Non-Fragmenting Metal Rupture Disk version of...

the

RuptureSeal™

NRS Series Backup Relief Valves

with a

Reverse Buckling Non-fragmenting Metal Rupture Disk

for

REFRIGERANT CONTAINMENT

on

Low Pressure Centrifugal Chillers

Manufactured in accordance with ASHRAE Guideline 3-1990 Sec. 4.6 Flow tested by ASME approved testing laboratory

Multiple Patents Pending

"Lifetime Warranty"

(Excludes Rupture Disk burst by Overpressurization)

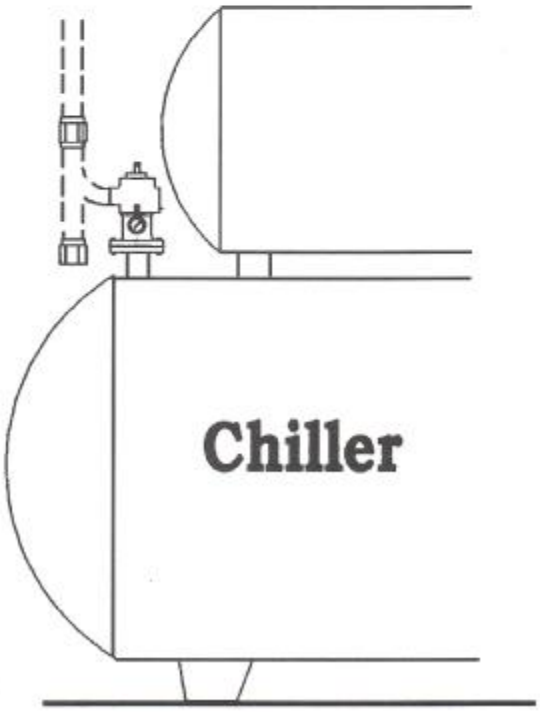
Special Features

- **SHIPPED FULLY ASSEMBLED INCLUDING DISK**
- **All Stainless Steel Construction**
- **Compact and Light Weight - *17 Lbs. (NRS-2)***
- **Seals Bubble Tight - *37 Lbs. (NRS-3)***
- **Compensates for Back Pressure**
- **ANSI Flanged - Ready to Bolt On**
- **Optional RuptureAlarm™ Available**

Your Benefits

- **Competitive Pricing**
- **Easier, Low Cost Installation**
- **Minimal Vent Line Modifications Required**
- **Easily Serviced Even with Chiller Running**
- **Safety Checks, as required by Insurer, can be done quickly - even with Chiller Operating**
- **Complies with all ASHRAE and API Guidelines**

CFC EMISSIONS



Typical Installation

RuptureSeal™ NRS Series Specifications

The **RuptureSeal™** backup relief valve comes in two sizes: The NRS-2, two inch (2") model with a flow capacity of 961 SCFM; the NRS-3, three inch (3") model with a flow capacity of 2128 SCFM. Units are shipped pre-assembled; ready to install.

Technical Features

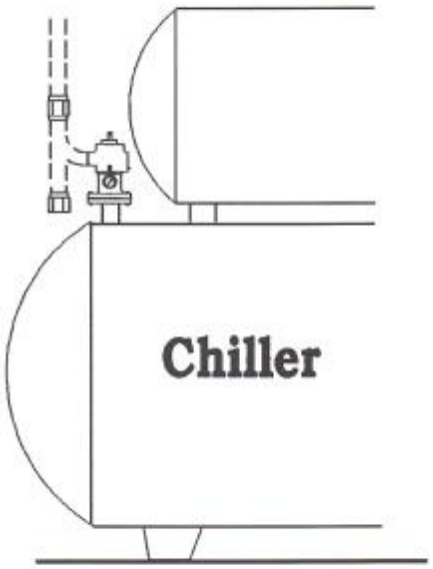
- **Flow capacity: NRS-2 = 961 SCFM**
  NRS-3 = 2128 SCFM
- **Set pressure - 15 psig**
- **Reseals "bubble tight" within 3 psi of set pressure**
- **Refrigerant compatibility — R-11, R-113 & R-123**
- **Weight — 17 lbs (NRS-2) — 37 lbs (NRS-3)**
- **Dimensions: installed length 8½ inches, height 6 inches, width 8 inches (NRS-2)**
- **O-Ring seat — seals bubble tight**
- **ALL STAINLESS STEEL CONSTRUCTION**
- **Tell-tale pressure gauge 30" Hg-0-30 psig**
- **Double check pressure equalizing valve (included)**
- **O-Rings serviceable without disturbing pressure relief calibration**
- **Every valve 100% tested for pressure setting and leakage**
- **Non-fragmenting "*Reverse-Buckling*" solid metal rupture disk**
- **Pivot spring action corrects mis-alignment and compensates for spring side thrust**
- **Calibration is factory sealed to prevent inadvertent tampering or dis-assembly**
- **High capacity full nozzle design**
- **Direct spring acting**
- **INSTANTANEOUS "POP OPEN" ACTION**
- **Not BACK PRESSURE sensitive**

Special Features

- **SHIPPED FULLY ASSEMBLED INCLUDING DISK**
- **All Stainless Steel Construction**
- **Compact and Light Weight - *17 Lbs (NRS-2)***
- **Seals Bubble Tight - *37 Lbs (NRS-3)***
- **Compensates for Back Pressure**
- **ANSI Flanged - Ready to Bolt On**
- **Optional RuptureAlarm™ Available**

Your Benefits

- **Competitive Pricing**
- **Easier, Low Cost Installation**
- **Minimal Vent Line Modifications Required**
- **Easily Serviced Even with Chiller Running**
- **Safety Checks, as required by Insurer, can be done quickly - even with Chiller Operating**
- **Complies with all ASHRAE, API Guidelines**

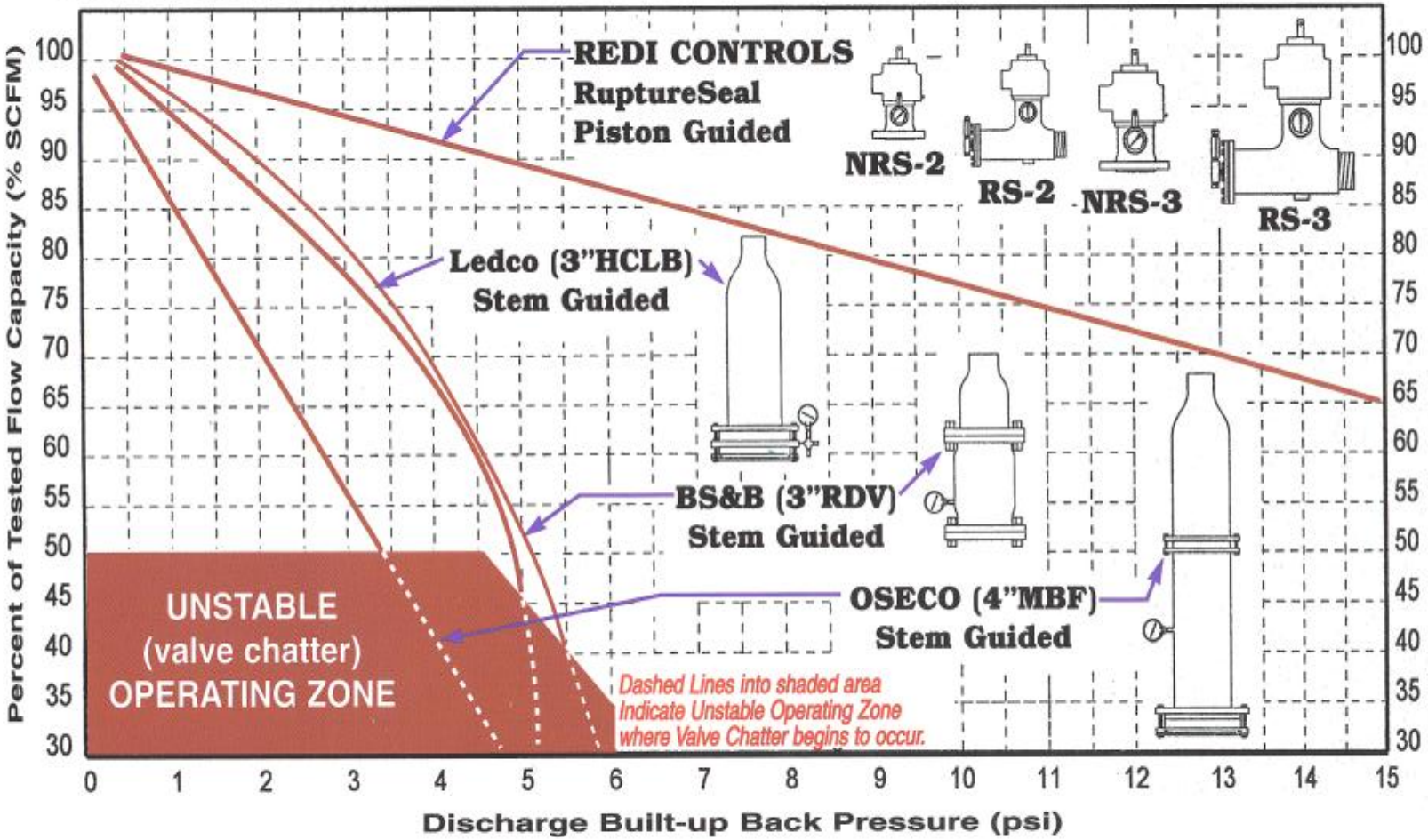


Typical Installation

The primary function of the **RuptureSeal™** backup relief valve is to minimize refrigerant loss to the atmosphere in the event of a burst rupture disk. The **RuptureSeal™** backup relief valve accomplishes this vital function by automatically closing off the vent path, thus re-sealing chiller once pressure returns to normal. In the event of a burst rupture disk, the **RuptureSeal™** also serves as the interim primary relief.

Effect of Back Pressure Buildup on Flow Capacity

The RuptureSeal™ "Piston Guided" valve - vs - Conventional "Stem guided" valves based on actual performance tests conducted at an ASME approved Testing Laboratory according to ASME/ANSI PTC 25.3-1988 for Discharge Built-up Back Pressure.



Relief Valve Performance Chart

Piston Guided Valves -vs- Stem Guided (see note)

NOTE: At the point where "Stem Guided" valves begin to approach the UNSTABLE OPERATING ZONE, Redi Controls' "Piston Guided" valves are still flowing at approximately 90% of their rated flow capacity.

Relief Valves & Rupture Disks

Now there is a RuptureSeal™ Back-up Relief Valve for use with any type of RUPTURE DISK (or no rupture disk at all!)

1.

Carbon Rupture Disk

The **RuptureSeal™** RS series Backup Relief Valves, with their "patent pending" collection trap, and other "patent pending" features, utilize the chiller's existing carbon rupture disk and thus can be installed without having to shut down the chiller or pull its refrigerant charge.

2.

Metal Non-fragmenting Disk

The **RuptureSeal™** "patent pending" NRS series Backup Relief Valves include a non-fragmenting *reverse-buckling* solid metal rupture disk which mounts directly to chiller's existing rupture disk flange.

3.

No Rupture Disk

The **RuptureSeal™** "patent pending" DSR series *Zero Down Time* 3-way Valves, with Dual Safety Reliefs, reseal "bubble tight" and therefore can be installed without a rupture disk. **For critical application chillers.** "When you can't afford to shut a chiller down."