开维喜阀门集团
Kaiweixi valve group
https://www.kaiweixi.com
E-mail：sales@kaiweixi.com

D341X 涡轮法兰蝶阀系列

D341X Gear-Operated Flanged 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.

地址：中国 浙江省温州市瓯北街道三桥工业区林下路 1 号　电话：0577-67038872　传真：0577-67198981　邮编：325100

开维喜阀门集团
Kaiweixi valve group
https://www.kaiweixi.com
E-mail: sales@kaiweixi.com

D341X 涡轮法兰蝶阀

D341X Gear-Operated Flanged Butterfly Valve

型号：D341X　　规格：DN50-DN1200
公称压力：PN10~PN16　　适用介质：水及类似于水的介质
适用温度：-20-120℃　　阀体材质：铸铁、球墨铸铁、不锈钢+衬胶
连接方式：法兰　　驱动方式：手动、蜗轮蜗杆、气动、电动

Model: D341X
Size: DN50 - DN1200
Nominal Pressure: PN10 - PN16
Applicable Media: Water and water-like media
Applicable Temperature: -20 - 120 ° C
Body Material: Cast iron, ductile iron, stainless steel + rubber lining
Connection Type: Flange
Drive Mode: Manual, worm gear, pneumatic, electric

概述

D341X 涡轮法兰蝶阀是一种采用法兰连接，通过涡轮蜗杆传动机构驱动蝶板做 90° 旋转以实现启闭和流量调节的阀门。阀体中线设计使得蝶板密封面与阀座均匀接触，利用橡胶或弹性高分子材料制成的蝶板密封圈（或阀座密封圈）受压变形实现双向密封。涡轮传动装置（也称蜗轮箱）将手动操作扭矩放大，使得大口径阀门也能轻松启闭，并具有自锁功能，可稳定保持蝶板在任何开度位置。该阀门广泛用于水处理、暖通空调、给排水、能源化工等行业的流体管路控制。

Overview

The D341X Gear-Operated Flanged Butterfly Valve is a valve designed with flanged connections, utilizing a worm gear mechanism to drive the disc through a 90° rotation for opening, closing, and flow regulation. The centerline design of the valve body ensures uniform contact between the disc sealing surface and the seat, achieving bidirectional sealing through the compression deformation of a rubber or elastic polymer disc seal ring (or seat seal ring). The gear-operated transmission device (commonly referred to as a gearbox) amplifies manual operating torque, enabling smooth operation even for large-diameter valves. It also features a self-locking function to maintain the disc securely at any opening position. This valve is widely used for fluid pipeline control in industries such as water treatment, HVAC, water supply and drainage, energy, and chemical processing.

开维喜阀门集团
Kaiweixi valve group
https://www.kaiweixi.com
E-mail：sales@kaiweixi.com

D341X 涡轮法兰蝶阀产品图

Product Illustration of D341X Gear-Operated Flanged Butterfly Valve

特点

1、涡轮传动，操作省力：采用精密蜗轮蜗杆减速机构，输出扭矩大，启闭轻便省力，尤其适用于 DN200 以上口径的手动操作场合，并具备机械自锁功能，可防止蝶板因介质冲击而移位。

2、结构紧凑，流量特性好：中线对称设计，结构长度短，占用空间小。全开时蝶板对介质流阻小，流道近似管道内径，压力损失低。

3、双向密封，性能可靠：阀座通常采用整体橡胶或复合软密封结构，与蝶板边缘精密贴合。通过蝶板转动压紧密封圈，可实现双向（或根据设计为单向）零泄漏密封，关闭时密封性能优异。

4、耐腐蚀，寿命长：阀体内外表面可采用环氧树脂喷涂等防腐处理，关键部件如阀杆、蜗轮采用不锈钢或铜合金材质，耐腐蚀性能好，适用于多种水质及轻度腐蚀性介质。

5、法兰连接，安装稳固：采用标准法兰连接，与管道法兰对接方便，连接强度高，密封可靠，便于在现有管路上安装与拆卸。

6、多功能与可扩展性：涡轮驱动头通常可方便地拆卸并更换为电动、气动执行机构，实现远程自动控制，满足自动化管线需求。

Features

1、Gear-Driven Operation with Low Effort: Utilizing a precision worm gear reduction mechanism, the valve delivers high output torque, enabling smooth and effortless opening and closing. It is particularly suitable for manual operation in pipelines with diameters above DN200. The integrated mechanical self-locking function prevents disc displacement caused by medium impact.

2、Compact Structure and Excellent Flow Characteristics: Designed with a centerline symmetrical construction and short face-to-face dimensions, the valve occupies minimal space. When fully open, the disc offers low resistance to flow, with the passage approximating the inner diameter of the pipeline, resulting in minimal pressure loss.

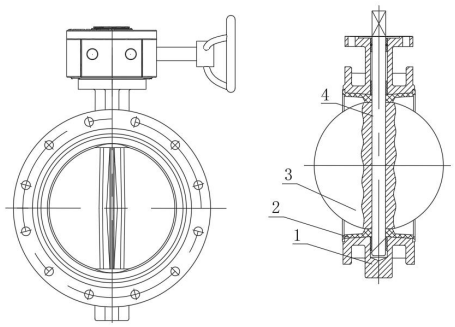
3、Bidirectional Sealing with Reliable Performance: The valve seat typically features an integral rubber or composite soft-seal structure, which closely mates with the disc edge. By rotating the disc to compress the sealing ring, the valve achieves bidirectional (or unidirectional, depending on design) zero-leakage sealing, providing excellent shut-off performance when closed.

4、Corrosion Resistance and Long Service Life: The interior and exterior surfaces of the valve body can be treated with anti-corrosion coatings such as epoxy resin. Key components, including

the stem and worm gear, are manufactured from stainless steel or copper alloy, offering strong corrosion resistance and suitability for various water qualities and mildly corrosive media.

5、Flanged Connection for Secure Installation: Designed with standard flanged ends, the valve ensures easy alignment with pipeline flanges, high connection strength, and reliable sealing. It is convenient for installation and removal within existing piping systems.

6、Versatility and Expandability: The gear operator can be easily detached and replaced with electric or pneumatic actuators, enabling remote automatic control to meet the requirements of automated pipeline systems.



D341X 涡轮法兰蝶阀结构图

Structural Diagram of D341X Gear-Operated Flanged Butterfly Valve

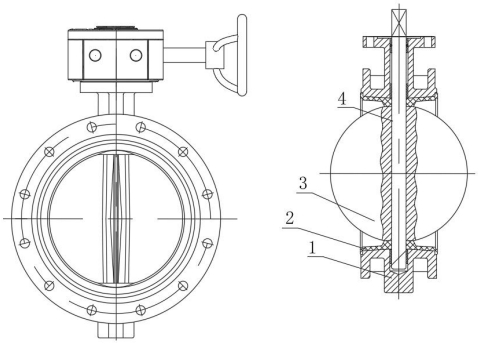
零部件名称材料表 Parts Name and Material List

零件名称	材料
阀体 Valve Body	铸铁、球墨铸铁、不锈钢+衬胶 Cast iron, ductile iron, stainless steel + rubber lining
蝶板 Butterfly Disc	灰铸铁、球墨铸钢、铸钢、不锈钢及特殊材料 Gray Cast Iron, Ductile Cast Steel, Cast Steel, Stainless Steel and Special Materials
密封圈 Seal Ring	各种橡胶材料 Various Rubber Materials
阀杆 Valve Stem	2Cr13、不锈钢 2Cr13, Stainless Steel
填料 Packing	O 型圈、柔性石墨 O-Ring, Flexible Graphite

性能规范表 Performance Specification Table

性能规范表 Performance Specification Table		
公称压力 Nominal Pressure	1.0/1.6	MPa
强度试验压力 Shell Test Pressure	1.5/2.4	
密封试验压力 Seal Test Pressure	1.1/1.76	
适用温度 Applicable Temperature Range	-20-120℃	℃

开维喜阀门集团
Kaiweixi valve group
https://www.kaiweixi.com
E-mail：sales@kaiweixi.com



D341X 涡轮法兰蝶阀外形尺寸图

D341X Gear-Operated Flanged Butterfly Valve Overall Dimension Drawing

D341X 涡轮法兰蝶阀外形尺寸表

D341X Gear-Operated Flanged Butterfly Valve Outline Dimension Table

DN	L	L1	PN10			PN16			150LB			10K			D3	H1	H2	H3
			D	D1	Z-d	D	D1	Z-d	D	D1	Z-d	D	D1	Z-d	法兰号 Flange size			
50	108	160	165	125	4-19	165	125	4-23	150	120.6	4-19	155	120	4-19	F05	73	125	60
65	112	160	185	145	4-19	185	145	4-23	180	139.7	4-19	175	140	4-19	F05	82	136	60
80	114	160	200	160	8-19	200	160	8-20	190	152.4	4-19	185	150	8-19	F05	91	142	60
100	127	160	220	180	8-19	220	180	4-23	230	190.5	8-19	210	175	8-19	F07	104	163	60
125	140	160	250	210	8-19	250	210	4-23	255	215.9	8-22	250	210	8-23	F07	127	176	60
150	140	160	285	240	8-23	285	240	4-25	280	241.3	8-22	280	240	8-23	F07	138	197	60
200	152	210	340	295	8-23	340	295	4-25	345	298.5	8-22	330	290	12-23	F10	170	230	72
250	165	210	395	350	12-23	405	355	4-28	405	362	12-25	400	355	12-25	F10	204	261	72
300	178	210	445	400	12-23	460	410	4-28	485	432	12-25	445	400	16-25	F10/12	241	294	75
350	190	210	505	460	16-23	520	470	4-30	535	476	12-29	490	445	16-25	F10/12	263	335	75
400	216	320	565	515	16-28	580	525	4-30	600	540	16-29	560	510	16-27	F14/16	309	400	126
450	222	320	615	565	20-28	715	650	4-33	700	635	20-32	675	620	20-27	F14/16	328	420	126
500	229	320	670	620	20-28	715	650	4-33	700	635	20-32	675	620	20-27	F14/16	361	480	126
600	267	340	780	725	20-31	840	770	4-36	815	749.5	20-35	795	730	24-32	F16	459	560	127
700	292	380	895	840	24-31	910	840	24-36		864	28-35	905	840	24-33	F25	520	624	167
800	318	380	1015	950	24-34	1025	950	24-39		978	28-41	1020	950	28-33	F25	590	680	167
900	3304	00	15	1050	28-34	1125	1050	28-39		1089	32-41	1120	1050	28-33	F25	656	720	193
1000	410	400	1230	1160	28-37	1255	1170	28-42		1200	36-41	1235	1160	28-39	F25	720	800	193
1200	470	450	1455	1380	32-40	1485	1390	28-49		1422	44-41	1465	1380	32-39	F30	844	941	

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、压力等级及阀体材质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、涡轮箱无损伤。清除阀腔内及密封面保护物
手动操作涡轮箱手轮，确认蝶板启闭灵活、无卡阻。安装前将蝶板调整至微开状态

安装位置与方向：

阀门可安装于水平或垂直管道上，安装位置应预留足够空间便于操作和维护
注意阀体上介质流向箭头指示，确保安装方向正确（双向密封阀门可忽略此要求）

管道对接要求：

使用标准管道法兰与阀门法兰配对连接，确保法兰密封面清洁、垫片完好
严禁强行校正法兰错位或间隙。先初步对中固定，再采用对角、交替方式逐步均匀拧紧螺栓
大口径阀门安装时建议使用支撑装置，避免管道应力作用于阀体

驱动装置说明：

本阀门已集成涡轮蜗杆传动机构，操作省力且具备自锁功能
如需加装电动/气动执行器，应在阀门管道安装就位后进行，确保连接对中可靠
执行器安装前手动将阀门调至全关位置，再按执行器说明书进行行程和扭矩设定

二、 使用与操作说明

开启与关闭：

首次使用时，建议在低压状态下缓慢操作数次全开全关，磨合密封面
正常操作时通过涡轮手轮平稳启闭，到达全开/全关位置后勿强行旋转
涡轮机构自带自锁功能，可保持蝶板在任意开度位置不松动

开度调节：

涡轮传动机构可实现精确开度控制，适用于调节工况
通过蜗轮箱上的开度指示器可直观查看当前开度位置
长期处于调节状态时，建议每月进行一次全行程操作防止卡阻

注意事项：

严禁用作节流阀长期处于微小开度（＜15°），以免冲蚀密封面
高温工况下，冷态安装后首次升温应进行热态螺栓再紧固
操作时如遇异常阻力应立即停止，检查原因排除故障
定期检查涡轮箱润滑情况，确保传动顺畅

三、 维护与保养说明

日常维护：

每月检查阀门外部及法兰连接处有无泄漏
每季度对涡轮箱加注专用润滑脂，保持阀杆清洁
检查手轮操作是否灵活，开度指示是否准确

定期检查：

每 6-12 个月进行全面检查（工况恶劣时应缩短周期）
检查密封面磨损、阀杆转动灵活度、法兰螺栓紧固状态
检查涡轮箱齿轮磨损、轴承润滑情况

存放要求：

长期存放时蝶板应处于微开状态，装好法兰保护盖
存放于干燥通风室内，涡轮传动部件应涂防锈油脂
避免露天存放或与腐蚀性物质接触

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；检查法兰螺栓是否均匀紧固
操作沉重： 检查涡轮箱润滑是否充足；检查阀杆是否卡阻；检查管道应力是否过大
开度指示不准： 调整蜗轮箱限位装置；检查指针连接是否松动
自锁失效： 检查涡轮蜗杆磨损情况；检查复位弹簧状态
对于需要更换密封圈、阀杆、涡轮传动部件等维修，建议联系专业技术人员处理。

重要提示：

本说明书为通用性指导。对于特殊工况（如高温高压、腐蚀性介质、安全关键系统等），应严格遵循相关行业规范及制造商的专项技术要求。建议建立阀门维护档案，定期进行专业检测和维护。

Installation and Maintenance Guidelines

I. Installation Instructions

Pre-Installation Inspection:

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

Inspect the valve visually to ensure the body, flanges, and gearbox are free from damage incurred during transportation. Remove any protective materials from the valve cavity and sealing surfaces. Manually operate the gearbox handwheel to confirm smooth disc operation without sticking. Adjust the disc to a slightly open position before installation.

Installation Position and Direction:

The valve may be installed in horizontal or vertical pipelines. The chosen position should provide sufficient space for easy operation and maintenance.
Observe the flow direction arrow on the valve body to ensure correct orientation (this requirement may be omitted for bidirectional sealing valves).

Pipeline Connection Requirements:

Use standard pipeline flanges matched with the valve flanges for connection. Ensure flange sealing surfaces are clean and gaskets are intact.
Do not force correction of flange misalignment or gaps. Align and secure the flanges preliminarily, then tighten the bolts gradually and evenly in a diagonal, alternating sequence.
For large-diameter valve installation, it is recommended to use support devices to avoid pipeline stress acting on the valve body.

Actuator Instructions:

This valve is equipped with an integrated worm gear mechanism, providing effortless operation and a self-locking function.
If an electric/pneumatic actuator is to be added, it should be installed after the valve is securely positioned in the pipeline. Ensure proper alignment and a secure connection.
Before installing the actuator, manually adjust the valve to the fully closed position. Then, follow the actuator's manual to set 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 to run-in the sealing surfaces.
During normal operation, open and close the valve smoothly via the gearbox handwheel. Do not force rotation once the fully open or fully closed position is reached.
The worm gear mechanism features a self-locking function, allowing the disc to be securely maintained at any opening position without slippage.

Flow Adjustment:

The gear-driven mechanism enables precise flow control, making it suitable for regulation

applications.
The current opening position can be viewed directly on the opening indicator located on the gearbox.
If the valve remains in a regulating position for extended periods, perform a full-stroke operation monthly to prevent sticking.

Important Notes:

Do not use the valve as a throttle valve at very small openings (<15°) for prolonged periods to avoid erosion of the sealing surfaces.
For high-temperature applications, re-tighten the bolts under hot conditions after initial cold installation and subsequent heating.
If abnormal resistance is encountered during operation, stop immediately and investigate the cause to resolve the issue.
Regularly check the lubrication condition of the gearbox to ensure smooth transmission.

III. Maintenance and Care Instructions

Routine Maintenance:

Inspect the valve exterior and flange connections monthly for leaks.
Lubricate the gearbox with specified grease quarterly and keep the valve stem clean.
Check that the handwheel operates smoothly and the opening indicator provides accurate readings.

Periodic Inspection:

Conduct a comprehensive inspection every 6-12 months (shorten the interval under severe operating conditions).
Inspect seal surface wear, valve stem rotation smoothness, and flange bolt tightness.
Examine gear wear and bearing lubrication within the gearbox.

Storage Requirements:

For long-term storage, keep the disc in a slightly open position and install flange protectors.
Store indoors in a dry, well-ventilated area. Apply anti-rust grease to the gear transmission components.
Avoid outdoor storage or contact with corrosive substances.

Troubleshooting and Remedies:

Leakage: Check if the disc is fully closed; inspect seal surfaces for damage; verify that flange bolts are evenly tightened.
Stiff Operation: Check if the gearbox lubrication is sufficient; inspect for valve stem obstruction; assess if excessive pipeline stress is present.
Inaccurate Opening Indicator: Adjust the gearbox limit device; check if the pointer connection is loose.

Self-Locking Failure: Inspect worm gear wear; check the condition of the return spring.
For repairs involving the replacement of seals, valve stems, gear transmission components, etc., it is recommended to contact professional technicians.

Important Notice:

This manual provides general guidance. For special applications (such as high temperature/pressure, corrosive media, safety-critical systems, etc.), strictly adhere to relevant industry standards and the manufacturer's specific technical requirements. It is advisable to establish a valve maintenance record and perform periodic professional inspections and maintenance.

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