



The forgotten items; the isolation valves and vents & drains

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Demands on valves in district heating applications



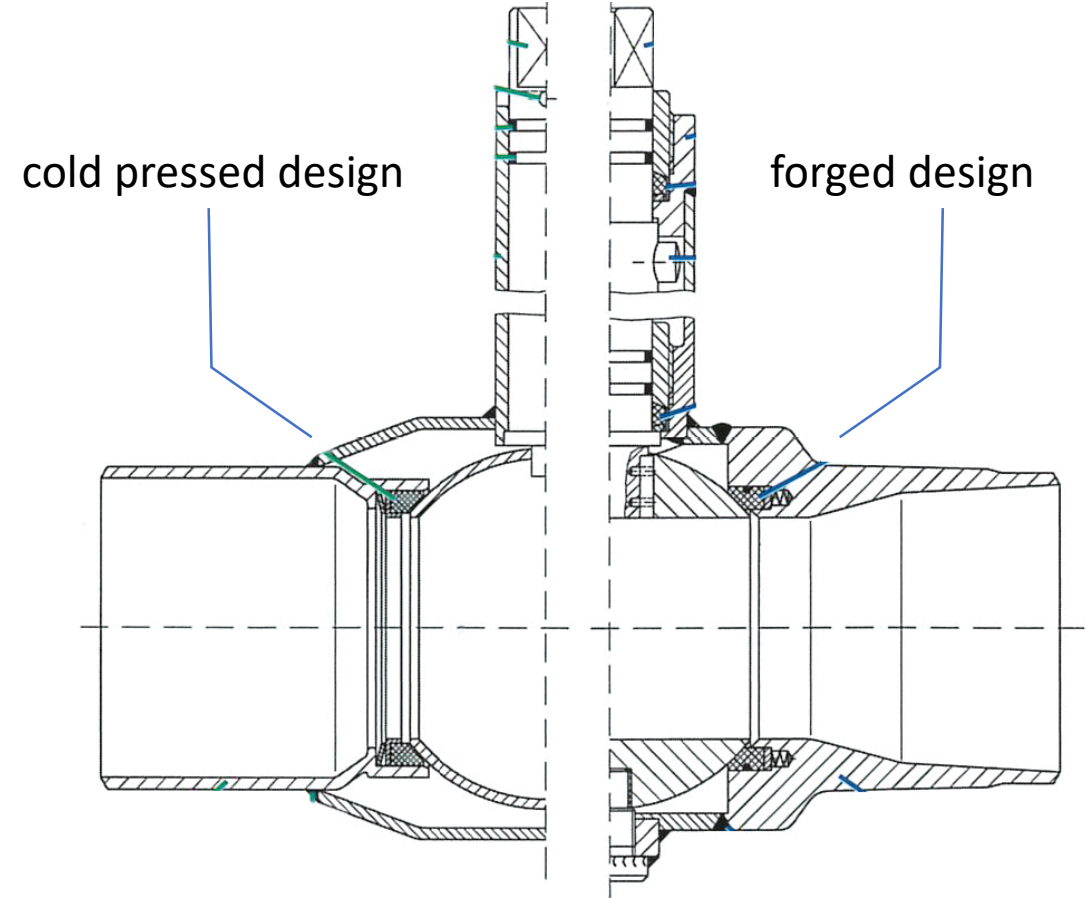
- Reliability
- shut off
- operating under extreme loads
- conformity with European standard EN488

Advantages of using ball valves



- safe shut-off
- low flow losses
- safe absorption of tensile and compressive forces and bending torques

The district-heating ball valve for direct underground installation



Vent and drain valves

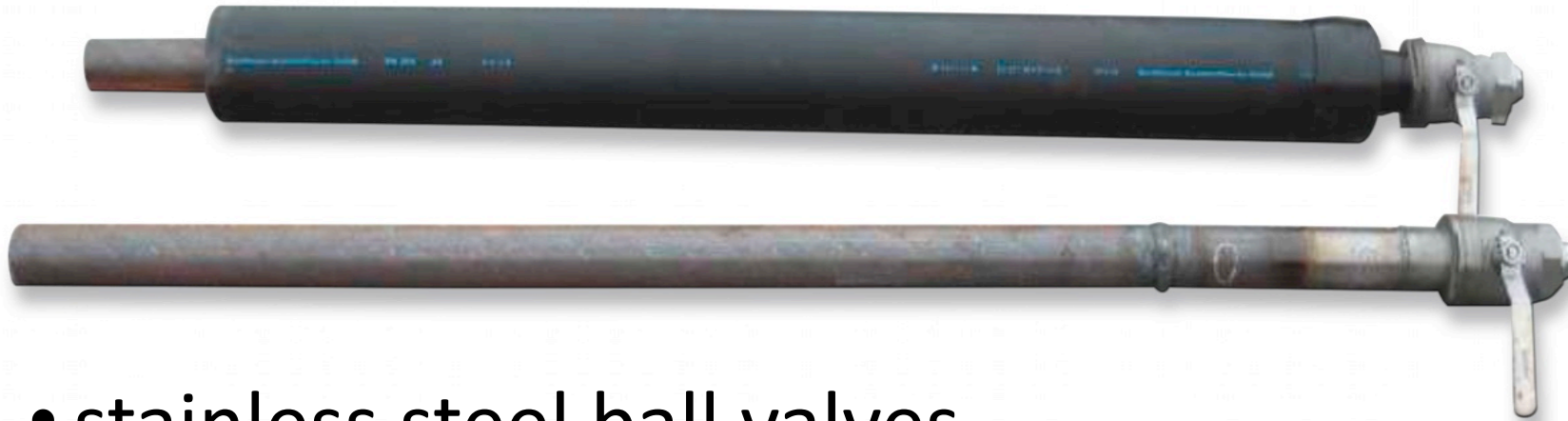
What should be avoided?



- installing a steel ball valve without any protection against corrosion
 - The effect of water and dissolved road salt

Vent and drain valves

Which types are available?



- stainless steel ball valves
- steel extension pipe, to provide best conditions for welding (black seam)

Vent and drain valves

Which types are available?



- steel with complete pre-insulation accord. To EN 253
- Developed in cooperation with „Rheinenergie AG“

Vent Solution



Example of damaged ball valve in Cologne



What can happen to underground valves

- non-visible corrosion damage to a drain and vent tap
- after manual operation, mechanical weakening of the corroded material
- sudden dangerous discharge of hot water/steam
- *fortunately, no operating personnel was in the vicinity of such a tap. However, we recommend regular inspection in order to detect any early corrosion*



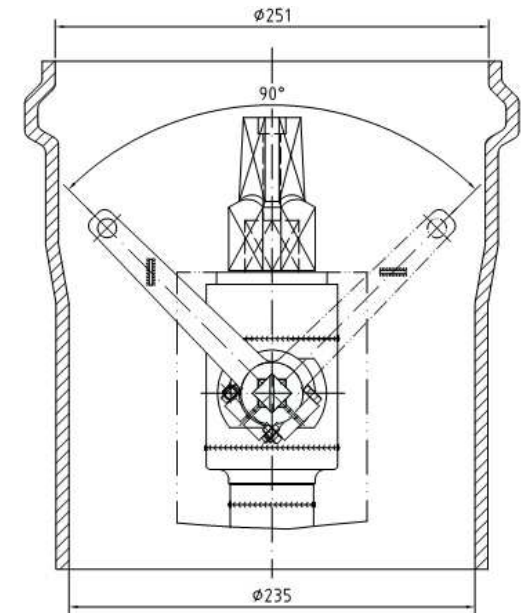
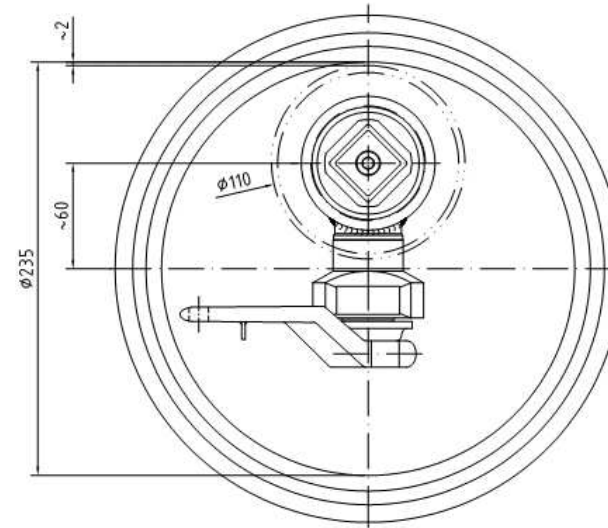
Cause of damage

- ***Caution! End caps are only splashproof***
- especially in winter, when the operating temperature is high, water & dissolved road salt can flow into the roadbox.
- water accumulates and creates micro-leak paths, penetrates into the pre-insulation and leads to corrosion damage.



Avoidance

- *for underground ball valves:*
PE sleeve pipes with screw caps
- *for drain and vent ball valves:*
pre-insulation up to the top edge
(lowest temperature load) + additional
PE protective pipe or steel-pipe, each
with cover



Error to avoid at the construction phase

- Danger also exists with actuating mounting for direct buried ball valves.
- The reason for BÖHMER ball valves, however, is sealing.



Any Questions?



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