



# GlobeSaver™ Vacuum Pumps

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## Operating Manual

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Manuel d'utilisation

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## GVP Vacuum Pump Series

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National Refrigeration Products  
985 Wheeler Way  
Langhorne, PA 19047  
[www.nrproducts.com](http://www.nrproducts.com)

## **READ FIRST**

### **Safety / Warnings**

**GVP Series Vacuum Pumps are to be use by trained and certified professionals only.**

**Always wear eye protection, gloves, and protective clothing when using Vacuum Pumps and handling refrigerants. Never run unit while unattended. If extension cord is used it must at least 12AWG and no longer than 15 ft. Only use unit in well ventilated areas and away from flammables. During normal use pump will become hot to the touch. Damage may occur attempting to evacuate a system while it is under high pressure. Remove all refrigerant from the system before connecting the vacuum pump.**

**Keep out of reach of children at times.**

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## 1. FEATURES - DESIGN - HOW IT WORKS

NRP thanks you for the purchase of your new two stage vacuum pump, the GVP12, which has been specifically designed for air conditioning and refrigeration service. This new design together with the latest technology allows you to get a high quality vacuum and fast thorough evacuation.

This pump consists of the following features:

**Triple Intake Connections :** the access valve has a triple tee connection with 1/2" MFL, 3/8" MFL, and 1/4" MFL access ports. The ports that are not in use have caps with gaskets to prevent leakage.

**Sure-grip handle:** ergonomic design handle to allow a sure grip during carrying.

**Gas ballast:** it allows a small quantity of air to be introduced into the pump preventing condensation of moisture vapor and helping maintain the purity of the pumps oil. Also the use of the gas ballast improves the pump's operating efficiency.

**High vacuum rating:** the two-stage design provides a higher and more complete evacuation assuring the moisture is removed, meanwhile the high flow reduces the vacuum time.



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## 2. PUMP COMPONENTS / PARTS LIST



|   | Part Name                     | Part Number by Model |          |           |
|---|-------------------------------|----------------------|----------|-----------|
|   |                               | GVP3                 | GVP6     | GVP12     |
| 1 | Handle                        | VP3H                 | VPZ6H    | VPZ6H     |
| 2 | Gas Ballast Valve             | VPZGB                | VPZGB    | VPZGB     |
| 3 | Oil Tank with Sight glass     | VP3RES               | VPZ6OT   | VPZ12OT   |
| 4 | Oil Drain Plug                | VPZ6ODP              | VPZ6ODP  | VPZ6ODP   |
| 5 | Base                          | VP3BP                | VPZ6BASE | VPZ12BASE |
| 6 | Motor                         | VP3MTR               | VPZ6MTR  | VPZ12M    |
| 7 | Valve with Caps               | VPZ6VK               | VPZ6VK   | VPZ6VK    |
| 8 | Oil / Exhaust Cap with o-ring | VPZ6OC               | VPZ6OC   | VPZ6OC    |
| 9 | Power cord 110V (not shown)   | UPC110V              | UPC110V  | UPC110V   |

### 3. START-UP PROCEDURES - CHECK LIST

In all cases motors are designed for operating voltages plus or minus 10 % of the normal rating (See motor nameplate specifications)

1. Check Voltage Selector is set to proper voltage 110V or 220V depending on power source. Use correct Power Cord type; unit comes with two cords 110V and 220V.(GVP3 110V ONLY) Power Switch must be in OFF position (0) before you plug the pump into the power outlet. Gas Ballast Valve should be closed.

2. The Pump is shipped with without oil. Pump **MUST** be filled with oil before starting. Remove oil cap and add oil until sight glass is half full, next reinstall oil cap. Remove one of the intake connection caps and switch ON (I) the pump. As soon as the noise changes, close the intake connection cap and let pump run for one minute. Switch pump OFF (0) and check oil level, the sight glass should be half full or filled to the middle, if necessary add oil.

3. A high oil level is not recommended, the oil can be carried out together with the air that is being evacuated from the system, producing an oil fog at the exhaust. A low oil level will produce a poor vacuum.

#### **WARNING:**

Before connecting your pump to the system, be sure to eliminate the remaining gas inside the pump in an acceptable way. Do not begin the evacuation of a system which is still under pressure, it may cause damage to the pump.

### 4. USE OF THE GAS BALLAST

When vacuum is being performed in the system, there is always moisture inside as vapor which tends to condense into liquid and combine with the vacuum pump oil. This reduces the pump's ability to reach the ultimate deep vacuum level for which it was designed.

The gas ballast purges a small quantity of atmospheric air through the exhaust chamber to prevent vapor condensation inside the pump.

To operate the gas-ballast, while the pump is producing vacuum, unscrew it 1 turn, to let the air in for 1 minute, then close it again to let the pump reach the final vacuum level.

## 5. PUMP SHUT DOWN

1. Close and secure the connection between pump and the system ( ball valve, manifold, etc.)
2. Disconnect the hose from the pump and replace the connection cap onto the access valve's port.
3. Turn the power switch on the pump to OFF.
4. Quickly open and close one of the connection caps on the access valve to break the vacuum inside the pump.

## 6. MAINTENANCE

It is recommended to change the vacuum pump oil after you have finished the evacuation of a system. The oil used in the vacuum pump has a great importance for the final vacuum level that can be reached. Always use oils specially recommended for this application (low vapor pressure). The oil provided with the pump has been specially blended to maintain maximum viscosity at normal running temperatures and to improve cold weather starts.

### OIL CHANGE PROCEDURE

1. Let the pump run for a few minutes to insure the pump is warm.
2. Turn the power switch to OFF.
3. If it is necessary, tilt the pump forward to drain residual oil.
4. Replace the oil drain cap, and remove the oil fill cap at the top.
5. Fill the reservoir with new vacuum oil until the oil is visible at the bottom of the sight glass.
6. With the connection caps closed, allow the pump to run for one minute, then check oil level. If it is low, refill up to the middle of the oil sight glass.
7. Replace the oil fill cap making sure the drain cap is tight

**NOTE:** If the oil is badly contaminated you should first drain the oil from the reservoir, and then remove the oil reservoir, clean properly and replace.

## 7.SPECIFICATIONS

| Model Number                | GVP3               | GVP6                | GVP12                |
|-----------------------------|--------------------|---------------------|----------------------|
| Stages                      | 2                  | 2                   | 2                    |
| Motor Size (HP)             | 1/3                | 1/3                 | 1/2                  |
| Frequency                   | 60Hz               | 60Hz                | 60Hz                 |
| RPM @ 110V                  | 1720               | 3440                | 3440                 |
| RPM @ 220V                  | N/A                | 3440                | 3440                 |
| Voltage                     | 110V               | 110V-220V           | 110V-220V            |
| Free Air Displacement       | 3 CFM<br>84.9L/MIN | 6 CFM<br>169.9L/MIN | 12 CFM<br>339.8L/MIN |
| Micron                      | 15 microns         | 15 microns          | 15 microns           |
| Intake Flare<br>Connections | 1/2 1/4 & 3/8      | 1/2 1/4 & 3/8       | 1/2 1/4 & 3/8        |
| Weight                      | 23.6 lbs           | 24.8 lbs            | 33.51 lbs            |
| Width                       | 5.63 inches        | 5.63 inches         | 6.30 inches          |
| Height                      | 10.43 inches       | 10.43 inches        | 11.23 inches         |
| Length                      | 13.78 inches       | 13.78 inches        | 13.78 inches         |
| Oil Capacity                | 14 oz              | 14 oz               | 20 oz                |
| Gas Ballast Valve           | yes                | yes                 | yes                  |

## 8.WARRANTY

The GVP series vacuum pumps are warranted to be free of manufacturing defects for one year from date of purchase.

Warranty does not cover damage from improper operation or abuse, or if any unauthorized repairs or customization's were performed during this period.

NRP will repair or replace ( at NRP's options ) any pump found to have manufacturing defects.

Any warranty claim must be submitted within 1 year of purchase with a copy of invoice. See your distributor for details.



## 9. TROUBLESHOOTING GUIDE

| CONDITION           | POSSIBLE PROBLEM  | SOLUTION   |
|---------------------|---|--|
| UNUSUALLY NOISY     | <ul style="list-style-type: none"> <li>Bad bearings</li> <li>Loose motor bolts</li> <li>Coupling drive</li> <li>Dirty, low, improper oil</li> <li>Air leaks in connections</li> </ul>                                   | <ul style="list-style-type: none"> <li>Replace</li> <li>Tighten bolts</li> <li>Adjust /replace coupling</li> <li>Replace oil</li> <li>Check / adjust</li> </ul>                                |
| HIGH TEMPERATURE    | <ul style="list-style-type: none"> <li>Low voltage</li> <li>Worn bearings</li> <li>Low oil level</li> </ul>   | <ul style="list-style-type: none"> <li>Check voltage</li> <li>Replace / repair</li> <li>Add / replace</li> </ul>   |
| POOR VACUUM         | <ul style="list-style-type: none"> <li>Systems leaks</li> <li>Low oil level</li> <li>Dirty oil</li> <li>Worn pump</li> <li>Air leaks at connections</li> <li>Air leak through seal</li> </ul>                           | <ul style="list-style-type: none"> <li>Repair leaks</li> <li>Add / replace</li> <li>Flush / replace</li> <li>Replace module</li> <li>Check / repair</li> <li>Replace</li> </ul>                |
| OIL LEAKS           | <ul style="list-style-type: none"> <li>Oil leaks through exhaust</li> <li>Oil leaks through seal</li> <li>Oil leaks through reservoir</li> <li>System vented pressure through pump</li> <li>Pump tipped over</li> </ul> | <ul style="list-style-type: none"> <li>Oil level too high</li> <li>Replace seal</li> <li>Tighten bolts replace gasket</li> <li>Check oil level / add</li> <li>Cheak oil level / add</li> </ul> |
| PUMP DOES NOT START | <ul style="list-style-type: none"> <li>No voltage supplied</li> <li>Damaged motor</li> <li>Thermal cut-out</li> </ul>   | <ul style="list-style-type: none"> <li>Check wiring</li> <li>Repair / replace</li> <li>Self restore, wait and verify cause</li> </ul>  |
| THERMAL CUT-OUT     | <ul style="list-style-type: none"> <li>Low / incorrect voltage</li> <li>Cold weather</li> <br/> <li>Dirty oil</li> </ul>  | <ul style="list-style-type: none"> <li>Check voltage</li> <li>Open intake fitting and gas ballast for 1 minute to warm up while starting</li> <li>Replace</li> </ul>                           |

Design, specification or materials subject to change without notice.



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