

Stop check valves

In many applications the use of a combination of a stop valve and a check valve is used.

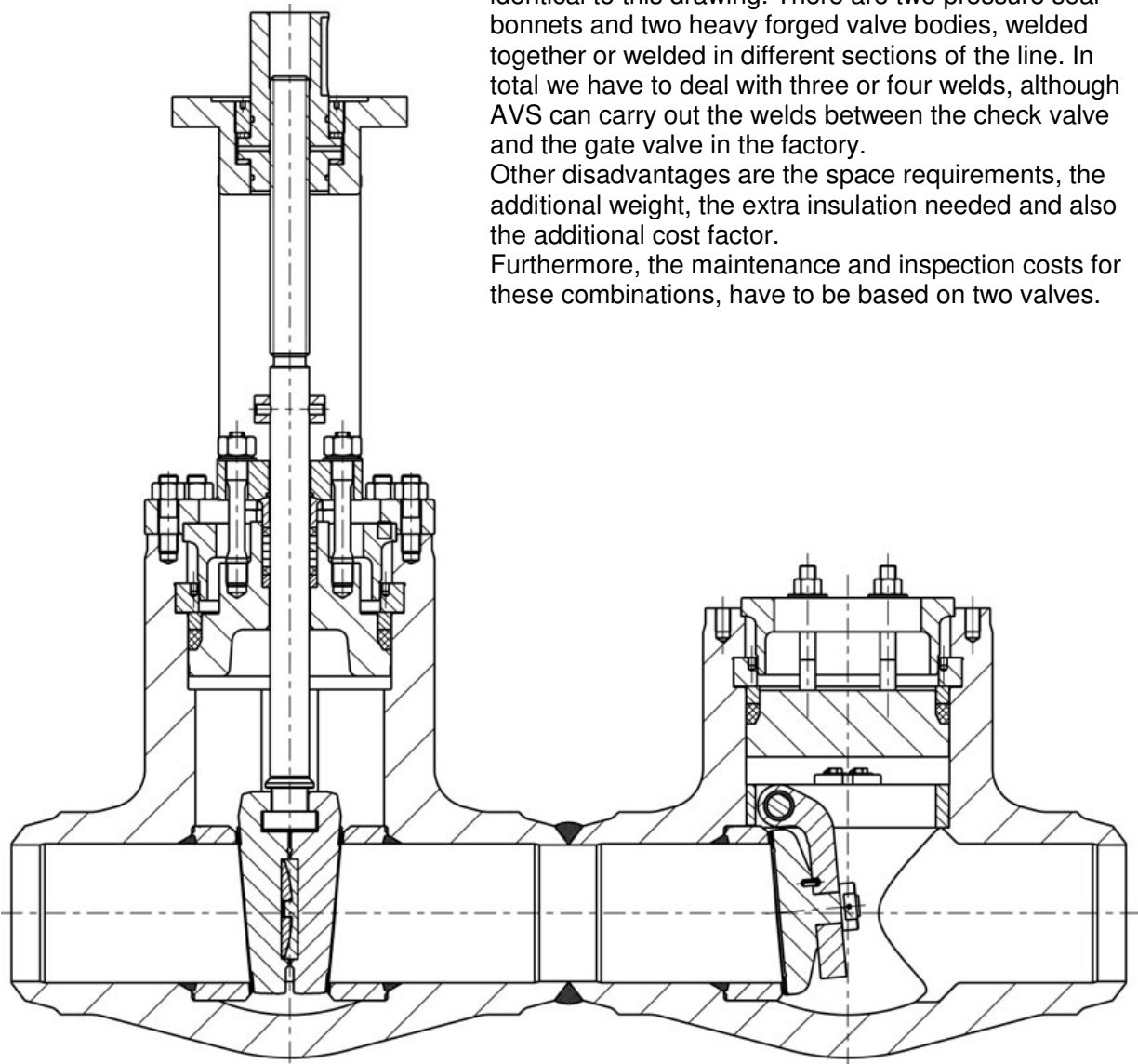
This results in two pressure containing parts, two potential leak paths and the added issues of space and especially weight.

Based on globe valves, stop-check valves have been developed in the past. By mounting a loose disk on the spindle, the disk can function as a check valve. The main disadvantage is that these valves in most cases have not been designed as stop check valves. A second disadvantage is the fact that the pressure drop over this type of valves is high, due to the change in flow direction.

If we build the start stop combination, based on two different pressure-containing bodies, the unit would be identical to this drawing. There are two pressure seal bonnets and two heavy forged valve bodies, welded together or welded in different sections of the line. In total we have to deal with three or four welds, although AVS can carry out the welds between the check valve and the gate valve in the factory.

Other disadvantages are the space requirements, the additional weight, the extra insulation needed and also the additional cost factor.

Furthermore, the maintenance and inspection costs for these combinations, have to be based on two valves.



Above: Tapered parallel slide gate valve and swing check combination (source Persta)

Latest Developments

New developments within Persta have combined the tapered parallel slide gate valve, with a full swing check valve, brought together in one valve body.

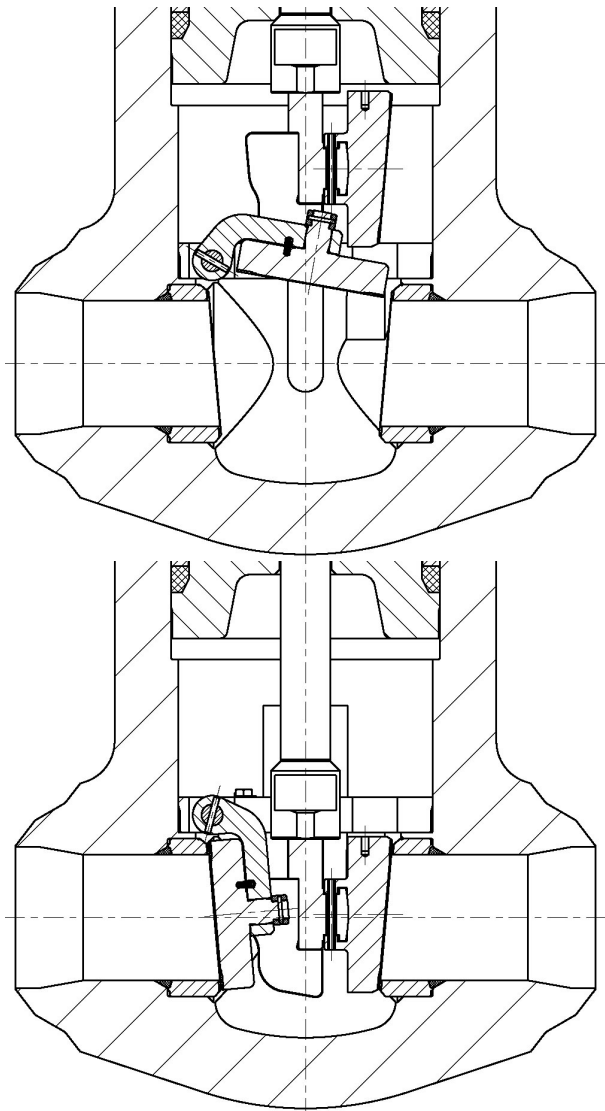
Based on a standard gate valve body and standard stock items a stop-check valve can be created.

With a swing check valve and the straight through pattern of the valve body the pressure drop is negligible. When the valve is required to be closed an additional disk is lowered on a second downstream seat.

The mounting arrangement of the second disk provides a positive closing force on the swing check disk resulting in a tight bidirectional closure.

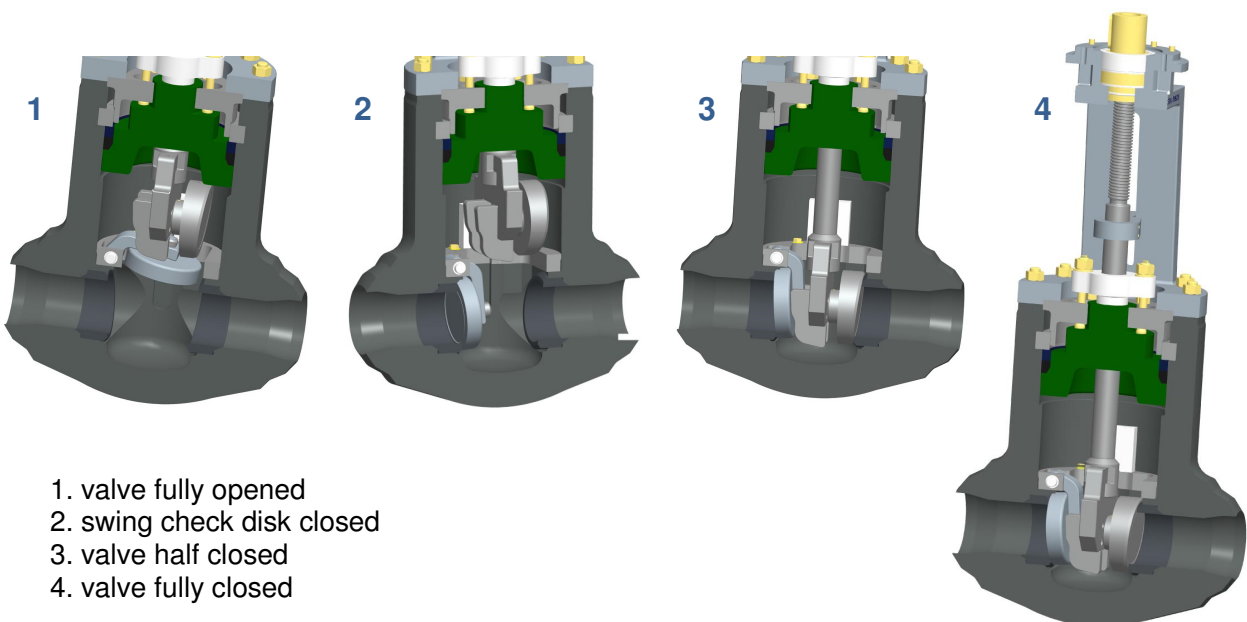
Now the stop-check valve is performing as a tapered parallel slide gate valve.

Based on standard Persta hollow forgings, high-pressure equipment can be built. It is evident that the costs of a combined stop-check valve are much lower than the conventional use of a separate stop valve and check valve. Especially where pressures and temperatures are high, the features of the new Persta stop-check valve provide many advantages.



Right and below:

Persta stop-check gate valve in open and closed position. (Source Persta)



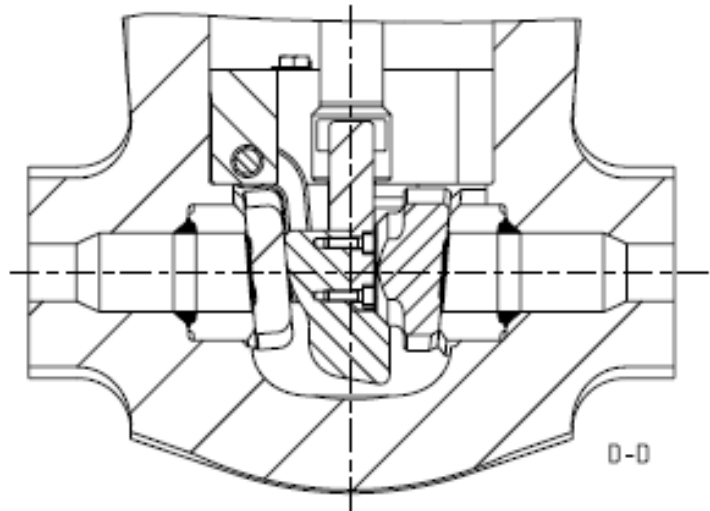


Applications:

In the industry many possible applications can be identified.

In many power stations where there are two gas turbines, two HRSG's and one steam turbine, a check valve and a stop valve are installed in the main steam lines. Depending on pressure, temperature and capacity a **12"**, **16"** or **20"** valve combination brings a better performance and a more economic approach.

Our gate-check valves are available in different materials, such as **ASTM A 182 F12, A 182 F 22,** and **A 182 F 91**



Every high pressure pump is fitted with a check valve. If this check valve can be combined with a stop valve in the same line, a significant saving can be achieved. High pressure forged check valves and gate valves provide weight and subsequently cost savings.

Our gate-check valves are available in different materials, such as the **EN** equivalent of **ASTM A 182 F1** and **DIN /EN WB 36 (1.6368)**. (**ASTM A 533 Gr B, C and D**)

In the oil and gas industry, produced water is re-injected into the well. These pumps do have a check valve and a stop valve. Combining it into the Persta stop-check valves gives a considerable saving in space and weight. Please check the availability of materials, such as **Duplex, Super Duplex** and **254 SMO**.

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