MANKENBERG

deep drawn from special materials, for ex. sea water-resistant stainless steels, Titanium, Super Duplex, Hastelloy®, CrNiMo steel (316L) etc.

long operational lifespan, easy installation, minimum space required 1

standard body surface
Ra ≤ 1.6 µm

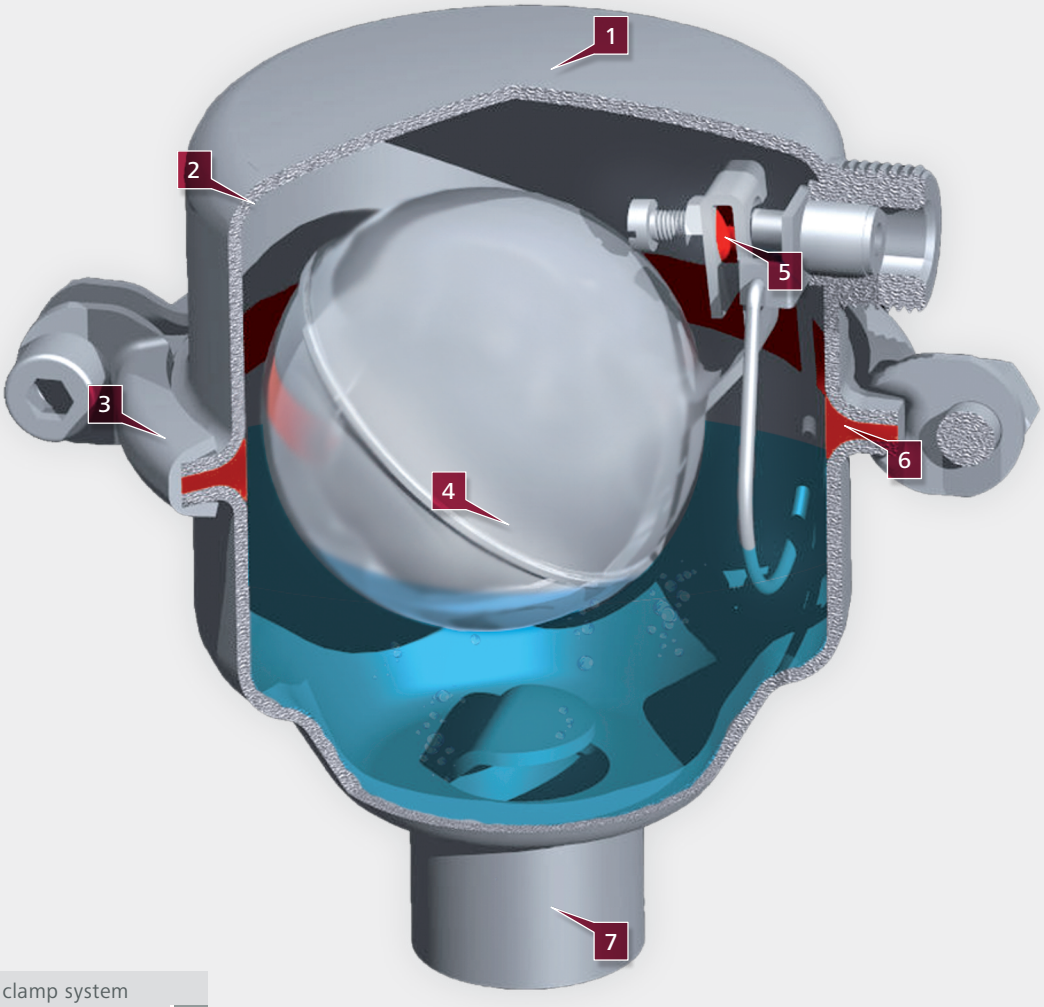
prevents unwanted adhesions, easy-to-clean 2

sturdy, simple valve mechanism

reliable function, easy-to-maintain, can be disassembled without any specialist knowledge 5

optional elastomers

adaptable to a variety of application conditions 6



Mankenberg clamp system

easy-to-maintain 3

internal parts and float available in special materials, for ex. sea water-resistant stainless steels, Titanium, Super Duplex, Hastelloy®, etc.

prevents unwanted adhesions, easy-to-clean 4

a wide variety of connection types: DIN, ANSI flanges, socket end connections ...

no adapters or fitting pieces required 7

Compact Standard Bleeding Valve made from special Materials EB 1.12

Continuous Bleeding and Venting Valve in Action

MANKENBERG

Compact Standard Bleeding Valve made from special Materials — EB 1.12

float-controlled operational bleeding valve for all types of pipelines, tanks etc., thanks to soft seal especially tight-closing, outlet at the side | usable for nearly all liquids (petrol, oil ...), available in the ozone-resistant version | completely made of deep-drawn CrNiMo-steel (316L) – surface finish of the body Ra ≤ 1.6 µm | easy-to-maintain owing to the clamp system | corrosion-resistant, very lightweight and compact | available in special materials, such as sea water-resistant stainless steel, titanium, Hastelloy® etc.

DN	25 - 100	PN	16
G	¾ - 2	T	130 °C
P	0 - 16 bar	Q	248 Nm^3/h

HIGH GRADE

Ventilation of Pipelines for the Loading of Oil on Ships

Transporting crude oil through pipelines sometimes is neither economically viable nor technically feasible. Therefore, the oil is often transported in large tank ships to its place of destination. Oil tankers have as advantages that they can transport oil as well as further processed crude oil products. This allows the petrochemical industry to settle directly at the oil excavation site, where the first production steps of the processing chain can be accomplished.

A lading port for petrochemical products or crude oil consists of tank installations for the storage of the product and of pipelines, whose length varies between 2 and 5 kilometres. The product is then pumped into the ship's cargo hold through these pipelines. Once the pipe connection has been established, the pumping process starts. It is initially relatively slow because the entire pipeline is still completely filled with nitrogen. During the previous filling process, the pipeline was pigged clean and nitrogen gas was fed in to drain the residual medium.

In the beginning, the flow velocity of the filling process is at 0.5 m/s to ensure that no pressure surges will be generated. Once the major part of the nitrogen gas has escaped, the pressure within the pipeline slowly rises until economical flow velocities of more than 3 m/s have been achieved – depending on the product being laden.

Mankenberg's bleeding and venting valves are used to discharge the nitrogen gas from the pipelines. Startup bleeding valves are installed at the pipeline endpoints whilst pipeline high points are furnished with continuous bleeding valves of the EB 1.12 type, which safely discharge gas bubbles. The pipeline sections suitable for the bleeding process have been chosen in close cooperation with the plant engineer. The valve is adjusted in such a manner that it discharges nitrogen gas during normal operation, but remains closed during the pigging process that is normally performed at a pressure higher by abt. 3 - 4 bar. The valves have been designed to suit the lower density of petrochemical products and equipped with the corresponding seals.

Effective bleeding and venting with the EB 1.12 valve considerably cuts the operational costs of the tank installations because the entire pipeline is available for transport without any trapped air thus reducing the loading time of the ships.