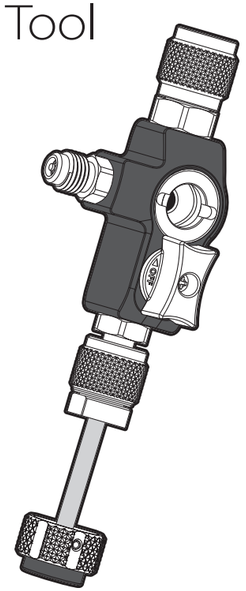
Fieldpiece

1/4" Valve Core Removal Tool

with Sight Glass



OPERATOR'S MANUAL

Model VC1G

Important Notice

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

Read and understand this operator's manual in its entirety before using your Valve Core Removal Tool to prevent injury or damage to you or equipment.

DO NOT tighten with any tools.
DO NOT attempt to close Inline Valve with Capture Rod inserted.
DO NOT use any attachment on the side port for additional leverage to tighten the tool.
DO NOT force the tool; gentle pressure is sufficient.
DO NOT overtighten. This may cause damage, leaks and potential venting of the system under service.

Scan for more languages.

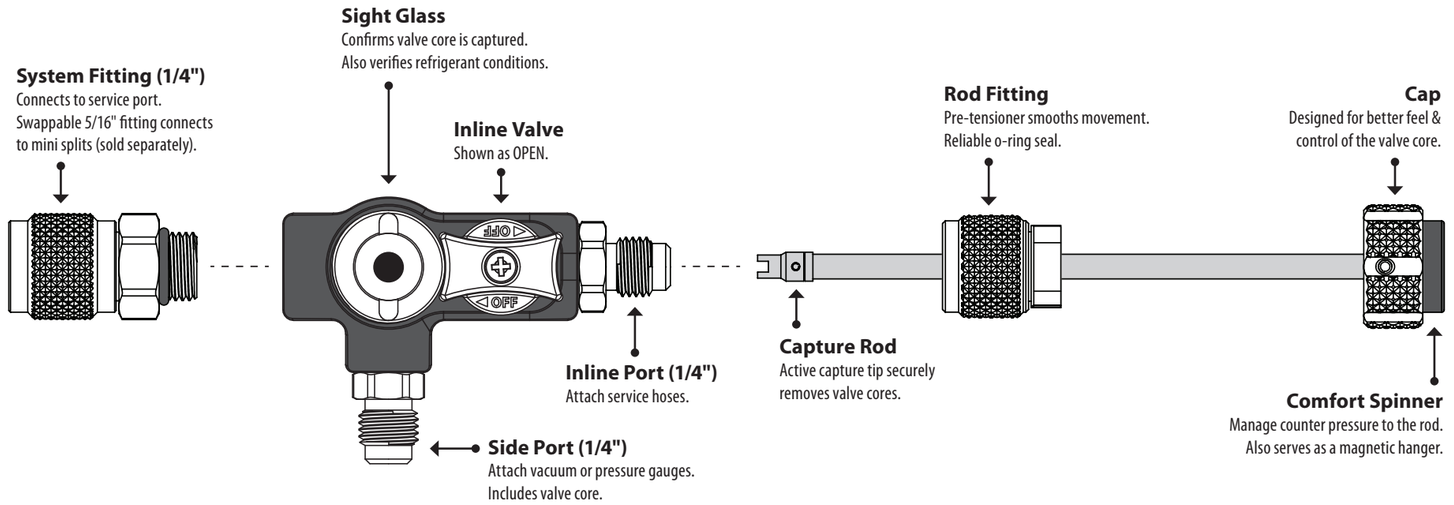
Fieldpiece Americas

US, CA, MX

Fieldpiece Europe

EN, DE, FR, IT, ES, PT, NL, SE, DK, FI

Product Features



Quick Start

1. With capture rod pulled out (min. of 1/2"), hand-tighten the system fitting of the tool to the service port.
2. Push in the capture rod and slowly rotate the cap while applying pressure to the comfort spinner until you feel the capture rod fully engage the valve core.
3. While maintaining pressure on the comfort spinner, rotate the cap counterclockwise until the valve core is completely loose. Use the sight glass to verify the valve is captured.
4. Ease up on the cap enough to allow the system pressure to push the rod & valve out. Close the inline valve to seal the system pressure.
5. Unscrew the rod fitting and remove the rod and valve core.
6. The magnetic comfort spinner can hold the rod on nearby equipment until service is complete.
7. Install the new valve core in the reverse order it was removed.

What's Included

(1) 1/4" Valve Core Removal Tool with Sight Glass
(1) Operator's manual
(1) Year limited warranty

Description

Vacuum-rated to 20 microns, our Valve Core Removal Tools (VCRTs) are essential tools in every HVACR technician's tool kit. Removing a valve core helps speed up charging & recovery operations. Valve cores are also a common leak point of a system.

The integrated sight glass allows you to positively verify you have captured and removed the valve core before fully removing the capture rod assembly from the VCRT body - saving you time, headaches, and refrigerant loss.

The comfort spinner on the end of the capture rod assembly makes it simple to apply pressure while still turning the cap to remove or install the valve core.

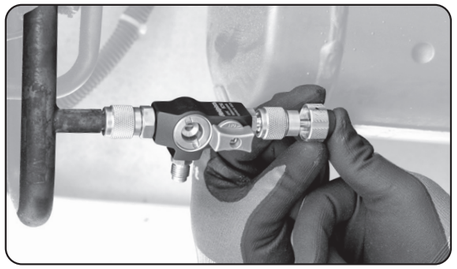
Rated for high pressure refrigerants including R410a.

A2L compliant as the base materials don't degrade from exposure to related gases and lubricants.

How to Use

Valve Core Removal

1. **HAND-TIGHTEN** the system fitting to the system access port of the unit and pull the capture rod out from the VCRT body.
2. Push in the capture rod and slowly rotate the cap while applying pressure to the comfort spinner until you feel the capture rod fully engage the valve core.
3. Maintain pressure on the comfort spinner, rotate the cap counterclockwise until the valve core is completely loose.



WARNING: Ensure the system fitting doesn't turn. If loosened, there is a risk of refrigerant to leak out.

NOTE: Once the valve core is loose, the system refrigerate pressure will cause the capture rod assembly to push outward from the body.
4. Slowly pull the capture rod out to extract the valve core through the body until it is removed. If extracting successfully, you will be able to see the valve core through the sight glass as you pull out the capture rod.
5. Close the inline valve.
6. Unscrew the rod fitting counterclockwise to remove from the tool. Hang it onto the system to keep it protected & off the ground.

Service & Install New Valve Core

1. The inline port now has maximum flow. If needed, connect a service hose and open the inline valve to perform service. Use the side port to attach vacuum or pressure gauges.

NOTE: If connecting a hose to the side port, ensure the valve core is removed prior to attaching. Do not evacuate through hoses with low loss fittings. Use shortest vacuum hoses with largest diameter available.
2. Once completed, close the valve & remove any unneeded service hoses and gauges.
3. With a new valve core attached, carefully reinsert the rod into the body & thread the rod fitting onto the inline port clockwise until **HAND-TIGHT**.
4. Open the inline valve and gently push in the rod until you reach the system access port. Rotate clockwise until the new valve core is tightened and threaded in securely.
5. Pull out the capture rod and close the valve.
6. With a pressure gauge attached, confirm it's at the required level & remove the gauge.
7. Slowly remove the VCRT from the system access port by hand loosening it counterclockwise and then check for leaks. If you notice leaks, retighten the VCRT, and tighten the valve core with the capture rod.

PRO TIP: To help maintain a vacuum-tight seal, a light coating of vacuum grease or vacuum pump oil may be applied to the system access port and the inline & side ports of the tool.

Specifications

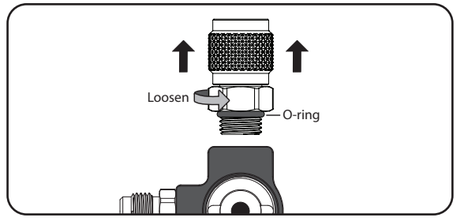
Vacuum Rating: 20 microns / 0.027 millibar / 0.020 Torr
Maximum Working Pressure: 800psi / 55 Bar
Fittings:
1/4" female service port (swappable);
1/4" male side port with removable valve core;
1/4" male service hose connection
Spare Parts:
RVCRL - spare capture rod assembly
RVC4 - spare 1/4" service port fitting and o-rings
RVC5 - spare 5/16" service port fitting and o-rings
RVCG10 - Spare service port o-rings kit
Weight: 0.71 lbs / 322 g
US Patent: www.fieldpiece.com/patents

Class A2L/A2/A3 Refrigerant Safety Notice

Systems using class A2L (mildly flammable), class A2 (flammable), or class A3 (highly flammable) refrigerants can be tested 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.

Swapping Out System Fittings

Continue below to replace the 1/4" Fitting or switch to the 5/16" option (Model RVC5) which is typically used for mini-splits servicing.



1. Remove and pull out the capture rod assembly from the VCRT body.
2. Hold the body tight and using an adjustable or 18mm wrench, twist the nut of the service port fitting counterclockwise to loosen and remove.
3. Ensure the o-ring is secure on the fitting and in good condition. Replace if it is scratched or damaged. Failure to use a good o-ring may result in leaking.
4. Using proper alignment, **HAND-TIGHTEN** the new system fitting clockwise to the VCRT body and use the wrench, torque spec: 20 to 40 in-lbf (2.26 Nm to 4.52 Nm), to lock it into place.

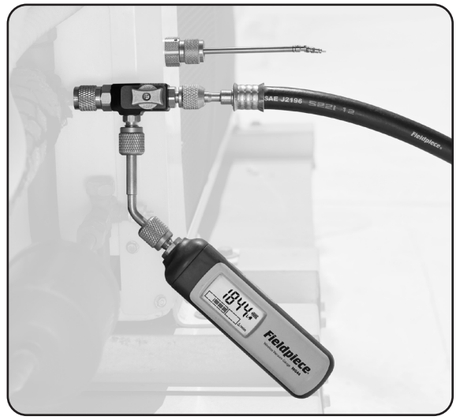
Maintenance

Regularly inspect and maintain your VCRT to ensure its functionality & cleanliness. Store the in a safe and secure location, out of the reach of children.

CLEANING: Clean the exterior with a damp cloth. Do not use detergents or solvents.
NOTE: If you suspect a leak in the tool, perform an isolation test to be sure and contact us for repair options.

Failure to follow these instructions could result in injury, damage to the unit, or death. Always exercise caution and follow proper safety procedures when working with this tool.

ISOLATION TEST: You will need the following: (1) Vacuum Pump, (1) High-Accuracy Vaccum Gauge, (1) Vacuum Hose & (1) Empty Recovery Cylinder.
NOTE: If testing a 5/16" VCRT, you will need a tank with 5/16" ports or an appropriate adapter.
NOTE: All components (other than the test tool) must be known-good, clean, dry and have no leaks. This isolation test should not be rushed. Experience and a high-accuracy vacuum gauge will allow for shorter evaluation times.



1) Close the valves on a known-good and dry recovery cylinder.
2) Attach the VCRT to the vapor port of the cylinder.
3) Attach the vacuum gauge to the side port.
4) Attach the vacuum hose to the inline port of the VCRT. Connect the other end to the vacuum pump.
5) Open the vapor port valve of the cylinder.
6) To start the test, turn on the vacuum pump.
7) Allow the vacuum gauge pull down to 200 microns.
8) Close the inline valve halfway on the VCRT. Allow the vacuum gauge to pull back down to 200 microns. Fully open the inline valve on the VCRT and wait 10-15 seconds. Close the valve halfway again and check that the vacuum pressure does not rise. If the vacuum pressure rises, repeat opening and partially closing the valve until the pressure does not rise. Fully close the inline valve on the VCRT. Turn off the vacuum pump and remove the vacuum hose.
9) Allow the setup to rest for 15-20 minutes. The gauge should not rise beyond 500 microns. If so, the VCRT is properly holding a vacuum.

NOTE: When comparing a proper rise to a leak, a proper vacuum will have a slight rise that equalizes over time. This is opposed to a leaky tool that steadily rises back to atmosphere.

Limited Warranty

This product is warranted against defects in material and 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 instrument.

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 instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim of such damage, expenses, or economic loss.

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

Obtaining Service

For customers outside the U.S., warranty for products should be handled through local distributors. Visit our website to find your local distributor.

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Safety First!

For use only by qualified and certified technicians in the safe use, handling, and transporting of refrigerants. Please refer to flammable refrigerant safety guides, regional codes and legislation for more information.

⚠ WARNINGS – failure to regard these hazards and actions can result in serious injury or death

1. Always wear Proper Protective Equipment (PPE), which includes gloves and safety glasses
2. Know proper safety and handling requirements of the refrigerant in the Safety Data Sheet (SDS)
3. Avoid breathing refrigerant and oil vapors
4. Handle hoses and equipment carefully as refrigerant is under high pressure and can cause frost bite
5. Ensure proper ventilation and safety measures when operating with flammable gases
6. Perform leak detection in accordance with recommended practice to verify working environment is free from leaking refrigerant as it can be toxic and/or flammable
7. Only work in well-ventilated areas (minimum of 4 air exchanges per hour)

Additional safety instructions for recovering flammable refrigerants (e.g. R-32, R-454B, R-290, R600a, etc.):

1. Adhere to local occupational safety codes and possess detailed knowledge and skills when handling mildly flammable refrigerants
2. Have emergency, evacuation, and fire protection plans
3. Designate and monitor a Temporary Flammable Zone with a 3-meter perimeter
4. Identify and disable all possible ignition sources within this Zone
5. Monitor air with a flammable refrigerant leak detector within this Zone
6. Use a ventilation fan to maintain 5 air exchanges per hour within this Zone
7. Make power connection of the recovery machine and other equipment outside of the Temporary Hazard Zone
8. Bond the recovery machine outlet port to the recovery tank's unpainted fitting with a grounding strap to dissipate static electricity buildup during recovery process
9. Ensure area around machine is free of debris that could enter air vents and fan and cause accidental sparking
10. Always remain in attendance and observant when the machine is running
11. Do not mix flammable refrigerants with air
12. Use an evacuated DOT recovery tank approved for use with flammable refrigerants
13. If system has a suspected leak, stop recovery at 0 psig/bar to prevent air from entering the recovery tank
14. After recovery, purge system with 100% nitrogen before opening system for repair

⚠ CAUTIONS – failure to regard these conditions can cause equipment damage.

1. Ensure that recovery machine, hoses, tank and other equipment are in good working condition
2. Avoid overfilling recovery tanks by following refrigerant manufacturer's filling instructions and using a weight scale
3. Avoid cross contamination by not mixing refrigerants

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Refrigerant Recovery Machines