

■ Gate valves ■ Over-pressure-safety devices

If a closed gate valve filled with a medium (e.g. water) (fig. 1) is heated, an unacceptably high pressure may develop inside the body. The level of increase in pressure that may occur depends upon the percentage volumes of the fluid and vapour phases and on the increase in the temperature of the medium. Overpressure inside the body can adversely affect the operation of the gate valve. Moreover an unacceptably high pressure load can result in the failure of the pressure-retaining components.

Figure 2 shows the increase of pressure according to percentage volume and temperature changes, when water is in the body.

Attention: If there is a possibility of an unacceptable pressure load of this kind developing inside the valve because of the way it has been fitted or the way it is used, the piping designer or operator must provide a suitable safety device.

Simple and effective protection against overpressure can be achieved by means of a hole in the seat ring or in the wedge on the side facing the pressure (Fig. 4). This hole prevents the pressure inside the body from exceeding the operating pressure; however, the gate valve can then only provide a seal in one direction. If this is the case, the direction of flow is shown by an arrow on the body. Another possibility is an equalizing pipe connection to the third room (Fig. 5) with the pressurized side.

In case an outside overpressure safety device should be assigned body has to be ordered with an appropriate closed stud (Fig. 1 and 3).

Fig. 6 includes a pressure equalizing pipe to reduce the opening torque with differential pressure, this configuration also enables the „3rd chamber“ to be relieved to the high pressure side. Bi-directional flow characteristics are achievable with this design.

Fig. 1

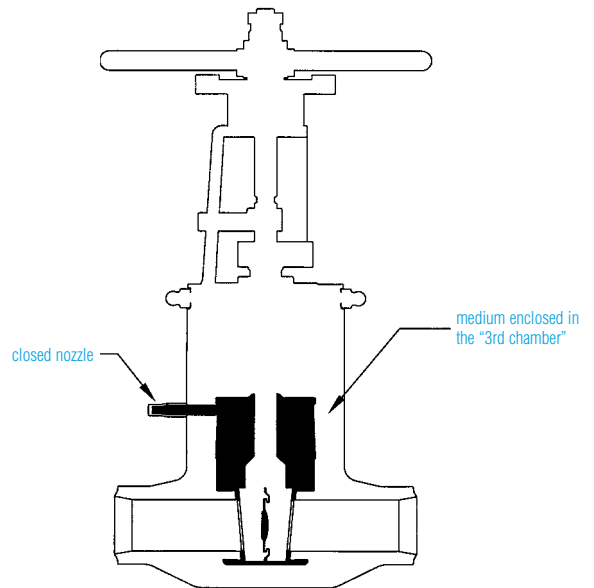


Fig. 2

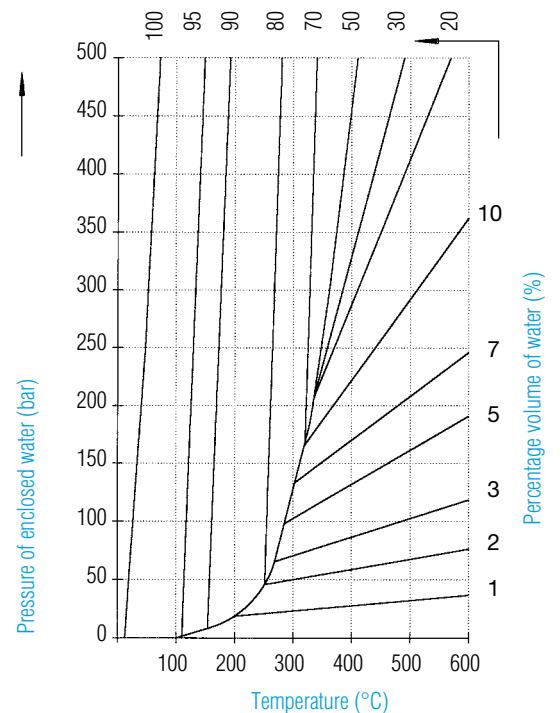


Fig. 3: With safety valve

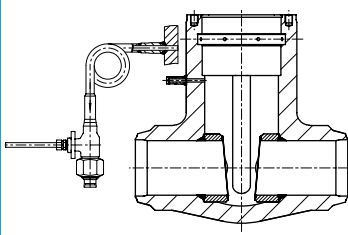


Fig. 4: With hole in the disc or seating

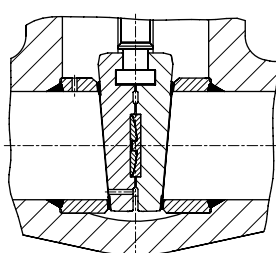


Fig. 5: With equalizing pipe to the 3rd chamber

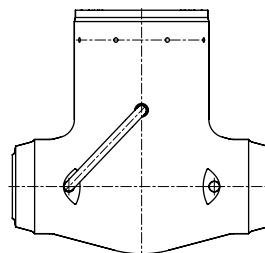
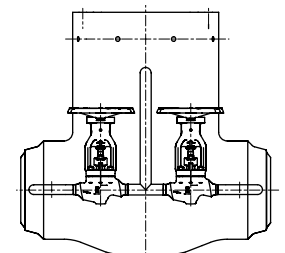
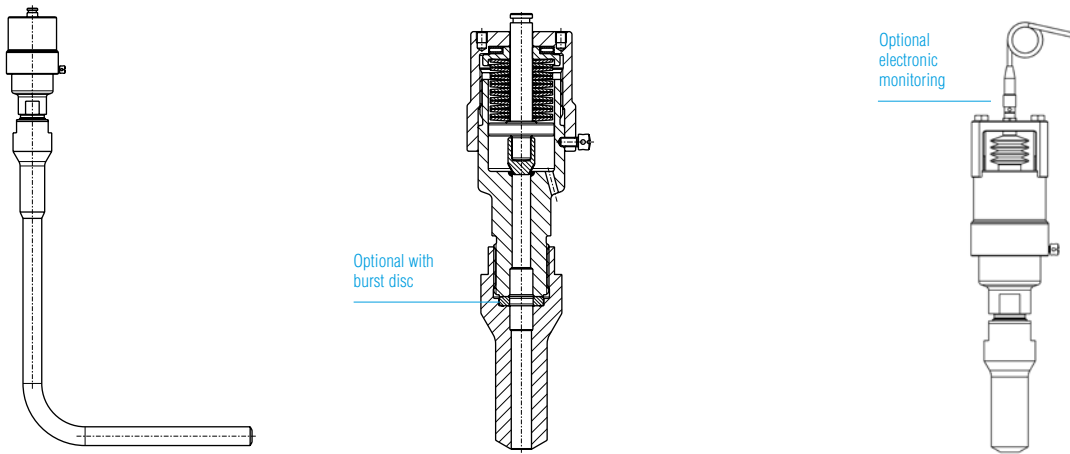


Fig. 6: With equalizing pipe and bypass valves

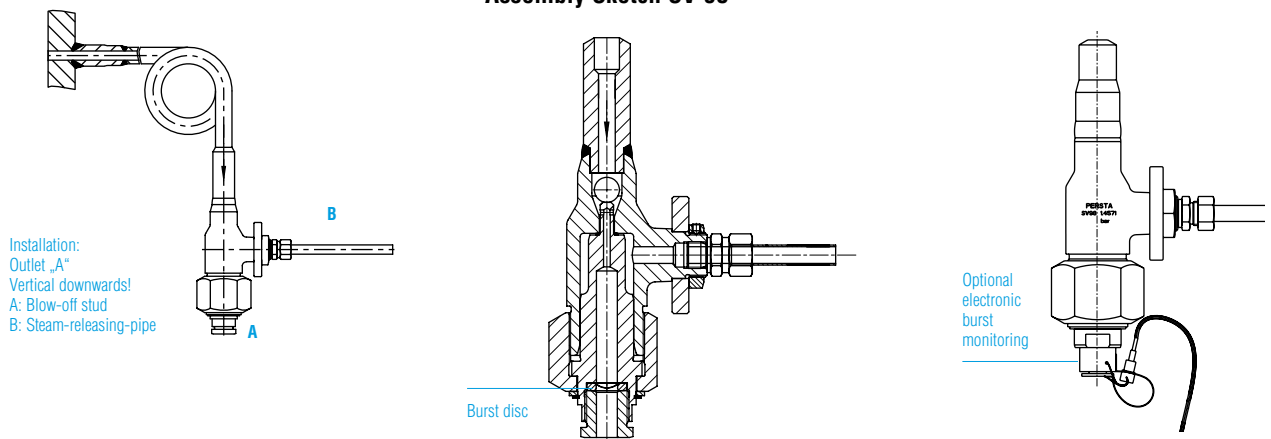


■ Gate valves ■ Over-pressure-safety devices ■ PERSTA Type SV 97 / SV 98 / SV 99

Assembly Sketch SV 97



Assembly Sketch SV 98



Assembly Sketch SV 99 with lockable high pressure globe valve

