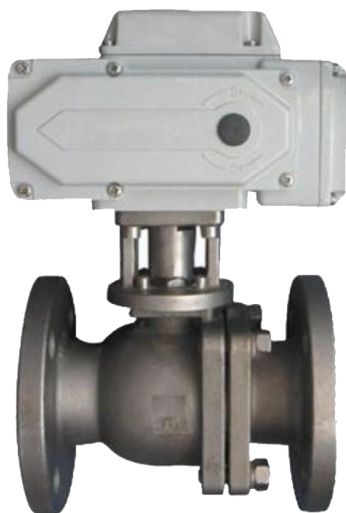


Q941H 硬密封电动球阀

Q941H Electric Metal Seated Ball Valve

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

Q941H 硬密封电动球阀

型号: Q941H-16P/40P/64P/25P/16R/25R/40R/64R 规格: DN15-DN200
公称压力: PN16, PN25, PN40, PN64 适用介质: 水、石油、硝酸类、醋酸类、强氧化性介质
适用温度: $\leq 350^{\circ}\text{C}$ 阀体材质: 铸钢、不锈钢、青铜
连接方式: 法兰 驱动方式: 电动
其他参数: 制造标准按 GB/T 12237

Q941H Electric Metal Seated Ball Valve

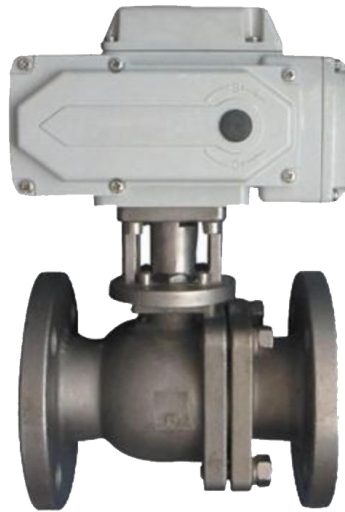
Model: Q941H-16P/40P/64P/25P/16R/25R/40R/64R Specifications: DN15-DN200
Nominal Pressure: PN16, PN25, PN40, PN64
Applicable Media: Water, petroleum, nitric acid, acetic acid, strong oxidizing media
Applicable Temperature: $\leq 350^{\circ}\text{C}$ Body Material: Carbon steel, stainless steel, Bronze
End Connection: Flange Operation: electric
Other Parameters: Manufacturing standard according to GB/T 12237.

Q941H 硬密封电动球阀概述

Q941H 硬密封电动球阀是一种采用一体化电动执行机构驱动的法兰连接球阀，通常具备金属硬密封结构。阀体材料多为铸钢或不锈钢，其核心密封副采用球体表面堆焊硬质合金、阀座为金属或增强复合材料的硬对硬或硬对软配对方式。阀门通过接收控制信号驱动电机，经减速机构输出扭矩带动球体实现 90 度旋转启闭或比例调节。该设计专注于高温、高压、磨损性介质或频繁操作的严苛工况，广泛应用于电站、石油化工、煤化工、冶金及蒸汽系统等工业领域，作为需要可靠切断与调节的关键设备。

Q941H Electric Metal Seated Ball Valve Overview

Q941H Electric Metal Seated Ball Valve is a flange connected ball valve driven by an integrated electric actuator, usually with a metal hard seal structure. The valve body material is mostly cast steel or stainless steel, and its core sealing pair adopts a hard to hard or hard to soft pairing method with a spherical surface welded with hard alloy and a valve seat made of metal or reinforced composite material. The valve drives the motor by receiving control signals, and outputs torque through the deceleration mechanism to drive the ball to achieve 90 degree rotation opening and closing or proportional adjustment. This design focuses on harsh working conditions such as high temperature, high pressure, abrasive media, or frequent operation, and is widely used in industrial fields such as power plants, petrochemicals, coal chemicals, metallurgy, and steam systems. It is a key equipment that requires reliable cutting and regulation.



Q941H 硬密封电动球阀产品图
Q941H Electric Metal Seated Ball Valve Product Image

Q941H 硬密封电动球阀特点

1. 硬质密封耐高温高压：采用金属密封或复合密封结构，可耐受较高温度（通常可达 425℃ 以上）与压力，适用于蒸汽、热油及带颗粒介质，耐磨性强，使用寿命长。
2. 精确可靠的电动控制：一体化电动执行器可实现精准的开关控制与连续比例调节，开度反馈精确，便于集成到自动化控制系统（DCS/PLC），支持远程与集中控制。
3. 防火与安全设计：通常符合 API 607/API 6FA 等防火测试标准，在异常高温下软性材料失效后，仍能通过金属密封副保持基本密封，阀杆具备防静电与防吹出结构。
4. 高强度与广泛适用性：阀体采用高强度材质，结构稳固。全通径或缩径设计可选，能适应从常温到高温、从中压到高压的多种复杂工况，用途广泛。
5. 维护便捷与长寿命：部分结构支持在线维护或快速更换阀座。执行机构具备手动操作功能（手轮）以备应急，模块化设计使维护和故障诊断更为简便。

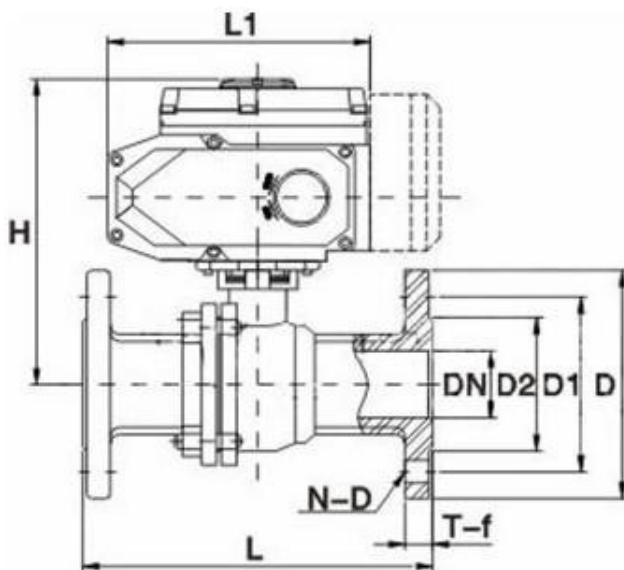
Q941H Electric Metal Seated Ball Valve Features

1. Hard seal resistant to high temperature and pressure: It adopts metal seal or composite seal structure, which can withstand high temperature (usually up to 425 °C or above) and pressure, suitable for steam, hot oil and granular media, with strong wear resistance and long service life.
2. Accurate and reliable electric control: The integrated electric actuator can achieve precise switch control and continuous proportional adjustment, with precise opening feedback, making it easy to integrate into automation control systems (DCS/PLC) and supporting remote and centralized control.
3. Fire and safety design: It usually complies with fire testing standards such as API 607/API 6FA, and can maintain basic sealing through metal sealing pairs even after the failure of soft materials at abnormal high

temperatures. The valve stem has anti-static and anti blowout structures.

4. High strength and wide applicability: The valve body is made of high-strength materials and has a stable structure. Full diameter or reduced diameter design is optional, which can adapt to various complex working conditions from room temperature to high temperature, from medium pressure to high pressure, and has a wide range of applications.

5. Convenient maintenance and long lifespan: Some structures support online maintenance or quick replacement of valve seats. The actuator has manual operation function (handwheel) for emergency use, and modular design makes maintenance and fault diagnosis easier.



Q941H 硬密封电动球阀结构图

Q941H Electric Metal Seated 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、不锈钢 Carbon steel, stainless steel
2	球体 Ball	2cr13+氮化处理 nitriding
3	密封圈 sealing ring	PTFE、碳素纤维+PTFE、对位聚苯 Carbon fiber+PTFE, para polystyrene
4	填料 packing	PTFE
5	阀杆 Stem	2cr13、不锈钢 stainless steel

性能规范表 Performance Specification

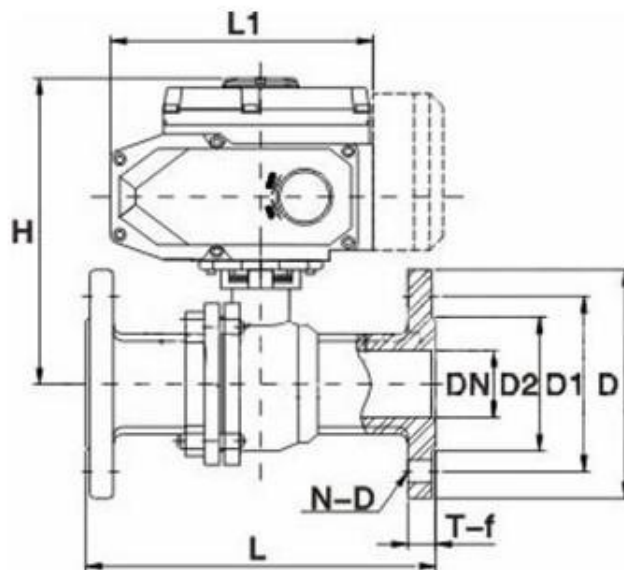
公称压力 Nominal Pressure	1.6/2.5/4/6.4	MPa
强度试验压力 Shell Test	2.4/3.75/6/9.6	
密封试验压力 Seal Test	1.76/2.75/4.4/7.04	
适用温度 Suitable Temp.	≤350	℃

外形尺寸标准要求

- 1、阀门的结构长度按 GB/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.



Q941H 硬密封电动球阀外形图

Q941H Electric Metal Seated Ball Valve View Drawing

Q941H 硬密封电动球阀外形尺

Q941H Electric Metal Seated Ball Valve Dimensions Table

公称通径 DN	连接尺寸 mm								
	L	L1	L2	H	D	D1	D2	T-f	N-D
15	130	165	150	185	95	65	45	14-2	4-14
20	140	165	150	190	105	75	55	16-2	4-14
25	150	165	150	200	115	85	65	16-2	4-14
32	165	165	150	206	135	100	78	18-2	4-18
40	180	190	170	216	145	110	85	18-3	4-18

50	200	190	170	225	160	125	100	20-3	4-18
65	220	190	170	244	180	145	120	20-3	4-18
80	250	270	220	284	195	160	135	20-3	8-18
100	280	270	220	310	215	180	155	22-3	8-18
125	320	270	220	353	245	210	185	22-3	8-18
150	360	270	220	372	280	240	210	24-3	8-23
200	400	270	220	423	335	295	265	24-3	12-23

Q941H 硬密封电动球阀安装、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、法兰标准及电动执行器规格（电源电压、控制信号、输出扭矩）。彻底清洁阀门内腔及管道端口，确保无异物。检查阀门流向标记，部分硬密封结构有流向要求。
2. 吊装与搬运：使用阀体吊耳进行吊装，严禁以电动执行器作为受力点。搬运过程中避免碰撞，保护阀杆及执行器。
3. 法兰连接与紧固：将阀门置于管道法兰之间，确保流向符合设计要求。使用合适的耐高温垫片，按对角线顺序分步均匀拧紧所有连接螺栓至规定扭矩。
4. 电气接线与空间预留：由专业电工按照接线图连接电源线、控制信号线及反馈线。接线口应密封严密，满足防护等级要求。确保执行器周围有足够的散热、操作和维护空间。
5. 系统测试：在管道系统压力试验前，建议通过执行器将阀门调整至半开位置。试验压力需符合设计规范，试验后检查各连接处。

使用操作

1. 电动与手动操作：正常运行时，通过控制系统（如 DCS）发送指令实现自动启闭或调节。断电或调试时，可切换至手动模式（操作执行器上的手轮或离合器），操作后务必复位至电动状态。
2. 状态确认与反馈：通过执行器上的位置指示窗，或远程监控位置反馈信号（如 4-20mA），准确判断阀门开度。首次运行或检修后，需验证全开和全关限位设置是否准确。
3. 运行注意事项：本阀门设计用于高温、高压及磨损性介质的截断，原则上不推荐长期用于节流工况。若用于调节，应避免长期处于小开度状态。
4. 高温工况操作：在高温系统（如蒸汽）中启闭阀门时，操作应平稳缓慢，以减少热应力冲击。定期检查执行器在高温环境下的工作温度是否在允许范围内。

维护保养

1. 定期检查：定期检查阀体与法兰连接处有无泄漏，阀杆填料处密封情况。检查执行器外壳是否完好，电气接头是否紧固，清除通风口的灰尘。
2. 电气系统维护：定期检查执行器的电源、信号及接地是否正常。验证电机过热保护、扭矩保护等功能是否有效。保持电气部件干燥清洁。
3. 密封系统维护（阀座注脂）：对于配备注脂系统的阀门，可根据运行情况或发现轻微内漏时，通过注脂阀向阀座密封系统注入指定的高温密封脂，以维持或恢复密封性能。
4. 内漏处理：若阀门关闭不严，首先尝试注入密封脂。若无效，可能需离线拆解，检查硬质合金密封面是

否磨损、划伤。轻微损伤可由专业人员研磨修复，严重则需更换密封组件。

5. 长期停用：阀门计划长期停用时，应置于全开或全关位置，排空阀内积液。断开电源，对执行器电气接口做好防水防潮保护。定期进行手动功能测试，防止卡涩。重新启用前需进行全面检查和测试。

Installation, Use, and Maintenance Manual for Q941H Electric Metal Seated Ball Valve

Installation Guide

1. Preparation before installation: Check the valve model, pressure rating, flange standard, and specifications of the electric actuator (power supply voltage, control signal, output torque). Thoroughly clean the valve cavity and pipeline ports to ensure that there are no foreign objects. Check the valve flow direction markings, some hard seal structures have flow direction requirements.
2. Lifting and handling: Use valve body lifting lugs for lifting, and it is strictly prohibited to use electric actuators as force points. During the transportation process, avoid collisions and protect the valve stem and actuator.
3. Flange connection and fastening: Place the valve between the pipeline flanges to ensure that the flow direction meets the design requirements. Use suitable high-temperature resistant gaskets and tighten all connecting bolts evenly in diagonal order to the specified torque.
4. Electrical wiring and space reservation: Professional electricians connect power lines, control signal lines, and feedback lines according to the wiring diagram. The wiring port should be tightly sealed to meet the protection level requirements. Ensure sufficient heat dissipation, operation, and maintenance space around the actuator.
5. System testing: Before the pressure test of the pipeline system, it is recommended to adjust the valve to the half open position through the actuator. The test pressure must comply with the design specifications, and after the test, check all connections.

Usage and Operation

1. Electric and manual operation: During normal operation, automatic opening and closing or adjustment is achieved by sending instructions through the control system (such as DCS). When cutting off power or debugging, it can be switched to manual mode (by operating the handwheel or clutch on the actuator), and must be reset to the electric state after operation.
2. Status confirmation and feedback: Accurately determine the valve opening through the position indicator window on the actuator or remote monitoring of the position feedback signal (such as 4-20mA). After the first operation or maintenance, it is necessary to verify whether the fully open and fully closed limit settings are accurate.
3. Operation precautions: This valve is designed for cutting off high temperature, high pressure, and abrasive media, and is generally not recommended for long-term use in throttling conditions. If used for adjustment, it should be avoided to be in a small opening state for a long time.
4. High temperature operation: When opening and closing valves in high-temperature systems (such as

steam), the operation should be smooth and slow to reduce thermal stress impact. Regularly check whether the operating temperature of the actuator in high temperature environments is within the allowable range.

maintenance

1. Regular inspection: Regularly check for leaks at the connection between the valve body and flange, as well as the sealing condition of the valve stem packing. Check if the actuator casing is intact, if the electrical connectors are securely fastened, and remove dust from the ventilation openings.
2. Electrical system maintenance: Regularly check whether the power supply, signal, and grounding of the actuator are normal. Verify the effectiveness of motor overheat protection, torque protection, and other functions. Keep electrical components dry and clean.
3. Sealing system maintenance (valve seat grease injection): For valves equipped with a grease injection system, specified high-temperature sealing grease can be injected into the valve seat sealing system through the grease injection valve based on operating conditions or when slight internal leakage is detected to maintain or restore sealing performance.
4. Internal leakage treatment: If the valve is not tightly closed, first try injecting sealing grease. If it is ineffective, offline disassembly may be necessary to check whether the hard alloy sealing surface is worn or scratched. Minor damage can be repaired by professional grinding, while severe damage may require replacement of sealing components.
5. Long term shutdown: When the valve is planned to be shut down for a long time, it should be placed in the fully open or fully closed position to drain the accumulated fluid in the valve. Disconnect the power supply and provide waterproof and moisture-proof protection for the electrical interface of the actuator. Regularly conduct manual function tests to prevent jamming. A comprehensive inspection and testing are required before reactivation.

非常感谢您的阅读！

Thank you very much for reading!

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