

# Isolate Expensive, Potentially Damaging Refrigerants with the SENTRY Rupture Disc Assembly

tech  
tips

Figure 1:

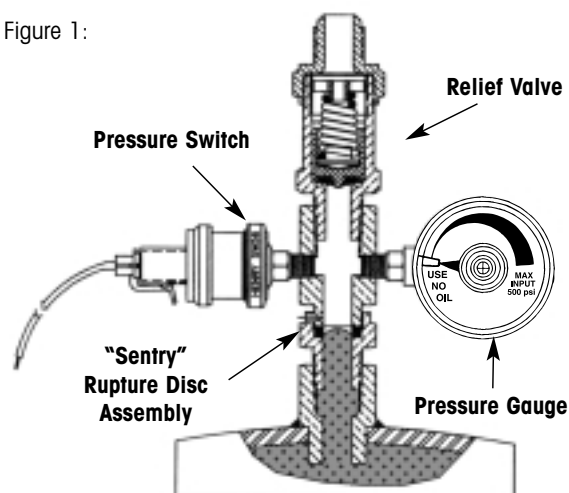


Figure 2:

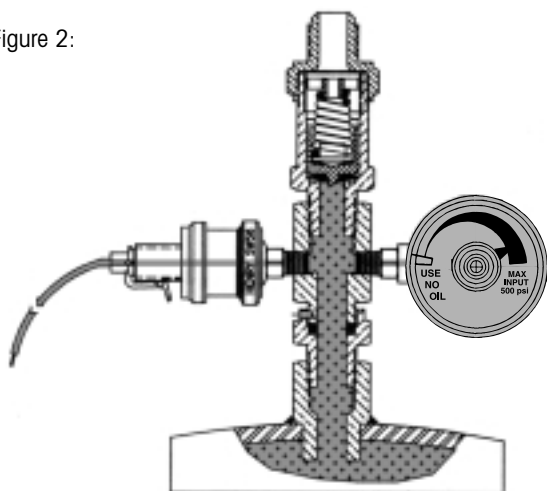


Figure 1: The SENTRY Rupture Disc Assembly/Relief Valve combination is shown in its normal operating condition with system pressure only under the rupture disc. (Gauge shows no pressure)

Figure 2: The SENTRY Rupture Disc Assembly/Relief Valve combination is shown with the disc ruptured by high system pressure. The relief valve has discharged but resealed, preventing the entire refrigerant charge from escaping into the atmosphere. (Gauge shows pressure)  
Note: Relief valve, Pressure Gauge and Switch sold separately.

Chlorofluorocarbons (CFCs) are expensive as well as damaging to the environment so it's important to take measures to prevent leaks and accidental discharge.

During the transition period to new environmentally friendly refrigerants, Henry Valve can provide you with reliable refrigerant containment system as a solution.

The SENTRY Rupture Disc Assembly helps prevent leakage of CFCs by indicating that the relief valve has discharged.

The ANSI/ASME code permits the installation of the SENTRY Rupture Disc Assembly between a pressure vessel and a relief valve. The assembly provides, as required by code, a chamber between the rupture disc and relief valve and a connection to install a pressure gauge or suitable telltale indicator. This arrangement permits a positive indication that the disc has ruptured and the relief valve has discharged.

Other benefits of the arrangement include:

- Prevention of leaking or weeping of CFCs through the relief valve.
- Extra gauge port for installation of a Sentry Pressure Switch warns electrically of a refrigerant release caused by a system malfunction.
- Non-fragmenting rupture disc under the relief valve seat.
- Rupture disc assembly sealed by pinning to prevent tampering.
- Elimination of the need to fabricate a rupture disc assembly in the field to meet codes.
- A device with fewer joints than a field-fabricated assembly.

**We recommend replacement of a relief valve that has discharged.** Although relief valves are designed to re-close automatically at a pre-determined pressure, there is the chance that foreign material can collect on the valve seat disc during discharge. This possibility makes it nearly impossible to determine whether or not the relief valve resealed tightly enough to prevent leakage of the refrigerant. Both the SENTRY Rupture Disc Assembly and Pressure Relief Valve only work once and have to be replaced following a discharge.

*Application*

The ASME Code, Section VIII, Division 1, UG 127 provides guidelines for the application of rupture disc devices:

A rupture disc device may be installed between a pressure relief valve and the vessel provided:

- The combination of the spring-loaded safety relief valve and the rupture disc device is ample in capacity to prevent the pressure in the vessel from rising more than 10 percent above its design pressure. Since the capacity of a relief device is measured at 10 percent above its stamped setting, the setting cannot exceed the design pressure of the vessel.

Use of a rupture disc device in combination with a safety relief valve shall be carefully evaluated to ensure that the media being handled and the valve operational characteristics will result in pop action of the relief valve coincident with the bursting of the rupture disc.

- The stamped capacity of a spring-loaded safety relief valve when installed with a rupture disc device between the inlet of the valve and the vessel shall be multiplied by a factor of 0.90 of the rated relieving capacity of the relief valve alone.
- The space between a rupture disc device and a safety relief valve shall be provided with a pressure gauge or suitable telltale indicator. This arrangement permits detection of disc rupture or leakage.

Users are warned that a rupture disc will not burst at its designed pressure if back pressure builds up in the space between the disc and the safety relief valve, which will occur should leakage develop in the rupture disc due to corrosion or other causes.

**Specifications**

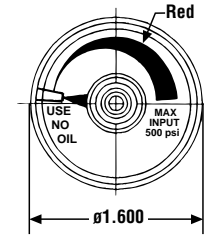
**Case, Pointer, Socket:** AISI 304 stainless steel

**Lens:** Plexiglass, watertight

**Dial:** Maximum working pressure: 600 p.s.i.

**Operating Temperature:** -40°F (-40°C) to +150°F (+65°C)

Catalog Number	Size Connection
G15	1/8" M.P.T., back



**Specifications**

**Type:** Direct action blade contact

**Contacts:** Silver alloy, gold plated

**Set Point:** Factory set and sealed

**Pressure setting:** 5 PSI

**Switch Burst Pressure:** 750 PSI

**Ratings:** 4 AMP-24 VAC

**Diaphragm:** Teflon

**Temperature Range:** -40°F to +250°

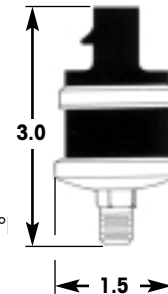
**Connector:** 1/8-27 NPT male thread

**Terminals:** Metri-Pack, 1/4" blade

**Circuitry:** Normally opened

**Base:** Steel

**Cover:** Glass reinforced polyester



*Selection*

We recommend the SENTRY Rupture Disc Assembly have the same pressure setting as the relief valve it is attached to.

Rupture Disc settings range between 150 PSI and 450 PSI. All gauge connections are 1/8 FPT. The SENTRY Rupture Disc Assembly is available in a wide range of connection sizes. Brass bodies are available for halo-carbon applications in 3/8 and 1/2 N.P.T. Plated steel bodies are available in 1/2 N.P.T. thru 1-1/4 N.P.T. for both halocarbon and ammonia applications.