

D371X-150LB 美标凸耳蝶阀系列

D371X-150LB American Standard Butterfly Valve Series

使
用
说
明
书

Operating Instructions



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

D371X-150LB 美标凸耳蝶阀

D371X-150LB American Standard Lug Type Butterfly Valve

型号: D371X-150LB 规格: DN50-DN600
公称压力: 150LB 适用介质: 水及类似于水的介质
适用温度: $\leq 80^{\circ}\text{C}$ 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、蜗轮蜗杆、电动、气动
Model: D371X-150LB
Size Range: DN50 - DN600
Nominal Pressure: 150LB
Applicable Media: Water and water-like media
Applicable Temperature: $\leq 80^{\circ}\text{C}$
Body Material: Cast iron, ductile iron, stainless steel + rubber lined, PTFE lined
Connection Type: Wafer type
Actuation: Manual, worm gear, electric, pneumatic

概述

D371X-150LB 美标凸耳蝶阀是一种采用对夹式连接、符合美国标准 150 磅压力等级的蝶阀。阀门通过蝶板在阀体内绕阀杆旋转 90° 实现启闭与流量控制，采用中线对称设计确保蝶板与阀座均匀接触。蝶板密封通常采用橡胶或弹性高分子材料，依靠其受压变形实现双向密封。该阀门广泛用于石油、化工、电力等工业领域，尤其适用于符合美标（ANSI/ASME）管道系统的流体控制。

Overview

The D371X-150LB American Standard Lug Type Butterfly Valve is a wafer-type butterfly valve designed in accordance with the U.S. standard 150- pound pressure rating. The valve controls fluid flow by rotating a disc 90° around the stem inside the valve body. Its centerline symmetrical design ensures uniform contact between the disc and seat. The disc sealing is typically achieved with rubber or elastic polymer materials, which form a bidirectional seal through compression deformation. This valve is widely used in industrial applications such as petroleum, chemical, and power industries, and is particularly suitable for fluid control in pipeline systems conforming to American standards (ANSI/ASME).



D371X-150LB 美标凸耳蝶阀产品图

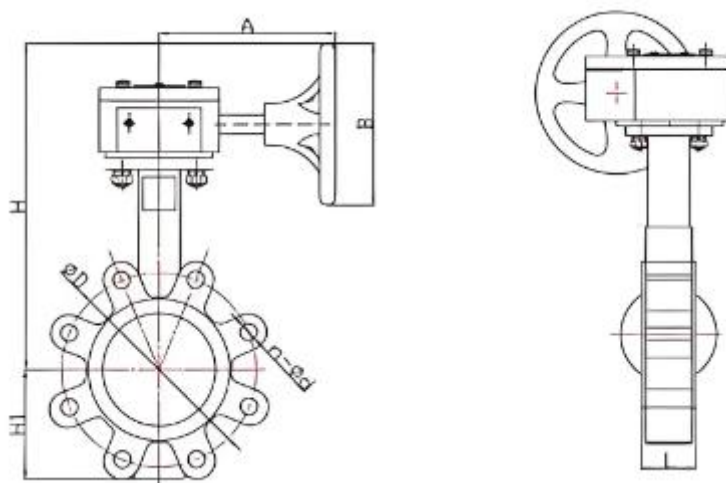
Product Drawing of D371X-150LB American Standard Lug Type Butterfly Valve

特点

- 1、美标压力等级：严格遵循 ANSI/ASME B16.34 标准，压力等级为 150LB，适用于美标管道系统，确保在相应工况下的安全性与可靠性。
- 2、双向软密封设计：采用橡胶或 PTFE 等弹性软质材料作为密封圈，依靠蝶板旋转压紧实现双向密封，关闭状态下泄漏量低，密封性能优良。
- 3、对夹式结构紧凑：采用对夹式连接方式，结构长度短、体积小、重量轻，便于在有限空间内安装，尤其适合改造项目或密集管线布置。
- 4、操作轻便灵活：可配置手柄、蜗轮或气动/电动执行机构。手动操作时启闭迅速，90° 旋转即可完成全开全关，所需操作扭矩小。
- 5、耐腐蚀材质选择：阀体可采用铸钢、不锈钢等多种材质，内衬及蝶板可根据介质特性选用不同防腐材料，适用于水、油品、气体及弱腐蚀性介质。
- 6、维护简便经济：结构简单，拆卸方便，易损件（如密封圈）更换容易，维护成本低，使用寿命长。

Features

- 1、American Standard Pressure Rating: Strictly complies with ANSI/ASME B16.34 standard with a pressure rating of 150LB. Suitable for American standard pipeline systems, ensuring safety and reliability under corresponding operating conditions.
- 2、Bidirectional Soft Seal Design: Utilizes elastic soft materials such as rubber or PTFE as the sealing ring. Bidirectional sealing is achieved by compression during disc rotation, offering low leakage in the closed state and excellent sealing performance.
- 3、Compact Wafer-Type Structure: Adopts a wafer-type connection, featuring short face-to-face dimensions, small volume, and light weight. Facilitates installation in confined spaces, making it especially suitable for retrofit projects or densely arranged piping.
- 4、Smooth and Flexible Operation: Can be equipped with a handle, worm gear, or pneumatic/electric actuator. Manual operation allows quick opening and closing—90° rotation completes full open or close—with low required operating torque.
- 5、Corrosion-Resistant Material Options: The valve body can be made from materials such as cast steel or stainless steel. The lining and disc can be selected from different anti-corrosion materials according to medium characteristics, making it suitable for water, oils, gases, and mildly corrosive media.
- 6、Easy and Economical Maintenance: Simple in structure, easy to disassemble, with straightforward replacement of wear-prone parts (e.g., sealing rings), resulting in low maintenance costs and a long service life.



D371X-150LB 美标凸耳蝶阀结构图

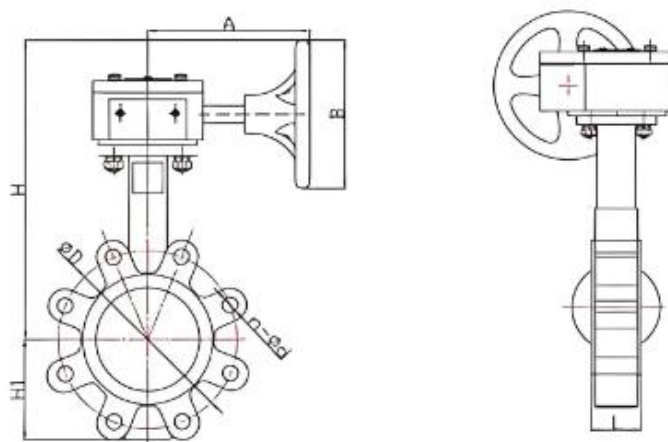
D371X-150LB American Standard Lug Type Butterfly Valve Structural Drawing

零部件名称材料表 Parts List and Material Specification

名称 Name	材料 Materials
蜗轮箱 Worm Gear Box	球墨铸铁 Ductile Iron
蜗杆 Worm (Shaft)	碳钢 (调质处理) Carbon Steel (Quenched & Tempered)
蝶板 Disc	碳钢 (衬丁腈橡胶) Carbon Steel (Lined with NBR)
阀杆 Stem	铬不锈钢 (304/316) Chromium Stainless Steel (304/316)
阀座 Seat	丁腈橡胶 / 三元乙丙橡胶 Nitrile Rubber (NBR) / EPDM
螺栓 Bolt	碳钢 (镀锌) / 不锈钢 Carbon Steel (Galvanized) / 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)	150LB	MPa
强度试验压力 Shell Test Pressure	1.5times	
密封试验压力 Seat Test Pressure	1.1times	
适用温度 Operating Temperature Range	≤80	℃



D371X-150LB 美标凸耳蝶阀外形尺寸图

D371X-150LB American Standard Lug Type Butterfly Valve Overall Dimension Drawing

D371X-150LB 美标凸耳蝶阀外形尺寸表

D371X-150LB American Standard Lug Type Butterfly Valve overall dimension table

规 格 (mm) Specifications (mm)	连接尺寸 Connection Dimensions								
	H1	H	n-Φd		ΦD		L	A	B
			PN10	PN18	PN10	PN16			
DN50	63	264	4--16	4--16	125	125	42	148	136
DN65	95	272	4--16	4--16	145	145	45	148	136
DN80	102	277	4--16	8--16	160	160	45	148	136
DN100	124	280	8--16	8--16	180	180	52	148	136
DN125	139	302	8--16	8--16	210	210	55	148	136
DN150	149	319	8--20	8--20	240	240	56	148	136
DN200	181	445	8--20	12--20	295	295	61	193	263
DN250	210	469	12--20	12--24	350	355	66	193	263
DN300	246	530	12--20	12--24	400	410	77	210	263
DN350	279	526	12--20	16--24	400	470	77	210	263
DN400	305	631	10--24	16--27	515	525	102	250	377
DN450	365	840	20--24	20--27	565	595	114	260	377
DN500	371	685	20--24	20--30	620	650	130	215	269
DN600	457	808	20--27	20--33	725	770	152	334	269

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（DN）、压力等级（150LB）及阀体材质是否与管路设计要求一致，并确认阀门的密封材质与介质相容

检查阀门外观，确保运输过程中阀体、法兰面及蝶板无损伤。清除阀腔内及密封面的保护物和杂质

手动操作手柄或将驱动方榫旋转 90°，确认蝶板启闭灵活、无卡阻，安装前应将蝶板置于微开状态（约 10% 开度）

安装位置与方向:

阀门可安装于水平或垂直管道上。安装位置应便于操作和维护，并预留足够空间供手柄或驱动装置操作。注意阀体上的箭头指示方向，确保其与介质流向一致（双向密封阀门可忽略流向要求）

管道对接要求:

安装时，请使用标准美标（ANSI B16.5）法兰与阀门配对连接。严禁通过拧紧螺栓来强行校正法兰间的错位或间隙，以免对阀门造成过大的安装应力，导致变形和密封失效

阀门采用对夹式安装：将阀门置于两片管道法兰之间，使用对穿螺栓连接。建议逐次、对角、均匀地拧紧法兰螺栓，确保阀门受力均匀

驱动装置安装:

如果配备电动、气动或蜗轮等执行机构，应在阀门安装就位后再进行安装。安装时需保证执行机构输出轴与阀杆精确对中，连接牢固

安装前，手动操作阀门至全关位置，再安装执行机构，并严格按照其说明书进行行程和扭矩的调试与设定

二、使用与操作说明

开启与关闭:

首次使用时，建议在系统压力较低或介质未完全充满管道时，缓慢、轻柔地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，避免使用冲击力或蛮力。尤其在使用扳手或执行机构时，到达全开或全关位置后切勿继续强行旋转

开度调节:

本阀门适用于调节工况。通过精确控制蝶板旋转角度，可实现流量的线性调节

在长期处于非全开（调节）状态时，应定期进行全行程操作，以防止局部沉积或卡阻

注意事项:

阀门不可用作节流阀长期处于微开状态（如小于 15° 开度），以免高速介质流对蝶板和阀座密封面造成严重冲蚀

对于高温工况，在冷态安装后首次通入热介质时，应对螺栓进行热态再紧固，防止因热膨胀导致泄漏
使用于含固体颗粒介质时，建议全开全关操作，避免在部分开度下长期运行

三、维护与保养说明

日常维护：

定期检查阀门外部及连接处有无泄漏

保持阀杆、驱动装置外露部分的清洁，并定期对阀杆密封处、传动机构等部位加注适当的润滑脂

检查执行机构（如有）的工作状态是否正常

定期检查：

根据使用频率和工况，建议每半年至一年进行一次全面检查（恶劣工况应缩短检查周期）

检查内容包括：密封面磨损情况、阀杆是否灵活、各连接螺栓是否松动、O 型圈等易损件状态

检查法兰密封面是否完好，必要时更换垫片

存放要求：

长期存放时，阀门应处于微开状态（避免密封面长期受压粘连），安装好通道两端法兰保护盖
存放于干燥、通风的室内，避免阳光直射和雨淋，远离腐蚀性环境

故障与处理：

泄漏： 检查并确认阀门是否关到位；检查密封面是否损坏或有杂质；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；检查润滑是否充足；检查执行机构是否匹配或阀门是否承受过大管道应力

密封性能下降： 检查密封圈是否老化或损坏；检查介质温度是否超出阀门设计范围

如遇无法排除的故障或需更换内部核心密封件，建议联系专业技术人员或生产厂家进行处理。

重要提示：

本说明为通用性指导。对于特殊工况（如极高温、强腐蚀、超低温等）、危险介质或关键安全系统，应严格遵守项目具体技术规范、美标（ANSI/ASME）相关标准及安全规程进行操作与维护。

Installation and Maintenance Guidelines

I. Installation Instructions

Pre-installation Inspection:

Verify that the valve model, nominal diameter (DN), pressure rating (150LB), and body material comply with pipeline design requirements. Confirm compatibility between the valve sealing material and the intended medium.

Visually inspect the valve to ensure no damage has occurred to the body, flange faces, or disc during transportation. Remove all protective materials and debris from the valve cavity and sealing surfaces.

Operate the valve manually by turning the handle or drive square 90° to confirm smooth and unobstructed opening and closing of the disc. Before installation, set the disc to a slightly open position (approximately 10% open).

Installation Position and Direction:

The valve may be installed in horizontal or vertical pipelines. The installation location shall facilitate operation and maintenance, with sufficient space reserved for handle or actuator movement.

Observe the arrow indicator on the valve body to ensure alignment with the medium flow direction (flow direction may be ignored for bidirectional sealing valves).

Pipeline Connection Requirements:

Use standard American (ANSI B16.5) flanges matched to the valve for connection. Do not correct misalignment or gaps between flanges by forcibly tightening bolts, as this may impose excessive installation stress on the valve, leading to deformation and seal failure.

The valve employs a wafer-type installation: place the valve between two pipeline flanges and connect them with through-bolts. It is recommended to tighten the flange bolts gradually, diagonally, and evenly to ensure uniform load distribution on the valve.

Actuator Installation:

If an electric, pneumatic, or gear actuator is to be mounted, it should be installed only after the valve is properly positioned in the pipeline. Ensure precise alignment between the actuator output shaft and the valve stem, with a secure connection.

Before actuator installation, manually operate the valve to the fully closed position. Then install the actuator and strictly follow its manual to set and adjust stroke and torque.

II. Operation and Usage Instructions

Opening and Closing:

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

During normal operation, open and close the valve smoothly, avoiding impact or excessive force. Especially when using a wrench or actuator, do not continue forcing rotation once the fully open or fully closed position is reached.

Flow Adjustment:

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

When the valve remains in a non- fully- open (throttling) position for extended periods, perform periodic full- stroke operations to prevent local deposit buildup or sticking.

Important Notes:

The valve shall not be used as a throttle valve for prolonged periods at very small openings (e.g., less than 15°), as high- velocity medium flow can cause severe erosion of the disc and seat sealing surfaces.

For high- temperature applications, after cold installation and initial introduction of hot medium, re- tighten the bolts under hot conditions to prevent leakage due to thermal expansion.

When handling media containing solid particles, it is advisable to operate the valve fully open or fully closed and avoid prolonged operation at partial openings.

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

Regularly inspect the valve exterior and connections for leaks.

Keep exposed parts such as the valve stem and drive components clean. Apply suitable grease periodically to the stem seal and transmission mechanism.

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

Periodic Inspection:

Depending on frequency of use and operating conditions, a comprehensive inspection is recommended every six months to one year (shorten the interval under severe conditions).

Inspection items shall include: wear condition of sealing surfaces, smoothness of valve stem rotation, tightness of connection bolts, and condition of wearing parts such as O- rings.

Check the integrity of flange sealing surfaces and replace gaskets if necessary.

Storage Requirements:

For long- term storage, the valve should be kept slightly open (to avoid permanent compression of the seals) with flange protectors installed on both ports.

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

Troubleshooting and Remedies:

Leakage: Verify that the valve is fully closed; inspect sealing surfaces for damage or contamination; check that flange bolts are evenly tightened.

Excessive Operating Torque: Check for internal obstruction or foreign objects; verify adequate lubrication; assess whether the actuator is properly matched or if excessive pipeline stress is

acting on the valve.

Seal Performance Degradation: Inspect sealing rings for aging or damage; verify that the medium temperature does not exceed the valve's design range.

If a fault cannot be resolved or replacement of internal core sealing components is required, it is recommended to contact qualified technical personnel or the manufacturer.

Important Notice:

This document provides general guidance. For special applications (e.g., extreme temperatures, highly corrosive media, cryogenic service), hazardous media, or critical safety systems, all installation, operation, and maintenance activities must strictly comply with the project-specific technical specifications, relevant American standards (ANSI/ASME), and safety regulations.

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 18967796392

网址：<https://www.kaiweixi.com>

mail: karrie@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 18967796392

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

E-mail: karrie@kaiweixi.com