

Q41F 法兰球阀

Q41F Flange Ball Valve

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

Q41F 法兰球阀

型号: Q41F-16P/25P/40P/Q41F-64P/Q41F-16C/Q41F-25C

公称压力: PN16, PN25, PN40, PN64

适用温度: -196~350℃

连接方式: 法兰

其他参数: 制造标准按 GB/T 15185

规格: DN15-DN200

适用介质: 水、油、液体

阀体材质: 铸钢、不锈钢、合金钢、青铜

驱动方式: 手动、气动、电动

Q41F Flange Ball Valve

Model: Q41F-16P/25P/40P/Q41F-64P/Q41F-16C/Q41F-25C

Specifications: DN15-DN200

Nominal Pressure: PN16, PN25, PN40, PN64

Applicable Media: Water, oil, liquid

Applicable Temperature: -196~350℃

Body Material: Carbon steel, stainless steel, alloy steel, Bronze

End Connection : Flange

Operation: Manual, pneumatic, electric Other

Parameters: Manufacturing standard according to GB/T 15185.

Q41F 法兰球阀概述

Q41F 法兰球阀是一种通过法兰连接的通用型截断阀门，采用球体旋转 90 度实现快速启闭。阀体通常采用铸钢、不锈钢或黄铜，结构为全通径或缩径设计，确保流体阻力小。其密封副多采用聚四氟乙烯（PTFE）等软质材料与球体形成紧密贴合，实现可靠密封。该阀门工作压力范围广，适用于水、蒸汽、油品、气体及一般腐蚀性介质，广泛应用于石油、化工、电力、给排水及供热等工业管路上，作为流体接通或切断的控制设备。

Q41F Flange Ball Valve Overview

Q41F flange ball valve is a universal shut-off valve connected by flanges, which uses a ball to rotate 90 degrees to achieve rapid opening and closing. The valve body is usually made of cast steel, stainless steel or brass, with a full bore or reduced diameter design to ensure low fluid resistance. Its sealing pair often uses soft materials such as polytetrafluoroethylene (PTFE) to form a tight fit with the sphere, achieving reliable sealing. This valve has a wide working pressure range and is suitable for water, steam, oil, gas, and general corrosive media. It is widely used in industrial pipelines such as petroleum, chemical, power, water supply and drainage, and heating as a control device for fluid connection or disconnection.



Q41F 法兰球阀产品图
Q41F Flange Ball Valve Product Image

Q41F 法兰球阀特点

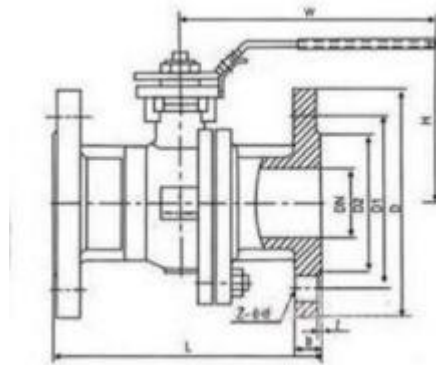
1. 法兰连接稳固：采用标准法兰连接，对接方便，密封面型式多样（如突面、平面），连接刚性好，适用于各类中高压管道系统。
2. 优良密封性能：阀座采用 PTFE 等弹性材料，摩擦系数小，具有自润滑性，可实现长期使用的双向密封，基本实现零泄漏。
3. 操作轻便灵活：球体旋转阻力小，手柄或执行机构操作扭矩低，90 度快速启闭，便于实现自动化控制或远程操作。
4. 防火与安全设计：部分型号符合防火标准，软密封失效后可通过金属密封副实现应急密封；阀杆采用防吹出结构，安全性高。
5. 维护简便与通用性强：结构相对简单，出现泄漏时可在线或线下更换阀座密封件。适用介质范围广泛，综合性价比高。

Q41F Flange Ball Valve Features

1. Stable flange connection: Using standard flange connection, easy docking, diverse sealing surface types (such as protruding and flat), good connection rigidity, suitable for various medium and high pressure pipeline systems.
2. Excellent sealing performance: The valve seat is made of elastic materials such as PTFE, with a low friction coefficient and self-lubricating properties, which can achieve long-term bidirectional sealing and basically achieve zero leakage.
3. Lightweight and flexible operation: The ball has low resistance to rotation, the handle or actuator has low operating torque, and can be quickly opened and closed at 90 degrees, making it easy to achieve automated control or remote operation.

4. Fire prevention and safety design: Some models comply with fire prevention standards, and emergency sealing can be achieved through metal sealing pairs after the soft seal fails; The valve stem adopts an anti blowout structure with high safety.

5. Easy maintenance and strong universality: The structure is relatively simple, and the valve seat seal can be replaced online or offline in case of leakage. Wide range of applicable media and high comprehensive cost-effectiveness.



Q41F 法兰球阀结构图
Q41F Flange Ball Valve Structure Diagram

零部件名称材料表

Parts Name Material List

序号 NO.	名称 Name	材料 Material
1	阀体 Body	碳钢、不锈钢 carbon steel、stainless steel
2	球体 Ball	不锈钢 stainless steel
3	密封圈 sealing ring	PTFE、RPP
4	填料 packing	PTFE
5	阀杆 Stem	不锈钢 stainless steel

性能规范表 Performance Specification		
公称压力 Nominal Pressure	1.6/2.5/4/6.4	MPa
强度试验压力 Shell Test	2.4/3.75/6/9.6	
密封试验压力 Seal Test	1.76/2.75/4.4/7.04	
适用温度 Suitable Temp.	≤350	℃

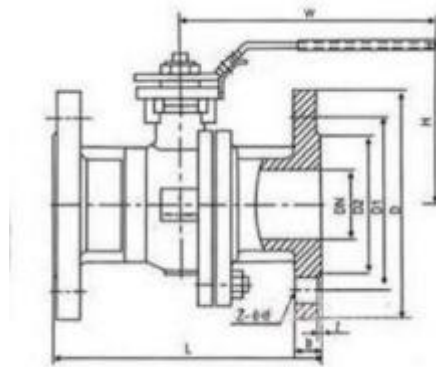
外形尺寸标准要求

- 1、阀门的结构长度按 GB/T 12221 的标准
- 2、连接法兰按 GB/T9113 的标准

Dimensions Standard Requirements

1. The structural length of the valve shall conform to the standard GB/T12221.

2. The connecting flange shall conform to the standard GB/T 9113.



Q41F 法兰球阀外形图
Q41F Flange Ball Valve View Drawing

Q41F 法兰球阀外形尺寸表

Q41F Flange Ball Valve Dimensions Table

公称通径 DN	15	20	25	32	40	50	65	80	100	125	150	200
L	130	140	150	165	180	200	220	250	280	320	360	400
H	59	63	75	85	95	107	142	152	178	252	272	342

Q41F 法兰球阀安装、使用与维护说明书

安装指南

1. 安装前准备：核对阀门型号、压力等级、法兰标准及密封面形式是否与管路匹配。彻底清理阀门内腔、密封面及管道法兰面上的灰尘、油污与异物，检查密封垫片是否完好。
2. 吊装与就位：使用阀门本体上的吊装孔或通过阀体进行吊装，避免将绳索挂在阀杆或执行机构上。将阀门置于管道法兰之间，确保介质流向与阀体指示箭头方向一致（如有要求）。
3. 法兰对接与紧固：使阀门法兰与管道法兰对中，装入正确规格和材质的密封垫片。按对角线顺序分次、均匀地拧紧连接螺栓，直至达到规定的扭矩值，确保法兰面平行贴合，防止因受力不均导致泄漏或阀体变形。
4. 操作空间：安装时应确保阀门手柄或执行机构周围有足够的旋转空间，便于日常操作与维护。
5. 系统测试：安装完成后，在系统压力试验前，应先将阀门置于半开状态，防止试压时球体承受单侧过大压力。试压完成后，检查各连接处有无渗漏。

使用操作

1. 启闭操作：通过手柄、齿轮箱或执行器进行 90 度旋转操作。操作时应平稳施力，当听到或感觉到“到位”的限位感时即停止，切勿强行超程旋转，以免损坏阀杆或内部限位机构。

2. 状态指示：观察手柄方向（与管道轴线平时为开，垂直时为关）或执行机构的开度指示器，明确阀门所处状态。

3. 常规使用：该阀门主要用于全开或全关的截断功能，不推荐长期用于节流或流量调节，以免高速流体冲刷损坏密封面。

4. 带压操作：在系统带压状态下操作时，应缓慢进行，并注意观察有无异常。

维护保养

1. 定期检查：定期检查阀门外部，重点查看法兰连接处有无泄漏，阀杆填料处是否渗漏，以及紧固件有无松动。

2. 阀杆密封维护：若阀杆填料处出现轻微渗漏，可在系统泄压后，均匀适度地拧紧填料压盖螺母。如无效，则需更换填料。

3. 阀门内漏处理：如果阀门出现关闭不严、内部泄漏的情况，可能是阀座密封面受损或有杂质。可尝试将阀门完全开关数次，利用流体冲刷可能存在的杂质。若无效，则需将阀门从管线上拆下，检查并清洗或更换阀座密封件。

4. 长期停用：若阀门计划长期停用，应将其置于全开或全关位置，排空阀内积液，并对阀门通道和外部进行防护，保持清洁干燥。

5. 拆卸维修：进行任何内部维修前，必须确认管道系统已完全泄压、排空并冷却至室温。拆卸时应注意保护法兰密封面及球体表面。重新组装时，建议更换所有密封件（垫片、填料、阀座等）。

Installation, Use, and Maintenance Manual for Q41F Flange Ball Valve Installation Guide

1. Preparation before installation: Check whether the valve model, pressure rating, flange standard, and sealing surface form match the pipeline. Thoroughly clean the dust, oil stains, and foreign objects on the valve cavity, sealing surface, and pipeline flange surface, and check whether the sealing gasket is intact.

2. Lifting and positioning: Use the lifting holes on the valve body or through the valve body for lifting, avoiding hanging ropes on the valve stem or actuator. Place the valve between the pipeline flanges, ensuring that the flow direction of the medium is consistent with the direction indicated by the arrow on the valve body (if required).

3. Flange docking and fastening: Align the valve flange with the pipeline flange, and install sealing gaskets of the correct specifications and materials. Tighten the connecting bolts in diagonal order in stages and evenly until the specified torque value is reached, ensuring that the flange faces are parallel and in contact to prevent leakage or valve body deformation caused by uneven stress.

4. Operating space: During installation, ensure that there is sufficient rotational space around the valve handle or actuator for daily operation and maintenance.

5. System testing: After installation, the valve should be placed in a semi open position before the system pressure test to prevent the ball from bearing excessive pressure on one side during the pressure test. After the pressure test is completed, check for any leaks at each connection.

Usage and Operation

1. Opening and closing operation: Rotate 90 degrees through a handle, gearbox, or actuator. When operating, the force should be applied steadily. Stop when you hear or feel the "in place" limit feeling. Do

not forcefully rotate beyond the range to avoid damaging the valve stem or internal limit mechanism.

2. Status indication: Observe the direction of the handle (open when parallel to the pipeline axis, closed when perpendicular) or the opening indicator of the actuator to determine the valve's status.

3. Conventional use: This valve is mainly used for fully open or fully closed shut-off function, and is not recommended for long-term throttling or flow regulation to avoid high-speed fluid flushing and damaging the sealing surface.

4. Pressure operation: When operating the system under pressure, it should be done slowly and carefully observed for any abnormalities.

maintenance

1. Regular inspection: Regularly inspect the exterior of the valve, focusing on checking for leaks at the flange connection, valve stem packing, and loose fasteners.

2. Valve stem sealing maintenance: If there is slight leakage at the valve stem packing, the packing gland nut can be tightened evenly and moderately after the system is depressurized. If it is ineffective, the packing needs to be replaced.

3. Valve leakage treatment: If the valve is not tightly closed or has internal leakage, it may be due to damage to the sealing surface of the valve seat or impurities. You can try fully opening and closing the valve several times, using fluid to flush out any impurities that may exist. If it is ineffective, the valve needs to be removed from the pipeline, inspected and cleaned, or the valve seat seal needs to be replaced.

4. Long term shutdown: If the valve is planned to be shut down for a long time, it should be placed in the fully open or fully closed position, the accumulated fluid in the valve should be drained, and the valve channel and exterior should be protected to maintain cleanliness and dryness.

5. Disassembly and maintenance: Before conducting any internal maintenance, it is necessary to confirm that the piping system has been completely depressurized, emptied, and cooled to room temperature. When disassembling, attention should be paid to protecting the flange sealing surface and the surface of the sphere. When reassembling, it is recommended to replace all seals (gaskets, packing, valve seats, etc.).

非常感谢您的阅读！

Thank you very much for reading!

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