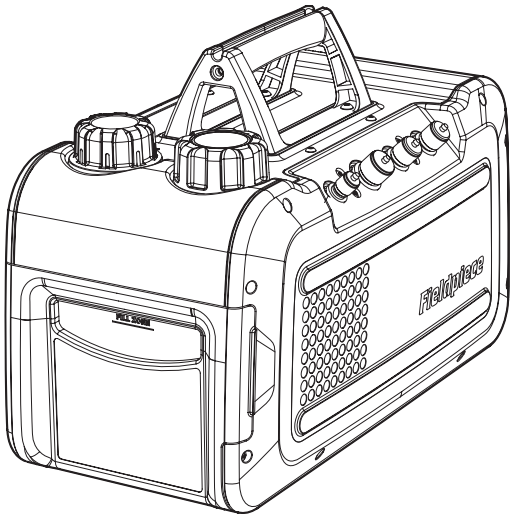
Fieldpiece®

Vacuum Pump with RunQuick™ Oil Change System

OPERATOR'S MANUAL

Models **VP55**INT, **VP55**INTAU, **VP55**INTBR, **VP55**INTUK
VP85INT, **VP85**INTAU, **VP85**INTBR, **VP85**INTUK



Contents

Important Notice

This is not a consumer machine. Only qualified personnel trained in service and installation of A/C and/or refrigeration equipment shall use this vacuum pump.

This vacuum pump is used for evacuating (drying) refrigerant lines. Fieldpiece model MR45 is available for recovering refrigerant.

Read and understand this operator's manual in its entirety before using VP55/VP85 to prevent injury or damage to you or equipment.

Class A2L Refrigerant Safety Notice

Systems recovered of class A2L (mildly flammable) refrigerants can be evacuated safely ONLY by qualified personnel explicitly trained in the use and handling of those refrigerants. This manual is in no way a replacement for proper training.

What's Included

- VP55 or VP85 Vacuum Pump
- (2) 8 Ounce Vacuum Pump Oil
- Power Plug Adapter (Europe Models Only)
- Operator's Manual
- 1 Year Warranty

⚠ WARNINGS

Ensure voltage of pump matches power source; injury risk.
Do not use to pump hydrocarbons; explosion risk.
Do not use to pump flammable media; explosion risk.
Do not connect to power unless the local environment has been verified to be clear of combustible gas with a trusted leak detector; explosion risk.
Ensure proper equipment grounding; electrical shock risk.
Do not use to pump liquid refrigerant; explosion risk.
Do not use to pump flammable media; explosion risk.
Inhalation of high concentrations of refrigerant vapor can block oxygen to the brain causing injury or death.
Exposure to refrigerant can cause frostbite.
Oil from the vacuum pump can be hot. Handle with caution.

Description

Performing a proper system evacuation prior to charging directly increases the expected life and efficiency of the system. Fieldpiece vacuum pumps provide a new view at system evacuation.

Good oil is the lifeblood of every evacuation. You need to know the condition of the oil. You need to change the oil easily with no mess. Clearly view the oil condition through the huge oil tank window. The tank's blue backlight helps to see the condition of the oil and if the fill level is correct.

With the RunQuick™ oil change system, you can replace the oil in under 20 seconds without losing vacuum, even while the pump is running. The extra wide base helps prevent tipping and spilling oil. Four inline ports in three different sizes give you tidy hose routing and hose options. Place the power cord on the handle for tangle free storage. Carry the machine to and from the job site easily and well protected.

Features

- **RunQuick™ Oil Change System**
  - **Easy View Window and Oil Backlight**
  - **Change Oil Quickly, Even with the Pump Running**
  - **Extra Oil Bottle Storage (VP85)**
  - **Elevated Oil Drain Ball Valve**
  - **Wide Mouth Fill Port**
  - **Oil Bottle Cap Storage**
  - **Precision Oil Circulator**
- **4 Inline Ports**
  - **(1) 1/4″ (8 mm)**
  - **(2) 3/8″ (10 mm)**
  - **(1) 1/2″ (15 mm)**
- **Two Stage Pump**
- **8CFM (VP85)**
- **5CFM (VP55)**
- **Gas Ballast Switch with LED**
- **Remote Exhaust Port**
- **Quiet Fan-Cooled Operation**
- **DC Motor (VP85)**
- **Heavy Duty Rubberized Construction**
- **Power Cord Storage**
- **Stable Base**
- **Operation in the Rain (IP24)**
- **Class A2L Refrigerant System Compatible**
- **Dual Voltage Switch 115/230 VAC (VP55)**
- **Wide Operating Voltage 207 to 253 VAC (VP85)**

Specifications

Nominal Flow Rate: 8 CFM (VP85), 5 CFM (VP55)
Oil Capacity: 8 oz (237 mL)
Oil Compatibility: Fieldpiece Vacuum Pump Oil
(Highly refined and optimized for proper sealing and lubrication)
Fieldpiece part numbers: OIL8X3, OIL32, OIL128
If Fieldpiece brand oil cannot be found, ISO viscosity grade 46 vacuum pump oil is recommended.
Oil Backlight: Blue LED
Oil Drain: Ball valve
Port Sizes: (1) 1/4" (8 mm), (2) 3/8" (10 mm), (1) 1/2" (15 mm)

Compressor: Rotary vane, two stage
Motor: 3/4 HP brushless DC (VP85), 1/3 HP AC (VP55)
RPM: 2500 (VP85), 2867 @ 50 Hz or 3440 @ 60 Hz (VP55)
Power Source: 207 to 253 VAC @ 50/60 Hz (VP85),
99 to 121 VAC @ 50/60 Hz or 198 to 242 VAC @ 50/60 Hz (VP55)
Nominal Current Draw: 9.0 AAC (VP85), 8.0 AAC (VP55)
Ultimate Vacuum at Input Ports: 15 microns (2.0 Pa)

Dimensions: 9.25" x 12.4" x 17.7" (235 mm x 315 mm x 450 mm)
Weight: 28 lbs (12.7 kg) without oil (VP85),
30 lbs (13.6 kg) without oil (VP55)
Operating Environment: 30°F to 122°F (-1.1°C to 50°C)
US Patent: www.fieldpiece.com/patents

Certifications

CE

EN 55014, EN 61000,
EN 60335, EN 1012,
IEC 61347

WEEE
Do not dispose through
typical waste streams.

Correct disposal of this product: This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

Safety Information

General

1. This machine is only intended for use by qualified personnel trained in servicing and installation of A/C/Refrigeration equipment.
2. Read and understand this operator's manual in its entirety before using VP55/VP85 to prevent injury or damage to you or equipment.
3. Always dispose of oil according to local jurisdiction.

Environmental

1. Use only within operating environment specification.
2. Ensure fan opening is clear of debris.
3. Explosion and fire risks:
   Do not use near sewer lines.
   Do not use in poorly ventilated enclosed areas.
   Do not use near gasoline, acetylene, or other flammable gases.
   Do not use to pump hydrocarbons.
   Do not use near flames or sparks.
   Assume all components are pressurized.

Personal Protection

1. Frostbite danger. Be careful using hoses.
2. Use personal protective equipment:
   Wear safety goggles.
   Wear earplugs if using for long durations.
   Wear protective gloves.
3. Oil from the vacuum pump can be hot. Use caution while handling.
4. Do not use in poorly ventilated enclosed areas.

VP55/VP85 Protection

1. Ensure voltage setting on pump (VP55) matches source, injury risk.
2. Ensure clean oil is added to a level within the FILL ZONE.
3. Do not use to remove refrigerant from a system. Use a recovery machine and filter to remove refrigerant and particles from the system before using VP55/VP85 to evacuate the system.
4. Do not use on pressurized systems. Doing so may damage or contaminate your vacuum pump.
5. Do not use on ammonia or salt water systems. Doing so may damage or contaminate your vacuum pump.
6. Store with ports capped to prevent dust from entering.
7. Drain oil after every job and store VP55/VP85 empty to prevent spillage and reduced oil life.

Setup

1. Ensure voltage setting on pump (VP55) matches source, injury risk.
2. Inspect the machine and repair any damaged parts before using.
3. Ensure motor power switch is turned OFF (press right) before connecting or disconnecting power.
4. Ensure power cord is not damaged.
5. Ensure all equipment is grounded.
6. Extension cord options:
   14 AWG (2.08 mm^2) or thicker, up to 50 feet (15 m)
   12 AWG (3.31 mm^2) or thicker, up to 100 feet (30 m)
7. Ensure extension cord is grounded, 3 conductor.

Tech Tips

General

1. Vacuum pumps are not recovery machines and should not be used for recovering refrigerant.
2. Purge the A/C system with a few psi of dry nitrogen before evacuation to pre-dry the system. This extra step actually saves time overall because it quickly removes a great amount of moisture, oil, and other contaminants before you even connect your pump.
3. Performing a triple evacuation is a great way to ensure a system is dry. The nitrogen flow can help carry moisture with it out of the system. A triple evacuation is as follows:

    1. Purge with nitrogen
    2. Evacuate down to 2000 microns
    3. Purge with nitrogen
    4. Evacuate down to 1000 microns
    5. Purge with nitrogen
    6. Evacuate down to below 500 microns

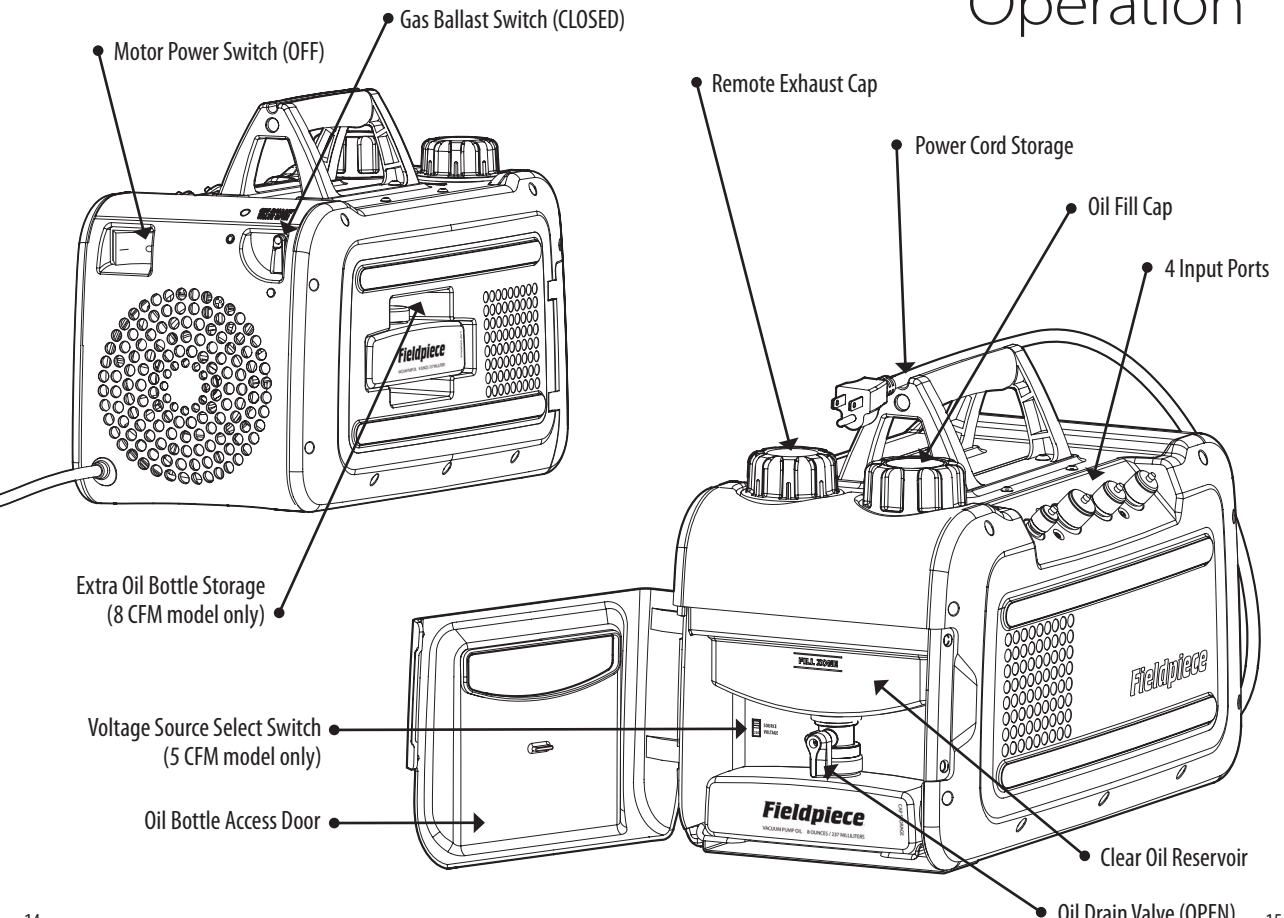
Cold Weather Starts

1. Open an unused input port to ambient for a few seconds until the pump is running.
2. Warm the pump in your truck/home by letting it sit in a warm environment. You can warm the oil in your truck/home before adding it to the pump.

Setup

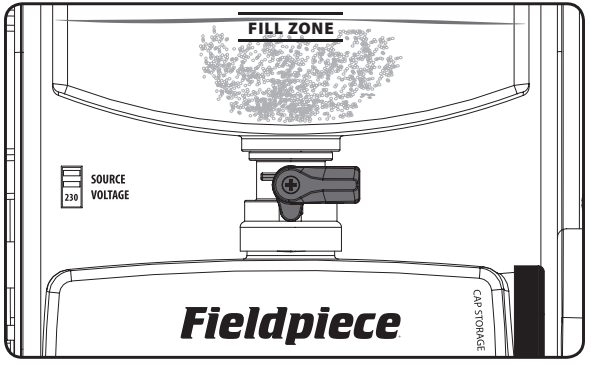
1. Always use fresh Fieldpiece vacuum pump oil. If oil is left in the pump for more than a week, the oil may have absorbed enough moisture from ambient air to affect performance.
2. Refrigerant manifolds can be convenient to charge the system after evacuation, but their hoses and valves can limit or slow evacuation. It's best to use vacuum rated hoses, directly connected to core removal tools at the service ports.
3. If you want to use a manifold, it's best to use a 4 port manifold. 4 port manifolds typically have a larger bore to increase flow. They also isolate the pump from the system and micron gauge without the need of a shut-off valve on the hose.
4. Hoses:
   Short as possible.
   Widest diameter possible.
   Vacuum rated.
   Core depressors removed.
   Ball valve shut-offs instead of low loss fittings.
   Good seals.
   Replace if worn.
5. Use a vacuum rated Schrader valve core removal tool to temporarily remove valve cores from service valves.
6. Connect multiple hoses to the inline ports on VP55/VP85 to further decrease hose restriction and increase air flow.

Operation


Motor Power Switch (OFF)
Gas Ballast Switch (CLOSED)
Extra Oil Bottle Storage
(8 CFM model only)
Remote Exhaust Cap
Power Cord Storage
Oil Fill Cap
4 Input Ports
Voltage Source Select Switch
(5 CFM model only)
Oil Bottle Access Door
Clear Oil Reservoir
Oil Drain Valve (OPEN)
Fieldpiece

RunQuick™ Oil Change System

The only way to create a deep vacuum is to evacuate with fresh oil, especially at the end of the job. The RunQuick oil change system makes this old chore a breeze.



Easy View Window and Oil Backlight

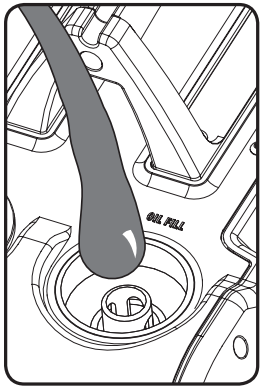
There are a few signs that remind you to change your oil. The visual condition is one of them. If it looks old, change it. You will see tiny air bubbles with fresh oil. Saturated oil will look more opaque.

Elevated Oil Drain Ball Valve

By elevating the oil reservoir and utilizing a fast opening ball valve, we made it easy to drain old oil into the empty bottle without a drop spilled. The spring loaded platform securely holds the bottle in place.

Oil Bottle Cap Storage

When you open a fresh bottle of oil, put the cap on the side of the bottle so you can cap the bottle after you drain old oil into it.

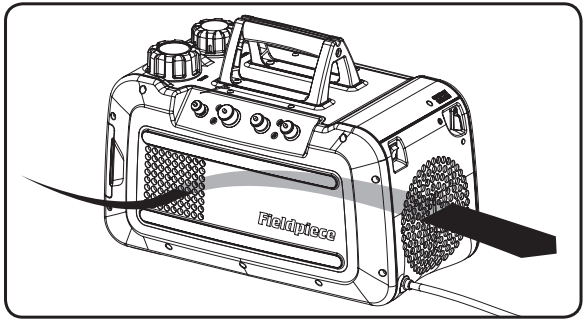


Wide Mouth Fill Port

It is easy to hit your target with the wide mouth fill port.

Change Oil Quickly with the Pump Running

Towards the end of the evacuation is when you need fresh oil the most. The RunQuick system maintains a vacuum for about 30 seconds after you drain the oil giving you enough time to refill the oil reservoir without losing vacuum.

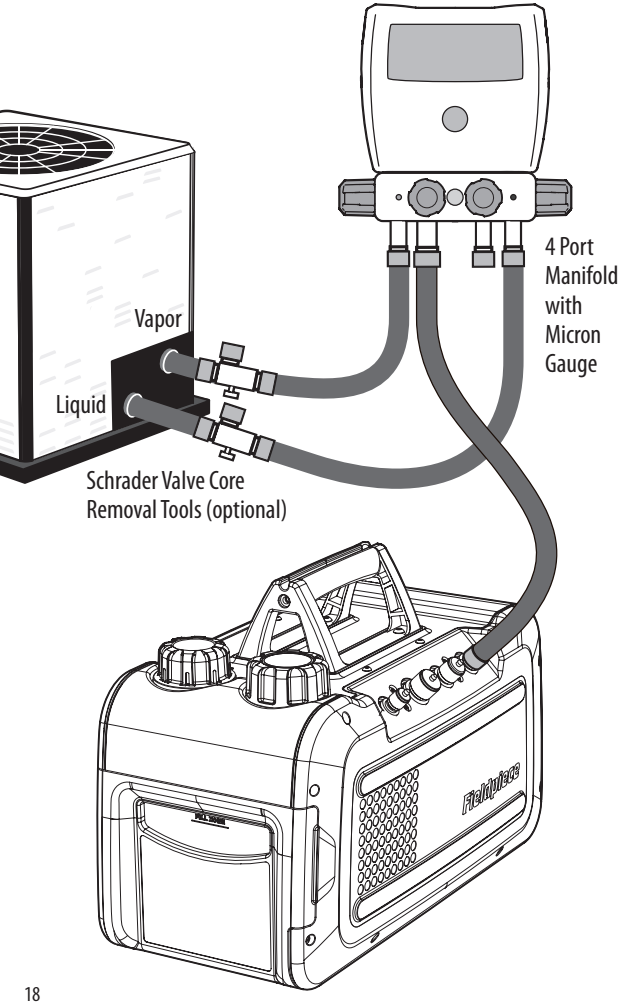


Precision Oil Circulator and Fan

Instead of submerging the pump in excess oil, a small oil pump constantly lubricates targeted sealing zones. The quiet high speed fan cools the heat sinks of the motor and pump.

Spare Oil Bottle Storage (8 CFM models only)

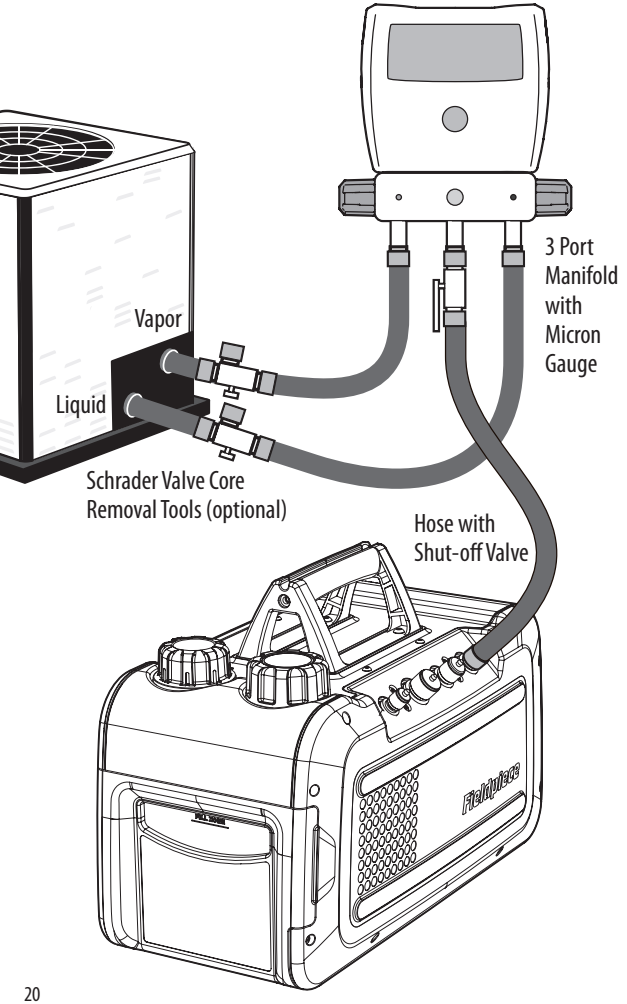
Take an extra bottle to and from the job site so you always have that fresh oil performance bump at the end of the job.



Evacuation with a 4 Port Manifold

This is the most common evacuation method. Read the tech tips (page12) for optimum gauge placement and variations to reduce recovery times.

1. Always fill with fresh Fieldpiece Vacuum Pump Oil (page 24). *Running the pump without oil will damage the pump and void the warranty. Oil can be drained while the pump is running if refilled within 3 minutes (within 30 seconds to maintain your vacuum).*
2. Ensure the VP55/VP85 motor power switch is turned OFF (down).
3. Plug VP55/VP85 into an outlet (oil backlight should illuminate).
4. Ensure the gas ballast is closed (vertical) (page 26).
5. Connect VP55/VP85 to the empty, depressurized A/C system.
6. Turn the motor power switch to ON (left).
7. Open line set (hoses, manifolds, removal tools, etc.) to expose the pump to the system.
   To reduce oil contamination early in the job, open the gas ballast until the sound of the pump quiets down (about 3000 microns). The LED shines if the ballast is open.
8. After the appropriate vacuum is reached, isolate the system from the pump. You can check the system for potential leaks at this time by monitoring your micron gauge.
   VP55/VP85 has a unique oil suck back prevention feature to keep your hoses clean. Still, it's good practice to release the vacuum at the input port before turning off the pump.
9. Turn the motor power switch to OFF (right), remove your hoses, and cap the ports to keep components free of contaminants.
10. Disconnect VP55/VP85 from the system and unplug from power.
11. Drain the contaminated oil while the oil is still warm to keep the pump as clean as possible when stored.



Evacuation with a 3 Port Manifold

This is a common, but less than ideal evacuation method. Read the tech tips (page 12) for optimum gauge placement and variations to reduce recovery times.

1. Always fill with fresh Fieldpiece Vacuum Pump Oil (page 24). *Running the pump without oil will damage the pump and void the warranty. Oil can be drained while the pump is running if refilled within 3 minutes (within 30 seconds to maintain your vacuum).*
2. Ensure the VP55/VP85 motor power switch is turned OFF (down).
3. Plug VP55/VP85 into an outlet (oil backlight should illuminate).
4. Ensure the gas ballast is closed (vertical) (page 26).
5. Connect VP55/VP85 to the empty, depressurized A/C system.
6. Turn the motor power switch to ON (left).
7. Open line set (hoses, manifolds, removal tools, etc.) to expose the pump to the system.
   To reduce oil contamination early in the job, open the gas ballast until the sound of the pump quiets down (about 3000 microns). The LED shines if the ballast is open.
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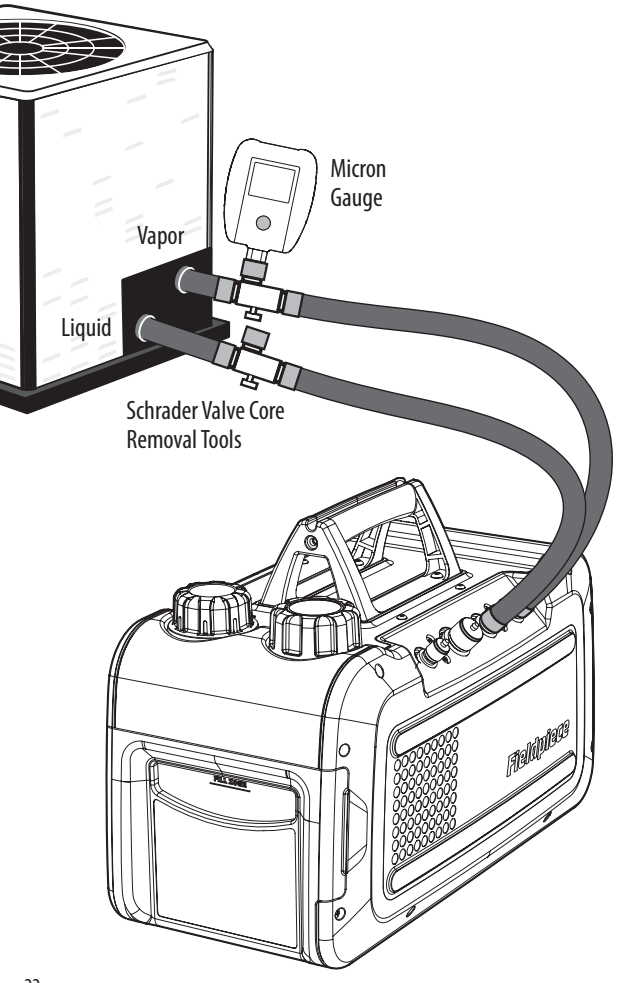
   VP55/VP85 has a unique oil suck back prevention feature to keep your hoses clean. Still, it's good practice to release the vacuum at the input port before turning off the pump.
9. Turn the motor power switch to OFF (right), remove your hoses, and cap the ports to keep components free of contaminants.
10. Disconnect VP55/VP85 from the system and unplug from power.
11. Drain the contaminated oil while the oil is still warm to keep the pump as clean as possible when stored.



Direct Evacuation

This is usually the fastest evacuation method. Read the tech tips (page 12) for optimum gauge placement and variations to reduce recovery times.

1. Always fill with fresh Fieldpiece Vacuum Pump Oil (page 24). *Running the pump without oil will damage the pump and void the warranty. Oil can be drained while the pump is running if refilled within 3 minutes (within 30 seconds to maintain your vacuum).*
2. Ensure the VP55/VP85 motor power switch is turned OFF (down).
3. Plug VP55/VP85 into an outlet (oil backlight should illuminate).
4. Ensure the gas ballast is closed (vertical) (page 26).
5. Connect VP55/VP85 to the empty, depressurized A/C system.
6. Turn the motor power switch to ON (left).
7. Open line set (hoses, manifolds, removal tools, etc.) to expose the pump to the system.
   To reduce oil contamination early in the job, open the gas ballast until the sound of the pump quiets down (about 3000 microns). The LED shines if the ballast is open.
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   VP55/VP85 has a unique oil suck back prevention feature to keep your hoses clean. Still, it's good practice to release the vacuum at the input port before turning off the pump.
9. Turn the motor power switch to OFF (right), remove your hoses, and cap the ports to keep components free of contaminants.
10. Disconnect VP55/VP85 from the system and unplug from power.
11. Drain the contaminated oil while the oil is still warm to keep the pump as clean as possible when stored.

Oil Change Procedure

Changing oil is easy and visible. Start each job with fresh oil. Change as needed during the job.

DRAINING OLD OIL

1. For extended pump life, drain the oil immediatly after the job instead of waiting until the beginning of the next job.
2. Ensure the pump oil inside is warm enough, >75°F (>24°C), for proper drainage. Run the pump for 10 minutes if ambient temp is low.
3. Ensure the VP55/VP85 motor power switch is turned OFF (right). *Running the pump for longer than 3 minutes without oil will damage the pump and void the warranty.*
4. Plug in VP55/VP85 to activate the oil backlight.
5. Pull open the oil bottle access door.
6. Ensure your old empty oil bottle is located under the oil reservoir.
7. Open the oil drain valve clockwise (vertical) to empty the oil reservoir of old oil.
8. Close the valve counter clockwise (horizontal).
9. Remove and cap the old oil for disposal.

ADDING FRESH OIL

10. Ensure the drain valve is closed (horizontal).
11. Unscrew the pump's OIL FILL cap 1/4 turn counter clockwise.
12. Open a new 8 ounce bottle of Fieldpiece Vacuum Pump Oil (OIL8X3). Put the bottle cap on the side of the bottle (CAP STORAGE).
13. Pour the entire 8 ounce bottle of fresh oil into the OIL port. The oil level should land within the FILL ZONE. Replace OIL FILL cap.
14. Place the empty bottle under the drain valve so it's ready to gather oil at the next oil change. *Push down on the spring loaded platform to locate the bottle underneath the drain.*
15. Close the oil access door.
16. Your vacuum pump is now ready to operate.

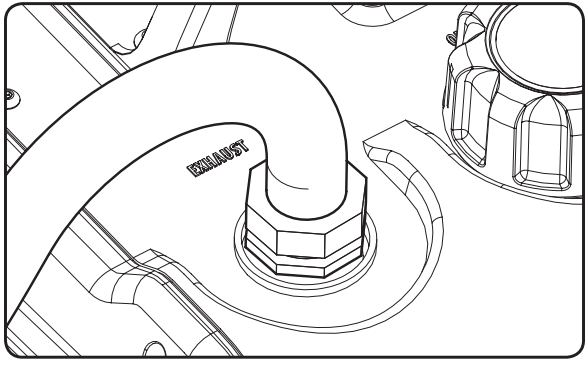
Dynamic Vacuum Measurement

During the pull down, the system's vacuum level drops faster at the front of the system, near the vacuum pump.

To ensure that your full system achieves the target micron level, place the vacuum gauge as far to the back of the system, away from the pump, as possible.

Remote Exhaust

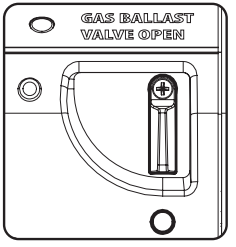
Unscrew the EXHAUST cap and connect an obstruction-free garden hose if you need to exhaust oil mist and vapor remotely to the outside of a building structure.



Gas Ballast Switch

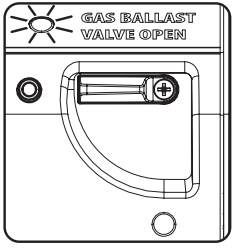
Much of the air and moisture in a system are removed before reaching 3000 microns. For wet systems, you should open the gas ballast during this initial pull down. Doing so helps the pump run smoothly and keeps the oil in good condition for when you need it most -- towards the end of the evacuation.

At about 3000 microns, when the sound of the pump quiets down, the gas ballast should be closed so that a deep vacuum can be generated.



Closed

- Normal operating position.
- LED off.
- Discharge stroke isolated from ambient.



Open

- Set here for initial pumping down (above 3000 microns) of wet systems.
- LED on.
- Discharge stroke exposed to ambient.

Maintenance

General

Wipe with damp cloth to clean the exterior. Do not use solvents.

Storage

Empty or replace oil at the end of every job. Don't leave old oil in the machine. Store the pump and oil in dry clean areas for longest life.

Oil can lose its sealing properties if left uncovered. Keep oil sealed until it's ready for use.

Vacuum Isolation Test

Perform this test to ensure VP55/VP85 and your micron gauge are working properly.

1. Connect your vacuum gauge directly to a port on VP55/VP85.
2. Seal the 3 other ports.
3. Ensure the gas ballast is closed (page 26).
4. Turn on VP55/VP85 to create a vacuum at your gauge.

If your gauge measures below 200 microns within 1 minute, you know VP55/VP85 *and* your micron gauge are working correctly.

If your gauge does not reach 200 microns, there is a problem with your gauge, VP55/VP85, or both.

Contaminated Oil Reservoir

After some jobs, solids, sludge, and other waste may gather in the oil reservoir. The large oil drain ball valve will typically drain these when changing the oil.

The oil reservoir is permanently attached to the machine. If contaminants build up in the reservoir, use a bottle brush (with plastic bristles) through the oil fill and/or exhaust openings to reach in and clean the clear reservoir.

Rubbing alcohol can be used in conjuction with brushing without damaging the reservoir. Always allow alcohol to fully evaporate before refilling the reservoir with oil.

Troubleshooting

Appropriate vacuum is never reached.

Ensure the gas ballast is closed (vertical position, LED off).

Ensure oil is fresh.

Ensure oil level is within the FILL ZONE.

Ensure all port caps are closed and have working seals.

Limit amount of connections. Check for leaks at connections.

Use vacuum rated hoses.

Check for blockages between the pump and the system.

Check for a system leak.

Verify your vacuum gauge is in the correct location and is accurate.

Use the right pump for the job, 5CFM or 8CFM (over 20 tons).

Perform a triple evacuation to carry moisture out of the system by purging the system with dry nitrogen.

Vacuum rises when isolating the system.

Ensure your micron gauge is located on the system side of the shut-off valve. The micron gauge of a 3 port (2 valve) manifold cannot measure a system's vacuum if the valves are closed. Use a shut-off valve at the third port to isolate the pump from the system (page 20).

Check for a system leak.

Oil backlight does not turn on when plugged in.

Ensure power cord and outlet are okay. If backlight does not shine and the pump turns on, the oil backlight LED module may need to be replaced.

Pump makes excessive noise.

The pump may be experiencing a high load.

Loose objects may be vibrating in the case.

Motor bearings may be bad. Motor needs to be replaced.

Motor may have come loose. Tighten motor mount bolts.

Oil level or condition may be bad. Change the oil.

Leaks may be present. Tighten or fix all connections.

Oil mist is coming out of the exhaust.

Some slight oil mist is normal due to airflow carrying oil as it passes through the pump. You can attach a garden hose to the exhaust port to control oil misting (page 25).

For larger systems with long evacuation times, extended high pressure conditions can cause excessive misting to occur. Add oil as needed if excessive oil loss occurs.

Motor does not start when switched ON.

Model VP85 has a soft-start feature that slowly increases speed during startup. Slow startup in cold temperatures is normal.

Oil in the pump may have become highly viscous due to contamination or low temperature. Use fresh Fieldpiece Vacuum Pump Oil within the pump's operating temperature.

The pump may be cold. Warm the pump in your truck/home by letting it sit in warm environment. You can warm the oil in your truck/home before adding it to the pump.

The pump may be cold. Open an unused input port to ambient for a few seconds until the pump is running.

Voltage is incorrect. Ensure proper voltage and cord length.

Motor may be damaged. Motor needs to be replaced.

Motor thermal protection activated. Wait for the machine to cool down to operating range and determine why it may have overheated. Loading may be excessive.

Oil is leaking.

Oil likely fell into the housing from around the fill port and is now dripping through the internal housing. Wipe clean and make sure oil is not spilled when adding to the wide mouth OIL FILL port.

Limited Warranty

This machine is warranted against defects in material or workmanship for one year from date of purchase from an authorized Fieldpiece dealer. Fieldpiece will replace or repair the defective unit, at its option, subject to verification of the defect.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the machine.

Any implied warranties arising from the sale of a Fieldpiece product, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. Fieldpiece shall not be liable for loss of use of the machine or other incidental or consequential damages, expenses, or economic loss, or for any claim of such damage, expenses, or economic loss.

State laws vary. The above limitations or exclusions may not apply to you.

Obtaining Service

Warranty for products purchased outside of the U.S. should be handled through local distributors. Visit our website to find your local distributor.

VP55
VP85