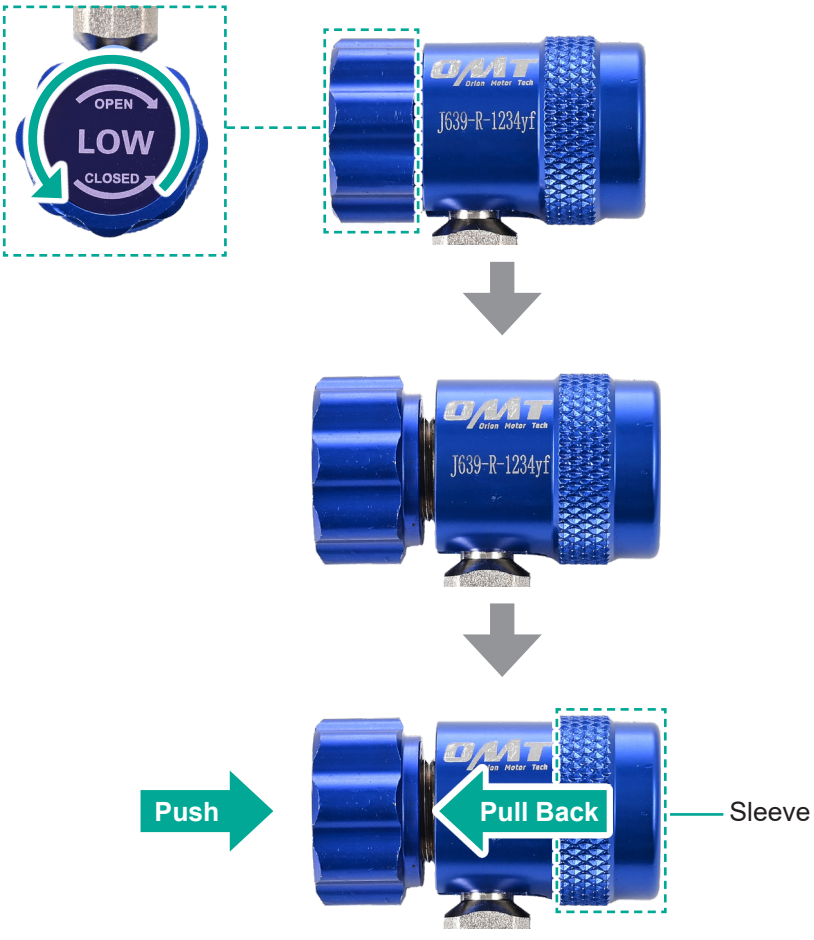
> **Danger**
>
> - *Ensure that your A/C system has been **COMPLETELY** turned off.*
> - *Read the guidelines provided by the manufacturer of your A/C system as well.*

1. Turn the coupler knobs completely counterclockwise.
2. Pull back the coupler sleeves.
3. Push the couplers onto their matching service ports of your A/C system.

> **Danger**
>
> ***DO NOT** mix up the couplers and service ports, as they are **NOT** interchangeable.*

4. Release the sleeves to secure the connections.

Example: LP Coupler



7. Operation

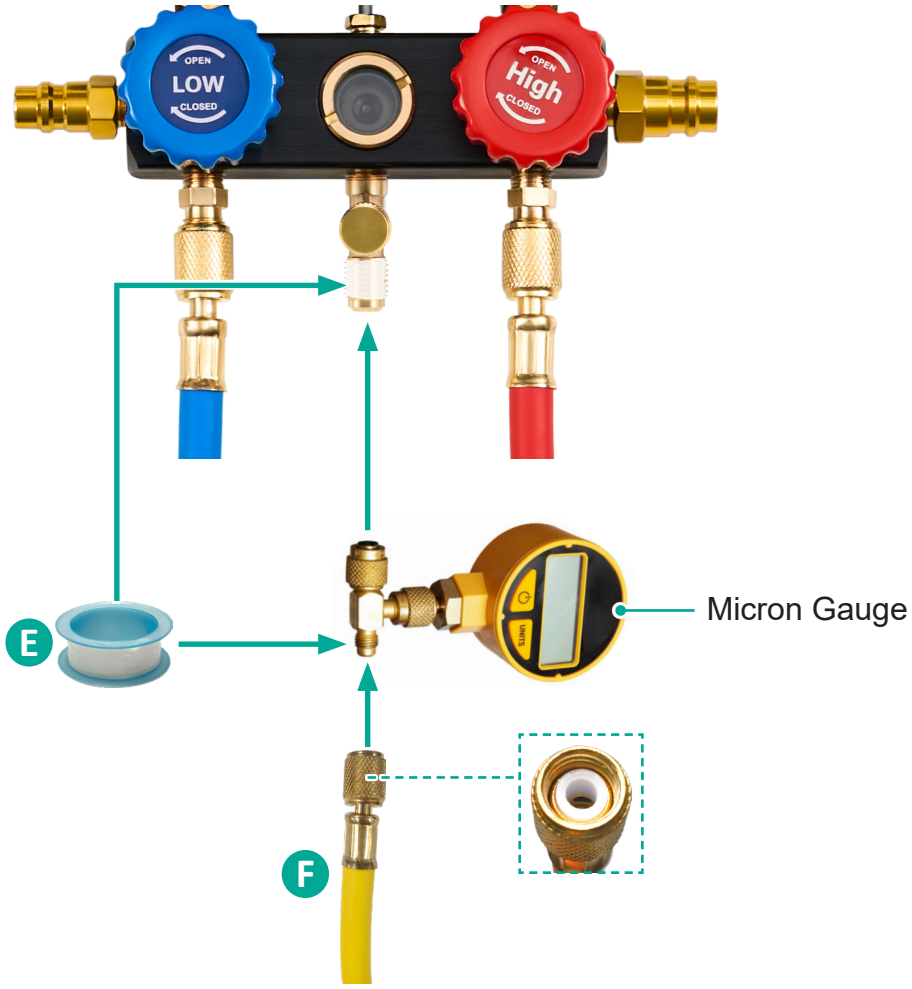
7.1 Evacuation

> **Danger**
>
> *Again, check that your A/C system has been **COMPLETELY** turned off.*

7.1.1 Connecting the Dual-Purpose Hose to the Gauge Set

1. Pull away the protective cap from the dual-purpose port in the middle of the gauge set.
2. Connect a micron gauge **(not included)** to the port and the yellow dual-purpose hose **(F)**.
   If necessary, use additional adapters for the connections.
3. Tighten each connection **COMPLETELY**.

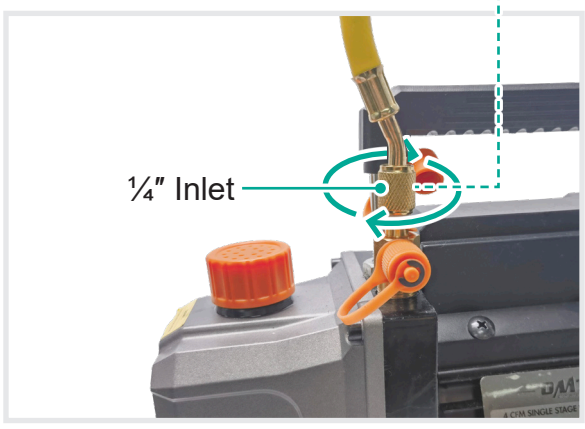
> **Danger**
>
> - *Wrap the provided tape **(E)** around the port threads to prevent leaks.*
> - *Use the hose end **WITHOUT** a copper core.*



7. Operation

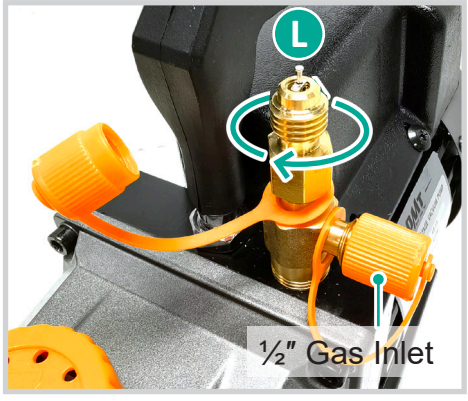
7.1.2 Connecting the Dual-Purpose Hose to the Vacuum Pump

1. Locate the ¼" gas inlet of the vacuum pump (A).
2. Unscrew the inlet cap.
3. Wrap the inlet threads with the tape.
4. Connect the copper-core end of the yellow hose to the inlet.
5. Tighten the connection using the hose's locking nut.

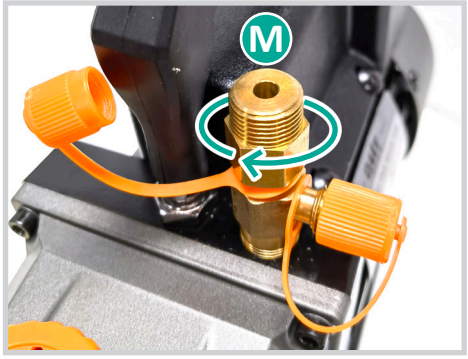


Note:

- *To use a ½" diameter hose **(not included)**, connect it to the ½" inlet directly **OR** the ¼" inlet with the ½" male to ¼" female adapter **(L)**.*



- *To use a ⅝" diameter hose **(not included)**, connect it to the ¼" gas inlet with the ⅝" male to ¼" female adapter **(M)**.*



7. Operation

7.1.3 Filling the Oil Reservoir

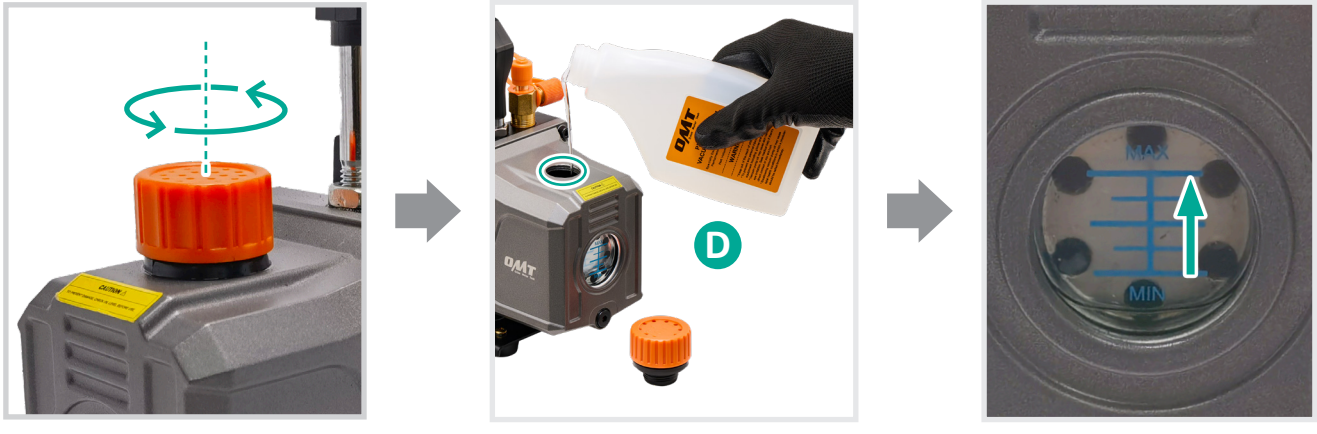
> **⚠ Warning**
>
> ***NEVER** run the vacuum pump **WITHOUT** the provided oil or a proper equivalent.*
>
> *Failure to follow this **WILL** damage the device, pose various risks, and void **ALL** warranties stated or implied.*

1. Place the vacuum pump on a clean, firm, flat, level, nonflammable, and nonslip surface.
2. Retighten the oil drain cap using a 4 mm hex wrench **(not included)**.

3. Unscrew the filter, exposing the oil inlet.
4. Carefully add the vacuum pump oil **(D)** until the reservoir window is covered between **MIN** and **MAX**.

   To prevent spills, use a funnel **(not included)** that fits the oil inlet.

> **⚠ Danger**
>
> - *Vacuum pump oil is flammable and explosive and **MUST** be kept away from open flames and sparks.*
> - ***NEVER** swallow the oil or touch it with bare skin.*



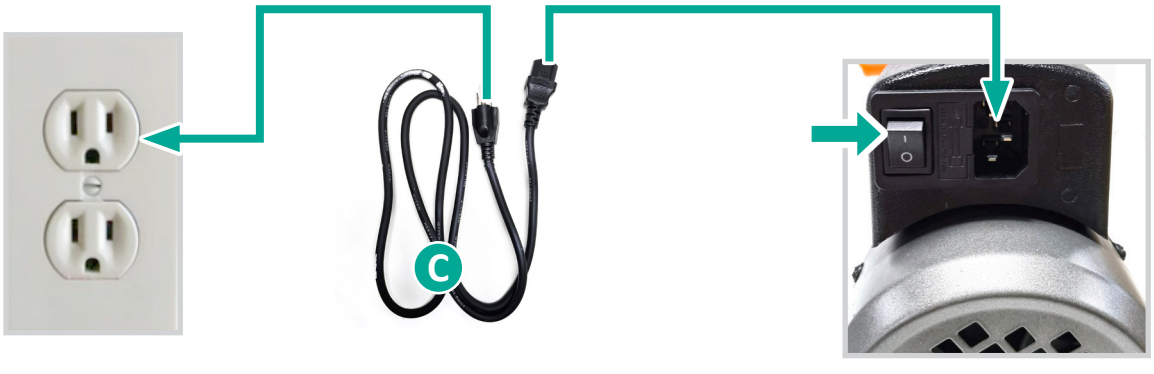
5. Replace and tighten the filter.

7.1.4 Evacuating Your A/C System

1. Turn on your micron gauge.
2. Open the LP valve by turning the blue **LOW** knob completely counterclockwise.

3. Connect the power cord **(C)** to the inlet of the vacuum pump.
4. Connect the cord to a stable, compatible, and grounded power source.
5. Flip the power switch to **I** and evacuation should begin.

> ⚠ **Warning**
>
> ***ALWAYS*** *keep an eye on the reservoir window during evacuation.*
>
> *Stop the pump and properly refill the reservoir if the oil level falls to* ***MIN****.*



7. Operation

6. When the micron gauge reads less than 500 microns, close the LP valve by turning its knob **COMPLETELY** clockwise.

   Your A/C system should be fully cleared.

7. Flip the power switch to **O**, turning off the pump.

8. Disconnect the micron gauge from the pressure gauge set and yellow hose.
9. Loosen the locking nut and disconnect the yellow hose from the pump.

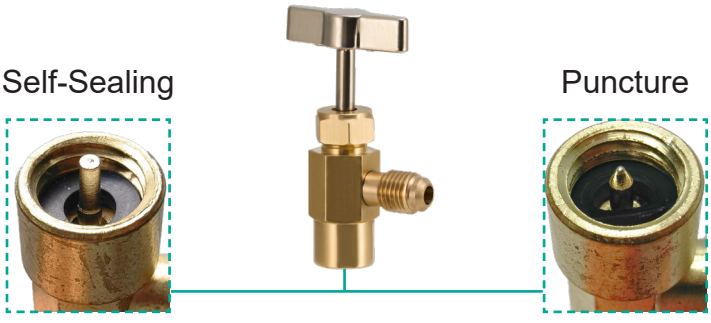
7.2 Charging

Danger

- ***ALWAYS*** *keep your refrigerant cans away from heat sources and direct sunlight.*
- *Be cautious* ***NOT*** *to open your refrigerant cans by accident in* ***ANY*** *way.*
- *Ensure that* ***BOTH*** *gauge valves* ***ARE*** *completely closed* ***BEFORE*** *starting your work.*
- ***NEVER*** *leave your refrigerant cans or the gauge set unattended when charging is ongoing.*

Note:

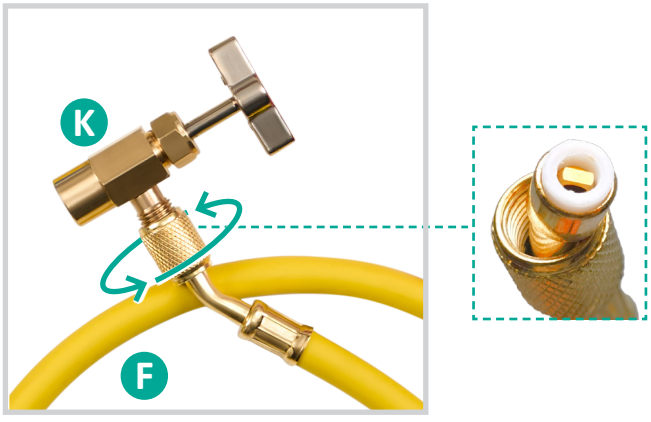
- *The round pin of the provided R1234yf tap* ***ONLY*** *fits cans of* ***SELF-SEALING*** *style.*
- *For puncture-style cans, use taps with taper pins* ***(not included)****.*



7. Operation

7.2.1 Connecting the Dual-Purpose Hose to the R1234yf Tap

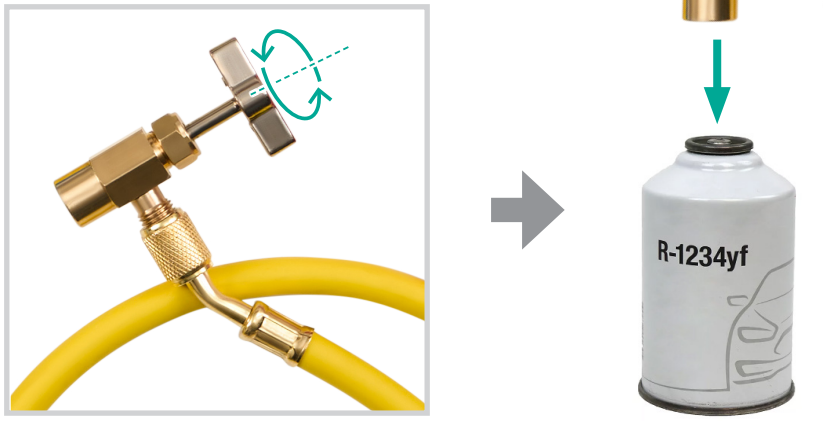
1. Pull away the protective cap from the threaded **MALE** port of the R1234yf tap **(K)**.
2. Connect the copper-core end of the yellow hose **(F)** to this port.
3. Tighten the connection using the hose's locking nut.
4. Check that the other end of the hose remains secure to the pressure gauge set.



7.2.2 Connecting the R1234yf Tap to a Refrigerant Can

> **Danger**
> - ***NEVER** use incompatible refrigerant cans.*
> - *Ensure that the blue LP valve is **FULLY** closed **BEFOREHAND**.*

1. Turn the tap handle completely counterclockwise.
2. Securely fit the tap onto your refrigerant can using its **FEMALE** port.
3. Turn the handle completely clockwise, opening the can and allowing the refrigerant to flow through the hose.



7. Operation

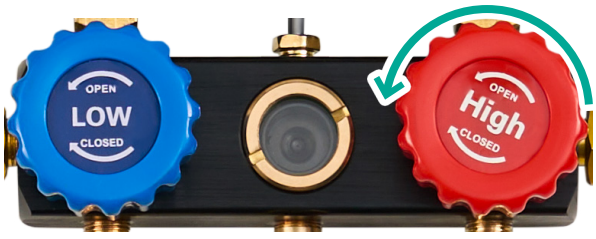
7.2.3 Testing Leaks

> **Danger**
> *Charging **WITHOUT** prior leak tests poses risks.*

1. Start your A/C system and set it to the maximum cooling and fan speed.
2. Locate the red **HIGH** coupler **(J)** connected to your system's HP service port.

   Turn its knob completely clockwise, opening the service port.

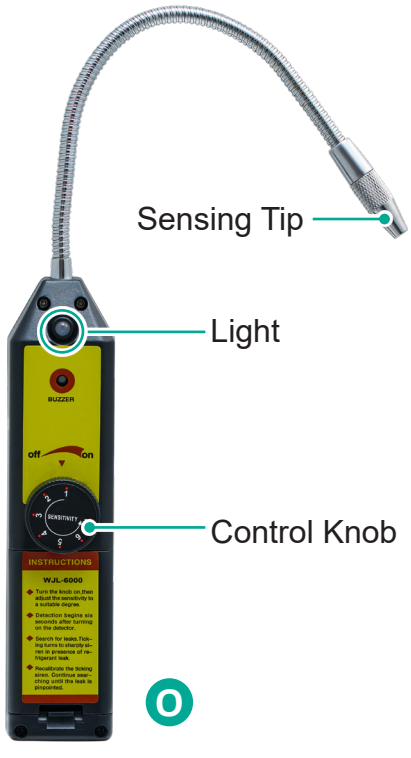
3. Open the HP valve by turning the red **HIGH** knob completely counterclockwise.



4. Check the state of the pointer in the red HP gauge.
   - If it remains still, there are no leaks.
   - If it keeps swinging, take the following steps:
     a. Pull open the battery compartment at the back of the leak detector **(O)**, properly insert two AAA batteries **(not included)**, and close the compartment.
     b. Activate the detector by turning its knob to **2–7.**

        The larger the number, the higher the operational intensity.
     c. Place the sensing tip close to each hose and joint.

        If the warning light turns on while an audio alarm goes off, there is a leak in the location of the tip.
     d. Close the HP valve **IMMEDIATELY** and deactivate the detector by turning its knob to **1**.
     e. Retighten, repair, or replace any problematic parts and perform retests **BEFORE** resuming use.



7. Operation

5. Once confirming no leaks, close the HP valve by turning its knob **COMPLETELY** clockwise.

6. Close your system's HP service port using the red **HIGH** coupler.

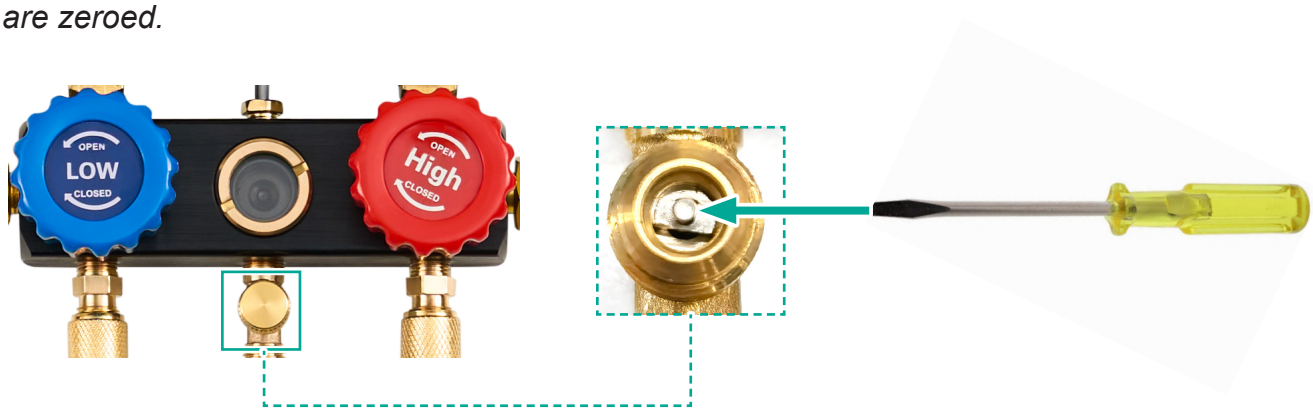
7.2.4 Charging Your A/C System

Danger

- ***ONLY** start charging **AFTER** confirming **NO** leaks.*
- ***DO NOT** overcharge.*

  *Consult your A/C system's specifications **BEFOREHAND**, finding the recommended pressure that indicates a full charge, which is usually between **25 psi (1.7 bar)** and **80 psi (5.5 bar)**.*

***Note:** If the pressure gauges read more than 0 psi, unscrew the cap above the dual-purpose port and press the valve core inside **UNTIL** excess air is **FULLY** expelled while the readings are zeroed.*



7. Operation

1. Locate the blue **LOW** coupler **(I)** connected to your system's LP service port.

   Turn its knob completely clockwise, opening the service port.

2. Open the LP valve by turning the blue **LOW** knob completely counterclockwise.

   Charging should begin.

3. Pay attention to the window of the pressure gauge set.

   Ensure that refrigerant is continuously flowing through and does **NOT** run out midway.

Note:

- *There might be a small amount of refrigerant remaining in the can **EVEN** though the window displays nothing.*

  *You can **GENTLY** shake the can in its inverted position and view the window again.*
- *If refrigerant runs out midway, close the LP valve as described in **Step 4 BEFORE** installing the tap on a new can.*
- *Refrigerant cans **MUST** be disposed of according to laws and regulations.*

7. Operation

4. Once the LP gauge reads the recommended pressure, close the LP valve by turning its knob **COMPLETELY** clockwise.

   Charging should stop.

5. Close your system's LP service port using the blue **LOW** coupler.

6. Turn the handle of the tap **(K)** completely counterclockwise to close your refrigerant can.

7. If the can is empty, remove it from the tap.

   If it is not, you can leave the tap there **BUT** keep it **FULLY** closed **UNTIL** resuming use.

8. Pull back the coupler sleeves while sliding the couplers away from your A/C system.

> **Danger**
>
> *Exercise caution **WITH** any remaining refrigerant that may come out.*

9. Loosen the locking nuts and disconnect the three hoses from the tap, quick couplers, and gauge set.

8. Maintenance

Danger

- ***ALWAYS*** *disconnect this product from power and A/C systems* ***BEFORE*** *performing* ***ANY*** *maintenance tasks.*

  Failure to do so can invite accidents, leading to equipment damage and personal injury.
- *For tests or other purposes that require power or system connections to be restored, wear* ***INSULATED*** *hand protection as well as ANSI or OSHA-compliant breathing and eye protection.*
- *Be careful* ***NOT*** *to scrape or abrade the hoses and* ***NOT*** *to drop the pump or gauge set on hard or rough surfaces.*

8.1 Cleaning

Clear any debris, dust, and oil off the external surfaces of the vacuum pump, pressure gauge set, hoses, and other items as needed after each use.

Recommended Tools:

- Soft dry brush
- Soft damp cloth
- ANSI or OSHA-compliant compressed air

Warning

- ***ALWAYS*** *avoid direct pressurized spray.*
- ***DO NOT*** *flush or soak this product.*
- ***NEVER*** *use abrasive or caustic cleaners.*

8.2 Replacing Vacuum Pump Oil

Be mindful of the oil behind the reservoir window.

If it turns turbid, replace it as follows:

1. Make sure the oil remains warm.

   Note:

   If unsure, run the pump for about 10 minutes to heat the oil sufficiently.

   Remember to deactivate and unplug the pump ***BEFORE*** *continuing.*

8. Maintenance

2. Unscrew the oil drain cap using your 4 mm hex wrench **(not included)**.
3. Grip the carrying handle, tilting down the pump to pour the oil into a suitable container.
4. When the reservoir becomes empty, screw the cap back into place.
5. Refill the reservoir following **Section 7.1.3** on **Pages 14–15**.

> ***Note: ONLY** use the provided vacuum pump oil or any other of equivalent weight **(ISO 100 or SAE 30)** as the replacement.*

8.3 Checks

Check the vacuum pump, pressure gauge set, hoses, and other items for any wear, damage, and malfunction after each use.

Repair or replace any problematic items before further use.

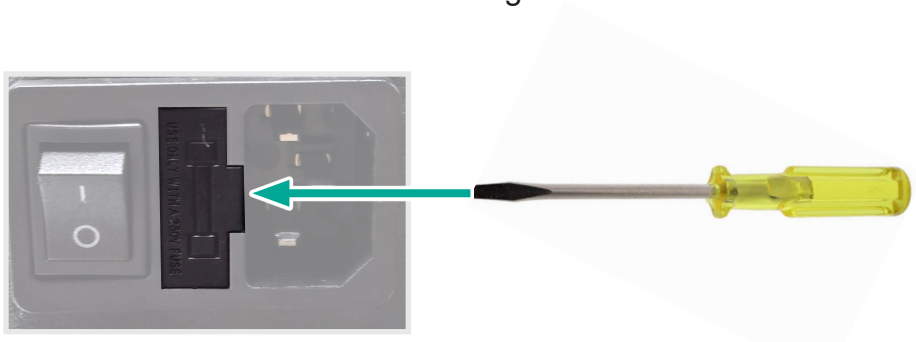
> **⚠ Warning**
>
> - ***DO NOT** attempt to dismantle the pump or gauge set **WITHOUT** professional training.*
> - ***ONLY** allow trained technicians to do repairs to the internal components.*
> - ***NEVER** use nonidentical or unauthorized replacements.*
> - ***ANY** consequences of arbitrary modification **WILL** void **ALL** warranties stated or implied.*

8.4 Storage

If this product is not to be used for a prolonged period, clean all items, seal all ports with their protective caps, place them in the case and bag **(Q)** that comes with the package, and store everything in a location:

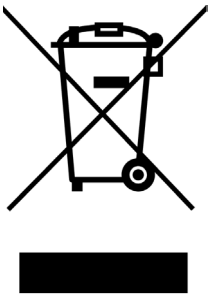
- Clean, cool, and dry
- Away from flammables, explosives, caustics, and heat sources
- Inaccessible to children and pets
- Sheltered against unauthorized use
- Well protected from the elements

9. Troubleshooting

Problem	Solution(s)
The vacuum pump cannot turn on or automatically turns off.	Ensure that your power source is functioning.
	Firmly reconnect the power cord to the power source and inlet.
	Check for damage to the power cord. If necessary, ask your local dealer or contractor for a new identical replacement.
	Pry open the fuse box and check the fuse inside. If it is burnt, replace it with a new **F6AL250V** one and **FULLY** address the cause **BEFORE** resuming use. 
	Move the pump to a warmer location and wait a while before reactivating it.
	The thermal protector will deactivate your pump if its motor reaches 160°F (70°C). Wait about 15 minutes to let it cool down before restarting your pump.
Oil leaks from the vacuum pump.	Retighten the oil drain cap.
	Ensure that the pump's support surface is flat and level.
Smoke is emitted from the filter.	This is normal and requires **NO** repair. To reduce emissions, ensure that all connections are secure and maintain the oil level between **MIN** and **MAX** on the reservoir window.

10. Disposal

Electrical products should not be disposed of with household products. In the EU and UK, according to the European Directive 2012/19/EU for the disposal of electrical and electronic equipment and its implementation in national laws, used electrical products must be collected separately and disposed of at the collection points provided for this purpose. Locations in Australia, Canada, and the United States may have similar regulations. Contact your local authorities or dealer for disposal and recycling advice.



Contact Us

Thank you for choosing our products! If you have any questions or comments, contact us at **support@orionmotortech.com** and we'll resolve your issue ASAP!

For a .pdf copy of the latest version of these instructions, use the appropriate app on your smartphone to scan the QR code to the right.

VPH-BN0C-O1 Rev. 8 Nov. 2024