开维喜阀门集团
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D71X 对夹中线蝶阀系列

D71X Wafer Centerline Butterfly Valve Series

使用说明书

Operating Instructions

开维喜阀门集团有限公司

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D71X 对夹中线蝶阀

D71X Wafer Centerline Butterfly Valve

型号： D71X	规格：DN50-DN300
公称压力：PN10~PN25	适用介质：水及类似于水的介质
适用温度：≤ 80 ℃	阀体材质：铸铁、球墨铸铁、不锈钢+衬胶、衬氟
连接方式：对夹	驱动方式：手动
Model: D71X	Specification: DN50-DN300
Nominal Pressure: PN10~PN25	Applicable Medium: Water and water-like media
Applicable Temperature: ≤ 80 ℃	Body Material: Cast iron, ductile iron, stainless steel + rubber lining, fluorine lining
Connection Type: Wafer type	Actuation: Manual

概述

D71X 对夹中线蝶阀是一种通过圆盘形蝶板绕其固定轴（阀杆）旋转来开启、关闭和调节流体通道的阀门。其阀杆轴线位于蝶板密封面中心与管道通道中心线相交的“中线”位置，蝶板两侧对称。阀门采用对夹式连接，即阀体本身无法兰，通过双头螺栓将阀门夹持在两片管道法兰之间。蝶板密封圈通常采用橡胶等弹性材料，直接镶嵌在阀体或压板内圈，依靠蝶板旋转压紧密封圈实现密封。该阀门通过手动、电动或气动装置驱动阀杆旋转 90° 或更小角度，即可快速控制流体的通断与流量。

Overview

The D71X Wafer-Type Centerline Butterfly Valve is a valve that controls the opening, closing, and regulation of fluid flow by rotating a disc-shaped butterfly plate around its fixed shaft (valve stem). The axis of the valve stem is located at the "centerline" position, where the sealing surface of the butterfly plate intersects with the centerline of the pipeline channel, ensuring symmetrical design on both sides of the butterfly plate. The valve features a wafer-type connection, meaning the valve body itself is flangeless and is clamped between two pipeline flanges using double-ended bolts. The sealing ring of the butterfly plate is typically made of elastic materials such as rubber and is directly embedded in the valve body or the inner ring of a pressure plate, achieving sealing by compressing the ring during butterfly plate rotation. The valve is operated manually, electrically, or pneumatically, driving the valve stem to rotate 90 degrees or less for rapid control of fluid flow, including on/off functions and flow regulation.

D71X 对夹中线蝶阀产品图

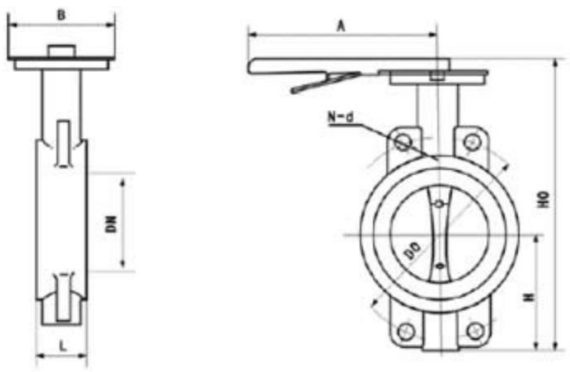
D71X Wafer Centerline Butterfly Valve Product Image

特点

1、结构紧凑轻巧：采用对夹式设计，结构长度短，体积小，重量轻，特别适用于安装空间受限的管道系统。
2、启闭迅速便捷：蝶板旋转 90° 即可完成全开或全关，操作简单快捷，且所需操作扭矩小。
3、流体阻力小：当蝶板处于全开位置时，介质流道近似直通管，蝶板对流体产生的阻挡很小，因此压力损失小。
4、密封性能良好：采用中线密封结构，弹性软质密封圈与蝶板边缘紧密贴合，能实现有效的双向密封（或单向密封，视具体设计而定），尤其适用于常温常压或中低压工况。
5、维护方便，成本经济：结构简单，零部件较少，拆卸与更换相对容易。相比同等口径的其他阀门，制造成本和安装成本通常更具优势。
6、用途广泛：阀体可采用铸铁、球铁、不锈钢等多种材质，内衬和蝶板也可选用不同防腐材料或涂层，使其能应用于水处理、空调、给排水、燃气、电力、化工等众多行业的液体、气体介质管路。

Features

1、Compact and Lightweight Design: The wafer-type construction ensures a short face-to-face dimension, small volume, and reduced weight, making it particularly suitable for piping systems with limited installation space.
2、Quick and Easy Operation: A 90° rotation of the disc completes the full opening or closing cycle, offering simple and rapid actuation with low operating torque.
3、Low Fluid Resistance: When fully open, the disc creates minimal obstruction to the flow, resembling a straight pipe section, resulting in low pressure loss.
4、Excellent Sealing Performance: The centerline sealing structure utilizes a resilient soft seat that fits tightly against the disc edge, providing effective bidirectional sealing (or unidirectional sealing, depending on the specific design), especially suitable for normal/low temperature and low-to-medium pressure applications.
5、Easy Maintenance and Cost-Effectiveness: With a simple structure and fewer components, disassembly and replacement are relatively straightforward. Compared to other valves of the same diameter, it generally offers advantages in both manufacturing and installation costs.
6、Wide Range of Applications: The valve body can be made from materials such as cast iron, ductile iron, or stainless steel, while the lining and disc may be selected from various corrosion-resistant materials or coatings. This versatility enables its use in pipelines handling liquids or gases across numerous industries, including water treatment, HVAC, water supply and drainage, gas, power, and chemical processing.



D71X 对夹中线蝶阀结构图

D71X Wafer Centerline Butterfly Valve Structure Diagram

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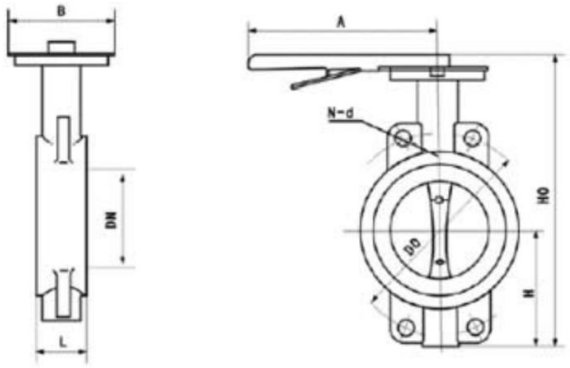
零部件名称材料表 Parts Name and Materials Table

名称 Name	材料 Materials
手柄 / 手轮 Handle / Handwheel	铸铁 Cast Iron
阀杆 Stem	不锈钢（304/316）Stainless Steel (304/316)
蝶板 Disc	球墨铸铁 Ductile Iron
螺栓 / 螺母 Bolt / Nut	不锈钢 Stainless Steel
阀体 Body	铸铁、球墨铸铁、不锈钢+衬胶、衬氟 Cast iron, ductile iron, stainless steel +rubber lining, fluorine lining

性能规范表 Performance Specification Table

性能规范表 Performance Specification Table		
公称压力 Nominal Pressure (PN)	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 Seal Test Pressure	1.1/1.76/2.75	
适用温度 Suitable Temperature Range	≤80	℃



D71X 对夹中线蝶阀外形尺寸图

D71X Wafer Centerline Butterfly Valve Overall Dimension Drawing

D71X 对夹中线蝶阀外形尺寸表 Outline Dimension Table

DN	L	H	H0	A	B	0.6MPa		1.0MPa		1.6MPa	
						Do	n-d	Do	n-d	Do	n-d
50	43	63	235	270	110	110	4-14	125	4-18	125	4-18
65	46	70	250	270	110	130	4-14	145	4-18	145	4-18
80	46	83	275	270	110	150	4-18	160	8-18	160	8-18
100	52	105	316	270	110	170	4-18	180	8-18	180	8-18
125	56	115	340	310	110	200	8-18	210	8-18	210	8-18
150	56	137	376	310	110	225	8-18	240	8-22	240	8-22
200	60	164	430	353	150	280	8-18	295	8-22	295	12-22

250	68	206	499	353	150	335	12-18	350	12-22	355	12-26
300	78	230	570	380	150	395	12-22	400	12-22	410	12-26

安装与维护须知

一、 安装说明

安装前检查：

核对阀门型号、通径、压力等级及介质流向是否与管路设计要求一致。
检查阀门外观，确保运输过程中阀体、法兰密封面及蝶板无损伤。清除阀腔内及蝶板密封面的保护物和杂物。
手动旋转手柄或驱动方榫，确认蝶板启闭灵活、无卡阻。安装前建议将蝶板调整至微开状态（约 10%-15%开度）。

安装位置与方向：

阀门可安装于水平或垂直管道上，安装位置应便于观察、操作和维护。
注意阀体或法兰上的箭头指示方向，确保其与介质设计流向一致。

管道对接要求：

阀门采用对夹式连接，需使用标准管道法兰夹持安装。严禁通过强行拧紧螺栓校正管道法兰间的错位或间隙，以免阀体变形导致密封失效。
安装时，将阀门置于两片法兰之间，插入对穿螺栓后，采用对角、分步、均匀的方式拧紧螺母，确保阀门受力均匀。

驱动装置安装：

若配备电动、气动或蜗轮执行机构，应在阀门管道安装就位后再行安装。确保执行机构输出轴与阀杆对中，连接牢固可靠。
手动操作阀门至全关位置，再安装执行机构，并依据其说明书进行行程和扭矩的调试设定。

二、 使用与操作说明

开启与关闭：

首次使用时，建议在低压或介质未充满管道状态下，缓慢进行数次全开全关操作，以磨合密封面。
正常操作时应平稳启闭，避免冲击。手动操作时，到达全开或全关位置后请勿继续强行旋转手柄。使用执行机构时，应确保其限位装置调整正确。

开度调节：

本阀门可用于调节流量，通过控制蝶板旋转角度可实现近似线性的流量控制。
若长期处于部分开启的调节状态，建议定期进行全行程开关操作，以防局部沉积或结垢影响密封与操作。

注意事项：

本阀门不宜作为节流阀长期处于微小开度（如＜15°）工作，以免高速介质流冲蚀密封面。
用于高温工况时，冷态安装并首次通入热介质后，需对法兰螺栓进行热态再紧固，防止因热膨胀差异引起泄漏。
如介质中含有固体颗粒或纤维，使用前应评估其对密封面的磨损与卡阻风险。

三、 维护与保养说明

日常维护：

定期检查阀门外部及法兰连接处有无泄漏。
保持阀杆及传动部件清洁，并按需对阀杆密封处、蜗轮传动机构等加注适量润滑脂。
检查配套执行机构（如有）的运行状态是否正常。

定期检查：

根据使用频率与工况条件，建议每 6-12 个月进行一次全面检查。
检查内容包括：密封面磨损情况、阀杆转动是否灵活、法兰螺栓是否松动、O 型圈等密封件是否老化。

存放要求：

阀门长期存放时，应处于微开状态（避免密封面长期受压粘连），并装好两端法兰保护盖。
存放于干燥、通风的室内环境中，避免阳光直射、雨淋及腐蚀性气氛。

故障与处理：

泄漏：检查蝶板是否关到位；检查密封面是否损坏或有异物；检查法兰螺栓是否均匀紧固。
操作扭矩过大：检查是否有内部卡阻或异物堆积；检查润滑是否充分；检查执行机构是否匹配或过载。
如需更换密封圈、阀杆等内部零件，或遇到无法排除的故障，建议联系专业人员或生产厂家处理。

重要提示：
本说明为通用性技术指导，适用于常规工况。若用于特殊介质（如强腐蚀、易燃易爆、超低温等）、关键安全系统或极端参数场合，必须严格遵循相关行业规范及制造商的专项技术协议进行操作与维护。

Installation and Maintenance Guidelines

I. Installation Instructions

Pre-installation Inspection:

Verify that the valve model, bore size, pressure rating, and flow direction correspond to the pipeline design requirements.

Inspect the valve visually to ensure that the body, flange sealing surfaces, and disc are free from damage incurred during transportation. Remove any protective materials and debris from the valve cavity and the disc sealing surfaces.

Manually rotate the handle or drive square to confirm smooth disc operation without sticking. Before installation, it is recommended to adjust the disc to a slightly open position (approximately 10%–15% open).

Installation Position and Direction:

The valve may be installed in horizontal or vertical pipelines. The chosen position should allow for easy observation, operation, and maintenance.

Observe the arrow indicator on the valve body or flange to ensure it aligns with the designed medium flow direction.

Pipeline Connection Requirements:

The valve employs a wafer-style connection and must be installed by clamping it between standard pipeline flanges. Do not attempt to correct pipeline flange misalignment or gaps by forcibly tightening the bolts, as this may deform the valve body and compromise the seal.

To install, position the valve between two flanges, insert the through-bolts, and then tighten the nuts in a diagonal, stepwise, and uniform manner to ensure even load distribution on the valve.

Actuator Installation:

If equipped with an electric, pneumatic, or gear actuator, the actuator should be mounted only after the valve is securely installed in the pipeline. Ensure the actuator output shaft is aligned concentrically with the valve stem and the connection is secure.

Manually operate the valve to the fully closed position before installing the actuator. Subsequently, follow the actuator's manual to set and adjust the stroke and torque.

II. Operation and Usage Instructions

Opening and Closing:

During initial use, it is advisable to perform several slow, full open and close cycles under low pressure or before the pipeline is fully filled with medium to run-in the sealing surfaces.

Normal operation should involve smooth and steady opening and closing actions. Avoid abrupt movements. When operating manually, do not continue forcing the handle once the fully open or

fully closed position is reached. When using an actuator, ensure its limit switches are correctly adjusted.

Flow Adjustment:

This valve is suitable for flow regulation. Approximate linear flow control can be achieved by adjusting the disc rotation angle.

If the valve is to be maintained in a partially open position for extended periods for regulation purposes, periodically perform full-stroke open/close operations to prevent localized deposits or scaling from affecting sealing and operation.

Important Notes:

This valve is not recommended for continuous use as a throttling valve at very small openings (e.g., <15°), as high-velocity medium flow may erode the sealing surfaces.

For high-temperature applications: After installation at ambient temperature and initial exposure to hot medium, re-tighten the flange bolts under hot conditions to prevent leaks due to differential thermal expansion.

If the medium contains solid particles or fibers, evaluate the risks of seal wear and potential jamming before use.

III. Maintenance and Care Instructions

Routine Maintenance:

Regularly inspect the valve exterior and flange connections for leaks.

Keep the valve stem and drive components clean. Lubricate the stem seals, gear drives, etc., with appropriate grease as needed.

Check the operational status of any associated actuator(s).

Periodic Inspection:

Depending on frequency of use and service conditions, a comprehensive inspection is recommended every 6–12 months.

Inspection items should include: wear condition of sealing surfaces, smoothness of valve stem rotation, tightness of flange bolts, and aging of seals such as O-rings.

Storage Requirements:

For long-term storage, the valve should be left in a slightly open position (to prevent permanent compression-set of the seals) with flange protectors installed on both ends.

Store indoors in a dry, well-ventilated area, protected from direct sunlight, rain, and corrosive atmospheres.

Troubleshooting and Remedial Actions:

Leakage: Check if the disc is fully closed; inspect the sealing surfaces for damage or foreign matter; verify that flange bolts are tightened evenly.

Excessive Operating Torque: Check for internal obstruction or debris accumulation; inspect lubrication status; verify actuator compatibility and ensure it is not overloaded.

For procedures involving replacement of internal parts (e.g., seals, valve stem) or for unresolved malfunctions, contact qualified personnel or the manufacturer.

Important Notice:

This document provides general technical guidance for standard service conditions. For applications involving special media (e.g., highly corrosive, flammable, explosive, cryogenic), critical safety systems, or extreme operating parameters, operation and maintenance must strictly comply with all applicable industry standards and the manufacturer's specific technical agreements.

非常感谢您的阅读!
Thank you very much for reading!

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