BIRKETT PILOT OPERATED SAFETY VALVES

OPERATING AND SAFETY INSTRUCTIONS (PED)

Before installation these instructions must be read fully and understood

GENERAL

The intent of these instructions is to acquaint the user with the storage, installation and operation of this product.
Please read these instructions carefully before installation.
This safety valve should only be used in accordance with the applicable operating instructions and within the application specifications of the purchase order.
This valve has been tested and adjusted at the factory. Contact the factory or an authorized representative before making any changes to the settings.

INSTALLATION

- Many valves are damaged when first placed in service because of failure to clean the connection properly when installed. Before installation flange faces or threaded connections on both the valve inlet and the vessel and/or line on which the valve is mounted must be cleaned thoroughly of all dirt and foreign material.
  Because foreign materials that pass into and through safety valves can damage the valve, the systems on which the valves are tested and finally installed must also be inspected and cleaned. New systems in particular are prone to containing foreign objects that get trapped inadvertently during construction and will destroy the seating surface when the valve opens. The system should be cleaned thoroughly before the safety valve is installed.
  Sometimes, foam padding is used to protect the main valve seat during shipping. Check for any foam padding inside the main valve and remove before installation.
- The gaskets used must be dimensionally correct for the specific flanges. The inside diameters must clear the safety valve inlet and outlet openings fully so that the gasket does not restrict flow. For flanged valves, draw down all connection studs or bolts evenly to avoid possible distortion of the valve body.
- Threaded valves have flats on the body inlet neck to aid in installation. Use a back-up wrench on the body outlet neck during the installation of discharge piping.
- Safety valves are intended to open and close within a narrow pressure range. Valve installations require accurate design both as to inlet and discharge piping. Refer to International, National and industry standards for guidelines.

SAFETY PRECAUTIONS

- When the safety valve is under pressure never place any part of your body near the outlet of the valve.
- The valve outlet and any separate drains should be piped or vented to a safe location.
- Always wear proper safety gear to protect hands, head, eyes, ears, etc, any time you are near pressurized valves.
- Never attempt to remove the safety valve from a system that is pressurized.
- Never make adjustments to or perform maintenance on the safety valve while in service unless the valve is isolated from the system pressure. If not isolated properly from the system pressure, the safety valve may open inadvertently resulting in serious injury.
- Remove the safety valve prior to performing any pressure testing of the system.
- The safety of lives and property often depends on the proper operation of the safety valve. The valve must be maintained according to appropriate instructions and must be tested and reconditioned periodically to ensure correct function.
- For further information including adjustment, maintenance, cleaning, lapping and detail illustrations obtain the appropriate Installation, Operation and Maintenance Instructions. These may be requested from the factory or are available on our website.

WARNING

- *If a gagging device is provided with the valve it must be removed before the valve is put into service.*
- *Removal of the seal wires in an attempt to adjust and/or repair this product by unauthorized or unqualified personnel voids the product warranty and may cause damage to equipment and serious injury or death to personnel.*
- *This product is a safety related component intended for use in critical applications. The improper application, installation or maintenance of the valve or the use of parts or components not manufactured by us may result in a failure of the valve.*
- *Any obstruction due to polymerization, solidification or solid deposit will affect the safety performance of this valve. Methods to reduce such risk should be taken.*
- *A safety valve should be used only to protect a system from overpressure during a pressure upset. It should not be used as a control valve that is required to operate continuously or as a block valve to isolate portions of the system. It should not be used as a pipe fitting or transition piece in a piping system.*
- *Any installation, maintenance, adjustment, repair or test performed on the safety valve must be done in accordance with the requirements of all our applicable procedures and instructions as well as applicable National and International Codes and Standards.*
- *The information, specifications and technical data (the 'specifications') contained in this document are subject to change without notice. We do not warrant that the specifications are current and assume no responsibility for the use or misuse thereof. The purchaser should verify that there have been no changes to the specifications prior to use.*

STORAGE AND HANDLING

Because cleanliness is essential to the satisfactory operation and tightness of a pressure relief valve, precautions should be taken during storage to keep out all foreign material. Inlet and outlet protectors should remain in place until the valve is ready to be installed in the system. Take care to keep the valve inlet absolutely clean. It is recommended that the valve be stored indoors in the original shipping container away from dirt and other forms of contamination.
Safety valves must be handled carefully and never subjected to shocks. Rough handling may alter the pressure setting, deform valve parts and affect seat tightness and valve performance adversely. The valve should never be lifted or handled using the tubing, piping, pilot or pilot brackets. When it is necessary to use a hoist, use the lifting eye(s) on the main valve body. If there are no lifting eyes, a chain or sling should be placed around the main valve body in a manner that will ensure that the valve is in a vertical position to facilitate installation.

PIPING

Inlet piping

Connect this valve as directly and close as possible to the vessel being protected.
The valve should be mounted vertically in an upright position either directly on a nozzle from the pressure vessel or on a short connection fitting that provides a direct, unobstructed flow between the vessel and the valve. Installing a safety valve in other than this recommended position will affect its operation adversely.
The valve should never be installed on a fitting having a smaller inside diameter than the inlet connection of the valve.

Discharge piping

Discharge piping should be simple and direct. A 'broken' connection near the valve outlet is preferred wherever possible. All discharge piping should be run as directly as is practicable to the point of final release for disposal. The valve must discharge to a safe disposal area.
The pilot is often vented to the atmosphere under operating conditions, since the discharge during operation is small. When vent discharge to the atmosphere is not permissible, the pilot should be vented either to the discharge piping or through a supplementary piping system to a safe location. When designing vent piping, avoid the possibility of back pressure on the pilot unless the pilot is a balanced design. Discharge piping must be drained properly to prevent the accumulation of liquids on the downstream side of the pressure relief valve or the pilot. The weight of the discharge piping should be carried by a separate support and be braced properly to withstand reactive thrust forces when the valve relieves. The valve should also be supported to withstand any swaying or system vibrations. If the valve is discharging into a pressurized system be sure the pilot valve is a 'balanced' design. Pressure on the discharge of an 'unbalanced' design will affect the valve performance and set pressure adversely.

Fittings or pipe having a smaller inside diameter than the valve outlet connections must not be used.

SET PRESSURE VERIFICATION TESTING

Set pressure verification testing should be performed in accordance with instructions in the applicable Installation, Operation and Maintenance Instructions.

NOTE

Service technicians are available to assist with your installation or other field problems.
Call your nearest authorized representative (details can be found at Emerson.com/FinalControl).