

D971F 电动衬氟蝶阀系列

D971F Electric Fluorine-Lined Butterfly Valve Series

使
用
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书

Operating Instructions



开 维 喜 阀 门 集 团 有 限 公 司
Kaiweixi Valve Group Co., LTD.

D971F 电动衬氟蝶阀

D971F Electric Fluorine-Lined Butterfly Valve

型号: D971F 规格: DN50-DN2000
公称压力: PN10~PN25 适用介质: 水、酸、碱及腐蚀性介质
适用温度: $\leq 80^{\circ}\text{C}$ 阀体材质: 铸铁、球铁、不锈钢+衬氟
连接方式: 对夹 驱动方式: 电动
Model: D971F
Specifications: DN50 - DN2000
Nominal Pressure: PN10 - PN25
Applicable Media: Water, acids, alkalis, and corrosive media
Applicable Temperature: $\leq 80^{\circ}\text{C}$
Valve Body Materials: Cast iron, ductile iron, stainless steel + fluorine lining
Connection Type: Wafer type
Actuation Mode: Electric

概述

D971F 电动衬氟蝶阀是一种采用高性能衬氟（聚四氟乙烯）工艺的耐腐蚀阀门，通过电动执行器驱动蝶板作 90° 旋转运动，实现管道内腐蚀性介质的精确启闭或流量调节。该阀门采用对夹式或法兰式连接结构，其阀体内壁及蝶板表面均衬有完整的聚四氟乙烯（PTFE）或改性氟塑料层，实现全流道的耐腐蚀保护。电动执行器接收控制信号后，通过减速传动机构将电机扭矩传递给阀杆，驱动蝶板在衬氟阀座内精密旋转。衬氟层具有优异的化学惰性，使阀门能够耐受强酸、强碱、有机溶剂等多种强腐蚀介质。D971F 电动衬氟蝶阀广泛用于化工、制药、电镀、环保等领域的腐蚀性介质管路控制。

Overview

The D971F Electric Fluorine-Lined Butterfly Valve is a corrosion-resistant valve that utilizes a high-performance fluorine-lining process (polytetrafluoroethylene). It is designed for precise on/off control or flow regulation of corrosive media in pipelines, achieved through 90° -degree rotation of the disc driven by an electric actuator. The valve features a wafer or flanged connection design, with both the inner wall of the valve body and the surface of the disc completely lined with polytetrafluoroethylene (PTFE) or modified fluoropolymer, providing full flow path corrosion protection. Upon receiving control signals, the electric actuator transfers motor torque to the valve stem via a gear reduction mechanism, driving the disc to rotate precisely within the fluorine-lined seat. The fluorine lining offers exceptional chemical inertness, enabling the valve to withstand a wide range of highly corrosive media, including strong acids, alkalis, and organic solvents. The D971F Electric Fluorine-Lined Butterfly Valve is widely used in the control of corrosive media pipelines across industries such as chemical processing, pharmaceuticals, electroplating, and environmental protection.



D971F 电动衬氟蝶阀产品图

D971F Electric Fluorine-Lined Butterfly Valve Product Illustration

特点

- 1、全流道衬氟防腐：阀体内腔及蝶板表面采用整体模压或烧结工艺衬覆聚四氟乙烯（PTFE）或 PFA、FEP 等氟塑料，形成完整耐腐蚀屏障，可耐受绝大多数强腐蚀介质，化学稳定性优异。
- 2、电动智能控制：配置一体化或分体式电动执行器，支持 4-20mA 信号输入或开关量控制，实现远程自动化操作、比例调节及程序控制，适用于自动化生产线。
- 3、零泄漏密封设计：蝶板采用氟橡胶包覆或全衬氟结构，与衬氟阀座形成过盈配合，密封性能好，可实现双向零泄漏（密封等级可达 VI 级），有效防止介质外泄。
- 4、轻量化紧凑结构：采用对夹或法兰连接方式，结构长度短、重量轻，安装空间要求小，便于在密集管道中布置；电动执行器体积小巧，整体集成度高。
- 5、低扭矩耐磨损：衬氟层摩擦系数低，蝶板启闭阻力小；电动执行器配备扭矩保护功能，防止过载损坏，延长阀门使用寿命。
- 6、耐温耐压适配：衬氟层可适应-29℃至 180℃的温度范围，特殊改性氟塑料可耐受更高温度；阀门设计压力可达 PN16，满足多种工况需求。
- 7、维护简便安全：结构简单，拆卸方便；衬氟层抗粘附性好，介质不易积聚；电动执行器防护等级高（通常 IP67），适应潮湿、腐蚀性环境。
- 8、卫生级可选配置：可提供抛光处理及无菌设计版本，满足制药、食品等行业洁净度要求，支持在线清洗（CIP）和灭菌（SIP）流程。

Features

- 1、Full Flow Path Fluorine-Lining Anti-Corrosion: The inner cavity of the valve body and the surface of the butterfly disc are entirely lined with fluoroplastics such as polytetrafluoroethylene (PTFE), PFA, or FEP through overall molding or sintering processes, forming a complete corrosion-resistant barrier. This provides excellent chemical stability and resistance to most highly corrosive media.
- 2、Electric Intelligent Control: Equipped with an integrated or separated electric actuator, supporting 4-20 mA signal input or switch control. It enables remote automated operation, proportional regulation, and program control, making it suitable for automated production lines.
- 3、Zero-Leakage Sealing Design: The butterfly disc features a fluorine rubber coating or fully fluor-lined structure, forming an interference fit with the fluor-lined valve seat. This ensures superior sealing performance, achieving bidirectional zero leakage (sealing level up to Class

VI) and effectively preventing medium leakage.

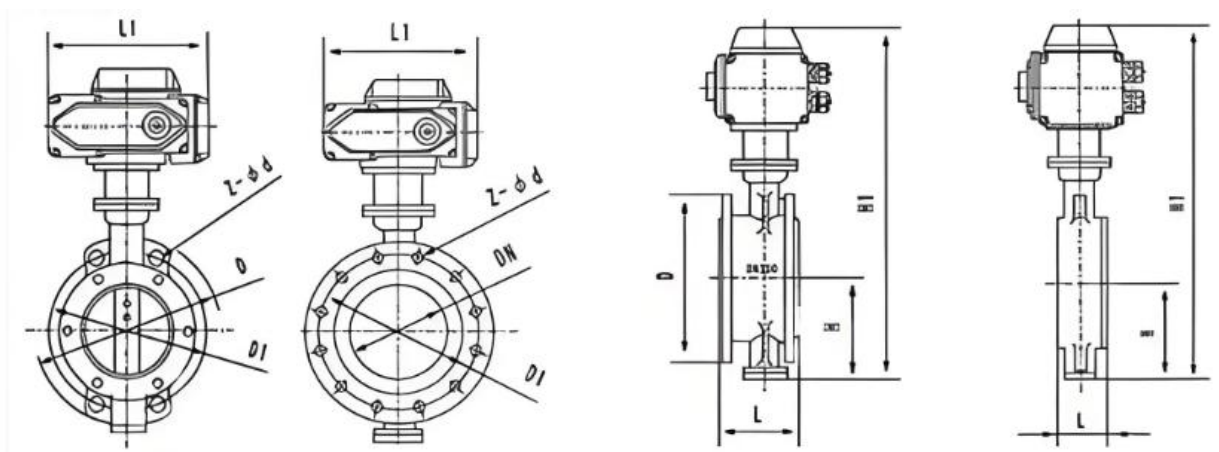
4、Lightweight and Compact Structure: Adopting wafer or flange connection, with short face-to-face dimensions and light weight, requiring minimal installation space and facilitating layout in densely packed pipelines. The electric actuator is compact in size, offering high overall integration.

5、Low Torque and Wear Resistance: The fluor-lining layer has a low friction coefficient, reducing the opening and closing resistance of the butterfly disc. The electric actuator is equipped with torque protection to prevent overload damage and extend valve service life.

6、Temperature and Pressure Adaptation: The fluor-lining layer can withstand temperatures ranging from -29°C to 180°C , with specially modified fluoroplastics capable of enduring higher temperatures. The valve design pressure can reach PN16, meeting various operational requirements.

7、Easy and Safe Maintenance: The simple structure allows for easy disassembly. The fluor-lining layer exhibits good anti-adhesion properties, preventing medium accumulation. The electric actuator features a high protection rating (typically IP67), making it suitable for humid and corrosive environments.

8、Optional Sanitary Configuration: Polished finishes and sterile design versions are available to meet cleanliness requirements in industries such as pharmaceuticals and food. Supports Clean-in-Place (CIP) and Sterilization-in-Place (SIP) processes.



D971F 电动衬氟蝶阀结构图

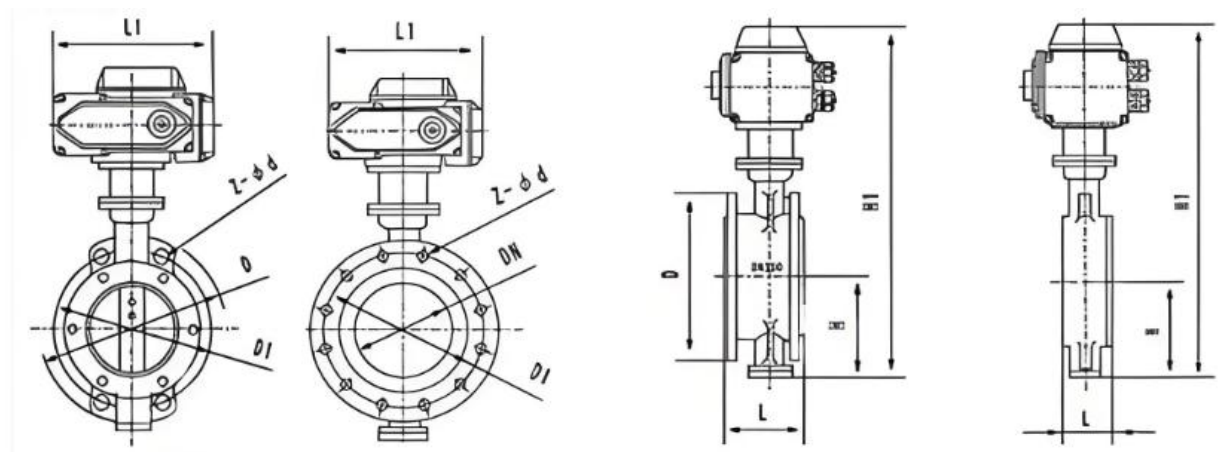
Structure Diagram of D971F Electric Fluorine-Lined Butterfly Valve

零部件名称材料表 Parts Name and Materials List

名称 Name	材料 Material
阀体 Valve Body	铸铁、球铁、不锈钢+衬氟 Cast iron, ductile iron, stainless steel + fluorine lining
蝶板 Disc	球墨铸铁 + 橡胶包覆 (或不锈钢 304) Ductile Iron + Rubber Cladding (or Stainless Steel 304)
阀座 Valve Seat	三元乙丙橡胶 (EPDM) / 四氟乙烯 (PTFE) Ethylene Propylene Diene Monomer (EPDM) / Polytetrafluoroethylene (PTFE)
阀杆 Stem	不锈钢 (304/316) Stainless Steel (304/316)
填料 Packing	柔性石墨 / 四氟填料 Flexible Graphite / PTFE Packing
填料压盖 Packing Gland	球墨铸铁 Ductile Iron
电动执行器壳体 Electric Actuator Housing	铝合金 Aluminum Alloy
连接螺栓 Connecting Bolt	不锈钢 (304) Stainless Steel (304)

性能规范表 Performance Specification Table

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公称压力 Nominal Pressure	1.0/1.6/2.5	MPa
强度试验压力 Strength Test Pressure	1.5/2.4/3.75	
密封试验压力 Sealing Test Pressure	1.1/1.76/2.75	
适用温度 Applicable Temperature	≤80	℃



D971F 电动衬氟蝶阀外形尺寸图

D971F Electric Fluorine-Lined Butterfly Valve Overall Dimension Drawing

D971F 电动衬氟蝶阀外形尺寸表

D971F Electric Fluorine-Lined Butterfly Valve overall dimension table

公称通径 DN		结构长度 标准值) Face-to-face Dimension (Standard Value)	外形尺寸 (参考值) Overall Dimensions (Reference Value)				连接尺寸(标准值) Connection Dimensions (Standard Value)					
							0.6MPa		1.0MPa		1.6MPa	
毫米 mm	英寸 inch	L	H	H0	A	B	D0	n-φd	D0	n-φd	D0	n-φd
50	2	43	63	438	125	125	110	4-14	125	4-18	125	4-18
65	2 1/2	46	70	453	125	125	130	4-14	145	4-18	145	4-18
80	3	46	83	478	125	125	150	4-18	160	8-18	160	8-18
100	4	52	105	519	125	125	170	4-18	180	8-18	180	8-18
125	5	56	115	713	325	245	200	8-18	210	8-18	210	8-18
150	6	56	137	749	325	245	225	8-18	240	8-22	240	8-22
200	8	60	164	843	325	245	280	8-18	295	8-22	295	12-22
250	10	68	206	947	363	313	335	12-18	350	12-22	355	12-26
300	12	78	230	1013	363	313	395	12-22	400	12-22	410	12-26
350	14	78	248	1046	363	313	445	12-22	460	16-22	470	16-26
400	16	102	289	1135	363	313	495	16-22	515	16-26	525	16-30
450	18	114	320	1328	465	439	550	16-22	565	20-26	585	20-30
500	20	127	343	1226	546	431	600	20-22	620	20-26	650	20-33
600	24	154	413	1394	546	556	705	20-26	725	20-30	770	20-36
700	28	165	478	1534	546	556	810	24-26	840	24-30	840	24-36
800	32	190	525	1659	546	556	920	24-30	950	24-33	950	24-39
900	36	203	585	1748	617	706	1020	24-30	1050	28-33	1050	28-39
1000	40	216	640	1805	632	706	1120	28-30	1160	28-36	1170	28-42
1200	48	254	755	2035	632	706	1340	32-33	1380	32-39	1390	32-48
1400	56	279	910	2310	790	1338	1560	36-36	1590	36-42	1590	36-48
1600	64	318	1030	2845	868	1476	1760	40-36	1820	40-48	1820	40-56
1800	72	356	1140	3060	868	1476	1970	44-39	2020	44-48	2020	44-56
2000	80	406	1250	3350	965	1600	2180	48-42	2230	48-48	2230	48-62

安装与维护须知

一、安装说明

1. 安装前检查:

核对验证： 仔细核对阀门铭牌上的型号（D971F）、公称通径（DN）、压力等级（PN）、阀体材质及衬氟层材质（如 PTFE、FEP、PFA 等），确保其与管道设计要求完全一致，并确认衬氟材料适用于工作介质及温度范围。

外观与内部检查： 检查阀门及电动执行器外观，确认无运输损伤。特别注意检查衬氟层表面，应光滑、无划痕、鼓包、裂纹等缺陷。清除阀腔内所有杂物，防止损伤衬氟层。

手动功能测试： 将电动执行器切换至 “手动” 模式，转动手轮或手柄，确认蝶阀启闭灵活、无卡阻。测试后，将蝶阀置于 微开状态（约 10%-15% 开度），以便安装对准。操作完毕切换回 “自动” 模式。

2. 安装位置与方向：

阀门可安装于水平或垂直管道上。安装位置应便于电动执行器的操作、维护、接线及观察。

流向确认： 必须确保阀体上标示的箭头方向与管道中介质的流向一致。衬氟蝶阀通常为单向密封设计，反向安装可能导致密封失效或衬氟层受损。

3. 管道对接要求：

本阀门通常采用对夹式连接，需通过一组长螺栓、螺母夹持在两片管道法兰之间。也有部分型号为法兰连接，请根据实物确认。

严禁使用阀门螺栓强行纠正管道法兰间的错位、不平行或间隙过大。安装前应校准管道，确保两片法兰平行对中，法兰内径与阀门通径匹配，避免法兰螺栓或管道边缘与阀门衬氟层接触或摩擦。

衬氟保护安装步骤（关键）：

将阀门置于两片法兰之间，插入少量螺栓进行初步定位。

通过手动机构将蝶阀旋转至完全开启位置（与管道平行），最大限度减少安装干涉。

分步均匀拧紧： 使用扭矩扳手，严格按照对角交叉顺序，分 2-3 轮逐步均匀拧紧所有螺栓至规定扭矩值。严禁单侧或一次性强行紧固，防止阀体（特别是衬氟层）因受力不均而变形、压溃或产生内应力，导致泄漏或衬层开裂。

4. 电动执行机构安装与调试：

电动执行机构通常已预装。阀门在管道上紧固后，进行电气连接和调试。

电气连接： 由专业电工严格按照执行器接线图操作，确保电源电压、频率与控制信号匹配，并做好可靠的接地及电缆密封（尤其适用于腐蚀性环境）。

手动操作： 通电前，确认执行器处于 “手动” 模式，手动操作应顺畅。

行程与限位调试（关键步骤）：

- 切换至 “自动” 模式，操作阀门至 关闭 位置。
- 轻柔地调节执行器内部的关向限位（机械或电子），使蝶阀达到全关位置，确保氟塑料密封面均匀贴合。严禁过度调整导致衬氟蝶阀或阀座过载压缩。
- 操作阀门至 开启 位置（通常为 90° ）。
- 调节开向限位，设定全开位置。
- 反复进行数次开关循环，确认动作平稳、位置准确。

力矩设定： 由于衬氟密封面摩擦力较小，所需操作力矩通常不大。请根据阀门规格，将执行器的工作力矩和过力矩保护值设定在合理范围，避免因设定过大而在卡阻时损坏衬氟层。

二、使用与操作说明

1. 开启与关闭操作：

首次或长期停用后启用： 建议在系统低压或无压状态下，通过手动或低速电动模式，缓慢、轻柔地进行数次全开全关操作，以使衬氟密封面初步磨合，并检查有无异常。

正常操作： 通过控制系统平稳操作，避免急速启闭产生水锤冲击，防止衬氟层因压力骤变受损。

手动操作： 仅用于调试或断电应急。操作前必须切换至“手动”模式，操作力应均匀。

2. 开度调节：

当配置调节型电动执行器时，可用于流量调节。但由于氟塑料的耐冲蚀性有一定限度，需谨慎使用。

严禁长期小开度节流： 绝对禁止将本阀门长期用作节流阀并停留在极小开度（如 $<20^\circ$ ）。高速流体在极小开度下会对衬氟密封面造成严重的气蚀和冲蚀破坏，导致衬层迅速失效。

定期全行程操作： 若长期处于非全开状态，应 每周或每两周 定期进行一次全行程开关操作，防止介质中的结晶物或颗粒在密封面局部沉积、粘附。

3. 重要注意事项：

温度与压力限制： 严格遵守阀门标称的最大允许工作压力（MAP）和温度范围。氟塑料的机械强度随温度升高而下降，严禁超温超压使用。

热冲击： 避免阀门温度急剧变化（如从高温急速冷却或反之），以防衬氟层因热胀冷缩与金属基体剥离或开裂。

介质兼容性： 确保工作介质与阀门所有过流部件（特别是衬氟材料）完全兼容。不兼容的介质会导致衬层溶胀、腐蚀或渗透。

真空工况： 用于真空状态时，需确认阀门结构及衬层设计适用于负压，防止衬层被吸瘪。

三、维护与保养说明

1. 日常维护：

定期巡检阀门外部及连接处有无泄漏。

保持阀门及执行机构清洁，防止腐蚀性介质或灰尘积聚。

检查电动执行器运行是否平稳，有无异响。

2. 定期检查：

根据介质腐蚀性、温度及使用频率，建议每 3 至 6 个月 进行一次重点检查。

阀门部分：

检查阀杆处有无泄漏。
检查法兰螺栓有无松动。

核心检查项：通过观察或短时拆卸（如有条件），检查衬氟层（阀体内壁、蝶板表面）有无鼓包、裂纹、剥离、严重磨损或冲蚀痕迹。任何衬层损伤都意味着阀门已不适用。

执行机构部分：

检查执行器密封、接线及运行状态。

按制造商要求对执行器传动部件进行润滑。

3. 存放要求：

阀门应处于微开状态，避免衬氟密封面长期受压变形。

封闭阀门两端接口。

执行器切换至“手动”模式，并断开电源。

存放于阴凉、干燥、通风良好的室内，远离热源、阳光直射及臭氧源。避免与尖锐物品碰撞。

4. 常见故障与处理：

泄漏（关闭不严）：

检查并调整关向限位。

检查密封面是否有固体颗粒卡住。

检查衬氟密封面是否有损伤或永久变形。

阀门操作困难或卡死：

检查是否有介质结晶或聚合物在阀内凝固。

检查衬氟层是否发生鼓包、剥离导致机械干涉。

严禁强行操作，以免扩大损伤。

衬氟层可见损伤（鼓包、裂纹、剥离）：

立即停用阀门。

衬氟层无法现场修复。任何损伤都意味着阀门寿命终结。

联系制造商或专业供应商，更换整个阀门或阀内衬氟组件。

核心警告： 衬氟蝶阀的氟塑料衬里是保证其耐腐蚀性能的唯一屏障。一旦衬层出现任何形式的物理损伤（划伤、开裂、鼓包、严重冲蚀）或化学损伤（溶胀、老化、渗透），阀门必须立即停用并更换。严禁对衬氟层进行任何形式的焊接、粘补或机械加工修复，此类修复无效且危险。

Installation and Maintenance Instructions

I. Installation Guidelines

Pre-Installation Inspection

Verification: Carefully check the model (D971F), nominal diameter (DN), pressure rating (PN), valve body material, and fluorine-lining material (e.g., PTFE, FEP, PFA) on the valve nameplate to ensure full compliance with pipeline design requirements. Verify the suitability of the lining

material for the intended service media and temperature range.

Visual and Internal Inspection: Inspect the valve and electric actuator for any transport damage. Pay special attention to the surface of the fluorine lining, which should be smooth and free from scratches, bulges, cracks, or other defects. Remove all foreign materials from the valve cavity to prevent damage to the lining.

Manual Function Test: Switch the electric actuator to "Manual" mode. Rotate the handwheel or lever to confirm the butterfly disc opens and closes smoothly without sticking. After testing, leave the disc in a slightly open position (approx. 10%-15% open) to facilitate alignment during installation. Switch back to "Automatic" mode upon completion.

Installation Position and Direction

The valve can be installed in horizontal or vertical pipelines. The location should allow convenient operation, maintenance, wiring, and observation of the electric actuator.

Flow Direction: Ensure the arrow marked on the valve body aligns with the direction of medium flow in the pipeline. Fluorine-lined butterfly valves are typically designed for unidirectional sealing; reverse installation may cause seal failure or damage to the lining.

Pipeline Connection Requirements

This valve typically uses a wafer-type connection, clamped between two pipeline flanges using a set of long bolts and nuts. Some models may have flanged ends; confirm based on the actual product. NEVER use the valve bolts to forcibly correct misalignment, non-parallelism, or excessive gaps between pipeline flanges. Align the pipeline before installation to ensure the two flanges are parallel and centered. Match the flange inner diameter to the valve bore to prevent flange bolts or pipeline edges from contacting or rubbing against the valve's fluorine lining.

Fluorine-Lining Protection Installation Steps (Critical):

Place the valve between the two flanges and insert a few bolts for preliminary positioning. Rotate the butterfly disc to the fully open position (parallel to the pipeline) using the manual mechanism to minimize installation interference.

Stepwise and Even Tightening: Using a torque wrench, tighten all bolts evenly and gradually in 2-3 stages, following a diagonal cross sequence to the specified torque value. NEVER tighten bolts on one side only or force-tighten them all at once, as uneven force can distort, crush, or stress the valve body (especially the lining), leading to leakage or lining cracks.

Electric Actuator Installation and Commissioning

The electric actuator is typically pre-mounted. After the valve is secured in the pipeline, proceed with electrical connection and commissioning.

Electrical Connection: A qualified electrician must perform this strictly according to the actuator wiring diagram, ensuring power supply voltage, frequency, and control signals match. Provide reliable grounding and proper cable sealing (especially important in corrosive environments).

Manual Operation: Before energizing, ensure the actuator is in "Manual" mode and operates smoothly by hand.

Stroke and Limit Switch Adjustment (Critical Steps):

- a. Switch to "Automatic" mode and operate the valve to the closed position.
- b. Gently adjust the close-direction limit (mechanical or electronic) inside the actuator so the disc reaches the fully closed position, ensuring uniform contact of the fluorine sealing surfaces. Avoid over-adjustment which can overload and compress the lined disc or seat.
- c. Operate the valve to the open position (typically 90°).
- d. Adjust the open-direction limit to set the fully open position.
- e. Perform several open/close cycles to confirm smooth operation and accurate positioning.

Torque Setting: Due to the low friction of fluorine-lined sealing surfaces, the required operating torque is typically low. Set the actuator's operating torque and overload protection to appropriate values based on valve specifications to avoid damaging the lining if jamming occurs due to excessive settings.

II. Operation and Use Instructions

Opening and Closing Operation

Initial Start-up or After Prolonged Inactivity: It is recommended to perform several slow, gentle full-open and full-close cycles under low or no system pressure (via manual or low-speed electric mode) to allow initial bedding-in of the fluorine sealing surfaces and check for abnormalities.

Normal Operation: Operate smoothly via the control system. Avoid rapid opening/closing that causes water hammer, which can damage the lining due to sudden pressure changes.

Manual Operation: For commissioning or emergency power loss only. Always switch to "Manual" mode before operation and apply force evenly.

Throttling (Flow Regulation)

When equipped with a modulating electric actuator, the valve can be used for flow regulation. However, due to the limited erosion resistance of fluoroplastics, use with caution.

Prohibit Prolonged Low-Degree Throttling: ABSOLUTELY AVOID using this valve as a throttling valve and keeping it at very small openings (e.g., <20°) for extended periods. High-velocity flow at such openings causes severe cavitation and erosion damage to the fluorine sealing surfaces, leading to rapid lining failure.

Regular Full-Stroke Operation: If the valve remains in a non-fully-open position for long periods, perform a weekly or bi-weekly full-stroke open/close operation to prevent crystallization or particle build-up on the sealing surfaces.

Important Precautions

Temperature and Pressure Limits: Strictly adhere to the valve's marked Maximum Allowable Working

Pressure (MAWP) and temperature range. The mechanical strength of fluoroplastics decreases with rising temperature; NEVER exceed these limits.

Thermal Shock: Avoid sudden temperature changes (e.g., rapid cooling from high temperature or vice versa) to prevent the lining from detaching or cracking due to differing thermal expansion/contraction with the metal substrate.

Media Compatibility: Ensure the service medium is fully compatible with all wetted valve parts, especially the fluorine lining. Incompatible media can cause lining swelling, corrosion, or permeation.

Vacuum Service: When used under vacuum, confirm the valve structure and lining design are suitable for negative pressure to prevent the lining from collapsing.

III. Maintenance and Service Instructions

Routine Maintenance

Periodically inspect the valve exterior and connections for leaks.

Keep the valve and actuator clean, preventing accumulation of corrosive media or dust.

Check that the electric actuator operates smoothly and without abnormal noise.

Periodic Inspection

Depending on media corrosivity, temperature, and usage frequency, a detailed inspection is recommended every 3 to 6 months.

Valve:

Check for leakage around the stem.

Check for loose flange bolts.

Key Inspection Item: Visually inspect or briefly disassemble (if possible) to check the fluorine lining (valve body interior, disc surface) for bulges, cracks, delamination, severe wear, or erosion marks. Any lining damage indicates the valve is no longer serviceable.

Actuator:

Check actuator seals, wiring, and operational status.

Lubricate the actuator's transmission components as per the manufacturer's instructions.

Storage Requirements

Store the valve in a slightly open position to avoid permanent deformation of the fluorine sealing surfaces under constant compression.

Seal both valve end connections.

Switch the actuator to "Manual" mode and disconnect the power supply.

Store indoors in a cool, dry, well-ventilated area, away from heat sources, direct sunlight, and ozone sources. Avoid contact with sharp objects.

Common Troubleshooting

Leakage (Failure to Seal Tightly):

Check and adjust the close-direction limit switch.

Check for solid particles trapped on the sealing surfaces.

Check for damage or permanent deformation of the fluorine sealing surfaces.

Difficult Operation or Seizing:

Check for media crystallization or polymerization inside the valve.

Check if lining bulging or delamination is causing mechanical interference.

DO NOT force operation, as this may worsen the damage.

Visible Lining Damage (Bulging, Cracks, Delamination):

Stop using the valve immediately.

Fluorine lining cannot be repaired on-site. Any damage signifies the end of the valve's service life.

Contact the manufacturer or a specialized supplier to replace the entire valve or the fluorine-lined internal assembly.

CORE WARNING: The fluoroplastic lining is the sole barrier ensuring the corrosion resistance of a fluorine-lined butterfly valve. If the lining sustains any form of physical damage (scratches, cracks, bulging, severe erosion) or chemical damage (swelling, aging, permeation), the valve **MUST** be taken out of service and replaced immediately. ANY attempts to repair the lining through welding, adhesive patching, or machining are **STRICTLY PROHIBITED**, as such repairs are ineffective and hazardous.

非常感谢您的阅读！

Thank you very much for reading!

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