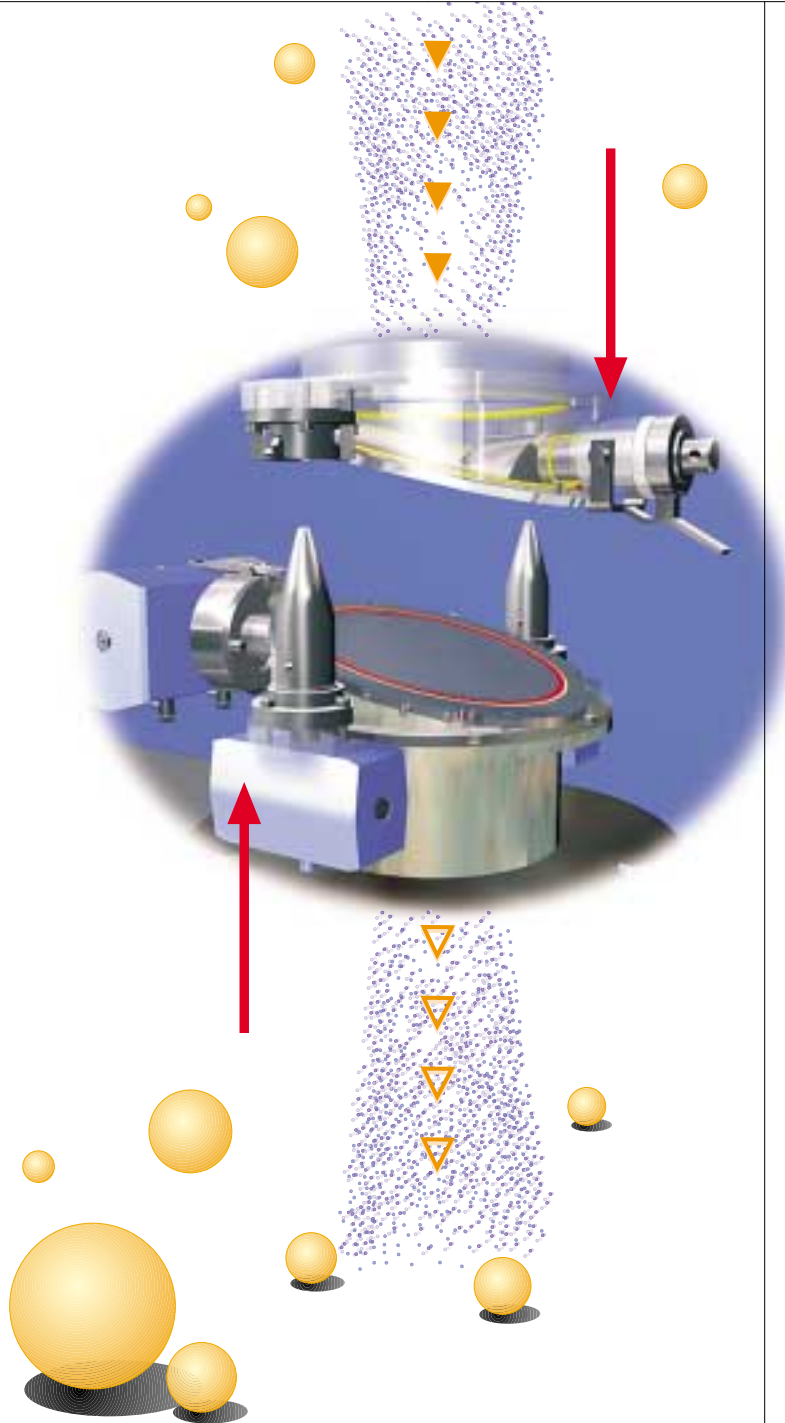


# Isolation Valve System



**SKS**



**We set the standards**

# Design and Operation

Highly potent substances require highly effective protective measures for human being, environment and product. The Glatt SKS isolation valve system sets new standards in the containment transfer and is since several years a world-wide industry-proven technology.



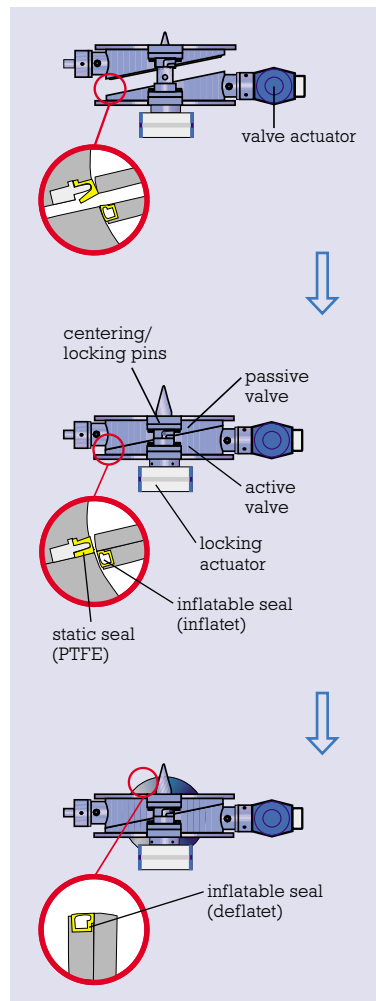
**Isolation valve system SKS 200, locked and opened (product transfer)**

The advantages of the SKS system:

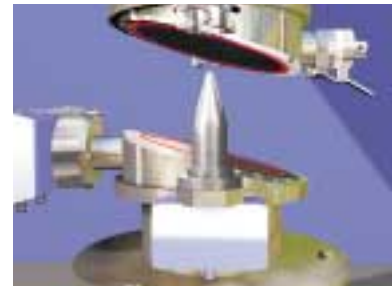
- full operator protection
- no cross-contamination
- compliance with statutory regulations and standards
- economically through renunciation in the need of secondary measures (e.g. clean room, operator protection clothes)
- reproducible containment levels over long periods
- quick docking and undocking cycle (< 10 sec)
- extremely low-wear operation because no mechanical contact between disk and housing
- quick and easy disassembly/reassembly for cleaning/inspection
- completely WIP-able
- flexible, manual and fully automated operation possible

The system operates in the following sequence:

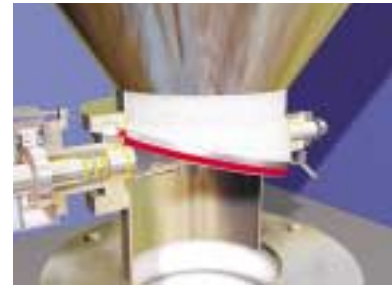
1. positioning of IBC on the docking station
2. docking of the float-mounted active valve to the passive valve
3. aligning of the valve halves to each other by means of centering/locking pins
4. locking both halves by rotating the centering/locking pins.
5. opening the valve
6. product transfer
7. internal air-purging of the seal surfaces
8. closing the valve
9. unlocking valve halves
10. removal of IBC from docking station



**Docking cycle of the SKS valve system**



**Pre-positioning of the IBC**



**Docking and locking of both valve halves**



**Opening of the valve and product transfer**



**Internal air-purging of the seals**

A complete set-up for integration into a docking station consists of:

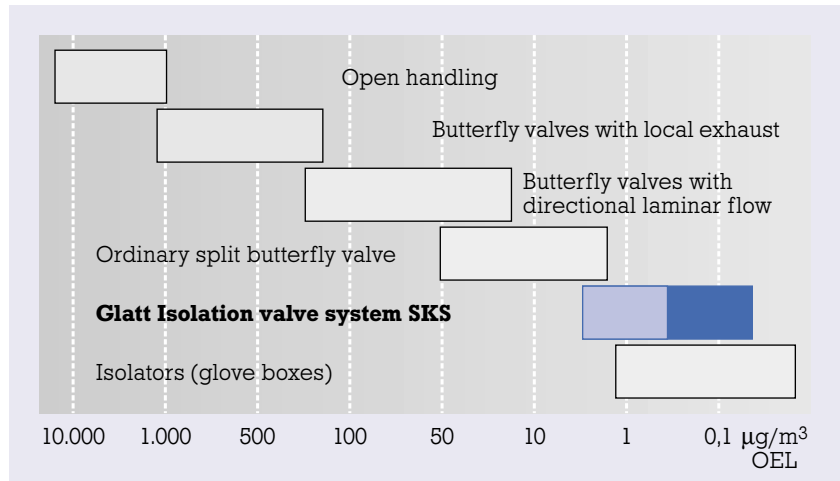
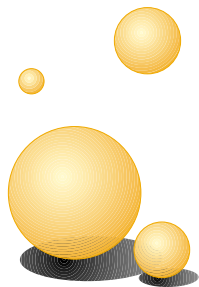
- one active valve incl. pneumatic actuators for locking and opening/closing of the valve
- one docking module incl. float mounting system and connecting product chutes to the upstream/downstream equipment.
- one PLC control system, controlling the docking and opening/closing cycles of the valve

# Total Containment on the top level

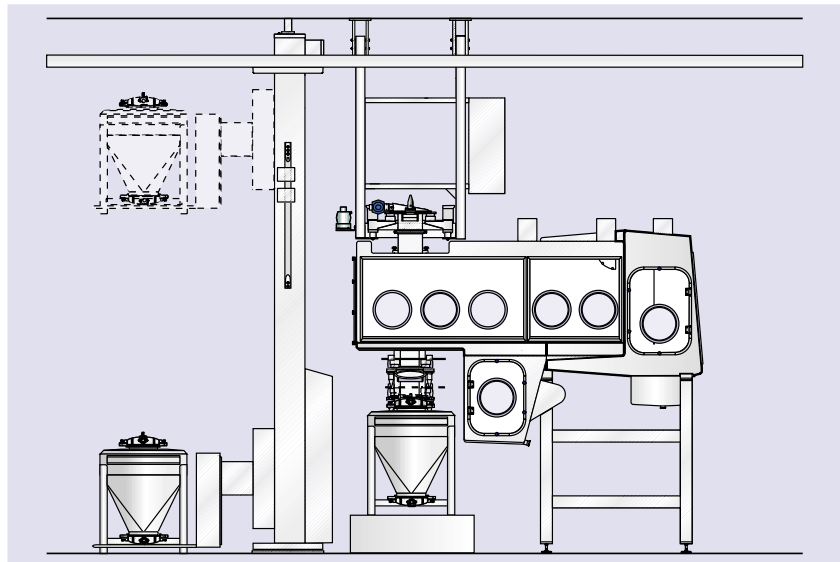
Extensive testing (docking-charging-undocking) has been done both by Glatt and third parties to evaluate the long term reliability and containment performance of the Glatt isolation valve system SKS.

The test results show extremely low and reproducible levels of both airborne and surface contamination which have been proven multiple times in various industrial applications, e.g. pharmaceuticals and nuclear-chemical ingredients. Even rough operating conditions (e.g. incomplete discharge of IBC) are well handled by the system even when processing highly concentrated active potent ingredients or otherwise toxic materials, no critical contamination values of product and production area were found.

For the most stringent containment requirements the SKS system can be equipped with an additional local exhaust system.



Overview: typical areas of application of containment technology

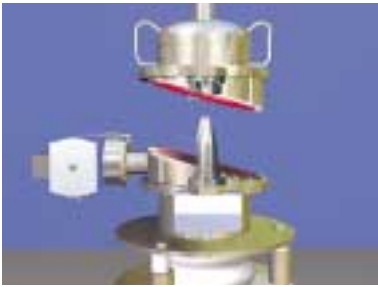


SKS isolation valve system for charging and discharging of a glove box (example)



Dustfree after several transfer cycles

# Cleaning



*Positioning of the wash hood over the active valve*



*Installing wash hood on the active half and interlocking*



*Cleaning of valve surfaces and seals*



*Drying by air purging*

Suitable cleaning technology is typically determined by the needs of the customer, depending upon the materials processed, the equipment specification and the frequency of product changes.

For the SKS system the possibilities can range from a simple manual or mechanical cleaning after valve disassembly to a fully automated wash in place (WIP) of the whole system.

Due to the typically toxic nature of the product in contained systems, WIP is the preferred method for cleaning.

## Passive valve

- WIP without disassembly in suitable washing systems
- manual cleaning after pre-wash including disassembly of valve disk.

## Active valve

- WIP without disassembly by introducing cleaning liquid through air purge system
- by incorporating WIP adapters with integrated nozzles



*Washing station with valve opener and nozzle for cleaning of passiv valves*



*Positioning of the IBC with passiv half onto the washing station*



*Active valve with docked drain funnel during the cleaning cycle*

# Docking Stations

## Passive docking

Pre-positioning of the passive valve by lifting devices

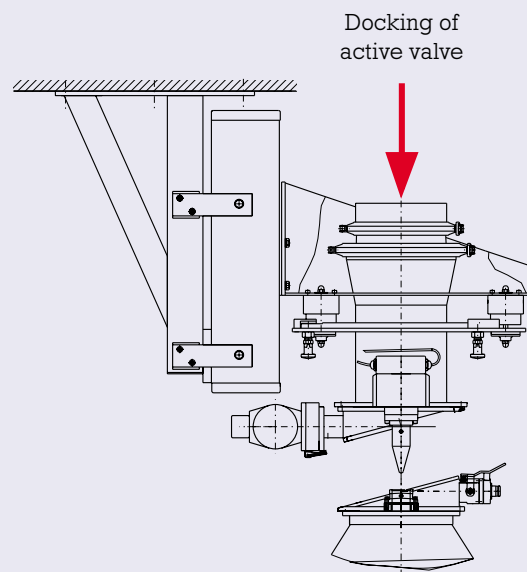
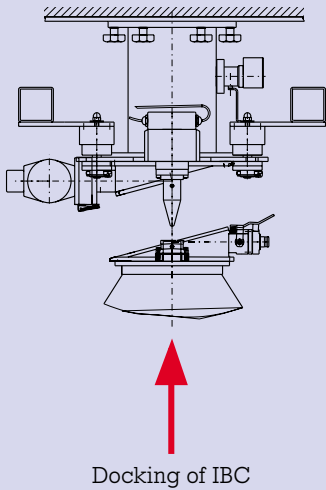
- no weighing applications
- accurate pre-positioning necessary for the docking process
- three-dimensional adjustment

## Active docking

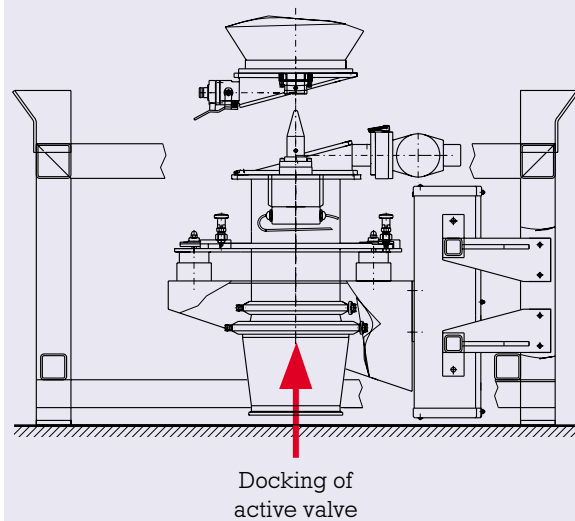
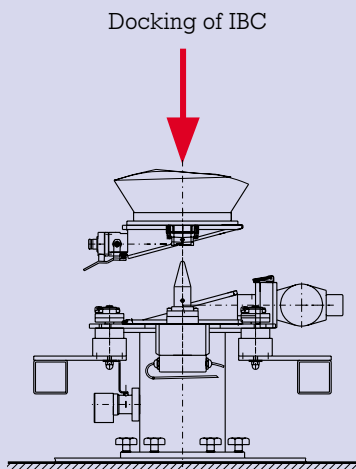
Pre-positioning of the active valve by integrated lifting devices charging

- weighing applications possible
- three-dimensional adjustment

## charging



## discharging





## Addresses

**World wide  
service to the  
customer.**



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the standards**