



CONTAINMENT VALVE SYSTEM

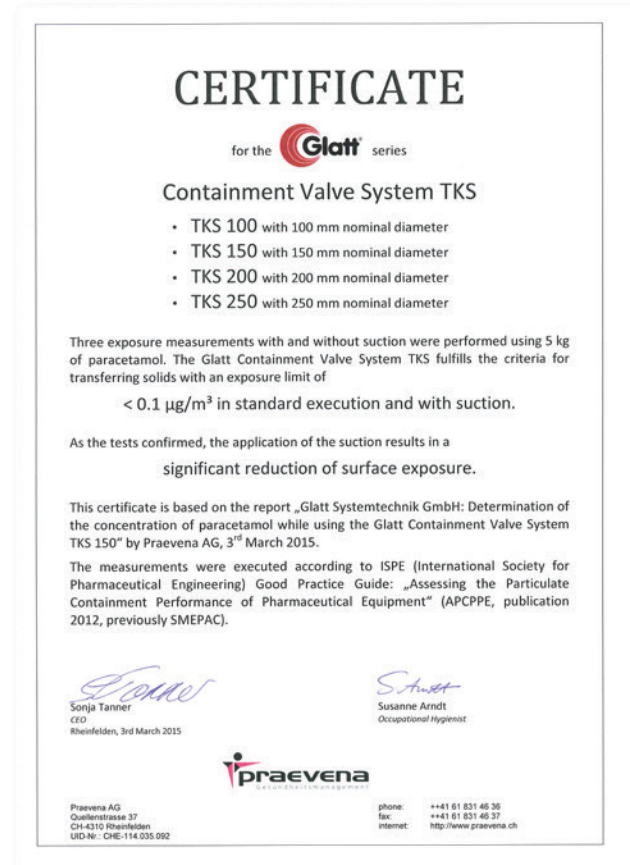
CONTAINMENT VALVE SYSTEM - TKS

Accomplishment of highest demands

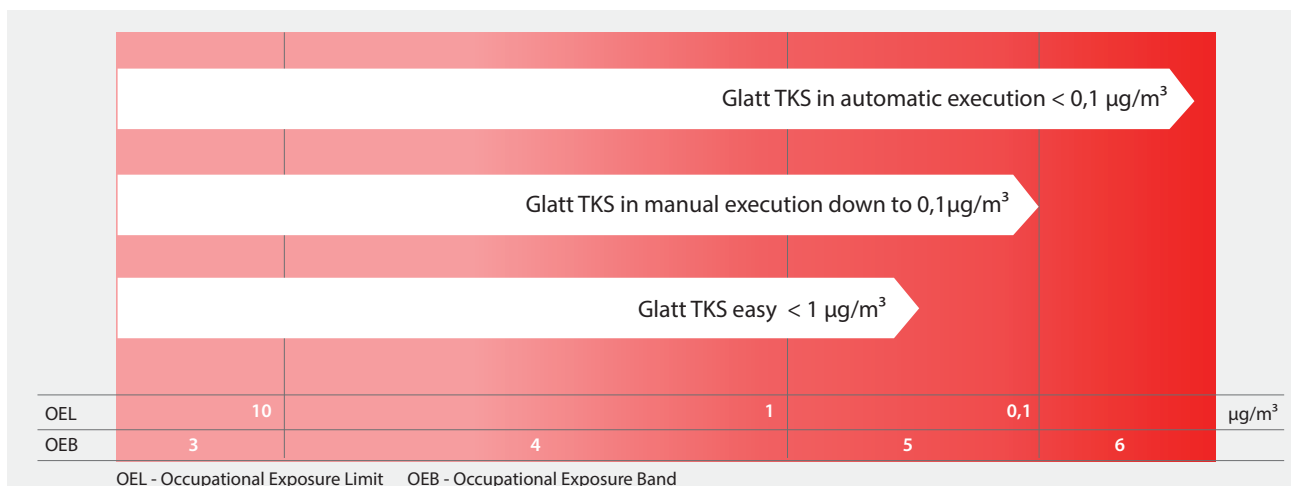
High-potency substances in research, development and production require highly effective safety precaution for humans, the environment and products.

Glatt presents the Containment Valve System TKS with two identical static seals. In combination with custom-made docking systems Glatt offers various solutions for handling solids by maintaining minimum emission limit values. Our ambition is the implementation of technically and economically optimized solutions for our customers, their product developments and production. With many world-wide proven and patented solutions and closed collaboration with users our Containment Valve System emphasises these efforts.

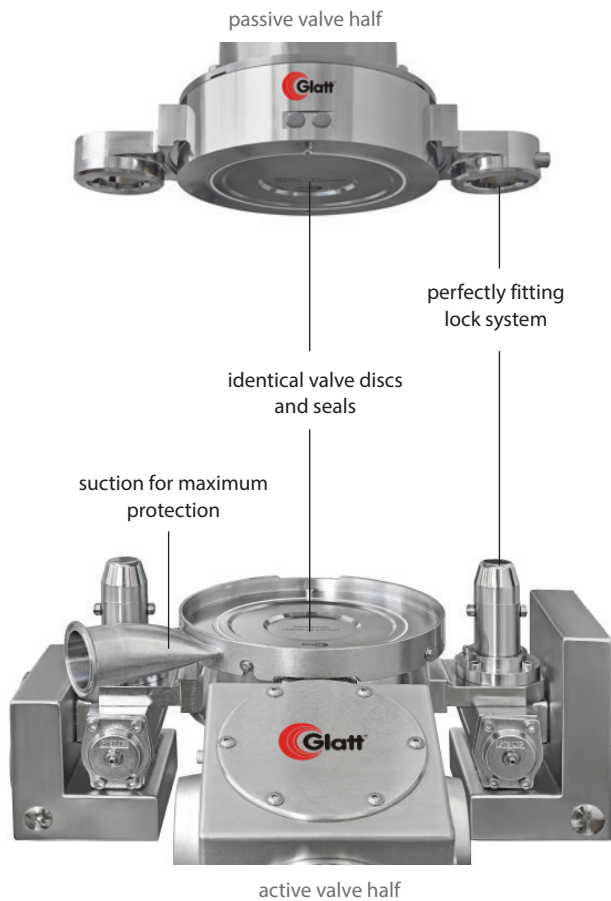
The technical principle and detailed design of the Containment Valve System TKS not only meet the requirements for transferring solids with an Occupational Exposure Limit (OEL) $< 0.1 \mu\text{g}/\text{m}^3$, it likewise simplifies installation, cleaning and maintenance.



APCPPE-Certificate for the Glatt series Containment Valve System TKS in standard execution and with particle suction



The above-stated performances depend on application.



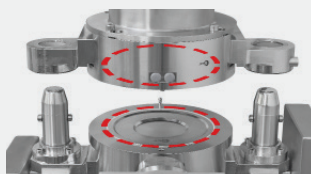
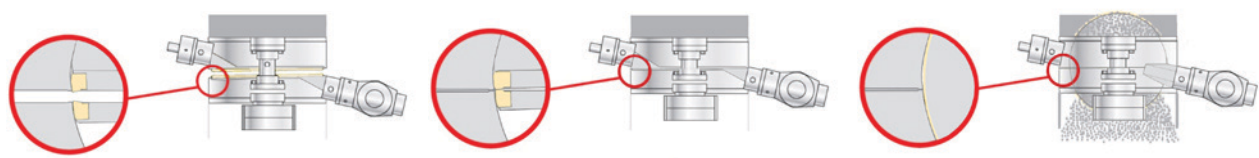
Design of Containment Valve System TKS in automatic execution and with particle suction

Highlights

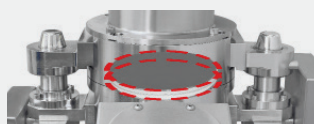
- » single-side mounted, single piece valve shaft
- » guaranteed error-free function & assembly without tools
- » WIP/CIP-able
- » cGMP-compliant design

Design and function

The Glatt Containment Valve System TKS is unique on the market, as it works without a split shaft. This patented design (EP 0910541 US 6.076.836) achieves essential advantages in performance and handling of the system. The valve bodies and valve discs with their circumferential EPDM-seals are interchangeable while maintaining the same containment level thanks to our precise manufacturing process.



- Positioning the IBC
- Docking the passive valve half onto the active valve half guided by locking pins



- Locking both valve halves by rotating the locking pins



- Opening the valve
- Product transfer from one closed system to the other
- Closing the valve after product transfer
- Unlocking and undocking both valve halves

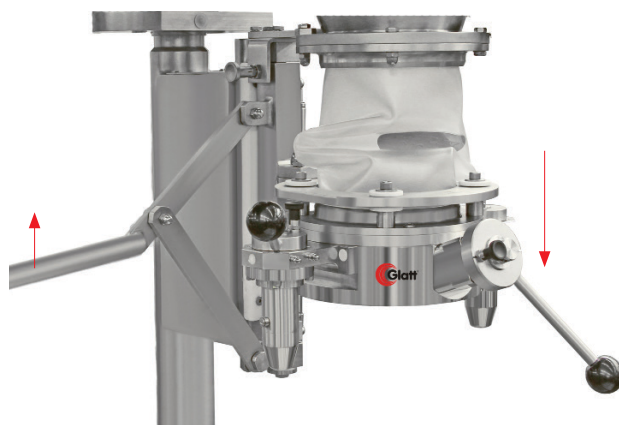
Operating principle of Glatt series Containment Valve System TKS

Product Range

	Sizes			
	100	150	200	250
TKS in automatic execution	●	●	●	●
TKS in manual execution	●	●	●	
TKS easy	●			
Particle suction	●	●	●	●
Accessories	valve opener, silicone cap, protection cap, cap for blending transfer bin, transfer bag, sample taker, WIP Top, WIP Drain, WIP Hood			



Automatic active valve half on active docking system with automatic lifting



Manual active valve half on active docking system with manual lifting

TKS WITH PEEK-BODY

Light and easy

For TKS 100 and 150 in manual execution the valve bodies can be made of the light material PEEK. The enormous reduction of weight allows easy one person only handling for small product quantities. Therefore additional transfer stations are becoming obsolete.

PEEK (polyetheretherketone) features higher mechanical strength, stiffness and temperature resistance compared with conventional plastic materials.



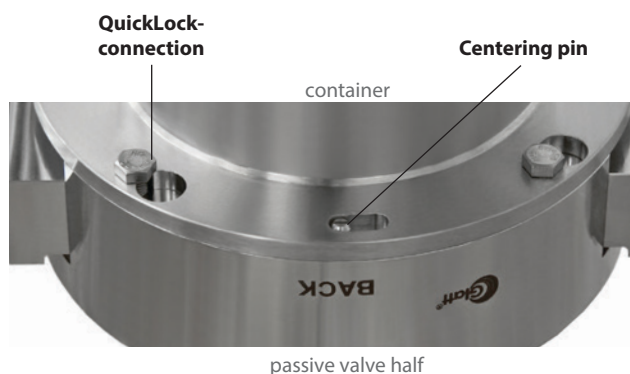
Manual active valve half with light PEEK-body on small container

Combinations

	Active valve half		
	automatic execution	manual execution	manual execution with PEEK-body
Passive valve half	●	●	●
Passive valve half with PEEK-body	●	●	●

Connections

The passive valve half can be attached to the container by Tri-Clamp or QuickLock. The exact position of the passive valve half to the connecting flange is assured in both versions with a centering pin. The advantage of the QuickLock-connection is a simple and fast handling.



Docking systems

To compensate tolerances during the docking procedure Glatt provides different docking systems. Our active and passive docking systems ensure a wide tolerance compensation in 3 axes. Glatt active docking systems provide smooth, reliable and fast mechanical motions. They are best suitable for weighing applications, too.

PARTICLE SUCTION

Continuously safe

Our TKS-suction ensures optimal protection of operators, the environment and products by significant reduction of surface contamination. It guarantees a continuous performance during frequent docking cycles without having to clean the valve system in between. All active valve halves are prepared for mounting the suction ring without modification, so on-site installations later on are possible at any time.



Particle suction for maximum protection

INSPECTION & MAINTENANCE IN A TWINKLING OF AN EYE

Nothing is simpler

Glatt provides an unique concept for inspection and maintenance for the Containment Valve System.

To inspect the few seals it is enough to disassemble the valve disc in 3 easy steps. The assembly and disassembly works intuitive and without any tools. It is designed for an on-site task executed by a single person only.



1. Easy loosening and removal of the valve disc drive via quick release.



2. Turning the valve disc by 180 degrees.



3. Removal of the valve disc.

Disassembly of the valve disc of TKS in automatic execution

WIP/CIP

Economic and clean

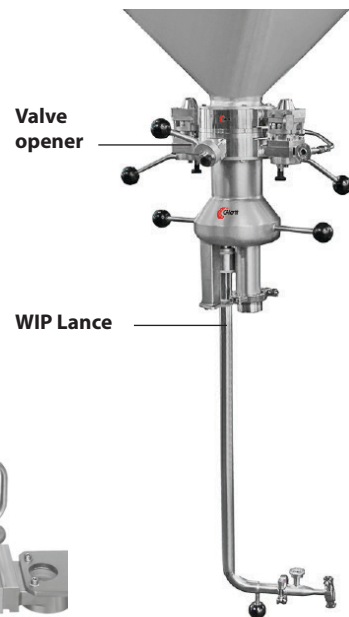
To clean product-contacting surfaces and seals of the active valve halves Glatt provides the adapter types WIP Top and WIP Drain with integrated cleaning nozzles. Thereby the adapters can be integrated into a frame to accommodate handling supports.

For automatic cleaning of product-contacting surfaces of containers and drums with passive valve halves Glatt offers matching valve openers for integration in container washing machines and washing places.

Prewashing reduces cleaning inspection efforts distinctly. Therefore Glatt offers economically sensible solutions like mobile washing lances or prewashing places. The final washing takes place in conventional container washing machines.



WIP Top / WIP Drain



WIP Hood with WIP Lance for inside cleaning of containers

INSTALLATION EXAMPLES



Glatt transfer- and dosing station



Container charging with APIs



Charging of Glatt Vertical Granulator

TKS EASY

Flexible Total Containment

The TKS easy is ideal for direct product transfer systems for powders and granules under containment conditions.

With our TKS easy system small product quantities delivered in disposable plastic bags, PE-bottles or small stainless steel containers are easily combinable itself or with closed process equipment. Therefore docking systems are not necessary, a single Tri-Clamp connection is enough.

The identical valve halves made of PEEK are interchangeable. For easy handling a simple locking ring with or without particle suction is used to lock the valve halves.

An additional cleaning station is not required, an universal adapter can be attached directly as WIP Top or WIP Drain.



Design of TKS easy



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