

# PRESSURE RELIEF VALVES

**The main function of a Pressure Relief Valve is to protect against accidental over-pressure of a pressure vessel due to system malfunction or fire.**

## Applications

Henry Technologies' Relief Valves are designed to be used in refrigeration systems to prevent over-pressure due to system malfunction or excessive external heat. They are to be used only with refrigerant vapor or gas, where they are typically installed on the top section of a pressure vessel, i.e. liquid receiver or suction accumulator.

Most states and municipalities which have refrigeration safety codes conform to the "American Standard Safety Code for Mechanical Refrigeration (ANSI/ASHRAE 15)". This code and ASME states that the Relief Valve setting is not to exceed the design working pressure of the vessel on which the Relief Valve is installed. The discharge capacity of relief valves varies with pressure setting. The discharge capacity required is based on the size of the vessel and the refrigerant used. See "Determining Minimum Required Discharge Capacity" section for more information, or contact Technical Support at 1-800-627-5148.

Whenever conditions permit, it is highly advisable to have the Relief Valve pressure setting (which must not exceed the design working pressure of the vessel) at least 25% higher than the normal operating pressure for the refrigerant used.

52 series Pressure Relief Valves are suitable for use with HCFC and HFC refrigerants and their associated oils, as well as other industrial fluids non-corrosive to brass, steel and Teflon.

53 and 56 series Pressure Relief Valves are suitable for use with ammonia, HCFC and HFC refrigerants and their associated oils, as well as other industrial fluids non-corrosive to steel, iron and Teflon.

## How it works

All Henry Technology Relief Valves are 100% tested and manufactured to guidelines as indicated in ASME Section VIII Division I. Every Relief Valve is calibrated to indicate a pre-determined set pressure, where the valve begins to allow gas or vapor to pass through. The valve will open to a full discharge within 10% over set pressure. After discharge Pressure Relief Valves will blow down and reseal once the pressure falls below the valves set pressure.

## Main Features

- NPT and SAE flare connections
- High pressure line available (500-675 PSI) suitable for R410A & CO<sub>2</sub>. See model numbers 5233AX, 5234AX and 5235AX
- Valves fully open before 10% overpressure when taken from the average set pressure
- Reset pressure ranges typically 10-40% (blowdown) from pop pressure
- Valves bear individual serial numbers
- UV-1 pressure test reports available upon request

## Technical Specifications

All Henry Technologies PRV's have a set pressure range +/- 3% of the stamped pressure.

Set pressure range = see tables

Allowable operating temperature = -20°F to +225°F (-29°C to +107°C)

Henry Technologies' Relief Valves are stamped with the ASME UV symbol and NB to indicate National Board certification as to capacities. Additionally, Pressure Relief Valves are designed and registered for use in Canada. Please contact Technical Support at 1-800-627-5148 for CRN details and list of approved provinces and territories.

## Materials of Construction

The 52 series Relief Valves have brass valve bodies. The internal parts are made of brass and carbon steel. The 53 series valves have stainless steel valve bodies. Internal parts are made from stainless steel and carbon steel. The 56 series valves have cast or ductile iron valve bodies. The internal parts are made from stainless steel and carbon steel. All valves have Teflon valve seats.



## Relief Valve Capacity Ratings

Henry Technology Relief Valves are marked with a discharge capacity in unit lbs-air/min, and marked in accordance with the requirements of the ASME (Boiler and Pressure Vessel Code Section VIII, Division 1). These valves are also approved by many local refrigeration and air conditioning codes in the USA and Canada for relief of excess pressure.

Angle Relief Valve - Steel

| Part No  | Fig No | Conn Size (inch) |           | Dimensions (inch) |      | Orifice Diameter (inch) | Weight (lbs) |
|----------|--------|------------------|-----------|-------------------|------|-------------------------|--------------|
|          |        | Inlet            | Outlet    | A                 | B    |                         |              |
| 5600-XXX | 2      | 1/2 FPT          | 3/4 FPT   | 2.69              | 1.63 | 0.703                   | 3.60         |
| 5601-XXX | 2      | 1/2 FPT          | 1 FPT     | 2.69              | 1.63 | 0.703                   | 3.44         |
| 5602-XXX | 2      | 3/4 FPT          | 1 FPT     | 2.69              | 1.63 | 0.921                   | 3.40         |
| 5603-XXX | 2      | 1 FPT            | 1 1/4 FPT | 2.88              | 2.00 | 1.000                   | 4.75         |
| 5604-XXX | 2      | 1 1/4 FPT        | 1 1/2 FPT | 4.13              | 2.31 | 1.125                   | 6.50         |

Straight-through Relief Valves - Brass

| Part No         | Fig No | Conn Size (inch) |               | Dimensions (inch) | Orifice Diameter (inch) | Weight (lbs) |
|-----------------|--------|------------------|---------------|-------------------|-------------------------|--------------|
|                 |        | Inlet            | Outlet        | A                 |                         |              |
| 5250A-1/2-XXX   | 4      | 1/2 MPT          | 1/2 FPT       | 4.26              | 0.375                   | 0.85         |
| 5250-1/2-XXX    | 4      | 1/2 MPT          | 3/4 FPT       | 4.04              | 0.375                   | 0.97         |
| 5252-3/4-XXX    | 4      | 3/4 MPT          | 3/4 FPT       | 4.05              | 0.375                   | 0.95         |
| 5244-3/4-XXX    | 4      | 3/4 MPT          | 1 FPT         | 4.16              | 0.500                   | 1.46         |
| 5244-1-XXX      | 4      | 1 MPT            | 1 FPT         | 4.16              | 0.500                   | 1.46         |
| 5246A-1-XXX     | 4      | 1 MPT            | 1 1/4 FPT     | 5.82              | 0.719                   | 2.50         |
| 5246A-1-1/4-XXX | 4      | 1 1/4 MPT        | 1 1/4 FPT     | 5.82              | 0.719                   | 2.60         |
| 5230AX-XXX      | 3      | 1/4" NPT         | 1/2" FL       | 3.72              | 0.276                   | 1.00         |
| 5231AX-XXX      | 3      | 3/8 NPT          | 1/2" FL       | 3.72              | 0.276                   | 1.00         |
| 5231BX          | 3      | 1/2" NPT         | 5/8" FL       | 4.16              | 0.276                   | 1.00         |
| 5233AX-XXX      | 3      | 3/8 NPT          | 7/8 SAE Flare | 4.18              | 0.276                   | 1.02         |
| 5234AX-XXX      | 4      | 3/8 NPT          | 3/4 FPT       | 4.22              | 0.276                   | 1.12         |
| 5235AX-XXX      | 4      | 1/2 NPT          | 3/4 FPT       | 4.50              | 0.276                   | 1.21         |

Straight-through Relief Valves - Stainless Steel

| Part No         | Fig No | Conn Size (inch) |           | Dimensions (inch) | Orifice Diameter (inch) | Weight (lbs) |
|-----------------|--------|------------------|-----------|-------------------|-------------------------|--------------|
|                 |        | Inlet            | Outlet    | A                 |                         |              |
| 5350-1/2-XXX    | 4      | 1/2 MPT          | 3/4 FPT   | 4.00              | 0.375                   | 0.95         |
| 5352-3/4-XXX    | 4      | 3/4 MPT          | 3/4 FPT   | 4.00              | 0.375                   | 1.03         |
| 5344-3/4-XXX    | 4      | 3/4 MPT          | 1 FPT     | 4.18              | 0.500                   | 1.46         |
| 5344-1-XXX      | 4      | 1 MPT            | 1 FPT     | 4.19              | 0.500                   | 1.46         |
| 5345A-XXX       | 4      | 1 MPT            | 1 1/4 FPT | 5.81              | 0.719                   | 2.50         |
| 5346A-1-1/4-XXX | 4      | 1 1/4 MPT        | 1 1/4 FPT | 5.81              | 0.719                   | 2.60         |

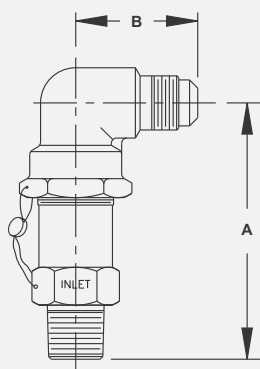


FIG 1

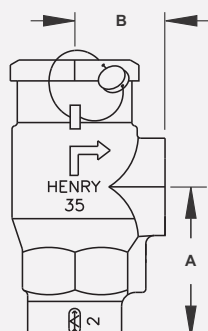


FIG 2

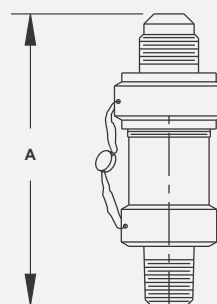


FIG 3

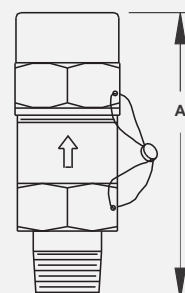


FIG 4

## Order Information

- To order, add desired pressure setting to Pressure Relief Valve part number suffix (i.e. 5230-300)
- Pressure certificates (ASME UV-1) are available with each order for an extra charge. Specify a "-C" suffix on the part number.
- Pressure settings outside the range stated for each model are not available. Henry only supplies relief valves bearing the NV-NB stamps.