

α β 阀

密闭转移技术 Containment Transfer Technology

药品生产物料密闭快速转移解决方案



适合物料的快速、安全输送系统
密闭性
经济型方案

Fast and secure transfer for material
Containment
Economic solution

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产品介绍/Description

α β 阀是采用精心设计的分体式蝶阀 (SBV) 技术, 由主动阀和被动阀组成。实现密闭条件下物料转移, 转移过程保证无菌物料的无菌状态不受破坏或防止有毒物料的扩散。该转移包括加料、卸料、配料或取样等。GeevoSBV α β 阀分常规型和在线清洗灭菌型两大系列。

An Alpha Beta valve (Split butterfly valve) system is consist of an active and a passive valve which adopts well-designed split butterfly valve technology. Realize contained transfer of material, and the transfer process guarantees the sterile situation won't be destroyed or avoid being spread of the toxic materials in the container. Including feeding, charging, dispensing, sampling, etc. GeevoSBV αβ valve has two types: Conventional and clean/sterilization in place.



被动阀 Passive

主动阀 Active

使用目的/Purpose of use

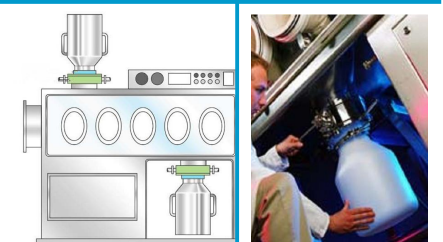
1. 确保生产过程符合 GMP、产品质量要求和行业监管。
 2. 保护操作人员的安全—防止高致敏性和毒性物料在转移过程中泄漏, 危害操作人员的安全。
 3. 产品的无菌保护—保证无菌产品在转移过程中免受外界微生物的影响。
 4. 最大限度地降低物料转移过程中的物料损失。
 5. 减少人工干预, 封闭的传输限制交叉污染的风险。
 6. 可减少高要求洁净区和繁琐的个人防护要求。
 7. 有效控制转移过程中的粉尘扩散, 确保无尘环境。
1. Ensure production process meet GMP, product quality requirement and industry supervision
 2. Operator protection- Avoiding the leakage of toxic materials during transfer process which is harmful for operator
 3. Protection of sterile product-Guarantee the transfer process of sterile product avoiding being effected by outside microbe
 4. Eliminate loss of product yield during transfer.
 5. Reduce the potential risk of product cross-contamination and manual intervention
 6. Reduce requirement for high demand clean area and cumbersome personal protection
 7. Effective dust control during transfer process, ensure dust-free environment

使用领域/Application

制药 生物 化工 食品 饮料 核工业 疾控
 Pharmaceutical Biotechnology Chemical Food Beverage Nuclear CDC

应用案例/Application case

- 无菌原料药转移、分装
- 隔离器装料、卸料
- 密闭式配料、装料、卸料、取样和粉碎
- 无菌胶塞隔离运输
- 毒性高致敏性物品转移
- Sterile API transfer and subpackage
- Isolator charging and discharging
- Contained dispensing, charging, discharging, sampling and milling
- Containment transfer of sterile rubber plug
- Transfer toxic product



技术参数/Technical Parameter

- 两个阀盘外表面金属与金属密封
 - 主体部分材料：316L 不锈钢
 - 密封件材质：食品级氟橡胶 (FKM)
 - 暴露限度： $\leq 10 \mu\text{g}/\text{m}^3$ ，暴露等级： ≥ 4 级
 - 耐压： $\geq 0.25\text{MPa}$
 - 标准快装卡箍接口，可定制对应接口
 - 容器外操作阀门开关和产品转移
 - 符合新版 GMP、FDA、欧盟等生产要求
- Valve disc surface sealing by metal to metal
 - Body material: 316L stainless steel
 - Sealing material: FKM
 - OEL: $\leq 10\mu\text{g}/\text{m}^3$, OEB: ≥ 4
 - Endure Pressure: $\geq 0.25\text{MPa}$
 - Standard clamp interface, accept customized corresponding interface
 - Outside of container operate valve switch and product transfer
 - Comply with the new version of GMP, FDA, EU production requirements

特点/Feature

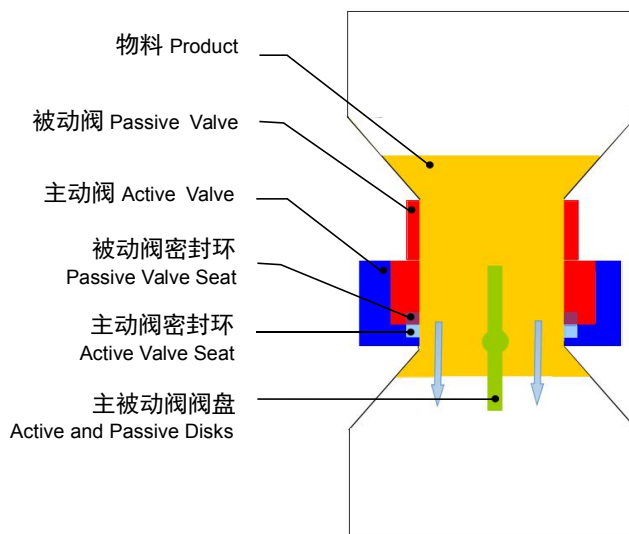
- 两个阀瓣之间采用金属密封
 - 食品级氟橡胶 (FKM) 密封环
 - 多个互锁设计，避免误操作
 - 可在线清洗和在线灭菌，CIP、SIP 功能
 - 高效清洗和维护
 - 安装简便快捷
 - 适合现有非密闭性物料转移系统进行密闭性改进
- Valve disc surface sealing by metal to metal
 - Food grade FKM seat
 - Multi-interlock function, avoiding error operation
 - With clean/sterilization in place function
 - Efficient cleaning and maintenance
 - Easy and fast to install
 - Suit for non-containment material transfer system which need improve



规格/Type

- 标准型号尺寸 Standard size: 50mm, 65mm, 80mm, 100mm, 150mm, 200mm, 250mm
- 接口型式 Interface: PN6, PN10, ANSI#150, Tri-Clamp
- 定制尺寸 Customized size: **接受非标尺寸定制 Accept customized non-standard size**





常规型 α β 阀未设置隔离阀进口和隔离阀出口，不能对被密封的在阀盘之间的暴露面进行在线的清洗和灭菌处理。可人工离线对暴露面进行清洗和灭菌，以达到物料转移的规范要求。

αβ valve -Conventional don't set isolation valve inlet and outlet, can't clean/sterilize the valve disk exposed face in place. People can wash and sterilize the exposed face by manual work to reach the normative requirement of material transfer.

过程介绍/Process

第 1 步，准备对接——主动阀单元与被动阀单元对准，准备对接。每个阀门单元都拥有一个半阀盘，此时每个阀门单元都是独立密封，并且无法单独打开，只有两个半阀盘合并在一起时才可打开。

第 2 步，阀盘闭合——两个阀盘锁在一起，之前暴露面都被密封在阀盘之间，形成一个完整的蝶形阀盘。

第 3 步，物料转移——主动阀控制蝶形阀盘的开关，一旦主动阀开启阀盘，物料即可通过阀门，实现密闭物料转移。一旦阀盘开启物料转移开始，由于互锁设计，主动阀与被动阀无法脱离。

第 4 步，阀体分离——物料转移结束后关闭蝶形阀盘，主动阀与被动阀又形成两个独立的密封单元，然后主动阀与被动阀解锁，确保两者能自由脱离。

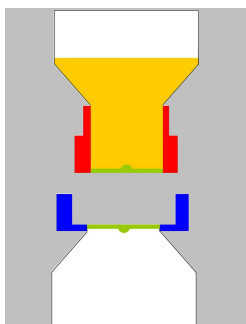
First step. Prepare docking ——Active valve and passive valve prepare docking. Each valve has one half disk, and each valve is both sealed independently which can't open until two halves valve disks combined.

Second step. Disks combined ——Two halves valve disks combined. The previously exposed faces are now sealed together to form a single butterfly valve disk.

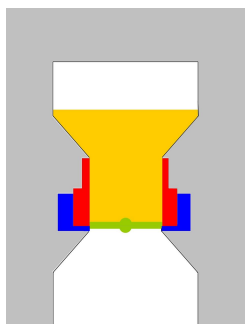
Third step. Material transfer ——Active valve is the driving of butterfly valve disk. Once operate disk will open to allow the material being transferred through the valve. Once open, active valve and passive valve can't split because of Interlock design.

Forth step. Valve split ——Operate disk to close after finishing transferring material. Active valve and passive valve form two independent sealed unit. Then unlock of two valves, ensure the split.

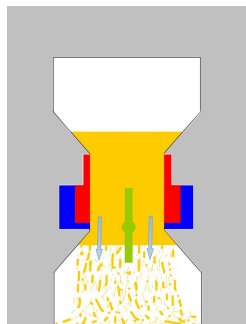
工作过程/Process



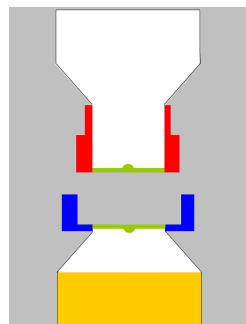
1. 准备对接
Prepare docking



2. 两个阀盘闭合
Disks combined

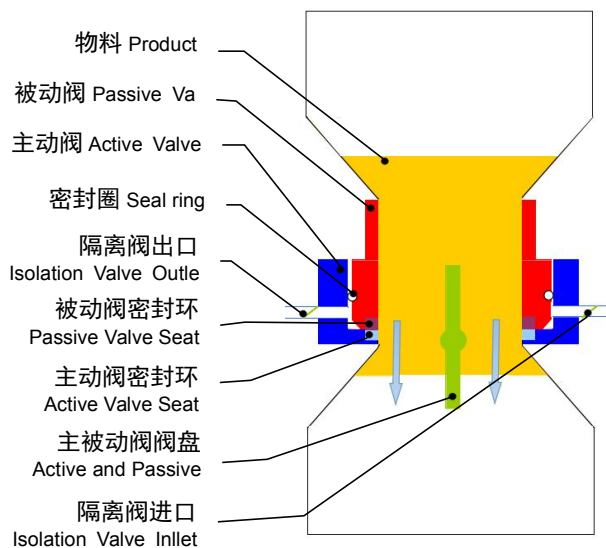


3. 物料转移
Material transfer



4. 阀体分离
Valve split





在线清洗灭菌型 α β 阀设置了进隔离阀和出隔离阀，对被密封的在阀盘之间的暴露面进行在线的清洗或在线灭菌处理，再进行主被动阀的对接或脱离，以保证物料的安全或环境的安全。

Clean/sterilization in place type of αβ valve set isolation inlet and outlet, can clean/sterilize the valve disk exposed face in place, then carry on active and passive valve combined and split, guarantee safety of material or environment.



间隙自锁装置
Interval self-lock device

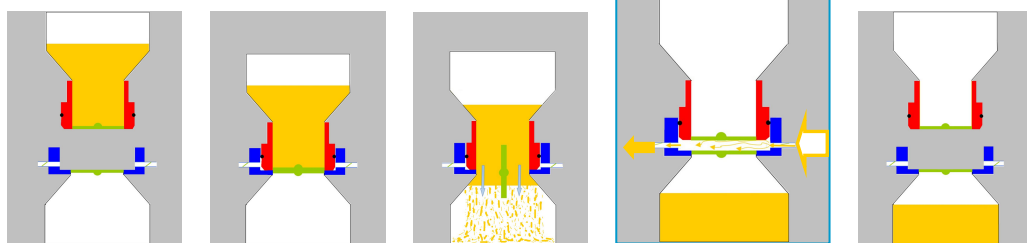
在线清洗/CIP(Clean in place)

物料转移后，被动阀与主动阀开始分离，启动间隙自锁装置。采用洁净空气或纯净水清洁阀盘暴露面。
After material being transferred, active and passive valve operate to be apart, start interval self-lock device, adopts clean air or purified water to clean exposed face.

在线灭菌/SIP(Sterilization in place)

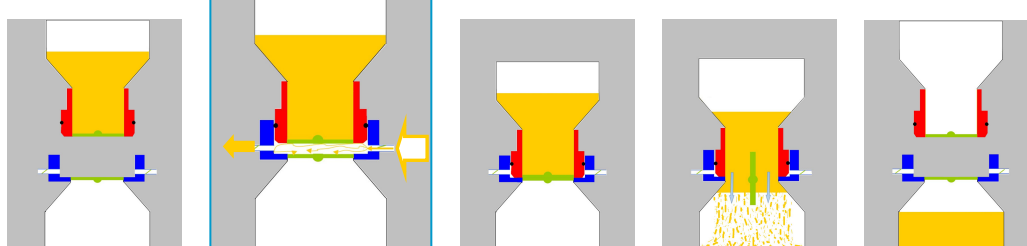
被动阀与主动阀开始对接，阀盘闭合前，启动间隙自锁装置。采用汽化过氧化氢（VHP）吹扫对阀盘暴露面进行灭菌，
Active and passive valve prepare docking, before combined of two disks, start interval self-lock device. Purge with VHP to decontaminate the exposed face.

在线清洗/CIP



1. 准备对接
2. 两个阀盘闭合
3. 物料转移
4. 阀瓣分离, 自锁间隙, 清洗残留
5. 清洗后解锁, 阀体分离

在线灭菌/SIP



1. 准备对接
2. 自锁间隙, 暴露面灭菌
3. 灭菌后解锁, 阀瓣闭合
4. 物料转移
5. 阀体分离



变径接口

可通过被动阀或主动阀接口的变径，来满足不同尺寸接口对接的需要，提高设备的使用率，降低使用成本，变径接口的应用可以扩展为取样口、容器内清洗接口、窥视窗口等。

Different size of valve interface can be connected according to reducer union. It improves the utilization rate of device, reduce the cost. The application of reducer union can be extended to sampling port, cleaning interface of container and watch window.



不锈钢物料桶

不锈钢材质的物料桶，满足特殊物料装载，可根据用户的实际使用需要来定制体积大小及接口尺寸。也可定制可窥视不锈钢物料桶，方便观察物料转移过程。

Stainless steel barrel

Stainless steel material barrel can load special materials. Accept customized for volume or interface size, even can customized visible ss barrel, easy for observe the transfer process of material.



α β 阀专用密封环

采用食品级的白色氟橡胶（FKM）材质，优良的化学稳定性，耐油、耐高温、耐强酸、耐氧化等特性。符合 FDA 要求，可提供第三方检测机构检测报告。需其他材质的密封环，可帮助用户定制满足特殊的使用需求。

αβ valve special sealing seat

Adopts food grade white FKM material, having good chemical stability, and resistance for high temperature, acid, oxidation and others. Meet the demand of FDA, can supply the testing report from the third party. Accept customized seal ring by other material as demanded by user.



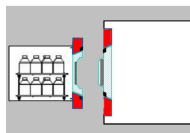
RTP 传递系统

Rapid Transfer Ports 快速传递接口，简称 RTP。RTP 传递系统可以在非受控环境中实现两个受控环境之间无菌连接，用于无菌或有害物品的快速传入传出。

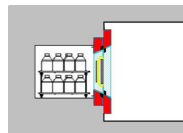
Rapid Transfer Ports

Rapid Transfer Ports, called RTP. Under uncontrolled environment, RTP system can realize sterile connection during two controlled environment. Used for sterile or toxic material transfer in and out.

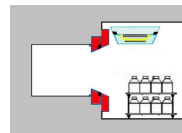
工作过程/Process



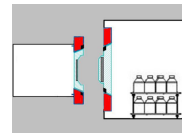
1. 准备对接
Prepare docking



2. 法兰锁紧，双门合并
Double door merged



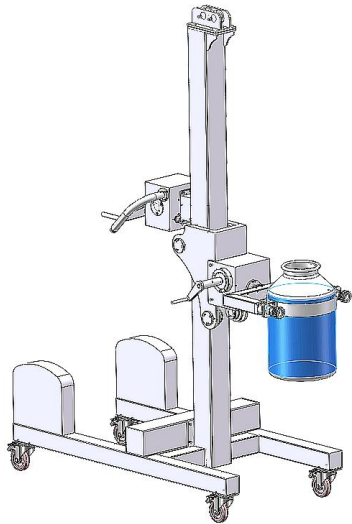
3. 开启传递门，物料传递
Transfer materials



4. 传递结束，双门分离
Finish and door split

型号和接口尺寸参照表

型号 Type	SBV50	SBV65	SBV80	SBV100	SBV150	SBV200	SBV250
英制 Imperial system	2"	3"	3 1/2"	4"	6"	8"	10"
接口外尺寸 External size of interface	64mm	91mm	106mm	119mm	167mm	218mm	268.5mm



产品介绍/Description

多功能物料转运车组合了物料的垂直升级、可 360 度翻转及转运三大功能，主要是在洁净区等高要求的区域使用。转运车在垂直升降和 360 度旋转时微调高度和角度，满足精准对接。尤其是与 α β 阀配合使用，使物料转移更加快捷，提高工作效率，物料转移更加安全。

Multi-function material carrier have three functions, Material vertical lifting, rollover at 360 degree and transport. Mainly applied in clean room and some high requirement area. Only fine adjust the height and angle when carrier lift vertically and rotate at 360 degree to connect exactly. Especially working with $\alpha\beta$ valve, that will be easy, fast and safe for material transfer.

三大功能/Three Function

功能一：上下垂直升降物料——蜗轮升降，手感轻便，可微调高度，并有自动锁止功能。

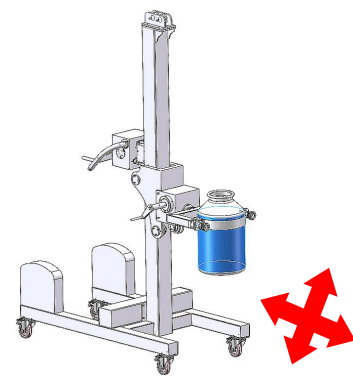
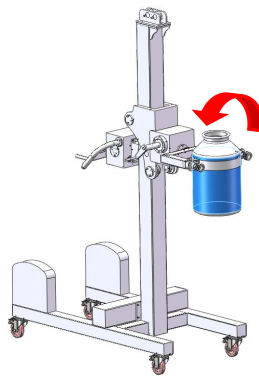
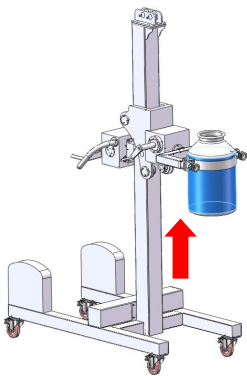
功能二：垂直 360 度翻转物料——蜗轮旋转，顺时针逆时针全角度翻转，可微调角度，确保精准对接。

功能三：全方位推移小车——4 个万向脚轮，可在较小空间内移动和原地旋转。

Function 1: Material vertical lifting- Adopts worm gear lift for easy control. Can be fine adjustment for the height with self-lock action

Function 2: Material vertical rollover at 360 degree- worm gear control, all angle, can be fine adjustment for exact connect.

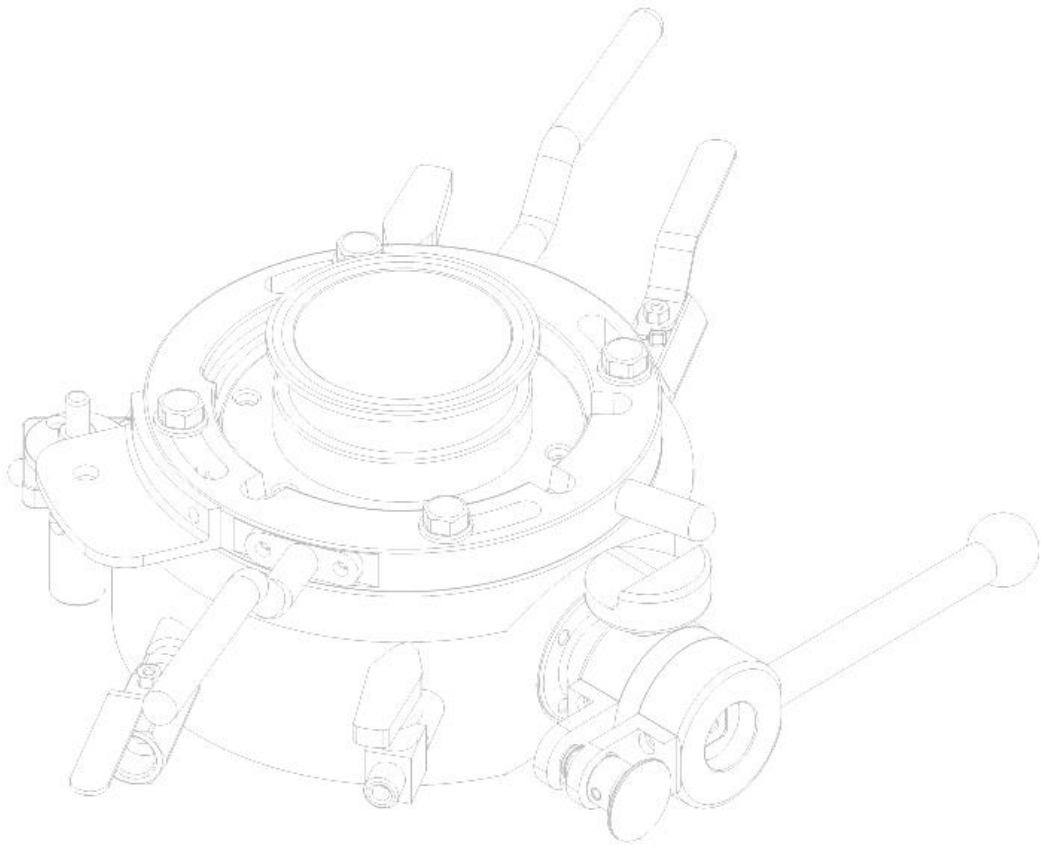
Function 3: Moveable carrier -Four universal caster wheel, can move at small room or rotate in place.



技术特点/Feature

- 主体材料：304 不锈钢
- 带刹车万向脚轮，静音设计
- 采用蜗轮蜗杆传动技术，升降和翻转进程微调、过程自锁功能
- 物料转运重量 $\leq 150\text{Kg}$
- 拓展改造后，可作为小型叉车使用
- 钢丝绳升降，对接时可起到缓冲作用

- Material: SS304
- Universal caster wheel with brakes, mute design
- Adopts worm gear and worm drive technology. Lift and rollover process is fine adjustment, process self-lock function
- Weight of material transfer $\leq 150\text{Kg}$
- Can be small forklift after upgrade
- Adopts wirerope lift, have buffer action during docking.



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