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Q641F 气动法兰球阀

Q641F Pneumatic Flange Ball Valve

使用说明书

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Q641F 气动法兰球阀

型号：Q641F-16C/25C/40C　　规格： DN20-DN200
公称压力：PN16,PN25,PN40　　适用介质：水、蒸汽、油品
适用温度：≤200℃　　阀体材质：铸钢、不锈钢、青铜
连接方式：法兰　　驱动方式：气动
其他参数：制造标准按 GB/T 12237

Q641F Pneumatic Flange Ball Valve

Model:Q641F-16C/25C/40C　　Specifications: DN20-DN200
Nominal Pressure:PN16,PN25,PN40
Applicable Media: Water, steam, oil
Applicable Temperature:≤200℃　　Body Material:Carbon steel,stainless steel,Bronze
End Connection : Flange　　Operation:pneumatic
Other Parameters: Manufacturing standard according to GB/T 12237.

Q641F 气动法兰球阀概述

Q641F 气动法兰球阀是一种以压缩空气为动力源的自动化控制阀门，由法兰连接球阀本体与气动执行器组合而成。阀门通过执行器驱动阀杆带动球体作 90 度旋转，实现快速启闭。阀体通常采用铸钢或不锈钢材质，密封副多为聚四氟乙烯（PTFE）等软质材料，确保可靠密封。该阀门接收控制系统的气动信号（通常为 4-20mA 或开关信号）即可动作，适用于要求快速切断、远程控制或频繁操作的场合，广泛应用于石油、化工、电力、轻工及自动化生产线的流体管路系统中，实现对水、蒸汽、油品及一般腐蚀性介质的自动控制。

Q641F Pneumatic Flange Ball Valve Overview

Q641F pneumatic flange ball valve is an automated control valve powered by compressed air, which is composed of a flange connected ball valve body and a pneumatic actuator. The valve is driven by an actuator to rotate the valve stem and the ball 90 degrees, achieving rapid opening and closing. The valve body is usually made of cast steel or stainless steel, and the sealing pair is mostly made of soft materials such as polytetrafluoroethylene (PTFE) to ensure reliable sealing. This valve can be activated by receiving pneumatic signals (usually 4-20mA or switch signals) from the control system, and is suitable for situations that require quick cut-off, remote control, or frequent operation. It is widely used in fluid pipeline systems of petroleum, chemical, power, light industry, and automation production lines to achieve automatic control of water, steam, oil products, and general corrosive media.

Q641F 气动法兰球阀产品图
Q641F Pneumatic Flange Ball Valve Product Image

Q641F 气动法兰球阀特点

1.气动驱动快速响应：采用单作用或双作用气动执行器，动作迅速，启闭时间短（通常仅需数秒），响应灵敏，适合需要快速切断或实现过程自动化的控制回路。

2.多种控制与附件选项：可配备气动三联件（过滤器、减压阀、油雾器）、电磁阀、限位开关及定位器等附件，轻松实现远程控制、开关信号反馈和精确比例调节，集成度高。

3.结构紧凑与高可靠性：执行器与阀门采用直连式或支架式安装，结构紧凑坚固。在失去气源时，单作用弹簧复位型可自动归位至开启或关闭状态，保障系统安全。

4.优良的密封与通用性能：球体与 PTFE 阀座形成紧密软密封，泄漏等级高。阀门兼具法兰连接的稳固性与气动控制的便捷性，适用于中低压多种介质工况。

5.维护简便与安全性高：模块化设计便于执行器与阀体的分别维护。阀门通常具备防火防静电设计，阀杆防吹出结构，在易燃易爆环境中也能安全使用。

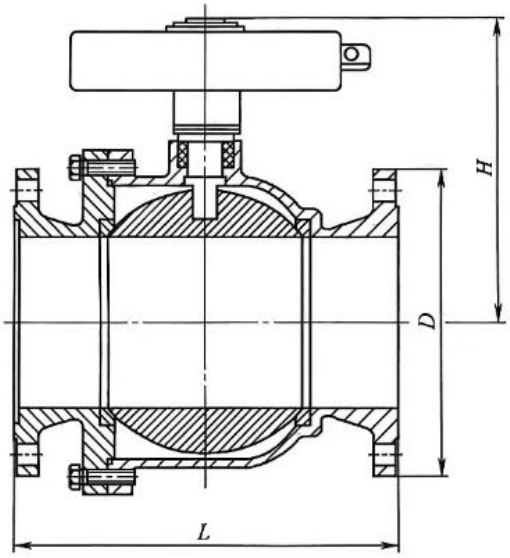
Q641F Pneumatic Flange Ball Valve Features

1. Pneumatic Drive Rapid Response: Using single or double acting pneumatic actuators, the action is rapid, the opening and closing time is short (usually only a few seconds), the response is sensitive, and it is suitable for control circuits that require rapid cutting off or process automation.
2. Multiple control and accessory options: can be equipped with pneumatic triple components (filter, pressure reducing valve, oil mist device), solenoid valve, limit switch, locator and other accessories, easily achieving remote control, switch signal feedback and precise proportional adjustment, with high integration.
3. Compact structure and high reliability: The actuator and valve are installed in a direct connection or

bracket style, with a compact and sturdy structure. When the gas source is lost, the single acting spring reset type can automatically return to the open or closed state to ensure system safety.

4. Excellent sealing and universal performance: The ball and PTFE valve seat form a tight soft seal, with a high leakage level. Valves combine the stability of flange connections with the convenience of pneumatic control, making them suitable for various medium and low pressure conditions.

5. Easy maintenance and high safety: Modular design facilitates separate maintenance of the actuator and valve body. Valves usually have fire-resistant and anti-static designs, with anti blowing structures for the valve stem, and can be safely used in flammable and explosive environments.



Q641F 气动法兰球阀结构图

Q641F Pneumatic 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 Carbon steel
2	球体 Ball	20cr13
3	密封圈 sealing ring	聚四氟乙烯 PTFE
4	填料 packing	聚四氟乙烯 PTFE
5	阀杆 Stem	20cr13

性能规范表 Performance Specification		
公称压力 Nominal Pressure	1.6/2.5/4	Mpa
强度试验压力 Shell Test	2.4/3.75/6	
密封试验压力 Seal Test	1.76/2.75/4.4	
适用温度 Suitable Temp.	≤200	℃

外形尺寸标准要求

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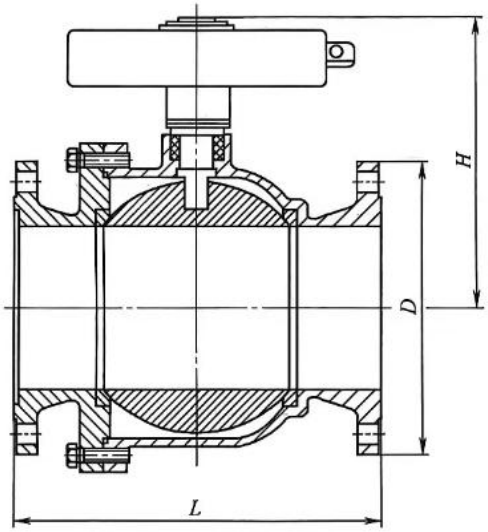
1、阀门的结构长度按 GB/T 12221 的标准

2、连接法兰按 GB/T 9113 的标准

Dimensions Standard Requirements

1. The structural length of the valve shall conform to the standard GB/T 12221.

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



Q641F 气动法兰球阀外形图

Q641F Pneumatic Flange Ball Valve View Drawing

Q641F 气动法兰球阀外形尺寸表

Q641F Pneumatic Flange Ball Valve Dimensions Table

型号 Model	尺寸 Size	公称尺寸 DN										
		20	25	32	40	50	65	80	100	125	150	200
Q641F-16C	L	140	160	165	180	200	220	250	280	320	360	457
	D	105	115	140	150	165	185	200	220	250	285	340
	H	252	265	268	282	289	364	462	477	575	614	708
Q641F-25	L	140	160	165	180	200	220	250	280	320	360	457
	D	105	115	140	150	165	185	200	235	270	300	360
	H	252	265	268	282	289	364	462	477	575	614	708
Q641F-40	L	152	165	178	190	216	241	283	305	380	403	502
	D	105	115	140	150	165	185	200	235	270	300	375
	H	252	265	268	282	289	364	462	477	575	614	708

Q641F 气动法兰球阀安装、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、法兰标准及气动执行器规格（作用形式、气源压力）是否符合

设计要求。清洁阀门内腔、管道法兰面及气路接口，检查密封垫片完好。

2. 吊装与搬运：使用阀体吊耳进行吊装，严禁将吊绳悬挂于气动执行器、电磁阀或附属管路上。搬运时保持平稳，避免剧烈震动。

3. 阀门本体安装：将阀门置于管道法兰之间，确保介质流向与阀体指示方向一致（双向密封除外）。使用合适垫片，按对角线顺序分步均匀拧紧连接螺栓至规定扭矩。

4. 气路连接与附件安装：连接洁净、稳定的气源管路至执行器进气口。根据需要安装并调试好气动三联件（过滤器、减压阀、油雾器）、电磁阀、限位开关及定位器等附件。确保所有气路连接密封可靠，无泄漏。

5. 操作空间与电气接线：确保执行器及附件有足够的操作、调试与维护空间。按电气图纸正确接线，并做好防爆环境下的密封处理（如适用）。

使用操作

1. 手动与自动操作：自动控制时，通过电磁阀接收信号驱动阀门启闭。调试或断电时可切换至手动操作模式（通常通过拉动执行器上的手动操作机构或使用手轮）。操作后需恢复至自动状态。

2. 状态确认与反馈：通过观察执行器位置指示器、听取动作声音，或检查限位开关/定位器的电信号反馈，确认阀门是否准确到达全开或全关位置。

3. 运行监控：阀门主要用于快速切断或接通，不应用于精密节流调节。长期处于静态时，建议定期（如每月）进行数次全行程自动开关测试，以保持机构灵活性。

4. 异常情况处理：若发生气源故障（如压力过低、失压），单作用弹簧复位型执行器将自动驱动阀门至预设的安全位置（开或关）。需及时恢复气源并检查系统。

维护保养

1. 定期检查：定期检查气源压力是否稳定，三联件需排水、加油。检查阀杆填料处及法兰连接有无外漏，紧固件是否松动。清洁阀门及附件外部。

2. 气路系统维护：定期清理空气过滤器滤芯，检查减压阀设定，确保油雾器有适量润滑油。检查电磁阀、定位器工作是否正常，气路接头有无老化泄漏。

3. 阀杆密封调整：若阀杆处出现轻微外漏，可均匀适度拧紧填料压盖螺母。若无效，需在系统泄压后更换阀杆填料。

4. 内漏处理：若阀门关闭后内部泄漏，可能是阀座密封面磨损或夹有杂质。可尝试多次开关冲刷。若无效，需离线拆解，清洗或更换阀座密封件。

5. 长期停用：计划长期停用时，应将阀门置于安全位置，排空阀内及执行器气路内的冷凝水。对气动接口加盖保护，断开电源。建议定期进行手动功能测试，防止卡涩。重新启用前，需全面检查气路与电气系统。

Installation, Use, and Maintenance Manual for Q641F Pneumatic Flange Ball Valve

Installation Guide

1. Preparation before installation: Check whether the valve model, pressure rating, flange standard, and pneumatic actuator specifications (action form, air source pressure) meet the design requirements. Clean the valve cavity, pipeline flange surface, and gas path interface, and check that the sealing gasket is intact.

2. Lifting and handling: Use valve body lifting lugs for lifting, and it is strictly prohibited to hang lifting ropes on pneumatic actuators, solenoid valves, or auxiliary pipelines. Maintain stability during transportation and avoid severe vibrations.

3. Valve body installation: Place the valve between the pipeline flanges to ensure that the flow direction of the medium is consistent with the direction indicated by the valve body (except for bidirectional sealing). Use appropriate washers and tighten the connecting bolts evenly in diagonal order to the specified torque.

4. Gas path connection and accessory installation: Connect a clean and stable gas source pipeline to the actuator inlet. Install and debug the pneumatic triple components (filter, pressure reducing valve, oil mist

device), solenoid valve, limit switch, locator and other accessories as needed. Ensure that all gas path connections are sealed reliably and leak free.

5. Operating space and electrical wiring: Ensure that the actuator and accessories have sufficient space for operation, debugging, and maintenance. Connect the wires correctly according to the electrical drawings and perform sealing treatment in an explosion-proof environment (if applicable).

Usage and Operation

1. Manual and automatic operation: During automatic control, the valve is driven to open and close by receiving signals through an electromagnetic valve. When debugging or power off, it can be switched to manual operation mode (usually by pulling the manual operating mechanism on the actuator or using the handwheel). After operation, it needs to be restored to automatic mode.

2. Status confirmation and feedback: By observing the actuator position indicator, listening to the action sound, or checking the electrical signal feedback of the limit switch/positioner, confirm whether the valve has accurately reached the fully open or fully closed position.

3. Operation monitoring: Valves are mainly used for quick cut-off or connection, and should not be used for precision throttling regulation. When in a static state for a long time, it is recommended to conduct regular (such as monthly) full stroke automatic switch tests to maintain the flexibility of the mechanism.

4. Abnormal situation handling: In case of gas source failure (such as low pressure or loss of pressure), the single acting spring reset actuator will automatically drive the valve to the preset safe position (open or close). Timely restore the gas source and inspect the system.

maintenance

1. Regular inspection: Regularly check whether the air source pressure is stable, and drain and add oil to the three components. Check if there is any leakage at the valve stem packing and flange connection, and if the fasteners are loose. Clean the exterior of valves and accessories.

2. Maintenance of the air system: Regularly clean the air filter element, check the pressure reducing valve setting, and ensure that the oil mist generator has an appropriate amount of lubricating oil. Check if the solenoid valve and locator are working properly, and if there is any aging or leakage in the air circuit joints.

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

4. Internal leakage treatment: If there is internal leakage after the valve is closed, it may be due to wear on the sealing surface of the valve seat or impurities. You can try switching on and off multiple times to flush. If it is ineffective, offline disassembly, cleaning or replacement of the valve seat seal is required.

5. Long term shutdown: When planning to shut down for a long time, the valve should be placed in a safe position and the condensed water in the valve and actuator air circuit should be drained. Cover the pneumatic interface with protection and disconnect the power supply. It is recommended to conduct regular manual function tests to prevent jamming. Before reactivation, a comprehensive inspection of the air circuit and electrical system is required.

非常感谢您的阅读！

Thank you very much for reading!

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