

HM_008

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To whom it may concern

Set pressure tolerance of HEROSE safety valves

According to pressure equipment directive 97/23/EG (PED) a temporary pressure increase of 10 % above the maximum allowable working pressure (MAWP) is allowed (Annex 1, chapter 7.3).

To the definition of AD2000-Merkblatt A2 "normal"-safety valves opens within a pressure increase of 10% (Full lift – safety valves within 5%) and discharge the required mass flow. This means that the set pressure of a safety valve not comply to the MAWP + 10%, but only to the MAWP of the protected system.

Example:

- | | |
|---|---------------------------|
| - MAWP of the system: | 10,0 bar |
| allowable temporary pressure increase: | 10 %, equates to 11,0 bar |
| - max. set pressure of the safety valve : | 10,0 bar |
| open pressure safety valve: | 10 %, equates to 11,0 bar |

To standard DINE EN ISO 4126 – 1 "safety valves", chapter: 7.2.1 a) the tolerance of the set pressure is defined as: "set pressure \pm 3 % of set pressure or \pm 0,15 bar, whichever is the greater".

The allowable set pressure tolerance to the American ASME-Code Sec. VIII Div. I, UG134 (d) (1) is identical.

In AD 2000-Merkblatt A2 no tolerance for set pressures is defined.

For set pressures lower than 1,5 bar the regulations are inconsistent with the requirements of the PED: safety valves have to discharge the max. possible mass flow certain at a pressure increase of 10 % above the set pressure.

Therefore HEROSE safety valves are above the requirements of these standards set within a tolerance of -0% and $+3\%$. For set pressures lower than 1,0 bar apply -0 and $+0,1$ bar. This ensures that safety valves does not open below their designated set pressure and if the plant operating pressure is very close to the set pressure the safety valves will not start to leak.

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