

Q41F 手动球阀

Q41F Manual Ball Valve

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

Q41F 手动球阀

型号: Q41F-16P/R	规格: DN15-DN250
公称压力: 1.6Mpa-6.4Mpa	适用介质: 水、气、油
适用温度: ≤350℃	阀体材质: 不锈钢、铸钢、青铜
连接方式: 法兰	驱动方式: 手动
其他参数: 制造标准按 GB/T12237	

Q41F Manual Ball Valve

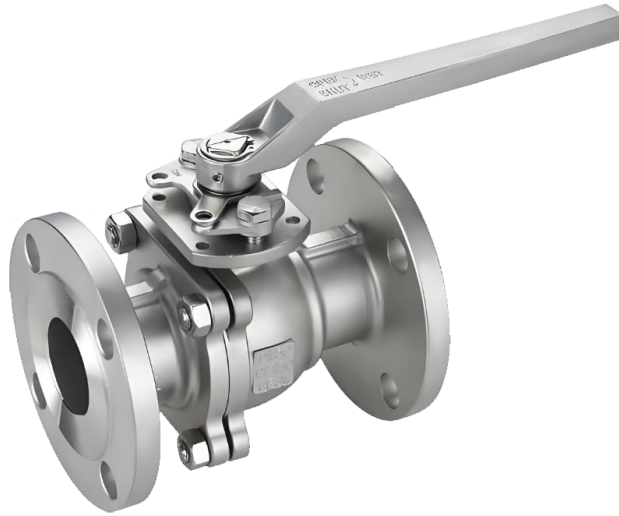
Model: Q41F-16P/R	Specifications: DN15-DN250
Nominal Pressure: 1.6Mpa-6.4Mpa	Applicable Media: Water, Gas, Oil
Applicable Temperature: ≤350℃	Body Material: stainless steel, cast steel, Bronze
End Connection :flange	Operation: manual
Other Parameters: Manufacturing standard according to GB/T12237.	

Q41F 手动球阀概述

Q41F 手动球阀是一种采用法兰连接、通过手动操作实现启闭的通用型工业球阀。阀体通常采用铸钢、不锈钢或铸铁材质，通过手柄旋转 90 度驱动阀杆带动球体运动，实现快速截断或接通。阀座采用聚四氟乙烯（PTFE）等软密封材料，确保可靠密封。该阀门结构简单、操作直观，适用于水、蒸汽、油品及非腐蚀性介质，工作压力范围通常为 PN16-PN40，广泛应用于石油化工、电力、给排水及一般工业管道系统中。

Q41F Manual Ball Valve Overview

The Q41F Manual Ball Valve is a versatile industrial ball valve with flange connections, designed for manual operation to open or close the flow. The valve body is typically made of cast steel, stainless steel, or cast iron. A 90-degree rotation of the handle drives the stem to actuate the ball, enabling rapid shut-off or flow restoration. The seat utilizes soft sealing materials such as PTFE to ensure reliable sealing. With a simple structure and intuitive operation, this valve is suitable for media including water, steam, oil, and non-corrosive fluids, with a typical working pressure range of PN16 to PN40. It is widely used in petroleum and chemical industries, power generation, water supply and drainage systems, and general industrial pipelines.



Q41F 手动球阀产品图
Q41F Manual Ball Valve Product Image

Q41F 手动球阀特点

1. 手动操作简单可靠：通过手柄直接旋转 90 度即可实现启闭，操作直观简便，无需外部动力，适用于无自动化要求的场合。
2. 法兰连接安装稳固：采用标准法兰连接，安装方便，密封性好，可与各类工业管道系统兼容。
3. 软密封性能优良：PTFE 阀座与球体形成软密封，密封可靠，泄漏率低，使用寿命长。
5. 结构紧凑维护简便：阀门结构简单，零件少，故障率低，日常维护工作量小，密封件更换方便。
6. 经济实用适用范围广：制造成本低，适用于多种非腐蚀性介质，是工业管道系统中性价比高的基础截断设备。

Q41F Manual Ball Valve Features

1. Simple and Reliable Manual Operation:

Operated by rotating the handle 90 degrees directly to open or close the valve. The intuitive and straightforward design requires no external power source, making it suitable for applications without automation requirements.

2. Stable Installation with Flange Connection:

Equipped with standard flange connections for easy installation and excellent sealing performance, ensuring compatibility with various industrial pipeline systems.

3. Excellent Soft Sealing Performance:

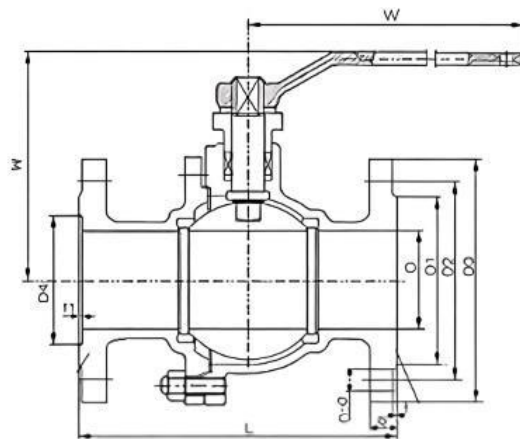
The PTFE seat forms a soft seal with the ball, providing reliable sealing with low leakage rates and a long service life.

4. Compact Structure and Easy Maintenance:

The simple valve structure with fewer components results in low failure rates and minimal daily maintenance. Sealing components can be replaced conveniently when needed.

5. Cost-Effective and Wide Applicability:

Low manufacturing costs and suitability for a variety of non-corrosive media make it a highly cost-effective basic shut-off device in industrial pipeline systems.



Q41F 手动球阀结构图
Q41F Manual 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	不锈钢、碳钢 stainless steel、cast steel
2	球体 ball	不锈钢、碳钢 stainless steel、cast steel
3	密封圈 seal gasket	PTFE、对位聚苯 Poly
4	填料 packing	PTFE、柔性石墨 Flexible Graphite
5	阀杆 stem	不锈钢、碳钢 stainless steel、cast steel

性能规范表 Performance Specification

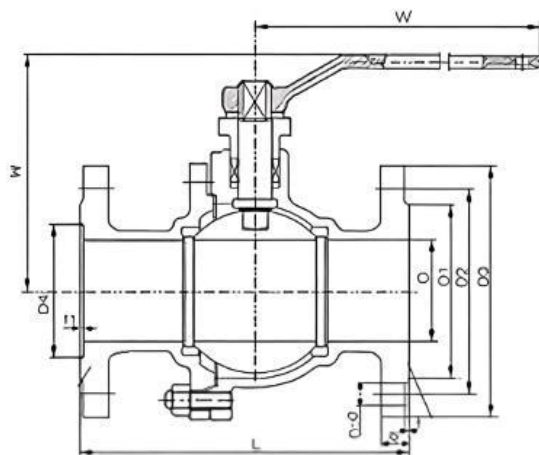
公称压力 Nominal Pressure	1.6-6.4	Mpa
强度试验压力 Shell Test	2.4-9.6	
密封试验压力 Seal Test	1.8-7.04	
适用温度 Suitable Temp.	350	℃

外形尺寸标准要求

- 1、阀门的结构长度按 GB/T12221 的标准
- 2、连接法兰按 GB9113 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 GB9113.



Q41F 手动球阀外形图
Q41F Manual Ball Valve View Drawing

Q41F 手动球阀外形尺寸表

Q41F Manual Ball Valve Dimensions Table

DN	D	D1	D2	D3	1	b	n-d	L	H	W
15	13	45	65	95	2	14	4-14	130	75	130
20	19	55	75	105	2	14	4-14	140	84	170
25	25	65	85	115	2	14	4-14	150	90	170
32	32	78	100	135	2	16	4-18	165	107	200
40	38	85	110	145	3	16	4-18	180	127	250
50	51	100	125	160	3	16	4-18	200	140	250
65	64	120	145	180	3	18	4-18	220	164	350
80	76	135	160	195	3	20	8-18	250	177	350
100	102	155	180	215	3	20	8-18	280	206	420
125	127	185	210	245	3	22	8-18	320	292	700
150	152	210	240	280	3	24	8-23	360	320	1000
200	203	265	295	335	3	26	12-23	400	365	1300
250	254	320	355	405	3	30	12-25	450	420	1800

Q41F 手动球阀安装、使用与维护说明

安装指南

1. 安装前准备：核对阀门型号、压力等级、法兰标准及阀体材质是否符合管道设计要求。清洁阀门内腔及

管道法兰密封面，确保无杂质。

2. 法兰连接与紧固：使用合适的垫片，将阀门置于管道法兰之间，确保阀体流向箭头与介质流向一致。按对角线顺序分步、均匀拧紧所有连接螺栓至规定扭矩。
3. 安装方向确认：阀门可安装于水平或垂直管道，但需确保手柄有充足且无障碍的 90 度旋转空间，并能清晰观察到开关位置指示。
4. 操作灵活性测试：安装后手动操作阀门全行程开关数次，确认启闭顺畅无卡阻。检查法兰连接处有无泄漏。
5. 系统压力测试：阀门参与管道系统压力试验，试验压力需符合设计规范，试验后复查密封性。

使用操作

1. 启闭操作：通过手柄旋转 90 度实现启闭，手柄与管道轴线平行时为开启，垂直时为关闭。操作应平稳到位，避免急速或强行过位操作。
2. 状态确认：通过手柄位置可直观判断阀门开关状态。对于不易观察的位置，可在阀体或手柄上做明显标记。
3. 常规使用：本阀门用于全开或全关闭断，不应用于流量调节。长期全开运行时，建议定期进行全行程开关操作以保持阀座弹性。
4. 注意事项：带压操作时若感觉扭矩异常增大，应立即停止并检查系统压力是否超标或阀门是否有卡阻现象。

维护保养

1. 定期检查：定期检查法兰连接处有无泄漏，阀体表面有无异常腐蚀或损伤。检查手柄是否牢固无松动。
2. 阀座密封维护：若阀门出现关闭不严（内漏），可能是阀座密封面磨损或杂质附着。可在系统泄压后，尝试清洗阀座区域或更换阀座密封件。
3. 阀杆维护：若阀杆处出现外漏或操作干涩，可尝试均匀适度拧紧填料压盖螺母，或在阀杆螺纹处涂抹少量润滑脂。若泄漏严重，需更换填料。
4. 内部清洗：长期使用后若性能下降，可拆下阀门进行内部清洗，检查球体与阀座密封面状态，清除沉积物。
5. 长期停用：阀门长期存放应处于全开或全关状态，对阀杆及外露金属表面采取防锈措施。定期活动手柄以防卡滞，重新启用前需进行压力测试。

Installation, Operation and Maintenance Instructions for Q41F Manual Ball Valve Installation Guide

1. Pre-installation Preparation: Verify that the valve model, pressure rating, flange standard, and body material comply with the pipeline design requirements. Clean the valve interior and the sealing surfaces of the pipeline flanges to ensure they are free from debris.
2. Flange Connection and Tightening: Use a suitable gasket and place the valve between the pipeline flanges, ensuring the flow direction arrow on the valve body aligns with the intended media flow. Tighten

all bolts evenly and gradually in a diagonal sequence to the specified torque.

3. Installation Orientation Verification: The valve can be installed in horizontal or vertical pipelines. However, ensure there is sufficient unobstructed clearance for a 90-degree rotation of the handle and that the open/close position indicator is clearly visible.

4. Operational Flexibility Test: After installation, manually cycle the valve through its full open and close positions several times to confirm smooth, unhindered operation. Inspect the flange connections for leaks.

5. System Pressure Testing: The valve must participate in the pipeline system pressure test. The test pressure must comply with design specifications. Re-inspect for leaks after the test.

Operation

1. Opening/Closing Operation: Open or close the valve by rotating the handle 90 degrees. The valve is open when the handle is parallel to the pipeline axis and closed when perpendicular. Operate smoothly and completely, avoiding rapid or forced movement beyond the stops.

2. Position Verification: The valve position (open/closed) can be visually confirmed by the handle orientation. For locations with poor visibility, apply clear markings on the valve body or handle.

3. Normal Use: This valve is designed for on/off service and must not be used for flow regulation. For valves kept in the fully open position for extended periods, periodic full-stroke cycling is recommended to maintain seat elasticity.

4. Precautions: If abnormal or increased operating torque is felt during operation under pressure, stop immediately. Check whether system pressure exceeds limits or if valve blockage is present.

Maintenance

1. Regular Inspection: Periodically inspect flange connections for leaks and the valve exterior for abnormal corrosion or damage. Check that the handle is secure and not loose.

2. Seat Seal Maintenance: If the valve fails to seal properly (internal leakage), this may indicate worn seat seals or contamination. After depressurizing the system, attempt to clean the seat area or replace the seat seal components.

3. Stem Maintenance: For minor leakage around the stem or stiff operation, attempt to evenly and moderately tighten the stem packing nut, or apply a small amount of lubricant to the stem threads. For severe leakage, replace the stem packing.

4. Internal Cleaning: If performance degrades after prolonged use, remove the valve for internal cleaning. Inspect the condition of the ball and seat sealing surfaces and remove any deposits.

5. Long-Term Storage: Valves intended for long-term storage should be left fully open or fully closed. Apply rust protection to the stem and other exposed metal surfaces. Periodically exercise the handle to prevent seizing. Perform a pressure test before returning the valve to service.

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 18967796135



开维喜阀门

网址: <https://www.kaiweixi.com>

E-mail: yannie@kaiweixi.com

开维喜阀门集团

Kaiweixi valve group

<https://www.kaiweixi.com>

E-mail: sales@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 18967796135

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

E-mail: yannie@kaiweixi.com