

Q11F 内螺纹（带锁）三片式球阀

Q11F NPT Three-Piece Ball Valve (with Lock)

使
用
说
明
书



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

Q11F 内螺纹（带锁）三片式球阀

型号: Q11F	规格: DN6-DN100
公称压力: 1.6Mpa-6.4Mpa	适用介质: 水、食品、饮料及卫生级系统
适用温度: ≤350℃	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/T12224	

Q11F NPT Three-Piece Ball Valve (with Lock)

Model: Q11F	Specifications: DN6-DN100
Nominal Pressure: 1.0Mpa-6.4Mpa	Applicable Media: Water, food, beverage, and hygienic systems
Applicable Temperature: ≤350℃	Body Material: stainless steel
End Connection :NPT	Operation: Manual, pneumatic, electric
Other Parameters: Manufacturing standard according to GB/T12237.	

Q11F 内螺纹（带锁）三片式球阀概述

Q11F 内螺纹（带锁）三片式球阀是一种集成了锁定装置的黄铜或不锈钢制三片式球阀，采用内螺纹连接。其阀体由两片端盖与中间阀体通过螺栓连接构成，结构稳固且便于拆装，并在阀杆或手柄处设有专用锁孔，可配合挂锁或铅封使用。阀门通过旋转阀杆带动球体实现 90 度启闭，阀座采用聚四氟乙烯（PTFE）等软质密封材料。该设计在实现可靠截断功能的同时，提供了物理锁定机制，防止未经授权的误操作，适用于水、油、气等非腐蚀性介质，常见于需要安全管理或流程控制的仪器仪表、供水供气、设备管路及公共设施中。

Q11F Internal Thread (Lockable) Three-Piece Ball Valve – Overview

The Q11F internal thread (lockable) three-piece ball valve is a brass or stainless steel three-piece ball valve integrated with a locking mechanism and designed for internal thread connection. The valve body consists of two end caps and a central body section bolted together, offering robust construction and easy disassembly. A dedicated lock hole is provided at the stem or handle, allowing the use of a padlock or seal. The valve operates by rotating the stem to drive the ball 90 degrees for opening or closing, with the seat made from soft sealing materials such as PTFE (polytetrafluoroethylene). This design not only provides reliable shut-off functionality but also incorporates a physical locking mechanism to prevent unauthorized or accidental operation. Suitable for non-corrosive media such as water, oil, and gas, it is commonly used in instrumentation, water/gas supply systems, equipment pipelines, and public facilities where safety management or process control is required.



Q11F 内螺纹（带锁）三片式球阀产品图

Q11F NPT Three-Piece Ball Valve (with Lock) Product Image

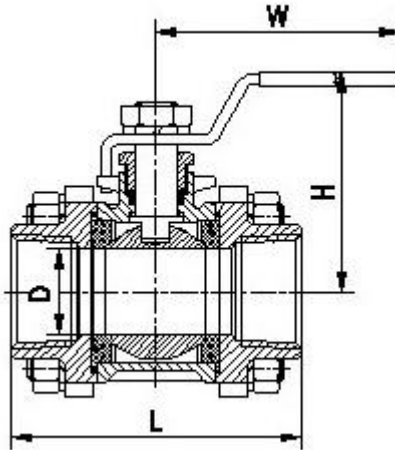
Q11F 内螺纹（带锁）三片式球阀特点

1. 三片式结构维护便捷：分体式设计使内部清洗、检查和密封件更换无需从管道上完全拆卸阀门，大大简化了维护流程。
2. 内螺纹连接紧凑可靠：采用 G 或 NPT 内螺纹连接，结构短小紧凑，安装方便，密封性好，适合空间有限的管路布置。
3. 集成锁定防误操作：阀杆或手柄设计有标准锁孔，支持使用挂锁或铅封，可有效防止非授权人员擅自操作，提升流程安全与管理水平。
4. 优良密封与操作轻便：PTFE 阀座确保可靠密封且摩擦系数小，启闭扭矩低，操作手感轻便灵活。
5. 经济耐用与用途广泛：黄铜或不锈钢材质耐腐蚀、寿命长，性价比高。锁定功能使其特别适用于需要流程隔离、收费管理或安全控制的场合。

Q11F Internal Thread (Lockable) Three-Piece Ball Valve Features

1. Three-Piece Structure for Easy Maintenance: The split-body design allows for internal cleaning, inspection, and seal replacement without complete removal of the valve from the pipeline, greatly simplifying maintenance procedures.
2. Compact and Reliable Internal Thread Connection: Equipped with G or NPT internal threads, the valve offers a short, compact structure, easy installation, and excellent sealing performance, making it suitable for piping layouts with limited space.
3. Integrated Locking Mechanism to Prevent Misoperation: The stem or handle is designed with a standard lock hole, compatible with padlocks or lead seals, effectively preventing unauthorized operation and enhancing process safety and management.

4. Excellent Sealing and Smooth Operation: The PTFE seat ensures reliable sealing, low friction coefficient, minimal opening/closing torque, and light, flexible operation.
5. Cost-Effective, Durable, and Versatile: Constructed from corrosion-resistant brass or stainless steel for long service life and high cost-performance. The locking feature makes it particularly suitable for applications requiring process isolation, access control, billing management, or safety regulation.



Q11F 内螺纹（带锁）三片式球阀结构图

Q11F NPT Three-Piece Ball Valve (with Lock) Structure Diagram

零部件名称材料表 Parts Name Material List

序号 NO.	名称 Name	材料 Material
1	球体 ball	不锈钢 stainless steel
2	密封垫 seal gasket	PTFE
3	填料 packing	弹性石墨 flexible graphite
4	阀杆 stem	不锈钢 stainless steel
5	阀座 seat	RPTFE
6	阀体 body	不锈钢 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	1.76-7.6	
适用温度 Suitable Temp.	350	℃

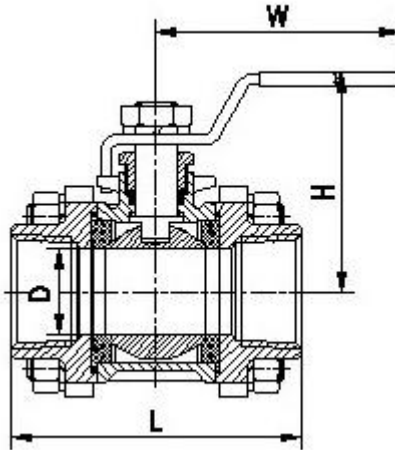
外形尺寸标准要求

- 1、阀门的结构长度按 GB/T12221 的标准
- 2、连接法兰按 JB/T7306 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（带锁）三片式球阀外形图

Q11F NPT Three-Piece Ball Valve (with Lock) View Drawing

Q11F 内螺纹（带锁）三片式球阀外形尺寸表

Q11F NPT Three-Piece Ball Valve (with Lock) Dimensions Table

SIZE	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
D	11.6	12.7	15	20	25	32	38	50	65	80	100
L	68	68	72	82	90	112	120	145	185	210	268
H	100	100	130	130	165	165	190	190	250	250	280
E	100	100	130	130	165	165	190	190	250	250	280

Q11F 内螺纹（带锁）三片式球阀安装、使用与维护说明

安装指南

- 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，确保无异物。
- 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，避免过度用力损坏螺纹或阀体。
- 三片式结构检查：**安装时无需拆卸阀门的三片式连接螺栓。紧固管道螺纹时应确保不使阀门整体承受过大扭曲力，以防内部密封错位。
- 锁定装置确认：**安装前检查锁孔是否通畅、无损伤，确认挂锁或铅封机构可正常使用。安装后确保锁具安装位置便于操作且不受管道或其他部件干涉。
- 安装后测试：**手动操作阀门数次，检查启闭是否顺畅无卡阻。测试完毕后可将阀门置于所需状态（开或关）并进行上锁。

1. 启闭与锁定操作：操作前需先打开锁具。通过手柄旋转 90 度实现启闭（平行管道为开，垂直为关）。操作到位后，应及时通过锁孔安装指定挂锁或铅封，并记录锁定状态。
2. 状态管理：阀门开关状态和锁定状态应有明确标识或记录，防止误操作。只有授权人员方可进行开锁及阀门操作。
3. 常规使用：本阀门主要用于需要安全管理截断的场合，不应用于流量调节。长期处于固定状态时，建议定期（如每季度）开锁并操作阀门全行程一次，以保持灵活性。
4. 带压操作注意事项：在带压系统操作时，应确保压力在阀门额定范围内，并平稳均匀施力。若感觉操作异常困难，应停止操作并检查原因，不可强行扳动手柄。

维护保养

1. 定期检查：定期检查螺纹连接处有无渗漏，阀体表面有无腐蚀。检查锁具是否完好、锁孔有无锈蚀或堵塞，确保锁定功能有效。
2. 内部维护（利用三片式结构）：若需清洗或更换密封件，可在系统泄压后，拆卸连接中间阀体的螺栓，将阀体部分取出进行维护，而无需完全拆卸管道螺纹连接。
3. 密封性能维护：若阀门出现内漏，可按上述方法取出阀体，检查并清洗球体与阀座密封面。若阀座磨损或老化，可更换阀座密封圈或整体维修包。
4. 阀杆与锁定机构维护：若阀杆处出现外漏，可尝试均匀拧紧阀杆压盖。定期在锁孔及阀杆转动部位涂抹少量防锈润滑剂，保持操作顺滑并防止锈蚀。
5. 拆卸与长期存放：需要完全拆卸时，应先泄压并解除锁定。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。锁具应单独保管并防锈。

Q11F Internal Thread (Lockable) Three-Piece Ball Valve Installation, Operation and Maintenance Instructions

Installation Guide

1. Pre- Installation Preparation

– Verify that the valve model, pressure rating, thread standard and material meet the pipeline design requirements.

– Clean the valve interior and pipeline- port threads to ensure they are free of foreign matter.

2. Threaded Connection Procedure

– Wrap a suitable amount of PTFE thread- seal tape or apply sealant clockwise around the external pipe threads.

– Hand- thread the valve onto the pipe, align the threads, then tighten evenly using a tool on the hexagonal part of the valve body. Avoid excessive force that could damage the threads or valve body.

3. Three- Piece Structure Check

- Do not disassemble the three- piece connecting bolts during installation.
- When tightening the pipe threads, ensure the whole valve is not subjected to excessive torsional force, which could misalign internal seals.

4. Locking Device Verification

- Before installation, check that the lock hole is clear and undamaged, and confirm that the padlock or sealing mechanism can be used normally.
- After installation, ensure the locking position is accessible and not obstructed by the pipeline or other components.

5. Post- Installation Testing

- Manually cycle the valve several times to verify smooth, unrestricted opening and closing.
- After testing, set the valve to the required state (open or closed) and apply the lock.

Operation

1. Opening/Closing and Locking Operation

- Before operation, unlock the valve. Rotate the handle 90° (parallel to the pipe = open; perpendicular = closed).
- After operation, promptly install the specified padlock or seal through the lock hole, and record the locked status.

2. Status Management

- The valve's open/closed status and locked status shall be clearly marked or recorded to prevent misoperation.
- Only authorized personnel may unlock and operate the valve.

3. Normal Use

- This valve is primarily used for safety- managed shut- off applications and is not intended for flow regulation.
- If the valve remains in a fixed position for a long time, it is recommended to unlock and cycle it through its full travel periodically (e.g., quarterly) to maintain flexibility.

4. Operation Under Pressure

- When operating in a pressurized system, ensure the pressure is within the valve's rated range and apply force steadily and evenly.
- If abnormal resistance is felt, stop operation and investigate the cause; never force the handle.

Maintenance

1. Regular Inspection

- Periodically check threaded connections for leakage and the valve body for corrosion.
- Inspect the lock and lock hole for damage, rust, or blockage to ensure the locking function remains effective.

2. Internal Maintenance (Using the Three- Piece Structure)

- If cleaning or seal replacement is required, depressurize the system, remove the bolts connecting the central valve body, and extract the body section for maintenance without having to completely disengage the pipe threads.

3. Seal- Performance Maintenance

- Should internal leakage occur, follow the method above to extract the valve body, then inspect and clean the sealing surfaces of the ball and seat.
- If the seat is worn or aged, replace the seat seal ring or the complete repair kit.

4. Stem and Locking- Mechanism Maintenance

- If external leakage occurs at the stem, try evenly tightening the stem gland.
- Periodically apply a small amount of anti- rust lubricant to the lock hole and stem- rotation areas to maintain smooth operation and prevent corrosion.

5. Disassembly and Long- Term Storage

- Before complete disassembly, depressurize the system and remove the lock.
- For long- term storage, the valve should be fully open or fully closed, with ports cleaned and capped against dust.
- Locks should be stored separately and protected from rust.

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