

PRESSURE RELIEF VALVE INSTALLATION INSTRUCTIONS

1. Introduction

Pressure relief valves are precision instruments. Correct installation is essential for plant, property, personnel and public safety. Failure of a pressure relief valve can lead to catastrophic overpressure of equipment and/or the release of fluid under pressure. The fluids may be hazardous and all precautions should be taken to ensure safe disposal.

2. Storage & Handling

Cleanliness is essential to the satisfactory operation and tightness of a pressure relief valve. Every precaution should be taken to ensure that dirt or other foreign matter does not enter the valve.

- Valves that are not immediately installed in service should be stored indoors.
- Inlet and outlet covers should be left in place until the valve is to be installed.
- Valves should be moved and installed with the stem in the vertical position.
- Care should be taken to keep the inlet and outlet clean.

3. Receiving Inspection

A visual inspection of the valve should be made when it is first received. Any problems should be recorded and reported to the manufacturer or his local representative. Points that should be checked include:

- Looking for any shipping damage.
- Confirming the nameplate data against ordering documents.
- Verifying the factory wire seals are in place.
- Storing properly if the valve will not be installed immediately.

4. Confirmation of Set Pressure

Before the valve is installed, it is important to confirm the set pressure. This step should only be performed by trained personnel using proper test equipment. If trained personnel and/or proper test equipment are not available, this step should be skipped. Use of improper test procedures or equipment can damage the valve and will void any warranties.

5. Confirmation of Seat Tightness

After the set pressure has been verified, the valve's seat tightness should be checked using the procedures outlined in the appropriate maintenance manual. As a general rule, seat tightness testing is performed at 90% of the set pressure. This testing should only be performed by trained personnel using proper test equipment. If trained personnel and/or proper test equipment are not available, this step should be skipped. Use of improper test procedures or equipment can damage the valve and will void any warranties.

6. Inspection of Inlet and Outlet Piping

Before a pressure relief valve is installed in service, the upstream and downstream piping should be inspected for foreign matter such as welding beads, pipe scale, and other material that could damage the valve during relief. Wherever possible, the system should be thoroughly purged before the valve is installed.

7. Pressure Relief Valve Installation

Pressure relief valve performance can be adversely affected by improper installation. To ensure good performance, the following guidelines should be followed.

- Always install pressure relief valves upright with the stem in the vertical position and the inlet at the bottom.
- Avoid mounting valves close to equipment that can cause pressure fluctuations, such as compressor discharge lines.
- Avoid installing valves close to equipment that emits excessive heat.
- Install valves close to the pressure source so that the inlet pressure loss is no more than 3%.
- Mount valves away from equipment that may cause turbulence, such as reducing stations, orifice plates and nozzles, and other valves and fittings.
- Make sure all inlet and outlet piping is properly supported to avoid putting an excessive load on the valve. Provide drainage from the piping or from the valve body.
- Remove the inlet and outlet flange protectors. Any extraneous materials inside the valve body or nozzle should be removed.

- Make sure inlet piping is at least equal to or greater than the inlet size of the valve. Outlet piping should be equal to or greater than the valve's outlet size.
- On bellows valves remove the plastic shipping plug from the bonnet. Discharge vent in a safe direction.
- Tighten all inlet and outlet flange bolts evenly.
- Leave enough room to allow for in-line maintenance and adjustments.

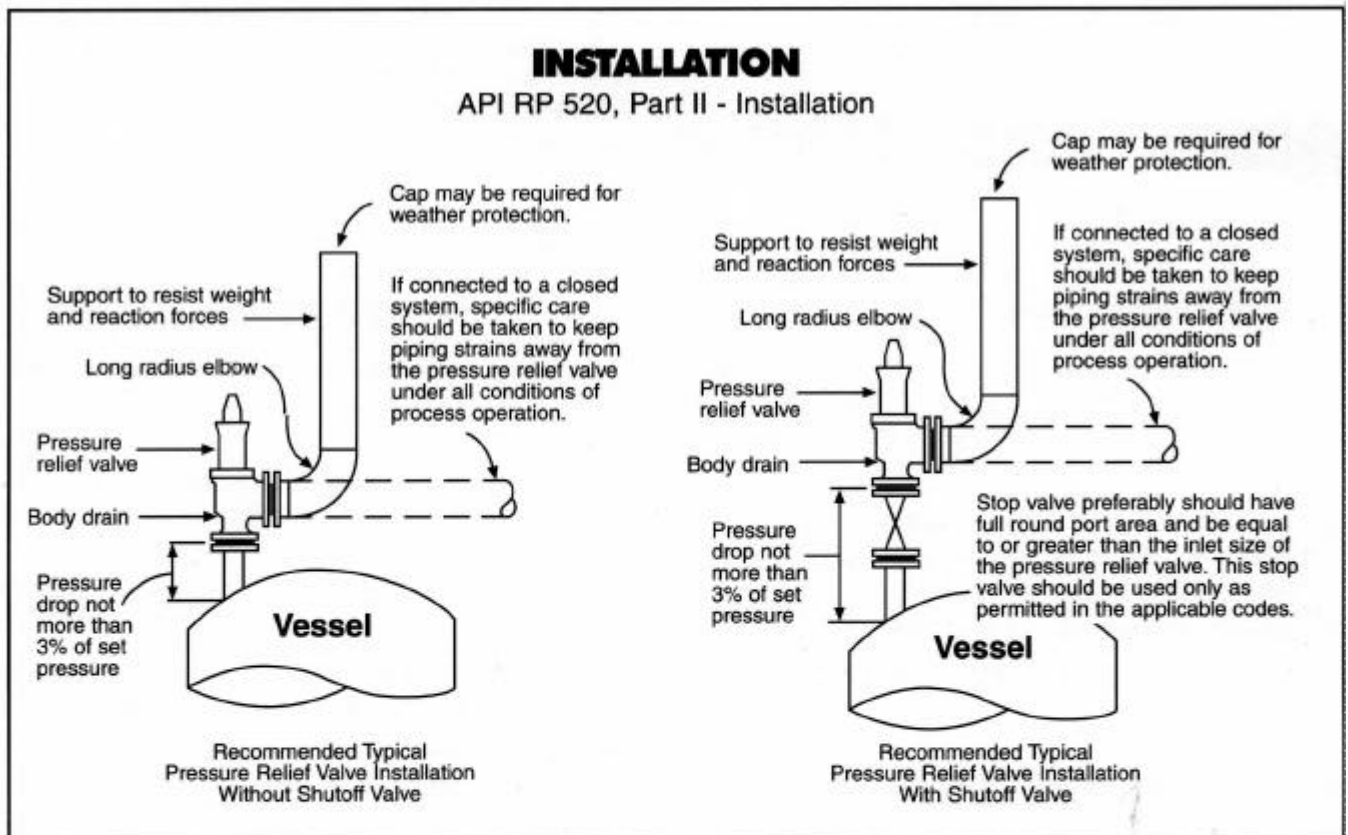
8. Lifting Levers

Lifting levers are provided on some valves to allow the user to manually verify that the valve trim is free to move when the operating pressure exceeds the set pressure.

To prevent stem damage, the valve should have a minimum of 75% of the set pressure under the disc before operating the test lever. In addition, the valve should never be carried by the lever as this can move the disc off the seat, resulting in damage to both parts.

9. System Start Up and Testing

It is recommended that the valve be isolated during pressure testing of the system, either by blanking or closing a stop valve. If gagging is used, extreme caution should be used to avoid damaging the valve stem or seat by overtightening the gag screw. Gag screws should be installed hand tight and should always be removed after system testing has been completed.



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