

D71X 凸耳消防蝶阀系列

D71X Lug Type Fire 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.

D71X 凸耳消防蝶阀

D71X Lug Type Fire 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: $\leq 80\text{ }^{\circ}\text{C}$ 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 similar media
Applicable Temperature: $\leq 80\text{ }^{\circ}\text{C}$
Valve Body Material: Cast iron, Ductile iron, Stainless steel + rubber lining, PTFE lining
Connection Type: Wafer
Drive Mode: Manual

概述

D71X 凸耳消防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。其阀杆轴线同样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。阀门采用凸耳式连接，即阀体上设计有带螺纹孔的凸起耳座，通过单头螺栓将阀门固定于管道法兰之间，并可作为管路末端阀门使用。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，尤其适用于消防系统及需单独拆卸维护的管道工况。

Overview

The D71X lug-type fire butterfly valve is a valve that opens, closes, and regulates fluid flow by rotating a disc around its fixed shaft (stem). Its stem axis is also located at the "center line" where the center of the disc sealing surface intersects with the centerline of the pipeline passage, with the disc being symmetrical on both sides. The valve adopts a lug-type connection, meaning the valve body is designed with raised lugs containing threaded holes, allowing the valve to be secured between pipeline flanges using single-end bolts, and it can also be used as a pipe-end valve. The disc sealing ring is typically made of elastic materials such as rubber, directly embedded in the inner groove of the valve body or retainer plate, achieving sealing by the disc rotating and compressing the sealing ring. The valve can be driven manually, electrically, or pneumatically to rotate the stem by 90° or less, enabling quick control of fluid on/off and flow regulation. It is particularly suitable for fire protection systems and pipeline conditions requiring independent disassembly and maintenance.



D71X 凸耳消防蝶阀产品图
D71X Lug Type Fire Butterfly Valve Product Drawing

特点

1. 结构紧凑且适配末端安装：采用凸耳式设计，阀体带有带螺纹孔的耳座，结构长度短，体积小，重量轻。不仅适用于安装空间受限的管道系统，还可作为管道末端阀门单独使用，无需额外配置法兰和短节。
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，便于手动或自动驱动。
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，节能效果显著。
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）。尤其适用于消防系统、给排水等常温常压或中低压工况，同时凸耳式连接便于在线单独拆换阀门而不影响管路整体。
5. 维护方便，成本经济：结构简单，零部件较少。由于凸耳式设计允许阀门独立拆卸，维护时无需拆除两侧管道，检修和更换更加便捷。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，适合消防及工业管路：阀体可采用球墨铸铁、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。广泛应用于消防系统、水处理、空调、给排水、化工等行业的液体、气体介质管路，尤其满足消防规范对管路末端阀门及可靠性的要求。

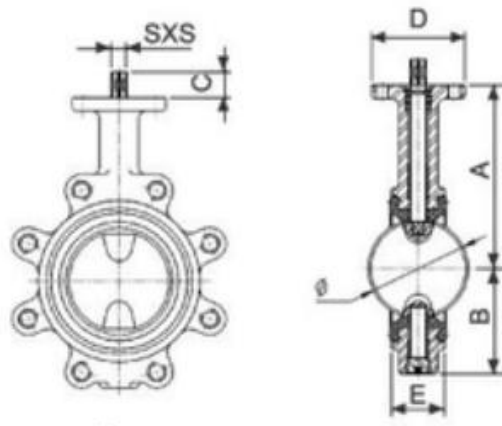
Features:

1. Compact structure with end-of-line installation capability: The lug-type design features a valve body with raised lugs containing threaded holes, offering short structural length, small volume, and light weight. It is not only suitable for pipeline systems with limited installation space but can also be used independently as a pipe-end valve without the need for additional flanges or spool pieces.
2. Quick and convenient opening/closing: The disc rotates 90° to achieve full open or full close, providing simple and fast operation with low operating torque, facilitating manual or automatic actuation.
3. Low fluid resistance: When the disc is fully open, the media flow path is nearly a straight pipe, with minimal obstruction from the disc, resulting in low pressure loss and significant energy saving.
4. Good sealing performance: The center-line sealing structure allows the elastic soft sealing

ring to closely contact the disc edge, achieving effective bidirectional sealing (or unidirectional sealing depending on specific design). It is particularly suitable for fire protection systems, water supply and drainage, and other normal temperature, normal pressure, or medium-low pressure conditions. Additionally, the lug-type connection enables online independent replacement of the valve without affecting the entire pipeline.

5. Easy maintenance and cost-effective: Simple structure with few components. The lug-type design allows independent valve disassembly, making inspection and replacement more convenient without removing adjacent pipes. Compared to other valves of the same size, manufacturing and installation costs are generally more advantageous.

6. Wide application, suitable for fire protection and industrial pipelines: The valve body can be made of various materials such as ductile iron and stainless steel, while the lining and disc can also be selected with different anti-corrosion materials or coatings. Widely used in fire protection systems, water treatment, air conditioning, water supply and drainage, chemical industry, and other liquid/gas media pipelines, especially meeting the fire protection code requirements for pipe-end valves and reliability.



D71X 凸耳消防蝶阀结构图

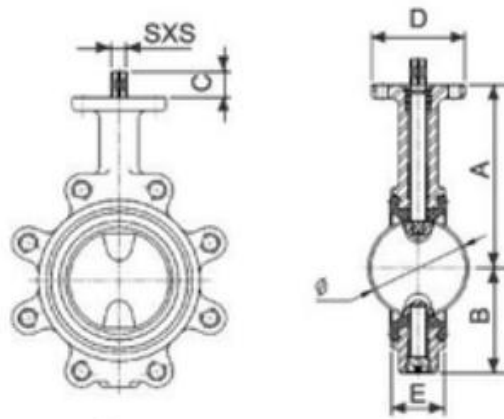
D71X Lug Type Fire Butterfly Valve Structure Drawing

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

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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 凸耳消防蝶阀外形尺寸图

D71X Lug Type Fire Butterfly Valve Overall Dimension Drawing

D71X 凸耳消防蝶阀外形尺寸表

D71X Lug Type Fire Butterfly Valve Overall 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、口径、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 $<15^\circ$ ）工作，以免高速介质流冲刷密封面。

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 Instructions

I. Installation Instructions

Pre-installation Inspection:

- Verify that the valve model, bore diameter, pressure rating, and medium flow direction comply with the pipeline design requirements.
- Inspect the valve appearance to ensure no damage to the valve body, flange sealing faces, or disc during transportation. Remove any protective materials and debris from the valve cavity and disc sealing face.
- Manually rotate the handle or drive square stem to confirm that the disc opens and closes smoothly without sticking. It is recommended to set the disc to a slightly open position (approx. 10%-15% opening) before installation.

Installation Position and Direction:

- The valve can be installed on horizontal or vertical pipelines. The installation position should facilitate observation, operation, and maintenance.
- Pay attention to the arrow indication on the valve body or flange to ensure it aligns with the designed medium flow direction.

Pipeline Flanging Requirements:

- The valve adopts a wafer-type connection and must be clamped between standard pipeline flanges. Do not use excessive force to tighten bolts to correct misalignment or gaps between pipeline flanges, as this may deform the valve body and cause sealing failure.
- During installation, place the valve between two flanges, insert through-bolts, and tighten the nuts in a diagonal, stepwise, and uniform manner to ensure even stress on the valve body.

Actuator Installation:

- If equipped with an electric, pneumatic, or worm gear actuator, install it after the valve has been mounted on the pipeline. Ensure the actuator output shaft is aligned with the valve stem and the connection is secure.
- Manually operate the valve to the fully closed position before installing the actuator, then adjust and set the stroke and torque according to the actuator manual.

II. Operation and Handling Instructions**Opening and Closing:**

- For first-time use, it is recommended to perform several full open/close cycles slowly under low pressure or with the pipeline not fully filled with medium to allow the sealing surfaces to seat properly.
- During normal operation, open and close smoothly without impact. When operating manually, do not continue to force the handle after reaching the fully open or fully closed position. When using an actuator, ensure its limit devices are correctly adjusted.

Flow Regulation:

- This valve can be used for flow regulation. By controlling the disc rotation angle, approximately linear flow control can be achieved.
- If the valve remains in a partially open regulating position for an extended period, it is advisable to perform full-stroke open/close operations periodically to prevent local deposits or scaling from affecting sealing and operation.

Precautions:

- This valve is not suitable for long-term operation at very small openings (e.g., $<15^\circ$) as a throttling valve, as high-velocity medium flow may erode the sealing surfaces.
- For high-temperature applications, after cold installation and initial introduction of hot medium, hot retightening of flange bolts is required to prevent leakage caused by differential thermal expansion.
- If the medium contains solid particles or fibers, assess the risk of wear and jamming of the sealing surfaces before use.

III. Maintenance and Care Instructions**Routine Maintenance:**

- Periodically check the exterior of the valve and flange connections for any leakage.

- Keep the valve stem and driving components clean, and apply appropriate lubricating grease to the stem seal and worm gear mechanism as needed.
- Check the operating status of any ancillary actuator (if equipped) for normal operation.

Periodic Inspection:

- Depending on frequency of use and operating conditions, a comprehensive inspection is recommended every 6 to 12 months.
- Inspection items include: wear condition of sealing surfaces, smoothness of stem rotation, tightness of flange bolts, and aging of sealing elements such as O-rings.

Storage Requirements:

- When storing the valve for an extended period, keep it in a slightly open position (to prevent prolonged compression and adhesion of sealing surfaces) and install protective covers on both flanges.
- Store indoors in a dry, well-ventilated environment away from direct sunlight, rain, and corrosive atmospheres.

Troubleshooting:

- Leakage: Check whether the disc is fully closed; inspect sealing surfaces for damage or foreign matter; verify that flange bolts are uniformly tightened.
- Excessive Operating Torque: Check for internal obstruction or debris accumulation; verify adequate lubrication; confirm that the actuator is properly matched and not overloaded.
- If internal parts such as sealing rings or valve stems need replacement, or if a problem cannot be resolved, it is recommended to contact a professional or the manufacturer for assistance.

Important Note:

These instructions provide general technical guidance applicable to conventional operating conditions. For special media (e.g., highly corrosive, flammable/explosive, ultra-low temperature, etc.), critical safety systems, or extreme parameter applications, operation and maintenance must strictly comply with relevant industry codes 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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