

## Scope:

These user instructions are applicable for Generant Series VRV, Vent Relief Valves sizes 1/8", 1/4", 3/8", 1/2", 3/4" and 1"; Series VRVH, High Pressure Vent Relief Valves sizes 1/8 and 1/4"; Series VRVHI, Inline High Pressure Vent Relief Valves sizes 1/8 and 1/4"; and Series VRVS, Vent Relief Valves with Screens, size 1/8".

## Intended Use:

The intended use of these valves is to protect against over pressure in a given system. These products can be used with the following Media, Inert gases, Oxygen and potential oxidizer gases > 21% and Hydrogen. Due to the potential of Hydrogen Embrittlement, special consideration should be given when valves are intended to be used in H<sub>2</sub>S service.

**Please Note:** Proper seal material selection is important to ensure compatibility with intended gas use.

## Technical Data:

VRV, VRVH, VRVHI, and VRVS Series valves are supplied preset, 100% factory tested and locked. All VRV, VRVH, VRVHI, and VRVS products are engraved with part number, set pressure and date of manufacture. Operating parameters are listed below:

Set Pressure Tolerance:  $\pm 5\%$ \*

Temperature Range: -320° F to 400° F, elastomer dependent

VRV Nominal Set Pressure Range: .5 – 150 psi (0.03 – 10.34 bar)

VRVH and VRVHI Nominal Set Pressure Range: 150 – 600 psi (10.34 – 41.37 bar)

Full Rated Flow by 110% of Set Pressure

| *PED/TPED Set Pressure Tolerances: |                |
|------------------------------------|----------------|
| Nominal Set Pressure               | Tolerance      |
| 0.50-28.90 psig                    | $\pm 5\%$      |
| 29.00-48.30 psig                   | $\pm 1.45$ psi |
| 48.40 + psig                       | $\pm 3\%$      |



| Operating Temperature Per Seal Material |                                       |
|-----------------------------------------|---------------------------------------|
| SEAL MATERIAL                           |                                       |
| V - Viton™                              | -10° F to 375° F (-23° C to 190° C)   |
| B - Buna-N                              | -40° F to 250° F (-40° C to 121° C)   |
| N - Neoprene                            | -40° F to 250° F (-40° C to 121° C)   |
| EP - Ethylene Propylene                 | -65° F to 300° F (-54° C to 148° C)   |
| FS - Fluorsilicone                      | -80° F to 350° F (-62° C to 176° C)   |
| S - Silicone                            | -65° F to 400° F (-54° C to 205° C)   |
| T - Teflon™                             | -320° F to 400° F (-220° C to 205° C) |

Viton & Teflon are trademarks of DuPont.

Generant Series VRV, VRVH, VRVHI, and VRVS Relief Valves are supplied assembled, preset and tested. If required, valves should only be re-adjusted by trained personnel or returned to the factory. Valves that are supplied "Cleaned for Oxygen Service" from the factory are supplied heat sealed in poly bags. Once removed from the bag, integrity of this cleaning has been compromised. Proper handling should be used to ensure the integrity and cleanliness of the system.

To make a proper connection:

1. All Series VRV, VRVH, VRVHI, and VRVS relief valves are 100% factory tested for leakage before crack, full flow and reseal performance.
2. The piping system should be complete before installation of the relief valve.
3. All upstream piping and connection ports must be free from particulate contamination that is naturally generated during the assembly of the piping system. This should be accomplished by purging the system with clean, dry nitrogen gas. Visually inspect the port for cleanliness.
4. For valves supplied with NPT threads, Teflon tape should be used to seal the connection between the relief valve and the piping system.
5. Beginning with the first thread, wrap tape in the direction of the male tapered thread spiral, and join with a slight overlap.
6. Make sure tape does not overhang the first thread, as the tape could shred and get into the system.
7. Cut off excess tape. Draw the free end of the tape around the thread tautly so that it conforms to the threads. Press in firmly at the overlap point. The connection is now ready for makeup. (If any additional pipe sealant is being used (i.e.: pipe dope or Swak), **Do not** apply it to the first thread of the valve)
8. Thread the valve into the connection port hand tight. Using an open-end wrench, tighten the valve an additional 3/4 to 1 full turn.
9. The relief connection should be tested for leaks using an approved leak detector.

**Mounting Limitations** – Please note the following mounting limitations:

| Generant Valve Series                              | Mounting Limitations              |
|----------------------------------------------------|-----------------------------------|
| VRV 1/8" through 1/2", VRVH, VRVHI and VRVS        | -None                             |
| VRV 3/4" and 1" -Set pressures less than 5 psig    | -Vertical Orientation Recommended |
| VRV 3/4" and 1" -Set pressures greater than 5 psig | -None                             |

## Safe Component Selection

When selecting a component, the total system design must be considered to ensure safe, trouble free performance.

Component function, materials compatibility, adequate ratings, proper installation, operation, cleanliness and maintenance are the responsibility of the system designer and user.