



Before installation these instructions must be fully read and understood

General

The intent of these instructions is to acquaint the user with the storage, installation and operation of this product.

This Safety Valve should only be used in accordance with the applicable operating instructions and within the application specifications of the purchase order.

These valves have been tested and adjusted at the factory. Contact the Factory or a Tyco Valves and Controls authorized representative before making any changes to the settings.

Storage and handling

Because cleanliness is essential to the satisfactory operation and tightness of a safety valve, precautions should be taken during storage to keep out all foreign materials. 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 adversely affect seat tightness and valve performance.

The valve should never be lifted or handled using the lifting lever.

When it is necessary to use a hoist, the chain or sling should be placed around the valve body and bonnet in a manner that will insure that the valve is in a vertical position to facilitate installation.

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 thoroughly cleaned 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 contain foreign objects that inadvertently get trapped during construction and will destroy the seating surface when the valve opens. The system should be thoroughly cleaned before the safety valve is installed.

The gaskets used must be dimensionally correct for the specific flanges. The inside diameters must fully clear the safety valve inlet and outlet openings 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. For threaded valves, do not apply a wrench to the valve body. Use the hex flats provided on the inlet bushing.

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.

Inlet piping

Connect this valve as direct 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 adversely affect its operation.

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 direct as is practicable to the point of final release for disposal. The valve must discharge to a safe disposal area.

Discharge piping must be drained properly to prevent the accumulation of liquids on the downstream side of the safety valve.

The weight of the discharge piping should be carried by a separate support and be properly braced 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 valve is a "balanced" design. Pressure on the discharge of an "unbalanced" design will adversely affect the valve performance and set pressure.

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

The bonnets of balanced bellows safety valves must always be vented to ensure proper functioning of the valve and to provide a telltale in the event of a bellows failure. Do not plug these open vents. When the fluid is flammable, toxic or corrosive, the bonnet vent should be piped to a safe location.

PED - Operating and Safety Instructions

Direct Spring Operated Safety Valves

Set pressure verification testing

Set pressure verification testing should be performed in accordance with instructions in the applicable Operation and Maintenance Manual

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. anytime 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 properly isolated from the system pressure, the valve may inadvertently open resulting in serious injury.
- Remove the safety valve prior to performing any pressure testing of the system. It is recommended that valves with welded inlets be hydrostatic tested using hydrostatic test plugs and caps supplied with the valves.
- 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 periodically tested and reconditioned to ensure correct function.
- For further information including adjustment, maintenance, cleaning lapping and detail illustrations, obtain the appropriate Operation and Maintenance Manual from the following table. These manuals may be requested from the factory or are available at www.tycovalves.com.

Valve Model	Operation and Maintenance Manual
Series 800, 900 OMNI-TRIM	IS-V3117
BP OMNI-TRIM	IS-V3117A
JOS, JBS, JLT-JOS, JLT-JBS	IS-V3137A
JOS-E, JBS-E, JLT-JOS-E, JLT-JBS-E	IS-V3137B
JO, JB OVER T	IS-V3175
HS/HC	IS-V3100
HCI ISOFLEX	IS-V3143 (Valves shipped prior to 1998)
HCI ISOFLEX	IS-V3143A (Valves shipped from 1998)
HSJ	IS-V3146
HC/HCA	IS-V3147
HC/HCA ISOFLEX	IS-V3147A
HE	IS-V3155A
HE ISOFLEX	IS-V3155B
HNB, HNP, HN	IS-V3167
HPV and APS2	IS-V3160A
HPV-ST and APS2	IS-V3165A
HL	IS-V3184

Service Technicians are available to assist with your installation or other field problems. Call your nearest Tyco Valves and Controls representative.



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 persons voids the product warranty and may cause damage to equipment and serious injury or death to persons.
- 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 Tyco Valves & Controls may result in a failure of the safety 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 applicable Tyco Valves & Controls 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. Tyco Valves & Controls does not warrant that the Specifications are current and assumes no responsibility for the use or misuse thereof. The Purchaser should verify that there have been no changes to the Specifications prior to use.