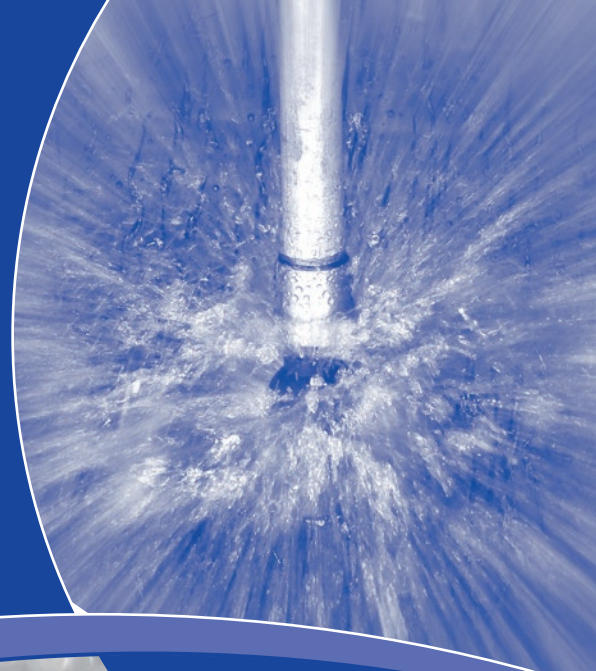
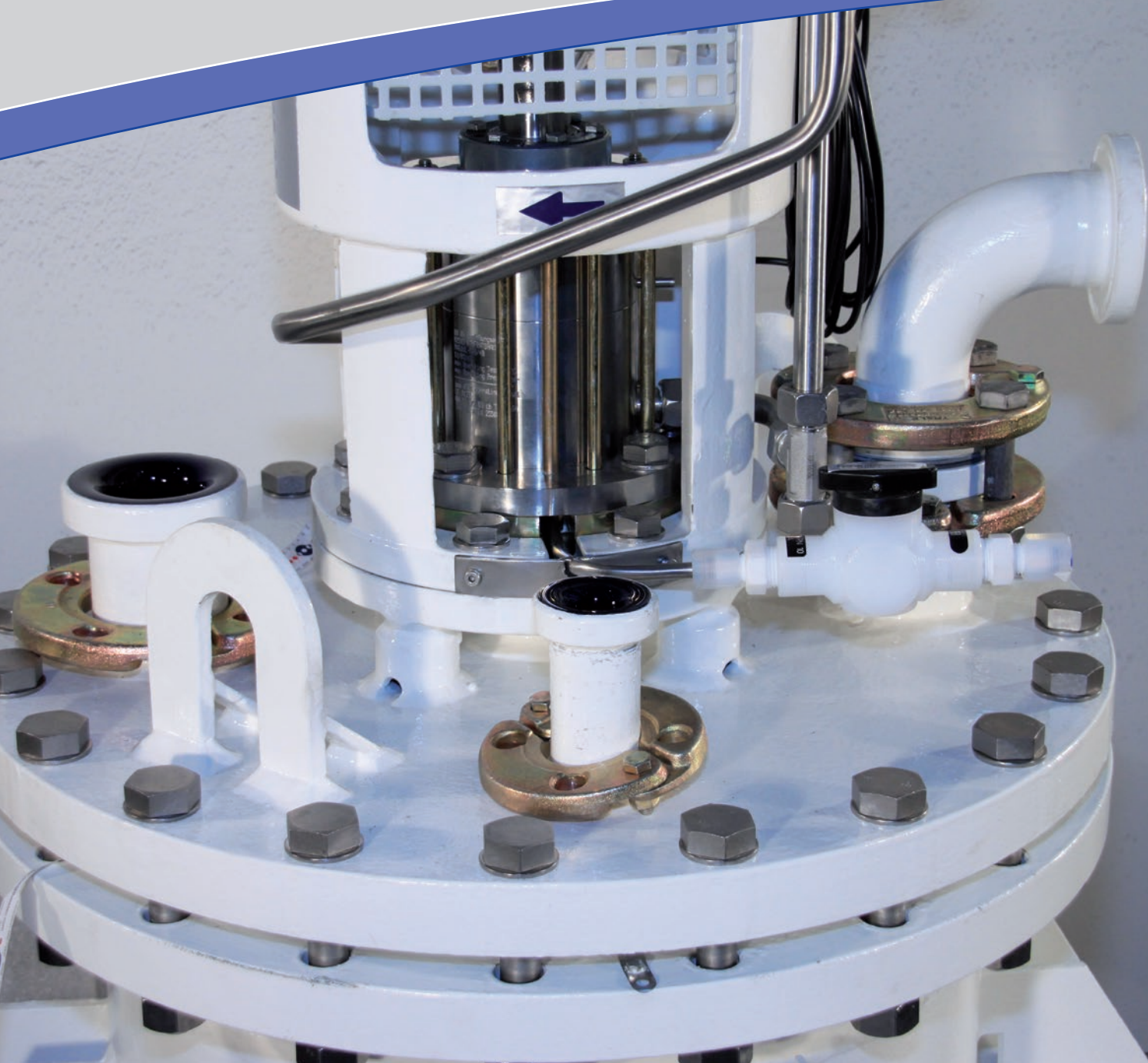


THALETEC

GMP- and CIP-Solutions





THALETEC offers a wide range of solutions to make glass-lined equipment fit for pharmaceutical and fine chemical applications.

THALETEC's solutions ensure that:

- that an optimal cleanliness from the outside is achieved
- that an optimal cleanability of the product-contacted surfaces inside the equipment is achieved

Furthermore, **THALETEC** offers a comprehensive range of cleaning technology and CIP-systems that are specially optimized for use with glass-lined equipment.

With this flyer we inform you comprehensively about the features and advantages of the solutions that you can only get from THALETEC. Please contact us so that we can assist you in the design of your. The following table shows the most important factors that can support an optimal glass-lined equipment.

Optimal cleanliness on the outside

Insulation and cladding



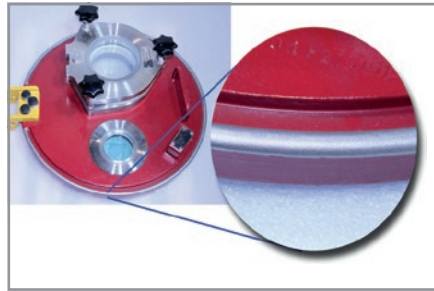
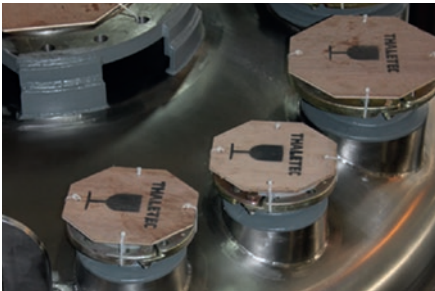
- Clean surfaces
- Good cleanability
- Corrosion resistance
- Supporting structure made of stainless steel
- Insulation with foamglass, glass wool, etc.
- Tightly welded insulation
- High energy efficiency

CleanEdge clamp screw connections

- Corrosion-resistant clamping bead for clamp screws
- No flaking paint
- Durable and maintenance-free solution

Stainless steel clamp bolts (S007) and flanges (S008)

- Durable functional reliability
- Corrosion resistance
- Secure and pressure-resistant connection of flanges

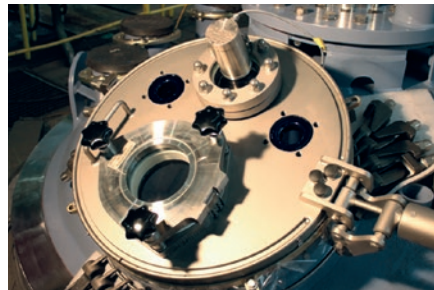


Pharma valve with cladding (K071)



- Bottom outlet valve with complete stainless steel cladding
- High operational reliability
- Good cleanability from the outside

QuickPort: stainless steel quick-opening cover (K022)




- Universal quick opening cover
- Completely made of stainless steel
- Universally applicable for nozzles from DN100 and all manhole openings
- Removable sealing element, cleanable and sterilizable

Components made of glass-lined stainless steel



- Glass-lined stainless steel components
- Good chemical resistance of the glasslined
- Metallic surface glass bead blasted
- Good cleanability and external corrosion protection

Optimum cleanability in the product space

Sealless fused-in sight glasses THALook, Viewport, Quickport (K023 , K022 )



- Gasket-free sight glass fused into the glass-lined steel
- No dead spaces and undercuts
- Good accessibility through CIP-systems

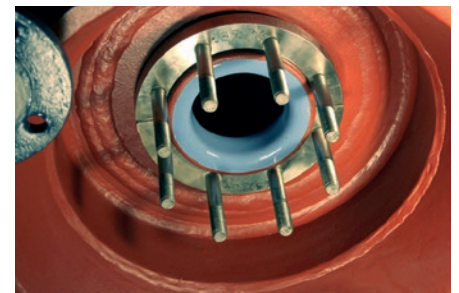
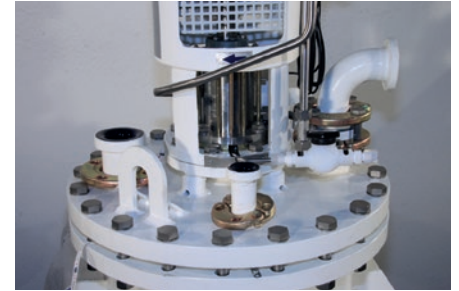


Flat seat valve with TT block flange and CIP spray lance




- Bottom outlet valve for equipment with block flange on bottom spigot
- Low dead space due to special valve seat
- Corrugated bellows sealing without dead spaces

Reactors with flat top heads and block flanges



- Flat top heads for good accessibility of the inner surfaces by CIP-systems
- Compact design
- Block flanges on all top head nozzles
- Padded flange at the bottom outlet nozzle
- Flat top head also available in glass-lined stainless steel



Dead space-free Safe & Clean nozzles (K075 ) and dead-space free bottom valve

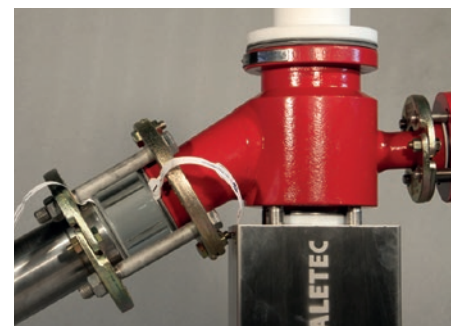
- Nozzle with dead space free sealing system
- Matching bottom outlet valves with cavity-free SC valve seat
- Can be retrofitted on new equipment and when reglazing

Stationary Mechanical Seals




- Mechanical seals with internal rotating mating ring
- Block flange on agitator nozzle
- Good accessibility through CIP-systems

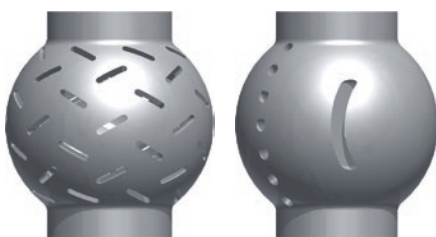
Ring sight glass (free of dead space) (K034 )



- Universal sight glass for pipelines and on equipment nozzles
- Ideal for checking the cleaning result
- Low dead space sealing system
- Pressure resistant up to 6 bar

Cleaning Technology and CIP-systems

Rotating spray ball
Roto-CIPPY; StatiCIPPY
static spray ball (K082 )



- Static or rotary cleaning system for glass-lined equipment
- For tanks up to 2000 mm diameter
- Available as a permanently installed system or as a demountable system
- PTFE virginial or electrically conductive with FDA approval

Retractable glasslined rotating Spraying System (K149 )



- rotating glass-lined sprayhead
- Minimal nozzle diameter DN50 (2"). For other nozzle dimensions, a glass-lined base flange is available
- All surfaces in contact with the product are glass-lined with electrically conductive glass
- Pressure up to 8 bar, flow rate up to 75l/min
- Travel: 400 mm
- Suitable for tanks up to 3.400mm diameter

FlushRings (AX, AXAX, TAN, RAD) (K026 )



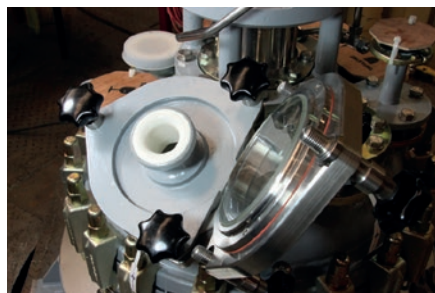
- Glass-lined ring-shaped component with DN 25 side nozzle for the introduction of cleaning nozzle
- Cleaning of tank nozzles, baffles, etc.
- Available from DN 100 to DN 400
- Nozzle ring made of FDA-approved PTFE for different spray patterns

Bottom outlet valves with CIP nozzle (K016 , K071 )



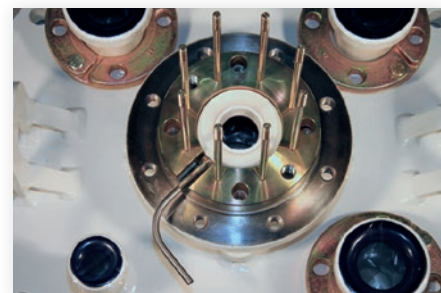
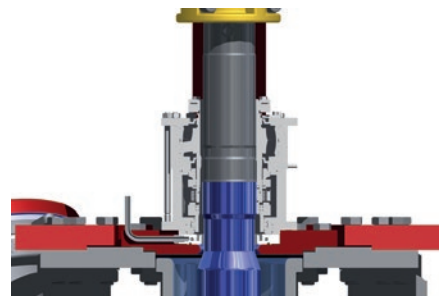
- Bottom outlet valve with side self-draining nozzle DN 25
- Installation of CIP-lances
- Connection of flushing fluids
- Sampling

Quickport quick release lid (K022 ) with CIP lance adapter




- Adapter for mounting on Quickport quick-lock cover
- Quick opening Cover, easy and safe handling
- Installation of a static or rotating spray ball

CIP base flange for DIN mechanical seals (K064 )



- Glass-lined base flanges for mechanical seals according to DIN
- Integrated flushing connection for cleaning the product-contacted surfaces of the mechanical seal and the agitator nozzle
- Alternatively with collecting cup for collecting debris of the mechanical seal

Cleanable sight glass units (Clearview, Wiper) (K039 )



- Sight glass unit with side connection DN 25 for cleaning liquid
- Built-in nozzle ring for quick and complete cleaning of the sight glass and the sight glass nozzle
- Sight glass fused into glass-lined steel part without seals

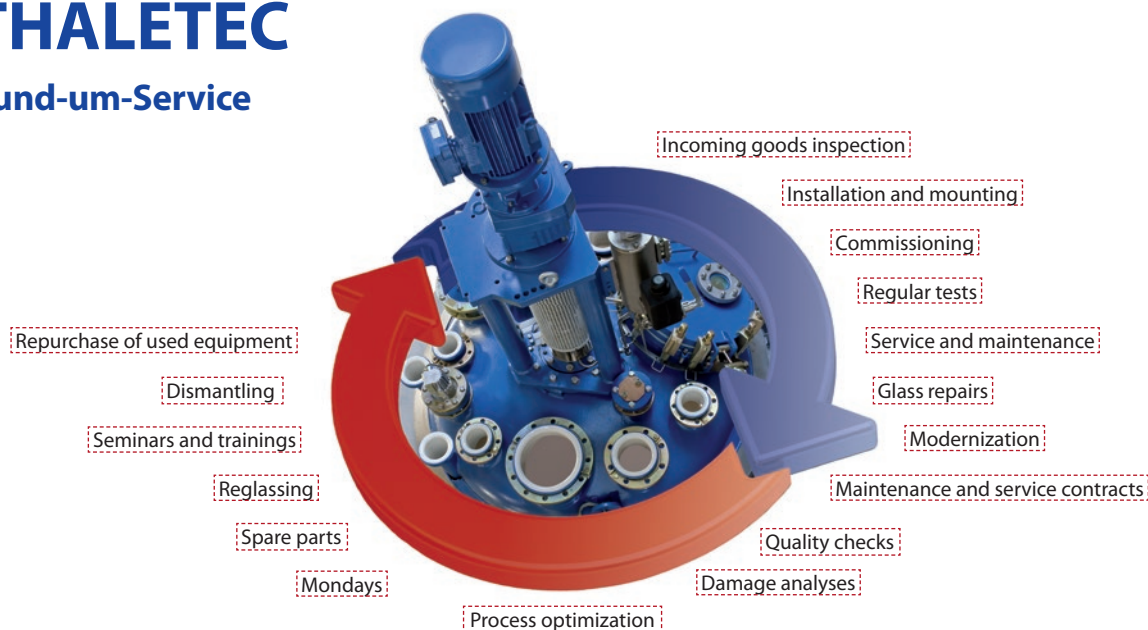
We are happy to support you:

- Glass-lined stirred tanks according to DIN 28136
- Special agitator vessels for the pharmaceutical industry
- Components for pharmaceutical apparatus technology
- Agitators and systems for the chemical and pharmaceutical industry
- Polymerization apparatus
- Storage tanks and templates
- Columns
- Glass-lined heat exchanger
- Measurement and analysis technology
- Accessories

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