

## **PRESSURE RELIEF VALVE SPECIFICATION**

### **GENERAL**

Pressure Relief Valves (PRV's) are for the utilization in reciprocating engine exhaust systems to minimize damage caused by an engine backfire or similar over-pressure events. They are commonly used to protect exhaust systems where exhaust silencers, catalytic converters, and / or waster recovery units are employed. Other applications include installation in reciprocating engine air intake systems to protect against inlet-air-filter damage due to engine backfire. Pressure Relief Valves are available in sizes from 6" Ø ID – 48" Ø ID. They are set to open at a pressure of 2 PSI and rated to relieve the entire exhaust flow of the engine at the design point. They are equipped with a 7/16" wide roll-formed flange and designed to connect to systems with the same connection method. These valves are designed for operation in exhaust systems where exhaust flue gas temperatures reach 1400°F.

### **REFERENCE STANDARDS**

1. NFPA 37 (2010) Section 8.1.4 – Standard for the Installation and use of Stationary Combustion Engines and Gas Turbines.
2. UL2561 / ULC ORD C959 – Standard for 1400°F (760°C) Factory-Built Chimneys

### **REQUIREMENT**

Per NFPA 37 (2010) Section 8.1.4 - "Exhaust systems shall be designed and constructed to withstand forces caused by the ignition of unburned fuel or shall have provisions to relieve those forces without damaging the exhaust system."

### **PRESSURE RELIEF VALVES**

- A. Valve body fabricated from 20 ga. 304 stainless steel on duct with an inside diameter of 6" – 36" and fabricated from 18ga. 304 stainless steel on duct with an inside diameter of 38" – 48".
- B. Connection method shall be a 7/16" rolled flange utilizing vee bands and matching the connection style of the rest of the ventilation system.
- C. Hardware (Bolts, nuts, springs, washers) all manufactured from stainless steel or other suitable material which provides exceptional corrosion resistance properties.
- D. Utilizes an Inconel wire-reinforced graphite gasket.
- E. Sealing flange and seal plate laser cut from 1/4" thick 304 stainless steel.

- F. Includes a mechanical visual indicator / tamper-evident seal to show when an overpressure event has occurred.
- G. Fabricated in the United States using material originating from the United States.
- H. To ensure proper operation, the PRV shall be produced by the same manufacturer as the rest of the ventilation system to which the PRV is being installed on.
- I. Includes all the necessary hardware to complete installation.
- J. Able to be serviced (rebuilt) and include credit for the used valve.
- K. Must be of a compact design with minimal moving parts.

## INSTALLATION

**\*\*Note:** Pressure Relief Valves should be located close to the engine and at the first directional change in the exhaust system. They should also be located before any other ancillary equipment including silencers, catalytic converters, waste recovery units, etc.

1. Inspect all liner flanges and straighten any mild deformations that may have occurred during shipping.
2. To ensure sealant adhesion, degrease and remove any dirt and debris from the liner flanges. Use an acetone-based cleaner applied to a rag.
3. Apply a continuous bead of sealant (3/16" – 1/4") to one or both flanges to be joined.
4. Butt the flanged ends of the sections being joined together, being careful not to smear off the sealant. Re-apply if this happens.
5. Apply a bead of sealant into the groove of each vee band.
6. Install the vee band making sure the overlap tabs slide under the mating end and tighten up. Overlap tabs should be located on the side of the horizontal duct. It is **necessary** to lightly tap the vee band while tightening the hardware to ensure a snug fit.

**\*\*Note:** Wipe smooth any excess sealant on the inside of the assembled chimney / vent to prevent sealant dams.

7. Install the (2) half-moon shaped covers and half draw band (Van-Packer® part numbers CVR and HDB, respectively) to cover the exposed insulation adjacent to the PRV installation.

**\*\*Note:** Allow sealant to cure for (7) days before introducing heat or putting into service.