

双密封导轨阀、双密封旋塞阀、将军阀(缩径)

Double Seal Guide Valve, Double Sealed Plug Valve, General Valve (Reduced Bore)

使
用
说
明
书



开维喜阀门集团有限公司
Kaiweixi Valve Group Co., LTD.

双密封导轨阀、双密封旋塞阀、将军阀(缩径)

型号: TG4X TG54X TG34X TG94X

规格: DN50-DN350

公称压力: PN1.6~PN6.4

适用介质: 航空煤油、原油、轻质油、天然气、液化气、管道煤气、化工介质等管

适用温度: $\leq 180^{\circ}\text{C}$ 阀体材质: WCB

连接方式: 法兰 驱动方式: 手轮、伞齿轮、手柄

Model: TG4X, TG54X, TG34X, TG94X

Specification: DN50-DN350

Nominal pressure: PN1.6 ~ PN6.4

Applicable medium: Aviation kerosene, crude oil, light oil, natural gas, LPG (liquefied petroleum gas), pipeline gas, chemical media, etc.

Applicable temperature: $\leq 180^{\circ}\text{C}$

Valve body material: WCB

Connection method: flange

drive method: Handwheel, bevel gear, handle



双密封导轨阀、双密封旋塞阀、将军阀(缩径)产品图

Double Seal Guide Valve, Double Sealed Plug Valve, General Valve (Reduced Bore) Product Diagram

概述

双密封导轨阀（亦称双密封旋塞阀、将军阀（缩径））是一种通过锥形或圆柱形旋塞（塞体）沿导轨导向的复合运动来实现流体通道的开启或关闭的阀门，同时具备双密封与双关双断功能。该阀为直通式缩径结构，旋塞上设有贯通的介质流道（通径较公称通径有所缩小），通过旋转旋塞 90 度，使流道与阀体通道对齐或垂直，从而实现全开或全关。其阀杆与旋塞为一体式或固定连接设计，操作时阀杆与旋塞同步旋转，无升降动作，填料密封位于阀杆与阀体之间，确保外密封可靠。阀体内部设有上下两组独立密封副，在关闭状态下可形成双重密封屏障，同时阀体中部设有排放口，可在两道密封之间进行介质排放或压力监测，实现双关双断功能。该阀采用缩径设计，有效降低了操作扭矩，提高了密封比压，同时减少了阀门整体尺寸和重量。阀门依靠旋塞与阀体密封面之间的精密配合及导轨导向实现密封，操作扭矩小，密封性能稳定，广泛应用于石油、天然气、化工等行业的苛刻工况管路系统中，作为截断、隔离或排放介质之用。

Overview

The double seal guided valve (also known as double seal plug valve or general valve (reduced bore)) is a type of valve that opens or closes the fluid passage through the compound motion of a tapered or cylindrical plug guided along a track, and is equipped with dual sealing and double block and bleed functions. The valve adopts a straight-through reduced bore structure, with a through-type medium flow port provided on the plug (the bore diameter is reduced relative to the nominal diameter). By rotating the plug 90 degrees, the flow port aligns with or becomes perpendicular to the valve body passage, thereby achieving fully open or fully closed positions. The valve stem is integrally or fixedly connected to the plug. During operation, the stem and plug rotate synchronously without any lifting motion. Packing sealing is provided between the stem and the valve body to ensure reliable external sealing. The valve body is designed with upper and lower independent sealing pairs, forming a double sealing barrier in the closed position, and a bleed port is provided in the middle of the valve body for medium discharge or pressure monitoring between the two seals, achieving double block and bleed functionality. The reduced bore design effectively lowers operating torque, increases sealing specific pressure, and reduces the overall size and weight of the valve. The valve relies on precise fit and guide track guidance between the plug and the valve body sealing surfaces to achieve sealing, offering low operating torque and stable sealing performance. It is widely used in demanding pipeline systems in petroleum, natural gas, chemical and other industries for shut-off, isolation or bleed applications.

特点

1. 双密封结构，安全可靠：阀门设有上下两组独立密封副，关闭时可形成双重密封屏障，同时阀体中部设有排放口，可在两道密封之间进行介质排放或压力监测，确保零泄漏安全。
2. 导轨导向，无摩擦启闭：旋塞沿精密导轨运动，启闭时先提升使密封面脱离再旋转，关闭时先旋转后下降强制压紧，密封面无摩擦磨损，大幅延长使用寿命。
3. 缩径设计，操作轻便：阀门采用缩径流道设计，有效降低操作扭矩，提高密封比压，同时减少阀门整体尺寸和重量，适用于安装空间受限的管道系统。
4. 强制密封，零泄漏：关闭时通过导轨下降或楔形机构产生强制密封力，确保金属硬密封达到零泄漏标准，适用于高温、高压及含颗粒介质的苛刻工况。
5. 耐腐蚀与耐磨：阀体及旋塞可根据介质选用碳钢、不锈钢、合金钢等材质，密封面可进行硬化处理（如堆焊硬质合金、渗氮等），耐磨损、抗冲刷，使用寿命长。
6. 双向密封无流向限制：阀门设计为双向密封，无严格介质流向要求，安装适应性更强，适合多种管路布置。

Feature

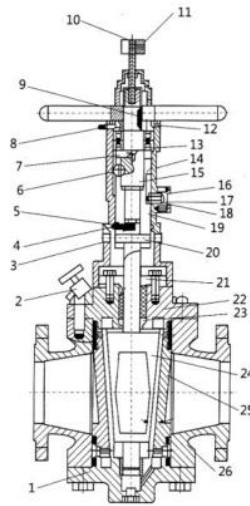
1. Double Seal Structure for Maximum Safety: The valve features upper and lower independent sealing pairs, forming a double sealing barrier in the closed position. A bleed port is provided in the middle of the valve body for medium discharge or pressure monitoring between the two seals, ensuring zero-leakage safety.
2. Guide Track Guidance for Frictionless Opening/Closing: The plug moves along a precision guide track. During opening, the plug first rises to disengage the sealing surfaces before rotation; during closing, the plug first rotates then lowers for forced sealing. There is no friction or wear on the sealing surfaces, significantly extending service life.
3. Reduced Bore Design for Light Operation: The valve adopts a reduced bore flow path design, effectively lowering operating torque, increasing sealing specific pressure, and reducing the

overall size and weight of the valve, suitable for pipeline systems with limited installation space.

4 . Forced Sealing with Zero Leakage: During closing, guide track descent or a wedging mechanism generates a forced sealing force, ensuring metal hard sealing meets zero-leakage standards, suitable for demanding applications with high temperature, high pressure, and particulate-laden media.

5 . Corrosion and Wear Resistance: The valve body and plug can be made of carbon steel, stainless steel, alloy steel, or other materials depending on the medium. Sealing surfaces can be hardened (e.g., hardfacing with cemented carbide, nitriding, etc.), providing wear resistance, erosion resistance, and long service life.

6 . Bidirectional Sealing with No Flow Direction Restriction: The valve is designed for bidirectional sealing with no strict requirement on flow direction, offering greater installation flexibility and suitability for various pipeline layouts.



双密封导轨阀、双密封旋塞阀、将军阀(缩径)结构图

Double Seal Guide Valve, Double Sealed Plug Valve, General Valve(Reduced Bore) Structural diagram

零部件名称材料表 List of Component Names and Materials

序号/No.	名称/name	材料/material
1	主密封底盘 / Main sealing bottom plate	WCB
2	泄压阀(手动式) / Manual pressure relief valve	组件/ Assembly
3	防尘盖/ Dust cover	PVC
4	紧定螺钉/ Set screw	标准件/ Standard parts
5	导向块/ Guide block	35#
6	球头销/ Ball stud	65Mn
7	圆柱销/ Cylindrical pin	65Mn
8	油杯/ Oil cup	标准件/ Standard parts

9	平键/ Flat key	标准件/ Standard parts
10	指示标记牌/ Indicator nameplate	20#
11	紧定螺钉、显示杆、保护罩、锁紧螺母、手轮/ Set screw,Indicator stem, Protective cover,Lock nut,Handwheel	组件/ Assembly
12	轴承套/ Bearing sleeve	2cr13
13	轴承/ Bearing	标准件/ Standard parts
14	支架/ Bracket	WCB
15	主轴/ Main shaft	2cr13
16	限位轴/ Limit shaft	45#
17	挡销/ Stop pin	45#
18	弹簧/ Spring	标准件/ Standard parts
19	轴套/ Shaft sleeve	2cr13
20	圆柱销/ Cylindrical pin	65Mn
21	填料压盖/ Packing gland	WCB
22	端盖/ End cover	WCB
23	填料垫/ Packing seat	石墨/ Graphite
24	阀芯/ Valve core	WCB
25	阀瓣/ Valve disc	QT500-1
26	阀体/ Valve body	WCB

性能规范表 Performance Specification Sheet

性能规范表 Performance Specification Sheet		
公称压力 Nominal Pressure	1.6	MPa
强度试验压力 Strength test pressure	2.4	
密封试验压力 Sealing test pressure	1.76	
适用温度 Applicable Temperature	≤180	℃

外形尺寸标准要求

- 1、阀门的结构长度按 ANSI B16.10 及 GB12221-89、JB/T5298 的标准
- 2、连接法兰按 ANSI B16.5、JB79、GB/T9113、HG20592 的标准

Standard requirements for external dimensions

1. The structural length of the valve shall comply with the standard of ANSI B16.10, GB12221-89, JB/T5298
2. Connecting flanges according to ANSI B16.5、JB79、GB/T9113、HG20592 standard

型号/ Model: TG4X-150 压力等级/ Pressure rating: 150LB											
口径 Size	mm	50	65	80	100	125	150	200	250	300	350
	in	2	2 1/2	3	4	5	6	8	10	12	14
L-RF		200	190	203	229	320	360	400	450	500	550
L-BW		267	305	330	356	381	394	457	533	610	686
H		435	460	490	525	570	625	700	780	870	980
W		220	260	280	300	340	400	450	500	500	500
重量/Weight(kg)		60	63	65	75	100	150	190	275	368	605

型号/ Model: TG4X 压力等级/ Pressure rating: 600LB											
口径 Size	mm	50	65	80	100	125	150	200	250	300	350
	in	2	2 1/2	3	4	5	6	8	10	12	14
L-RF-BW		292	330	356	432	508	559	660	787	838	889
H		435	460	490	525	570	625	700	780	870	980
W		220	260	280	300	340	400	450	500	500	500
重量/Weight(kg)		41	54	68	99	128	191	258	430	650	870

型号/ Model: TG4X-300 压力等级/ Pressure rating: 300LB											
口径 Size	mm	50	65	80	100	125	150	200	250	300	350
	in	2	2 1/2	3	4	5	6	8	10	12	14
L-RF		216	241	283	305	381	403	419	457	502	762
L-BW		267	305	330	356	381	457	521	559	635	762
H		435	460	490	525	570	625	700	780	870	980
W		220	260	280	300	340	400	450	500	500	500

重量/Weight(kg)	37	44	60	82	115	165	225	305	405	650
---------------	----	----	----	----	-----	-----	-----	-----	-----	-----

型号/ Model: TG4X 压力等级/ Pressure rating: 900LB											
口径 Size	mm	50	65	80	100	125	150	200	250	300	350
	in	2	2 1/2	3	4	5	6	8	10	12	14
L-RF-BW		368	419	381	457	559	610	737	838	965	1029
H		435	460	490	525	570	625	700	780	870	980
W		220	260	280	300	340	400	450	500	500	500
重量/Weight(kg)		47	62	75	115	147	220	379	490	720	1020

双密封导轨阀、双密封旋塞阀、将军阀(缩径)安装与维护须知

第一部分：安装须知

一、安装前准备

核对阀门：核对设备铭牌，确认公称压力、口径及壳体材质（通常为铸钢、不锈钢或合金钢）符合设计要求，确认阀门为缩径结构。检查旋塞与阀体导轨密封面有无划伤、锈蚀或损坏，检查导轨机构是否灵活、无卡滞，并检查上下两组密封副是否完好。检查排放口（双关双断功能）是否畅通、密封完好。清点法兰密封垫片及法兰连接件。

管道准备：安装前必须对管道系统进行彻底吹扫或冲洗，清除管道内残留的焊渣、铁锈、油污及杂物，防止杂质进入阀腔损伤导轨密封面。

方向与姿势：阀门为双向密封阀门，无严格介质流向限制。为便于操作和维护，推荐水平安装并使阀杆处于垂直向上位置，手轮或执行机构应朝向便于操作的方向，排放口应朝向便于接管和操作的位置。法兰连接时应确保两法兰面平行对中。

Part 1: Installation Instructions

1、Preparation before installation

Verification: Check the valve nameplate to confirm that the nominal pressure, nominal diameter, and body material (typically cast steel, stainless steel, or alloy steel) meet the design requirements, and confirm that the valve is of reduced bore design. Inspect the plug and valve body guide track sealing surfaces for scratches, corrosion, or damage. Check that the guide track mechanism operates smoothly without sticking. Check that both upper and lower sealing pairs are intact. Check that the bleed port (for double block and bleed function) is unobstructed and properly sealed. Count the flange gaskets and flange fasteners.

Pipeline Preparation: Before installation, the pipeline system must be thoroughly purged or flushed to remove weld slag, rust, oil, and other debris, preventing foreign matter from entering the valve cavity and damaging the guide track sealing surfaces.

Orientation and Position: The valve is a bidirectional sealing valve with no strict flow direction restriction. For ease of operation and maintenance, horizontal installation is recommended with the valve stem in a vertical upward position. The handwheel or actuator should face a direction convenient for operation, and

the bleed port should face a direction convenient for piping and operation. During flange connection, ensure that the two flange faces are parallel and aligned.

二、 安装过程

吊装与对中：平稳吊装阀门，确保阀体法兰与管道法兰自然对中，严禁强行撬动对孔。禁止以阀杆、手轮或排放口作为承力点。

位置选择：建议安装在需要可靠截断、隔离及排放介质的苛刻工况管段中，如长输管道、泵出口、反应器上下游等关键位置。安装位置应留有足够的空间用于拆卸阀门、导轨机构维护及排放操作。

支撑与仪表：大口径或重型阀门需有管道独立支撑，避免阀体承受额外弯矩。为监控运行状态，建议在阀门上下游安装压力表，用于判断阀门密封性能。法兰连接时应使用合适的密封垫片，按对角线顺序均匀紧固螺栓。

2、 Installation process

Lifting and Alignment: Lift the valve smoothly and ensure natural alignment between the valve body flange and the pipeline flange. Forced alignment by prying is prohibited. Do not use the valve stem, handwheel, or bleed port as lifting or load-bearing points.

Location Selection: The valve should be installed in demanding pipeline sections where reliable shut-off, isolation, and bleed functions are required, such as long-distance pipelines, pump outlets, and upstream/downstream of reactors. Sufficient space shall be reserved for valve disassembly, guide track mechanism maintenance, and bleed operations.

Supports and Instruments: Large-diameter or heavy valves require independent pipeline supports to prevent additional bending moments on the valve body. To monitor operating status, it is recommended to install pressure gauges upstream and downstream of the valve to evaluate valve sealing performance. For flange connections, use appropriate sealing gaskets and tighten bolts evenly in a diagonal sequence.

第二部分：操作与使用须知

一、初始投运：

排气与充液：缓慢开启系统介质进口阀，打开阀门高点的排气阀（如有），待介质连续稳定流出后关闭，排尽阀腔内空气。

检漏与观察：升压至工作压力后，检查阀体与管道法兰连接处、阀杆填料处、排放口处有无渗漏。观察并确认阀门在关闭状态下无内漏。注意检查两道密封之间排放口有无介质渗出，以验证双密封效果。

首次操作确认：首次操作时，确认旋塞沿导轨上升、旋转、下降动作顺畅，无卡滞现象。确认排放口在关闭状态下无介质泄漏。

二、运行监控与操作：

操作扭矩监测（科学维护依据）：定期记录阀门启闭时的操作扭矩。阀门采用缩径设计及导轨导向结构，启闭过程中密封面无摩擦，正常操作扭矩较小且稳定。当扭矩明显增大时，表明导轨机构可能发生卡滞或密封面有异物，应及时检查处理。严禁强行操作。

启闭操作：启闭阀门时应缓慢转动手轮或执行机构。先将手轮逆时针旋转使旋塞沿导轨上升使密封面脱离，再继续旋转 90 度完成开启；关闭时先旋转 90 度使旋塞沿导轨旋转到位，再顺时针旋转手轮使旋塞沿导轨下降压紧密封面。全开或全关位置应有明显限位感。到位后勿过度施力。长期处于固定位置的阀门，建议每月进行一次全行程启闭操作，防止导轨机构卡滞。

双关双断功能操作：需进行排放操作时，应先确认阀门处于全关位置（两道密封均已关闭），然后缓慢打开排放口阀门，排放两道密封之间的介质或进行压力监测。排放完成后关闭排放口阀门。严禁在阀门未完全关闭时打开排放口。

导轨机构维护：定期检查导轨导向机构的润滑情况，按制造商要求添加润滑脂。检查阀杆升降旋转是否顺畅。

Part 2: Instructions for Operation and Use

I. Initial Commissioning

Venting and Filling: Slowly open the system medium inlet valve. Open the vent valve at the high point of the valve (if available) and close it after a continuous and stable flow of medium emerges, ensuring that air in the valve cavity is completely expelled.

Leak Check and Observation: Raise the pressure to the working pressure and check for leakage at the valve-body flange connections, valve stem packing, and bleed port. Observe and confirm that there is no internal leakage when the valve is closed. Pay attention to check for medium seepage from the bleed port between the two seals to verify dual sealing effectiveness.

Initial Operation Confirmation: During initial operation, confirm that the plug lifting, rotating, and lowering actions along the guide track are smooth without sticking. Confirm that the bleed port has no medium leakage in the closed position.

II. Operation Monitoring and Handling

Torque Monitoring (Basis for Scientific Maintenance): Regularly record the operating torque when opening or closing the valve. The valve adopts reduced bore design and guide track structure with no friction on sealing surfaces during operation, resulting in low and stable normal operating torque. A significant increase in torque indicates possible sticking of the guide track mechanism or foreign matter on the sealing surfaces, requiring timely inspection. Forced operation is prohibited.

Opening and Closing Operation: Rotate the handwheel or actuator slowly when opening or closing the valve. For opening, first turn the handwheel counterclockwise to lift the plug along the guide track to disengage the sealing surfaces, then continue rotating 90 degrees to complete opening; for closing, first rotate 90 degrees to position the plug along the guide track, then turn the handwheel clockwise to lower the plug along the guide track to press the sealing surfaces together. A distinct limit feel should be present at the fully open and fully closed positions. Do not over-torque when reaching the end position. For valves remaining in a fixed position for extended periods, a full-stroke opening and closing operation is recommended once per month to prevent sticking of the guide track mechanism.

Double Block and Bleed Function Operation: When a bleed operation is required, first confirm that the valve is in the fully closed position (both seals are closed), then slowly open the bleed port valve to discharge medium between the two seals or perform pressure monitoring. Close the bleed port valve after completion. Do not open the bleed port when the valve is not fully closed.

Guide Track Mechanism Maintenance: Regularly check the lubrication condition of the guide track mechanism. Add lubricating grease as recommended by the manufacturer. Check that the valve stem moves up/down and rotates smoothly.

第三部分：维护与保养须知

一、日常维护

外观与泄漏检查: 定期巡检，检查阀体、法兰连接处、阀杆填料压盖、排放口有无锈蚀、裂纹或泄漏。如有微量外漏可适当均匀拧紧填料螺栓。检查各法兰螺栓有无松动。

仪表维护: 确保上下游压力表读数准确、灵敏。

操作灵活性检查: 定期（如每月）对阀门进行全行程启闭操作，确认导轨机构灵活、旋转顺畅、无卡滞现象。

导轨机构润滑: 定期检查导轨导向机构的润滑脂状态，按制造商要求周期添加或更换润滑脂。

双密封功能验证: 定期（如每年或按制造商建议）通过排放口检查两道密封之间的密封性能，确认无内漏。

二、旋塞密封及导轨维护

安全隔离与泄压: 关闭阀门上下游的截止阀。确认排放口处于关闭状态。缓慢打开下游泄放阀或系统放空

口，确认阀腔压力降至零且无介质流出后，方可进行后续操作。对于高温介质，须待阀体温度降至常温后再作业。

拆卸填料压盖及导轨机构：使用合适工具，均匀对角松开并卸下填料压盖螺栓。拆下导轨机构与阀杆的连接件，小心卸下导轨机构。注意保护阀杆和导轨导向面。

取出与检查旋塞：小心取出旋塞。检查旋塞与阀体导轨密封面有无划伤、腐蚀坑点、剥落或异物粘连。检查导轨导向槽和滚道是否完好。检查上下两道密封副的磨损情况。检查填料是否老化、变硬或失去弹性。

清洁密封面及导轨：使用软布和清洁剂擦拭密封面和导轨面，清除结垢、锈蚀或粘连物。严禁用硬物刮擦导轨密封面。对于轻微磨损，可使用专用研磨工具进行研磨修复。

检查与更换密封件：必须更换所有旧填料和密封垫片。如导轨密封面严重磨损无法修复，应更换旋塞或阀体组件。检查排放口密封是否完好。

回装与调试：将旋塞准确复位，确保密封面清洁。重新安装导轨机构，确保阀杆与导轨机构连接可靠。均匀对称紧固填料压盖螺栓。操作阀门进行全行程启闭，确认导轨机构工作正常、旋塞转动灵活、无卡滞，两道密封关闭到位。回装后进行密封性试验，确认无内外泄漏，并通过排放口验证双密封效果。

Part Three: Maintenance and Care Instructions

I. Routine and Periodic Maintenance

Visual and Leak Inspection: Perform regular inspections to check for rust, cracks, or leakage at the valve body, flange connections, valve stem packing gland, and bleed port. If slight external leakage occurs, evenly tighten the packing bolts as appropriate. Check for loosened flange bolts.

Instrument Maintenance: Ensure that upstream and downstream pressure gauges are accurate and responsive.

Operational Flexibility Check: Regularly (e.g., monthly) perform a full-stroke opening and closing operation of the valve to confirm smooth guide track mechanism operation, smooth rotation, and no sticking.

Guide Track Mechanism Lubrication: Regularly check the condition of the lubricating grease in the guide track mechanism. Add or replace lubricating grease according to the manufacturer's recommended schedule.

Dual Seal Function Verification: Regularly (e.g., annually or as recommended by the manufacturer) check the sealing performance between the two seals through the bleed port to confirm no internal leakage.

II. Plug Seal and Guide Track Maintenance (Core Procedure)

Safety Isolation and Depressurization: Close the shutoff valves upstream and downstream of the valve. Confirm that the bleed port is closed. Slowly open the downstream drain valve or system vent. Ensure that the valve cavity pressure drops to zero and no medium flows out before proceeding with subsequent operations. For high-temperature media, allow the valve body temperature to cool to ambient temperature before working.

Disassembly of Packing Gland and Guide Track Mechanism: Use appropriate tools to evenly and diagonally loosen and remove the packing gland bolts. Disconnect the guide track mechanism from the valve stem and carefully remove the guide track mechanism. Protect the valve stem and guide track surfaces.

Removal and Inspection of Plug: Carefully remove the plug. Inspect the plug and valve body guide track sealing surfaces for scratches, corrosion pits, spalling, or foreign matter adhesion. Check that the guide track grooves and raceways are in good condition. Check the wear condition of both upper and lower sealing pairs. Check whether the packing has aged, hardened, or lost elasticity.

Cleaning of Sealing Surfaces and Guide Track: Wipe the sealing surfaces and guide track with a soft cloth and cleaning agent to remove scale, rust, or adhered matter. Do not scrape the guide track sealing

surfaces with hard tools. For minor wear, use specialized lapping tools for restoration.

Inspection and Replacement of Sealing Components: All old packing and gaskets must be replaced. If the guide track sealing surfaces are severely worn beyond repair, replace the plug or valve body assembly. Check that the bleed port seal is intact.

Reassembly and Testing: Properly reposition the plug, ensuring that the sealing surfaces are clean. Reinstall the guide track mechanism, ensuring reliable connection between the valve stem and the guide track mechanism. Evenly and symmetrically tighten the packing gland bolts. Operate the valve through a full-stroke opening and closing cycle to confirm proper operation of the guide track mechanism and smooth, sticking-free rotation of the plug, with both seals properly closed. After reassembly, perform a sealing test to confirm no internal or external leakage, and verify dual sealing effectiveness through the bleed port.

三、常见故障与处理

故障现象/Fault Phenomenon	可能原因/Possible Causes	处理方法/Corrective Actions
阀门无法完全关闭，内漏严重 / Valve fails to close completely; severe internal leakage	1.导轨密封面磨损或划伤 2.密封面有异物卡滞 3.旋塞未沿导轨下降到位 4.两道密封副之一失效 / 1.Wear or scratching of guide track sealing surfaces 2.Foreign matter stuck between sealing surfaces 3.Plug not fully lowered along guide track 4.One of the two sealing pairs failed	1.拆解检查密封面，进行研磨修复或更换旋塞 2.清洗密封面，清除异物 3.检查导轨机构，调整下降行程 4.检查两道密封副，更换损坏部件 / 1.Disassemble and inspect sealing surfaces; perform lapping or replace the plug 2.Clean sealing surfaces to remove foreign matter 3.Check guide track mechanism; adjust lowering stroke 4.Inspect both sealing pairs; replace damaged components
排放口泄漏（双关双断功能失效） / Leakage at bleed port (double block and bleed function failure)	1.两道密封副均失效 2.排放口密封件损坏 3.排放口未关闭 / 1.Both sealing pairs failed 2.Bleed port seal damaged 3.Bleed port not closed	1.检查并修复或更换两道密封副 2.更换排放口密封件 3.关闭排放口阀门 / 1.Inspect and repair or replace both sealing pairs 2.Replace bleed port seal 3.Close bleed port valve
操作扭矩过大，转动困难 / Excessive operating torque; difficult rotation	1.导轨机构卡滞或润滑不良 2.旋塞未充分上升即旋转 3.填料压得过紧 4.阀体或旋塞变形 5.缩径流道内有异物 / 1.Guide track mechanism sticking or poor lubrication 2.Plug rotated without sufficient lifting 3.Packing compressed too tightly 4.Valve body or plug deformed 5.Foreign matter in reduced bore flow path	1.检查导轨机构，添加润滑脂 2.按正确顺序操作：先上升后旋转 3.适当松解填料压盖 4.检查工况是否超限，必要时更换阀门 5.拆解清除流道内异物 / 1.Check guide track mechanism; add lubricating grease 2.Operate in correct sequence: lift first then rotate 3.Slightly loosen the packing gland 4.Check if operating conditions exceed limits; replace valve if necessary 5.Disassemble and remove foreign matter from flow path
法兰连接处泄漏 / Leakage at flange	1.密封垫片老化或损坏 2.法兰螺栓松动 3.法兰密封面有划伤或腐蚀 /	1.更换密封垫片 2.按对角线顺序均匀重新紧固螺栓 3.修复法兰密封面或更换阀门 /

connections	1.Gasket aged or damaged 2.Flange bolts loose 3.Flange sealing surface scratched or corroded	1.Replace gasket 2.Evenly retighten bolts in diagonal sequence 3.Repair flange sealing surface or replace valve
-------------	--	---

四、 长期停用与存放

长期停用的阀门，应将其置于关闭状态并稍微提升旋塞使密封面脱离接触，避免密封面长期受压损伤。关闭系统进出口阀门及排放口阀门，排除阀腔内积液和压力。

对阀杆外露表面、法兰密封面、导轨机构等加工表面进行防锈处理（如涂防锈脂）。

阀门进出口应用盲板或塑料盖封住，排放口也应加以封堵，防止灰尘和异物进入阀腔及排放通道。

存放在干燥、通风的室内，不得露天堆放，避免受潮和机械损伤。

3、 Long term disuse and storage

For valves taken out of service for extended periods, place them in the closed position with the plug slightly lifted to disengage the sealing surfaces, preventing long-term compression damage to the sealing surfaces. Close the system inlet and outlet valves and the bleed port valve, and drain any trapped pressure and liquid from the valve cavity.

Apply rust preventive treatment (e.g., anti-rust grease) to exposed valve stem surfaces, flange sealing surfaces, guide track mechanism, and other machined surfaces.

Cover the valve inlet and outlet with blind flanges or plastic caps, and also cap the bleed port to prevent dust and foreign matter from entering the valve cavity and bleed passage.

Store in a dry, well-ventilated indoor location. Outdoor storage is not permitted. Protect from moisture and mechanical damage.

非常感谢您的阅读！

Thank you very much for reading!

开维喜阀门集团有限公司

地址：浙江省温州市永嘉县瓯北街道三桥工业区林下路 1 号

电话：+86（21）67038872

网址：<https://www.kaiweixi.com>

E-mail: zcq@kaiweixi.com

Kaiweixi Valve Group Co., Ltd

Address: No.1 Linxia Road, Sanqiao Industrial Zone, Oubei Street, Yongjia
County, Wenzhou City, Zhejiang Province

Phone: +86 (21) 67038872

URL: <https://www.kaiweixi.com>

E-mail: zcq@kaiweixi.com