

D363H 三偏心硬密封对焊蝶阀系列

D363H Three Eccentric Hard Seal Butt Welding Butterfly Valve Series

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用  
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书

Instruction Manual



开维喜阀门集团有限公司  
Kaiweixi Valve Group Co., LTD.

## D363H 三偏心硬密封对焊蝶阀

### D363H Three Eccentric Hard Seal Butt Welding Butterfly Valve

型号: D363H 规格: DN100-DN1400  
公称压力: PN10~PN40 适用介质: 水、油品及类似液体、气体。  
适用温度: -29℃~425℃/-40℃~650℃ 阀体材质: 铸钢、不锈钢、双相不锈钢  
连接方式: 对焊 驱动方式: 蜗轮传动、电动、气动  
Model: D363H  
Size Range: DN100 - DN1400  
Nominal Pressure: PN10 - PN40  
Applicable Media: Water, oil and similar liquids, gases  
Applicable Temperature: -29° C to 425° C / -40° C to 650° C  
Body Material: Cast steel, stainless steel, duplex stainless steel  
Connection Type: Butt weld  
Actuation: Worm gear, electric, pneumatic

#### 概述

D363H 三偏心硬密封对焊蝶阀是一种基于三偏心结构设计的高性能蝶阀, 通过蝶板绕其旋转轴线作 90° 回转运动实现阀门的启闭和流量调节。其核心特征在于三个关键偏心设计: 阀杆轴线与蝶板密封面偏心、阀杆轴线与管道通道轴线偏心, 以及蝶板密封面的圆锥轴线与管道通道轴线偏置。这种结构使得蝶板在启闭过程中与金属硬质密封圈 (如不锈钢、硬质合金) 实现完全脱离接触的旋转, 关闭时通过蝶板与阀座的楔形压紧作用达到双向金属密封。阀体采用对焊连接方式, 直接与管道焊接, 适用于高温、高压及腐蚀性介质工况。驱动方式可适配手动、电动、气动或液动装置, 适用于石油、化工、电力等行业严苛工况的可靠切断与调节控制。

#### Overview

The D363H triple eccentric hard seal butt welded butterfly valve is a high-performance butterfly valve designed based on a triple eccentric structure, which achieves valve opening and closing and flow regulation by rotating the butterfly plate 90 ° around its axis of rotation. Its core features lie in three key eccentric designs: eccentricity between the valve stem axis and the butterfly plate sealing surface, eccentricity between the valve stem axis and the pipeline channel axis, and offset between the conical axis of the butterfly plate sealing surface and the pipeline channel axis. This structure enables the butterfly plate to rotate completely out of contact with the metal hard sealing ring (such as stainless steel, hard alloy) during the opening and closing process. When closed, the bi-directional metal seal is achieved through the wedge-shaped compression effect between the butterfly plate and the valve seat. The valve body adopts butt welding connection method, directly welded with the pipeline, suitable for high temperature, high pressure and corrosive medium working conditions. The driving mode can be adapted to manual, electric, pneumatic or hydraulic devices, and is suitable for reliable cut-off and regulation control of harsh working conditions in industries such as petroleum, chemical, and power.



**D363H 三偏心硬密封对焊蝶阀产品图**

**D363H Three Eccentric Hard Seal Butt Welding Butterfly Valve Product Drawing**

## 特点

- 1、三偏心密封结构：采用阀杆轴线与密封面偏心、阀杆与管道轴线偏心、密封面锥角偏心的复合设计，实现蝶板启闭全程无摩擦，密封副金属硬接触，密封可靠且寿命长。
- 2、双向金属硬密封：蝶板与堆焊硬质合金阀座形成楔形压紧密封，可承受高压、高温及腐蚀性介质，适用于双向截流工况。
- 3、对焊连接强度高：阀体与管道直接焊接，连接强度高、密封绝对可靠，适用于高压管道及易燃、易爆、有毒介质系统。
- 4、启闭扭矩小、操作轻便：偏心结构减少摩擦，90° 回转操作扭矩小，可适配手动、电动、气动等多种驱动方式。
- 5、耐高温高压性能优异：金属硬密封结构可适应 $\leq 600^{\circ}\text{C}$ 的高温 and 较高压力（如 PN16~PN100 或更高等级），性能稳定。
- 6、使用寿命长、维护简便：密封面耐磨耐蚀，启闭过程无摩擦磨损，长期使用后仍可保持密封性能，维护周期长。
- 7、应用领域广泛：适用于石油、化工、电力、冶金等行业的高温、高压、腐蚀性介质管路，尤其适合苛刻工况的切断与调节。

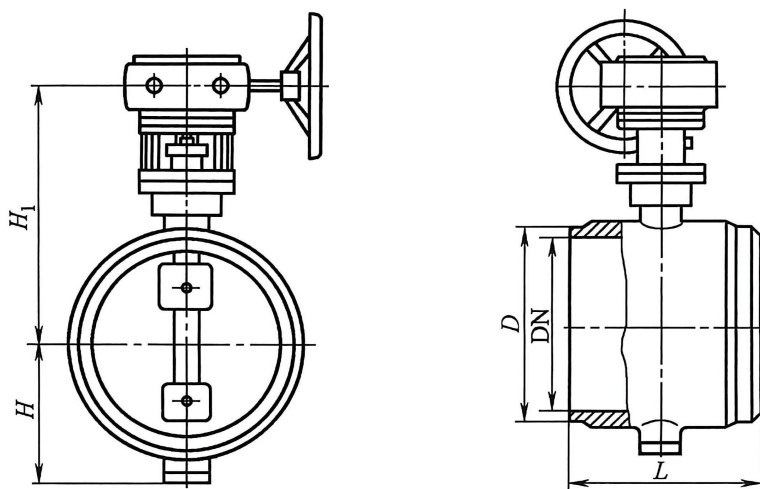
## feature

1. Triple eccentric sealing structure: adopting a composite design of eccentricity between the valve stem axis and the sealing surface, eccentricity between the valve stem axis and the pipeline axis, and eccentricity of the sealing surface cone angle, achieving frictionless opening and closing of the butterfly plate throughout the entire process, with a hard metal contact of the sealing pair, reliable sealing, and long service life.
2. Bidirectional metal hard seal: The butterfly plate and the welded hard alloy valve seat form a wedge-shaped compression seal, which can withstand high pressure, high temperature, and corrosive media, and is suitable for bidirectional flow conditions.
3. High welding connection strength: The valve body is directly welded to the pipeline, with high connection strength and absolutely reliable sealing, suitable for high-pressure pipelines and flammable, explosive, and toxic medium systems.
4. Small opening and closing torque, easy operation: The eccentric structure reduces friction, and the 90 ° rotation operation torque is small, which can be adapted to various driving modes such as manual, electric, and pneumatic.

5. Excellent resistance to high temperature and high pressure: The metal hard seal structure can adapt to high temperatures and higher pressures (such as PN16~PN100 or higher) up to 600 °C, with stable performance.

6. Long service life and easy maintenance: The sealing surface is wear-resistant and corrosion-resistant, and there is no friction or wear during the opening and closing process. After long-term use, the sealing performance can still be maintained, and the maintenance cycle is long.

7. Widely applicable in various fields: suitable for high temperature, high pressure, corrosive medium pipelines in industries such as petroleum, chemical, power, metallurgy, etc., especially suitable for cutting and regulating under harsh working conditions.



D363H 三偏心硬密封对焊蝶阀结构图

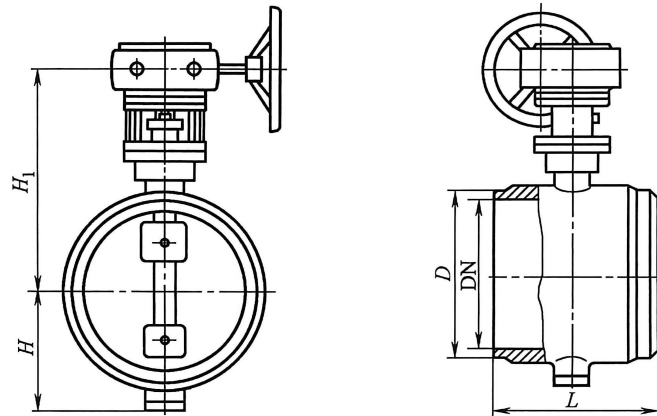
D363H Triple Eccentric Hard Seal Butt Weld Butterfly Valve Structure Drawing

零部件名称材料表 List of Component Names and Materials

| 阀体、阀板、阀座<br>Valve body, valve plate, valve seat                     | 阀杆 valve stem                                                                | 密封圈 sealing ring                                                     | 填料 filler                 |
|---------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------|
| 铸钢、不锈钢、双相不锈钢<br>Cast steel, stainless steel, duplex stainless steel | 20Cr13 不锈钢、铬钼钒钢<br>20Cr13stainless steel, chromium molybdenum vanadium steel | 不锈钢、软硬层叠式金属片<br>Stainless steel, soft and hard laminated metal sheet | 柔性石墨<br>flexible graphite |

## 性能规范表

| 性能规范表 Performance Specification Sheet |                     |     |
|---------------------------------------|---------------------|-----|
| 公称压力 Nominal Pressure                 | 1.0/1.6/2.5/4.0     | MPa |
| 强度试验压力 Strength test pressure         | 1.5/2.4/3.75/6      |     |
| 密封试验压力 Sealing test pressure          | 1.1/1.76/2.75/4.4   |     |
| 适用温度 Applicable Temperature           | -29℃~425℃/-40℃~650℃ | ℃   |



D363H 三偏心硬密封对焊蝶阀外形尺寸图

D363H Three Eccentric Hard Seal Butt Welding Butterfly Valve Overall Dimension Drawing

## D363H 三偏心硬密封对焊蝶阀外形尺寸表

D363H Three Eccentric Hard Seal Butt Welding Butterfly Valve Overall Dimension Table

| 型号 model | NPS/in         | 4   | 5   | 6   | 8   | 10  | 12  | 14  | 16  | 18  |
|----------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|          | DN             | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 |
| D363H-10 | L              | 190 | 200 | 210 | 230 | 250 | 270 | 290 | 310 | 330 |
|          | H              | 115 | 130 | 145 | 175 | 210 | 235 | 270 | 300 | 330 |
|          | H <sub>1</sub> | 255 | 295 | 310 | 380 | 400 | 460 | 510 | 545 | 620 |
|          | D              | 112 | 138 | 162 | 212 | 263 | 314 | 364 | 415 | 466 |
| D363H-16 | L              | 190 | 200 | 210 | 230 | 250 | 270 | 290 | 310 | 330 |
|          | H              | 115 | 130 | 145 | 175 | 210 | 235 | 270 | 300 | 330 |
|          | H <sub>1</sub> | 255 | 295 | 310 | 380 | 400 | 460 | 510 | 545 | 620 |
|          | D              | 112 | 138 | 164 | 214 | 265 | 316 | 367 | 418 | 469 |
| D363H-25 | L              | 190 | 200 | 210 | 230 | 250 | 270 | 290 | 310 | 330 |
|          | H              | 115 | 130 | 145 | 175 | 210 | 235 | 270 | 300 | 330 |
|          | H <sub>1</sub> | 255 | 295 | 310 | 380 | 400 | 460 | 510 | 545 | 620 |
|          | D              | 114 | 140 | 166 | 216 | 267 | 318 | 370 | 421 | 472 |
| D363H-40 | L              | 190 | 200 | 210 | 230 | 250 | 270 | 290 | 310 | 330 |
|          | H              | 115 | 130 | 145 | 175 | 210 | 235 | 270 | 300 | 330 |
|          | H <sub>1</sub> | 255 | 295 | 310 | 380 | 400 | 460 | 510 | 545 | 620 |

|          |                |     |     |     |     |     |      |     |      |      |
|----------|----------------|-----|-----|-----|-----|-----|------|-----|------|------|
|          | D              | 116 | 142 | 168 | 219 | 271 | 322  | 374 | 426  | 477  |
| 型号 model | NPS/in         | 20  | 24  | 28  | 32  | 36  | 40   |     | 48   | 56   |
|          | DN             | 500 | 600 | 700 | 800 | 900 | 1000 |     | 1200 | 1400 |
| D363H-10 | L              | 350 | 390 | 430 | 470 | 510 | 550  |     | 630  | 710  |
|          | H              | 370 | 430 | 470 | 530 | 580 | 650  |     | 765  | 890  |
|          | H <sub>1</sub> | 650 | 680 | 780 | 860 | 900 | 980  |     | 1100 | 1200 |
|          | D              | 516 | 617 | 719 | 820 | 921 | 1022 |     | 1222 | 1424 |
| D363H-16 | L              | 350 | 390 | 430 | 470 | 510 | 550  |     | 630  | 710  |
|          | H              | 370 | 430 | 470 | 530 | 580 | 650  |     | 765  | 890  |
|          | H <sub>1</sub> | 650 | 680 | 780 | 860 | 900 | 980  |     | 1100 | 1200 |
|          | D              | 519 | 620 | 722 | 823 | 924 | 1026 |     | 1229 | 1433 |
| D363H-25 | L              | 350 | 390 | 430 | 470 | 510 | 550  |     | 630  | 710  |
|          | H              | 370 | 430 | 470 | 530 | 580 | 650  |     | 765  | 890  |
|          | H <sub>1</sub> | 650 | 680 | 780 | 860 | 900 | 980  |     | 1100 | 1200 |
|          | D              | 522 | 525 | 728 | 830 | 931 | 1034 |     | 1240 | 1442 |
| D363H-40 | L              | 350 | 390 | 430 | 470 | 510 | 550  |     | 630  | 710  |
|          | H              | 370 | 430 | 470 | 530 | 580 | 650  |     | 765  | 890  |
|          | H <sub>1</sub> | 650 | 680 | 780 | 860 | 900 | 980  |     | 1100 | 1200 |
|          | D              | 528 | 632 | 835 | 841 | 945 | 1048 |     | 1257 | 1465 |

## 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、材质（如阀体材质 WCB、密封面堆焊硬质合金）是否与管路设计要求一致。  
检查阀门外观，确保阀体焊接坡口、密封面及蝶板无损伤。清除阀腔内保护涂层或异物。  
手动旋转阀门驱动装置（手柄或方榫），确认蝶板启闭灵活无卡阻，建议安装前将蝶板调至全开位置。

#### 焊接安装要求

阀门采用对焊连接，焊接前需确认管道与阀体坡口尺寸匹配，并按焊接工艺规范进行坡口清洁处理。  
焊接时需采用对称分段焊接，控制层间温度，避免阀体因局部过热变形。焊接后需对焊缝进行无损检测（如渗透或射线检测）。  
阀门焊接过程中严禁蝶板处于关闭状态，且需采取保护措施防止焊渣飞溅至密封面或阀腔内。

#### 安装方向与位置

阀门可安装于水平或垂直管道，安装位置需留足执行机构操作及维修空间。  
注意阀体铸造箭头方向与介质流向一致，三偏心结构具有单向或双向密封特性，需按设计要求安装。

## 驱动装置安装

对焊阀门通常焊接后再安装驱动装置（电动、气动或蜗轮箱）。安装时需确保执行机构输出轴与阀杆同轴，紧固螺栓均匀受力。  
阀门手动关至全密封位置后，再安装执行机构并进行行程、扭矩调试，确保限位准确。

## 二、使用与操作说明

### 启闭操作

首次投入使用前，需在低压状态下进行 2-3 次全行程启闭操作，检验密封面磨合情况。  
正常操作时需平稳启闭，避免冲击。手动操作时禁止使用加长杠杆强行开关。  
通过执行机构操作时，需确保其输出扭矩与阀门所需扭矩匹配，避免过载损坏密封副。

### 调节使用

本阀门可用于流量调节，但因金属硬密封结构特性，长期节流工况可能加速密封面冲蚀，建议避免长期处于小开度（ $<20^{\circ}$ ）工作。  
若用于调节场合，需定期进行全开全关操作，防止杂质沉积影响密封。

### 特殊工况注意事项

高温工况（如 $>300^{\circ}\text{C}$ ）使用时，冷态安装后需在热态运行温度下重新紧固螺栓，防止热松弛导致泄漏。

用于含颗粒或腐蚀性介质时，需根据介质特性选择密封面硬化材料（如司太立合金），并定期检查密封面状态。

## 三、维护与保养说明

### 日常维护

定期检查阀体焊缝、阀杆填料处有无泄漏，保持阀门外部清洁。  
对阀杆轴承、蜗轮箱等传动部件每 3-6 个月加注高温或耐腐蚀润滑脂（根据介质温度选择）。

### 定期检修

根据工况严苛程度，建议每 1-2 年进行一次全面拆检。  
检查内容：密封面磨损与冲蚀情况、阀杆同轴度与弯曲度、轴承是否磨损、填料或 O 型圈是否老化。  
密封面轻微损伤可现场研磨修复，严重损伤需返厂堆焊重新加工。

## 存放要求

阀门长期存放时需处于微开状态（防止密封面粘连），焊接坡口需加盖保护帽。  
存放环境需干燥通风，避免与腐蚀性物质接触，室外存放时需有防雨防尘措施。

## 常见故障处理

密封泄漏：检查蝶板是否关到位；检查密封面是否有划伤或异物；检查执行机构行程是否设定正确。

操作扭矩异常增大：检查阀杆是否弯曲或轴承损坏；检查密封面是否因高温蠕变导致卡滞；检查执行机构是否故障。

焊接部位泄漏：需按压力容器规范进行焊缝补焊或返修。

## 重要提示

本阀门为三偏心金属硬密封结构，需严格按设计压力温度曲线选型使用，严禁超参数运行。

用于石油、化工等关键安全系统时，需遵循行业安全规范（如 API、ASME 标准），维护操作需由专业人员进行。

阀门维修或密封面更换后，需重新进行压力密封试验，合格后方可投入使用。

## Installation and Maintenance Instructions

### 1、 Installation instructions

#### Pre-installation check

Check whether the valve model, diameter, pressure rating, and material (such as valve body material WCB and sealing surface welded hard alloy) are consistent with the pipeline design requirements. Check the appearance of the valve to ensure that the welding groove, sealing surface, and butterfly plate of the valve body are not damaged. Remove protective coatings or foreign objects from the valve chamber.

Manually rotate the valve drive device (handle or square tenon) to confirm that the butterfly plate opens and closes flexibly without any obstruction. It is recommended to adjust the butterfly plate to the fully open position before installation.

#### Welding installation requirements

The valve is connected by butt welding. Before welding, it is necessary to confirm that the pipeline matches the groove size of the valve body, and clean the groove according to the welding process specifications.

During welding, symmetrical segmented welding should be used to control the interlayer temperature and avoid deformation of the valve body due to local overheating. After welding, non-destructive testing (such as penetration or radiographic testing) should be performed on the weld seam.

During the valve welding process, it is strictly prohibited for the butterfly plate to be in the

closed state, and protective measures must be taken to prevent welding slag from splashing onto the sealing surface or valve chamber.

### **Installation direction and position**

Valves can be installed in horizontal or vertical pipelines, with sufficient space for actuator operation and maintenance at the installation location.

Note that the arrow direction of the valve body casting should be consistent with the flow direction of the medium. The three eccentric structure has one-way or two-way sealing characteristics and should be installed according to the design requirements.

### **Installation of drive device**

Welding valves are usually welded before installing the driving device (electric, pneumatic, or worm gear box). During installation, it is necessary to ensure that the output shaft of the actuator is coaxial with the valve stem and that the fastening bolts are evenly stressed.

After manually closing the valve to the fully sealed position, install the actuator and perform stroke and torque adjustments to ensure accurate positioning.

## **2、 Instructions for use and operation**

### **Opening and closing operation**

Before being put into use for the first time, it is necessary to perform 2-3 full stroke opening and closing operations under low pressure to check the running in condition of the sealing surface. During normal operation, it is necessary to open and close smoothly to avoid impact. Do not use an extended lever to forcefully switch during manual operation.

When operating through the actuator, it is necessary to ensure that its output torque matches the torque required by the valve to avoid overloading and damaging the sealing pair.

### **Adjust usage**

This valve can be used for flow regulation, but due to the characteristics of the metal hard seal structure, long-term throttling conditions may accelerate the erosion of the sealing surface. It is recommended to avoid working at a small opening ( $<20^\circ$ ) for a long time.

If used for regulating occasions, regular full open and full close operations are required to prevent impurities from depositing and affecting the seal.

### **Special working condition precautions**

When used under high temperature conditions (such as  $>300^\circ\text{C}$ ), the bolts should be re tightened at the hot operating temperature after cold installation to prevent leakage caused by thermal relaxation.

When used for media containing particles or corrosive substances, it is necessary to select a sealing surface hardening material (such as Stellite alloy) based on the characteristics of the medium, and regularly check the sealing surface condition.

### **3、Maintenance and upkeep instructions**

#### **routine maintenance**

Regularly inspect the valve body welds and valve stem packing for leaks, and maintain the external cleanliness of the valve.

Add high-temperature or corrosion-resistant lubricating grease (depending on the medium temperature) to transmission components such as valve stem bearings and worm gearboxes every 3-6 months.

#### **regular maintenance**

According to the severity of the working conditions, it is recommended to conduct a comprehensive dismantling inspection every 1-2 years.

Inspection contents: wear and erosion of sealing surface, coaxiality and curvature of valve stem, wear of bearings, aging of packing or O-ring.

Minor damage to the sealing surface can be repaired by on-site grinding, while severe damage requires rework by welding at the factory.

#### **Storage requirements**

When the valve is stored for a long time, it should be kept slightly open (to prevent the sealing surface from sticking), and the welding groove should be covered with a protective cap.

The storage environment should be dry and ventilated, avoiding contact with corrosive substances. Rainproof and dustproof measures should be taken when storing outdoors.

#### **Common fault handling**

Sealing leakage: Check if the butterfly plate is properly closed; Check whether there are scratches or foreign objects on the sealing surface; Check if the actuator travel is set correctly.

Abnormal increase in operating torque: Check whether the valve stem is bent or the bearing is damaged; Check if the sealing surface is stuck due to high-temperature creep; Check if the actuator is malfunctioning.

Leakage at the welding site: Weld repair or rework is required according to the pressure vessel specifications.

#### **Important Notice**

This valve is a three eccentric metal hard seal structure and must be selected and used strictly according to the design pressure temperature curve. It is strictly prohibited to operate beyond

the parameters.

When used in critical safety systems such as petroleum and chemical industries, industry safety regulations (such as API and ASME standards) must be followed, and maintenance operations must be carried out by professionals.

After valve maintenance or sealing surface replacement, a pressure sealing test must be conducted again, and it can only be put into use after passing the test.

非常感谢您的阅读！

Thank you very much for reading!

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