

Q11F 内螺纹一片式球阀

Q11F NPT One-Piece Ball Valve

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

Q11F 内螺纹一片式球阀

型号: Q11F	规格: DN6-DN50
公称压力: PN16-PN64	适用介质: 水及类似于水的介质
适用温度: ≤180℃	阀体材质: 不锈钢
连接方式: 内螺纹	驱动方式: 手动、气动、电动
其他参数: 制造标准按 GB/T12237	

Q11F NPT One-Piece Ball Valve

Model: Q11F	Specifications: DN6-DN50
Nominal Pressure: PN16-PN64	Applicable Media: Water and water-like media
Applicable Temperature: ≤180℃	Body Material: stainless steel
End Connection :NPT	Operation: Manual, pneumatic, electric
Other Parameters: Manufacturing standard according to GB/T12237.	

Q11F 内螺纹一片式球阀概述

Q11F 内螺纹一片式球阀是一种采用整体式阀体结构、内螺纹连接的紧凑型球阀，阀体通常由黄铜或不锈钢整体加工而成。该阀门采用一体成型设计，结构简单坚固，通过旋转阀杆带动球体实现 90 度快速启闭，阀座采用聚四氟乙烯（PTFE）等软质密封材料确保可靠密封。其整体式结构避免了分体式阀门的连接泄漏风险，体积小巧、密封性能好，适用于水、油、空气等非腐蚀性介质，工作压力通常为 PN16-PN40，广泛应用于小型设备、仪表测量、气动系统及一般工业管路中，是一种经济可靠的微型截断阀门。

Q11F NPT One-Piece Ball Valve Overview

The Q11F NPT One-Piece Ball Valve is a compact ball valve featuring an integrated body structure and internal thread connections. The valve body is typically machined from a single piece of brass or stainless steel. With its one-piece molded design, the valve offers a simple yet robust structure. It achieves quick 90-degree on/off operation by rotating the stem to drive the ball, while the seat is made of soft sealing materials such as polytetrafluoroethylene (PTFE) to ensure reliable sealing. The integrated structure eliminates the risk of connection leaks common in split-type valves. Its small size and excellent sealing performance make it suitable for non-corrosive media such as water, oil, and air. The typical working pressure ranges from PN16 to PN40. Widely used in small equipment, instrument measurement, pneumatic systems, and general industrial pipelines, it is an economical and reliable miniature shut-off valve.



Q11F 内螺纹一片式球阀产品图
Q11F NPT One-Piece Ball Valve Product Image

Q11F 内螺纹一片式球阀特点

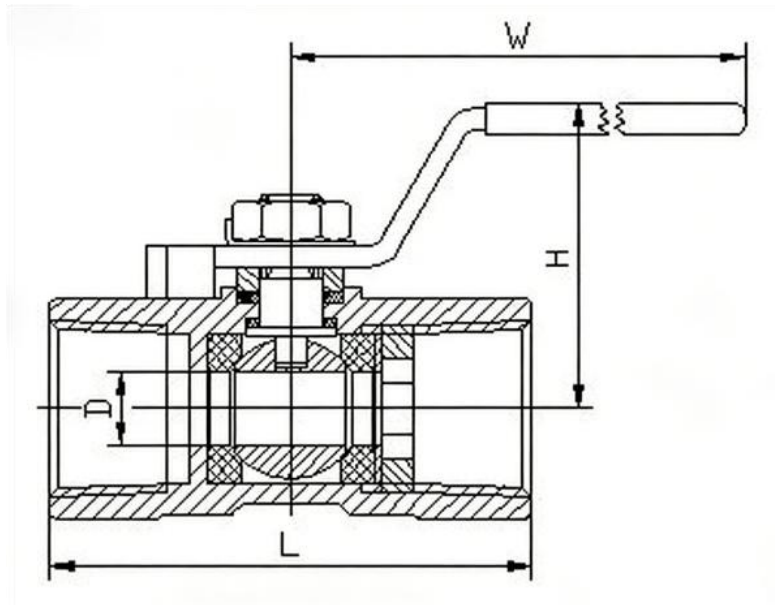
1. 整体式阀体结构：阀体采用一体成型工艺，无连接缝隙，从根本上杜绝了阀体泄漏风险，结构更加坚固可靠。
2. 内螺纹连接紧凑：采用 G 或 NPT 内螺纹连接，安装空间极小，适合空间受限的紧凑型管路布置。
3. 优良密封性能：PTFE 阀座与球体形成软密封，密封性能好，泄漏率低，且摩擦系数小，操作扭矩较轻。
4. 维护简便：虽然为一体式结构，但阀座通常可拆卸更换，维护时只需拆卸阀杆相关部件即可进行密封件更换。
5. 经济耐用：整体式设计减少了零件数量，制造成本较低，黄铜或不锈钢材质耐腐蚀，使用寿命长，是性价比极高的小流量控制阀门。

the Q11F NPT One-Piece Ball Valve s Features

1. One-Piece Body Structure: The valve body is manufactured using integral molding technology, with no connecting seams. This fundamentally eliminates the risk of body leakage and provides a more robust and reliable structure.
2. Compact Internal Thread Connection: Equipped with G or NPT internal threads, it requires minimal installation space, making it ideal for compact piping layouts in space-restricted areas.
3. Excellent Sealing Performance: The PTFE seat forms a soft seal with the ball, ensuring superior sealing performance and low leakage rates. The low coefficient of friction results in lighter operating torque.

4. Easy Maintenance: Despite its one-piece design, the seat is generally detachable and replaceable. Maintenance involves only disassembling the stem-related components for seal replacement.

5. Cost-Effective and Durable: The one-piece design reduces the number of parts, lowering manufacturing costs. Brass or stainless steel construction offers corrosion resistance and long service life, making it a highly cost-effective valve for small-flow control applications.



Q11F 内螺纹一片式球阀结构图

Q11F NPT One-Piece 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 stainless steel
2	球体 ball	不锈钢 stainless steel
3	密封垫 seal gasket	PTFE
4	填料 packing	弹性石墨 flexible graphite
5	阀杆 stem	不锈钢 stainless steel
6	阀座 seat	RPTFE

性能规范表 Performance Specification

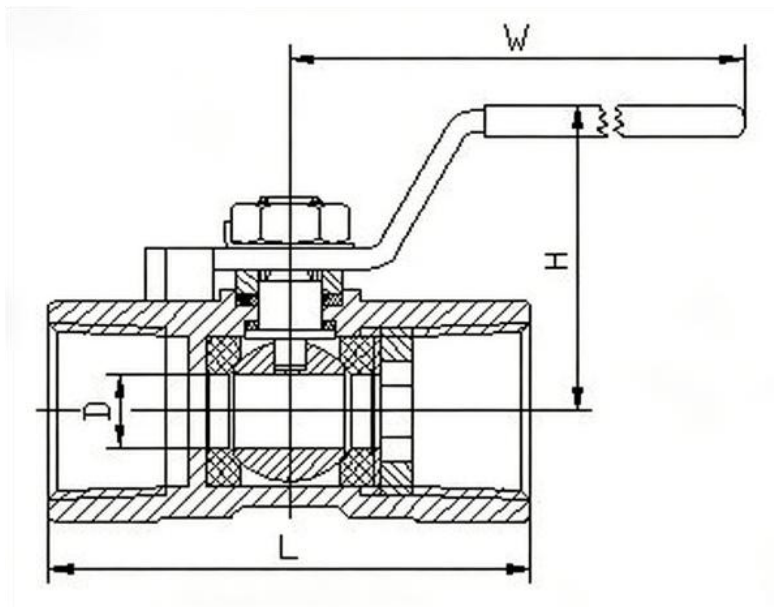
公称压力 Nominal Pressure	1.0-6.4	Mpa
强度试验压力 Shell Test	1.5-9.6	
密封试验压力 Seal Test	1.1-7.04	
适用温度 Suitable Temp.	350	℃

外形尺寸标准要求

1、阀门的结构长度按 GB/T12221 的标准

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 JB/T7306.



Q11F 内螺纹一片式球阀外形图

Q11F NPT One-Piece Ball Valve View Drawing

Q11F 内螺纹一片式球阀外形尺寸表

Q11F NPT One-Piece Ball Valve Dimensions Table

公称通径		结构长度 (mm)	外形尺寸 (mm)			参考重量 (kg)
毫米	英寸		d	H	W	
6	1/4"	40	4.2	22	80	0.10
10	3/8"	45	6	26	80	0.115
15	1/2"	57	8	31	88	0.175
20	3/4"	60	12	34	88	0.250
25	1"	72	15	38	105	0.400
32	1-1/4"	79	19	43	105	0.600
40	1-1/2"	85	24	50	124	0.850
50	2"	101	32	57	124	0.900

Q11F 内螺纹一片式球阀安装、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、螺纹标准及材质是否符合管路设计要求。清洁阀门内腔及管道端口螺纹，确保无任何杂质或毛刺。
2. 螺纹连接操作：在管道外螺纹上顺时针缠绕适量聚四氟乙烯生料带或涂抹密封剂。手动将阀门旋入管道并对正螺纹，使用工具卡住阀体六角部位均匀紧固，避免过度用力导致阀体变形或螺纹损伤。
3. 安装方向与空间：阀门可安装于任意方向，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. 安装后检查：手动操作阀门全行程开关数次，确认启闭顺畅无卡阻。检查螺纹连接处有无渗漏。
5. 系统压力测试：阀门安装后参与管道系统压力试验，试验压力不得超过阀门公称压力，试验后复查连接密封性。

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，勿强行超程旋转。
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标记。
3. 常规使用：本阀门主要用于管路截断或接通，不应用于流量调节。长期处于全开状态时，建议定期进行全行程开关操作，以保持阀座弹性。
4. 带压操作注意事项：在系统带压状态下操作时，应缓慢均匀施力。若操作异常困难或无法完全启闭，应停止操作并检查原因。

维护保养

1. 定期检查：定期检查阀门螺纹连接处有无渗漏，阀体表面有无腐蚀或损伤。检查手柄是否牢固无松动。
2. 阀座维护：若阀门出现关闭不严（内漏），可能为阀座密封面磨损或附着杂质。需将阀门从管道上拆下，拆卸阀杆及相关部件后，检查并清洗阀座与球体密封面。若阀座损坏，需更换阀座密封件。
3. 阀杆密封维护：若阀杆处出现轻微外漏，可尝试均匀拧紧阀杆压盖螺母。若无效或泄漏严重，需将阀门泄压后更换阀杆密封填料。
4. 整体更换原则：由于是一片式整体结构，若阀体出现裂纹或严重损坏，不建议修复，应整体更换新阀门。
5. 拆卸与存放：需要拆卸时，应先确认系统已完全泄压。阀门长期存放应处于全开或全关状态，保持端口清洁并加盖防尘。定期活动手柄以防卡滞。

Installation, Operation and Maintenance Instructions for Q11F One-Piece Internal Thread Ball Valve

Installation Guide

1. Pre-Installation Preparation: Verify that the valve model, pressure rating, thread standard, and material comply with pipeline design requirements. Clean the valve interior and pipeline port threads to ensure they are free from any debris or burrs.
2. Threaded Connection Procedure: Wrap an appropriate amount of PTFE tape or apply sealant

clockwise around the external threads of the pipe. Manually thread the valve onto the pipe, aligning the threads properly. Use a tool to grip the hexagonal part of the valve body and tighten evenly, avoiding excessive force that could deform the valve body or damage the threads.

3. Installation Orientation and Space: The valve can be installed in any orientation, but ensure the handle has sufficient and unobstructed 90-degree rotation space, and the open/closed position indicators are clearly visible.

4. Post-Installation Inspection: Manually operate the valve through its full travel several times to confirm smooth opening and closing without jamming. Check for any leakage at the threaded connections.

5. System Pressure Testing: After installation, the valve should participate in the pipeline system pressure test. The test pressure must not exceed the valve's nominal pressure. After testing, re-inspect the sealing integrity of the connections.

Operation

1. Opening and Closing Operation: Operate 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 fully; do not force the handle beyond its travel limit.

2. Status Confirmation: The handle position provides a clear indication of the valve's open/closed status. For locations where visibility is poor, mark the valve body or handle.

3. Normal Use: This valve is primarily used for fully opening or closing the pipeline and is not intended for flow regulation. If the valve remains fully open for extended periods, periodically perform full travel open/close operations to maintain seat elasticity.

4. Precautions for Operation Under Pressure: When operating under system pressure, apply force slowly and evenly. If operation is abnormally difficult or the valve cannot fully open/close, stop and investigate the cause.

Maintenance

1. Regular Inspection: Periodically check for leaks at threaded connections, and inspect the valve body surface for corrosion or damage. Ensure the handle is secure and not loose.

2. Seat Maintenance: If the valve does not close tightly (internal leakage), it may be due to wear or contamination on the seat sealing surface. Remove the valve from the pipeline, disassemble the stem and related components, then inspect and clean the sealing surfaces of the seat and ball. If the seat is damaged, replace the seat seal.

3. Stem Seal Maintenance: If minor external leakage occurs at the stem, try evenly tightening the stem gland nut. If ineffective or leakage is severe, depressurize the valve and replace the stem packing.

4. Replacement Principle: Due to the one-piece integral structure, if the valve body is cracked or severely damaged, repair is not recommended. Replace the entire valve with a new one.

5. Removal and Storage: Before removal, ensure the system is fully depressurized. For long-term storage, the valve should be in the fully open or fully closed position. Keep the ports clean and capped to prevent dust ingress. Periodically operate the handle to prevent seizing.

非常感谢您的阅读！

Thank you very much for reading!

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