

AZO aeration pad in hygienic design for discharging flow-resistant powder

Reliable discharging

Can be dismantled
without tools

Aseptic design

Shock pressure
proof to 10 bar

WIP and CIP
cleaning

Preferred applications

The AZO aeration pad in hygienic design is primarily used to assist discharging of flow-resistant powdery products from containers in hygienically sensitive areas. It is used especially in areas where rapid cleaning, possibly WIP or CIP cleaning, is required.

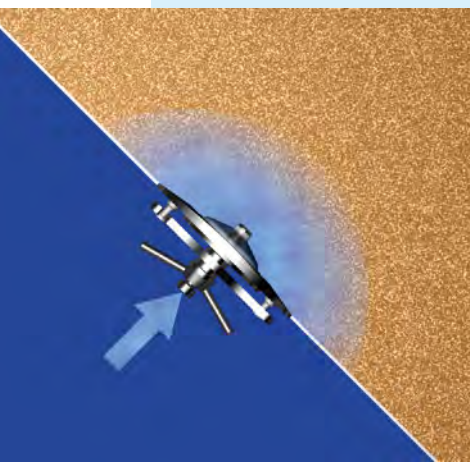
Special advantages

- Safe discharge of flow-resistant products with air or gas
- Can be dismantled without tools
- Inner surface tightly sealed by means of aseptic seal, wet cleaning possible when installed (WIP)
- Drying of the pad when installed
- Shock pressure proof to 10 bar excess pressure

System design

The nozzle component is sealed to the mounting flange by means of an aseptic seal. The design is based on DIN 11864-2, form A with the relevant modifications, which are necessary for level-surface sealing. With this design, the space required to fit an o-ring is limited by connecting the groove and collar components in such a way that the o-ring moulds itself to the interior of the container and, in doing so, creates a cavity-free seal.

THE INNOVATION



Modes

1. Operates as an aeration device to assist discharging, admission flow with process air or gas.
2. As with 1, but with additional wet cleaning, admission flow with process air or gas, subsequent cleaning process with cleaning fluid, thereafter drying with conditioned air in an installed or dismantled state.

How it works

Aeration

Air or gas reaches the radial holes through the axial hole in the nozzle component and flows into the cavity under the pad. The sealing lip on the outer edge of the pad is raised with the increasing pressure and the gas flows into the container. Here the air carries along and fluidises the surrounding product. When the pressure falls the sealing lip of the pad returns to its original position again whereby the pressure begins to rise again as gas then flows through. This

process repeats itself as long as the aeration pad is pressurised with gas. The vibration of the pad actively contributes to discharge aid.

How it works

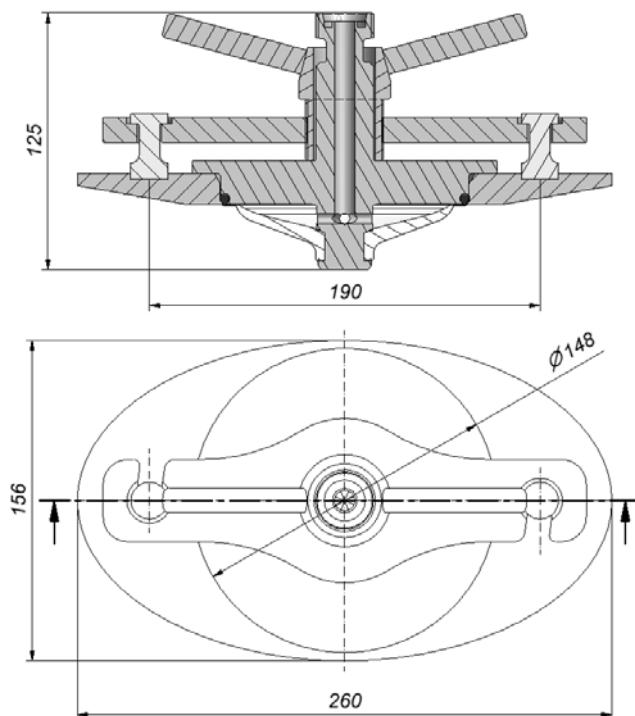
Cleaning

If cleaning fluid is fed into the pad instead of air or gas, the dead space-free interior of the aeration unit will be rinsed and any possible traces of product will be flushed out. For drying, dry air simply needs to be passed through the aeration pad. The duration of the rinsing and drying cycle depends on the degree of soiling and the quality of the dry air. Fluid cleaning is not a prerequisite when using this aeration pad but an option to achieve a better cleaning result.

How it works

Manual cleaning

For dismantling without any tools the T-screw is released far enough that the clamping brace can be released from both pins of the inlet flange by means of a circular motion. The clamping brace and T-screw can now be detached. The nozzle component can be removed from the inlet flange. The seal, which caps the opening fitting aseptically, stays on the nozzle component, like the pad and can later be removed. All loose components on the aeration unit are suitable for automatic cleaning and sterilisation processes.



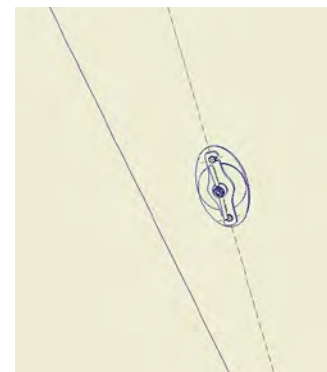
Aseptic connection

The seal in the centred bezel is shaped by connecting the groove-faced flange to the collar flange. When the contact surface of the groove-faced flange reaches the contact surface of the collar flange, the seal is brought to its final fitting position through a

contour in the collar flange. This construction ensures that the seal always changes its shape in the same manner regardless of how firmly the mounting units press onto the grooved and collar flanges.

Installation position

Any installation position is possible in connection with the elliptically conical flange fitting, primarily in symmetrical or asymmetrical hoppers with min. 400 mm diameter in the level of the fitting axis. Both pins on the flange fitting must always lie on the connecting line, which ends at the upper and lower hopper diameter at the same angular point.



Technical data

Temperature range

- Operating mode: -10°C to 50°C
- Cleaning: -40°C to 200°C

Materials

- Flange fitting, nozzle component and clamping brace: chrome-nickel-steel
- T-screw: chrome-nickel-steel with PTFE coating
- Seal: transparent silicone, FDA-approved
- Pad: transparent silicone, with approval in accordance with FDA

System design

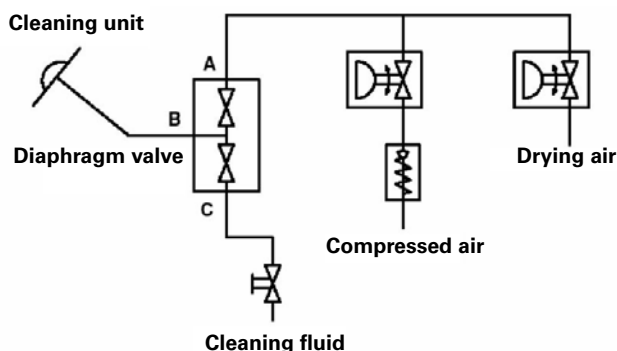
- Connections to the container aseptic flange connection with bayonet catch
- Supply via DN10 dairy coupling or Tri-clamp connections (optional)

Consumption:

- For aerating / discharging: 300 standard litres/min at 3 bar
- For purging depending on the degree of soiling: min. 20 standard litres/min
- For drying depending on the quality of the dry air at a temperature of approx. 50°C: approx. 1500 standard litres
- Operating pressure / supply pressure 3 bar
- Pressure in the container interior -1 bar to +0.5 bar
- Explosion over pressure 10 bar
- Noise level: 76 – 84 dBA, depending on the product and construction
- Weight: 3.8 kg, Flange fitting: 2.0 kg.

Control box for aeration pad

When only using in dry operations and wet cleaning takes place in a dismantled state, the aeration pad can be connected directly via a compressed air coupling socket. The compressed air supply is provided by a standard aeration pad controller built into a metal housing. For more sophisticated requirements in terms of hygiene and for dry operations with wet cleaning, the connection can be provided via a dairy coupling or a Tri-clamp connection. The valves should be adapted to the hygiene standard. The non return valve in the process control system is only needed if the aeration pad is installed within a shock pressure proof container.



The design is subject to change due to our continuous improvement program.