

Q21F 内外丝铜球阀

Q21F Female & Male Thread Brass Ball Valve

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

Q21F 内外丝铜球阀

型号: Q21F-16T

公称压力: 1.6Mpa

适用温度: ≤120℃

连接方式: 内螺纹

其他参数: 制造标准按 GB/T12237

规格: DN15-DN25

适用介质: 水及类似于水的介质

阀体材质: 铜

驱动方式: 手动

Q21F Female & Male Thread Brass Ball Valve

Model: Q21F-16T

Nominal Pressure: 1.6Mpa

Applicable Temperature: ≤120℃

End Connection :NPT

Other Parameters: Manufacturing standard according to GB/T12237.

Specifications: DN15-DN25

Applicable Media: Water and water-like media

Body Material: brass

Operation: Manual

Q21F 内外丝铜球阀概述

Q21F 内外丝铜球阀是一种采用内外螺纹组合连接的紧凑型球阀，阀体及主要部件采用锻造黄铜制造。该阀门一端为外螺纹（如 G 螺纹），另一端为内螺纹，便于在不同接口标准的管路中实现转接与连接。通过旋转阀杆带动球体 90 度动作实现快速启闭，阀座采用聚四氟乙烯（PTFE）等软密封材料确保可靠密封。该阀门结构精巧，兼具连接转换与截断功能，适用于水、油、空气等非腐蚀性介质，工作压力通常为 PN16-PN40，广泛应用于暖通系统、小型设备、仪器仪表及家庭供水等场合，是一种多功能的管路连接与控制元件。

Q21F Female & Male Thread Brass Ball Valve Overview

The Q21F Female & Male Thread Brass Ball Valve is a compact ball valve designed with combined female and male thread connections. Its body and key components are constructed from forged brass. One end of the valve features external threads (e.g., G-thread), while the opposite end has internal threads, facilitating convenient connection and adaptation between pipelines or equipment with different interface standards. A 90-degree rotation of the stem drives the ball to open or close the flow path quickly. The valve seat, made of soft sealing materials like PTFE (Polytetrafluoroethylene), ensures reliable sealing. Characterized by its compact and refined design, this valve integrates both connection/adaptation and shut-off functions. It is suitable for non-corrosive media such as water, oil, and air, with typical working pressures ranging from PN16 to PN40. Widely used in HVAC systems, small-scale equipment, instrumentation, and domestic water supply applications, it serves as a versatile pipeline connection and control component.



Q21F 内外丝铜球阀产品图
Q21F Female & Male Thread Brass Ball Valve Product Image

Q21F 内外丝铜球阀特点

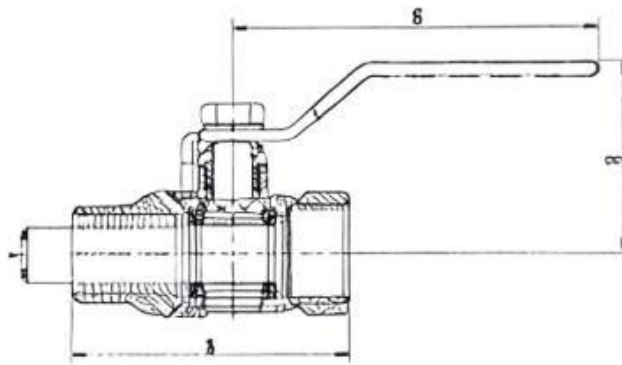
1. 内外螺纹组合连接：一端外螺纹、一端内螺纹的特殊设计，可直接连接不同接口的管路或设备，省去额外接头，安装灵活便捷。
2. 黄铜阀体耐腐蚀：采用锻造黄铜，强度高、耐腐蚀性好，不易生锈，使用寿命长。
3. 优良密封与操作轻便：PTFE 阀座确保可靠的软密封，摩擦系数小，启闭扭矩低，操作手感顺畅。
4. 结构紧凑功能多用：集转接与截断功能于一体，结构短小，节省安装空间，特别适合空间受限的改造或转接场合。
5. 经济实用维护简单：制造成本低，若阀座磨损可更换密封件，维护方便，是各类低压管路系统中性价比高的转接控制阀门。

Q21F Female & Male Thread Brass Ball Valve Features

1. Combined Female & Male Thread Connections: Features a special design with external threads on one end and internal threads on the other, allowing direct connection to pipelines or equipment with different interfaces. Eliminates the need for additional adapters, enabling flexible and convenient installation.
2. Corrosion-Resistant Brass Body: Manufactured from forged brass, offering high strength, excellent corrosion resistance, and resistance to rust, resulting in a long service life.
3. Excellent Sealing and Smooth Operation: Equipped with a PTFE seat for reliable soft sealing. The low friction coefficient ensures minimal opening/closing torque and smooth, effortless manual operation.
4. Compact and Multi-Functional Design: Integrates both connection/adaptation and shut-off functions in

one compact unit. Its short face-to-face length saves installation space, making it ideal for retrofit or connection applications in space-constrained environments.

5. Cost-Effective and Easy Maintenance: Low manufacturing cost. Sealing components can be replaced if the seat wears out, facilitating easy maintenance. A high-value, economical choice for shut-off and connection control in various low-pressure pipeline systems.



Q21F 内外丝铜球阀结构图

Q21F Female & Male Thread Brass 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	黄铜、青铜 Brass、Bronze
2	球体 ball	不锈钢 Stainless Steel
3	密封圈 seal gasket	PTFE
4	填料 packing	弹性石墨 Flexible Graphite
5	阀杆 stem	黄铜 Brass
6	阀座 seat	RPTFE

性能规范表 Performance Specification

公称压力 Nominal Pressure	1.6	Mpa
强度试验压力 Shell Test	2.4	
密封试验压力 Seal Test	1.8	
适用温度 Suitable Temp.	120	℃

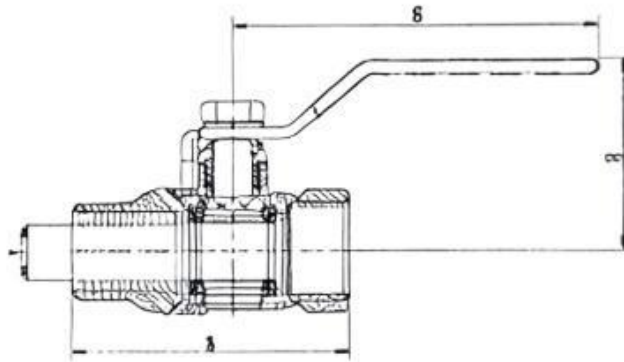
外形尺寸标准要求

- 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.



Q21F 内外丝铜球阀外形图

Q21F Female & Male Thread Brass Ball Valve View Drawing

Q21F 内外丝铜球阀外形尺寸表

Q21F Female & Male Thread Brass Ball Valve Dimensions Table

ON	SIZE	L	H	O	S
09	1/8"	47	31	85	5
10	2/8"	55	41	81	10
15	1/2"	61	42	81	12
20	3/8"	55.5	47	93	15

Q21F 内外丝铜球阀安装、使用与维护说明

安装指南

- 安装前准备：**核对阀门规格、压力等级和螺纹类型（内外螺纹标准需与两端管道匹配）。清洁阀门内腔及管道端口螺纹，确保无杂质。
- 螺纹连接操作：**根据阀门两端螺纹类型，在管道对应螺纹上缠绕适量聚四氟乙烯生料带或涂抹密封剂。先手动旋入一端，确保对正螺纹后再连接另一端。使用合适的工具分别卡住阀体两端六角部位交替均匀紧固，避免因单边受力导致阀体扭曲。
- 连接顺序建议：**建议先将阀门一端与固定端管道连接并初步紧固，再连接另一端管道进行调整对正，最后进行最终紧固。
- 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。
- 安装后检查：**手动操作阀门全行程开关数次，检查启闭是否顺畅。对两端螺纹连接处进行压力测试，确保无渗漏。

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，建议在阀体或手柄上做明显标记。
3. 常规使用：本阀门主要用于管路截断或转接处的流体控制，不应用于精确的流量调节。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. 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，可能内部有杂质或密封件异常，应停止操作并检查。

维护保养

1. 定期检查：定期检查阀门两端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。
2. 内部维护：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，拆卸相关部件后检查并清洗球体与阀座密封面。
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. 螺纹维护：长期使用后若拆卸阀门，应检查两端螺纹有无损伤。重新安装时需更换新的密封材料，确保密封可靠。
5. 存放保养：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。若作为备件存放，建议标注其内外螺纹规格以便快速选用。

Installation, Operation, and Maintenance Manual for Q21F Female & Male Thread Brass Ball Valve

Installation Guide

1. Pre-Installation Preparation: Verify the valve specifications, pressure rating, and thread type (the internal and external thread standards must match the connected pipelines on both ends). Clean the valve interior and the threads on the pipe ends to ensure they are free from debris.
2. Thread Connection Procedure: Based on the thread types on both ends of the valve, wrap an appropriate amount of PTFE thread seal tape or apply pipe sealant to the corresponding pipe threads. Start by hand-threading one end, ensuring the threads are properly aligned before connecting the opposite end. Use suitable tools to engage the hexagonal flats on both ends of the valve body and tighten alternately and evenly to avoid distorting the valve body due to uneven force.
3. Recommended Connection Sequence: It is recommended to first connect and preliminarily tighten one end of the valve to the fixed pipeline section. Then, connect and align the opposite pipeline end before performing the final tightening.
4. Orientation and Clearance: The valve can be installed in any orientation. 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.

5. Post-Installation Check: Manually cycle the valve through its full open and close positions several times to ensure smooth operation. Perform a pressure test on both threaded connections to confirm they are leak-free.

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 to the end position. Do not force the handle beyond its stops.
2. Position Verification: The valve position (open/closed) can be visually confirmed by the handle orientation. For locations with poor visibility, applying clear markings on the valve body or handle is recommended.
3. Normal Use: This valve is primarily designed for on/off service or fluid direction change at pipeline connections. It should not be used for precise flow regulation (throttling). For valves kept in the fully open position for extended periods, periodic full-stroke cycling is recommended to maintain seat flexibility.
4. Precautions: When operating the valve under system pressure, apply force slowly and evenly. If operation becomes abnormally difficult, it may indicate internal debris or seal issues. Stop operation and investigate.

Maintenance

1. Regular Inspection: Periodically inspect both threaded connections for leaks and the valve exterior for corrosion or damage. Check that the handle is secure.
2. Internal Maintenance: If the valve fails to seal properly (internal leakage), it may be due to worn seat seals or debris accumulation. The valve must be removed from the pipeline. After disassembling the relevant components, inspect and clean the sealing surfaces of the ball and seats.
3. Stem Seal Maintenance: If minor leakage occurs around the stem, try evenly tightening the stem packing nut. If ineffective or if leakage is severe, the stem packing must be replaced after depressurizing the valve.
4. Thread Maintenance: If the valve is disassembled after long-term use, inspect the threads on both ends for damage. Always use new sealing material during reinstallation to ensure a reliable seal.
5. Storage: Valves intended for long-term storage should be left in either the fully open or fully closed position. Keep the ports clean and capped to prevent contamination. Periodically exercise the handle to prevent seizing. If stored as a spare part, labeling it with its internal/external thread specifications is recommended for quick identification and selection.

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

网址： <https://www.kaiweixi.com>

E-mail: yannie@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