

Q367F 全焊接球阀

Q367F Fully Welded Ball Valve

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

Q367F 全焊接球阀

型号: Q367F
公称压力: PN16, PN25, PN40
适用温度: ≤180℃
连接方式: 焊接
其他参数: 制造标准按 GB/T12237

规格: DN600-DN1200
适用介质: 水、气、油
阀体材质: 铸钢、不锈钢
驱动方式: 气动、电动、手动

Q367F Fully Welded Ball Valve

Model: Q367F	Specifications: DN600-DN1200
Nominal Pressure: PN16, PN25, PN40	Applicable Media: water, gas, oil
Applicable Temperature: ≤180℃	Body Material: cast steel, stainless steel
End Connection :welded	Operation: Manual, pneumatic, electric
Other Parameters: Manufacturing standard according to GB/T12237.	

Q367F 全焊接球阀概述

Q367F 全焊接球阀是一种阀体与管道采用全焊接永久性连接的固定球阀，专为长输管线、城市地下管网及要求零外漏的关键系统设计。阀体采用优质管线钢或碳钢整体焊接成型，无任何可拆卸法兰连接点。其内部采用固定球结构，密封副通常为金属硬密封或高性能复合密封，通过旋转球体 90 度实现可靠启闭。该阀门设计符合 API 6D 等长输管线标准，具有极高的结构强度和密封完整性，适用于天然气、石油、供水等介质，尤其适合直接埋地安装，是保障管网长期安全运行的核心设备。

Q367F Fully Welded Ball Valve Overview

The Q367F Fully Welded Ball Valve is a trunnion-mounted ball valve featuring an integrally welded, permanent connection between the valve body and the pipeline. It is specifically engineered for long-distance pipelines, urban underground networks, and critical systems requiring zero external leakage. The valve body is fabricated from high-quality line pipe steel or carbon steel through fully welded construction, eliminating all removable flange connection points. Internally, it utilizes a fixed-ball (trunnion-mounted) design, typically employing metal hard seals or high-performance composite seals to achieve reliable 90-degree on/off operation through ball rotation. Designed and manufactured in compliance with long-distance pipeline standards such as API 6D, this valve offers exceptional structural strength and sealing integrity. It is suitable for conveying media such as natural gas, petroleum, and water supply, and is particularly well-suited for direct buried installation. As a core component, it ensures the long-term safe and reliable operation of pipeline networks.



Q367F 全焊接球阀产品图
Q367F Fully Welded Ball Valve Product Image

Q367F 全焊接球阀特点

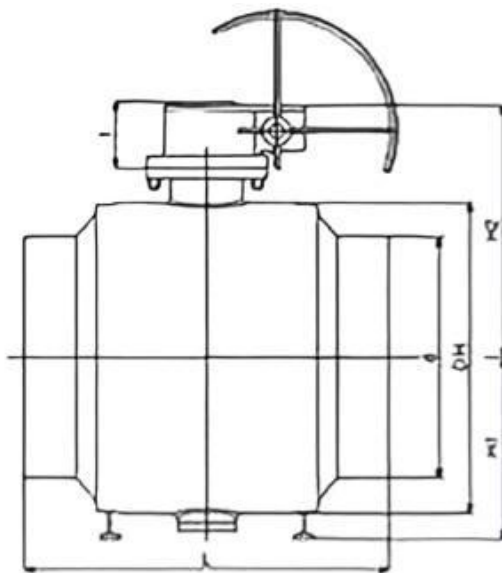
- 1.全焊接无泄漏结构：阀体与管道采用同材质焊接成一体，彻底消除了法兰、螺栓等传统连接处的潜在泄漏点，实现永久性密封，安全性极高。
- 2.埋地与长寿命设计：专为直埋或恶劣环境设计，外部结构紧凑，无需阀门井。整体焊接结构耐腐蚀和土壤应力，设计寿命通常与管线同步。
- 3.固定球高压性能稳定：采用上下轴固定的球体结构，操作扭矩小，密封可靠。金属硬密封设计耐高压、耐冲刷，适用于清管作业（PIGGING）。
- 4.在线维护与监控：通常配备阀座与阀杆注脂系统，可在不中断管线运营的情况下，通过注入专用密封脂进行预防性维护或应急密封补偿。
- 5.低维护高可靠性：正常工况下几乎无需维护，运行成本低。其“一次安装，终身使用”的特点使其在长输管线及城市地下管网中具有不可替代的优势。

Q367F Fully Welded Ball Valve Features

1. Fully Welded Leak-Free Structure: The valve body is integrally welded to the pipeline using matching materials, completely eliminating potential leak points associated with traditional flange and bolt connections. This achieves permanent sealing and provides extremely high safety.
2. Buried Installation and Long Service Life Design: Specifically engineered for direct burial or harsh environments. Its compact external structure eliminates the need for valve chambers. The fully welded

construction offers excellent corrosion and soil stress resistance, with a design life typically matching that of the pipeline.

3. **Stable High-Pressure Performance with Fixed Ball Design:** Utilizes a trunnion-mounted (fixed) ball design, ensuring low operating torque and reliable sealing. The metal hard seal construction provides excellent resistance to high pressure and erosion, making it suitable for pigging operations (PIGGING).
4. **Online Maintenance and Monitoring:** Typically equipped with grease injection systems for both the seat and stem. This allows for preventive maintenance or emergency sealing compensation by injecting dedicated sealant without interrupting pipeline operation.
5. **Low Maintenance and High Reliability:** Under normal operating conditions, it requires virtually no maintenance, resulting in low operating costs. Its "install once, last a lifetime" characteristic makes it an irreplaceable component in long-distance pipelines and urban underground networks.



Q367F 全焊接球阀结构图

Q367F Fully Welded 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	不锈钢 stainless steel
3	密封垫 seal gasket	PTFE
4	填料 packing	PTFE
5	阀杆 stem	不锈钢 stainless steel

性能规范表 Performance Specification

公称压力 Nominal Pressure	1.6-4	Mpa
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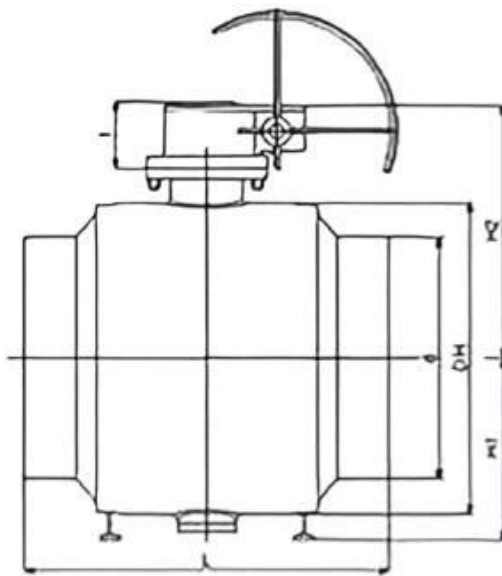
强度试验压力 Shell Test	2.4-6	
密封试验压力 Seal Test	1.76-4.4	
适用温度 Suitable Temp.	180	℃

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.



Q367F 全焊接球阀外形图

Q367F Fully Welded Ball Valve View Drawing

Q367F 全焊接球阀外形尺寸表

Q367F Fully Welded Ball Valve Dimensions Table

DN	公称直径	DH	d	t	L	H ₁	H ₂	重量 (kg)
			A/B					
600	500	813	610/630	22	1020	527	830	1050
700	590	960	711/720	22	1340	600	940	1955
800	684	1120	813/820	24	1520	682	1050	3050
900	781	1260	914/920	28	1720	765	1140	4700
1000	880	1400	1016/1020	30	1900	836	1210	5600
1100	980	1570	1124	32	2000	932	1320	6500
1200	1080	1700	1219/1220	36	2100	995	1450	8100

Q367F 全焊接球阀安装、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、适用温度及焊接端规格是否与管道设计完全匹配。阀门为永久性连接，安装前应完成所有出厂测试。彻底清洁阀门内腔及管道坡口，确保无任何水分、油脂或杂质。
2. 焊接工艺要求：焊接必须由具备相应资质的焊工，严格按照经评定合格的焊接工艺规程执行。推荐采用氩弧焊打底。焊接前阀门应处于全开位置，并对阀体采取持续有效的强制冷却措施（如使用专用冷却水套），严防焊接高温传入阀体内部损坏密封件。
3. 安装与焊后处理：确保阀门安装方向正确（按阀体永久流向箭头）。焊接完成后，必须立即按材料规范进行焊后热处理以消除应力。随后对焊缝进行 **100%**外观检查及规定的无损检测（如射线 RT 或超声波 UT）。
4. 防腐与覆土：焊缝检验合格后，对阀门外露表面及焊缝区域按设计要求进行防腐处理。对于直埋安装，需确保阀门的全焊接结构及外部防腐满足埋地要求，方可进行覆土。
5. 系统压力测试：阀门随管道系统进行强度试验和严密性试验。试验压力与程序需符合相关长输管线或工业管道规范，升压过程必须缓慢平稳。

使用操作

1. 启闭操作：通过地上加长杆或全焊接的执行机构进行操作。操作应平稳缓慢，旋转 **90** 度到位。通过位置指示器或执行器反馈确认开关状态。
2. 运行监控：阀门在正常输送期间通常处于常开或常闭状态。需定期检查地上部分操作机构是否正常，监听有无异常流体声响，并结合 SCADA 系统监控压力参数。
3. 功能限制：本阀门设计用于全开或全关闭断，严禁用于节流调节流量，以免损坏密封面。
4. 紧急情况：如遇管线紧急截断需求，应通过预设的自动或手动控制程序迅速关闭阀门。

维护保养

1. 定期外部检查：定期检查地上操作部件是否灵活，阀杆密封处有无泄漏迹象。对于直埋阀门，需检查地面标志桩是否完好，并无地面沉降异常。
2. 预防性维护（注脂）：阀门通常配备注脂阀。应根据运行时间或制造商建议，定期通过注脂阀向阀座密封系统和阀杆密封系统注入指定的专用密封脂，以润滑密封面并补充密封。
3. 内漏判断与处理：若通过流量计或压力监测怀疑阀门内漏，首先尝试通过阀座注脂阀注入足量密封脂。若无法消除泄漏，则表明内部密封件可能已严重损坏。
4. 维修的局限性：由于阀体为全焊接结构，任何涉及阀体或内部承压部件的实质性维修，均等同于阀门更换。若发生严重故障，需进行管线停运、排空、切割以更换阀门。
5. 长期管理：建立并维护阀门档案，记录安装位置、焊接信息、操作历史及注脂记录。长期无需操作时，也应定期进行注脂保养，以防止密封面干涩。重新启用或进行任何操作前，应确认系统状态并缓慢进行。

Q367F Fully Welded Ball Valve - Installation, Operation & Maintenance Instructions

Installation Guide

1. **Pre-Installation Preparation:** Verify that the valve model, pressure rating, applicable temperature range, and weld-end specifications fully match the pipeline design. As the valve is a permanent connection, all factory tests should be completed before installation. Thoroughly clean the valve's internal cavity and pipe bevels to ensure they are free from any moisture, oil/grease, or contaminants.
2. **Welding Process Requirements:** Welding must be performed by qualified welders strictly adhering to a qualified Welding Procedure Specification (WPS). The use of TIG (GTAW) root welding is recommended. Before welding, the valve must be in the fully OPEN position. Implement continuous and effective forced cooling of the valve body during welding (e.g., using a dedicated cooling jacket) to strictly prevent welding heat from transferring into the valve interior and damaging the seals.
3. **Installation & Post-Weld Treatment:** Ensure the valve is installed with the correct orientation (following the permanent flow direction arrow on the body). Immediately after welding is complete, Post Weld Heat Treatment (PWHT) must be performed according to the material specification for stress relief. Subsequently, conduct 100% visual inspection and specified Non-Destructive Testing (NDT, e.g., Radiographic Testing - RT or Ultrasonic Testing - UT) on all welds.
4. **Anti-Corrosion & Burial:** After the welds pass inspection, apply the corrosion protection coating to the valve's exterior surfaces and weld areas as per the design requirements. For direct burial installations, ensure the valve's fully welded construction and external corrosion protection meet burial specifications before backfilling.
5. **System Pressure Testing:** The valve shall participate in the pipeline system's strength and leak tests. The test pressure and procedures must comply with the relevant long-distance pipeline or industrial piping code. Pressure must be increased slowly and steadily.

Operation

1. **Opening/Closing Operation:** Operate the valve via an above-ground extension stem or a fully welded actuator. Operation should be smooth and gradual, rotating 90 degrees to the full position. Confirm the valve status (open/closed) via the position indicator or actuator feedback.
2. **Operational Monitoring:** During normal service, the valve is typically in a constant open or closed state. Periodically check that the above-ground operating mechanism functions properly, listen for unusual fluid noises, and monitor pressure parameters in conjunction with the SCADA system.
3. **Functional Limitation:** This valve is designed for full ON/OFF isolation only. It is strictly prohibited to use it for flow throttling or regulation, as this will damage the sealing surfaces.
4. **Emergency Situations:** In the event of a pipeline emergency requiring isolation, the valve should be closed rapidly via a pre-established automatic or manual control procedure.

Maintenance

1. **Periodic External Inspection:** Regularly inspect above-ground operating components for ease of movement and check the stem seal area for signs of leakage. For buried valves, check that marker posts are intact and there is no abnormal ground settlement.
2. **Preventive Maintenance (Grease Injection):** The valve is typically equipped with grease fittings (injection valves). According to operating hours or manufacturer recommendations, periodically inject the specified sealant/grease through these fittings into both the seat seal system and the stem seal system to lubricate the sealing surfaces and replenish the seal.
3. **Internal Leak Detection & Handling:** If internal leakage is suspected via flow meter or pressure monitoring, first attempt to inject an adequate amount of sealant through the seat grease fittings. If leakage persists, it indicates that the internal seals may be severely damaged.
4. **Limitations of Repair:** Due to the fully welded body construction, any substantial repair involving the body or internal pressure-containing parts is equivalent to valve replacement. In case of major failure, a pipeline shutdown, drainage, and cutting-out procedure is required to replace the valve.
5. **Long-Term Management:** Establish and maintain a valve record file, documenting installation location, welding information, operation history, and grease injection records. Even when the valve remains inoperational for long periods, perform regular grease injection maintenance to prevent the sealing surfaces from drying out. Before re-activating or performing any operation, confirm the system status and proceed slowly.

非常感谢您的阅读！

Thank you very much for reading!

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