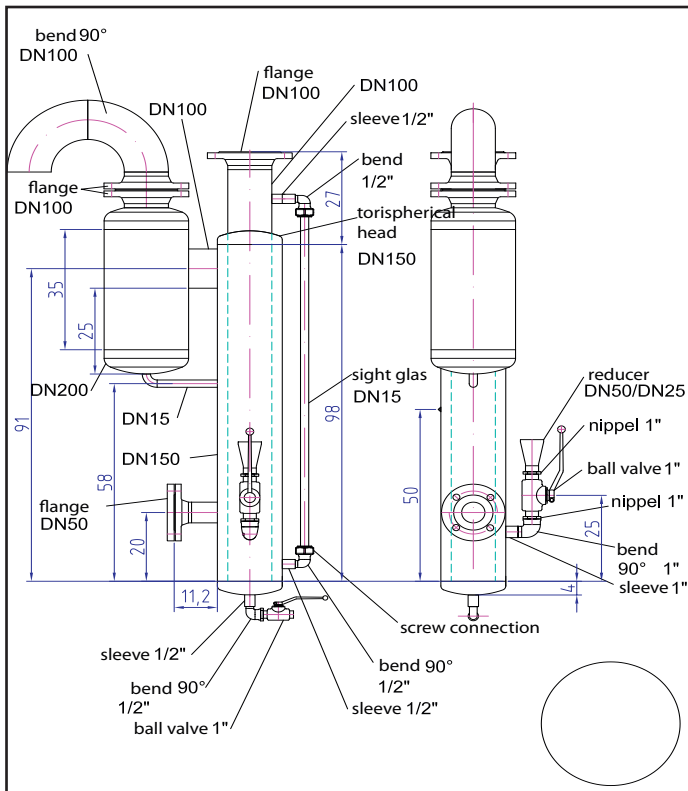




over-/underpressure safety lock

- safety device for tanks to store raw material for the polyurethan production
- protection against over-/ underpressure while simultaneously protecting the stored media against atmospheric influences
- to avoid a vacuum caused implosion/ an overpressure cause explosion
- main elements:
- 1 DN 100 inner- & 1 DN 150 outer tube, 1 expansion trap DN 200 & 1 sight tube DN 15, each 1" ball valve to empty and fill the over-/underpressure safety lock and 1 socket DN 50 for optional measurement technique at the outer tube
- material standard-steel S235JR, resistant against the sealing liquid and the stored media
- combines the advantage of bursting discs and safety valves



functional description

- to be fixed to the tank, installation according to the flow direction mark
- based on sealing liquids and on the principle of communicating tanks
- to be filled with an inert, non-water based sealing liquid up to the marking of the sight tube
- the length of the outer tube starting at the lower opening cross section of the DN 100 inner tube up to the ending of the outlet pipe enables the return of the sealing liquid above the regular filling level
- optional: filling level switch (LSA-) – in order to detect a filling level of the sealing liquid in the outer tube, which is too low (e.g. vibration limit switch)
- possible SPS integration
- at an underpressure of 100 mbar: pressure equalization via the DN 15 PA-tube
in case of higher underpressure the sealing liquid will be drawn into the tank, so that the cross section of the escape tube (that has to be installed as unlockable) will be available for the pressure equalization.
- in case of an overpressure the sealing liquid will be pressed out of the escape tube, so that the overpressure can escape
- the opening of the escape tube has to be directed in a way that neither any human nor any environment will be endangered by the escaping medium in case of a pressure surge
- sufficient collecting vessels need to be available, so that the sealing liquid will not be discharged during pressure equalization but will be returned to the over-/underpressure safety lock
- when filling the storage tanks the volume flow must not exceed 1200 l/min

Technical Data of the over-/underpressure safety lock

parameter	value
dimensions w x h x d	300 x 1250 x 270 mm
weight (empty)	ca. 56 kg
weight (with Mesamoll®-filling)	ca. 66 kg
material	S235 JR, PA
maximum operation temperature	50°C
response overpressure	0,1 bar
response underpressure	0,1 bar

advantages:

- no bonding despite the material's tendency to bond
- no destruction when reaching the response pressure
- cost-efficient due to a long life time
- little required space
- easy installation
- easy handling
- easy check and operation
- no wear parts; only weekly filling level maintenance necessary

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