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## 双向金属密封旋球阀

ROTATING BALL VALVE WITH DOUBLE DIRECTION METAL SEALING





## 公司简介 Company overview

河南泉舜流体控制科技有限公司隶属泉舜集团，注册资金5000万元，占地面积50余亩，专业制造各种高、中、低压流体控制成套设备。是河南省“双高”企业，《偏心半球阀》国家标准核心编制单位，郑州市“百高”企业，郑州高新区固定资产投资先进企业、经济突出贡献和高成长型高新技术企业；并被命名为“省级企业技术中心”，“泉舜”牌阀门荣获省优质名牌产品、节能产品、重点工业产品称号。河南泉舜流体控制科技有限公司为中石油、中海油、中石化的合格供应商。

Covering about 33,350 square meters in area, Henan Quanshun Flow Control Science & Technology Co., Ltd is a special high-tech enterprise which engaged in manufacturing flow control equipment. QUANSHUN valves including semi ball valve, bidirectional flow hard sealing rotating ball valve, y type slurry valve, tank bottom angle valve, ceramic valve and so on. The above valves can be used in poor working condition with strict requirement on corrosion resistance, abrasion resistance and erosion resistance of the product. Currently the registered capital of our company is more than 8 million dollars .We have set foot in the valve industry since the year 1984. In the past 30 years we have obtained rich experience in industrial valve and project service.

公司建立了全面的质量保证体系，先后取得了特种设备制造许可证（压力管道元件）A1级资质、ISO9001、ISO14001、OHSAS 18001、CE、API6D、API600、AAA级信用资质等多项国内外通行标准认证，拥有发明、实用新型专利四十多项，建成了先进的三维建模分析、CAD/CAM等专用阀门研发设计中心，现有加工中心、数控机床、大型立车、大型镗床、磨床、多功能阀门性能试验装置等大批精良机械加工和工艺保障检测设备。阀门材料包括：WCB、CF8、CF8M、304、316、316L等。

Due to the all-round quality management system, our valves have successfully passed certain certificates, such as ISO9001, ISO14001, OHSAS180001, CE, API6D,API600 and some others. At present we grant more than 40 national patents. The superior quality of our valves come from strict quality control, reasonable inspection process and sufficient attention on each detail. Possessing strong technical strength, our factory is equipped with advanced machining and testing equipment, including machining center, numerical control machine tool, large-scale vertical lathe large boring mill, grinding machine, multi-function valve performance testing device and so on. Therefore, we are capable of producing valves made of both general materials and special materials like WCB,304,316,316L,CF8,CF8M, etc.

公司在阀门以国代进和节能减排方面进行重点投入，相继研发了半球阀、旋球阀、针型调节阀、熔盐阀、水煤浆放料阀等一大批具有自主知识产权的阀门新品，受到了包括重庆化医恩力吉投资有限责任公司、南京金陵亨斯迈新材料有限公司、中国寰球工程公司、北京华福工程有限公司、中国铝业公司、东华工程科技股份有限公司、河南煤化、中国大唐、中国华能、延长石油、中平能化、金山集团、宁波万华、中钢集团、越煤集团、马来西亚APEX公司等在内的近二百家国内外知名企业和重点工程项目的青睐。

To complete the standard system of industrial manufacture, we make optimal overall arrangement on the production line. By utilizing the existed advanced equipments, we comprehensively control the casting process, inspection process, machining, assembling and commissioning of the valve .Highly praised in the industry due to the outstanding product performance, our industrial valves are applied in the fields such as mining industry, chemical industry, metallurgy industry, water industry, power industry, nonferrous metal, and some others. QUANSHUN VALVE has successfully established cooperative relationship with end user such as CHALCO,CNPC, SINOPEC,CNOOC and other distributors , Engineer company & Designing institute from all over the world .The valves are widely imported to United States ,Pakistan , Indonesia and other countries .

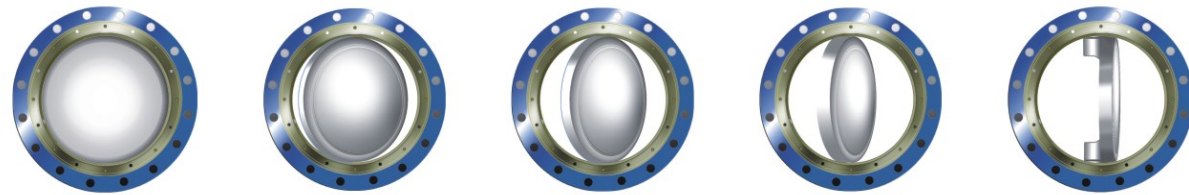
今天，会拼敢赢的泉舜人正在全力铸就百年企业品牌，以回馈各界对泉舜流控的厚爱和支持！

We are looking forward to building partnership with more customer from all over the world !



□ 双向金属密封旋球阀

Rotating Ball Valve With Double Directional Metal Sealing



设计理念更先进、结构更科学，性价比更高的球阀

MORE ADVANCED IN DESIGN, MORE SCIENTIFIC AND MORE COST-EFFECTIVE BALL VALVE

产品概述 Introduction

双向金属密封旋球阀是结合球阀的优越密封性能与蝶阀的结构优势性能研发而成的，其既具备球阀双向密封、寿命长的使用优势，又具备蝶阀体积小、可调节、重量轻的优势，其实质为蝶式结构偏心半球阀。密封原理结合了固定球阀的前端密封与偏心蝶阀的强制密封，从而实现了高低压双向切断。在密封副的两个密封面上可根据不同的硬度运用等离子喷涂、堆焊等工艺形成硬质合金。阀门能自动对正中心（自适应），自动越程补偿磨损，自动加以较高密封比压，瞬间关闭、瞬间打开，密封副间无摩擦。阀门打开时，阀芯投影不断内缩并后退、阀门关闭时，阀芯投影不断膨胀并前进，结构短，体积小，可实现大口径的制造。双向金属密封旋球阀具有双向密封、安装方便、运行可靠等特点，成为阀门行业的一次重大的技术革命。

Rotating ball valve with double direction metal sealing is a combination of superior sealing performance of ball valve and advantage of butterfly valve in structure and properties. It not only has the advantage of double directional sealing, long life time of ball valve, but also has the advantage of small size, adjustable, light weight of butterfly valve. Its essence is an eccentric hemisphere valve with butterfly structure. Sealing principle, combined with the front-end sealing of fixed ball valve and forced sealing of eccentric butterfly valve, thereby achieving the bi-directional cutting fluid no matter pressure is high or low. On the two sealing surface of valve, plasma spraying and surfacing process can be used to different hardness to form hard alloy. It can automatically align the center (self-adaption), automatically compensate for wear, automatically put in high hermetic pressure, and there is no friction between the seal when the valve instantly opening and closing. When opening the valve, the disc projection continuously retracts and goes backwards; when closing the valve, the disc projection continuously swells and moves forward. Its advantages of short structure and small volume allow for the possibility that valve with large size can be made. The valve has the features of double direction sealing, convenient installation, reliable operation, which has been a major technology revolution in the valve industry.

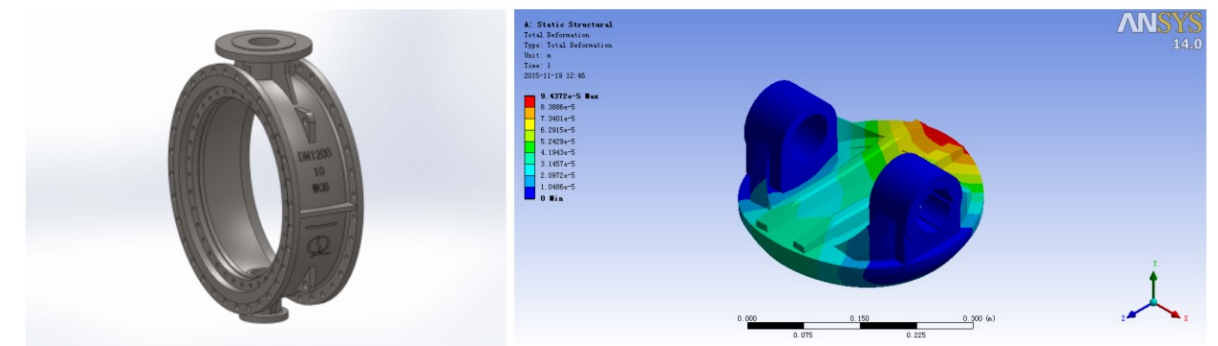
产品特点 Valve Performance

1、先进的设计理念和设计手段，成就高性能的双向密封旋球阀。

Advanced design idea and design method make the perfect bi-directional sealing valve performance.

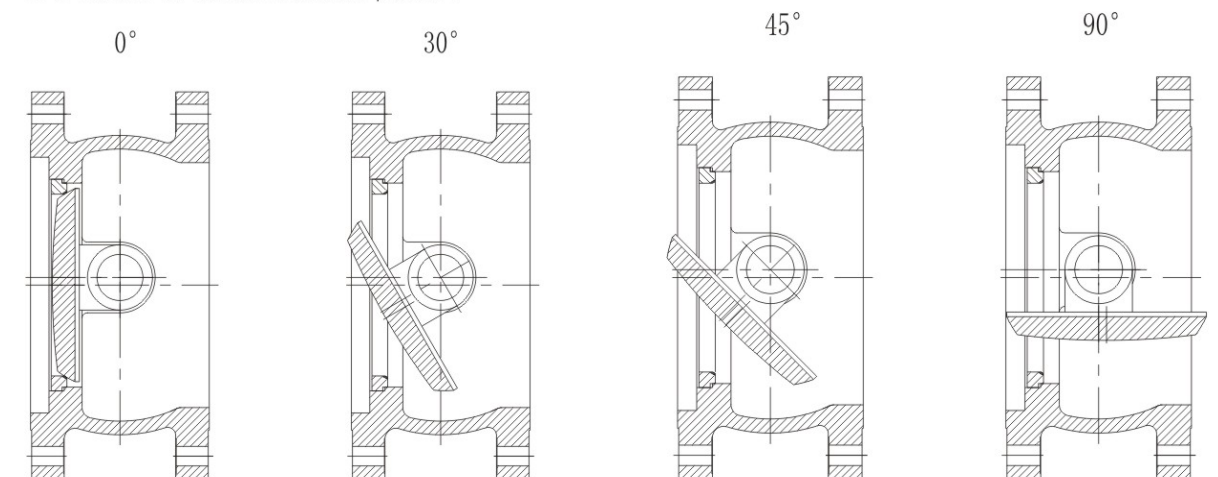
公司研发团队根据流体运动的数学模型伯努利方程、动量方程、连续性方程及能量守恒定律进行分析，采用三维软件设计阀体，并对阀体进行设计和优化。公司研发团队运用有限元分析软件对流体进行模拟流场分析，进行流道优化设计，流通能力强。

According to the mathematical model of fluid motion Bernoulli equation, momentum equation, continuity equation, energy conservation law, QUANSHUN technical team analyse the imitative flow pattern by advanced software and optimize the valve body with 3D design software to make the valve have high performance. The design team applied ANSYS software to analyze the flow field and optimize the runner inside the valve body, make the valve flow capacity is more larger.



2、阀门结构采用偏心楔紧原理，通过传动机构达到楔紧、调节、关闭的目的，阀座密封面与阀瓣密封面均采用金属球面密封。关闭时阀瓣球面沿阀座渐进，具有剪切刮扫功能，能够有效地切除结垢障碍、刮扫固体颗粒，实现可靠密封。因此，旋球阀特别适用于含固体颗粒的介质输送。

Since the eccentric structure and metal to metal sealing of the rotating ball valve, when the valve disc is closed, the good shear force between the valve disc and valve seat can effectively cut off the solid particles on the sealing surface of the valve disc, therefore, the rotating ball valve has a good function of self-cleaning and scale-resistance, so it is suitable for the medium with particle.



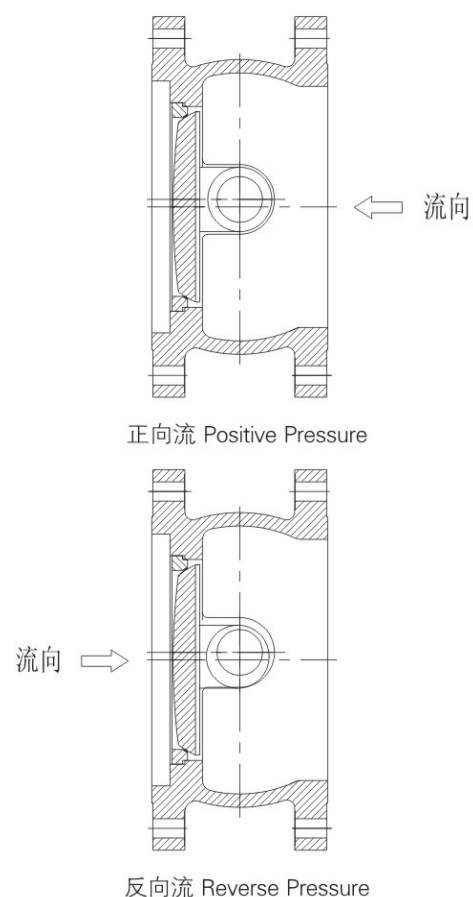


### 3、双向密封，密封性能优越

With bi-directional sealing function and tight sealing performance .

双向金属密封旋球阀最主要的功能是既能在正向压力时密封良好，也能在反向压力或反向压力大于正向压力时密封良好，如右图所示。当介质正向流动时，驱动装置施加在阀杆上的力，带动阀板，使阀板密封面产生强制密封力，作用在阀座密封面上，同时介质压力产生辅助密封力，使阀板密封面压紧阀座密封面而形成良好密封。当介质反向流动时，因阀座是浮动的，在预紧力和介质的活塞效应作用力的共同推动下，使阀座密封面压向阀板密封面，压紧而密封。

The most important function of rotating ball valve with double direction metal sealing is that it can seal well under positive pressure , moreover, it also have good sealing performance under reverse pressure or on the occasion that the reverse pressure is higher than the positive pressure, as the right picture showing. When positive pressure works, actuator rotates the disc through the valve stem ,the forced sealing will be occurred . Good sealing performance is achieved as the reason of the forced sealing force and medium pressure . When reverse pressure works,as the valve seat is floating type ,under the action of pretightening and piston effect force , seat sealing surface will move to the disc sealing surface and compress tightly to achieve good sealing performance .



### 4、开关轻便，操作力矩小

Easy to operate, small operating torque, so actuator cost will be largely reduced .

开启时阀芯与阀座脱离，无任何接触，启动扭矩小，转动灵活。

When valve opens, the valve core separates from valve seat without any contact, the starting torque is small, rotating is flexible.

### 5、结构长度短，安装方便，有效降低安装维护成本

Short length ,easy to install , installation and maintenance cost are reduced .

旋球阀采用半球阀的密封原理与蝶阀的结构长度，结合了球阀的优越双向密封性能与蝶阀的优势结构性能，因此体积小、重量轻、所需安装空间小，有效降低安装维护成本。

Because rotating ball valve combined the sealing advantage of semi ball valve and the structure advantage of butterfly valve , it has bidirectional sealing performance and short length. So it has the following advantage : light weight ,small volume, easy to install, so the cost of installation and maintenance are largely reduced .

### 6、多种耐磨材质相结合（镍基或钴基硬质合金等），阀门材料均进行硬化处理，使用寿命更长

Combined with a variety of wear-resistance material (nickel base or cobalt-based) , processed by special hardening treatment , so the valves have longer lifetime.

### 型号说明 / How to order



### 驱动方式 / Drive mode

| 代号/Code            | 2                         | 3                 | 6               | 7               | 9              |
|--------------------|---------------------------|-------------------|-----------------|-----------------|----------------|
| 驱动方式<br>drive mode | 电液动<br>electric-hydraulic | 蜗轮蜗杆<br>worm gear | 气动<br>pneumatic | 液动<br>hydraulic | 电动<br>electric |

### 连接型式 / Connetion type

| 代号/Code                 | 4            | 6             |
|-------------------------|--------------|---------------|
| 连接形式<br>connection type | 法兰<br>flange | 对焊<br>welding |

### 密封面材料 / Sealing surface material

| 代号/Code                           | H                                 | Y                  |
|-----------------------------------|-----------------------------------|--------------------|
| 密封面材料<br>sealing surface material | Cr13 系不锈钢<br>13Cr Stainless steel | 硬质合金<br>Hard alloy |

### 公称压力 / Nominal pressure

| 代号/Code                      | 6   | 10  | 16  | 25  | 40  | CL150    | CL300    |
|------------------------------|-----|-----|-----|-----|-----|----------|----------|
| 公称压力(PN)<br>Nominal pressure | 0.6 | 1.0 | 1.6 | 2.5 | 4.0 | Class150 | Class300 |

### 阀体材料 / Body material

| 代号/Code        | C   | P   | PL  | R    | RL   |
|----------------|-----|-----|-----|------|------|
| 材料<br>material | WCB | CF8 | CF3 | CF8M | CF3M |

## 主要用途 / Purpose

凡水泵出口端、管网系统、回收水系统、高位水槽、易水淹的污水系统、防倒流系统的所有阀门须用双向流阀门，本阀门广泛用于冶金、矿山、石化、化工、电力、环保、市政等行业和部门的管路启闭、调节。

All the valves used in pipe network system, water recovery system, balance tank, sewage system which is easy to be flooded, backflow prevention system should be bi-directional valves. The valve is widely used as on-off and regulating device in pipelines in the fields such as metallurgy, mining, petrochemical, chemical, power, environmental protection, urban construction industries.

## 主要结构及零部件材料 / Main structure and parts material



| 零件名称/Part name | 材料名称 Material                  |
|----------------|--------------------------------|
| 阀体/Body        | WCB、CF8、CF3、CF8M、CF3M等         |
| 阀板/Disc        | WCB、CF8、CF3、CF8M、CF3M等         |
| 阀杆/Stem        | 2Cr13、F304、F304L、F316、F316L等   |
| 阀座/Seat        | 25、A105、F304、F304L、F316、F316L等 |

## 技术性能规范 / Technical standard

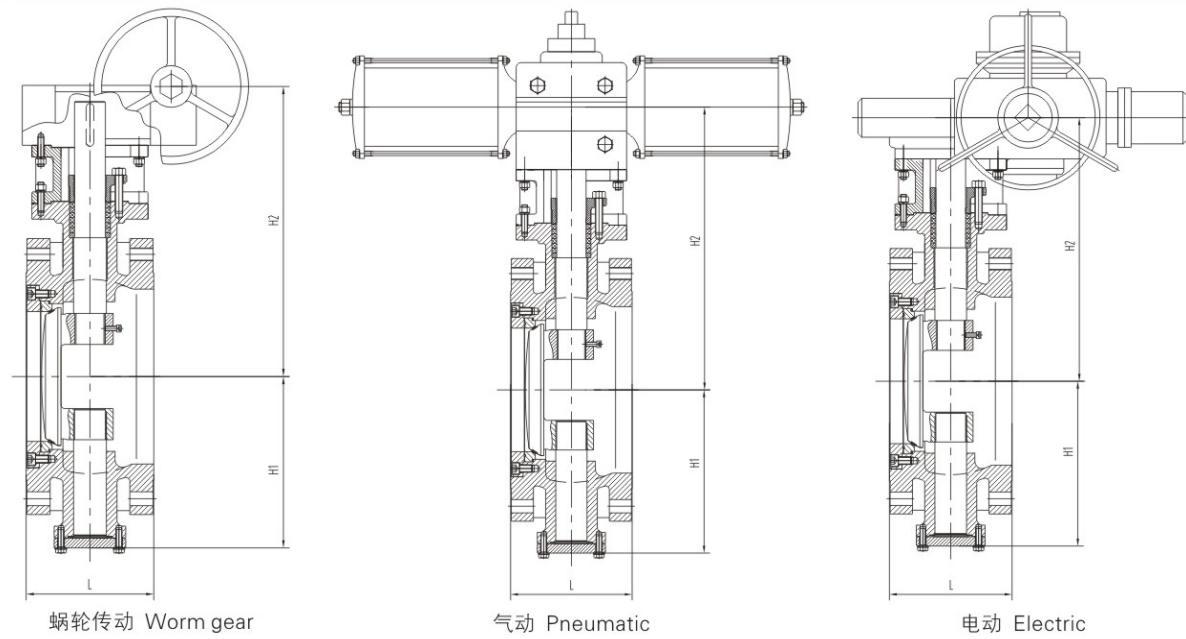
| 公称通径<br>(DN)<br>(mm) | 公称压力<br>(PN)<br>(Mpa) | 试验压力 Test pressure (MPa) |                                    |                                   | 适用温度<br>Applicable<br>temperature(°C)        | 适用介质<br>Applicable<br>medium  |
|----------------------|-----------------------|--------------------------|------------------------------------|-----------------------------------|--|---|
|                      |                       | 壳体强度试验<br>Shell test     | 正向密封试验<br>Positive<br>sealing test | 反向密封试验<br>Reverse<br>sealing test |  |   |
| DN50~<br>DN3000      | 0.6                   | 0.9                      | 0.66                               | 0.66                              | 基本型 basic type<br>-29~200°C                  | 蒸汽、水、油品、<br>污水及其它<br>腐蚀性介质<br>Steam,water,oil ,<br>sewage and other<br>corrosive medium |
|                      | 1.0                   | 1.5                      | 1.1                                | 1.1                               |  |   |
|                      | 1.6                   | 2.4                      | 1.76                               | 1.76                              | 高温型<br>high temperature<br>type<br>-29~425°C |   |
|                      | 2.5                   | 3.75                     | 2.75                               | 2.75                              |  |   |
|                      | 4.0                   | 6.0                      | 4.4                                | 4.4                               |  |   |
|                      | Class 150             | 3.0                      | 2.2                                | 2.2                               |  |   |
|                      | Class 300             | 7.5                      | 5.5                                | 5.5                               |  |   |

## 主要设计制造标准 / Technical specification

| 标准名称<br>Standard Name                       | 标准号<br>Standard No  | 标准内容<br>Standard content  |
|---|---|---|
| 结构设计标准(参照)<br>Reference<br>structure design | GB/T26146-2010  | 偏心半球阀 / Eccentric Semi-ball Valve   |
|   | GB/T12238-2008  | 法兰和对夹连接弹性密封蝶阀 / Flanged and wafer resilient seal butterfly valves   |
| 结构长度标准<br>Face to face                      | GB/T12221-2005  | 金属阀门结构长度<br>Metal valves-Face to face,end to end ,center to face and center to end dimensions                                     |
|   | ASME B16.10-2009  | 阀门的结构长度 / Face to Face and End-to-End Dimensions of Valves  |
| 法兰标准<br>Flange                              | GB/T9113-2010   | 榫槽面整体钢制管法兰 / Integral steel pipe flanges with tongue and groove face  |
|   | HG/T20592-2009  | 钢制管法兰 (PN系列) / Steel pipe flanges (PN designated)   |
|   | HG/T20615-2009  | 钢制管法兰 (Class系列) / Steel pipe flanges ( Class designated)  |
|   | HG/T20623-2009  | 大直径钢制管法兰 (Class系列) Large diameter steel pipe flanges (Class designated)   |
| 压力试验标准<br>Pressure test                     | ASME B16.5-2013   | 管法兰和法兰管件 ( NPS 1/2~NPS24米制/英制标准 )<br>Pipe Flanges and Flanged Fittings(NPS 1/2~NPS24 Metric/Inch Standard)                        |
|   | GB/T13927-2008  | 工业阀门压力试验 / Industrial valves-Pressure testing   |
| 材料标准<br>Material                            | API598-2009   | 阀门的检查和试验 / Valve Inspection and Testing   |
|   | GB/T12229-2005  | 通用阀门-碳素钢铸件技术条件<br>General purpose industrial valves-Specification of carbon steel castings  |
|   | GB/T12230-2005  | 通用阀门-不锈钢铸件技术条件<br>General purpose industrial valves-Specification of stainless steel castings                                     |
|   | ASTM A216/A216M-2008  | 高温用可熔焊碳素钢铸件标准规范<br>Standard specification for Steel castings,carbon,suitable for fusion welding,<br>for high -temperature service |
| ASTM A351/A351M-2012                        | 承压件用奥氏体铸件标准规格<br>Standard Specification for Castings,Austenitic,for Pressure-Containing Parts |   |

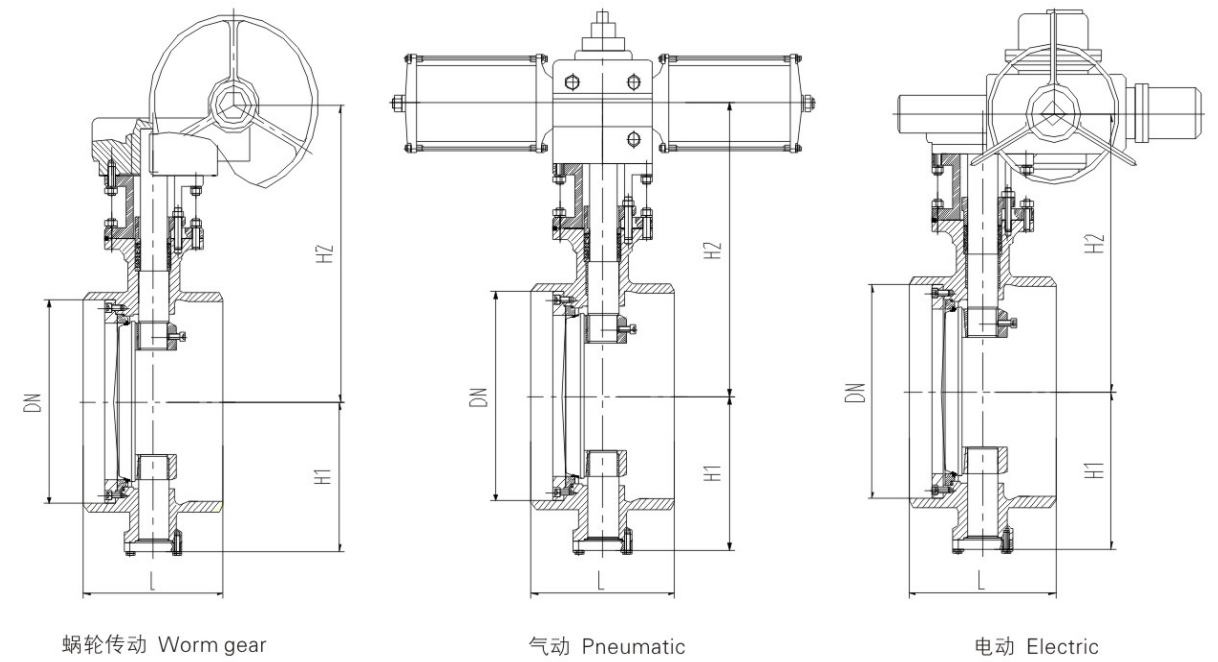


法兰端旋球阀主要尺寸图 / Dimensions for flange type



| 公称尺寸<br>Size |        | 结构长度L (mm)<br>Face to face dimension |                    | H1     | H2                |                 |                |
|--------------|--------|--------------------------------------|--------------------|--------|-------------------|-----------------|----------------|
| NPS(Inch)    | DN(mm) | PN6/PN10<br>/PN16/PN25<br>/Class150  | PN40/<br>Class 300 |        | 蜗轮传动<br>Worm gear | 气动<br>Pneumatic | 电动<br>Electric |
| 2            | 50     | 108                                  | 150                | 118.5  | 230               | 510             | 410            |
| 2-1/2        | 65     | 112                                  | 170                | 128.5  | 240               | 500             | 400            |
| 3            | 80     | 114                                  | 180                | 140    | 240               | 505             | 425            |
| 4            | 100    | 127                                  | 190                | 150    | 270               | 525             | 450            |
| 5            | 125    | 140                                  | 200                | 171    | 313               | 520             | 440            |
| 6            | 150    | 140                                  | 210                | 208    | 340               | 586             | 491            |
| 8            | 200    | 152                                  | 230                | 243    | 380               | 618             | 543            |
| 10           | 250    | 165                                  | 250                | 275    | 448               | 641             | 661            |
| 12           | 300    | 178                                  | 270                | 280    | 505               | 750             | 785            |
| 14           | 350    | 190                                  | 290                | 325    | 535               | 750             | 820            |
| 16           | 400    | 216                                  | 310                | 342    | 630               | 844             | 864            |
| 18           | 450    | 222                                  | 330                | 386    | 691               | 857             | 942            |
| 20           | 500    | 229                                  | 350                | 440.5  | 754               | 839.5           | 970            |
| 24           | 600    | 267                                  | 390                | 502    | 875               | 943             | 1093           |
| 28           | 700    | 292                                  | 430                | 547    | 905               | 1029            | 1288           |
| 32           | 800    | 318                                  | 470                | 603.5  | 921               | 1090            | 1420           |
| 36           | 900    | 330                                  | 510                | 663.5  | 1130.5            | 1330            | 1620           |
| 40           | 1000   | 410                                  | 550                | 708    | 1115              | 1294            | 1659           |
| 42           | 1050   | 410                                  | 550                | 708    | 1115              | 1294            | 1659           |
| 48           | 1200   | 470                                  | 630                | 833.5  | 1285              | 1650            | 1791           |
| 56           | 1400   | 530                                  | 710                | 933.5  | 1385              | 1597            | 1913           |
| 64           | 1600   | 600                                  | 790                | 1056   | 1592              | 1650            | 2056           |
| 72           | 1800   | 670                                  | 870                | 1173.5 | 1692              |                 | 2211           |
| 80           | 2000   | 760                                  | 950                | 1263   | 1875              |                 | 2310           |
| 88           | 2200   | 800                                  | 1000               | 1376   | 2120              |                 | 2520           |
| 96           | 2400   | 850                                  | 1100               | 1500   | 2230              |                 | 2600           |
| 104          | 2600   | 900                                  | 1200               | 1630   | 2310              |                 | 2735           |
| 112          | 2800   | 950                                  | 1300               | 1750   | 2450              |                 | 2885           |
| 120          | 3000   | 1000                                 | 1400               | 1855   | 2610              |                 | 3220           |

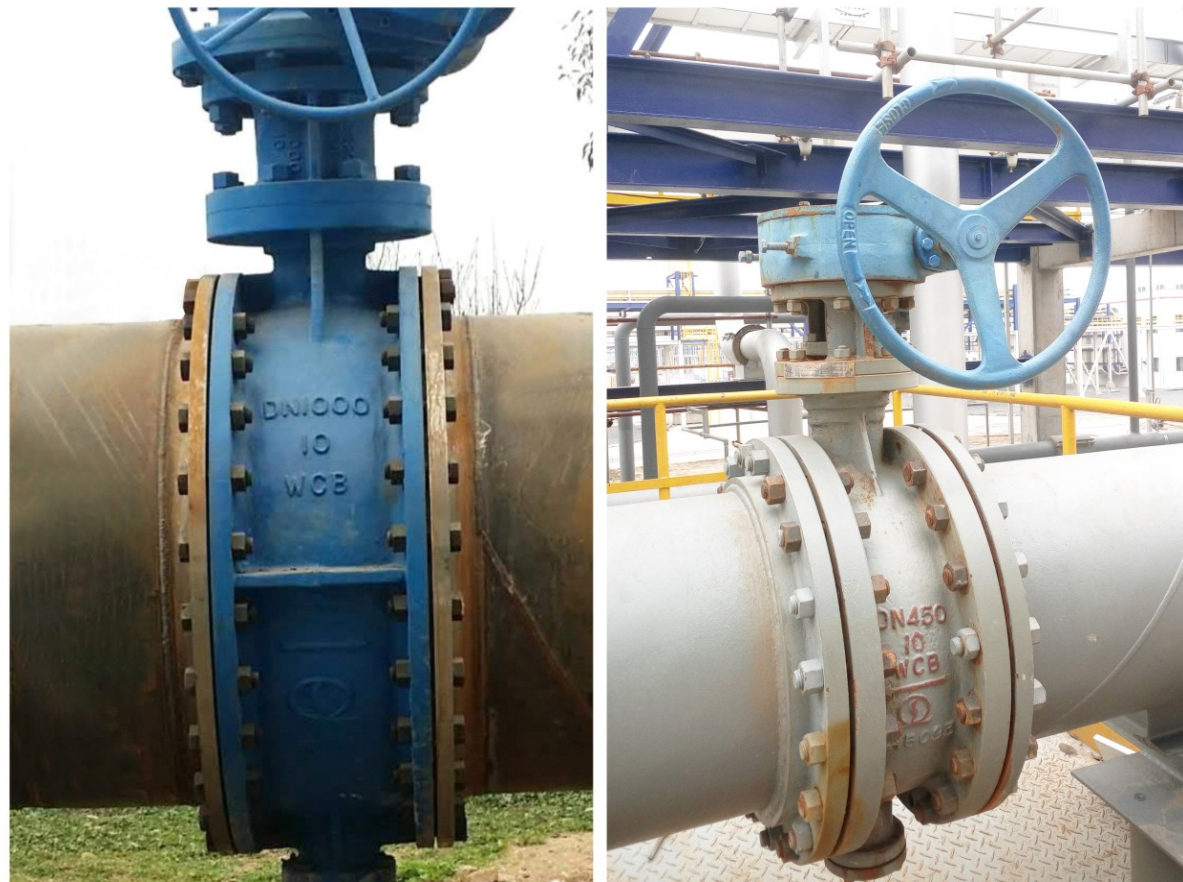
对焊端旋球阀主要尺寸图 / Dimensions for welding type



| 公称尺寸<br>Size |        | 结构长度L(mm)<br>Face to face dimension           |  | H1   | H2                |                 |                |
|--------------|--------|---|--|------|-------------------|-----------------|----------------|
| NPS(Inch)    | DN(mm) | PN6/PN10/PN16/PN25<br>PN40/Class150/Class 300 |  |      | 蜗轮传动<br>Worm gear | 气动<br>Pneumatic | 电动<br>Electric |
| 4            | 100    | 190   |  | 112  | 256               | 510             | 435            |
| 5            | 125    | 200   |  | 130  | 256               | 510             | 435            |
| 6            | 150    | 210   |  | 140  | 312               | 556             | 461            |
| 8            | 200    | 230   |  | 173  | 350               | 500             | 470            |
| 10           | 250    | 250   |  | 222  | 390               | 500             | 510            |
| 12           | 300    | 270   |  | 240  | 458               | 598             | 610            |
| 14           | 350    | 290   |  | 264  | 508               | 630             | 700            |
| 16           | 400    | 310   |  | 296  | 546               | 630             | 710            |
| 18           | 450    | 330   |  | 335  | 663               | 658             | 742            |
| 20           | 500    | 350   |  | 360  | 698               | 683             | 814            |
| 24           | 600    | 390   |  | 408  | 785               | 824             | 1000           |
| 28           | 700    | 430   |  | 503  | 797               | 880             | 1139           |
| 32           | 800    | 470   |  | 553  | 945               | 940             | 1270           |
| 36           | 900    | 510   |  | 613  | 1030              | 1190            | 1620           |
| 40           | 1000   | 550   |  | 663  | 1047              | 1190            | 1650           |
| 42           | 1050   | 550   |  | 663  | 1047              | 1190            | 1650           |
| 48           | 1200   | 630   |  | 773  | 1235              |                 | 1626           |
| 56           | 1400   | 710   |  | 876  | 1383              |                 | 1780           |
| 64           | 1600   | 790   |  | 1016 | 1527              |                 | 1873           |
| 72           | 1800   | 870   |  | 1128 | 1793              |                 | 1997           |
| 80           | 2000   | 950   |  | 1263 | 1875              |                 | 2310           |
| 88           | 2200   | 1000  |  | 1376 | 2120              |                 | 2520           |
| 96           | 2400   | 1100  |  | 1500 | 2230              |                 | 2600           |
| 104          | 2600   | 1200  |  | 1630 | 2310              |                 | 2735           |
| 112          | 2800   | 1300  |  | 1750 | 2450              |                 | 2885           |
| 120          | 3000   | 1400  |  | 1855 | 2610              |                 | 3220           |



## 阀门应用 / Valve Application



## 防伪查询 / Anti-counterfeiting

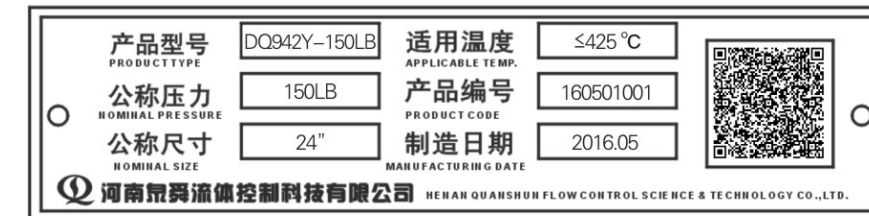
河南泉舜流体控制科技有限公司生产的旋球阀，每台阀门都有一个唯一的身份证。旋球阀从原材料到成品，建立有强大的数据库查询系统，可追溯性强。

Every QUANSHUN brand rotating ball valve has a special identity card No. Large database is established from raw material to finished products, every detail information can be found, so it has strong traceability.

用户可通过扫描阀门标牌上的二维码进行防伪查询。

The end user can scan QR code on the nameplate of valve to verify the product's authenticity.

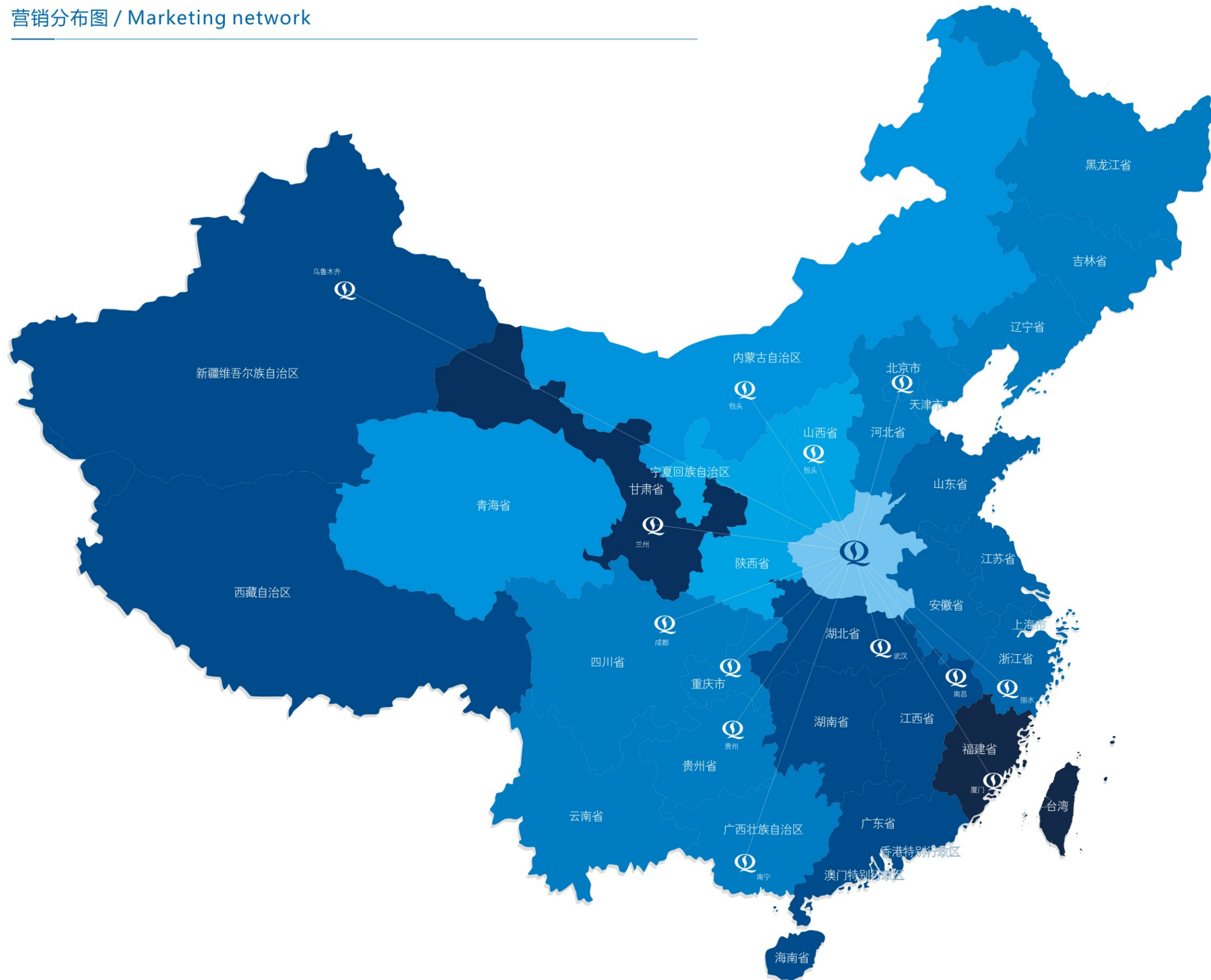
扫一扫 Scan



二维码显示内容 Scanning results



营销分布图 / Marketing network



图例一

分子公司

- 1、南宁泉舜
- 2、山西泉舜
- 3、内蒙泉舜
- 4、成都泉舜
- 5、重庆泉舜
- 6、浙江泉舜

图例二

营销大区及办事处

- 中原大区 (河南省)
- 西北大区 (山西、陕西、宁夏)
- 华北大区 (北京、天津、河北、辽宁、吉林、黑龙江)
- 华东大区 (江苏、浙江、山东、上海)
- 华南大区 (湖北、湖南、江西、广东)
- 新疆办事处 (新疆)
- 兰州办事处 (青海、甘肃)
- 福建办事处 (福建)