

# ***OPERATING INSTRUCTIONS***



## **MODEL VR13**

**REFRIGERANT RECOVERY UNIT**

**FOR R13, R23 & R503 VAPOR**

**NATIONAL REFRIGERATION PRODUCTS**

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# OPERATING INSTRUCTIONS NRP MODEL VR13

## Large Capacity Refrigerant Vapor Recovery Unit for R13 , R23 & R503

For safety reasons it is very important to fill all cylinders by weight in accordance with the cylinder supplier's instructions and ARI guidelines.

- \* ALWAYS USE NRP RETURNABLE CYLINDERS MODEL NC23 OR OTHER CYLINDERS APPROVED FOR RECOVERY AND RATED AT 2000 PSI OR ABOVE.
- \* DO NOT OVERFILL CYLINDERS. Cylinders should be filled to a maximum of 80% capacity. Use a scale to weigh cylinders.
- \* DO NOT MIX DIFFERENT REFRIGERANTS IN A CYLINDER. Mixtures can not be separated.
- \* ALWAYS WEAR RUBBER GLOVES AND SAFETY GOGGLES WHEN TRANSFERRING REFRIGERANT.
- \* BEFORE FILLING AN EMPTY CYLINDER, ALWAYS EVACUATE THE CYLINDER TO AT LEAST 1000 MICRONS TO REMOVE AIR AND NON-CONDENSABLES. NON-CONDENSABLES WILL INCREASE DISCHARGE PRESSURE DRASTICALLY.
- \* PLEASE EVACUATE OR PURGE THE VR13 RECOVERY UNIT AND HOSES BEFORE YOUR RECOVERY JOB TO AVOID INTRODUCING NON-CONDENSABLES IN THE RECOVERY CYLINDERS.
- \* **ALWAYS USE A 163 FILTER DRIER BEFORE THE INLET VALVE OF THE VR13. THIS DRIER WILL CAPTURE PARTICULATE AND WILL PREVENT DAMAGE TO THE VACUUM PUMP, O-RINGS AND INTERNAL SEALS OF THE VR13.**

### Power Requirements

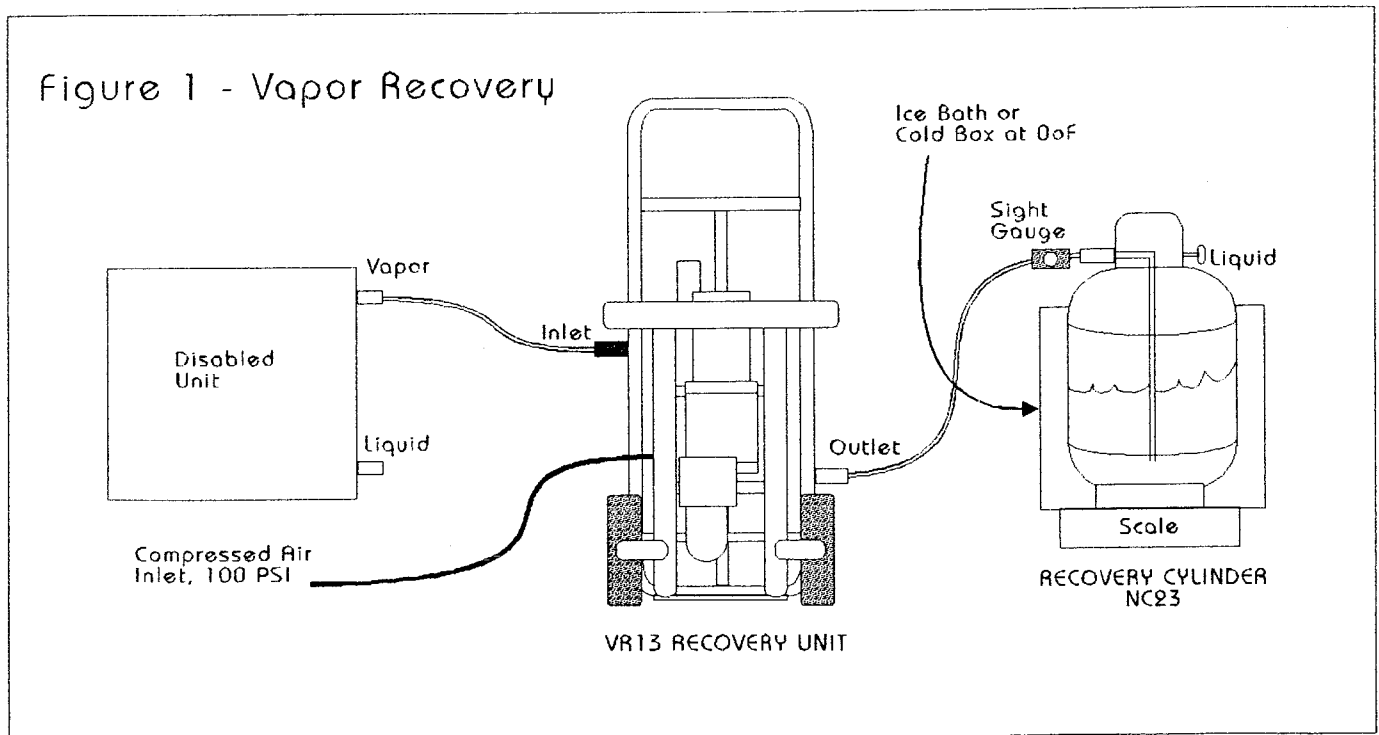
To power the VR13, dry compressed air is needed; 40 CFM at 100 psi is best and recommended. If there is a lower air pressure or capacity, the pumping capacity of the pump will be reduced.

Please drain moisture which may accumulate in the moisture separator on the air inlet side of the VR13 to avoid damage to the pump. The air supply to the VR13 is not to be lubricated in any way, and if a rental compressor is being used, make sure that the air supply is coming off the dry or non-lubricated port of the air compressor. Some of the air compressors from equipment rental dealers, used for jackhammers, have an automatic oiler. make sure not to use that air outlet. There is a shut-off valve at the air inlet to shut off air to the pump, which will allow the pump to be turned on and off.

## VAPOR RECOVERY

Figure 1 shows how vapor can be recovered. Once liquid has been recovered, the remaining vapor can be extracted with the recovery unit as shown in Figure 1. Vapor is recovered at a rate of approximately 1.5 pounds/minute, depending on suction pressure.

1. Connect the disabled unit to cylinder and to the recovery unit as shown in Figure 1.
  - A. Use hoses supplied with the VR13 unit or hoses rated at 3000 PSIG or higher.
  - B. Cylinders must be rated at 2000 PSI or higher. Use NRP model NC23 or equal.
  - C. The VR13 recovers vapor without condensing it. It is necessary to keep the cylinder in an ice bath or cold box at 0°F to condense the refrigerant vapors.
2. Open vapor valve on the cylinder. Open both valves on the recovery unit.
3. Turn recovery unit on.
4. When inlet pressure on inlet gauge reaches 35 PSIG or below, the vapor recovery is complete. Turn the VR13 off and wait two minutes. If the pressure rises, turn the recovery unit on until the inlet pressure returns to 35 PSIG.
5. When recovery is complete, or the cylinder is 80% full, turn the recovery unit off by shutting off the air supply to the VR13 pump.
6. Shut off valves on cylinder and transfer unit.



## **MAINTENANCE**

Under certain ambient temperature of 40°F or lower, the exhaust air from the VR13 can cause ice formation, causing the VR13 to stop pumping. Placing the pump in a warmer area can solve this problem.

After using the VR13 for removing highly contaminated refrigerants, use a few pounds of clean refrigerant to pump through the VR13 to clean out the VR13 pump.

## **IMPORTANT NOTE:**

For trapping of particles a filter-drier size 163 must be installed at the refrigerant inlet of the VR13. The drier should be replaced after each job or as often as required, depending on the amount of rust and particulate which are in the system being pumped out.

This will greatly reduce the amount of wear on the internal O-ring seals in the VR13.

## **WARRANTY**

National Refrigeration Products (NRP) Recovery Equipment is warranted to be free of manufacturing defects. NRP will repair or give credit for repair, at NRP's choice, if any NRP Recovery units or accessories have manufacturing defects. Any warranty claim must be submitted in writing within one year of purchase with a copy of the invoice. In no event shall NRP be liable for the cost of the labor charges, lost profits, injury to good will, or any other special or consequential damages for defective goods, late delivery, or non-delivery. There are no warranties which extend beyond the description on the face hereof, and NRP makes no warranty of merchant ability or fitness for specific purpose. Warranty does not cover damage by improper operation or abuse.