



ONE SOUL IN ONE VALVE MAKE VALVE ARTWORK

# GFE

## GFE<sup>®</sup>

让每一只阀门具有灵魂，  
用做艺术品的心态制造阀门！

One soul in one valve,  
make valve artwork!

**温州格鲁仕流体设备有限公司**  
WENZHOU GROWTH FLUID EQUIPMENT CO.,LTD.

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## 企业简介 Company profiles



温州格鲁仕流体设备有限公司(GFE), 多年来专注于设计和制造各类工业用阀门。在国内外市场上以高质量、低价格、勤服务而知名。

格鲁仕制造、分销和售后服务入手, 运营着多品牌系统, 创造客户便利, 享受一站式购买体验。

格鲁仕提供符合API 6D, API 6A, API 607, API 608, EN, GB, ISO等和其他国际标准的各种球阀阀门。

我们的产品为客户在整个使用过程中提供高度的可靠性, 可持续性, 耐用性和更高标准要求。产品可应用于天然气, 石油, 炼油, 化工, 发电和管道输送等行业。

我们的产品出口到40多个国家。美国, 英国, 德国, 意大利, 伊朗, 阿联酋, 新加坡, 巴西, 南非等。

我们有强大的技术能力, 先进的生产和检验设备, 科学的管理, 优质的产品和完善的售后服务。

我们的目标:

确保我们的产品符合质量保证体系;  
确保产品及时交付和产品质量保证;  
提供给客户完善的售后服务;  
精益我们的产品设计和制造水平。

Wenzhou Growth Fluid Equipment Co., Ltd. (GFE) has been focusing on the design and manufacture of various industrial valves for many years. It is well-known for its high quality, Competitive price and diligent service in both domestic and foreign markets.

Starting with manufacturing, distribution and after-sales service, GFE operates a multi-brand system to create customer convenience and enjoy a one-stop shopping experience.

GFE provides various ball valves conforming to API 6D, API 6A, API 607, API 608, EN, GB, ISO and other international standards.

Our products provide customers with a high degree of reliability, sustainability, durability and higher standards throughout the use process. The products can be used in industries such as natural gas, petroleum, oil refining,

chemical industry, power generation and pipeline transportation.

In addition, our products have been exported to more than 40 countries, like USA, UK, Germany, Italy, Iran, UAE, Singapore, Brazil, South Africa, etc.

We have strong technical capabilities, advanced production and inspection equipment, scientific management, high-quality products and perfect after-sales service.

Our goals:

Ensure that our products comply with the quality assurance system;  
Ensure timely delivery of products and product quality assurance;  
Provide customers with comprehensive after-sales service;  
Lean our product design and manufacturing level.

# 荣誉资质 Honors qualifications



公司获得的资质和荣誉，是对企业过去取得成绩的肯定，也是对企业创造明日辉煌的鼓舞和鞭策！  
向新的台阶迈进，是团队的顽强拼搏，永不停歇的信念！

The qualifications and honors obtained by our company are the affirmation of the past achievements of the enterprise, as well as the encouragement and spur for the enterprise to create brilliant future! Stride to a new level, is the team's tenacious struggle, never stop faith!



## 生产装备 Production equipment

先进的生产设备成就完美的产品品质  
Advanced production equipment achieves  
perfect product quality



## 品质保障

### Quality Assurance

光谱仪  
力学性能测试  
冲击试验机  
硬度试验  
阀门试压机  
超声波测厚  
超声波探伤

Spectrometer  
Mechanical performance test  
Impact testing machine  
Hardness test  
Valve pressure test machine  
Ultrasonic thickness measurement  
Ultrasonic flaw detection



为了提供高品质产品，公司配置了先进的检测设备以及完善的检测手段，建立了一支严格要求的品质管理队伍，实现了从原材料检测，生产过程检测，产品及应用全过程的质量控制。

In order to provide high-quality products, our company has equipped with advanced testing equipment and perfect testing methods, and established a strict quality management team, which has realized the quality control of the whole process from raw materials testing, production process testing, products and applications.



品质现场  
Quality scene



公司追求生产准确性、精细化。不断完善自己的精益生产方式，包括每一个零部件，每一道操作流程，都严格按标准化精心打造。确保产品的高品质。

Our company pursues production accuracy and refinement. Continuously improve our own lean production method, including every part and every operation process, strictly in accordance with the standardization of elaborate. Ensure the high quality of products.



## 品质服务 Quality service

用心

Attentively

售前服务/售后服务/终身服务  
Pre-sale service/after-sale service/lifetime service

精心

Elaborateness

产品的设计制造、装配、调试全程  
The whole process of product design, manufacture, assembly and commissioning

细心

Careful

定期回访用户，指导维护保养，代培维修人员  
Follow-up feedback termly, maintenance guide, and professional training

称心

Satisfactory

专业的技术人员为您提供全程技术支持  
Professional technicians provide you with full technical support

放心

Rest assured

实行终身维护，让您永无后顾之忧  
Implement life-long maintenance, so you will never worry about the future



对每一个细节反复研究，改进，就是为了将产品做到至善至美  
Repeatedly study and improve in the finite detail to make the product perfect and beautiful



我们深知设备对企业发展的重 要，多年来一直不遗余力的对软硬件设施进行更新研发。不但引进了国外各种先进设备和生产技术，同时还对专用装备进行开发，自动连续化生产线已经实现。生产体系的完善构筑，使企业在行业已更专业也更全面。

We are fully aware of the importance of equipment to the development of the company, and have spared no effort to update and develop software and hardware facilities for many years. Not only the introduction of various foreign advanced equipment and production technologies, but also the development of special equipment, the automatic continuous production line has been realized. The perfect construction of the production system has made the company more professional and comprehensive in the industry.



## 主导产品 Leading products

深耕精作，经过多年的发展

今天，我们成为全球球阀领域里产品线最丰富的企业之一：

我们提供：除阀门，包括执行器及控制元器件等更丰富的产品；

我们提供：铸铁、不锈钢、碳钢等多种材质的阀门；

我们提供：除产品外，包括方案设计、产品选型及系统调试等更具附加值的技术服务；

我们提供：除产品供应外，包括物流、配送等更能帮助我们的用户降低成本的超额服务。

未来，我们将做得更多……



Deep cultivation, after years of development

Today, we have become one of the companies with the most abundant product lines in the field of ball valves.

We provide: In addition to valves, including actuators and control components and other more abundant products;

We provide: valves made of cast iron, stainless steel, carbon steel and other materials;

We provide: In addition to products, more value-added technical services including program design, product selection and system debugging;

We provide: In addition to product supply, including logistics, distribution and other services that can help our users reduce costs, excess services.

In the future, we will do more……

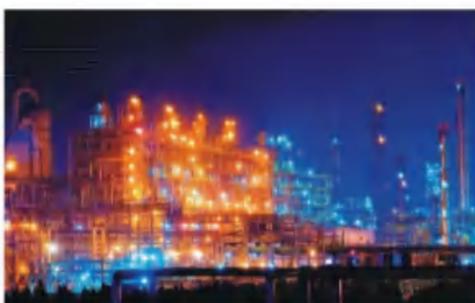


## 产品应用 Applications



公司立志造世界品质，创中国品牌，以质量兴企，求真务实，开拓创新，经过多年市场运作，产品已广泛运用于国内外各大工程及各个工业领域，在产品应用中深受客户赞誉。每一次产品的应用是我们为客户服务的开始，真诚服务，不断创新，追求卓越。

The company is determined to create world quality, create a Chinese brand, develop an enterprise with quality, seek truth and be pragmatic, pioneer and innovate. After years of market operation, the products have been widely used in major projects and various industrial fields at home and abroad, and the products are highly praised by customers. Every product application is the beginning of our customer service, sincere service, continuous innovation, and the pursuit of excellence.



## 营销网络 Marketing network



以客户为导向，用心为客户创造最大价值，

以优良产品服务客户，

做管道控制系统优秀制造商，

在广大客户心中树立良好品牌形象。

公司产品畅销全国二十七省市区共千余家客户，

还远销东南亚、欧美、俄罗斯、中亚、非洲等国家和地区。

Customer-oriented, creating maximum value for customers with heart,

Serve customers with excellent products,

To be an excellent manufacturer of piping control systems,

Establish a good brand image in the hearts of our customers.

The company's products sell well to more than 1,000 customers in 27 provinces, municipalities, and districts across the country.

It is also exported to Southeast Asia, Europe, America, Russia, Central Asia, Africa and other countries and regions.

球阀型号编制方法 Ball Valve Model Compilation Method	001
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**浮动球阀**  
Floating Ball Valve

浮动球阀 Floating Ball Valve	003
浮动式锻钢球阀 Floating Forged Steel Ball Valve	009
浮动式铸钢球阀 Floating Cast Steel Ball Valve	012
全径浮动球阀 Full Diameter Floating Ball Valve	013
缩径浮动球阀 Reduced Diameter Floating Ball Valve	015
美标整体式缩径球阀 ANSI Integrated Type Reduced Ball Valve	017

**固定球阀**  
Fixed Ball Valve

固定球阀 Fixed Ball Valve	018
固定式锻钢球阀 Fixed Forged Steel Ball Valve	024
全径固定球阀 Full Diameter Fixed Ball Valve	026
缩径固定球阀 Reduced Diameter Fixed Ball Valve	029
对焊固定球阀 Butt Welding Fixed Ball Valve	031

**顶装式球阀**  
Top-mounted Ball Valve

顶装式球阀 Top-mounted Ball Valve	036
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**锻钢球阀**  
Forged Steel Ball Valve

锻钢球阀 Forged Steel Ball Valve	046
二片式锻钢球阀 2PCS Forged Steel Ball Valve	047

三片式锻钢球阀 3PCS Forged Steel Ball Valve	049
三片式法兰锻钢球阀 3PCS Flange Forged Steel Ball Valve	051

**低温球阀**  
Cryogenic Ball Valve

低温球阀 Cryogenic Ball Valve	053
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**三通/四通球阀**  
Three Way/Four Way Ball Valve

三通球阀 Three-way Ball Valve	057
四通球阀 Four - way Ball Valve	060

**清管阀**  
Pigging Valve

清管阀 Pigging Valve	064
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夹套保温球阀 Jacket Insulation Ball Valve	075
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对夹式球阀 Wafer Ball Valve	078
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对夹式薄形球阀 Wafer Thin Ball Valve	080
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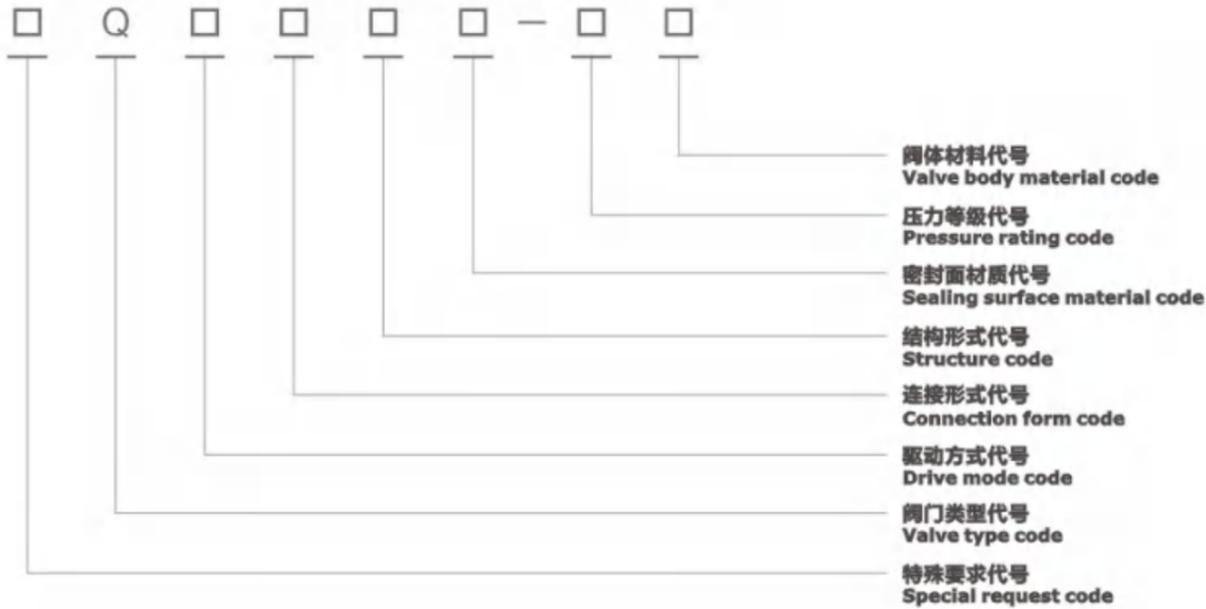
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附录B ASME密封环尺寸 Appendix B ASME Seal Ring Size	086
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内件材料附表 Internal Parts Material Schedule	092
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特殊要求代号  
Special request code

- K - 抗硫型 Sulfur resistant
- D - 低温型 Low temperature type
- EX - 加长杆型 Extension rod type
- M - 埋地型 Buried type
- B - 保温 Insulation
- H - 缓闭 Slow closing
- P - 排渣 Slagging

阀门类型代号  
Valve type code

- FB - 浮动球阀 Floating Ball Valve;
- TB - 固定球阀 Fixed ball valve

驱动方式代号  
Drive mode code

- 3 - 蜗轮操作器 Worm Gear Operator
- 5 - 伞齿轮传动 Bevel gear drive
- 6 - 气动 Pneumatic
- 6A - 气动调节 Pneumatic adjustment
- 6S - 气动弹簧复位 Pneumatic spring return
- 7 - 液动 Hydraulic
- 8 - 气液联动 Gas-liquid linkage
- 8H - 气液联动带紧急切断 Gas-liquid linkage with emergency cut-off
- 9 - 电动 Electric

特殊要求代号  
Special request code

- RF - 突面法兰 Raised Face Flange
- FF - 全平面法兰 Full face flange
- FM - 凹面 Concave
- M - 凸面 Convex
- MFM - 凹凸面法兰 Concave and convex flange
- TG - 榫槽面法兰 Tongue and groove flange
- RJ - 环接面法兰 Ring Face Flange
- BW - 对接焊 Butt Welding
- SW - 承插焊 Socket welding
- NPT - 螺纹连接 Threaded connection

结构形式代号  
Structure code

- 1 - 全径直通 Straight through
- 2 - 缩径直通 Reduced diameter straight
- 3T - T形三通 T-shaped tee
- 3L - L形三通 L-shaped tee
- 4 - 四通 Four-way
- 5 - 整体上装式(全径) Overall top-mounted type (full diameter)
- 5A - 整体上装式(缩径) Overall top-mounted type (reduced diameter)
- 6 - 轨道球阀(全径) Orbital ball valve (full diameter)
- 6A - 轨道球阀(缩径) Orbital ball valve (reduced diameter)
- 7H - 偏心半球 Eccentric hemisphere
- 7F - 偏心全球 Eccentric Global
- 8 - 全焊接(全径) Fully welded (full diameter)
- 8A - 全焊接(缩径) Fully welded (reduced diameter)

密封面材质代号  
Sealing surface material code

- Y - 硬质合金 Cemented carbide
- F - 增强聚四氟乙烯 Reinforced polytetrafluoroethylene
- N - 尼龙 Nylon
- PPL - 对位聚苯 Para-Polyphenylene
- G - 碳纤维 Carbon fiber
- E - PEEK
- M - MOLON
- H - 合金钢 Alloy steel
- Q - 搪瓷 Enamel
- T - 铜合金 Copper alloy
- X - 橡胶 Rubber

压力等级代号  
Pressure rating code

- 1 - PN16 Class 150
- 2 - PN25
- 3 - Class 300
- 4 - PN40 Class 400
- 5 - PN64 Class 600
- 8 - Class 900
- 9 - PN100
- 15 - Class 1500
- 16 - PN160
- 20 - Pn200
- 25 - Class 2500

阀体材料代号  
Valve body material code

- C - WCB (A105)
- C5 - C5
- C6 - WC6
- C9 - WC9
- L - LCB
- P8 - CF8 (304)
- R8 - CF8M (316)
- P3 - CF3 (304L)
- R3 - CF3M (316L)

球阀技术规范 Ball valve technical specifications

技术规范 Specifications	API系列 API series	GB系列 GB series
设计规范 Design specification	API 6D, API 608, BS5351	GB/T 12237, JB/T 7745
压力温度等级 Pressure temperature rating	ASME B16.34	GB/T 12224
结构长度 Structure length	ASME B16.10	GB/T 12221, GB/T 15188.1
法兰型式尺寸 Flange type size	ASME B16.5, ASME 16.47	GB/T9113, JB/T79
对焊端连接 Butt welding end connection	ASME B16.25	GB/T 9124
承插端连接 Socket welding connection	ASME B16.11	GB/T 12224
螺纹端连接 Threaded end connection	ASME B16.1.20	GB/T 12224
检验与试验 Inspection and testing	API 598, API 6D	JB/T9092, GB/T13927

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## 浮动球阀 Floating Ball Valve



## 浮动球阀 Floating Ball Valve



### 结构特点 Structural features

浮动球阀系本公司在消化吸收国内外先进技术的基础上生产出的优良产品，它具有更新颖的设计理念，同时能够满足一般工业标准的安全和实际需求。

#### 1、手动浮动球阀的开、关指示

球体、阀杆、手柄是阀门的运动部件，是一个装配单元。阀杆头部采用扁方结构，从而能够令使用者在手柄所处位置方便快捷地辨认出阀门处于开启状态或关闭状态。当手柄或阀杆扁方与管道轴线平行时，阀门处于开启状态；当手柄或阀杆扁方与管道轴线垂直时，阀门处于关闭状态。

#### 2、阀门锁定装置

为防止误操作阀门，在阀门处于全开或全关状态时可用阀门锁锁定阀门，特别是安装在野外的阀门或当工艺流程不允许开关阀门时，为防止其他人员错误操作阀门，将阀门位置锁定是很重要的。因此根据用户的需要在阀门设计时加装带锁孔定位片可满足用户的安全使用需求。

#### 3、阀杆防飞出结构

当介质通过阀门时，阀体中腔的压力可能将阀杆推出(或者在维修阀门时，如果中腔有压力，拆卸阀门时阀杆、介质容易飞出，误伤人员)。为防止这种情况发生，在阀杆下部设置一凸台结构。这样，即使火灾时，填料、止推轴承被烧损或其他原因引起填料等损坏，阀体内的介质压力将使阀杆凸台与阀体上密封面紧密接触，从而达到防止介质大量从损坏的填料部位处泄漏的目的。

#### 4、防静电装置

当操作阀门时，由于球体和聚四氟乙烯等非金属材料阀座之间的摩擦，会产生静电电荷并积聚在球体上。为防止产生静电火花，特在阀门上设置防静电装置，将积聚在球体上的电荷通过球体与阀杆、阀杆与阀体之间的静电通道导出。

#### 5、防火结构

当发生火灾时，填料、阀座等非金属材料(非防火材料)将被烧坏，大量泄漏的介质可能会更加促使火势蔓延、扩大，这时阀门的防火结构可阻挡介质大量泄漏。如后图所示，一旦阀座被烧损，球体将直接与阀体上的金属面接触，从而阻止介质大量从烧损的阀座处泄漏。

Floating ball valve is an excellent product produced by our company on the basis of digesting and absorbing advanced technology at home and abroad. It has a more novel design concept and can meet the safety and actual needs of general industrial standards.

#### 1. Opening and closing instructions of manual floating ball valve

The ball, valve stem, and handle are the moving parts of the valve and are an assembly unit. The head of the valve stem adopts a flat square structure, so that the user can easily and quickly identify the valve in the open or closed state at the position of the handle. When the handle or flat square of the valve stem is flat with the pipeline axis, the valve is in the open state; when the handle or flat square of the valve stem is perpendicular to the pipeline axis, the valve is in the closed state.

#### 2. Valve locking device

To prevent misoperation of the valve, the valve lock can be used to lock the valve when the valve is fully open or fully closed, especially when the valve is installed in the field or when the process flow does not allow the valve to be opened or closed. To prevent other personnel from operating the valve by mistake, set the valve position locking is very important. Therefore, according to the needs of users, the installation of positioning pieces with keyholes in the valve design can meet the safety requirements of users.

#### 3. The valve stem anti-flying structure

When the medium passes through the valve, the pressure in the middle cavity of the valve body may push the stem out (or when repairing the valve, if there is pressure in the middle cavity, the stem and the medium will easily fly out when the valve is dismantled, causing accidental injury to personnel). In order to prevent this from happening, a boss structure is provided at the lower part of the valve stem. In this way, even if the packing and thrust bearing are burned or damaged by other reasons during a fire, the medium pressure in the valve body will make the valve stem boss and the sealing surface of the valve body come into close

防火防静电的结构设计应符合API 607、GB/T 6899和BS 6755第二部分的要求。

#### 6、中部法兰无泄漏结构

阀体与左体的联接部位是靠垫片密封，为防止由于火灾、高温或震动等因素引起的该处密封泄漏，特设计为阀体与左体金属-金属接触，形成止口法兰，从而有效防止阀体泄漏。

#### 7、可靠的阀座密封结构

公司多年来的球阀制造经验与国际先进技术的结合而设计的双线密封结构，可自然泄压阀座，能保证高、低压和真空环境下的可靠密封。当介质压力运行在低压区时，阀座密封圈与球体接触面积较小，故有较大的密封比压，确保阀座可靠密封，当介质压力运行在较高位时，阀座密封圈与球体的接触面积增大，故阀座密封圈能承受较大的介质推力而保证阀体不受损坏。

对于工作压力很低的球阀，考虑到介质压力不能确保阀座的可靠密封，同时预紧力长期使用后的衰退，故对于低压、超低压或真空工况用球阀，采用球阀，用板簧加载的阀座密封结构，确保球阀长期可靠的密封。

中、高温球阀的阀座密封结构，采用对位聚苯作为密封圈可用于300℃的温度，而采用金属密封耐高温复合材料结构设计的球阀可用于更高的温度。这种结构具有单向密封功能。

#### 8、自动泄压结构

当滞留在阀中腔的介质由于管道系统压力或介质温度等因素引起的变化，从而出现中腔压力异常升高时，中腔介质能依靠本身的推力推动阀座而自动泄压，从而确保阀门的安全。

#### 9、全径和缩径

我公司球阀有全径和缩径两个系列，以满足用户的不同需要。全径球阀的通道内径与管线内径一致，流体阻力最小，便于管道清扫。而缩径系列球阀的重量只有相同口径球阀的70%左右，能有效降低成本和价格，而其流体阻力系数只有相同口径截止阀的1/7左右，故缩径球阀在国外得到广泛的使用。

contact, so as to prevent a large amount of medium from being damaged. The purpose of leakage at the packing site.

#### 4. Anti-static device

When operating the valve, due to the friction between the ball and the valve seat of non-metallic materials such as polytetrafluoroethylene, electrostatic charges will be generated and accumulated on the ball. In order to prevent the generation of static sparks, an anti-static device is specially installed on the valve, and the charge accumulated on the sphere is led out through the electrostatic passage between the sphere and the valve stem, and between the valve stem and the valve body.

#### 5. Fireproof structure

In the event of a fire, non-metallic (non-fireproof materials) such as packing and valve seats will be burnt out. A large amount of leaked media may further promote the spread and expansion of the fire. At this time, the valve's fireproof structure can prevent a large amount of media from leaking. As shown in the following figure, once the valve seat is burned, the ball will directly contact the metal surface on the valve body, thereby preventing a large amount of medium from leaking from the burned valve seat.

The design of fire-proof and anti-static structure should meet the requirements of API 607, GB/T 6899 and BS 6755 Part II.

#### 6. Non-leakage structure of the middle flange

The connecting part of the valve body and the left body is sealed by gaskets. In order to prevent the leakage of the seal caused by factors such as fire, high temperature or vibration, the valve body is specially designed to contact the metal-metal of the left body to form a stop flange. Effectively prevent valve body leakage.

#### 7. Reliable valve seat sealing structure

The company's many years of ball valve manufacturing experience combined with international advanced technology designed a double-line sealing structure,

which can naturally relieve the valve seat and ensure reliable sealing under high, low pressure and vacuum environments. When the medium pressure is operating in the low pressure area, the contact area between the valve seat sealing ring and the ball is small, so there is a larger sealing specific pressure to ensure reliable sealing of the valve seat. When the medium pressure runs at a higher level, the valve seat sealing ring and the ball the contact area of the valve is increased, so the valve seat sealing ring can withstand a larger medium thrust to ensure that the valve body is not damaged.

For the ball valve with very low working pressure, considering that the medium pressure cannot ensure the reliable sealing of the valve seat, and the pre-tightening force declines after long-term use, so for the low pressure, ultra low pressure or vacuum working conditions, the ball valve is used and the leaf spring is loaded. The sealing structure of the valve seat ensures the long-term and reliable sealing of the ball valve.

The seat sealing structure of medium and high temperature ball valves uses para-polystyrene as the sealing ring and can be used at a temperature of 300°C, while the ball valve with a metal seal and high temperature resistant composite material structure design can be used at higher temperatures. This structure has a one

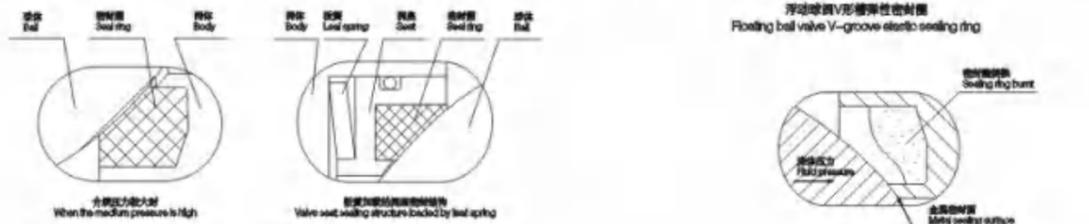
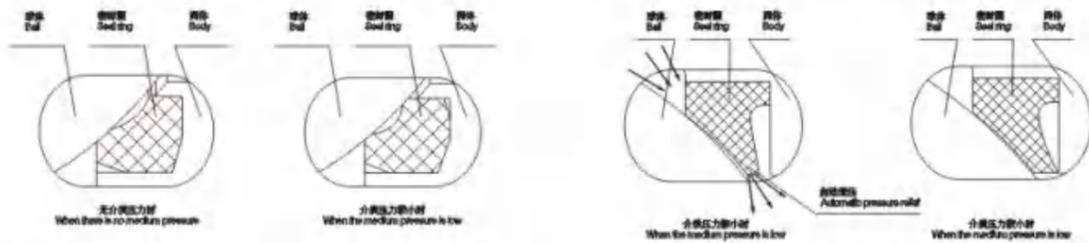
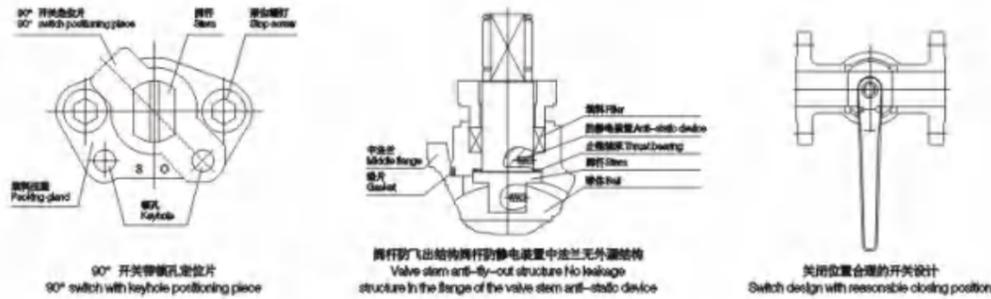
-way sealing function.

8. Automatic pressure relief structure

When the medium in the middle cavity of the valve changes due to the pressure of the piping system or the temperature of the medium, and the pressure in the middle cavity rises abnormally, the medium in the middle cavity can rely on its own thrust to push the valve seat to automatically release the pressure, thereby ensuring the valve security.

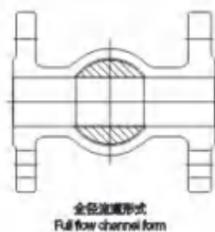
9. Full diameter and reduced diameter

Our company's ball valve has two series of full diameter and reduced diameter to meet the different needs of users. The internal diameter of the channel of the full-bore ball valve is the same as the internal diameter of the pipeline, and the fluid resistance is minimal, which is convenient for pipeline cleaning. The weight of the reduced diameter series ball valve is only about 70% of the same diameter ball valve, which can effectively reduce the cost and price, and its fluid resistance coefficient is only about 1/7 of the same diameter stop valve, so the reduced diameter ball valve is widely used abroad.

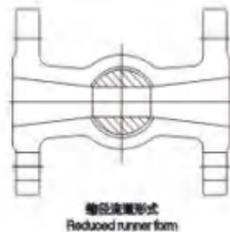


浮动球阀的双斜面弹性密封面  
Double inclined elastic sealing surface of floating ball valve

浮动球阀防火结构  
Floating ball valve fire protection structure



全径流道形式  
Full flow channel form

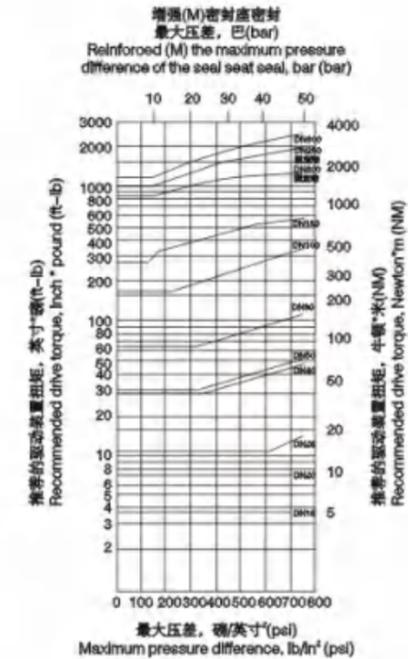
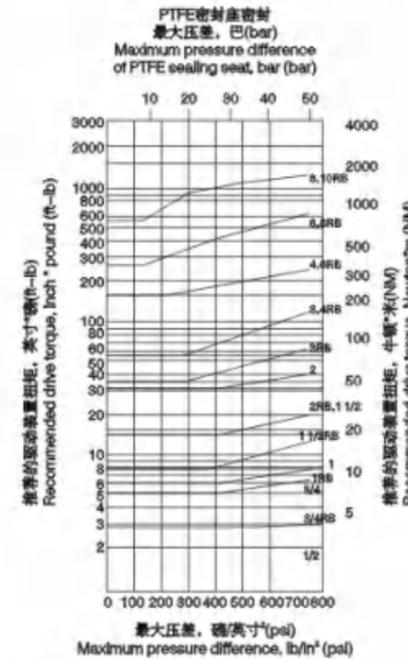


缩径流道形式  
Reduced runner form

浮动球阀参考力矩 Reference torque of floating ball valve

下列和图形扭矩供选择驱动装置时参考。根据介质的特性，内件及阀门的开启频率还另作考虑。使用防腐内件的阀门，用于清洁润滑介质，扭矩可降低20%。而对于苛刻介质，如料浆、颗粒性介质，以及用于氧气，扭矩可能要增加50%。

The following torques and graphs are for reference when selecting a drive unit. According to the characteristics of the medium, the opening frequency of the internal parts and the valve need to be considered separately. Valves with anticorrosive internal parts are used to clean the lubricating medium, and the torque can be reduced by 20%. For harsh media, such as slurry, granular media, and for oxygen, the torque may be increased by 50%.



力矩表 Torque table (N.m)

压力 Pressure	口径 Size (mm)	15	20	25	40	50	65	80	100	125	150	200
PN1.6MPa		3	5	10	16	25	50	65	125	250	340	485
PN2.5MPa		3	5	11	18	30	60	80	140	300	400	680
PN4.0MPa		5	10	24	35	50	100	150	250	450	585	996
PN6.4MPa		15	30	50	80	100	200	300	400	/	/	/
PN10.0MPa		19	35	68	130	190	360	480	770	/	/	/

注：表中数据未经实际测定，仅供参考  
Note: The data listed in the table have not been actually measured and are for reference only

压力 Pressure	口径 Size (mm)	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
Class 150		3	5	11	16	25	50	65	125	250	410	700
Class 300		7	12	26	38	60	120	160	280	600	950	1550
Class 400		15	30	50	90	140	240	350	540	/	/	/
Class 600		19	35	68	130	190	360	480	770	/	/	/

注：表中数据未经实际测定，仅供参考  
Note: The data listed in the table have not been actually measured and are for reference only

流量数据表 Flow data sheet

阀门的流量系数是衡量阀门流通能力的标准，流量系数值越大说明流体流过阀门时的压力损失小。流量系数值随阀门的尺寸、型式、结构而变化，不同类型和不同规格的阀门都要分别进行试验，才能确定该种阀门的流量系数值。对于同样结构的阀门，流体流过阀门的方向不同，流量系数值也会发生变化。这种变化一般是由于压力恢复不同而造成的。下表为浮动球阀的流量系数。[Cv值表示在1磅/英寸<sup>2</sup>(0.006894757MPa)压降下+60° F(+16°C)的水，每分钟流过阀门的美国加伦数。The flow coefficient of a valve is a measure of the flow capacity of the valve. The larger the value of the flow coefficient, the smaller the pressure loss when the fluid flows through the valve. The value of the flow coefficient varies with the size, type, and structure of the valve. Valves of different types and specifications must be tested separately to determine the value of the flow coefficient of the valve. For the valve of the same structure, the flow coefficient value will also change if the direction of the fluid flowing through the valve is different. This change is generally caused by different pressure recovery. The following table shows the flow coefficient of the floating ball valve. [The Cv value represents the number of US gallons per minute that +60° F (+16°C) water flows through the valve under a pressure drop of 1 lb/in<sup>2</sup> (0.006894757MPa).

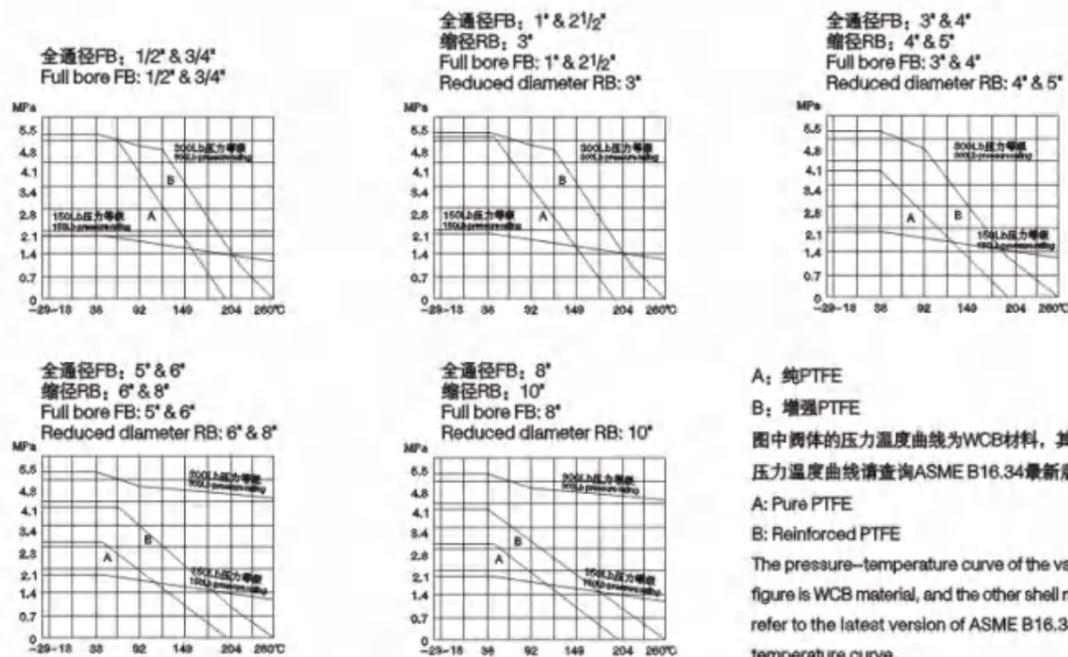
CV值 CV value

公称直径 Nominal diameter	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
缩径 Reduced diameter		9	19	45	-	125	16	270	350	550	670	765	1890
全径 Full path		25	50	100	-	270	490	950	1160	2200	3800	5100	9300

压力-温度额定值 Pressure-temperature rating

球阀的压力温度额定值不仅与阀体的材料有关，而且与阀座、填料、垫片等密封件有联系。密封件可以是高分子材料、石墨石棉或橡胶等；密封件材料的选择取决于阀门所输送的介质成分、工作温度、工作压力和流速。对于各种不可预知的工况，要准确的确定阀门压力温度额定值是极为困难的。根据我公司长期的阀门制造经验和用户的反馈意见，为此我们为你提供阀门在稳定工况下的压力温度额定值。

The pressure and temperature rating of the ball valve is not only related to the material of the valve body, but also related to the seat, packing, gasket and other seals. The seal can be polymer material, graphite asbestos or rubber, etc.; the choice of seal material depends on the medium composition, working temperature, working pressure and flow rate of the valve. For various unpredictable working conditions, it is extremely difficult to accurately determine the valve pressure and temperature ratings. Based on our company's long-term valve manufacturing experience and user feedback, we provide you with the pressure and temperature ratings of the valve under stable working conditions.



A: 纯PTFE  
B: 增强PTFE  
图中阀体的压力温度曲线为WCB材料，其余壳体材料的压力温度曲线请查询ASME B16.34最新版本。  
A: Pure PTFE  
B: Reinforced PTFE  
The pressure-temperature curve of the valve body in the figure is WCB material, and the other shell materials please refer to the latest version of ASME B16.34 for pressure temperature curve.

供货范围 Scope of supply

公称直径 Nominal diameter		压力等级 Pressure level (Class)			
DN	in	150	300	400	600
15	1/2			●/Δ	
20 × 15	3/4 × 1/2			●/Δ	
20	3/4			●/Δ	
25 × 20	1 × 3/4			●/Δ	
25	1			●/Δ	
32	1			-	
40 × 32	1 1/2 × 1 1/4			●/Δ	
40	1 1/2			●/Δ	
50 × 40	2 × 1 1/2			●/Δ	
50	2			●/Δ/★	
65 × 50	2 1/2 × 2			●/Δ/★	
65	2 1/2			●/Δ/★	
80 × 65	3 × 2 1/2			●/Δ/★	
80	3			●/Δ/★	
100 × 80	4 × 3			●/Δ/★	
100	4			●/Δ/★	
125 × 100	5 × 4		●/Δ/★		/
125	5		●/Δ/★		/
150 × 100	6 × 4			●/Δ/★	
150	6		●/Δ/★		/
200 × 150	8 × 6		●/Δ/★		/
200	8		●/Δ/★		/

注：●表示手柄操作阀门；★表示齿轮箱操作阀门；A表示气动操作阀门；★表示电动操作阀门；/表示没有此选项，表中未涉及的可按用户的要求制造。  
Note: ● means handle operated valve; ★ means gear box operated valve; A means pneumatic operated valve; ★ means electric operated valve; / means that there is no such option, and those not mentioned in the table can be manufactured according to user requirements.

产品性能规范 Product performance specifications

性能规范 Performance specification	公称直径 Nominal diameter (MPa)					压力等级 Pressure level (Class)				
	1.6	2.5	4.0	6.4	10.0	150	300	400	600	
试验压力(MPa) Test pressure	强度试验 Strength test	2.7	3.75	6.0	9.6	15.0	2.93	7.58	10.0	15.0
	密封试验 Sealing test	1.76	2.75	4.4	7.04	11.0	2.07	5.52	7.31	11.03
	气压试验 Air pressure test	0.6MPa								
适用温度 Applicable temperature	-196°C~550°C(注：不同工况温度，选用不同的材质) -196°C~550°C(Note: Different working conditions temperature, different materials are used)									
适用介质 Applicable medium	普通型 Normal type	水、蒸汽、石油、液化气、天然气等 Water, steam, petroleum, liquefied gas, natural gas, etc.								
	抗硫型 Sulfur resistant	含H <sub>2</sub> S、CO天然气、石油等 Contains H <sub>2</sub> S, CO, natural gas, oil, etc.								

**浮动式锻钢球阀**  
Floating Forged Steel Ball Valve

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**技术规范 Specification**

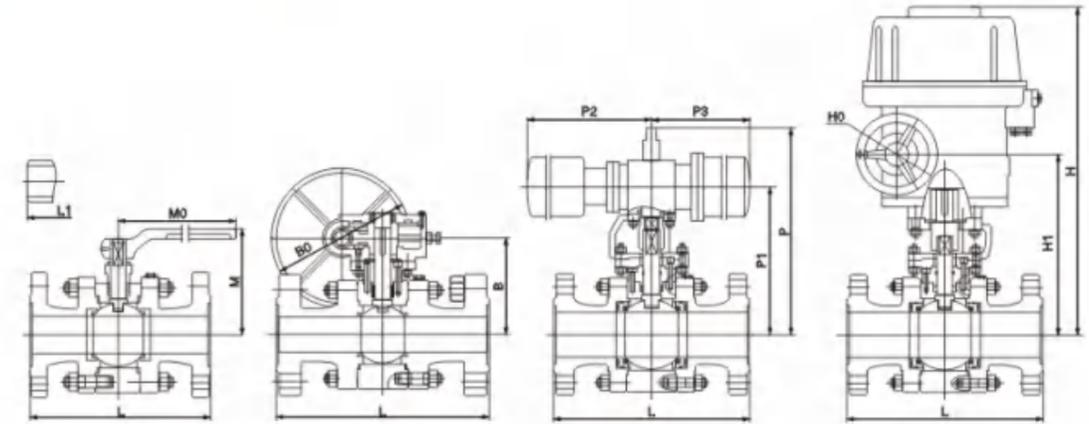
设计依据: API 6D/BS 5351/API 608  
 结构长度: ASME B16.10  
 法兰尺寸: ASME B16.5  
 试验和检验: API 598  
 注: 系列阀门连接法兰及对接端尺寸可根据用户要求设计制造。  
 Design basis: API 6D/BS 5351/API 608  
 Structure length: ASME B16.10  
 Flange size: ASME B16.5  
 Test and inspection: API 598  
 Note: The size of the series valve connecting flange and butt welding end can be designed and manufactured according to user requirements.

**主要零件材质表 Material table of main parts**

序号 No.	零件名称 Part name	材质 Material
		ASTM
1	垫片 Gasket	柔性石墨+不锈钢 Flexible graphite + stainless steel
2	阀座 Seat	PTFE
3	右体 Right body	A105
4	螺母 Nut	A194-2H
5	螺栓 Stud	A193-B7
6	阀体 Body	A105
7	球体 Ball*	A105+ENP
8	阀杆 Stem**	A182-F6a
9	垫片 Gasket	PTFE
10	填料垫 Padding	A276-410
11	填料 Packing	柔性石墨 Flexible graphite
12	填料压盖 Packing gland	A216-WCB
13	螺栓 Bolt	A193-B7
14	定位片 Positioning pieces	Carbon steel
15	挡圈 Retaining ring	AISI 1566
16	手柄 Handle	A47-66732510

注: \*抗硫型阀门的该零件的材质为ASTM (A182-304+NLP);  
 \*\*抗硫型阀门的该零件的材质为ASTM (A276-321); 系列阀门主要零部件及密封面的材质可根据实际工况条件或用户特殊要求设计选用。  
 Note: \* The material of this part of the anti-sulfur valve is ASTM (A182-304+NLP);  
 \*\* The material of this part of the anti-sulfur valve is ASTM (A276-321); the material of the main parts and sealing surface of the series valve can be designed and selected according to the actual working conditions or the special requirements of users.

**浮动式锻钢球阀**  
Floating Forged Steel Ball Valve



手柄操作 Handle operation    蜗轮操作 Worm gear operation    气动操作 Pneumatic operation    电动操作 Electric operation

**主要外形及连接尺寸 Main shape and connection size**

PN1.6MPa Class 150

DN	mm	15	20	25	40	50	65	80	100	125	150	200
NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
法兰 Flange	L	130(108)	130(117)	140(127)	165	178	190	203	229	356	394	457
对接 Butt welding	L1	140	152	165	190	216	241	283	305	381	403	419
手动 Manual	H	73	78	86	102	130	142	191	200	226	242	285
	W	130	130	160	180	230	400	400	460	750	750	900
	kg	3	4	6	12	15	19	22	46	65	85	127
蜗轮蜗杆传动 Worm gear drive	H	/	/	/	/	/	/	/	/	/	260	300
	W	/	/	/	/	/	/	/	/	/	400	600
	型号 Model	/	/	/	/	/	/	/	/	/	A	B
气动 Pneumatic	kg	/	/	/	/	/	/	/	/	/	110	175
	H	203	234	242	326	354	366	415	485	607	623	742
	H1	125	139	147	195	223	235	284	328	398	414	498
电动 Electric	L1	326	326	347	420	426	426	590	523	610	610	885
	L2	136	136	181	181	257	257	257	287	378	378	530
	型号 Model	AG06	AG09	AG09	AG13	AG13	AG13	AG13	AW13	AW17	AW17	AW20
kg	kg	6.1	6.3	8.1	14.1	16.6	38.0	42.1	53.0	93.5	105.2	207.8
	H	/	/	/	/	432	443	454	493	574	646	678
	H1	/	/	/	/	337	348	359	398	424	496	528
kg	W	/	/	/	/	190	190	190	190	400	400	400
	型号 Model	/	/	/	/	Q60-1	Q60-1	Q60-1	Q60-1	Q120-1	Q120-1	Q120-1
	kg	/	/	/	/	23	25	60	75	97	162	226

表中()内的尺寸是Class 150。  
 The size in () in the table is Class 150.

**浮动式锻钢球阀**  
Floating Forged Steel Ball Valve

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**主要外形及连接尺寸 Main shape and connection size**

**PN2.5/4.0MPa Class 300**

DN	mm	15	20	25	40	50	65	80	100	125	150	200
NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
法兰 Flange	L	140	152	165	190	216	241	283	305	381	403	502
对焊 Butt welding	L1	140	152	165	190	216	241	283	305	381	457	521
手动 Manual	H	73	80	86	102	136	164	191	223	240	253	307
	W	140	140	180	230	240	400	400	750	750	900	1000
	kg	4	6	6.8	11.2	18.3	32	36	78	85	102	125
蜗轮蜗杆传动 Worm gear drive	H	/	/	/	/	/	/	/	/	/	325	387
	W	/	/	/	/	/	/	/	/	/	400	600
	型号 Model	/	/	/	/	/	/	/	/	/	A	B
气动 Pneumatic	H	204	236	242	326	359	388	415	508	621	675	824
	H1	126	141	147	195	228	257	284	351	412	466	580
	L1	326	326	347	420	426	426	590	523	610	610	885
	L2	136	136	181	181	257	257	257	287	378	378	530
	型号 Model	AG08	AG09	AG09	AG13	AG13	AG13	AG13	AW13	AW17	AW17	AW20
kg	6.2	6.4	8.5	16.9	20.6	42.5	52.7	77.9	107.0	130	220	
电动 Electric	H	/	/	/	/	432	443	454	493	574	646	678
	H1	/	/	/	/	337	348	359	396	424	496	528
	W	/	/	/	/	190	190	190	190	400	400	400
	型号 Model	/	/	/	/	Q60-1	Q60-1	Q60-1	Q60-1	Q120-1	Q120-1	Q120-1
kg	/	/	/	/	23	35	60	75	100	170	245	

**主要外形及连接尺寸 Main shape and connection size**

**PN6.4/10.0MPa Class 600**

DN	mm	15	20	25	40	50	65	80	100
NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4
法兰 Flange	L	165	190	216	241	292	330	356	406(432)*
对焊 Butt welding	L1	165	190	216	241	292	330	356	406(432)
手动 Manual	H	73	80	86	110	142	171	185	220
	W	160	160	230	400	400	650	650	800
	kg	4.5	6.2	7.5	12.5	26.1	38	44	65
蜗轮蜗杆传动 Worm gear drive	H	/	/	/	/	/	/	182	217
	W	/	/	/	/	/	/	280	400
	型号 Model	/	/	/	/	/	/	0	A
气动 Pneumatic	H	229	236	242	266	366	395	470	601
	H1	134	141	147	171	235	264	313	392
	L1	283	283	283	350	590	590	523	610
	L2	136	181	181	181	257	257	287	378
	型号 Model	AG09	AG09	AG09	AG09	AG13	AG13	AG13	AW17
kg	6.5	6.8	9.3	17.8	33.6	45.1	55.3	81.3	
电动 Electric	H	/	/	/	/	500	520	545	558
	H1	/	/	/	/	350	370	395	408
	W	/	/	/	/	190	190	190	190
	型号 Model	/	/	/	/	Q120-1	Q120-1	Q120-1	Q120-1
kg	/	/	/	/	26	41	72	92	

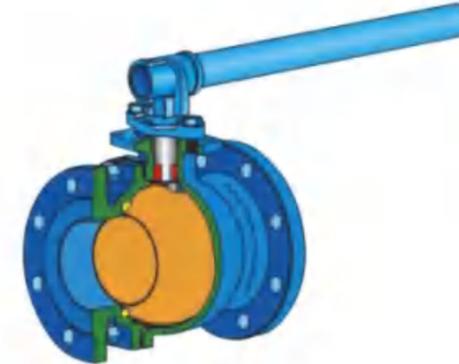
表中\*()内的尺寸是PN10.0MPa Class 600。  
The size in \*() in the table is PN10.0MPa Class 600.

**浮动式铸钢球阀**  
Floating Cast Steel Ball Valve



**技术规范 Specification**

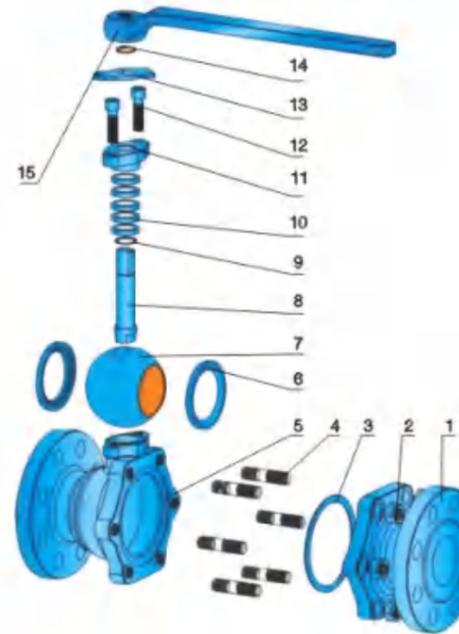
设计依据: API 6D/BS 5351/API 608  
 结构长度: ASME B16.10  
 法兰尺寸: ASME B16.5  
 试验和检验: API 598  
 注: 系列阀门连接法兰及对焊端尺寸可根据用户要求设计制造。  
 Design basis: API 6D/BS 5351/API 608  
 Structure length: ASME B16.10  
 Flange size: ASME B16.5  
 Test and inspection: API 598  
 Note: The size of the series valve connecting flange and butt welding end can be designed and manufactured according to user requirements.



**主要零件材质表 Material table of main parts**

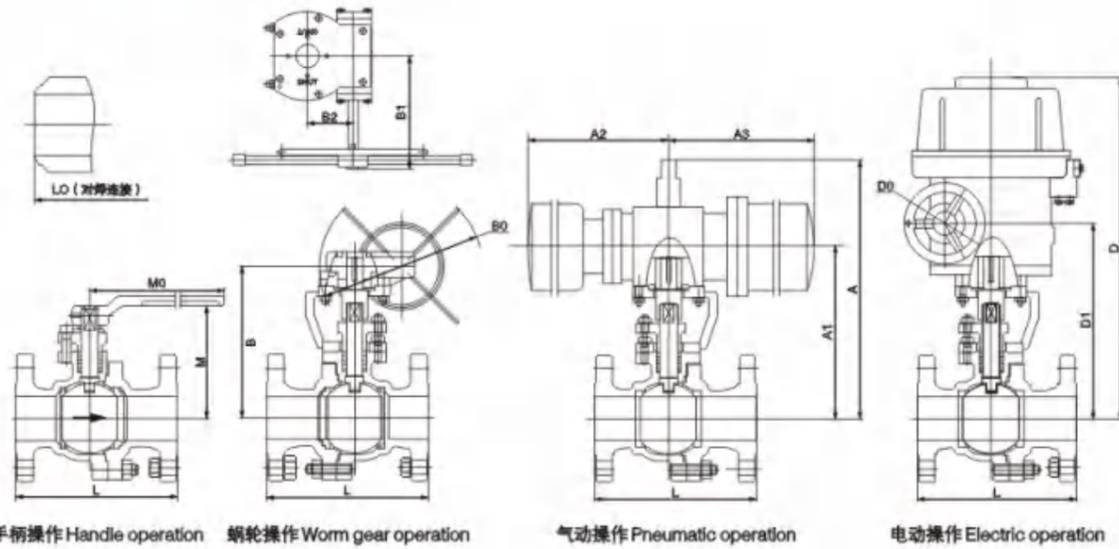
序号 No.	零件名称 Part name	材质 Material		
		碳钢系列 Carbon steel series	不锈钢系列 Stainless steel series	低温系列 Low temperature series
1	右体 Right body	A216 WCB	A351-CF8, CF8M, CF3, CF3M	A352 LCB, LCC
2	螺母 Nut	A194 2H	A194 8M	A194 4
3	垫片 Plastic sheet	柔性石墨+不锈钢 Flexible graphite + stainless steel		
4	螺栓 Stud	A193-B7 A193-B8 A320 L7M		
5	阀体 Body	A216 WCB	A351-CF8, CF8M, CF3, CF3M	A352 LCB, LCC
6	阀座 Seat	PTFE, RPTFE, Sintering carbonfibre, Metal+Rubber groupware		
7	球体 Ball*	A105+HCr/ENP	A182 F304, A182 F316	A350 LF2, A350 LF3+ENP
8	阀杆 Stem**	A182 F6a	A182 F304, 316	A182 F6a
9	垫片 Plastic sheet	CS	SS	CS
10	填料垫片 Filling plastic sheet	柔性石墨 Flexible graphite		
11	填料压盖 Packing gland	A216 WCB	A351 CF8, CF8M	A351 CF8
12	螺钉 Screw	A193 B7	A193 B8, B8M	A320 L7
13	定位片 Positioning pieces	GB/T700 Q235A+Zn(Cr)		
14	挡圈 Retaining ring	A216 WCB		
15	手柄 Handle	GB/T 1222 65Mn		

注: \*抗硫型阀门的该零件的材质为ASTM (A182-304+Ni.P);  
 \*\*抗硫型阀门的该零件的材质为ASTM (A276-321); 系列阀门主要零部件及密封面的材质可根据实际工况条件或用户特殊要求设计选用。  
 Note: \* The material of this part of the anti-sulfur valve is ASTM (A182-304+Ni.P);  
 \*\* The material of this part of the anti-sulfur valve is ASTM (A276-321); the material of the main parts and sealing surface of the series valve can be designed and selected according to the actual working conditions or the special requirements of users.



**全径浮动球阀**  
Full Diameter Floating Ball Valve

www.growthfluid.com



主要外形及连接尺寸 Main shape and connection size

PN1.6MPa Class 150

DN	mm	15	20	25	40	50	65	80	100	125	150	200
NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
L	RF	130(108)	130(117)	140(127)	165	178	190	203	229	356	394	457
Lo	BW	140	152	165	190	216	241	283	305	381	457	521
手动 Manual	M	59	63	75	95	107	142	152	178	252	272	342
	M0	130	130	160	230	230	400	400	650	1050	1050	1410
蜗轮蜗杆 Worm gear	B	/	/	/	/	/	/	/	/	/	292	398
	B0	/	/	/	/	/	/	/	/	/	400	600
	B1	/	/	/	/	/	/	/	/	/	350	350
	B2	/	/	/	/	/	/	/	/	/	115.5	115.5
气动 Pneumatic	A	200	204	257	264	340	370	389	594	646	646	781
	A1	122	126	162	169	209	239	258	337	437	437	537
	A3	326	326	347	420	426	426	590	523	610	610	885
	A4	136	136	181	181	257	257	257	287	378	378	530
电动 Electric	D	/	/	/	/	472	486	579	595	650	739	799
	D1	/	/	/	/	377	391	484	500	500	589	649
	D0	/	/	/	/	190	190	190	190	400	400	400
重量 Weight kg (RF)	手动 Manual	2.5	3	5	7	10	15	19	33	58	93	160
	气动 Pneumatic	10	15.7	19.5	42.8	46.9	50.5	70	92.7	160.7	183.5	276
	电动 Electric	/	/	/	/	32	35.6	44	55	93	128	195

注：连接法兰尺寸、焊接端尺寸见附表(A、E)

Note: See the attached table (A, E) for the dimensions of the connecting flange and the dimensions of the welding end.

**全径浮动球阀**  
Full Diameter Floating Ball Valve



主要外形及连接尺寸 Main shape and connection size

PN2.5/4.0MPa Class 300

DN	mm	15	20	25	40	50	65	80	100	125	150	200
NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
L	RF	140	152	165	190	216	241	283	305	381	403	502
Lo	BW	140	152	165	190	216	241	283	305	381	457	521
手动 Manual	M	59	63	75	95	107	142	152	178	252	272	342
	M0	130	130	160	230	230	400	400	650	1050	1050	1410
蜗轮蜗杆 Worm gear	B	/	/	/	/	/	/	/	/	/	292	398
	B0	/	/	/	/	/	/	/	/	/	400	600
	B1	/	/	/	/	/	/	/	/	/	350	421
	B2	/	/	/	/	/	/	/	/	/	115.5	171
气动 Pneumatic	A	200	204	257	264	340	379	452	594	646	744	920
	A1	122	126	162	169	209	248	295	375	437	500	615
	A3	326	326	347	420	426	426	590	523	610	610	885
	A4	136	136	181	181	257	257	257	287	378	378	530
电动 Electric	D	/	/	/	/	472	486	579	595	650	739	799
	D1	/	/	/	/	377	391	484	500	500	589	649
	D0	/	/	/	/	190	190	190	190	400	400	400
重量 Weight kg (RF)	手动 Manual	/	4	6	11	15	24	30	55	81	118	200
	气动 Pneumatic	10	15.7	20	40.9	43.9	51.9	68	99.4	177.5	207.5	381
	电动 Electric	/	/	/	/	29	37	42	77	116	143	235

注：连接法兰尺寸、焊接端尺寸见附表(A、E)

Note: See the attached table (A, E) for the dimensions of the connecting flange and the dimensions of the welding end.

主要外形及连接尺寸 Main shape and connection size

PN6.4/10.0MPa Class 600

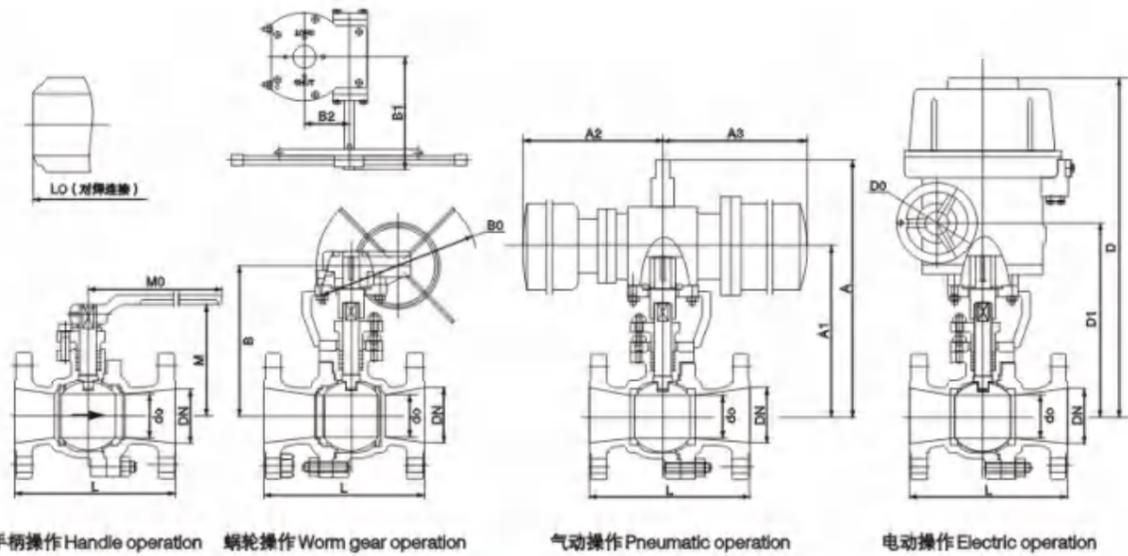
DN	mm	15	20	25	40	50	65	80	100
NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4
L	RF	165	190	216	241	292	330	356	406(432)
Lo	BW	165	190	216	241	292	330	356	406(432)
手动 Manual	M	59	63	75	95	142	154	184	209
	M0	160	160	230	400	400	650	650	1050
蜗轮蜗杆 Worm gear	B	/	/	/	/	/	/	292	398
	B0	/	/	/	/	/	/	400	600
	B1	/	/	/	/	/	/	350	421
	B2	/	/	/	/	/	/	115.5	171
气动 Pneumatic	A	200	204	241	264	340	379	452	584
	A1	122	145	146	169	209	248	295	375
	A3	283	283	283	350	590	590	523	610
	A4	136	136	181	181	257	257	287	378
电动 Electric	D	/	/	/	/	472	599	599	632
	D1	/	/	/	/	377	491	449	472
	D0	/	/	/	/	190	190	190	190
重量 Weight kg (RF)	手动 Manual	8	11	15	19	25	32	48	76
	气动 Pneumatic	17.2	21	24	32	68	75	101.3	177.5
	电动 Electric	/	/	/	/	60	67	83	111

注：表中( )括号内尺寸为PN10.0(Class 600)的结构长度，连接法兰尺寸、焊接端尺寸见附表(A、E)

Note: The dimensions in brackets ( ) in the table are the structural length of PN10.0 (Class 600), and the dimensions of the connecting flange and the dimensions of the welding end are shown in the appendix (A, E)

**缩径浮动球阀**  
Reduced Diameter Floating Ball Valve

www.growthfluid.com



主要外形及连接尺寸 Main shape and connection size

PN1.6MPa Class 150

DN	mm	20	25	40	50	65	80	100	125	150	200
NPS	in	3/4 x 1/2	1 x 3/4	1 1/2 x 1/4	2 x 1 1/2	2 1/2 x 2	3 x 2 1/2	4 x 3	5 x 4	6 x 4	8 x 6
do		15	20	32	40	50	65	80	100	100	150
L	RF	130(117)	140(127)	165	178	190	203	229	356	394	457
Lo	BW	152	165	190	216	241	283	305	381	457	521
手动 Manual	M	59	63	75	95	107	142	152	178	178	272
	M0	130	130	160	230	230	400	400	650	650	1050
蜗轮蜗杆 Worm gear	B	/	/	/	/	/	/	/	/	/	292
	B0	/	/	/	/	/	/	/	/	/	400
	B1	/	/	/	/	/	/	/	/	/	350
	B2	/	/	/	/	/	/	/	/	/	115.5
气动 Pneumatic	A	200	204	257	264	340	379	452	594	594	744
	A1	122	126	162	169	209	248	295	375	375	500
	A3	326	326	347	420	426	426	590	523	523	610
	A4	136	136	181	181	257	257	257	287	287	378
电动 Electric	D	/	/	/	/	472	486	579	595	595	739
	D1	/	/	/	/	377	391	484	500	500	589
	D0	/	/	/	/	190	190	190	190	190	400
重量 Weight kg (RF)	手动 Manual	3	4	7	9	14	19	25	32	40	84.0
	气动 Pneumatic	10	15.7	21	40.9	45.9	50.9	68	87.4	95.4	186.5
	电动 Electric	/	/	/	/	31	36	42	49	57	119

注：连接法兰尺寸、焊接端尺寸见附表(A、E)

Note: See the attached table (A, E) for the dimensions of the connecting flange and the dimensions of the welding end.

**缩径浮动球阀**  
Reduced Diameter Floating Ball Valve



主要外形及连接尺寸 Main shape and connection size

PN2.5/4.0MPa Class 300

DN	mm	20	25	40	50	65	80	100	125	150	200
NPS	in	3/4 x 1/2	1 x 3/4	1 1/2 x 1/4	2 x 1 1/2	2 1/2 x 2	3 x 2 1/2	4 x 3	5 x 4	6 x 4	8 x 6
do		15	20	32	40	50	65	80	100	100	150
L	RF	152	165	190	216	241	283	305	381	403	502
Lo	BW	152	165	190	216	241	283	305	381	457	521
手动 Manual	M	59	63	75	95	107	142	152	178	178	272
	M0	130	130	160	230	230	400	400	650	650	1050
蜗轮蜗杆 Worm gear	B	/	/	/	/	/	/	/	/	/	292
	B0	/	/	/	/	/	/	/	/	/	400
	B1	/	/	/	/	/	/	/	/	/	350
	B2	/	/	/	/	/	/	/	/	/	115.5
气动 Pneumatic	A	200	204	257	264	340	379	452	594	594	744
	A1	122	126	162	169	209	248	295	375	375	500
	A3	326	326	347	420	426	426	590	523	523	610
	A4	136	136	181	181	257	257	257	287	287	378
电动 Electric	D	/	/	/	/	472	486	579	595	595	739
	D1	/	/	/	/	377	391	484	500	500	589
	D0	/	/	/	/	190	190	190	190	190	400
重量 Weight kg (RF)	手动 Manual	3	4	7	9	14	19	25	32	40	84.0
	气动 Pneumatic	10	15.7	21	40.9	45.9	50.9	68	87.4	95.4	186.5
	电动 Electric	/	/	/	/	31	36	42	49	57	119

注：连接法兰尺寸、焊接端尺寸见附表(A、E)

Note: See the attached table (A, E) for the dimensions of the connecting flange and the dimensions of the welding end.

主要外形及连接尺寸 Main shape and connection size

PN6.4/10.0MPa Class 600

DN	mm	20	25	40	50	65	80	100	150
NPS	in	3/4 x 1/2	1 x 3/4	1 1/2 x 1/4	2 x 1 1/2	2 1/2 x 2	3 x 2 1/2	4 x 3	6 x 4
do		15	20	32	40	50	65	80	100
L	RF	190	216	241	292	330	356	406(432)	495(559)
Lo	BW	190	216	241	292	330	356	406(432)	495(559)
手动 Manual	M	59	63	75	95	142	154	184	209
	M0	160	160	230	400	400	650	650	1050
蜗轮蜗杆 Worm gear	B	/	/	/	/	/	/	/	292 398
	B0	/	/	/	/	/	/	/	400 600
	B1	/	/	/	/	/	/	/	350 421
	B2	/	/	/	/	/	/	/	115.5 171
气动 Pneumatic	A	200	204	241	264	340	379	452	584
	A1	122	145	146	169	209	248	295	375
	A3	283	283	283	350	590	590	523	610
	A4	136	181	181	181	257	257	287	378
电动 Electric	D	/	/	/	/	472	599	599	632
	D1	/	/	/	/	377	491	449	472
	D0	/	/	/	/	190	190	190	190
重量 Weight kg (RF)	手动 Manual	8	11	15	19	25	48	76	85
	气动 Pneumatic	15	22.7	29	33	39	91	119	187.5
	电动 Electric	/	/	/	/	60	83	111	120

注：连接法兰尺寸、焊接端尺寸见附表(A、E)

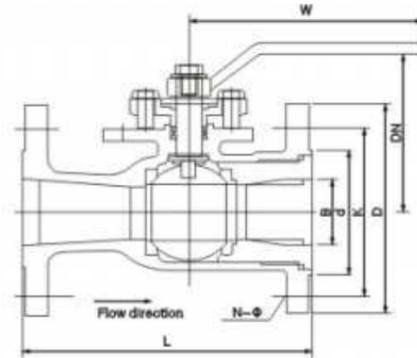
Note: See the attached table (A, E) for the dimensions of the connecting flange and the dimensions of the welding end.

美标整体式缩径球阀  
ANSI Integrated Type Reduced Ball Valve

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让每一只阀门具有灵魂，  
用做艺术品的心态制造阀门！

One soul in one valve,  
make valve artwork!



主要性能规范 Main performance specifications

公称压力 Nominal pressure	Lb	Class 150/300		
强度试验压力(MPa) Strength test pressure	MPa	3.0/7.5		
低压密封试验压力(MPa) Low pressure seal test pressure		0.6		
高压密封试验压力(MPa) High pressure seal test pressure		2.2/5.5		
适用介质 Applicable medium	C	P	R	
	水、油品、气 Water, oil, gas	硝酸类 Nitric acid	醋酸类 Acetic acid	
适用温度 Suitable temperature	-40~180°C			

主要零件材料 Material of main parts

零件名称 Part name	C	P	R
阀体 Body	WCB	1Cr18Ni9TiCF8	1Cr18Ni12Mo2Ti CF8M
阀盖 Bonnet	WCB	1Cr18Ni9TiCF8	1Cr18Ni12Mo2Ti CF8M
球体 Ball	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12Mo2Ti 316
阀杆 Stem	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12Mo2Ti 316
密封圈 Seal ring	聚四氟乙烯 PTFE		
填料 Packing	聚四氟乙烯 PTFE		

主要外形及连接尺寸 Main shape and connection size

单位 Unit: mm

Size	B	W	L	D	K	n-Φ
1/2	13	120	108	90	60.3	4-Φ16
3/4	19	120	117	100	69.9	4-Φ16
1	25	140	127	110	79.4	4-Φ16
1 1/4	32	160	140	115	88.9	4-Φ16
1 1/2	38	180	165	125	98.4	4-Φ16
2	49	200	178	150	120.7	4-Φ19
2 1/2	62	240	190	180	139.7	4-Φ19
3	74	260	203	190	152.4	4-Φ19
4	100	320	229	230	190.5	8-Φ19
5	125	600	356	255	215.9	8-Φ22
6	150	600	394	280	241.3	8-Φ22
8	201	800	457	345	298.5	8-Φ22
10	252	1000	533	405	362	12-Φ25.5
12	303	1200	610	485	431.8	12-Φ25.5

固定球阀  
Fixed Ball Valve



固定球阀结构特点 Structural characteristics of fixed ball valve

1、自动泄压结构

当中腔压力出现异常升高现象时，单密封结构的球阀具有自动泄压功能，而双密封结构的球阀则由阀体上的附加泄压装置进行泄压。

2、密封的紧急救护

阀门设计有辅助的阀座紧急密封系统，如图所示。一旦软密封受损，或出现紧急情况而不能密封时，通过向辅助密封系统注射相应的密封剂即可进行紧急密封。紧急密封装置在必要时也可用来对阀座区域进行冲洗润滑，以保持其清洁。同样阀杆也可设计有辅助功能的紧急密封系统。

3、防火结构

根据工况及用户的需要，球阀可设计为防火结构。球阀的耐火设计执行API 607及GB/T 6899等标准的规定，一旦发生火灾而使软密封圈烧损时，球阀的防火结构可阻止介质的大量泄漏，防止火灾的进一步扩大。

4、防静电结构

静电电荷并聚集在球体上。为防止产生静电火花，特在阀门上设置防静电装置，将聚集在球体上的电荷通过球体与阀杆、阀杆与阀体之间的静电通道导出。

5、锁定装置

在手动球阀的全开、全闭两点位置上设计可上锁的结构，这样，可防止误操作以及不可预知的线路振动而产生的不应有的开关现象，特别是在可燃性介质的石油类和化学药品的生产线，以及阀门在室外配管时，这种设计体现出的优点和实际效果特别好。

6、全通径结构及缩径结构

为满足用户的不同需要，本公司球阀产品有全通径及缩径两种系列(如图所示)。全通径球阀的通道内径与管道内径一致，便于管道清扫，而缩径系列球阀的重量相对较轻，但流体阻力仅为相同口径截止阀的1/7左右，故缩径系列球阀的应用前景较为广阔。

1. Automatic pressure relief structure

When the pressure in the middle cavity rises abnormally, the single-sealed ball valve has an automatic pressure relief function, while the double-sealed ball valve is relieved by an additional pressure relief device on the valve body.

2. Sealed emergency rescue

The valve is designed with an auxiliary valve seat emergency sealing system, as shown in the figure. Once the soft seal is damaged or cannot be sealed in an emergency situation, emergency sealing can be performed by injecting corresponding sealant into the auxiliary sealing system. The emergency sealing device can also be used to flush and lubricate the valve seat area when necessary to keep it clean. Similarly, the valve stem can also be designed with an emergency sealing system with auxiliary functions.

3. Fireproof structure

According to the working conditions and the needs of users, the ball valve can be designed as a fireproof structure. The fire-resistant design of the ball valve complies with the standards of API 607 and GB/T 6899. Once a fire occurs and the soft sealing ring is burned, the fire-resistant structure of the ball valve can prevent a large amount of medium leakage and prevent further expansion of the fire.

4. Anti-static structure

The electrostatic charge accumulates on the sphere. In order to prevent the generation of static sparks, an anti-static device is specially installed on the valve, and the charge accumulated on the sphere is led out through the electrostatic passage between the sphere and the valve stem, and between the valve stem and the valve body.

5. Locking device

The manual ball valve is designed with a lockable structure at the fully open and fully closed positions of the manual ball valve, so as to prevent misoperation and unpredictable line vibrations and undesirable switching phenomena, especially in the flammable medium of petroleum. The advantages and actual effects of this design are particularly good when the production line of chemical and chemical drugs and the valve are piping outdoors.

6. Full diameter structure and reduced diameter structure

In order to meet the different needs of users, the company's ball valve products have two series of full bore and reduced diameter (as shown in the figure). The channel inner diameter of the full bore ball valve is the same as the pipe inner diameter, which is convenient for pipe cleaning. The reduced diameter series ball valve is relatively light, but the fluid resistance is only about 1/7 of the same diameter globe valve, so the application prospect of the reduced diameter series ball valve is more extensive.

7、阀体的泄放装置

根据用户要求或装置系统要求，球阀的阀体上安装有排泄阀。一旦阀门的两端被封闭，阀腔内的积压可通过阀体的排泄阀进行排放，它具有双截止与泄放(DBB)功能。阀体的泄放阀的另一种功能是通过它可对阀体内的长期淤积物进行冲洗与排放。

8、防腐蚀

阀体壁厚设计时留有一定的腐蚀余量，碳钢阀门阀杆、固定轴、球体、阀座及底盖均按ASTM B733和B656进行表面化学镀层。此外尚有多种防腐材料供用户选择。阀门外表使用G“国际标准”的油漆，满足了各种环境条件的要求。

9、抗硫化应力开裂

我公司生产系列抗硫球阀，阀门接触介质的材料(包括紧固件)都是按美国腐蚀工程师协会标准NACE MR175的要求进行选择，并在制造过程中作严格的质量控制和质量检测，以求完全符合标准的规定，并满足硫化环境工况的工艺要求。

10、加长杆装置

对于埋地球阀，可提供加长装置，加长装置包括阀杆、注油脂阀、排泄阀等的加长。用户应在订单中说明加长要求和长度(长度一般是指阀门通道中心至操作装置中心的距离)。

7. Relief device of valve body

According to user requirements or device system requirements, a drain valve is installed on the valve body of the ball valve. Once the two ends of the valve are closed, the backlog in the valve cavity can be discharged through the drain valve of the valve body, which has the function of double stop and discharge (DBB). Another function of the relief valve of the valve body is to flush and discharge the long-term sludge in the valve body through it.

8. Anti-corrosion

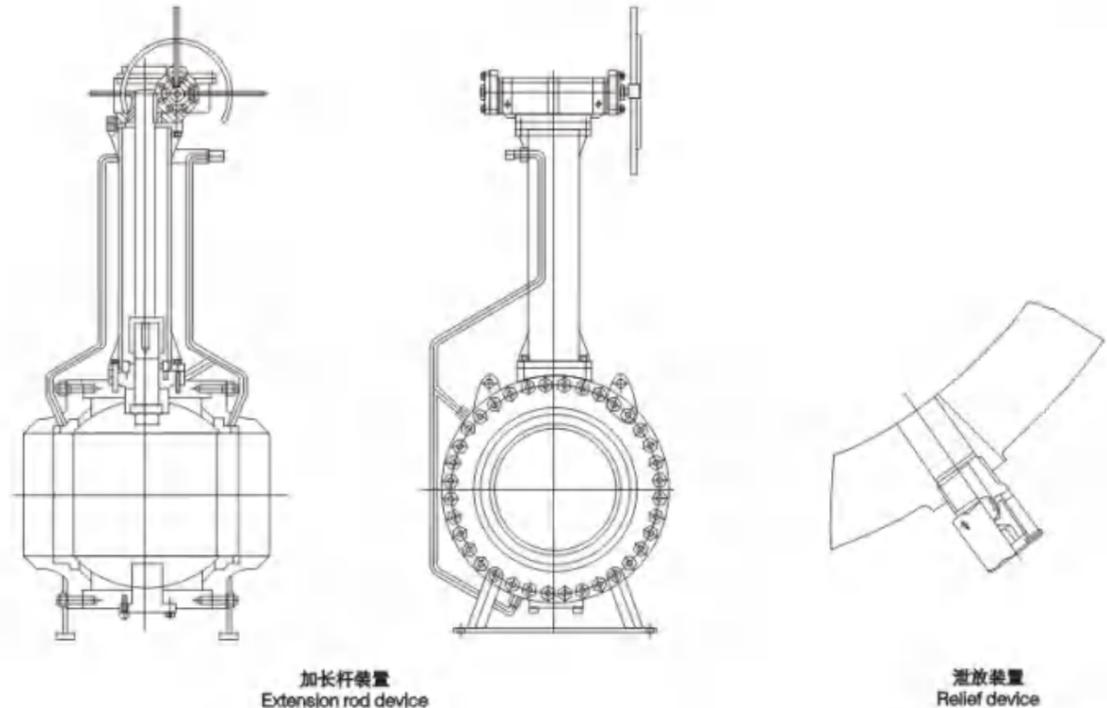
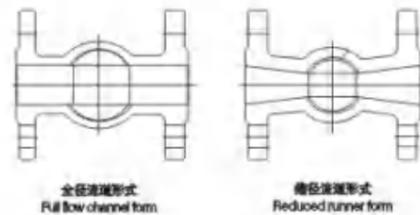
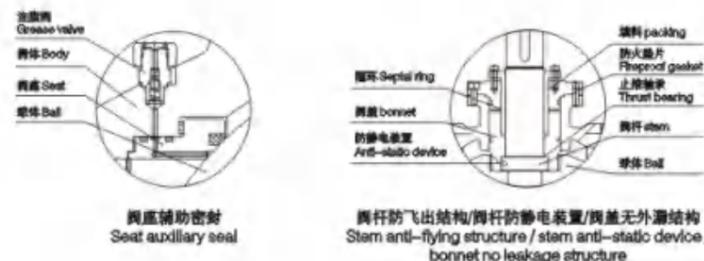
The wall thickness of the valve body is designed with a certain amount of corrosion allowance. The carbon steel valve stem, fixed shaft, ball, valve seat and bottom cover are all chemically plated on the surface according to ASTM B733 and B656. In addition, there are a variety of anti-corrosion materials for users to choose from. The exterior of the valve uses G "international standard" paint, which meets the requirements of various environmental conditions.

9. Resistance to vulcanization stress cracking

Our company produces a series of anti-sulfur ball valves. The materials (including fasteners) of the valve contacting medium are selected according to the requirements of the American Society of Corrosion Engineers standard NACE MR175, and strict quality control and quality inspection are performed during the manufacturing process to ensure completeness. It meets the requirements of the standard and meets the process requirements of the vulcanization environment.

10. Extension rod device

For buried earth valves, extension devices can be provided, including extensions for valve stems, grease injection valves, drain valves, etc. The user should specify the extension requirements and length in the order (length generally refers to the distance from the center of the valve channel to the center of the operating device).



固定球阀力矩表 Fixed ball valve torque table (N.m)

下表所列的扭矩值供选择驱动装置时参考，介质的特性，内件及阀门的开启频率需作额外因素考虑。如使用防腐内件，用于清洁润滑介质的阀门，扭矩可降低20%。而对于苛刻介质，如料浆/颗粒性介质，以及用于氧气，扭矩可能要增加50%。对于缩径阀门的操作扭矩按其缩径口所对应的直径的阀门操作扭矩需求进行选用。The torque values listed in the following table are for reference when selecting the drive device. The characteristics of the medium, the internal parts and the opening frequency of the valve still need to be considered for additional factors. If anti-corrosion internal parts are used, the valve used to clean the lubricating medium can reduce the torque by 20%. For harsh media, such as slurry/granular media, and for oxygen, the torque may be increased by 50%. The operating torque of the reduced-diameter valve is selected according to the valve operating torque requirement of the corresponding diameter of the reduced-diameter valve.

通径 Size		公称压力 Nominal pressure (MPa)					Class							
DN	In	1.6	2.5	4.0	6.4	10.0	150	300	400	600	900	1500	2500	
50	2	25	30	50	100	190	57	99	/	168	228	390	589	
65	2 1/2	50	60	100	200	360	/	/	/	/	/	/	/	
80	3	65	80	150	300	460	122	212	/	360	512	831	1577	
100	4	125	140	250	400	770	192	335	467	572	946	1524	1965	
125	5	250	300	450	650	1050	/	/	/	/	/	/	/	
150	6	340	400	585	890	1980	274	544	650	912	1784	2934	5501	
200	8	485	680	996	1500	3280	832	1250	1806	2177	4116	7215	11786	
250	10	810	1140	1690	2560	5250	1105	1736	2638	3093	5910	11128	13222	
300	12	1310	1870	2800	4290	7200	1502	2388	2929	4282	10137	16103	20075	
350	14	1910	2740	4110	6320	9860	1946	3224	3971	7458	14141	24518	/	
400	16	2860	4150	6300	9750	14500	3164	5139	6307	9310	18866	29630	/	
450	18	4500	6500	8900	13500	16900	3793	6194	7609	14639	22400	34392	/	
500	20	5860	7800	12000	18800	19000	4769	7826	9623	20011	28544	40198	/	
550	22	/	/	/	/	/	5695	9454	11651	24785	42427	/	/	
600	24	8920	13210	20380	31820	42500	7529	12958	15900	31226	43276	65351	/	
650	26	/	/	/	/	/	8693	14394	17727	35184	47580	/	/	
700	28	13320	19380	30670	48020	58000	9832	15620	20182	38987	52486	/	/	
750	30	/	/	/	/	/	11172	18703	23086	41832	56210	/	/	
800	32	24000	35420	55200	88830	82000	12494	21030	25985	45199	60849	/	/	
850	34	/	/	/	/	/	21148	31558	33000	48401	65244	/	/	
900	36	34960	52670	82700	134000	/	22987	34170	36045	52262	70355	/	/	
1000	40	43420	66700	102820	162210	/	26059	39115	43990	60197	/	/	/	
1050	42	/	/	/	/	/	28149	42414	50300	65496	/	/	/	
1200	48	/	/	/	/	/	42776	71868	80302	118938	/	/	/	
1350	54	/	/	/	/	/	70276	91238	116000	144342	/	/	/	
1400	56	/	/	/	/	/	85654	108550	129900	169230	/	/	/	
1500	60	/	/	/	/	/	118000	122820	178200	216270	/	/	/	

产品性能规范 Product Performance Specification

性能规范 Performance specification		公称通径 Nominal diameter (MPa)					压力等级 Pressure level (Class)							
		1.6	2.5	4.0	6.4	10.0	150	300	400	600	900	1500	2500	
试验压力 (MPa) Test pressure	强度试验 Strength test	2.4	3.75	6.0	9.6	15.0	2.93	7.58	10.0	15.0	22.5	37.5	63.0	
	密封试验 Sealing test	1.78	2.75	4.4	7.04	11.0	2.07	5.52	7.31	11.03	16.5	27.5	46.2	
	气压试验 Air pressure test	0.6MPa												
适用温度 Applicable temperature		-196°C~550°C(注:不同工况温度,选用不同的材质) -196°C~550°C(Note: Different working conditions temperature, different materials are used)												
适用介质 Applicable medium		普通型 Normal type 水、蒸汽、石油、液化气、天然气等 Water, steam, petroleum, liquefied gas, natural gas, etc. 抗硫型 Sulfur resistant 含H <sub>2</sub> S、CO天然气、石油等 Contains H <sub>2</sub> S, CO, natural gas, oil, etc.												

固定球阀流量系数表 Fixed ball valve flow coefficient table

阀门的流量系数是衡量阀门流通能力的指标，流量系数值越大说明流体过阀门时的压力损失越小。流量系数值随阀门的尺寸/型式/结构而变化，不同类型和不同规格的阀门都要分别进行试验，才能确定该种阀门的流量系数值。对于同样结构的阀门，流体流过阀门的方向不同，流量系数值也有变化。这种变化一般是由于压力恢复不同而造成的。

下表为固定球阀的流量系数，CV值表示在1磅/英寸<sup>2</sup>(0.006894757MPa) 压力下+6° F(+16)的水，每分钟流过阀门的美国加伦数。

The flow coefficient of a valve is an index to measure the flow capacity of the valve. The larger the value of the flow coefficient, the smaller the pressure loss when the fluid passes through the valve. The value of the flow coefficient varies with the size/type/structure of the valve. Valves of different types and specifications must be tested separately to determine the value of the flow coefficient of the valve. For the valve of the same structure, the flow coefficient value is also changed according to the direction of the fluid flowing through the valve. This change is generally caused by different pressure recovery.

The following table shows the flow coefficient of a fixed ball valve. The CV value represents the number of US gallons per minute of water flowing through the valve at +6° F (+16) under a pressure drop of 1 psig (0.006894757MPa).

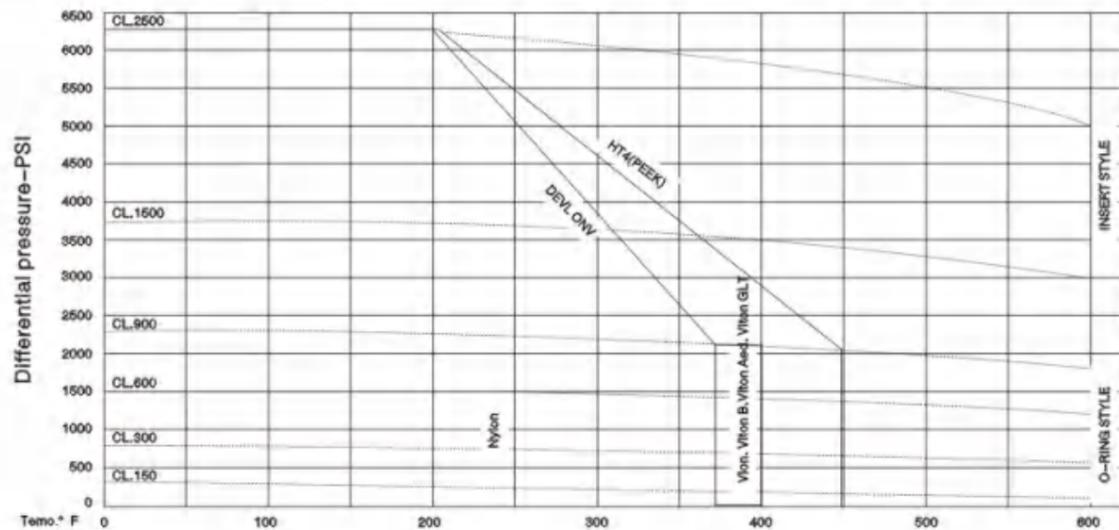
CV值 CV value

口径 Size		2" FB	3" RB	3" FB	4" RB	4" FB	6" RB	6" FB	6" RB
		50	80 × 50	80	100 × 80	100	150 × 100	150	200 × 150
压力等级 Pressure level	150	500	180	1350	545	2500	790	5300	1945
	300	500	195	1350	535	2500	765	5300	1945
	600	500	180	1350	550	2500	745	5300	2220
	900	500	187	1350	512	2500	740	5300	2035
	2500	330	187	1350	510	2500	742	4167	2033
口径 Size		8" FB	10" RB	10" FB	12" RB	12" FB	14" RB	14" FB	16" RB
		200	250 × 200	250	300 × 250	300	350 × 300	350	400 × 300
压力等级 Pressure level	150	10500	4050	17500	6900	26300	13100	31850	14600
	300	10500	4040	17500	7100	26300	13200	30050	14580
	600	10500	4065	17500	7150	26300	14350	28400	14350
	900	10500	4061	17500	7136	26300	14290	26803	14313
	2500	8013	4051	13309	7117	17073	14180	24276	14247
口径 Size		16" FB	18" RB	18" FB	20" RB	20" FB	22" FB	24" RB	24" FB
		400	450 × 400	450	500 × 400	500	550	600 × 500	600
压力等级 Pressure level	150	43300	/	57300	27750	74500	89700	44700	112300
	300	41700	/	55370	28050	72300	85350	44850	109150
	600	38150	/	50950	29500	65600	77600	48900	98150
	900	36705	/	48703	29443	62504	/	48713	86252
	1500	33215	/	43402	29253	55931	/	/	/
口径 Size		26" FB	28" RB	30" RB	30" FB	32" FB	34" FB	36" RB	36" FB
		550	700	750 × 600	750	800	850	900 × 750	900
压力等级 Pressure level	150	128300	151750	76000	179300	199750	225000	123000	258300
	300	123050	146050	75900	171200	187700	214900	121550	243500
	600	114050	136500	73850	158900	175000	196500	118300	226300
	900	102940	121201	71500	140093	159420	181137	103083	226033
口径 Size		40" FB	42" FB	48	54	56	60	/	/
		1000	1050	1200	1350	1400	1500	/	/
压力等级 Pressure level	150	323000	343000	460500	/	/	/	/	/
	300	309000	340000	460300	/	/	/	/	/
	600	28500	309000	438500	/	/	/	/	/
	900	/	/	/	/	/	/	/	/

密封阀座材料性能数据表 Sealing valve seat material performance data sheet

测试标准 Test standard	测试项目 Test items	单位 Unit	PEEK	NOLON	DEVLON	PPL	PTFE	PTFE+石墨 PTFE+graphite	PTFE+石墨 PTFE+graphite	NYLON66
D638	拉伸强度 Tensile strength 23°C/-40°C	MPa	93.08	75/100	79.92/ 109.52	72	24.82	25	24.2	60/80
D638	断裂伸长率 Elongation at break 23°C	%	50	10/30	5.37	6/8	300	150	105	60
D785	硬度 Hardness	邵氏D 邵氏R	/ 120	78 110/120	78/80 114	80 /	56 /	58 /	65 /	78 118
D790	弯曲强度 Bending strength	MPa	166.71	140	121.55	176	/	/	23.7	117
D621	符合下变形 Conform to the deformation	%	~0	1.2	1.0/2.0	0.78	14/48	8.8	5.5	1.4
E831	线膨胀系数 Linear expansion coefficient expansion	1/K	$0.46 \times 10^{-4}$	$0.6 \times 10^{-4}$	$1.1 \times 10^{-4}$	$0.43 \times 10^{-4}$	$1.2 \times 10^{-4}$	$1 \times 10^{-4}$	$1 \times 10^{-4}$	$0.7 \times 10^{-4}$
E648	热变形温度 Heat distortion temperature 1.82MPa/0.46MPa	°C	160 /	150/190 /	93 209	163 /	55 132	63 /	78 /	90 235
D792	密度 Density	G/cm <sup>3</sup>	1.34~1.36	1.15	1.14	1.48	2.20	2.22	2.1	1.12
D570	24hours吸水率 24hours water absorption	%	0.13	0.7	0.1	0.2	0.01	0.015	0.015	1.2
D695	抗拉强度 Tensile strength	MPa	142	140	140	117	35	45	52	/
D695	压缩强度 Compressive strength	MPa	/	120	88.9	/	11.7	/	/	75.8

密封阀座的压力-温度特性值 Pressure-temperature characteristic value of the sealing valve seat



上表中给了nylon、devlony、PEEK、viton等材料的温度压力值，其中150Lb、300Lb、600Lb的温度压力值同样适用于O型密封圈形式的阀座设计。

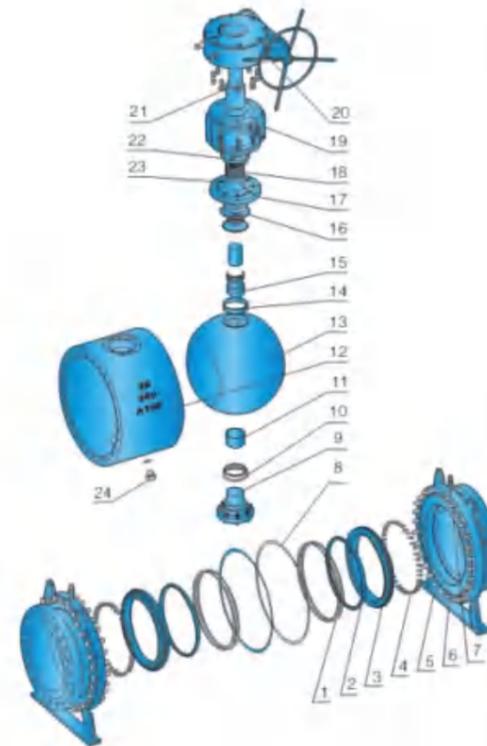
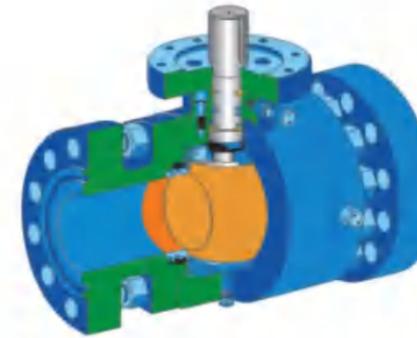
The temperature and pressure values of nylon, devlony, PEEK, viton and other materials are given in the above table. Among them, the temperature and pressure values of 150Lb, 300Lb, and 600Lb are also applicable to the valve seat design of O-ring seal.

技术规范 Specification

设计标准: API 6D  
 结构长度: API 6D ASME B16.10  
 连接尺寸: ASME B16.5 ASME B16.47  
 试验和检验: API 598  
 Design standard: API 6D  
 Structure length: API 6D ASME B16.10  
 Connection size: ASME B16.5 ASME B16.47  
 Test and inspection: API 598

主要零件材质表 Material table of main parts

序号 No.	零件名称 Part name	材质 Material
		ASTM
1	O型圈 O-ring	Viton
2	密封圈 Sealing ring	PTFE
3	阀座 Seat*	A105+ENP
4	弹簧 Spring	Inconel X-750
5	螺柱 Stud	A193-B7
6	左右体 Left right body	A105
7	注脂阀 Grease valve	Assembled
8	垫片 Plastic sheet	柔性石墨+不锈钢 Flexible graphite + stainless steel
9	下阀杆 Lower stem*	柔性石墨+不锈钢 Flexible graphite + stainless steel
10	垫片 Plastic sheet	A182-F6a
11	衬套 Bushing	F304+PTFE
12	阀体 Body	A105
13	球体 Ball*	A105+ENP
14	衬套 Bushing	F304+PTFE
15	上阀杆 Upper stem*	A182-F6a
16	垫片 Upper stem	柔性石墨+不锈钢 Flexible graphite + stainless steel
17	阀盖 Bonnet	A105
18	填料 Packing	柔性石墨+不锈钢 Flexible graphite + stainless steel
19	支架 Bractet	A216-WCB
20	驱动装置 Drive device	Assembled
21	连接套 Connecting sleeve	AISI C1045
22	填料压盖 Packing gland	A216-WCB
23	定位销 Positioning pin	A276-410
24	排污堵头 Drain plug	A105+ZN



注:

- 1、系列阀门连接法兰端尺寸可根据用户要求设计制造。
- 2、DN>1000 (40")阀门设计标准按《长输管线阀门技术条件》。

Note:

1. The size of the flange end of the series valve connection can be designed and manufactured according to user requirements.
2. DN>1000 (40") valve design standard is in accordance with "Technical Conditions for Long-distance Pipeline Valves".

注: \*抗硫型阀门的该零件的材质为ASTM (A276-321);

\*\*抗硫型阀门的该零件的材质为ASTM (A182-304、CF8+Ni.P);

系列阀门主要零部件及密封面的材质可根据实际工况条件或用户特殊要求设计选用。

Note: \* The material of this part of the anti-sulfur valve is ASTM (A276-321);

\*\* The material of this part of the anti-sulfur valve is ASTM (A182-304, CF8+Ni.P);  
 The materials of the main parts and sealing surfaces of the series valves can be designed and selected according to the actual working conditions or the special requirements of users.

## 固定式铸钢球阀 Fixed Cast Steel Ball Valve

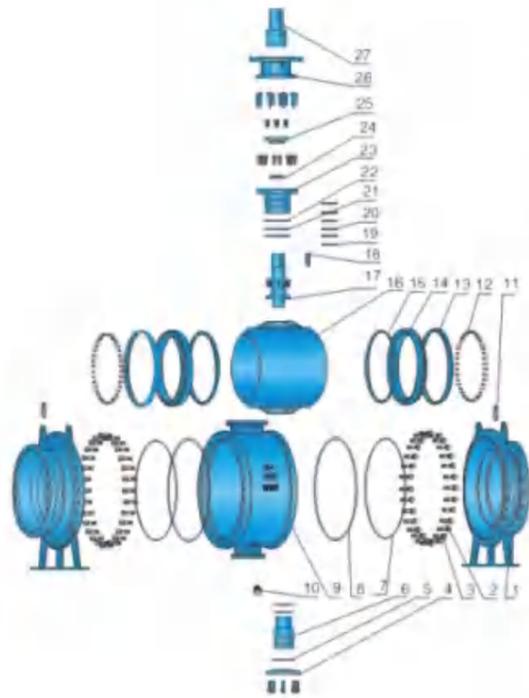
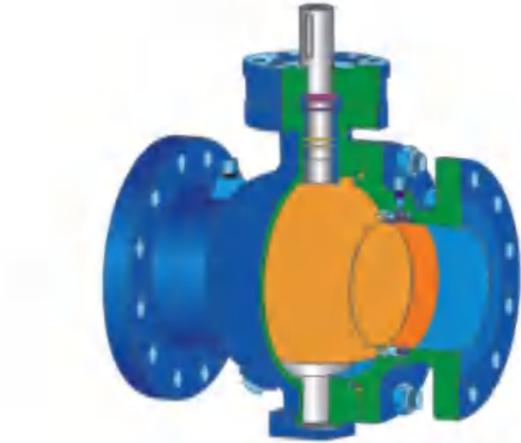
www.growthfluid.com

### 技术规范 Specification

设计标准: API 6D  
 结构长度: API 6D ASME B16.10  
 连接尺寸: ASME B16.5 ASME B16.47  
 试验和检验: API 598  
 Design standard: API 6D  
 Structure length: API 6D ASME B16.10  
 Connection size: ASME B16.5 ASME B16.47  
 Test and Inspection: API 598

### 主要零件材质表 Material table of main parts

序号 No.	零件名称 Part name	材质 Material
		ASTM
1	左右体 Left right body	A216-WCB
2	螺栓 Bolt	A193-B7
3	螺母 Nut	A194-2H
4	底盖 Bottom cover	A105
5	垫片 Gasket	柔性石墨+不锈钢 Flexible graphite + stainless steel
6	下阀杆 Lower stem*	A182-F6a
7	O型圈 O-ring	Viton
8	垫片 Gasket	柔性石墨+不锈钢 Flexible graphite + stainless steel
9	阀体 Body	A216-WCB
10	排污堵头 Drain plug	A105+ZN
11	注脂阀 Grease valve	Assembled
12	弹簧 Spring	Inconel X-750
13	O型圈 O-ring	Viton
14	阀座 Seat	A105+ENP
15	密封圈 Seal ring	PTFE
16	球体 Ball*	A105+ENP
17	上阀杆 Upper stem**	A182-F6a
18	键 key	AISI C1045
19	填料垫 Plastic packing	A276-420
20	填料垫 Padding	柔性石墨 Flexible graphite
21	O型圈 O-ring	Viton
22	垫片 Gasket	柔性石墨+不锈钢 Flexible graphite + stainless steel
23	阀盖 Bonnet	A216+WCB
24	O型圈 O-ring	Viton
25	填料压盖 Packing gland	A216-WCB
26	支架 Bractet	A216-WCB
27	连接套 Connecting sleeve	AISI C1045



注:

1. 系列阀门连接法兰端尺寸可根据用户要求设计制造。
2. DN>1000 (40") 阀门设计标准按《长输管线阀门技术条件》。

Note:

1. The size of the flange end of the series valve connection can be designed and manufactured according to user requirements.
2. DN>1000 (40") valve design standard is in accordance with "Technical Conditions for Long-distance Pipeline Valves".

注: \*抗硫型阀门的该零件的材质为ASTM (A276-321);

\*\*抗硫型阀门的该零件的材质为ASTM (A182-304, CF8+Ni.P);

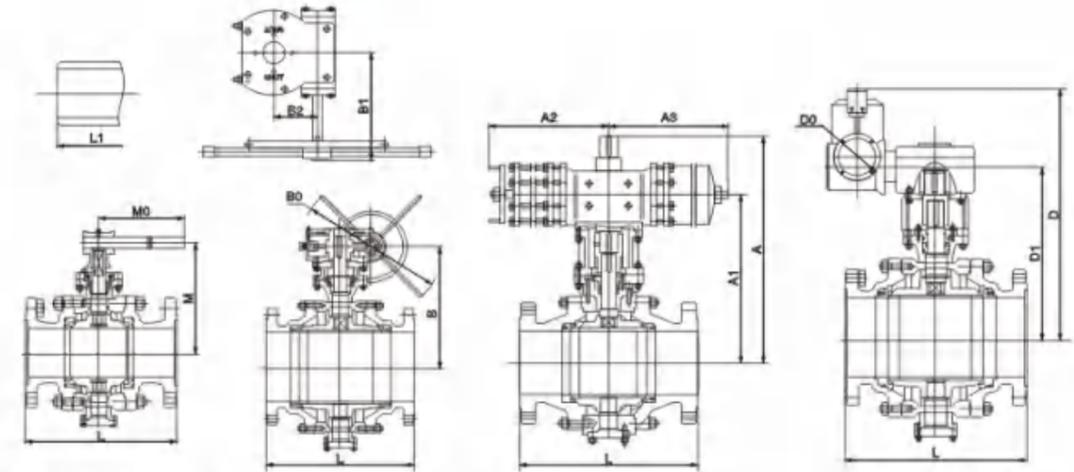
系列阀门主要零部件及密封面的材质可根据实际工况条件或用户特殊要求设计选用。

Note: \* The material of this part of the anti-sulfur valve is ASTM (A276-321);

\*\* The material of this part of the anti-sulfur valve is ASTM (A182-304, CF8+Ni.P);

The materials of the main parts and sealing surfaces of the series valves can be designed and selected according to the actual working conditions or the special requirements of users.

## 全径固定球阀 Full Diameter Fixed Ball Valve



手柄操作 Handle operation 蜗轮操作 Worm gear operation 气动操作 Pneumatic operation 电动操作 Electric operation

### 主要外形及连接尺寸 Main shape and connection size

PN1.6MPa Class 150

口径 Size		L			d	手动 Manual		蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		M	M0	B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
50	2	178	216	191	49	107	230	/	/	/	/	217	174	89	181	/	/	/	12	11
65	2 1/2	191	241	203	62	125	400	/	/	/	/	308	248	148	257	/	/	/	16	15.3
80	3	203	283	216	74	152	400	/	/	/	/	318	258	148	257	/	/	/	22	21.3
100	4	229	305	241	100	178	650	/	/	/	/	407	322	287	287	/	/	/	35	34
125	5	356	381	/	125	252	1050	/	/	/	/	480	395	287	287	/	/	/	58	55.4
150	6	394	457	406	150	272	1050	378	400	200	106	562	457	378	378	554	337	508	74	72
200	8	457	521	470	201	/	/	421	400	200	108	700	595	378	378	606	421	508	205	201
250	10	533	559	546	252	/	/	482	400	200	108	735	630	378	378	667	482	508	322	310
300	12	610	635	622	303	/	/	549	600	330	144	858	728	530	530	734	549	508	460	447
350	14	686	762	699	334	/	/	582	600	330	144	1013	883	530	530	784	582	508	576	536
400	16	762	838	775	385	/	/	687	800	370	220	1319	1154	680	680	889	687	508	864	814
450	18	864	914	876	436	/	/	730	800	370	220	1389	1224	680	680	981	730	305	1280	1210
500	20	914	991	927	487	/	/	772	800	370	220	1459	1294	680	680	1023	772	305	1600	1500
600	24	1067	1143	1080	589	/	/	995	800	515	279	1060	915	1455	1455	1268	995	305	3540	3000
650	26	1143	1245	/	633	/	/	1022	800	515	279	1234	1089	1455	1455	1334	1071	305	3930	3240
700	28	1245	1346	/	684	/	/	1088	800	515	279	1140	980	1665	1665	1459	1155	305	4500	3710
750	30	1295	1397	/	735	/	/	1153	800	515	279	1195	1035	1665	1665	1515	1211	305	5370	4530
800	32	1372	1524	/	779	/	/	1223	800	570	368	1338	1149	1960	1960	1649	1316	458	5940	4870
850	34	1473	1626	/	830	/	/	1307	800	570	368	/	/	/	/	1694	1361	458	6615	5305
900	36	1524	1727	/	874	/	/	1374	800	570	368	/	/	/	/	1766	1433	458	7540	6010
1000	40	1753	1956	/	976	/	/	1488	960	575	220	/	/	/	/	1854	1521	458	9320	7400
1050	42	1855	2083	/	1020	/	/	1532	960	575	220	/	/	/	/	2036	1586	610	14450	12150
1200	48	2134	2388	/	1166	/	/	1670	960	575	220	/	/	/	/	2185	1735	610	19200	16000

注: 连接法兰尺寸、焊接端尺寸见附录(A)

表格L栏中, RF表示突面法兰结构长度, BW表示焊接结构长度, RJ表示环连接形式结构长度。

Note: The dimensions of the connecting flange and the dimensions of the welded end are shown in column L of the table in Appendix (A).

Therefore means the length of the raised face flange structure, BW means the length of the welded structure, and RJ means the length of the ring connection form.

**全径固定球阀**  
Full Bore Trunnion Mounted Ball Valve

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主要外形及连接尺寸 Main shape and connection size

PN2.5/4.0MPa Class 300

通径 Size		L			d	手动 Manual		蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		M	M0	B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
50	2	216	216	232	49	107	230	/	/	/	/	234	174	148	257	/	/	/	15	11
65	2 1/2	241	241	257	62	125	400	/	/	/	/	308	248	148	257	/	/	/	24	18
80	3	283	283	298	74	152	400	/	/	/	/	343	258	287	287	/	/	/	30	22
100	4	305	305	321	100	178	650	/	/	/	/	407	322	287	287	/	/	/	55	45
125	5	381	381	/	125	252	1050	/	/	/	/	500	395	378	378	/	/	/	87	89
150	6	403	457	419	150	272	1050	378	400	200	106	562	457	378	378	522	337	508	118	98
200	8	502	521	517	201	/	/	421	400	200	108	700	595	378	378	606	421	508	255	225
250	10	568	589	584	252	/	/	482	600	330	108	780	630	530	530	667	482	508	370	330
300	12	648	635	664	303	/	/	549	600	330	144	858	728	530	530	751	549	508	533	493
350	14	762	762	778	334	/	/	582	800	370	144	1048	883	680	680	784	582	305	640	600
400	16	838	838	854	385	/	/	687	800	370	220	1319	1154	680	680	983	687	305	1030	930
450	18	914	914	930	436	/	/	730	800	370	220	1389	1224	1455	1455	981	730	305	1542	1402
500	20	991	991	1010	487	/	/	772	800	515	220	1459	1294	1455	1455	1045	772	305	2100	1900
600	24	1143	1143	1165	589	/	/	995	800	515	279	1075	915	1665	1665	1268	995	305	3430	2860
650	26	1245	1245	1270	633	/	/	1022	800	515	279	1249	1089	1665	1665	1375	1071	305	4340	3620
700	28	1346	1346	1372	684	/	/	1088	800	515	279	1140	980	1665	1665	1459	1155	305	4960	4140
750	30	1397	1397	1422	735	/	/	1153	800	515	279	1195	1035	1960	1960	1515	1211	305	5950	4960
800	32	1524	1524	1553	779	/	/	1223	800	570	368	1336	1149	1960	1960	1649	1316	458	6760	5640
850	34	1626	1626	1654	830	/	/	1307	800	570	368	/	/	/	/	1694	1361	458	8280	6900
900	36	1727	1727	1756	874	/	/	1374	960	570	368	/	/	/	/	1883	1433	458	9640	8040
1000	40	1956	1956	/	976	/	/	1468	960	575	220	/	/	/	/	1971	1521	458	11730	9680
1050	42	2089	2089	/	1020	/	/	1532	960	630	220	/	/	/	/	2036	1586	610	16300	13700
1200	48	2170	2170	/	1166	/	/	1670	960	630	220	/	/	/	/	2255	1735	610	20160	16800

主要外形及连接尺寸 Main shape and connection size

PN6.4-10.0MPa Class 600

通径 Size		L			d	手动 Manual		蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		M	M0	B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
50	2	292	292	295	49	107	400	/	/	/	/	234	174	148	148	/	/	/	35	29
65	2 1/2	330	330	333	62	125	650	/	/	/	/	333	248	287	287	/	/	/	38	31
80	3	356	356	359	74	152	650	/	/	/	/	343	258	287	287	/	/	/	55	45
100	4	432	432	435	100	178	1050	/	/	/	/	407	322	287	287	/	/	/	102	78
125	5	508	508	/	125	/	/	/	/	/	/	500	395	378	378	/	/	/	160	120
150	6	559	559	562	150	/	/	389	400	200	108	562	457	378	378	522	337	608	232	182
200	8	660	660	664	201	/	/	449	600	330	144	725	595	530	530	606	421	508	390	310
250	10	787	787	791	252	/	/	497	600	330	144	760	630	530	530	684	482	508	710	590
300	12	838	838	841	303	/	/	550	800	370	220	893	728	680	680	751	549	508	960	790
350	14	889	889	892	334	/	/	582	800	370	220	1048	883	1455	1455	784	582	305	1700	1490
400	16	991	991	994	385	/	/	687	800	370	220	1319	1154	1455	1455	980	687	305	1970	1720
450	18	1092	1092	1095	436	/	/	730	800	515	279	1384	1224	1665	1665	1003	730	305	2180	1830
500	20	1194	1194	1200	487	/	/	780	800	515	279	1459	1294	1665	1665	1045	772	305	3250	2770
600	24	1397	1397	1407	589	/	/	995	800	515	279	1075	915	1665	1665	1328	995	305	4880	4030
650	26	1448	1448	1461	633	/	/	1038	800	515	279	1249	1089	1960	1960	1375	1071	305	5830	4840
700	28	1549	1549	1562	684	/	/	1088	800	570	368	1140	980	1960	1960	1459	1155	305	670	5810
750	30	1651	1651	1664	735	/	/	1157	800	570	368	/	/	/	/	1661	1211	305	7450	6210
800	32	1778	1778	1794	779	/	/	1190	800	570	368	/	/	/	/	1766	1316	458	8470	7060
850	34	1930	1930	1946	830	/	/	1246	960	575	220	/	/	/	/	1894	1361	458	10360	8640
900	36	2083	2083	2099	874	/	/	1292	960	575	220	/	/	/	/	1883	1433	458	12080	10070
1000	40	2080	2080	/	976	/	/	1361	960	575	220	/	/	/	/	1971	1521	458	15420	12850
1050	42	2175	2175	/	1020	/	/	1423	960	575	220	/	/	/	/	2036	1586	610	18180	15150
1200	48	2435	2435	/	1166	/	/	1568	960	630	295	/	/	/	/	2255	1735	610	25260	21050

注：连接法兰尺寸、焊接端尺寸见附录(A)

表格L栏中，RF表示突面法兰结构长度，BW表示焊接结构长度，RJ表示环连接形式结构长度。

Note: The dimensions of the connecting flange and the dimensions of the welded end are shown in column L of the table in Appendix (A).

Therefore means the length of the raised face flange structure, BW means the length of the welded structure, and RJ means the length of the ring connection form.

**全径固定球阀**  
Full Bore Trunnion Mounted Ball Valve



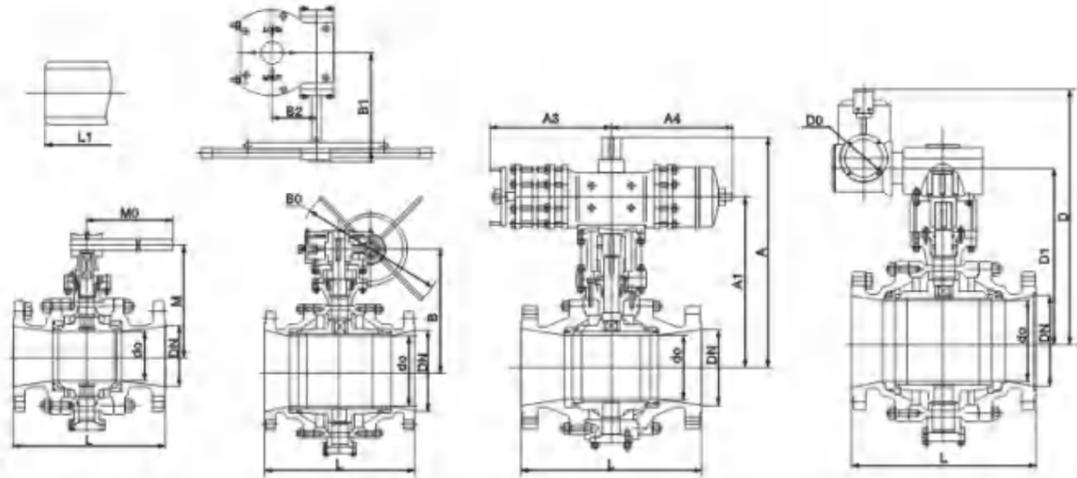
主要外形及连接尺寸 Main shape and connection size

PN15.0MPa Class 900

通径 Size		L			d	手动 Manual		蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		M	M0	B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
50	2	68	388	371	49	123	650	/	/	/	/	234	174	148	257	/	/	/	50	40
65	2 1/2	19	419	422	62	136	800	/	/	/	/	308	248	148	257	/	/	/	75	60
80	3	81	381	384	74	/	/	185	400	200	108	343	258	287	287	/	/	/	92	70
100	4	57	457	460	100	/	/	225	400	200	108	427	322	378	378	/	/	/	146	109
125	5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
150	6	10	610	613	150	/	/	389	600	330	144	587	457	530	530	522	337	508	339	264
200	8	37	737	740	201	/	/	449	600	330	144	725	595	530	530	608	421	508	640	540
250	10	38	838	841	252	/	/	497	800	370	220	795	630	680	680	684	482	508	960	800
300	12	65	965	968	303	/	/	550	800	370	220	837	728	1455	1455	822	549	508	1330	1110
350	14	029	1029	1038	322	/	/	582	800	370	220	1048	883	1455	1455	855	582	305	1640	1370
400	16	130	1130	1140	373	/	/	687	800	515	279	1314	1154	1665	1665	991	687	305	2240	1910
450	18	219	1219	1232	423	/	/	730	800	515	279	1384	1224	1665	1665	1003	730	305	2770	2310
500	20	321	1321	1334	471	/	/	780	800	515	279	1459	1294	1665	1665	1105	772	305	3740	3120
600	24	549	1549	1568	570	/	/	995	800	515	279	1075	915	1960	1960	1445	995	305	5560	4640
650	26	651	1651	1673	617	/	/	1038	800	570	368	1249	1089	1960	1960	1521	1071	305	7070	5880
700	28	753	1753	1775	665	/	/	1088	800	570	368	1140	980	1960	1960	1605	1155	305	8070	6730
750	30	880	1880	1902	712	/	/	1157	800	570	368	/	/	/	/	1661	1211	305	9680	8070
800	32	032	2032	2054	760	/	/	1190	960	575	220	/	/	/	/	1766	1316	458	11000	9170
850	34	159	2159	2188	808	/	/	1246	960	575	220	/	/	/	/	1881	1361	458	13470	11230
900	36	286	2286	2315	855	/	/	1292	960	575	220	/	/	/	/	1953	1433	458		

**缩径固定球阀**  
Reduced Diameter Fixed Ball Valve

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手柄操作 Handle operation    蜗轮操作 Worm gear operation    气动操作 Pneumatic operation    电动操作 Electric operation

**主要外形及连接尺寸 Main shape and connection size**

**PN1.6MPa Class 150**

通径 Size		L			d	手动 Manual		蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		M	M0	B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
80	3x2	203	283	216	49	107	230	/	/	/	/	217	174	89	181	/	/	/	19	15
100	4x3	229	305	241	74	152	400	/	/	/	/	318	258	148	257	/	/	/	32	24
150	6x4	394	457	406	100	178	650	/	/	/	/	407	322	287	287	/	/	/	55	48
200	8x6	457	521	470	150	272	1050	378	400	200	106	562	457	378	378	554	337	508	73	69
250	10x8	533	559	546	201	/	/	421	400	200	108	700	595	378	378	606	421	508	122	110
300	12x10	610	635	622	252	/	/	482	400	200	108	735	630	378	378	667	482	508	310	297
350	14x12	686	762	699	303	/	/	549	600	330	144	858	728	530	530	734	549	508	470	430
400	16x14	762	838	775	334	/	/	607	600	330	144	888	758	530	530	774	589	508	590	540
450	18x16	864	914	876	385	/	/	687	800	370	220	1319	1154	680	680	889	687	508	830	760
500	20x18	914	991	927	436	/	/	713	800	370	220	1354	1180	680	680	909	708	508	1040	940
600	24x20	1067	1143	1080	487	/	/	772	800	370	220	1459	1294	680	680	1023	772	305	1650	1110

**主要外形及连接尺寸 Main shape and connection size**

**PN2.5/4.0MPa Class 300**

通径 Size		L			d	手动 Manual		蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		M	M0	B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
80	3x2	283	283	298	49	107	230	/	/	/	/	234	174	148	257	/	/	/	28	20
100	4x3	305	305	321	74	152	400	/	/	/	/	343	258	287	287	/	/	/	38	28
150	6x4	403	457	419	100	178	650	/	/	/	/	407	322	287	287	/	/	/	67	54
200	8x6	502	521	517	150	272	1050	378	400	200	106	562	457	378	378	522	337	508	95	83
250	10x8	568	568	584	201	/	/	421	400	200	108	700	595	378	378	606	421	508	144	125
300	12x10	648	648	664	252	/	/	482	400	200	108	760	630	530	530	667	482	508	380	340
350	14x12	762	762	778	303	/	/	549	600	330	144	858	728	530	530	751	549	508	580	540
400	16x14	838	838	854	334	/	/	607	700	330	144	909	758	530	530	774	589	508	780	680
450	18x16	914	914	930	385	/	/	687	800	370	220	1319	1154	680	680	938	687	305	1190	1050
500	20x18	991	991	1010	436	/	/	713	800	370	220	1354	1180	680	680	909	708	508	1880	1690
600	24x20	1143	1143	1165	487	/	/	772	800	370	220	1459	1294	1455	1045	772	305	2750	2180	

注：连接法兰尺寸、焊接端尺寸见附录(A)

Note: See Appendix (A) for the dimensions of the connecting flange and the dimensions of the welding end

**缩径固定球阀**  
Reduced Diameter Fixed Ball Valve



**主要外形及连接尺寸 Main shape and connection size**

**PN10.0MPa Class 600**

通径 Size		L			d	手动 Manual		蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		M	M0	B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
80	3x2	356	356	359	49	107	400	/	/	/	/	234	174	148	257	/	/	/	44	34
100	4x3	432	432	435	74	152	650	/	/	/	/	343	258	287	287	/	/	/	89	65
150	6x4	559	559	562	100	178	1050	/	/	/	/	407	322	287	287	/	/	/	160	110
200	8x6	660	660	664	150	/	/	388	400	200	108	500	457	378	378	522	337	508	310	240
250	10x8	787	787	791	201	/	/	449	600	330	144	562	595	378	378	606	421	508	570	500
300	12x10	838	838	841	252	/	/	497	600	330	144	725	630	530	530	684	482	508	850	680
350	14x12	889	889	892	303	/	/	550	800	370	220	760	630	530	530	751	549	508	1180	970
400	16x14	991	991	994	334	/	/	550	800	370	220	760	758	530	530	751	549	508	1390	1140
450	18x16	1092	1092	1095	385	/	/	687	800	370	220	1319	1154	1455	1455	960	687	305	1765	1415
500	20x18	1194	1194	1200	436	/	/	687	800	370	220	1319	1154	1455	1455	960	687	305	2170	1690
600	24x20	1397	1397	1407	487	/	/	780	800	515	279	1459	1294	1665	1665	1045	772	305	3390	2540

**主要外形及连接尺寸 Main shape and connection size**

**PN15.0MPa Class 900**

通径 Size		L			d	手动 Manual		蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		M	M0	B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
80	3x2	381	381	384	49	123	650	/	/	/	/	234	174	148	257	/	/	/	58	48
100	4x3	457	457	460	74	/	/	185	400	200	106	343	258	287	287	/	/	/	105	90
150	6x4	610	610	613	100	/	/	225	400	200	108	427	322	378	378	/	/	/	230	162
200	8x6	737	737	740	150	/	/	389	600	330	144	587	457	530	530	522	337	508	470	370
250	10x8	838	838	841	201	/	/	449	600	330	144	725	595	530	530	606	421	508	580	410
300	12x10	965	965	968	252	/	/	497	800	370	220	795	630	680	680	684	482	508	1200	1030
350	14x12	1029	1029	1038	303	/	/	550	800	370	220	837	728	1455	1455	822	549	508	1695	1440
400	16x14	1130	1130	1140	322	/	/	550	800	370	220	837	728	1455	1455	822	549	508	1790	1480
450	18x16	1219	1219	1232	373	/	/	687	800	515	279	1314	1154	1665	1665	991	687	305	2520	2100
500	20x18	1321	1321	1334	423	/	/	687	800	515	279	1314	1154	1665	1665	991	687	305	2970	2430
600	24x20	1549	1549	1568	471	/	/	780	800	515	279	1459	1294	1665	1665	1105	772	305	5580	4520

**主要外形及连接尺寸 Main shape and connection size**

**PN25.0MPa Class 1500**

通径 Size		L			d	蜗轮蜗杆 Worm gear				气动 Pneumatic				电动 Electric			WT(kg)	
DN	NPS	RF	BW	RJ		B	B0	B1	B2	A	A1	A3	A4	D	D1	D0	RF	WE
80	3x2	470	470	473	49	154	400	200	106	259	174	287	287	/	/	/	75	49
100	4x3	546	546	549	74	187	600	330	144	363	258	378	378	/	/	/	130	73
150	6x4	705	705	711	100	217	600	330	144	452	322	530	530	/	/	/	300	181
200	8x6	832	832	841	144	346	800	370	220	587	457	530	530	522	337	508	615	491
250	10x8	991	991	1000	192	384	800	370	220	760	595	680	680	623	421	508	1085	879
300	12x10	1130	1130	1146	239	452	800	370	220	739	630	1455	1455	755	482	508	1850	1547
350	14x12	1257	1257	1276	287	512	800	515	279	837	728	1455	1455	822	549	508	2620	2214
400	16x14	1384	1384	1407	315	512	800	515	279	837	728	1455	1455	822	549	508	2890	2365
450	18x16	1537	1537	1559	360	601	800	515	279	1314	1154	1665	1665	1020	687	305	3856	3156
500	20x18	1664	1664	1686	406	601	800	515	279	1314	1154	1665	1665	1020	687	305	5005	4105
600	24x20	1943	1943	1972	454	727	800	570	368	1459	1294	1960	1960	1272	772	305	11377	9980

注：连接法兰尺寸、焊接端尺寸见附录(A)

Note: See Appendix (A) for the dimensions of the connecting flange and the dimensions of the welding end

**对焊固定球阀**  
Butt Welding Fixed Ball Valve

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**对焊固定球阀**  
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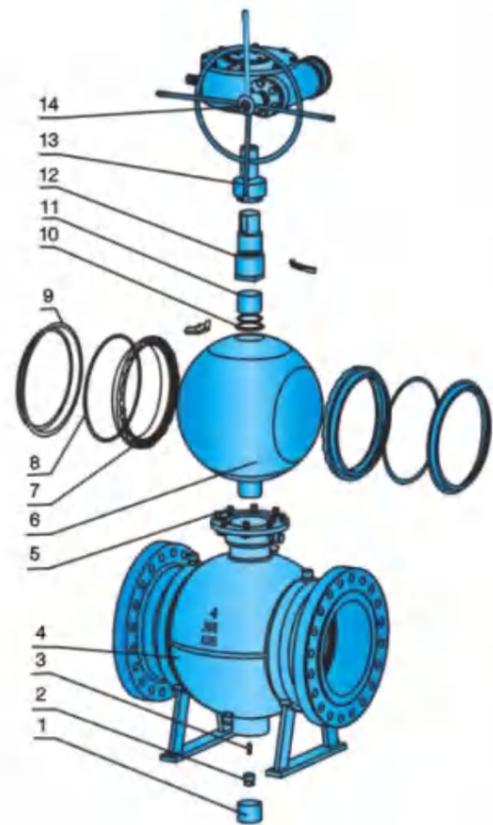


**技术规范 Specification**

设计标准: API 6D  
结构长度: API 6D ASME B16.10  
连接尺寸: ASME B16.5 ASME B16.47  
试验和检验: API 598、API 6D  
Design standard: API 6D  
Structure length: API 6D ASME B16.10  
Connection size: ASME B16.5 ASME B16.47  
Test and Inspection: API 598, API 6D

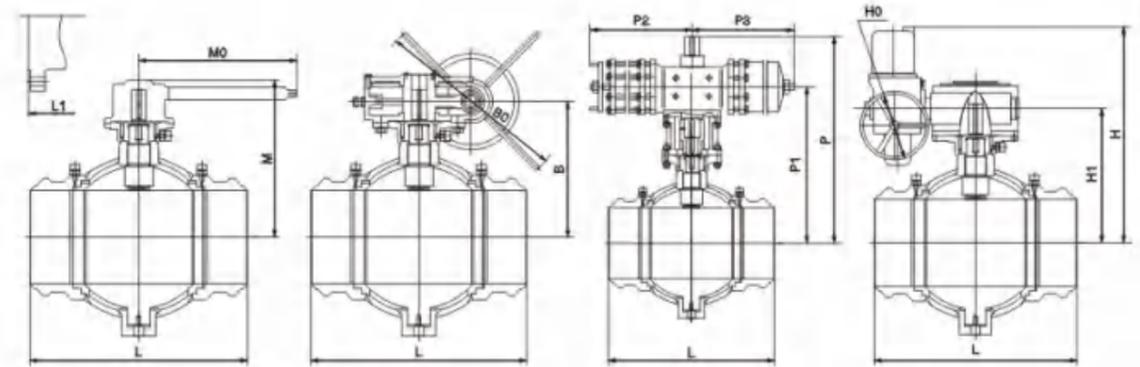
**主要零件材质表 Material table of main parts**

序号 No.	零件名称 Part name	材质 Material
		ASTM
1	衬套 Bushing	NiKeallum+PTFE
2	垫片 Gasket	A105
3	弹簧 Spring	InconelX-750
4	阀体 Body	A105
5	螺柱 Stud	A193-B7
6	球体 Ball**	A105+ENP
7	阀座 Seat	A105+ENP
8	密封圈 Sealing ring	PTFE
9	板簧 Leaf spring	AISI 9260
10	阀杆密封 Stem seal	PTFE
11	衬套 Bushing	NiKeallum+PTFE
12	阀杆 Stem*	A182-F6a
13	连接套 Connecting sleeve	AISI C 1045
14	驱动装置 Drive device	



注: \*抗硫型阀门的该零件的材质为ASTM (A276-321);  
\*\*抗硫型阀门的该零件的材质为ASTM (A182-304、CF8+Ni.P);  
系列阀门主要零部件及密封面的材质可根据实际工况条件或用户特殊要求设计选用。  
Note: \* The material of this part of the anti-sulfur valve is ASTM (A276-321);  
\*\* The material of this part of the anti-sulfur valve is ASTM (A182-304, CF8+Ni.P);  
The materials of the main parts and sealing surfaces of the series valves can be designed and selected according to the actual working conditions or the special requirements of users.

注:  
1. 系列阀门连接法兰端尺寸可根据用户要求设计制造。  
2. DN>1000 (40") 阀门设计标准按《长输管线阀门技术条件》。  
Note:  
1. The size of the flange end of the series valve connection can be designed and manufactured according to user requirements.  
2. DN>1000 (40") valve design standard is in accordance with "Technical Conditions for Long-distance Pipeline Valves".



手柄操作 Handle operation    蜗轮操作 Worm gear operation    气动操作 Pneumatic operation    电动操作 Electric operation

**主要外形及连接尺寸 Main shape and connection size**

**PN1.6MPa Class 150**

DN	mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1050	1200	1400	1500	
NPS	in	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	28	32	36	40	42	48	56	60	
法兰 Flange	L	216	241	283	305	381	457	521	559	635	762	838	914	991	1143	1348	1524	1727	1930	1829	2180	2300	2400	
对焊 Butt welding	L1	178	191	203	229	356	394	457	533	610	686	762	864	914	1067	1245	1372	1524	1721	1689	2100	2250	2400	
手动 Manual	H	107	125	152	178	300	330	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	W	230	350	400	450	700	750	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	kg	23	42	50	65	70	82	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
蜗轮蜗杆传动 Worm gear drive	H	/	/	/	/	/	/	337	385	414	447	510	538	585	665	730	930	990	1070	1260	1370	1480	1550	
	W	/	/	/	/	/	/	600	600	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
	Type	/	/	/	/	/	/	B	B	C	C	D	D	D	DA	DA	DB	DB	DC	DC	DD	DH	HD	
	kg	/	/	/	/	/	/	133	208	312	413	577	780	1028	1706	2534	3644	4986	6800	8500	11173	12900	15800	
气动 Pneumatic	H	269	379	389	479	552	666	804	839	972	1127	1485	1529	1599	1645	1160	1460	1510	1610	/	/	/	/	
	H1	174	248	258	322	395	457	595	630	728	883	1154	1224	1294	915	930	1100	1150	1250	/	/	/	/	
	L1	89	148	148	287	287	378	378	378	530	530	680	680	680	1455	1455	1665	1665	1960	/	/	/	/	
	L2	181	257	257	287	287	378	378	378	530	530	680	680	680	1455	1455	1665	1665	1960	/	/	/	/	
电动 Electric	Type	AG09	AG13	AG13	AW13	AW13	AW17	AW17	AW17	AW20	AW20	AW26	AW26	AW26	C1-366	C1-366	C2-480	C2-480	C3-600	/	/	/	/	
	H	/	/	/	/	/	435	480	532	600	610	670	760	763	903	982	1108	1445	1655	1954	2064	2174	2244	
	H1	/	/	/	/	/	215	262	315	320	360	420	510	590	630	725	835	880	970	1230	1340	1450	1520	
	W	/	/	/	/	/	200	200	200	280	280	280	305	305	305	400	400	460	460	600	600	600	600	
电动 Electric	Type	/	/	/	/	/	SMC-04+HBC	SMC-04+HBC	SMC-04+H1BC	SMC-04+H1BC	SMC-05+H2BC													
	kg	/	/	/	/	/	145	196	310	360	475	625	880	1200	2100	2750	4230	6000	7800	9000	12600	14000	17000	

**对焊固定球阀**  
Butt Welding Fixed Ball Valve

主要外形及连接尺寸 Main shape and connection size

PN2.5/4.0MPa Class 300

DN	mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1050	1200	1400	1500
NPS	in	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	28	32	36	40	42	48	56	60
法兰 Flange	L	216	241	283	305	381	457	521	559	635	762	838	914	991	1143	1346	1524	1727	2083	2050	2180	2300	2400
对焊 Butt welding	L1	216	241	283	305	381	403	502	568	648	762	838	914	991	1143	1346	1524	1727	2083	1960	2020	2250	2400
手动 Manual	H	107	125	152	178	300	330	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	W	230	400	400	600	750	800	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	kg	32	48	65	75	82	91	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
蜗轮蜗杆传动 Worm gear drive	H	/	/	/	/	/	278	375	480	465	510	538	660	830	880	930	990	1070	1260	1370	1480	1550	
	W	/	/	/	/	/	600	600	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
	Type	/	/	/	/	/	B	B	C	C	D	D	DA	DB	DC	DC	DD	DD	DD	DD	DD	DH	HD
气动 Pneumatic	H	269	379	452	579	595	595	736	942	994	1188	1280	1480	1554	1380	1430	1599	1790	1850	/	/	/	/
	H1	209	248	295	322	386	386	527	698	570	883	975	1080	1154	930	980	1149	1190	1250	/	/	/	/
	L1	148	148	287	287	378	378	378	530	530	680	680	680	1455	1455	1665	1665	1960	1960	/	/	/	/
电动 Electric	L2	181	257	287	287	378	378	378	530	530	680	680	680	1455	1455	1665	1665	1960	1960	/	/	/	/
	Type	AG13	AG13	AG13	AW13	AW17	AW17	AW20	AW20	AW28	AW28	C1-365	C1-365	C2-480	C2-480	C2-480	C3-600	C3-600	/	/	/	/	/
	kg	49	64	70	82	112	145	220	310	395	510	752	1000	1320	2200	3200	4520	6500	9100	/	/	/	/
手动 Manual	H	/	/	/	/	/	434	480	432	641	611	670	761	763	903	998	1108	1565	1655	2105	2245	2395	2470
	H1	/	/	/	/	/	217	263	315	360	360	420	510	590	670	725	835	880	970	1420	1560	1710	1785
	W	/	/	/	/	/	200	200	200	280	280	280	305	305	305	400	4600	460	460	600	600	600	600
蜗轮蜗杆传动 Worm gear drive	Type	/	/	/	/	/	SMC-04 +HBC	SMC-04 +HBC	SMC-04 +HBC	SMC-05 +HBC													
	kg	/	/	/	/	/	170	290	330	415	525	780	1200	1380	2400	3500	4630	6850	10600	11000	14000	15200	16100

主要外形及连接尺寸 Main shape and connection size

PN10.0MPa Class 600

DN	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1050	1200	1400	1500	
NPS	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	28	32	36	40	42	48	56	60	
法兰 Flange	L	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1778	2083	2337	2100	2400	2400	2700	
对焊 Butt welding	L1	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1778	2083	2337	2050	2180	2300	2400	
手动 Manual	H	108	155	197	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	W	500	650	650	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	kg	45	60	80	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
蜗轮蜗杆传动 Worm gear drive	H	/	/	/	115	180	254	325	392	390	455	590	630	830	960	1030	1171	1250	1260	1370	1480	1550	
	W	/	/	/	600	600	800	800	800	800	800	800	800	800	800	800	800	800	800	1000	1000	1000	1000
	Type	/	/	/	B	C	C	D	D	DA	DA	DB	DC	DD	DH	DH	DH	DH	DJ	DJ	DK	DK	DK
气动 Pneumatic	H	269	/	519	636	728	839	1014	1120	1224	1374	/	1490	1615	1760	/	/	/	/	/	/	/	/
	H1	209	/	295	479	519	595	770	815	1004	1154	/	1210	1335	1410	/	/	/	/	/	/	/	/
	L1	148	/	287	287	378	530	530	680	1445	1445	/	1665	1665	1960	/	/	/	/	/	/	/	/
电动 Electric	L2	257	/	287	287	378	530	530	680	1445	1445	/	1665	1665	1960	/	/	/	/	/	/	/	/
	Type	AG13	/	AW13	AW13	AW17	AW20	AW20	AW28	C1-365	C1-365	/	C2-480	C2-480	C2-480	/	/	/	/	/	/	/	/
	kg	60	/	105	112	160	220	320	470	610	890	/	1600	2700	4000	/	/	/	/	/	/	/	/
手动 Manual	H	/	/	/	/	480	532	641	651	670	761	763	943	998	1108	1238	1350	1400	1954	2064	2174	2244	
	H1	/	/	/	/	262	360	400	474	472	510	610	670	725	835	915	1050	1100	1230	1340	1450	1520	
	W	/	/	/	/	200	200	280	280	280	305	305	305	400	400	600	600	600	600	600	600	600	600
蜗轮蜗杆传动 Worm gear drive	Type	/	/	/	/	SMC-04 +HBC	SMC-05 +HBC																
	kg	/	/	/	/	175	240	350	485	625	920	1200	1280	2900	4350	5800	8200	11200	14100	18000	28000	24000	

**对焊固定球阀**  
Butt Welding Fixed Ball Valve

主要外形及连接尺寸 Main shape and connection size

PN15.0MPa Class 900

DN	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	750	800	900	1000	1200
NPS	in	2	2 1/2	3	4	6	8	10	1	14	16	18	20	24	30	32	36	40	48
法兰 Flange	L	368	419	381	457	610	737	838	965	1092	1130	1219	1321	1549	1780	2050	2050	2180	2600
对焊 Butt welding	L1	368	419	381	457	610	737	838	965	1092	1130	1219	1321	1549	1700	1780	1960	2100	2378
手动 Manual	H	217	241	259	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	W	650	650	650	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	kg	58	76	96	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
蜗轮蜗杆传动 Worm gear drive	H	/	/	/	177	244	274	382	452	515	602	706	714	736	1050	1090	1150	1230	1530
	W	/	/	/	600	800	800	800	800	800	800	800	800	800	800	1000	1000	1000	1000
	Type	/	/	/	B	/	C	D	D	DA	DB	DC	DD	DH	DH	DJ	DJ	DK	DK
气动 Pneumatic	H	519	/	728	842	1014	1120	1224	1374	1490	1615	1760	1760	/	/	/	/	/	
	H1	295	/	519	595	770	815	1004	1154	1210	1335	1410	1410	/	/	/	/	/	
	L1	287	/	378	530	530	680	1455	1455	1665	1665	1960	1960	/	/	/	/	/	
电动 Electric	L2	287	/	378	530	530	680	1455	1455	1665	1665	1960	1960	/	/	/	/	/	
	Type	AW17	/	AW17	AW20	AW28	AW28	C1-365	C1-365	C2-480	C2-480	C2-480	C2-480	/	/	/	/	/	
	kg	70	/	115	125	165	240	390	620	790	1240	1700	2250	3420	/	/	/	/	
手动 Manual	H	/	/	/	480	641	651	711	811	783	963	1058	1148	1238	1744	1784	1844	1294	2044
	H1	/	/	/	262	400	474	512	550	610	690	785	875	915	1020	1080	1120	1200	1320
	W	/	/	/	200	280	280	280	305	305	305	400	400	600	600	600	600	600	600
蜗轮蜗杆传动 Worm gear drive	Type	/	/	/	SMC-04 +HBC	SMC-05 +HBC													
	kg	/	/	/	128	175	265	395	635	812	1320	1750	2350	3560	4200	8100	11800	12500	20000

主要外形及连接尺寸 Main shape and connection size

PN25.0MPa Class 1500

DN	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
NPS	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
法兰 Flange	L	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	2043
对焊 Butt welding	L1	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	2043
手动 Manual	H	217	241	259	/	/	/	/	/	/	/	/	/	/
	W	650	650	650	/	/	/	/	/	/	/	/	/	/
	kg	75	82	105	/	/	/	/	/	/	/	/	/	/
蜗轮蜗杆传动 Worm gear drive	H	137	161	169	177	244	355	458	576	601	671	740	770	860
	W	600	600	600	600	800	800	800	800	800	800	800	800	800
	Type	A	A	B	B	C	D	D						

让每一只阀门具有灵魂，  
用做艺术品的心态制造阀门！

One soul in one valve,  
make valve artwork!

## 顶装式球阀 Top-mounted Ball Valve



## 顶装式球阀 Top-mounted Ball Valve



### 结构特点 Structure features

顶装式球阀是我公司消化吸收国外先进技术，并综合我公司多年的设计制造经验研制开发出来的新产品，技术水平达到国内一流，产品可与国际同行相媲美。它除了具有侧装固定球阀的特点外(见固定球阀)，还有以下几个特点：

- 1、整体式阀体设计，顶装式耳轴固定支持，法兰或对焊结构。
- 2、因科镍波纹弹簧使密封的金属阀座向球移动，具有进口和出口双向密封功能。
- 3、采用独特的阀座可缩回技术，在线可更换球杆，阀杆密封圈金属阀及波纹较长；扭矩减小到最小，便于阀门操作。
- 4、便于维修，安装方便，使用寿命长。阀门无需从管线上拆下来，即可维修和更换内件；延长了使用寿命。
- 5、力矩小，密封可靠，球形结构的阀座与普通球阀不一样，可以自动调整密封位置。
- 6、预置驱动装置平台及螺孔，并符合ISO 5211的要求，根据用户不同的要求，随时可装配驱动装置。
- 7、阀门具有DBB双阻塞泄放功能。
- 8、手动顶装式球阀采用高强度整体式球杆结构，确保了球体的精确定位。
- 9、阀杆采用防吹出保护结构，提高阀门操作的安全性。

Top-mounted ball valve is a new product developed by our company after digesting and absorbing foreign advanced technology and integrating our company's years of design and manufacturing experience. The technical level has reached the domestic first-class level, and the products are comparable to international counterparts. In addition to the features of side-mounted fixed ball valves (see fixed ball valves), it also has the following features:

1. Integral valve body design, top-mounted trunnion fixed support, flange or butt welding structure.
2. Inconel corrugated spring makes the sealed metal valve seat move to the ball, which has the function of two-way sealing of inlet and outlet.
3. The unique valve seat retractable technology is adopted, the ball rod can be replaced online, the metal valve of the valve stem seal ring and the corrugation are longer; the torque is reduced to a minimum, which is convenient for valve operation.
4. Easy maintenance, easy installation and long service life. The valve does not need to be removed from the pipeline, and the internal parts can be repaired and replaced; the service life is prolonged.
5. The torque is small and the sealing is reliable. The valve seat of the spherical structure is different from the ordinary ball valve, and the sealing position can be automatically adjusted.
6. The drive device platform and screw holes are preset, and meet the requirements of ISO 5211. The drive device can be assembled at any time according to the different requirements of users.
7. The valve has the function of DBB double blocking and venting.
8. The manual top-mounted ball valve adopts a high-strength integral ball rod structure to ensure the precise positioning of the ball.
9. The valve stem adopts an anti-blowout protection structure to improve the safety of valve operation.

### 球阀技术规范 Ball valve technical specifications

技术规范 Specifications	API系列 API series
设计规范 Design specification	API 6D, API 608, BS5351
压力温度等级 Pressure temperature rating	ASME B16.34
结构长度 Structural length	ASME B16.10
法兰连接 Flange connection	ASME B16.5, ASME 16.47
对焊端连接 Butt welding end connection	ASME B16.25
检验与试验 Inspection and testing	API 598/API 6D
防火试验 Fire test	API 6FA
铸钢件质量检验 Steel casting quality inspection	MSS-SP-55

力矩表 Torque table (N.m)

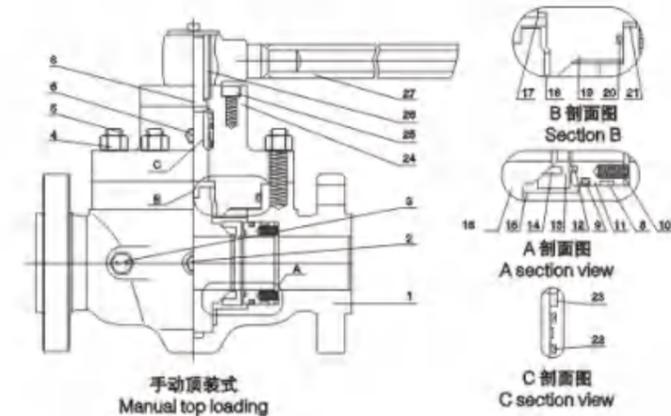
下表所列的扭矩值供选择驱动装置时参考，介质的特性，内件及阀门的开启频率尚需作额外因素考虑。使用防腐内件，用于清洁润滑介质的阀门，扭矩可降低20%。而对苛刻介质，如料浆、颗粒性介质，以及用于氧气，扭矩可能要增加50%。对于缩径阀门的操作扭矩按其缩径所对应的通径的阀门操作扭矩选用。(具体选择按实际为准)

The torque values listed in the following table are for reference when selecting the drive device. The characteristics of the medium, the internal parts and the opening frequency of the valve still need to be considered for additional factors. The use of anti-corrosion internal parts, used to clean the valve of the lubricating medium, the torque can be reduced by 20%. For splitting harsh media, such as slurry, granular media, and for oxygen, the torque may increase by 50%. The operating torque of the reduced-diameter valve is selected according to the valve operating torque of the corresponding diameter of the reduced-diameter valve. (The specific choice is subject to actual conditions)

通径 Size		Class						
DN	in	150	300	400	600	900	1500	2500
50 × 40	1 1/2	61	81	85	102	149	238	382
50	9	68	108	97	136	203	333	562
80 × 50	3 × 2	68	108	97	136	203	333	562
80	3	149	244	204	305	422	811	1460
100 × 80	4 × 3	149	244	204	305	422	811	1460
100	4	244	407	422	453	583	1505	1923
150 × 100	6 × 4	244	407	422	453	583	1505	5840
150	6	323	544	647	1006	1299	2940	5840
200 × 150	8 × 6	323	544	647	1006	1299	2940	12181
200	8	647	955	1157	2532	2766	6489	12181
250 × 200	10 × 8	647	955	1157	2532	2766	6489	15281
250	10	882	1822	2178	3941	5446	12181	15281
300 × 250	12 × 10	882	1822	2178	3941	5446	12181	15281
350 × 250	14 × 10	882	1822	2178	3941	5446	12181	19834
300	12	1577	2591	3064	6893	7909	15564	/
350 × 300	14 × 12	1577	2591	3064	6893	7909	15564	/
400 × 300	16 × 12	1577	2591	3064	6893	7909	15564	/
350	14	1873	3224	3853	3205	10948	23512	/
400 × 350	16 × 14	1873	3224	3853	3205	10948	23512	/
400	16	3050	5447	6529	8817	13682	27039	/
450 × 400	18 × 16	3050	5447	6529	8817	13682	27039	/
500 × 400	20 × 16	3050	5447	6529	8817	13682	27039	/
450	18	3819	6197	7461	11231	17705	37085	/
500	20	4508	7830	9348	14919	29866	40309	/
550	22	5490	9453	11302	16058	39324	/	/
600 × 500	24 × 20	4508	7830	9348	15140	29866	40309	/
600	24	6723	11457	15535	21840	40810	64671	/
650	26	9289	15139	17869	24889	51322	/	/
700	28	11647	18067	21063	28767	53515	/	/
750 × 600	30 × 24	6723	11457	15535	21840	40810	/	/
750	30	13558	19207	24966	34398	57057	/	/
800	32	15224	24095	28235	38880	61123	/	/
850	34	17846	30249	33291	41789	70277	/	/
900 × 750	36 × 30	13558	19207	24966	34398	57057	/	/
900	36	22032	33331	36277	51521	81349	/	/
1000	40	25972	38490	45269	60388	/	/	/
1050	42	27034	40425	53515	70277	/	/	/
1200	48	42606	64985	79311	112293	/	/	/

产品性能规范 Product performance specifications

性能规范 Performance specification	Class						
	150	300	400	600	900	1500	2500
强度试验 Strength test	2.93	7.58	10.0	150	22.5	37.5	63.0
密封试验 Sealing test	2.07	5.52	7.31	11.03	16.5	27.5	46.2
气压试验 Air pressure test	0.6MPa						
适用温度 Applicable temperature	-196°C~550°C(注:不同工况温度,选用不同的材质) -196°C~550°C(Note: Different working conditions temperature, different materials are used)						
适用介质 Applicable medium	水、蒸汽、石油、液化气、天然气等 Water, steam, petroleum, liquefied gas, natural gas, etc.						
尺寸范围 Size range	DN50~1200(NP2~48")。可根据客户要求制造 DN50~1200(NP2~48"). Can be manufactured according to customer requirements						
主体/内体材料 Body/inner body material	碳钢、不锈钢、双相不锈钢、镍合金、钛合金等 Carbon steel, stainless steel, duplex stainless steel, nickel alloy, titanium alloy, etc.						
端部连接 End connection	法兰连接、对焊连接 Flange connection, butt welding connection						
驱动装置 Driving device	手动、蜗轮蜗杆传动、电动、气动 Manual, worm gear drive, electric, pneumatic						

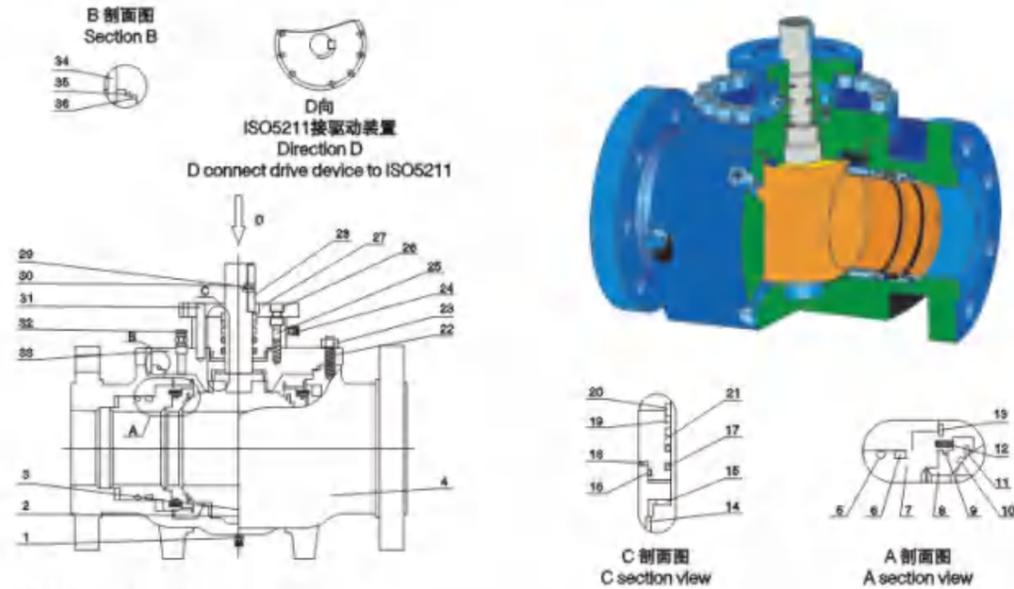


主要零部件材料 Material of main parts

序号 No.	零件名称 Part name	材质 Material			序号 No.	零件名称 Part name	材质 Material		
		碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel			碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel
1	阀体 Body	A216 WCB	A351 CF8M	A352 LCC	15	下轴衬 Lower bushing	PTFE+CS	PTFE+SS	PTFE+SS
2	排泄阀 Drain valve	A105+ENP	A182 F316	A350 LF2	16	球体 Ball	A105+ENP	A182 F316	A350 LF2
3	注脂阀 Grease valve	A105+ENP	A182 F316	A350 LF2	17	平轴衬 Flat bushing	PTFE+CS	PTFE+SS	PTFE+SS
4	螺母 Nut	A194 2H	A194 8	A194 7	18	上轴衬 Upper bushing	PTFE+CS	PTFE+SS	PTFE+SS
5	螺柱 Stud	A193 B7	A193 B8	A320 L7	19	阀盖 Bonnet	A216 WCB	A351 CF8M	A352 LCC
6	注脂阀 Grease valve	A105+ENP	A182 F316	A350 LF2	20	O型圈 O-ring	氟橡胶 Fluororubber		
7	阀杆 Stem	A182 F6a	A182 F316	A182 F316	21	垫片 Gasket	柔性石墨 Flexible graphite+SS		
8	防火垫 Fireproof mat	柔性石墨 Flexible graphite			22	O型圈 O-ring	氟橡胶 Fluororubber		
9	O型圈 O-ring	氟橡胶 Fluororubber			23	填料 Filler	柔性石墨 Flexible graphite		
10	弹簧 Spring	Incoen 600			24	压盖 Gland	A105+ENP	A182 F316	A350 LF2
11	支撑圈 Support ring	A105+ENP	A182 F316	A350 LF2	25	螺钉 Screw	A193 B7	A193 B8	A320 L7
12	垫片 Gasket	柔性石墨 Flexible graphite+SS			26	键 Key	ANSI 1045	ANSI 1045	ANSI 1045
13	阀座 Seat	A105+ENP	A182 F316	A350 LF2	27	手柄 Handle	Q235A		
14	密封圈 Seal ring	PTFE, NYLON, PEEK, PCTFE							

注:可根据不同工况和用户要求选用不同的材料。  
Note: Different materials can be selected according to different working conditions and user requirements.

阀门结构示意图(顶装式球阀) Schematic diagram of valve structure (Top-mounted ball valve)



主要零部件材料 Material of main parts

序号 No.	零件名称 Part name	材质 Material			序号 No.	零件名称 Part name	材质 Material		
		碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel			碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel
1	排泄阀 Drain valve	A105+ENP	A182 F316	A350 LF3	19	填料 Filler	柔性石墨 Flexible graphite		
2	下轴衬 Lower bushing	PTFE+CS	PTFE+SS	PTFE+SS	20	压套 Pressing sleeve	A182 F6a	A182 F316	A182 F6a
3	球体 Ball	A105+ENP	A182 F316	A350 LF3	21	上轴衬 Upper stem seat	A105+ENP	A193 B8	A350 LF3
4	阀杆 Stem	A216 WCB	A351 CF8M	A352 LCC	22	螺母 Nut	A193 B7	A194 B	A320 L7
5	O型圈 O-ring	氟橡胶 Fluororubber			23	螺母 Nut	A194 2H	A182 F316	A194 7
6	防火垫 Fireproof mat	柔性石墨 Flexible graphite			24	注脂阀 Grease valve	A105+ENP	A182 F316	A350 LF3
7	支撑圈 Support ring	A105+ENP	A182 F316	A350 LF3	25	螺钉 Screw	A193 B7	A193 B8	A320 L7
8	阀座 Seat	A105+ENP	A182 F316	A350 LF3	26	螺钉 Screw	A193 B7	A193 B8	A320 L7
9	O型圈 O-ring	氟橡胶 Fluororubber			27	连接盘 Land	A105+ENP		
10	O型圈 O-ring	氟橡胶 Fluororubber			28	键 Key	ANSI 1045		
11	密封圈 Sealing ring	PTFE, NYLON, PCTFE, MOLON			29	螺钉 Screw	A193B7		
12	弹簧 Spring	Incone1600			30	阀杆 Stem	A182 F6a	A182 F316	A182 F316
13	C型弹簧 C type spring	17-4			31	定位销 Locating pin	A182F6a		
14	上轴衬 Upper bushing	PTFE+CS	PTFE+SS	PTFE+SS	32	排泄阀 Drain valve	A105+ENP	A182 F316	A350 LF3
15	平面轴衬 Flat bushing	PTFE+CS	PTFE+SS	PTFE+SS	33	阀盖 Bonnet	A216 WCB	A351 CF8M	A352 LCC
16	O型圈 O-ring	氟橡胶 Fluororubber			34	定位销 Positioning pin	A182 F6a		
17	O型圈 O-ring	氟橡胶 Fluororubber			35	垫片 Gasket	柔性石墨 Flexible graphite+SS		
18	垫片 Gasket	柔性石墨 Flexible graphite+SS			36	O型圈 O-ring	氟橡胶 Fluororubber		

注: 1. 根据工况介质温度和压力选用不同的密封圈材料。

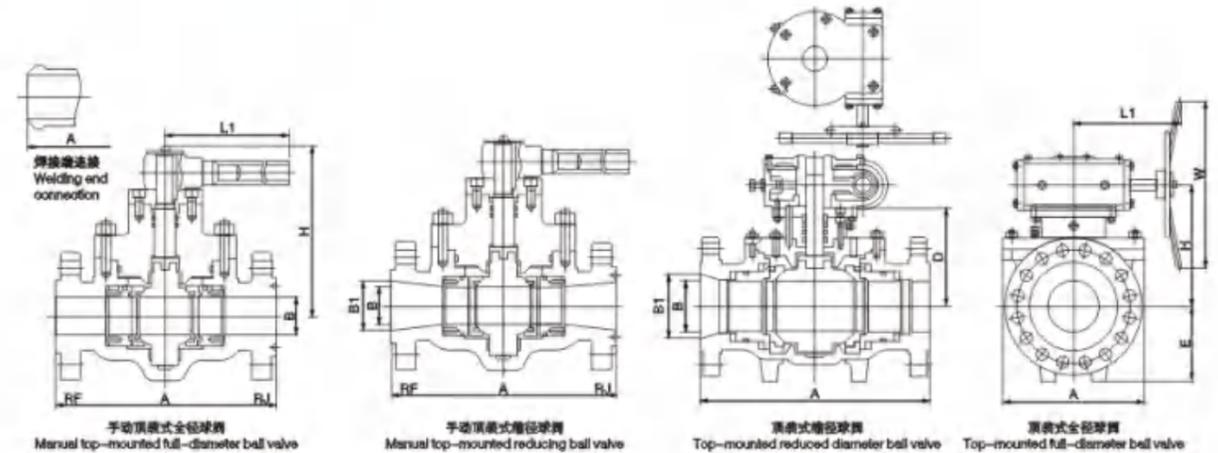
2. 除了表中列出的材料外, 可根据用户要求选材。

3. 可提供满足NACE MR-01-75标准(最新版本)适用于酸性气体工况的材料。

Note: 1. Choose different sealing ring materials according to the temperature and pressure of the industrial and mining medium.

2. In addition to the materials listed in the table, villages can be selected according to user requirements.

3. It can provide materials that meet the NACE MR-01-75 standard (the latest version) and are suitable for acid gas mining.



主要外形及连接尺寸 Main shape and connection size

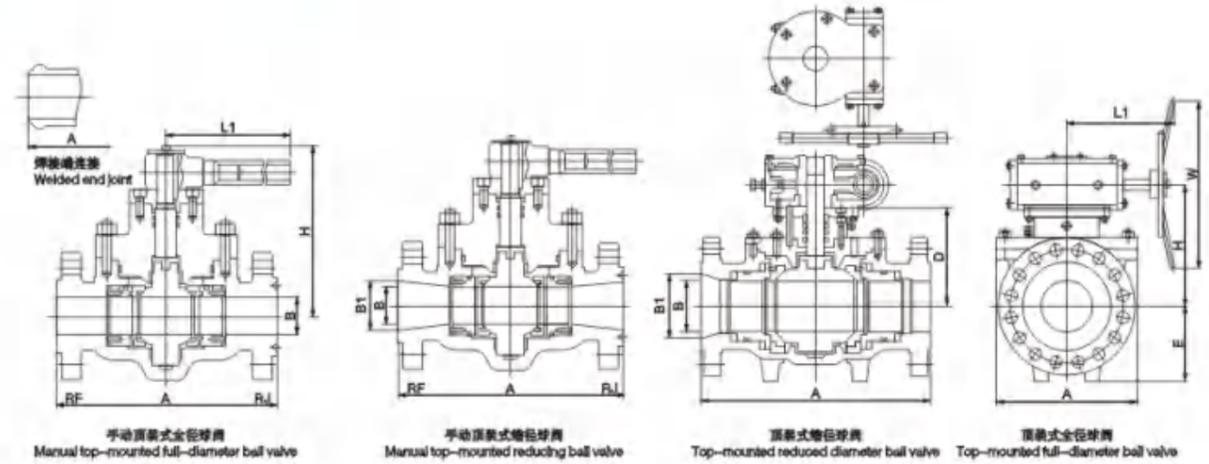
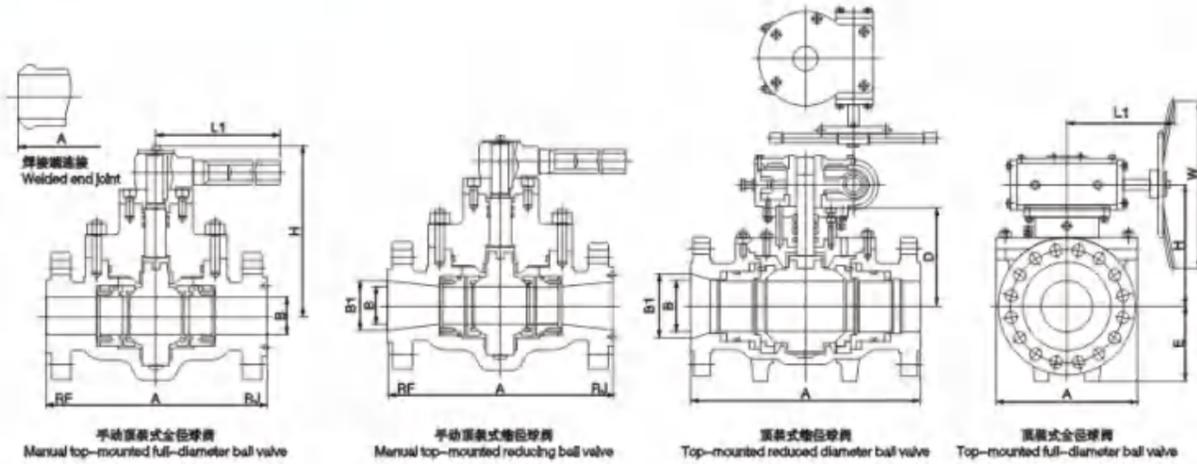
Class 150

DN	NPS	A			B	B1	D	E	F	H	L1	W
		RF	RJ	BW								
50 × 40	2 × 1 1/2	292	295	292	38	49	/	85	180	212	450	/
50	2	292	295	295	49	49	/	85	180	212	450	/
80 × 50	3 × 2	356	395	356	49	74	/	85	180	212	450	/
80	3	356	395	356	74	74	/	112	230	228	600	/
100 × 80	4 × 3	432	435	432	74	100	/	112	230	228	600	/
100	4	432	435	432	100	100	/	145	283	272	600	/
150 × 100	6 × 4	559	562	559	100	150	/	145	283	272	600	/
150	6	559	562	559	150	150	281	220	325	333	297	350
200 × 150	8 × 6	660	664	660	150	201	281	220	325	333	297	350
200	8	660	664	660	201	201	320	260	405	384	360	500
250 × 200	10 × 8	787	791	787	201	252	320	260	405	384	360	500
250	10	787	791	787	252	252	360	311	490	424	360	500
300 × 250	12 × 10	838	841	838	252	303	360	311	490	424	360	500
350 × 250	14 × 10	889	892	889	252	334	360	311	490	424	360	500
300	12	838	841	838	303	303	403	366	570	467	340	700
350 × 300	14 × 12	889	892	889	303	534	403	366	570	467	340	700
400 × 300	16 × 12	991	994	991	303	385	403	366	570	467	340	700
350	14	889	892	889	334	334	453	428	660	517	340	700
400 × 350	16 × 14	991	994	991	385	334	453	428	660	517	340	700
400	16	991	994	991	385	385	459	450	700	549	545	700
450 × 400	18 × 16	1092	1095	1092	385	436	450	450	700	549	545	700
500 × 400	20 × 16	1194	1200	1194	385	487	459	450	700	549	545	700
450	18	1092	1095	1092	436	436	502	473	755	577	575	700
500 × 450	20 × 18	1194	1200	1194	436	487	502	473	755	577	575	700
500	20	1194	1200	1194	487	487	551	580	870	628	575	700
600 × 500	24 × 20	1397	1407	1397	487	589	551	580	870	628	575	700
550	22	1295	1305	1295	538	538	578	590	955	653	575	700
600	24	1397	1407	1397	589	589	606	600	1030	696	579	700
750 × 600	30 × 24	1651	1664	1651	589	735	606	600	1030	696	579	700
650	26	1448	1461	1448	633	633	675	635	1075	765	570	700
700	28	1549	1562	1549	684	684	735	700	1165	825	579	700
750	30	1651	1664	1651	735	735	795	775	1250	865	579	700
900 × 750	36 × 30	2083	2099	2083	735	874	795	775	1250	865	579	700

**顶装式球阀**  
Top-mounted Ball Valve

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Top-mounted Ball Valve



**主要外形及连接尺寸 Main shape and connection size**

**Class 300**

DN	NPS	A			B	B1	D	E	F	H	L1	W
		RF	RJ	BW								
50 x 40	2 x 1 1/2	292	295	292	38	49	/	85	180	212	450	/
50	2	292	295	292	49	49	/	85	180	212	450	/
80 x 50	3 x 2	356	359	356	49	74	/	85	180	212	450	/
80	3	356	359	356	74	74	/	112	230	228	600	/
100 x 80	4 x 3	432	435	432	74	100	/	112	230	228	600	/
100	4	432	435	432	100	100	/	145	283	272	1000	/
150 x 100	6 x 4	559	562	559	100	150	/	145	283	272	1000	/
150	6	559	562	559	150	150	281	220	325	345	360	500
200 x 150	8 x 6	660	664	660	150	201	281	220	325	345	360	500
200	8	660	664	660	201	201	330	260	405	385	340	700
250 x 200	10 x 8	787	791	787	201	252	330	260	405	385	340	700
250	10	787	791	787	252	252	371	311	490	426	340	700
300 x 250	12 x 10	838	841	838	252	303	371	311	490	426	340	700
350 x 250	14 x 10	889	892	889	252	334	371	311	490	426	340	700
300	12	838	841	838	303	303	418	366	570	473	340	700
350 x 300	14 x 12	889	892	889	303	534	418	366	570	473	340	700
400 x 300	16 x 12	991	994	991	303	385	418	366	570	473	340	700
350	14	889	892	889	334	334	470	428	660	530	545	700
400 x 350	16 x 14	991	994	991	385	334	470	428	660	530	545	700
400	16	991	994	991	385	385	477	450	700	537	545	700
450 x 400	18 x 16	1092	1095	1092	385	436	477	450	700	537	545	700
500 x 400	20 x 16	1194	1200	1194	385	487	477	450	700	537	545	700
450	18	1092	1095	1092	436	436	522	473	755	597	575	700
500 x 450	20 x 18	1194	1200	1194	436	487	522	473	755	597	575	700
500	20	1194	1200	1194	487	487	573	580	880	663	579	700
600 x 500	24 x 20	1397	1407	1397	487	589	573	580	880	663	579	700
550	22	1295	1305	1295	538	538	600	590	965	690	579	700
600	24	1397	1407	1397	589	589	631	600	1040	721	579	700
750 x 600	30 x 24	1651	1664	1651	589	735	631	600	1040	721	579	700
650	26	1448	1461	1448	633	633	702	635	1085	874	605	700
700	28	1549	1562	1549	684	684	764	700	1175	919	950	700
750	30	1651	1664	1651	735	735	827	775	1265	982	950	700
900 x 750	36 x 30	2083	2099	2083	735	874	827	775	1265	982	950	700

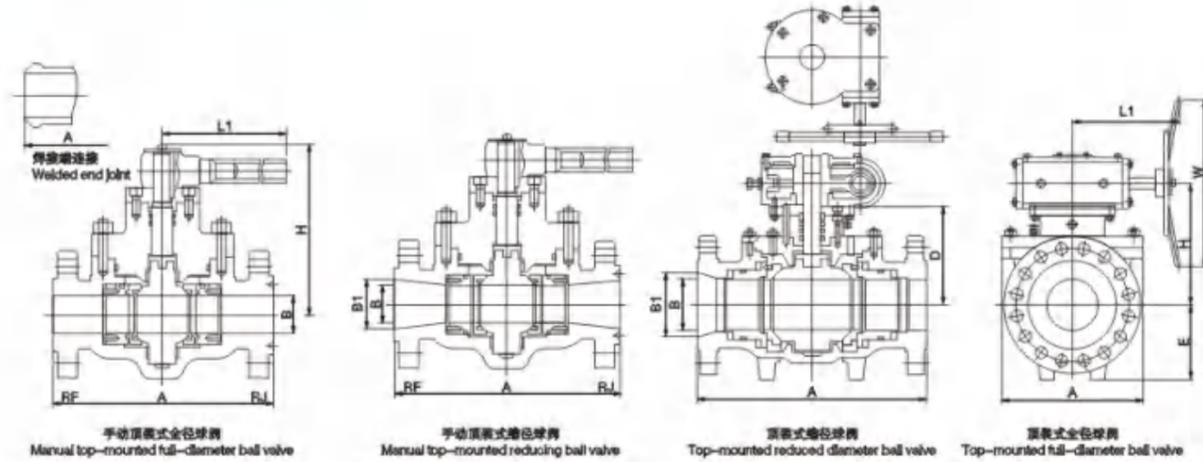
**主要外形及连接尺寸 Main shape and connection size**

**Class 600**

DN	NPS	A			B	B1	D	E	F	H	L1	W
		RF	RJ	BW								
50 x 40	2 x 1 1/2	292	295	292	38	49	/	85	180	212	450	/
50	2	292	295	295	49	49	/	85	180	212	600	/
80 x 50	3 x 2	356	395	356	49	74	/	85	180	212	600	/
80	3	356	395	356	74	74	/	112	230	228	1000	/
100 x 80	4 x 3	432	435	432	74	100	/	112	230	228	1000	/
100	4	432	435	432	100	100	/	145	283	250	1000	/
150 x 100	6 x 4	559	562	559	100	150	/	145	283	250	1000	/
150	6	559	562	559	150	150	281	220	325	336	340	700
200 x 150	8 x 6	660	664	660	150	201	281	220	325	336	340	700
200	8	660	664	660	201	201	340	260	425	395	340	700
250 x 200	10 x 8	787	791	787	201	252	340	260	425	395	340	700
250	10	787	791	787	252	252	355	311	505	415	545	700
300 x 250	12 x 10	838	841	838	252	303	355	311	505	415	545	700
350 x 250	14 x 10	889	892	889	252	334	355	311	505	415	545	700
300	12	838	841	838	303	303	401	366	585	461	545	700
350 x 300	14 x 12	889	892	889	303	534	401	366	585	461	545	700
400 x 300	16 x 12	991	994	991	303	385	401	366	585	461	545	700
350	14	889	892	889	334	334	451	428	680	526	575	700
400 x 350	16 x 14	991	994	991	385	334	451	428	680	526	575	700
400	16	991	994	991	385	385	493	450	730	568	575	700
450 x 400	18 x 16	1092	1095	1092	385	436	493	450	730	568	575	700
500 x 400	20 x 16	1194	1200	1194	385	487	493	450	730	568	575	700
450	18	1092	1095	1092	436	436	539	473	784	629	579	700
500 x 450	20 x 18	1194	1200	1194	436	487	539	473	784	629	579	700
500	20	1194	1200	1194	487	487	592	580	900	682	579	700
600 x 500	24 x 20	1397	1407	1397	487	589	592	580	900	682	579	700
550	22	1295	1305	1295	538	538	621	590	890	711	579	700
600	24	1397	1407	1397	589	589	653	600	1070	808	950	1400
750 x 600	30 x 24	1651	1664	1651	589	735	653	600	1070	808	950	1400
650	26	1448	1461	1448	633	633	725	635	1115	880	950	1400
700	28	1549	1562	1549	684	684	790	700	1210	945	950	1400
750	30	1651	1664	1651	735	735	850	775	1300	1005	950	1400
900 x 750	36 x 30	2083	2099	2083	735	874	850	775	1300	1005	950	1400

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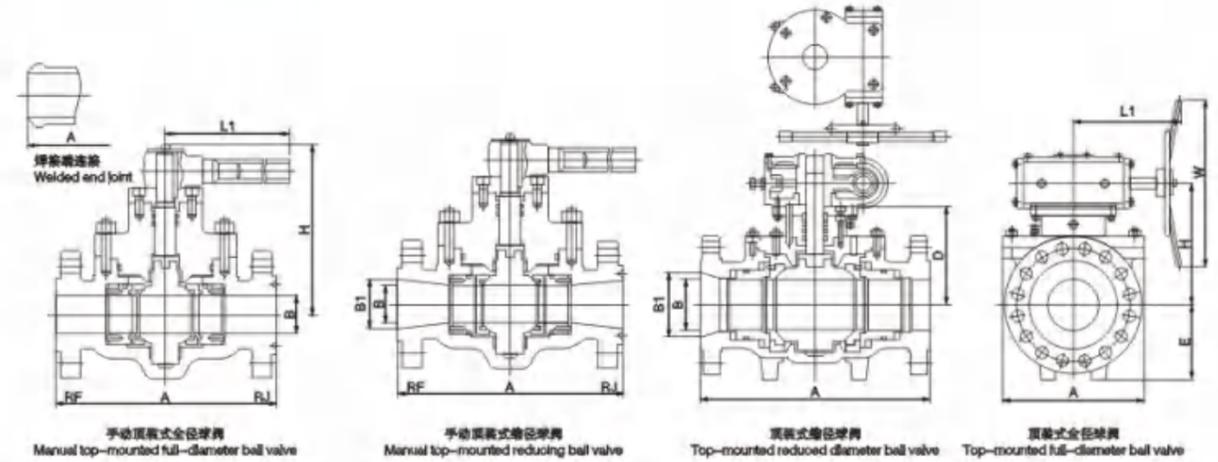


**主要外形及连接尺寸 Main shape and connection size**

**Class 900**

DN	NPS	A			B	B1	D	E	F	H	L1	W
		RF	RJ	BW								
50 × 40	2 × 1 1/2	368	371	368	38	49	/	85	195	215	450	/
50	2	368	371	368	49	49	/	85	195	215	600	/
80 × 50	3 × 2	381	384	381	49	74	/	85	195	215	600	/
80	3	381	384	381	74	74	/	112	240	193	1000	/
100 × 80	4 × 3	457	460	457	74	100	/	112	240	193	1000	/
100	4	457	460	457	100	100	227	145	295	291	360	500
150 × 100	6 × 4	610	613	610	100	150	227	145	295	291	360	500
150	6	610	613	610	150	150	258	225	330	313	340	700
200 × 150	8 × 6	737	740	737	150	201	258	225	330	313	340	700
200	8	737	740	737	201	201	318	280	425	378	545	700
250 × 200	10 × 8	838	841	838	201	252	318	280	425	378	545	700
250	10	838	841	838	252	252	370	320	525	430	545	700
300 × 250	12 × 10	965	968	965	252	303	370	320	525	430	545	700
350 × 250	14 × 10	1029	1038	1029	252	322	370	320	525	430	545	700
300	12	965	1140	965	303	303	418	375	600	493	575	700
350 × 300	14 × 12	1029	1038	1029	322	303	418	375	600	493	575	700
400 × 300	16 × 12	965	1140	1130	303	373	418	375	600	493	575	700
350	14	1029	1038	1029	322	322	470	440	695	545	575	700
400 × 350	16 × 14	1130	1140	1130	322	373	470	440	695	545	575	700
400	16	1130	1140	1130	373	373	515	465	750	605	579	700
450 × 400	18 × 16	1219	1232	1219	373	423	515	465	750	605	579	700
500 × 400	20 × 16	1321	1334	1321	373	471	515	465	750	605	579	700
450	18	1219	1232	1219	423	423	560	485	800	650	579	700
500 × 450	20 × 18	1321	1334	1321	423	471	560	485	800	650	579	700
500	20	1321	1334	1321	471	471	620	600	925	775	950	1400
600 × 500	24 × 20	1549	1568	1549	471	570	620	600	925	775	950	1400
600	24	1549	1568	1549	570	570	680	620	1095	835	950	1400
750 × 600	30 × 24	1880	1902	1880	570	712	680	620	1095	835	950	1400
650	26	1651	1673	1651	617	617	760	655	1145	915	950	1400
700	28	1753	1775	1753	665	665	824	720	1240	979	950	1400
750	30	1880	1902	1880	712	712	886	800	1335	1157	950	1400
900 × 750	36 × 30	2286	2315	2286	712	855	886	800	1335	1157	950	1400

**顶装式球阀**  
Top-mounted Ball Valve



**主要外形及连接尺寸 Main shape and connection size**

**Class 1500**

DN	NPS	A			B	B1	D	E	F	H	L1	W
		RF	RJ	BW								
50 × 40	2 × 1 1/2	368	371	368	38	49	/	85	205	179	450	/
50	2	368	371	368	49	49	/	85	205	179	600	/
80 × 50	3 × 2	470	473	470	49	74	/	85	205	179	600	/
80	3	470	473	470	74	74	/	120	250	201	1000	/
100 × 80	4 × 3	546	549	546	74	100	/	120	250	201	1000	/
100	4	546	549	546	100	100	240	155	310	295	340	700
150 × 100	6 × 4	705	711	705	100	144	240	155	310	295	340	700
150	6	705	711	705	144	144	273	240	370	333	545	700
200 × 150	8 × 6	832	841	832	144	192	273	240	370	333	545	700
200	8	832	841	832	192	192	335	280	455	410	575	700
250 × 200	10 × 8	991	1000	991	192	239	335	280	455	410	575	700
250	10	991	1000	991	239	239	385	340	565	460	575	700
300 × 250	12 × 10	1130	1146	1130	239	287	385	340	565	460	575	700
350 × 250	14 × 10	1257	1276	1257	329	315	385	340	565	460	575	700
300	12	1130	1146	1130	287	287	436	400	670	511	575	700
350 × 300	14 × 12	1257	1276	1257	315	315	436	400	670	511	575	700
400 × 300	16 × 12	1384	1407	1384	287	360	436	400	670	511	575	700
350	14	1257	1276	1257	315	315	485	467	730	575	579	700
400 × 350	16 × 14	1384	1407	1384	315	360	485	467	730	575	579	700
400	16	1384	1407	1384	360	360	530	495	790	620	579	700
450	18	1537	1559	1537	406	406	585	520	840	740	950	1400
500	20	1664	1686	1664	454	454	640	639	965	795	950	1400
600	24	1943	1972	1943	546	546	708	640	1145	979	1045	1400

让每一只阀门具有灵魂，  
用做艺术品的心态制造阀门！

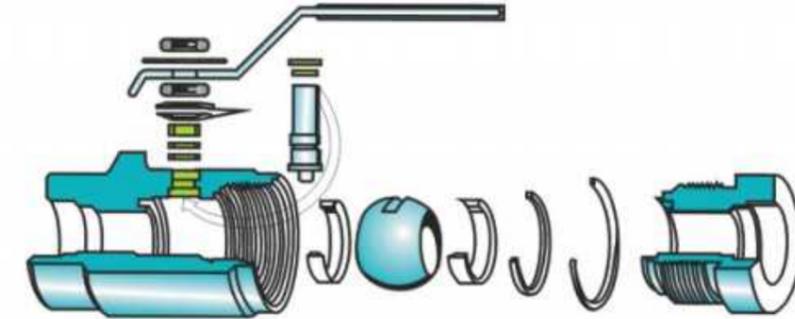
One soul in one valve,  
make valve artwork!

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**锻钢球阀**  
Forged Steel Ball Valve



**锻钢球阀**  
Forged Steel Ball Valve



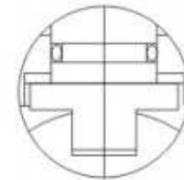
**设计结构 Design structure**

阀座采用PTFE+25%玻纤或PEEK。PTFE+25%玻纤在高压下能获得比PTFE更好的性能，而且还能减少酸性介质腐蚀，通常在800Lb的压力下采用；另外可以根据客户要求定做进口PEEK材质，以适应高温，高压工况下的高密封工作性能。

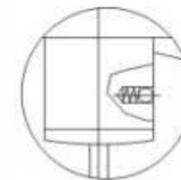
具有防火、防静电以及防阀杆吹出结构。

The valve seat is made of PTFE+25% glass fiber or PEEK. PTFE+25% glass fiber can obtain better performance than PTFE under high pressure, and it can also reduce the corrosion of acidic medium. It is usually used under 800Lb pressure; In addition, imported PEEK material can be customized according to customer requirements to adapt to high temperature and high pressure. High sealing performance under conditions.

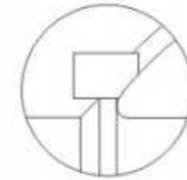
It has a fireproof, anti-static and anti-stem blow-out structure.



防阀杆吹出结构  
Anti-stem blow-out structure



防静电结构  
Anti-static structure



防火结构  
Fireproof structure

**流量系数 Flow Coefficient**

NPS	CV系数 CV coefficient	
	全径 Full path	缩径 Reduced diameter
1/4	8	
3/8	8	
1/2	12	8
3/4	33	12
1	48	33
1 1/4	83	48
1 1/2	120	83
2	250	120

**二片式锻钢球阀**  
2PCS Forged Steel Ball Valve

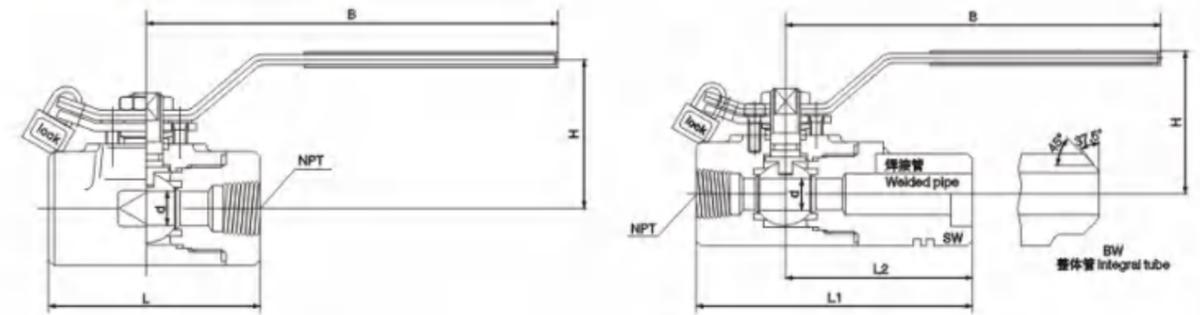
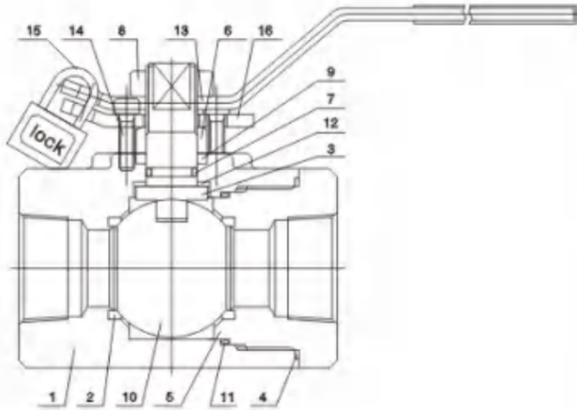
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**二片式锻钢球阀**  
2PCS Forged Steel Ball Valve



**应用规范 Application Specification**

- 设计制造: BS5351 MSS SP-118;
  - 连接端尺寸:
    - 承插口尺寸按: ANSI B16.11; JB/T 1751
    - 螺纹端尺寸按: ANSI B1.20.1; JB/T 7306
    - 对焊端尺寸按: ANSI B16.25; JB/T 12224
    - 法兰端尺寸按: ANSI B16.5; JB 79
  - 阀门检查和试验: API 598; GB/T 13927; JB/T 9092
  - 结构特征: 螺纹连接阀盖; 两段式T
  - 材料按: ANSI/ASTM规定。
  - 主体材料: A105, LF2, 304(L), 316(L), F347, F321, F51, Monel, 20合金等。
- Design and manufacture: BS5351 MSS SP-118;
  - Connection end size:
    - Socket size according to: ANSI B16.11; JB/T 1751
    - The size of the threaded end is as per: ANSI B1.20.1; JB/T 7306
    - The size of the butt welding end is as per: ANSI B16.25; JB/T 12224
    - Flange end size according to: ANSI B16.5; JB 79
  - Valve inspection and test: API 598; GB/T 13927; JB/T 9092
  - Structural features: threaded connection valve cover; two-stage T
  - Material according to: ANSI/ASTM regulations.
  - Main body material: A105, LF2, 304(L), 316(L), F347, F321, F51, Monel, 20 alloy, etc.



**碳钢温压等级 Carbon steel temperature pressure grade**

CL150-285 P.S.1@100° F CL300-740 P.S.1@100° F CL600-1480 P.S.1@100° F CL800-1975 P.S.1@100° F CL1500-3705 P.S.1@100° F

**主要零件材质表 Material table of main parts**

序号 No.	零件名称 Part name	A105/F6a	LF2/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	阀体 Body	A105	LF2	F304(L)	F316(L)	F51
2	阀座 Seat	RPTFE or PEEK				
3	阀杆 Stem	410	304	304(L)	316(L)	F51
4	垫片 Gasket	PTFE	PTFE	PTFE	PTFE	PTFE
5	阀盖 Bonnet	A105	LF2	F304	F316	F51
6	填料压套 Packing gland	410	304	304(L)	316(L)	F51
7	填料压板 Packing plate	A105	LF2	F304	F316	F51
8	扁螺母 Flat nut	8	8	8	8M	8M
9	填料 Filler	PTFE	PTFE	PTFE	PTFE	PTFE
10	球体 Ball	F6	F304	F304(L)	F316(L)	F51
11	O型密封圈 O-ring	VITON	VITON	VITON	VITON	VITON
12	上密封垫片 Upper gasket	RPTFE or PEEK				
13	手柄 Handle	ANSI 1025				
14	内六角螺钉 Socket head cap screws	B8	B8	B8	B8M	B8M
15	锁 Lock	成品 Finished product				
16	定位片 Positioning pieces	ANSI 1025				

**CL800**

末端连接可按一端螺纹和一端接管(承插焊或对焊) 设计按: BS5351  
The end connection can be designed according to one end thread and one end pipe (socket welding or butt welding) according to: BS5351

规格 (NPS) Specification	缩径 (R.P) Reduced diameter	1/2	3/4	1	1 1/4	1 1/2	2		
	全径 (F.P) Full diameter	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
结构长度 (mm) Structure length	L1	70	76	85	106	120	128	140	140
接管端至中心 (mm) Take over end to center	L2	121	121	121	130	136	140	148	160
中心至手柄端 (mm) Center to handle end	B	16	160	160	160	170	230	230	280
中心高度 (mm) Center height	H	60	60	60	65	85	105	105	125
流通孔径 (mm) Runner aperture	d	6	9	12.5	17	24	37	37	49
重量(约)(kg) Weight (approximately)		1.2	0.9	1.3	2.2	3.5	6.5	6.5	11

**CL1500-CL2500**

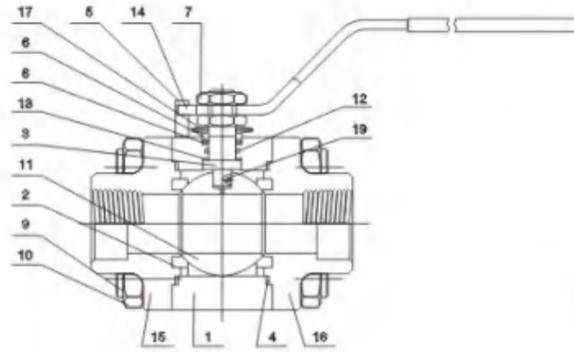
末端连接可按一端螺纹和一端接管(承插焊或对焊) 设计按: API 6D  
The end connection can be designed according to one end thread and one end pipe (socket welding or butt welding) according to: API 6D

规格 (NPS) Specification	全径 (F.P) Full diameter	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
结构长度 (mm) Structure length	L1	CL1500	85	85	95	115	125	135	155
		CL2500			125	135	155		155
接管端至中心 (mm) Take over end to center	L2	CL1500	121	121	130	136	140	148	160
		CL2500			136	140	148		175
中心至手柄端 (mm) Center to handle end	B	CL1500	160	160	160	170	230	230	280
		CL2500			230	230	280		280
中心高度 (mm) Center height	H	CL1500	60	60	65	85	105	105	125
		CL2500			90	110	125		
流通孔径 (mm) Runner aperture	d	CL1500	6	9	13	19	25	32	38
		CL2500	6	9	13	19	25		38
重量(约)(kg) Weight (approximately)		CL1500	1.2	1.5	2.5	3.7	5.8		11.5
		CL2500	1.5	1.9	2.7	4.1	6.3		12

**三片式锻钢球阀**  
3PCS Forged Steel Ball Valve

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**三片式锻钢球阀**  
3PCS Forged Steel Ball Valve



**应用规范 Application Specification**

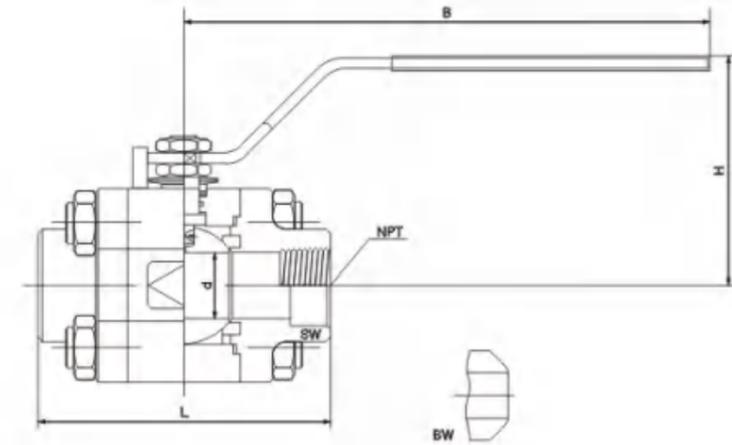
- 设计制造: BS5351 MSS SP-118;
  - 连接端尺寸:
    - 承插口尺寸按: ANSI B16.11; JB/T 1751
    - 螺纹端尺寸按: ANSI B1.20.1; JB/T 7306
    - 对焊端尺寸按: ANSI B16.25; JB/T 12224
    - 法兰端尺寸按: ANSI B16.5; JB 79
  - 阀门检查和试验: API 598; GB/T 13927; JB/T 9092
  - 结构特征: 螺纹连接阀盖; 三段式
  - 材料按: ANSI/ASTM规定。
  - 主体材料: A105, LF2, F5, F11, F22, 304(L), 316(L), F347, F321, F51, Monel, 20合金等。
- Design and manufacture: BS5351 MSS SP-118;
  - Connection end size:
    - Socket socket size according to: ANSI B16.11; JB/T 1751
    - The size of the threaded end is as per: ANSI B1.20.1; JB/T 7306
    - The size of the butt welding end is as per: ANSI B16.25; JB/T 12224
    - Flange end size according to: ANSI B16.5; JB 79
  - Valve inspection and test: API 598; GB/T 13927; JB/T 9092
  - Structural features: threaded connection valve cover; three-section type
  - Material according to: ANSI/ASTM regulations.
  - Body material: A105, LF2, F5, F11, F22, 304(L), 316(L), F347, F321, F51, Monel, 20 alloy, etc.

**碳钢温压等级 Carbon steel temperature pressure grade**

CL150-285 P.S.1@100° F CL300-740 P.S.1@100° F CL600-1480 P.S.1@100° F CL800-1975 P.S.1@100° F CL1500-3705 P.S.1@100° F

**主要零件材质表 Material table of main parts**

序号 No.	零件名称 Part name	A105/F6a	LF2/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	阀体 Body	A105	LF2	F304(L)	F316(L)	F51
2	阀座 Seat	RPTFE or PEEK	RPTFE or PEEK	RPTFE or PEEK	RPTFE or PEEK	RPTFE or PEEK
3	阀杆 Stem	410	304	304(L)	316(L)	F51
4	垫片 Gasket	PTFE	PTFE	PTFE	PTFE	PTFE
5	圆柱销 Cylindrical pin	25	304	304	304	304
6	压套 Pressing sleeve	410	304	304(L)	316(L)	F51
7	扁螺母 Flat nut	8	8	8	8M	8M
8	填料 Filler	PTFE	PTFE	PTFE	PTFE	PTFE
9	双头螺栓 Stud bolt	B7	B8	B8	B8M	B8M
10	螺母 Nut	2H	8	8	8M	8M
11	球体 Ball	F6	F304	F304(L)	F316(L)	F51
12	O型密封圈 O-ring	VITON	VITON	VITON	VITON	VITON
13	上密封垫片 Upper gasket	RPTFE or PEEK	RPTFE or PEEK	RPTFE or PEEK	RPTFE or PEEK	RPTFE or PEEK
14	手柄 Handle	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025
15	左阀盖 Left valve cover	A105	LF2	F304	F316	F51
16	右阀盖 Right valve cover	A105	LF2	F304	F316	F51
17	碟簧 Disc spring	65Mn	65Mn	304	304	304
18	弹垫 Spring cushion	65Mn	65Mn	304	304	304
19	静电弹簧 Electrostatic spring	304	304	304	316L	316L



末端连接可按一端螺纹和一端接管(承插焊或对焊)设计按: BS5351  
The end connection can be designed according to one end thread and one end pipe (socket welding or butt welding) according to: BS5351

**CL800-CL1500**

规格 (NPS) Specification	全径 (F.P) Full diameter	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
结构长度 (mm) Structure length	L1	92	92	92	112	127	140	152	178
中心至手柄端 (mm) Center to handle end	B	144	144	144	147	194	194	239	239
中心高度 (mm) Center height	H	75	75	75	84	98	101	116	126
流通孔径 (mm) Runner aperture	d								
	CL800	6	9	13	18	23	32	35	50
	CL1500	6	9	13	18	23	32	35	50
重量 (约) (kg) Weight (approximately)		2.5	2.4	2.3	3.4	5.4	6.4	11	13
		2.5	2.4	2.5	3.7	5.8	6.8	11.5	13.7

**规格 (NPS) Specifications**

末端连接可按一端螺纹和一端接管(承插焊或对焊)设计按: BS5351  
The end connection can be designed according to one end thread and one end pipe (socket welding or butt welding) according to: BS5351

**CL2500**

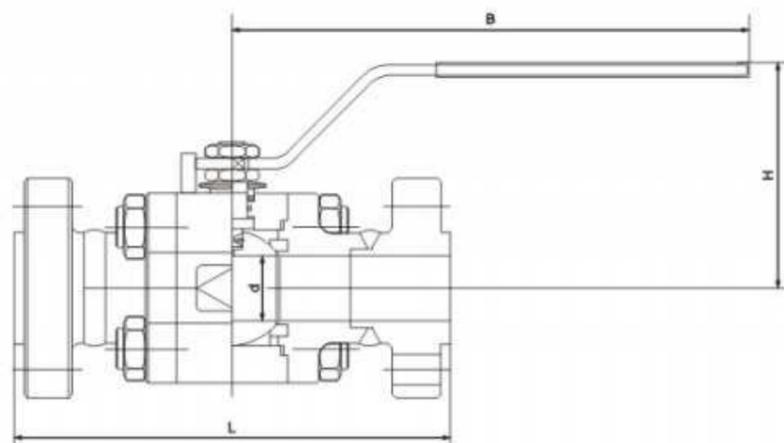
规格 (NPS) Specification	全径 (F.P) Full diameter	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
结构长度 (mm) Structure length	L1			112	129	150		200	
中心至手柄端 (mm) Center to handle end	B			170	230	230		310	
中心高度 (mm) Center height	H			95	110	125			
流通孔径 (mm) Runner aperture	d			13	19	25		38	
重量 (约) (kg) Weight (approximately)				2.7	4.1	6.3		12	

**三片式法兰锻钢球阀**  
3PCS Flange Forged Steel Ball Valve

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**CL1500-CL2500**

末端连接可按法兰或对焊，设计按：API 6D结构长度按工厂标准  
The end connection can be flanged or butt welded, and the design is according to: API 6D structure length according to the factory standard

规格 (NPS) Specification	全径 (F.P) Full diameter		1/2	3/4	1	1 1/4	1 1/2	2
结构长度 (mm) Structure length	L	CL1500	216	229	256	279	305	368
		CL2500	264	273	308	349	384	451
中心至手柄端 (mm) Center to handle end	B	CL1500	230	230	350	280	400	400
		CL2500	280	280	95	350	400	400
中心高度 (mm) Center height	H	CL1500	75	85	85	105	110	130
		CL2500	75	85	95	105	110	130
流通孔径 (mm) Runner aperture	d	CL1500	13	19	25	32	38	49
		CL2500	13	19	25	32	38	42
重量 (约) (kg) Weight (approximately)		CL1500	25	5.8	5.8	6.8	11.5	13.7
		CL2500	2.7	6.3	6.3	305	12	15

**低温球阀**  
Cryogenic Ball Valve



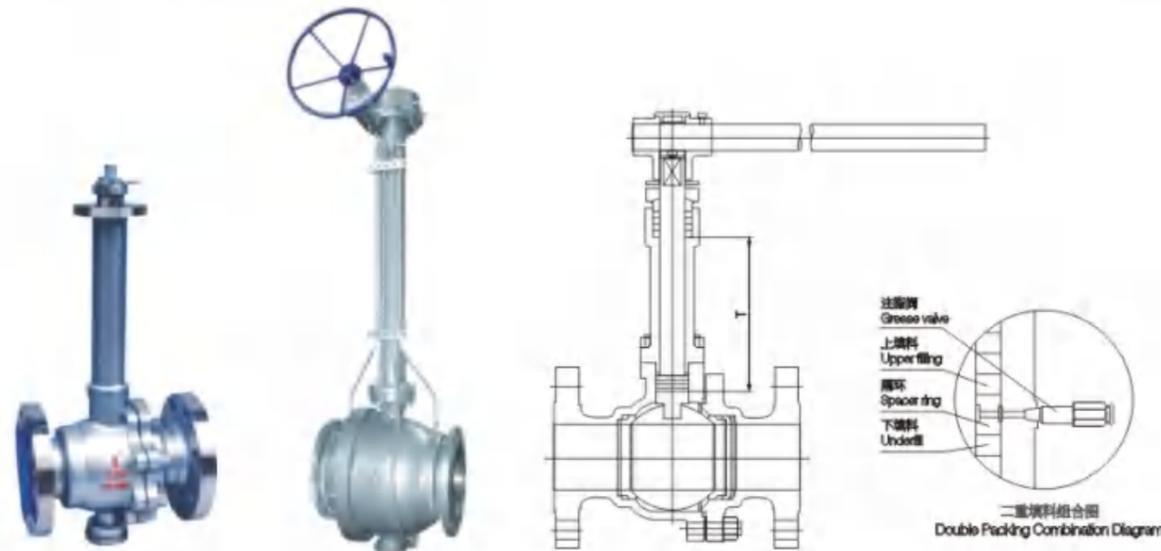
用途 Use

系列低温球阀主要适用于乙烯、液化天然气等化工装置上，输出的液态低温介质如乙烯、液氧、液氮等。这类介质不但易燃易爆，而且在升温时要气化，气化时，体积膨胀数百倍。而且这些介质渗透力强，易泄漏，加工制造比较困难。

结构特性 Structural characteristics

1. 承压件的材料能承受介质温度的变化而引起的膨胀、收缩，密封部位的结构在温度变化时不会产生永久的变形。用于-100℃以下工况时，阀门零件在精加工前应进行深冷处理，即将零件浸放在液氧箱中进行冷却，当零件温度达到-196℃时，开始温度1~2h，然后取出箱外自然处理到常温，重复循环2次。
2. 阀盖采用长颈结构，其目的为保护填料函，使填料函处于高低温较远的位置，保证填料的密封效果。同时还可以缠绕保冷材料，防止冷能损失。长颈的颈长(H，见左图)可根据使用温度和保冷材料的厚度来选择不同的长度。当填料密封效果降低时，可以从填料函的压差，提高密封性能。
3. 使用温度低于-100℃时，阀杆材料经过镀铬或氮化处理，提高阀杆表面硬度，提高填料密封的可靠性。
4. 低温球阀具有防止异常升压结构，由于低温阀门介质气化后，其体积急剧膨胀，压力会异常升高，当阀门中腔压力升高时，阀门中腔和进口侧连通，或在阀门进口端安装泄压阀，保证阀门安全使用。
5. 低温球阀用的垫片具有在常温下、低温状态及温度变化下能可靠密封性和复原性。

产品结构型式 Product structure type

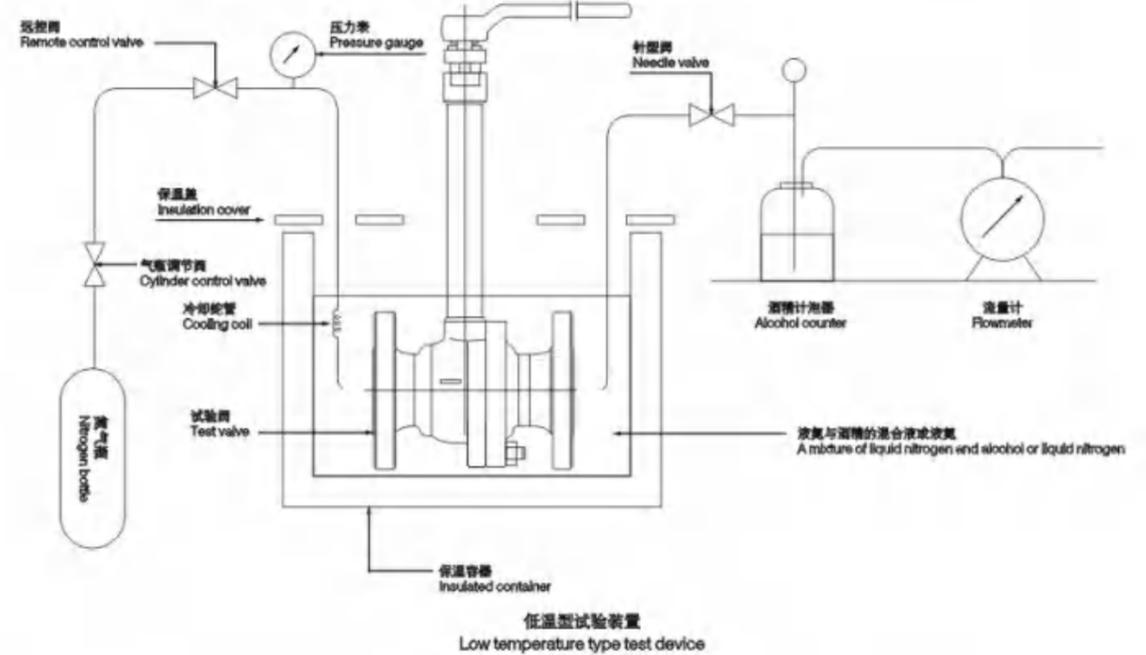


Series cryogenic ball valves are mainly used in chemical plants such as ethylene and liquefied natural gas, and output liquid cryogenic media such as ethylene, liquid oxygen, and liquid hydrogen. This kind of medium is not only flammable and explosive, but also vaporizes when the temperature rises, and the volume expands hundreds of times when it vaporizes. Moreover, these media have strong penetrating power, are easy to leak, and are difficult to process and manufacture.

1. The material of the pressure-bearing part can withstand the expansion and contraction caused by the change of the temperature of the medium, and the structure of the sealing part will not be permanently deformed when the temperature changes. When used in working conditions below -100℃, the valve parts should be cryogenically processed before finishing, that is, the parts should be immersed in a liquid oxygen tank for cooling. When the temperature of the parts reaches -196℃, the temperature will start for 1 to 2 hours, and then take it out. The outside of the box is naturally processed to room temperature, and the cycle is repeated 2 times.
2. The valve cover adopts a long-necked structure, the purpose of which is to protect the stuffing box, keep the stuffing box far away from the low temperature, and ensure the sealing effect of the packing. At the same time, cold insulation materials can be wound to prevent loss of cold energy. The length of the long neck (H, see the left picture) can be selected according to the use temperature and the thickness of the cold insulation material. When the packing sealing effect is reduced, the pressure difference of the stuffing box can be used to improve the sealing performance.
3. When the operating temperature is lower than -100℃, the stem material is chrome-plated or nitrided to increase the surface hardness of the stem and improve the reliability of the packing seal.
4. The cryogenic ball valve has a structure to prevent abnormal pressure rise. After the medium of the cryogenic valve is vaporized, its volume expands sharply, and the pressure rises abnormally. When the pressure in the valve cavity rises, the valve cavity and the inlet side are connected, or in the valve A pressure relief valve is installed at the inlet to ensure the safe use of the valve.
5. Gaskets for cryogenic ball valves have reliable sealing and restorability at room temperature, low temperature conditions and temperature changes.

低温球阀型式试验 Cryogenic ball valve type test

按照有关标准要求，低温球阀试验在常温压力试验合格后，还需进行低温压力试验。其原理图如下：  
According to the requirements of relevant standards, after the cryogenic ball valve test has passed the normal temperature pressure test, a low temperature pressure test is also required. The schematic diagram is as follows:



低温球阀主要外形连接尺寸 Main external connection dimensions of cryogenic ball valve

低温球阀的主要外形连接尺寸参照侧装式浮动球阀和固定球阀，阀门高度尺寸在其基础上加长颈的高度，故不再列尺寸表。  
The main external connection dimensions of the cryogenic ball valve refer to the side-mounted floating ball valve and the fixed ball valve. The height of the valve is based on the height of the long neck, so the size table is no longer listed.

低温球阀技术规范 Technical specification for cryogenic ball valve

技术规范 Specifications	API系列 API series	GB系列 GB series
基本设计规范 Basic design specification	ANSI B 16.34, JB/T7749	
压力温度等级 Pressure temperature class	ASME B16.34	GB/T12224
结构长度 Structural length	ASME B16.10 GB/T12221	
法兰连接 Flange connection	ASME B16.5 ASME B16.47	GB/T 9113 HG/T 20592
检验与试验 Inspection and testing	API 598*	JB/T 9092*

\*低温球阀在常温下压力试验合格后，还需进行低温压力试验，其原理见低温球阀型式图。  
\* After the cryogenic ball valve has passed the pressure test at room temperature, a low-temperature pressure test is required. The principle is shown in the cryogenic valve type diagram.

让每一只阀门具有灵魂，  
用做艺术品的心态制造阀门！  
One soul in one valve,  
make valve artwork!

低温球阀阀盖加长颈部长度的参考  
Cryogenic ball valve bonnet with extended neck length (reference)

公称直径 Nominal diameter		颈部长度的(mm) Neck length		
DN	in	≥-60℃	≥-100℃	<-100℃
15	1/2	90	110	130
20	3/4	100	110	140
25	1	100	120	150
32	1 1/4	110	120	150
40	1 1/2	110	130	160
50	2	110	130	170
65	2 1/2	120	140	180
80	3	120	150	190
100	4	130	160	200
125	5	130	160	200
150	6	140	170	220
200	8	140	170	220
250	10	150	180	240
300	12	150	180	240
350	14	160	190	250
400	16	160	190	250

供货范围 Scope of supply

公称直径 Nominal diameter		压力等级 Pressure level
DN	in	150Lb、300Lb、PN1.6-10.0MPa
15	1/2	Δ/●
20	3/4	Δ/●
25	1	Δ/●
32	1 1/4	Δ/●
40	1 1/2	Δ/●
50	2	Δ/★/●
65	2 1/2	Δ/★/●
80	3	Δ/★/●
100	4	Δ/★/●
125	5	Δ/★/●
150	6	Δ/★/●
200	8	Δ/★/●
250	10	Δ/★/●
300	12	Δ/★/●
350	14	Δ/★/●
400	16	Δ/★/●

注：★表示电动操作阀门；Δ表示气动操作阀门；●表示手柄操作阀门；-表示没有此选项，表示未涉及的可按用户的要求制造。  
Note: ★ means electric operated valve; Δ means pneumatic operated valve; ● means handle operated valve; - means that there is no such option, which means that the unrelated products can be manufactured according to user's requirements.

球阀阀体低温材料最低使用温度 Low temperature material of ball valve body minimum use temperature

锻件 Forging		铸件 Casting	
标准、材料牌号 Standards, material grades	最低温度℃ Lowest temperature °C	标准、材料牌号 Standards, material grades	最低温度℃ Lowest temperature °C
ASTM A350 LF2	-45.6℃	ASTM A352 LCB LCC	-46℃
ASTM A350 LF5	-59.4℃	ASTM A352 LC1	-59℃
ASTM A350 LF9	-73.3℃	ASTM A352 LC2	-73℃
ASTM A350 LF3	-101.1℃	ASTM A352 LC3	-101℃
ASTM A182 F304	-254℃	ASTM A351 CF8	-254℃
ASTM A182 F316	-254℃	ASTM A351 CF8M	-254℃
ASTM A182 F304L	-254℃	ASTM A351 CF3	-254℃
ASTM A182 F316L	-254℃	ASTM A351 CF3M	-254℃

三通/四通球阀  
Three Way/Four Way Ball Valve



三通球阀制造规范  
Three-way ball valve manufacturing specification

技术规范 Specifications	API系列 API series	DIN系列 DIN series
基本设计规范 Basic design specification	ANSI B 16.34	
压力温度等级 Pressure temperature rating	ASME B16.34	DIN3356
结构长度 Structure length	ASME B16.10	
法兰连接 Flange connection	ASME B16.5 DIN2543-2551	
检验与试验 Inspection and testing	API 598	DIN3230



阀门结构示意图(侧装浮动式爆炸图)  
Schematic diagram of valve structure (side-mounted floating exploded diagram)

序号 No.	零件名称 Part name	序号 No.	零件名称 Part name
1	阀盖 Bonnet	12	O型圈 O-ring
2	螺母 Nut	13	螺塞 Screw plug
3	螺栓 Bolt	14	阀杆 Stem
4	垫片 Gasket	15	垫片 Gasket
5	密封圈1 Sealing ring 1	16	填料 Filler
6	球体 Ball	17	螺钉 Screw
7	密封圈2 Seal ring 2	18	填料压盖 Packing gland
8	阀体 Body	19	限位片 Limit piece
9	密封圈3 Seal ring 3	20	挡圈 Retaining ring
10	密封圈4 Seal ring 4	21	手柄 Handle
11	阀座 Seat	22	

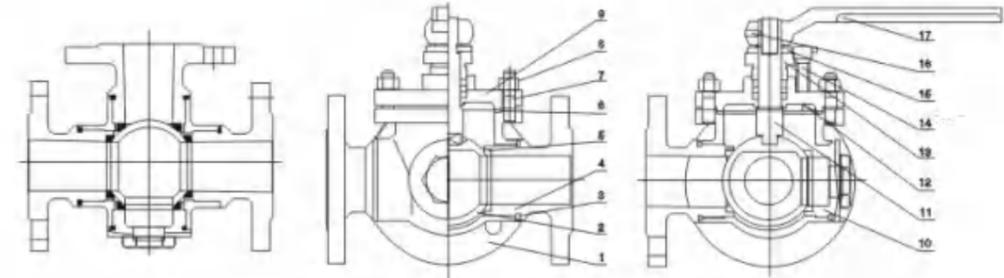
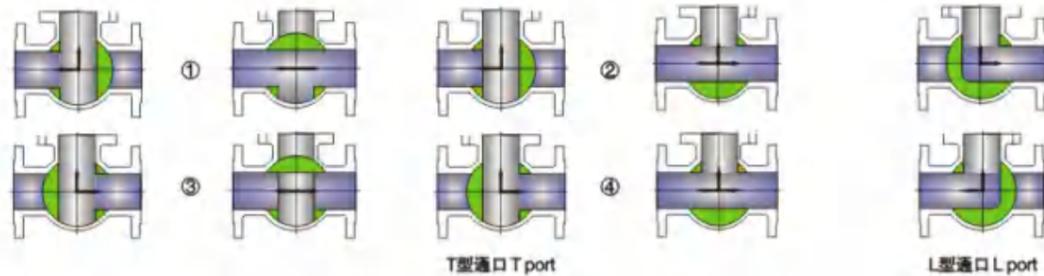
球阀功能 Ball valve function

三通球阀适用于在-46℃~+200℃温度下对腐蚀性或非腐蚀性液体、气体、粉末介质实现切换、混合和分流；开闭过程中，流路通畅减小了压力损失，操作省力、维修方便；五种流向(见右图：L型一种、T型四种)类型满足不同工艺要求，可进行手、气动、电动控制。

The three-way ball valve is suitable for switching, mixing and splitting corrosive or non-corrosive liquid, gas, and powder media at a temperature of -46℃~+200℃; during the opening and closing process, the flow path is unobstructed, reducing the pressure loss, and the operation is labor-saving. Convenient maintenance; five flow directions (see the picture on the right: one type L and four types T) meet different technological requirements, and can be controlled by hand, pneumatic and electric.

结构特点 Structural features

1. 阀座可设计成四面座浮动球和固定球，流态稳定，密封可靠；  
1. The valve seat can be designed as a four-sided floating ball and a fixed ball, with stable flow and reliable sealing;
2. 结构可设计成侧装式和顶装式，双向密封设计；流向切换绝无串流；  
2. The structure can be designed as side-mounted and top-mounted, with two-way sealing design; there is no serial flow when the flow direction is switched;
3. 防飞出阀杆设计；  
3. Anti-flying valve stem design;
4. 防静电设计；  
4. Anti-static design;
5. 两位(开合关位置)锁定设计。  
5. Two-position (opening and closing position) locking design.



主要零部件 Main parts

序号 No.	零件名称 Part name	序号 No.	零件名称 Part name
1	阀体 Body	10	阀座 Seat ring
2	球体 Ball	11	阀杆 Stem
3	O型圈 O-ring	12	填料 Filler
4	法兰盘 Flange	13	填料压盖 Packing gland
5	密封圈 Sealing ring	14	限位螺钉 Stop screw
6	垫片 Gasket	15	限位片 Limit piece
7	螺栓 Bolt	16	紧定螺钉 Set screw
8	螺母 Nut	17	手柄 Handle
9	阀盖 Bonnet		

供货范围 Scope of supply

公称通径 Nominal diameter		压力等级 Pressure level	
DN	in	150Lb	300Lb
15	1/2	●	●
20	3/4	●	●
25	1	●	●
32	1 1/4	●	●
40	1 1/2	●	●
50	2	●	●
65	2 1/2	●	●
80	3	●	●
100	4	●	●
125	5	●	●
150	6	☆	☆
200	8	☆	☆
250	10	☆	☆

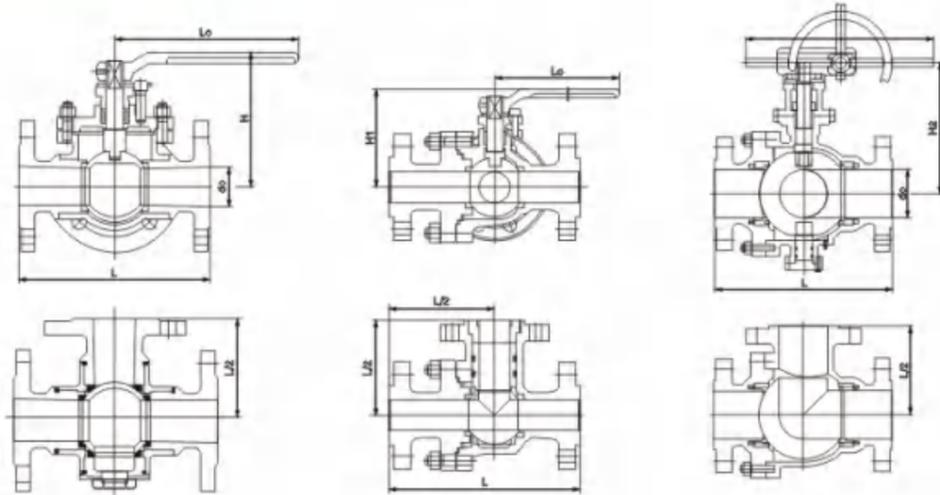
注：●表示手柄操作阀门；☆表示齿轮箱操作阀门；-表示没有此选项，表中未涉及的可按用户的要求制造。  
Note: ● Indicates that the valve is operated by the handle; ☆ indicates that the valve is operated by the gear box; - Indicates that there is no such option, and the products not mentioned in the table can be manufactured according to user requirements.

主要零部件材料(侧装式结构) Material of main parts (side-mounted structure)

序号 No.	零件名称 Part name	材质 Material			序号 No.	零件名称 Part name	材质 Material		
		碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel			碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel
1	阀盖 Bonnet	A216 WCB	A351 CF8M	A352 LCB	12	O型圈 O-ring	氟橡胶 Fluororubber		
2	螺母 Nut	A194 2H	A194 8	A194 4	13	螺塞 Screw plug	A105+ENP	A182 F316	A350 LF3
3	螺栓 Stud	A193 B7	A193 B8	A320 L7	14	阀杆 Stem	A182 F6a	A182 F316	A182 F316
4	垫片 Gasket	柔性石墨 Flexible graphite+SS			15	垫片 Gasket	PTFE/RPTFE		
5	密封圈 Sealing ring	PTFE/RPTFE			16	填料 Filler	PTFE/柔性石墨 Flexible graphite		
6	球体 Ball	A105+ENP	A182 F316/F304	A350 LF3/LF2+ENP	17	螺钉 Screw	A193 B7	A193 B8	A320 L7
7	密封圈 Sealing ring	PTFE/RPTFE			18	填料压盖 Packing gland	A216 WCB	A351 CF8M	A352 LCB
8	阀体 Body	A216 WCB	A351 CF8M	A352 LCB	19	限位片 Limit piece	A105+ENP		
9	密封圈 Sealing ring	PTFE/RPTFE			20	挡圈 Retaining ring	65Mn		
10	密封圈 Sealing ring	PTFE/RPTFE			21	手柄 Handle	Q235A		
11	阀座 Seat	A105+ENP	A182 F316	A350 LF3					

## 三通球阀 Three-way Ball Valve

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### 主要外形及连接尺寸 Main shape and connection size

PN1.6MPa Class 150

DN	NPS	L	do	H	H1	H2	Lo	W	重量 Weight(kg)
15	1/2	200	13	90	70	/	160	/	3
20	3/4	220	19	106	86	/	230	/	4
25	1	250	25	109	88	/	230	/	6
32	1 1/4	/	32	125	106	/	400	/	10
40	1 1/2	250	38	149	132	/	400	/	14
50	2	260	49	154	137	/	400	/	20
65	2 1/2	320	62	189	162	/	700	/	25
80	3	320	74	198	170	/	700	/	32
100	4	370	100	254	229	/	1050	/	45
125	5	510	125	273	247	/	1050	/	/
150	6	510	150	/	/	314	/	450	/
200	8	580	201	/	/	430	/	600	/
250	10	670	252	/	/	475	/	600	/

### 主要外形及连接尺寸 Main shape and connection size

PN2.5/4.0MPa Class 300

DN	NPS	L	do	H	H1	H2	Lo	W	重量 Weight(kg)	
									PN2.5	PN4.0
15	1/2	200	13	90	70	/	160	/	3	3
20	3/4	220	19	106	86	/	230	/	4	4
25	1	250	25	109	88	/	230	/	6.5	6.5
32	1 1/4	/	32	125	106	/	400	/	11	11
40	1 1/2	250	38	149	132	/	400	/	15	15
50	2	260	49	154	137	/	400	/	21.5	21.5
65	2 1/2	320	62	189	162	/	700	/	/	/
80	3	320	74	198	170	/	700	/	35	35
100	4	370	100	254	229	/	1050	/	49	49
125	5	370	125	273	247	/	1050	/	/	/
150	6	510	150	/	/	314	/	450	/	/
200	8	580	201	/	/	430	/	600	/	/
250	10	670	252	/	/	475	/	600	/	/

## 四通球阀 Four-way Ball Valve



### 四通球阀功能 Four-way ball valve function

四通球阀在电站系统中称为双向供水球阀(在石化系统中也称空气换向切换阀),适用于液体、气体、粉尘、浆料及含固体颗粒介质的循环系统。如:电站机组冷却器正反向循环供水系统。传统工艺配管方式实现冷却正反向循环供水,该装置所占空间大、成本高、操作烦琐(每次切换需操作四个阀门)、正向供水时阀1、3开启,阀2、4关闭;反向供水时阀2、4开启,阀1、3关闭。(见图1)采用四通球阀替代该工艺管汇和阀组的工作原理,简化程序、方便操作、降低成本、便于控制、同步性强。(见图2)

The four-way ball valve is called the two-way water supply valve in the power station system (also called the air reversing valve in the petrochemical system), which is suitable for the circulation system of liquid, gas, dust, slurry and medium containing solid particles. Such as: power plant unit cooler forward and reverse circulation water supply system. The traditional process piping method realizes cooling positive and negative circulating water supply. The device occupies a large space, high cost, and is cumbersome to operate (four valves are required for each switch). Valves 1, 3 are opened and valves 2, 4 are closed during forward water supply; When the water supply is reversed, valves 2 and 4 are opened, and valves 1 and 3 are closed. (See Figure 1) The four-way ball valve is used to replace the working principle of the process manifold and valve group, which simplifies procedures, facilitates operation, reduces costs, facilitates control, and has strong synchronization. (See Figure 2)

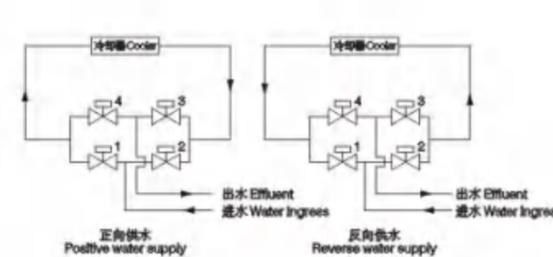


图1 Figure 1

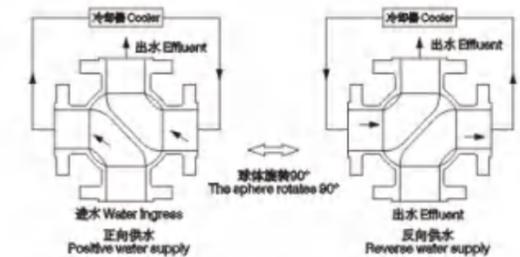


图2 Figure 2

### 结构特点 Structural features

1. 针对电力系统冷却器正反向供水特定工艺过程设计, 功能匹配, 可靠性高;
2. 顶装式固定球四面芯结构密封性能好、耐砂粒磨损、适用寿命长;
3. 电动、气动操作(必要时可切换到手动操作);
4. 便于控制控制箱与阀门间以及与上位机之间有良好的信息通道和操作界面; 并可按工艺要求实现在一定时间间隔正反向供水的自动切换。

1. Designed for the specific process of the positive and negative water supply of the power system cooler, with matching functions and high reliability;
2. The top-mounted fixed ball four-sided core structure has good sealing performance, and wear resistance and long service life;
3. Electric and pneumatic operation (switch to manual operation if necessary);
4. It is easy to control the good information channel and operation interface between the control box and the valve and between the upper computer; and can realize the automatic switching of positive and negative water supply at a certain time interval according to the process requirements.

四通球阀制造规范 Four-way ball valve manufacturing specification

技术规范 Specifications	API系列 API series	DIN系列 DIN series
基本设计规范 Basic design specification	ANSI B 16.34	
压力温度等级 Pressure temperature rating	ASME B16.34	DIN3356
结构长度 Structure length	ASME B16.10	
法兰连接 Flange connection	ASME B16.5	DIN2543-2551
检验与试验 Inspection and testing	API 598	DIN3230

控制系统 Control system

四通球阀即可就地现场控制，也可以通过控制箱中央控制系统实施远程集中控制。控制介面功能如下：

The four-way ball valve can be controlled on site or remotely controlled by the central control system of the control box. The control interface functions are as follows:

一、开关

I. Switch

1. 电源开关
2. 现场控制/远程控制转换开关
3. 手动循环/自动循环转换开关

1. Power switch
2. On-site control/remote control switch
3. Manual cycle/automatic cycle switch

二、按钮

II. Button

1. 正向供水
  2. 反向供水
  3. 停
- 三、指示灯
1. 电源指示
  2. 正向供水指示
  3. 反向供水指示
  4. 中位停顿指示
  5. 阀门或电装卡组过力矩指示(闪烁并报警)

1. Positive water supply
2. Reverse water supply
3. Stop

III. Indicator light

1. Power indicator
2. Positive water supply indication
3. Reverse water supply indication
4. Median pause indication
5. Over-torque indication of valve or Denso card group (flashing and alarm)

四、开度指示表

IV. The opening indicator table

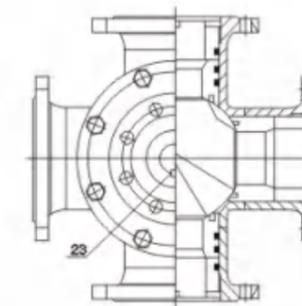
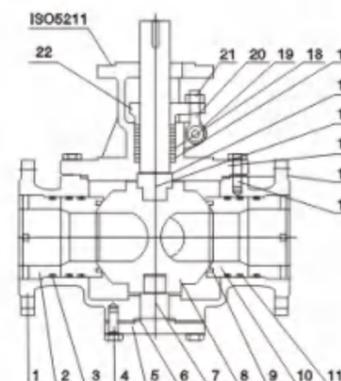
五、与上位机通讯

V. Communicate with the host computer

电气参数 Electrical parameters

电源AC280V/50HZ, 环境温度-20~+40℃, 相对湿度≤90%(25℃时), 防护等级IP 67, 电气原理图以使用说明书为准。

Power supply AC280V/50HZ, ambient temperature -20~+40℃, relative humidity ≤90% (at 25℃), protection grade IP 67, electrical schematic diagram is subject to the instruction manual.



主要零部件材料 Material of main parts

序号 No.	零件名称 Part name	材质 Material		
		碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel
1	阀体 Body	A216 WCB	A351 CF8M	A352 LCB
2	锁紧螺母 Lock nut	A105+ENP	A182 F316	A350 LF3
3	O型圈 O-ring	氟橡胶 Fluorine rubber		
4	螺栓 Bolt	A193 B7	A193 B8	A320 L7
5	底盖 Bottom cover	A105+ENP	A182 F316	A350 LF3
6	垫片 Gasket	柔性石墨 Flexible graphite		
7	下阀杆 Lower stem	A182 F6a	A182 F316	
8	球体 Ball	A105+ENP	A182 F316/F304	A350 LF3/LF2+ENP
9	密封圈 Sealing ring	PTFE/EPTFE		
10	阀座 Seat	A105+ENP	A182 F316	A350 LF3
11	O型圈 O-ring	氟橡胶 Fluorine rubber		
12	螺栓 Bolt	A193 B7	A193 B8	A320 L7
13	垫片 Gasket	柔性石墨 Flexible graphite		
14	阀盖 Bonnet	A216 WCB	A351 CF8M	A352 LCB
15	阀杆 Stem	A182 F6a	A182 F316	A182 F316
16	垫片 Gasket	PTFE+SS		
17	填料垫 Padding	A182 F6a	/	A182 F6a
18	填料 Filler	柔性石墨 Flexible graphite		
19	销轴 Pin shaft	A182 F6a		
20	活接螺栓 Union bolt	A193 B7	A193 B8	A320 L7
21	螺母 Nut	A194 2H	A194 8	A194 4
22	填料压盖 Packing gland	A216 WCB	A351 CF8M	A352 LCB
23	键 key	ANSI 1215		

供货范围 Scope of supply

公称直径 Nominal diameter		压力等级 Pressure level	
DN	in	150Lb	PN1.0/1.6/2.5MPa
50	2	△/★/☆	△/★/☆
65	2 1/2	△/★/☆	△/★/☆
80	3	△/★/☆	△/★/☆
100	4	△/★/☆	△/★/☆
125	5	△/★/☆	△/★/☆
150	6	△/★/☆	△/★/☆
200	8	△/★/☆	△/★/☆
250	10	△/★/☆	△/★/☆
300	12	△/★/☆	△/★/☆
350	14	△/★/☆	△/★/☆
400	16	△/★/☆	△/★/☆
450	18	△/★/☆	△/★/☆
500	20	△/★/☆	△/★/☆

注：●表示手柄操作阀门；  
☆表示齿轮箱操作阀门；  
-表示没有此选项，表中未涉及的可按用户的要求制造。

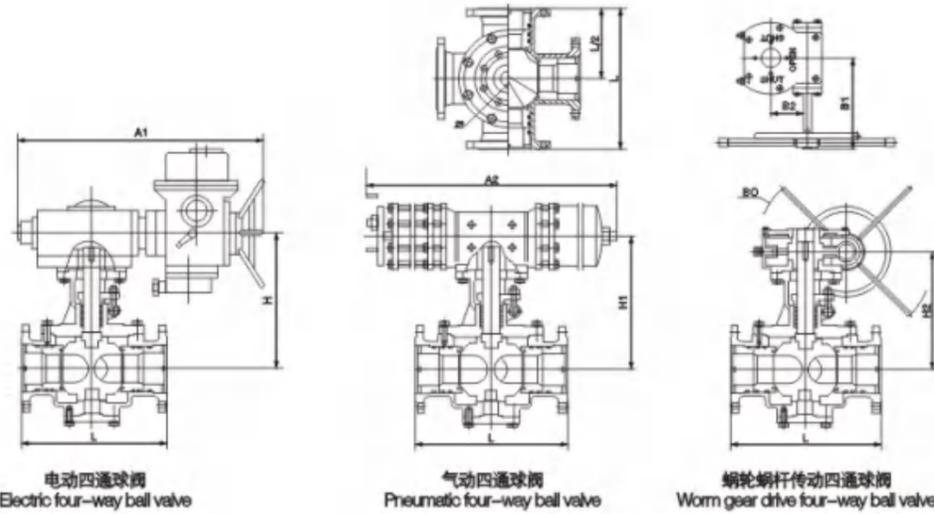
Note: ● indicates that the handle operates the valve;  
☆ indicates that the gear box operates the valve;  
- indicates that there is no such option, and those not mentioned in the table can be manufactured according to user requirements.

**四通球阀**  
Four-way Ball Valve

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用做艺术品的心态制造阀门！

One soul in one valve,  
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主要外形及连接尺寸 Main shape and connection size

PN1.0/1.6MPa Class 150

DN	NPS	L	do	H	A1	H1	A2	H2	Bo	B1	B2	重量 Weight(kg)
												G.O
50	2	265	49	220	433	217	405	200	250	106	52	28
65	2 1/2	320	62	295	433	248	405	260	250	106	52	48
80	3	320	74	367	433	335	574	320	250	106	52	87
100	4	370	100	440	520	412	574	400	300	143	80	137
125	5	510	125	535	520	495	756	500	300	143	80	240
150	6	510	150	660	520	613	756	600	400	200	108	270
200	8	580	201	870	520	824	756	800	400	200	108	585
250	10	670	252	1080	896	1025	1060	1000	600	200	108	765
300	12	760	303	1200	896	1176	1060	1180	600	200	108	1121
350	14	850	334	1250	896	1239	1360	1225	800	330	140	1450
400	16	980	385	1420	910	1388	1360	1350	800	330	140	1780
450	18	1080	436	1610	910	1596	1360	1575	800	330	140	2435
500	20	1220	487	1830	910	1725	2910	1750	1000	370	20	3108

主要外形及连接尺寸 Main shape and connection size

PN2.5/4.0MPa Class 300

DN	NPS	L	do	H	A1	H1	A2	H2	Bo	B1	B2	重量 Weight(kg)
												G.O
50	2	265	49	390	433	217	405	200	250	106	52	28.5
65	2 1/2	320	62	420	433	248	405	260	250	106	52	49
80	3	350	74	490	520	335	574	320	250	106	52	87
100	4	420	100	570	520	412	574	400	300	143	80	139
125	5	510	125	680	520	495	756	500	300	143	80	240
150	6	580	150	830	896	613	756	600	400	200	108	270
200	8	640	201	1020	896	824	756	800	400	200	108	585
250	10	740	252	1140	896	1025	1060	1000	600	200	108	765
300	12	820	303	1220	896	1176	1060	1200	600	200	108	1125
350	14	910	334	1390	910	1239	1360	1225	800	330	140	1455
400	16	1000	385	1580	910	1388	1360	1350	800	330	140	1785
450	18	1150	436	1790	910	1596	1360	1575	800	330	140	2467
500	20	1300	487	1960	936	1725	2910	1750	1000	370	220	3150

法兰尺寸见附表  
Flange size see attached table

**清管阀**  
Pigging Valve



### 概述 Overview

清管阀是一种主要用于水、石油、天然气等长输管线中清洗管道的新型阀，作清管器的发射和接收用。配合相应的清管器可以轻松完成管道清洁、排空隔离和按序输送介质、检测管道系统的工作。能够完全替代传统使用的以清管器收发筒为核心复杂的清管器发射、接收装置。清管阀的结构特征是在固定式球阀结构原理基础上改型和增加功能后创新设计的新型阀门。完全继承了两位截断式球阀的性能特点，能通过球芯的90° 回转实现阀门的启闭，便于设计成双阻塞使阀门在全开或全关的情况下都可以排放腔体内的介质，这种功能正是清管阀所必须的。

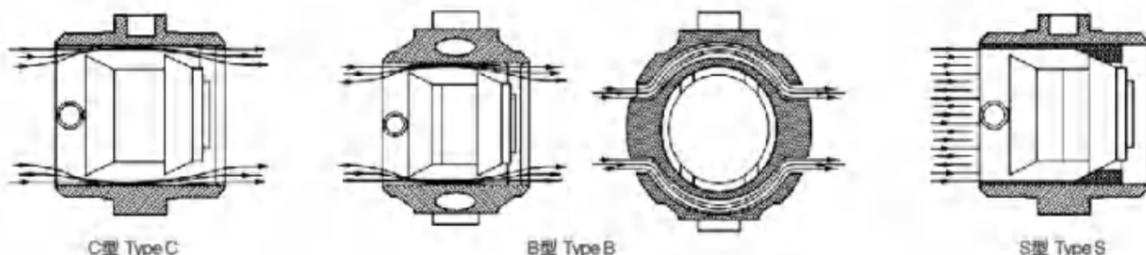
阀体的侧面开设支管，该支管中心与管线中心与管线中心垂直相交。支管上安装快开盲板和放空阀，使清管器能够方便送入清管阀或从清管阀中取出，球体通孔直径更大，通孔的一端设置能够阻碍清管器通过而又允许介质流通的挡条。

100%的压力试验并保证任何密封部位无可见泄漏；耐火安全设计，当弹性阀座被烧损后，球体和阀座之间形成金属对金属的密封；阀体与阀盖以及阀杆部位都设置耐高温的石墨垫片，保证高温密封可靠性，耐火试验符合API 6FA和API 607标准要求；抗静电设计，导电弹簧保证球体与阀体、阀杆与阀体间良好导电，安全地导出摩擦产生的静电。

The pig valve is a new type of valve mainly used for cleaning pipelines in long-distance pipelines such as water, oil, natural gas, etc., for the launch and reception of the pig. With the corresponding pig, it can easily complete the work of pipeline cleaning, emptying and isolation, orderly transporting the medium, and testing the pipeline system. It can completely replace the traditionally used and complex pig transmitting and receiving devices with the pig transceiver as the core. The structural feature of the pigging valve is a new type of valve that is innovatively designed based on the structural principle of the fixed ball valve after modification and addition of functions. It completely inherits the performance characteristics of the two-position cut-off ball valve, and can realize the opening and closing of the valve through the 90° rotation of the ball core. It is convenient to design as a double block so that the valve can discharge the medium in the body cavity when it is fully open or fully closed. This function is necessary for pigging valves.

A branch pipe is opened on the side of the valve body, and the branch pipe center intersects the pipeline center and the pipeline center perpendicularly. A quick-open blind plate and a vent valve are installed on the branch pipe, so that the pig can be easily fed into the pig valve or taken out of the pig valve. The diameter of the ball through hole is larger, and the one end of the through hole can prevent the pig from passing through. A barrier that allows the medium to circulate.

100% pressure test and ensure that there is no visible leakage in any sealing parts; fire-resistant safety design, when the elastic valve seat is burned, a metal-to-metal seal is formed between the ball and the valve seat; the valve body, bonnet and valve stem are all set high-temperature-resistant graphite gaskets to ensure high-temperature sealing reliability. The fire resistance test meets the requirements of API 6FA and API 607; the antistatic design and the static conductive spring ensure good conduction between the ball and the valve body, and the valve stem and the valve body. Lead out static electricity generated by friction.



#### 标准型清管阀 型号：C型

产品描述：C型是清扫管道用的标准型清管阀。它的球孔面积比管子通流面积约大25%，以保证清管作业过程中输送介质持续流动。C型清管阀能当作截断阀使用。性能特点：

- 1、阀杆不受球体推力作用，阀杆扭转自如，阀门操作灵活；
- 2、快开盲板操作方便；
- 3、零泄漏；
- 4、联锁设计保证操作人员的安全性；
- 5、耐火安全设计，耐火试验符合API 6FA和API 607标准要求；
- 6、抗静电设计；
- 7、清洗设计。

#### Standard pigging valve Model: Type C

Product description: Type C is a standard pigging valve for pipe cleaning. Its spherical hole area is about 25% larger than the pipe flow area to ensure the continuous flow of the conveying medium during the pigging operation. Type C pigging valve can be used as a shut-off valve.

#### Performance characteristics:

1. The valve stem is not affected by the thrust of the ball, the valve stem can be twisted freely, and the valve operation is flexible;
2. The quick opening blind plate is easy to operate;
3. Zero leakage;
4. Interlocking design ensures the safety of operators;
5. Fire-resistant safety design, fire-resistant test meets the requirements of API 6FA and API 607 standards;
6. Antistatic design;
7. Cleaning design.

#### 旁通型清管 型号：B型

产品描述：B型是一种带旁通的清管阀，在球体上垂直于球孔方向开设两个椭圆形通道，其通流面积约为管子的25%。这种结构保证即便在发射或接收清管器时清管阀也不会发生断流。B型清管阀不能当作截断阀使用。

#### Bypass pigging Model: Type B

Product description: Type B is a pigging valve with bypass. Two elliptical passages are opened on the sphere perpendicular to the direction of the ball hole, and the flow area is about 25% of the pipe. This structure ensures that the pig valve will not be cut off even when the pig is transmitted or received. B-type pigging valve cannot be used as a shut-off valve.

#### 隔离型清管阀型号：S型

产品描述：S型清管阀主要是隔离和按序输送介质用清管阀。它的球孔面积比管子通流面积约大3%；并且在接收清管阀的球孔内有一个附加密封，保证隔离清管器到达接收清管阀时形成密封，获得理想的隔离效果。S型清管阀能当作截断阀使用。

#### Isolated pigging valve model: S type

Product description: S-type pigging valve is mainly used for isolating and sequentially conveying medium. Its ball hole area is about 3% larger than the pipe flow area; and there is an additional seal in the ball hole of the receiving pig valve to ensure that the isolation pig reaches the receiving pig valve to form a seal and obtain an ideal isolation effect. The S-type pig valve can be used as a shut-off valve.

### 性能特点 Performance characteristics

- 1、阀杆不受球体推力作用，阀杆扭转自如，阀门操作灵活；
- 2、快开盲板操作方便；
- 3、零泄漏；
- 4、联锁设计保证操作人员的安全性；
- 5、耐火安全设计，耐火试验符合API 6FA和API 607标准要求；
- 6、抗静电设计；
- 7、清洗设计。

1. The valve stem is not affected by the thrust of the ball, the valve stem can be twisted freely, and the valve operation is flexible;
2. The quick opening blind plate is easy to operate;
3. Zero leakage;
4. Interlocking design ensures the safety of operators;
5. Fire-resistant safety design, fire-resistant test meets the requirements of API 6FA and API 607 standards;
6. Antistatic design;
7. Cleaning design.

### 采用的主要标准 Main standards adopted

设计制造按：API 6D GB/T12237-2009

试验和检验按：API 598 JB/T9092-2009

法兰尺寸按：ANSI B16.5 GB/T 9113-2009

JB/T79-2007 HG20592-2009

结构长度按：CTV-2000

Design and manufacture according to: API 6D GB/T12237-2009

Test and inspection according to: API 598 JB/T9092-2009

Flange size according to: ANSI B16.5 GB/T 9113-2009

JB/T79-2007 HG20592-2009

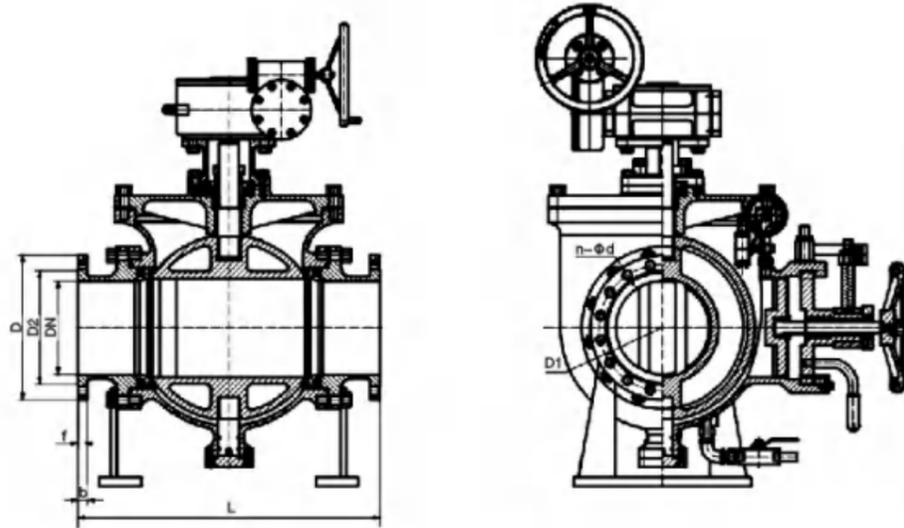
Structure length according to: CTV-2000

### 清管阀的材质 Material of pigging valve

阀门针对油气输送工况主体材料采用碳钢和低温钢，并分为普通和抗硫系列。抗硫阀门材料符合NACE MR01-75的规定。碳钢系列适用温度为-29~150℃，低温钢系列适用温度-46~121℃。

The valve adopts carbon steel and low temperature steel as the main material for oil and gas transportation conditions, and is divided into ordinary and sulfur resistant series. The anti-sulfur valve material complies with the regulations of NACE MR01-75. The suitable temperature for carbon steel series is -29~150℃, and the suitable temperature for low temperature steel series is -46~121℃.

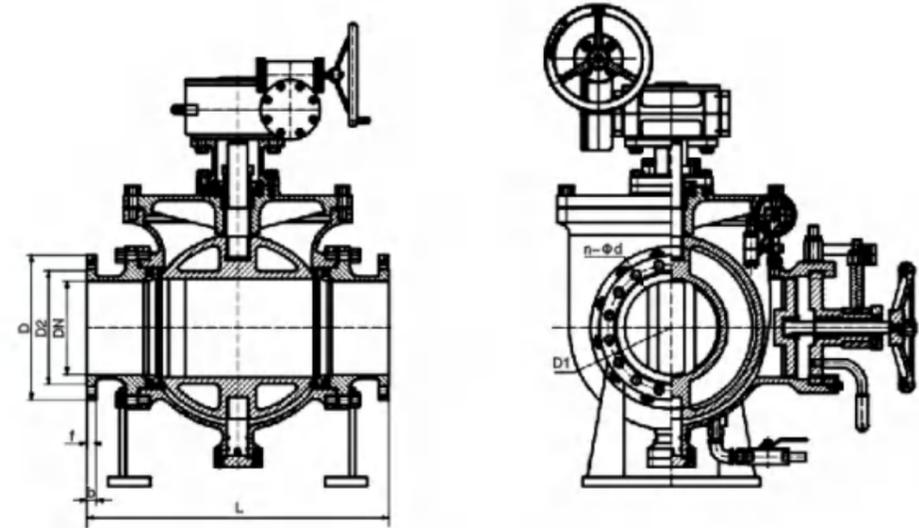
零件名称 Part name	碳钢 Carbon steel		低温钢 Low temperature steel	
	普通 Ordinary	抗硫 Sulfur resistance	普通 Ordinary	抗硫 Sulfur resistance
阀体、阀盖 Body, bonnet	A216 WCB	A216 WCB	A352 LCC	A352 LCC
球体 Ball	A216 WCB+HCr	A182 F316 A216 WCB+ENP	A182 LF2+HCr A352 LCC+HCr	A182 F316 A106/A352 LCC+ENP
阀杆 Stem	A182 F6a ANSI 1040+HCr	A182 F316 ANSI 1040+ENP	A182 F6a ANSI 1040+HCr	A182 F316 ANSI 1040+ENP
阀座 Seat	PTFE NYLON VITON			
阀座支承 Seat support	A182 F6a	A182 F316	A182 F6a	A182 F6a
弹簧 Spring	17-7PH			
螺栓 Bolt	A197 B7	A193 B7M	A320 L7	A352 L7M
螺母 Nut	A194 2H	A194 2HM	A194 4	A194 7M



主要外形和连接尺寸 Main shape and connection size

VDSQ347 <sup>F</sup>/<sub>H</sub> -16CIPR

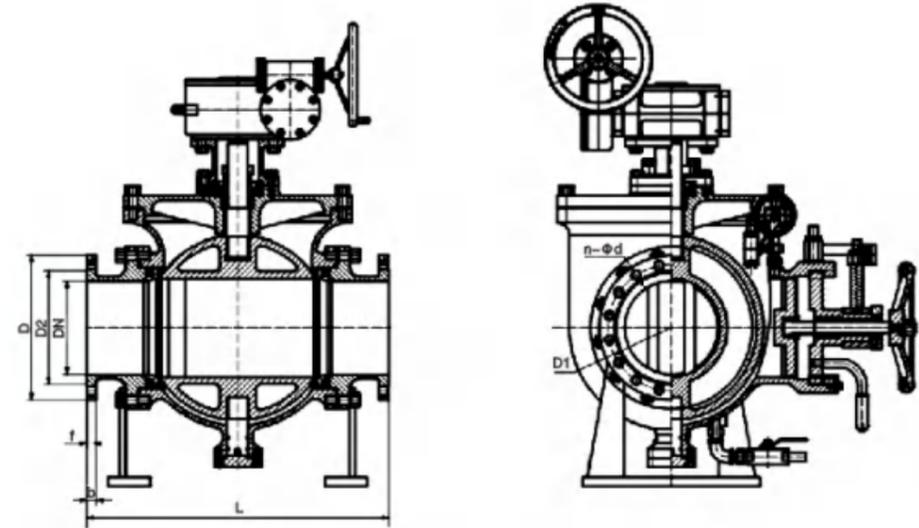
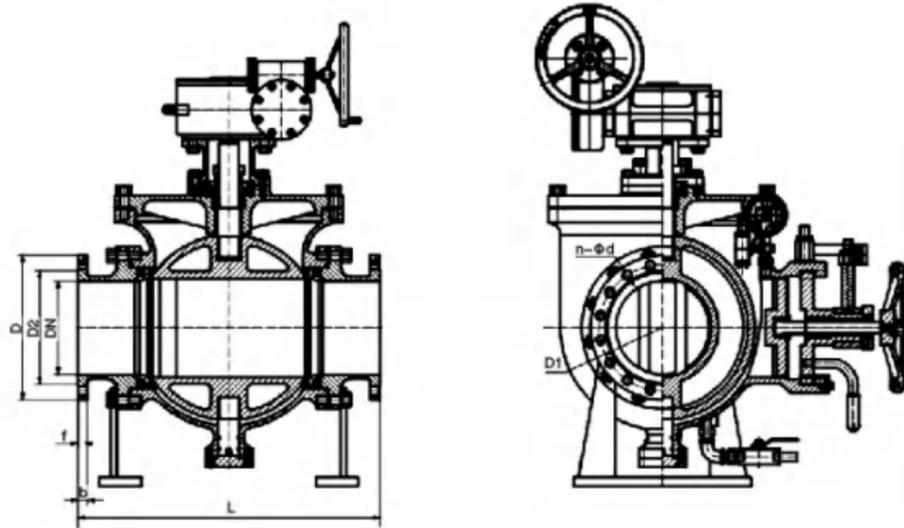
公称直径 Nominal diameter	连接尺寸 Connection size (1.6MPa)							
	DN	L	H	D	D1	D2	b	f
50	432	228	165	125	102	18	3	4-18
65	432	248	185	145	122	18	3	8-18
80	545	270	200	160	138	20	3	8-18
100	634	294	220	180	158	20	3	8-18
125	680	322	250	210	188	22	3	8-18
150	710	470	285	240	212	22	3	8-22
200	830	520	340	295	268	24	3	12-22
250	850	610	405	355	320	26	3	12-26
300	1100	650	460	410	378	28	4	12-28
350	1250	740	520	470	438	30	4	16-26
400	1400	795	580	525	490	32	4	16-30
450	1500	860	640	585	550	40	4	20-30
500	1700	945	715	650	610	44	4	20-33
600	1800	1040	840	770	725	54	5	20-36
700	1850	1150	910	840	795	58	5	24-36
800	1950	1280	1025	950	900	62	5	24-39
900	2252	1430	1125	1050	1000	64	5	28-39
1000	2500	1580	1255	1170	1115	68	5	28-42



主要外形和连接尺寸 Main shape and connection size

VDSQ347 <sup>F</sup>/<sub>H</sub> -25CIPR

公称直径 Nominal diameter	连接尺寸 Connection size (2.5MPa)							
	DN	L	H	D	D1	D2	b	f
50	432	240	165	125	102	20	3	4-18
65	432	260	185	145	122	22	3	8-18
80	545	280	200	160	138	24	3	8-18
100	634	345	235	190	162	24	3	8-22
125	680	390	270	220	188	26	3	8-26
150	710	470	300	250	218	28	3	8-26
200	830	540	360	310	278	30	3	12-26
250	850	630	425	370	335	32	3	12-30
300	1100	650	485	430	395	34	4	16-30
350	1250	740	555	490	450	38	4	16-33
400	1400	795	620	550	505	40	4	16-36
450	1500	860	670	600	555	46	4	20-36
500	1700	945	730	660	615	48	4	20-36
600	1800	1040	845	770	720	58	5	20-39
700	1850	1150	960	875	820	60	5	24-42
800	1950	1305	1085	990	930	66	5	24-48
900	2252	1505	1185	1090	1030	70	5	28-48
1000	2500	1615	1320	1210	1140	74	5	28-56



主要外形和连接尺寸 Main shape and connection size

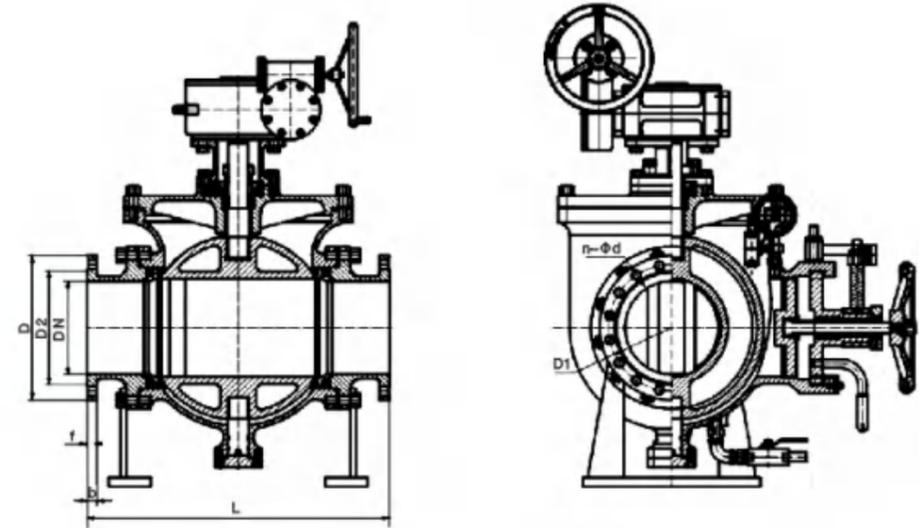
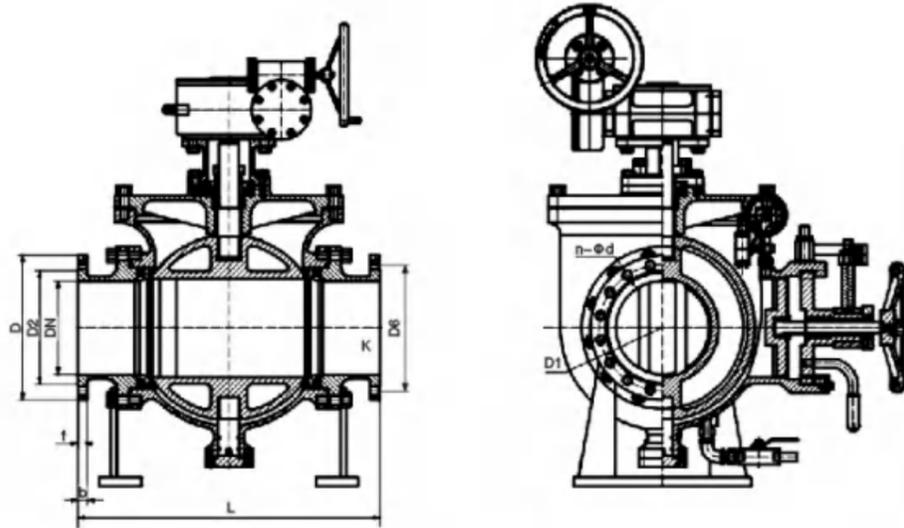
VDSQ347  $\frac{F}{H}$ -40CIPR

公称直径 Nominal diameter	连接尺寸 Connection size (4.0MPa)									
	DN	L	H	D	D1	D2	b	f	D6	K
50	432	240	165	125	102	20	3	88	4	4-18
65	432	260	185	145	122	22	3	110	4	8-18
80	545	280	200	160	138	24	3	121	4	8-18
100	634	345	235	190	162	24	3	150	4.5	8-22
125	680	390	270	220	188	26	3	176	4.5	8-26
150	710	470	300	250	218	28	3	204	4.5	8-26
200	830	540	375	320	285	34	3	260	4.5	12-30
250	850	630	450	385	345	38	3	313	4.5	12-33
300	1100	650	515	450	410	42	4	364	4.5	16-33
350	1250	740	580	510	465	46	4	422	5	16-36
400	1400	795	660	585	535	50	4	474	5	16-39
450	1500	860	685	610	560	57	4	524	5	20-39
500	1700	945	755	670	615	57	4	576	5	20-42
600	1800	1040	890	795	735	72	5	676	5	20-48

主要外形和连接尺寸 Main shape and connection size

VDSQ347  $\frac{F}{H}$ -64CIPR

公称直径 Nominal diameter	连接尺寸 Connection size (6.4MPa)									
	DN	L	H	D	D1	D2	b	f	D6	K
50	432	240	180	135	102	26	3	88	4	4-22
65	432	260	205	160	122	26	3	110	4	8-22
80	545	280	215	170	138	28	3	121	4	8-22
100	634	345	250	200	162	30	3	150	4.5	8-26
125	680	390	295	240	188	34	3	176	4.5	8-30
150	710	470	345	280	218	36	3	204	4.5	8-33
200	830	540	415	345	285	42	3	260	4.5	12-36
250	850	630	470	400	345	46	3	313	4.5	12-36
300	1100	650	530	460	410	52	4	364	4.5	16-36
350	1250	740	600	525	465	56	4	422	5	16-39
400	1400	795	670	585	535	60	4	474	5	16-42



主要外形和连接尺寸 Main shape and connection size

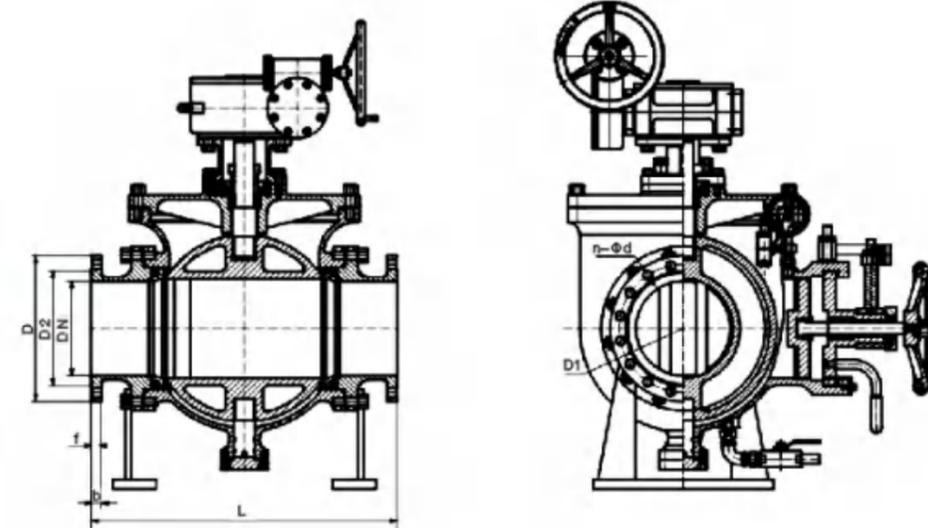
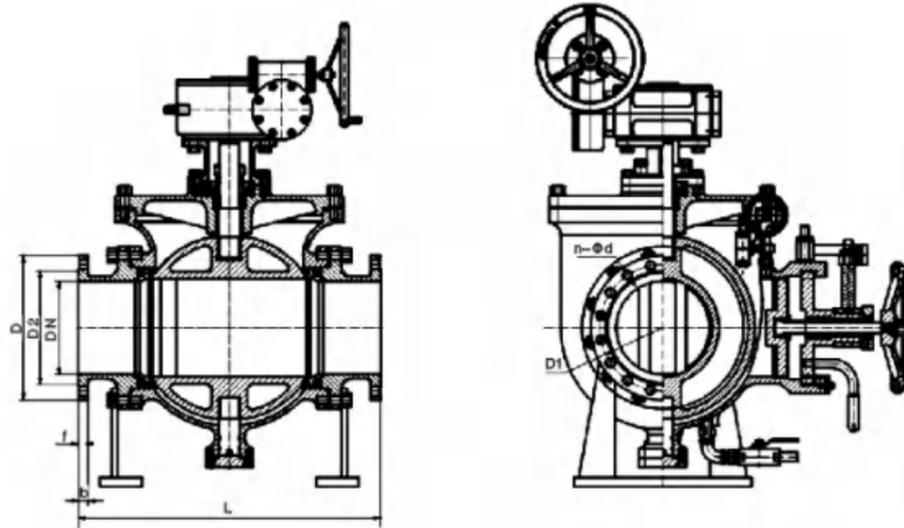
VDSQ347 <sup>F</sup>/<sub>H</sub> -100CIPR

公称直径 Nominal diameter	连接尺寸 Connection size (10.0MPa)									
	DN	L	H	D	D1	D2	b	f	D6	K
50	432	260	195	145	102	30	3	88	4	4-26
65	432	267	220	170	122	34	3	110	4	8-26
80	545	300	230	180	138	36	3	121	4	8-26
100	634	345	265	210	162	40	3	150	4.5	8-30
125	680	390	315	250	188	40	3	176	4.5	8-33
150	710	485	355	290	218	44	3	204	4.5	12-33
200	830	580	430	360	285	52	3	260	4.5	12-36
250	850	665	505	430	345	60	3	313	4.5	12-39
300	1100	760	585	500	410	68	4	364	4.5	12-42
350	1250	820	655	560	465	74	4	422	5	16-48

主要外形和连接尺寸 Main shape and connection size

VDSQ347 <sup>F</sup>/<sub>H</sub> -150Lb(CIPR)

公称直径 Nominal diameter	连接尺寸 Connection size (150Lb)									
	NPS	L	H	D	K	d	b	f	n-φd	
2"	432	240	150	120.7	92.1	16.3	2	4-φ19		
3"	545	280	190	152.4	127	19.5	2	4-φ19		
4"	634	345	230	190.5	157.2	24.3	2	8-φ19		
5"	680	390	255	215.9	185.7	24.3	2	8-φ22		
6"	710	470	280	241.3	215.9	25.9	2	8-φ22		
8"	830	540	345	298.5	269.9	29	2	8-φ22		
10"	850	630	405	362	323.8	30.6	2	12-φ26		
12"	1100	650	485	431.8	381	32.2	2	12-φ26		
14"	1250	740	535	476.3	412.8	35.4	2	12-φ29		
16"	1400	795	595	539.8	469.9	37	2	16-φ29		
18"	1500	860	635	577.9	533.4	40.1	2	16-φ32		
20"	1700	945	700	635	584.2	43.3	2	20-φ32		
24"	1800	1040	815	749.3	692.2	48.1	2	20-φ35		
28"	1850	1150	925	863.6	800	71.8	2	28-φ35		
32"	1950	1305	1060	977.9	914	83	2	28-φ41		
36"	2252	1505	1170	1085.8	1022	90.9	2	32-φ41		
40"	2500	1615	1290	1200.2	1124	90.9	2	36-φ41		



主要外形和连接尺寸 Main shape and connection size

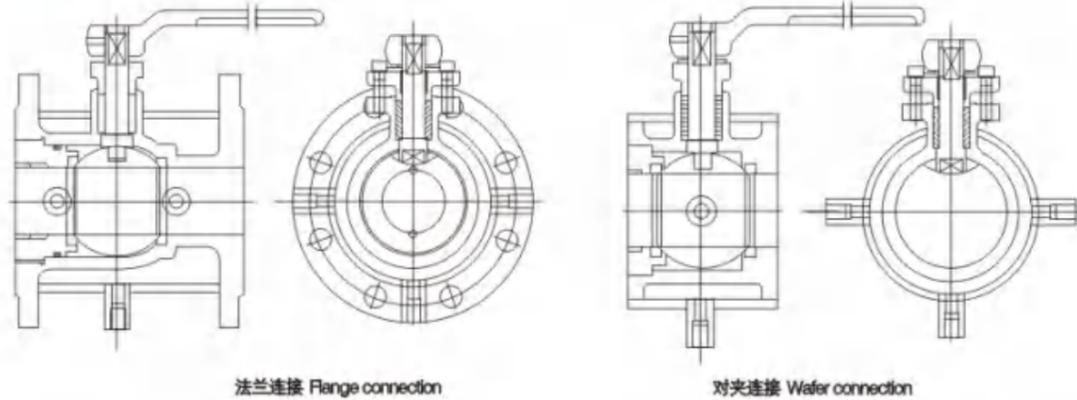
VDSQ347 <sup>F</sup>/<sub>H</sub> -300Lb(CIPR)

公称直径 Nominal diameter	连接尺寸 Connection size (300Lb)							
	L	H	D	K	d	b	f	n-φd
2"	432	240	165	127	92.1	22.7	2	8-φ19
3"	545	280	210	168.3	127	29	2	8-φ22
4"	634	345	255	200	157.2	32.2	2	8-φ22
5"	680	390	280	235	185.7	35.4	2	8-φ22
6"	710	470	320	269.9	215.9	37	2	12-φ22
8"	830	540	380	330.2	269.9	41.7	2	12-φ26
10"	850	630	445	387.4	323.8	48.1	2	16-φ29
12"	1100	650	520	450.8	381	51.3	2	16-φ32
14"	1250	740	585	514.4	412.8	54.4	2	20-φ32
16"	1400	795	650	571.5	469.9	57.6	2	20-φ35
18"	1500	860	710	628.6	533.4	60.8	2	24-φ35
20"	1700	945	775	685.8	584.2	64	2	24-φ35
24"	1800	1040	915	812.8	692.2	70.3	2	24-φ42
28"	1850	1150	1035	939.8	800	86.2	2	28-φ45
32"	1950	1305	1150	1054.1	914	96.9	2	28-φ51
36"	2252	1505	1270	1168.4	1022	105.2	2	32-φ54
40"	2500	1615	1240	1155.7	1086	114.8	2	32-φ45

主要外形和连接尺寸 Main shape and connection size

VDSQ347 <sup>F</sup>/<sub>H</sub> -600Lb(CIPR)

公称直径 Nominal diameter	连接尺寸 Connection size (600Lb)							
	L	H	D	K	d	b	f	n-φd
2"	432	240	165	127	92.1	25.4	7	8-φ19
3"	545	280	210	168.3	127	31.8	7	8-φ22
4"	634	345	275	215.9	157.2	38.1	7	8-φ26
5"	680	390	330	266.7	185.7	44.5	7	8-φ29
6"	710	470	355	292.1	215.9	47.7	7	12-φ29
8"	830	540	420	349.2	269.9	55.6	7	12-φ32
10"	850	630	510	431.8	323.8	63.5	7	16-φ35
12"	1100	650	560	489	381	66.7	7	20-φ35
14"	1250	740	605	527	412.8	69.9	7	20-φ39
16"	1400	795	685	603.2	469.9	76.2	7	20-φ42
18"	1500	860	745	654	533.4	82.6	7	20-φ45
20"	1700	945	815	723.9	584.2	88.9	7	24-φ45
24"	1800	1040	940	838.2	692.2	101.6	7	24-φ51
28"	1850	1150	1075	965.2	800	111.2	7	28-φ54
32"	1950	1305	1195	1079.5	914	117.5	7	28-φ60
36"	2252	1505	1315	1193.8	1022	123.9	7	28-φ67
40"	2500	1615	1320	1212.8	1111	156.8	7	32-φ60



### 用途 Use

系列夹套球阀主要适用于石油、化工、冶金、电力等各类系统中，以输送常温下会凝固的高温度介质。其球阀的夹套焊接在球阀的两端密封之间，球阀的侧面和底部设有夹套的标准连接口。由于增加了夹套，此种球阀的端部连接尺寸比同一规格的连接尺寸大一至两个规格，球阀的结构长度与同一规格的球阀相同。球阀的端部连接型式有法兰和对夹两种。夹套中可自由的通过蒸汽或其他热保温介质，确保粘稠的介质顺畅的通过球阀。

The series of jacketed ball valves are mainly used in various systems such as petroleum, chemical industry, metallurgy, electric power, etc., to transport high-temperature media that solidify at room temperature. The jacket of the ball valve is welded between the two ends of the valve, and the side and bottom of the valve are provided with standard connection ports for the jacket. Due to the addition of the jacket, the end connection size of this valve is one or two specifications larger than the connection size of the same specification, and the structural length of the valve is the same as that of the same specification. There are two types of valve end connection: flange and wafer. Steam or other thermal insulation media can be passed through the jacket freely to ensure that the viscous media can pass through the valve smoothly.

### 结构特点 Structural features

- 1、既能防止管路中粘稠的介质凝固，又能降低管路中低温介质的热量损失。
- 2、采用碳钢钢管焊接夹套比铸造的更加耐压、牢固和可靠。
- 3、由于球阀的口径与管道内径一致，介质呈直线流动，流阻小，最适用于易凝固，高粘性液体介质。
- 4、球阀阀体采用整体(一片式)结构，体积小，其重量比同类球阀的体积小、重量轻。

1. It can not only prevent the solidification of the viscous medium in the pipeline, but also reduce the heat loss of the low-temperature medium in the pipeline.
2. The welded jacket of carbon steel pipe is more pressure-resistant, firmer and more reliable than the cast one.
3. Since the diameter of the valve is the same as the inner diameter of the pipe, the medium flows in a straight line with low flow resistance, and is most suitable for liquid medium that is easy to solidify and high viscosity.
4. The valve body of the ball valve adopts an integral (one-piece) structure with a small volume, and its weight is smaller and lighter than similar ball valves.

### 夹套球阀制造规范 Jacketed ball valve manufacturing specification

标准 Standard	API系列 API series
基本设计规范 Basic design specification	ANSI B16.34
压力温度等级 Pressure temperature rating	ANSI B16.34
结构长度 Structural length	ASME B16.10
连接法兰 Connecting flange	ASME B16.5
检验与实验 Inspection and experiment	API 598

### 主要零部件 Main parts

序号 No.	零件名称 Part name	材质 Material
		ASTM
1	阀体 Body	A216 WCB
2	连接口 Connector	A105
3	夹套 Jacket	A105
4	锁紧螺母 Lock nut	A105
5	O型圈 O-ring	氟橡胶 Fluororubber
6	密封圈 Sealing ring	对位聚苯、尼龙 Para-polystyrene, nylon
7	球体 Ball	A105+ENP/F304
8	阀杆 Stem	A182 F6a
9	垫片 Gasket	PTFE+SS
10	填料垫 Padding	A182 F6a
11	填料 Filler	柔性石墨 Flexible graphite
12	填料压盖 Packing gland	A216 WCB
13	螺钉 Screw	A193 B7
14	定位片 Positioning pieces	Q235+Zn
15	挡圈 Retaining ring	65Mn
16	螺钉 Screw	A193 B7
17	手柄 Handle	Q235+Zn

### 阀门驱动装置选配表 Valve drive device selection table

Size		150Lb		300Lb	
DN	NPS	气动 Pneumatics	电动 Electric	气动 Pneumatics	电动 Electric
15	1/2	AG06	/	AG06	/
20	3/4	AG06	/	AG06	/
25	1	AG09	/	AG09	/
40	1 1/2	AG09	/	AG09	/
50	2	AG09	QT12.5	AG13	QB12.5
80	3	AG13	QT12.5	AW13	QB25
100	4	AW13	QT25	AW13	QB50
150	6	AW17	QT50	AW17	QB100
200	8	AW17	Qt50	AW17	QB200

注：表中气动装置型号为阿尔法公司生产型号；电动装置型号为常州电站辅机厂生产的型号。  
Note: The pneumatic device model in the table is the model produced by Alpha Company; the electric device model is the model produced by Changzhou Power Station Auxiliary Equipment Factory.

### 电动装置输出扭矩值 Electric device output torque value

型号 Type	输出扭矩 Output torque	阀杆直径 Stem diameter	输出转速 Output speed	电机功率 Motor power
QB12.5	125	22	1r/min	0.05KW
QB25	250	28	1r/min	0.09KW
QB50	500	50	1r/min	0.18KW
QB100	1000	50	1r/min	0.25KW
QB200	2000	60	1r/min	0.55KW

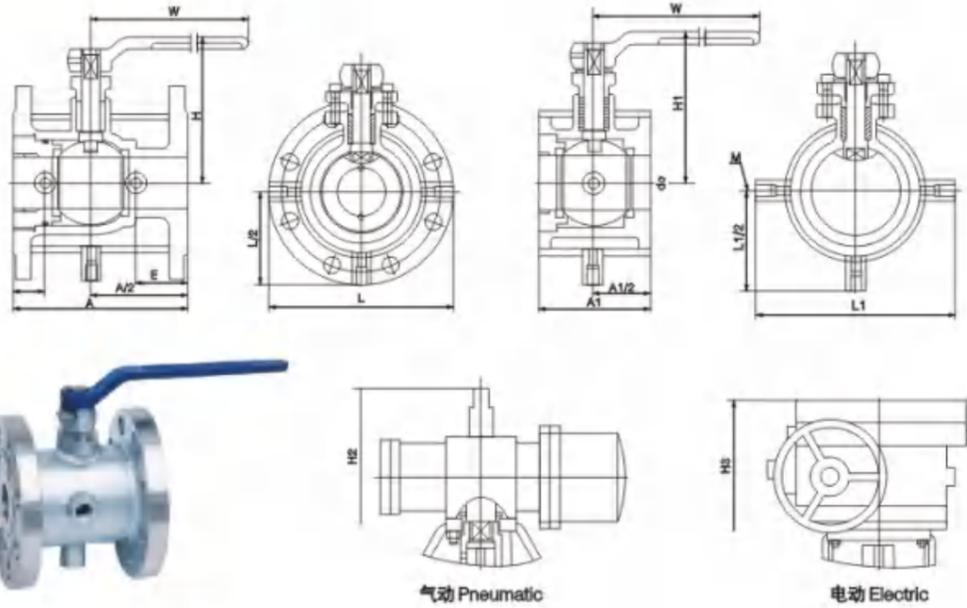
### 供货范围 Scope of supply

公称直径 Nominal diameter		压力等级 Pressure level
DN	in	150Lb, 300Lb PN1.0~4.0MPa
15	1/2	△/●
20	3/4	△/●
25	1	△/●
40	1 1/2	△/●
50	2	△/★/●
80	3	△/★/●
100	4	△/★/●
150	6	△/★/●
200	8	△/★/●

注：●表示手柄操作阀门；  
★表示齿轮箱操作阀门；  
-表示没有此选项，表中未涉及的可按用户的要求制造。  
Note: ● indicates that the handle operates the valve;  
★ indicating the gear box operating valve;  
- indicates that there is no such option, and those not mentioned in the table can be manufactured according to user requirements.

## 夹套保温球阀 Jacket Insulation Ball Valve

www.growthfluid.com



### 主要外形及连接尺寸 Main shape and connection size

### PN1.0~1.6MPa Class 150

DN	NPS	A	A1	do	H	H1	H2	H3	W	M	L	L1	E	法兰规格 Flange specification	重量 Weight(kg) 手动 Manual (PN16)
15	1/2	110	50	13	63	101	126	/	130	ZG3/4	147	110	58.5	DN40(1 1/2)	7.04
20	3/4	117	55	19	82	101	126	/	160	ZG3/4	147	117	58.5	DN40(1 1/2)	7.74
25	1	127	60	25	85	106	137	/	160	ZG3/4	156	127	63.5	DN50(2)	10.7
40	1 1/2	165	80	38	100	125	169	/	230	ZG3/4	181	165	62.5	DN65(2 1/2)	14.5
50	2	178	90	49	153	135	179	576	230	ZG3/4	218	178	68	DN80(3)	17.9
80	3	229	120	74	195	217	258	643	400	ZG3/4	275	229	82	DN150(6)	37.3
100	4	254	140	100	213	265	322	715	700	ZG3/4	300	254	83	DN200(8)	56
150	6	292	160	150	235	355	415	848	1100	ZG1	403	292	95	DN250(10)	93
200	8	330	180	201	342	410	527	903	1500	Zg1	492	330	100	DN300(12)	160

### 主要外形及连接尺寸 Main shape and connection size

### PN2.5~4.0MPa Class 300

DN	NPS	A	A1	do	H	H1	H2	H3	W	M	L	L1	E	法兰规格 Flange specification	重量 Weight(kg) 手动 Manual (PN16)
15	1/2	110	50	13	63	101	126	/	130	ZG3/4	147	110	58.5	DN40(1 1/2)	7.24
20	3/4	117	55	19	82	101	126	/	160	ZG3/4	147	117	58.5	DN40(1 1/2)	8.24
25	1	127	60	25	85	106	137	/	160	ZG3/4	156	127	63.5	DN50(2)	11.5
40	1 1/2	165	80	38	100	125	169	/	230	ZG3/4	181	165	62.5	DN65(2 1/2)	18.4
50	2	178	90	49	153	135	179	576	230	ZG3/4	218	178	68	DN80(3)	25.1
80	3	229	120	74	195	217	258	643	400	ZG3/4	275	229	82	DN150(6)	55.4
100	4	254	140	100	213	265	322	715	700	ZG3/4	300	254	83	DN200(8)	76.4
150	6	292	160	150	235	355	415	848	1100	ZG1	403	292	95	DN250(10)	118
200	8	330	180	201	342	410	527	903	1500	Zg1	492	330	100	DN300(12)	200

## 对夹式球阀 Wafer Ball Valve



### 产品结构特征 Product structure characteristics

系列对夹式球阀主要用于石油、化工、冶金、制药、食品等各类系统中，以截断或接通管路中的介质。对夹式球阀根据结构长度的长短可分为普通型及薄型对夹式两种系列，其中薄型系列系我公司根据客户的要求，引进国外产品的技术并结合普通型对夹式球阀的特点，自行研制开发的改进型产品。与其它类型球阀相比，系列对夹式球阀的主要结构特点有：采用一体式结构，结构紧凑，体积小、重量轻；密封可靠，介质流向不受限制；流阻小、启闭快，操作方便，根据用户需要，普通型对夹式球阀可装上相应的电动及气动装置，以实现遥控或自动控制。

Series wafer ball valves are mainly used in various systems such as petroleum, chemical, metallurgy, pharmaceutical, food, etc., to cut off or connect the medium in the pipeline. Wafer type ball valves can be divided into two series, ordinary type and thin type wafer type according to the length of the structure. Among them, the thin type series is our company according to customer requirements, introducing foreign product technology and combining the characteristics of ordinary type wafer type ball valves. An improved product developed by Babing. Compared with other types of ball valves, the main structural features of the series of wafer ball valves are: an integrated structure, compact structure, small size and light weight; reliable sealing, unrestricted medium flow direction; small flow resistance, fast opening and closing, and operation convenient, according to user needs, the common type wafer ball valve can be equipped with corresponding electric and pneumatic devices to realize remote control or automatic control.

### 产品规格 Product specifications

系列型号 Series Model	Q71, Q671, Q971	Q7b1
压力等级 Pressure Level	Class 150	Class 150-300
通径 Size	DN15 ~ 100mm 1/2" ~ 4"	DN10 ~ 200
驱动方式及适用范围 Drive mode and scope of application	手柄驱动、气动、电动 Handle drive, pneumatic, electric	手柄驱动 Handle drive

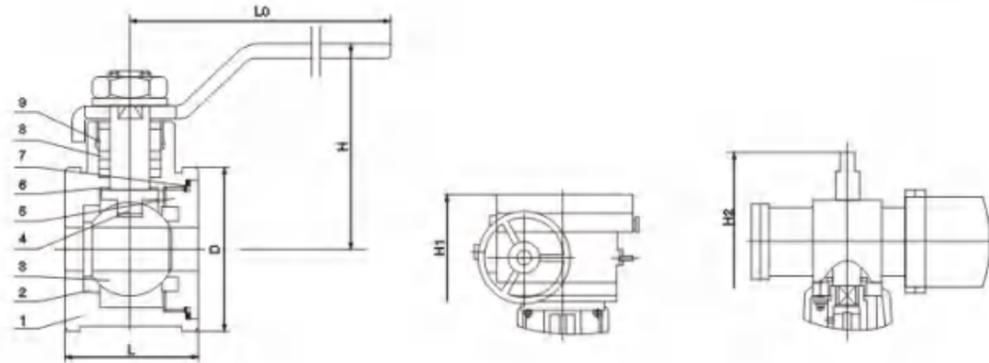
注：本公司可根据用户要求提供产品  
Note: The company can provide products according to user requirements

### 产品性能规范 Product performance specifications

公称压力 Nominal pressure	Class150
密封试验压力 Seal test pressure	2.2MPa
壳体强度试验压力 Shell strength test pressure	3.0MPa
介质温度 Medium temperature	≤300℃
适用介质 Applicable medium	水、油及腐蚀性介质 Water, oil and corrosive media

## 对夹式球阀 Wafer Ball Valve

www.growthfluid.com



### 技术规范 Specifications

结构形式 Structure type	对夹式 Wafer type
法兰连接 Flange connection	ANSI B16.5, JB/T79
驱动方式 Drive way	手动、电动、气动 Manual, electric, pneumatic
检验与试验 Inspection and testing	API 598

### 主要零部件材料 Material of main parts

序号 No.	零件名称 Part name	材质 Material		序号 No.	零件名称 Part name	材质 Material	
		GB	ASTM			GB	ASTM
1	阀体 Body	CF8	A351-CF8	6	垫片 Gasket	PTFE, RTFE	
2	密封圈 Sealing ring	尼龙/对位聚苯 Nylon/P-Polyphenylene		7	垫片 Gasket	柔性石墨+不锈钢 Flexible graphite + stainless steel	
3	球体 Ball	0Cr18Ni9+Ni.P	A276-304+Ni.P	8	填料 Filler	柔性石墨 Flexible graphite	
4	阀杆 Stem	0Cr18Ni9	A276-304	9	压盖 Pressing sleeve	0Cr18Ni9	A276-304
5	阀座 Seat	0Cr18Ni9	A276-304	10			

注：系列阀门主要零部件及密封面的材质可根据实际工况条件或用户特殊要求设计选用。

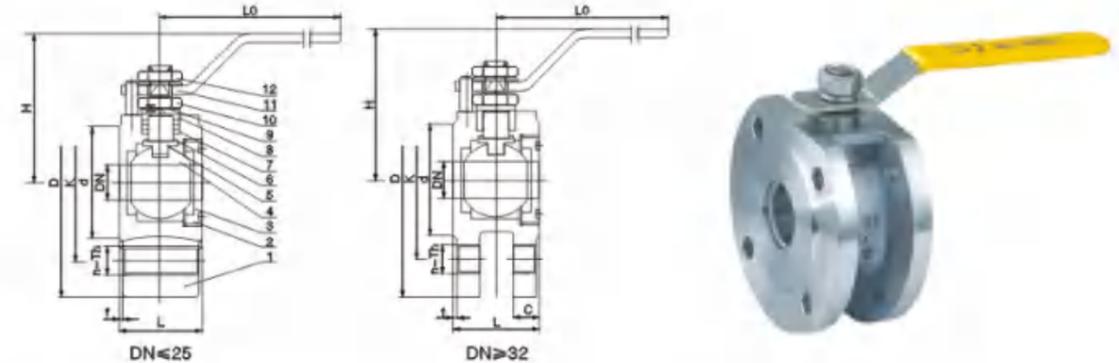
Note: The materials of the main parts and sealing surfaces of the series valves can be designed and selected according to the actual working conditions or the special requirements of users.

### 主要外形及连接尺寸 Main shape and connection size

PN1.0~2.5MPa Class 150

DN(mm)	15	20	25	32	40	50	65	80	100
NPS(In)	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
L	40	45	50	60	70	80	110	120	140
D	PN1.0, 1.6MPa	53	63	73	84	94	109	129	144
	PN2.5MPa	53	63	73	84	94	109	129	144
	PN2.0MPa, PN1.0MPa	47	57	66	75	85	103	122	135
手动 Manual	H	82	82	104	113	122	132	144	155
	L0	140	180	180	200	200	250	300	350
电动 Electric	H1	324	323	345	354	363	373	385	455
	气动装置 Pneumatic device	Q45-1	Q45-1	Q45-1	Q245-1	Q60-1	Q60-1	Q60-1	Q60-1
气动 Pneumatic	H2	228	228	238	263	275	284	365	382
	气动装置 Pneumatic device	AG06	AG06	AG09	AG09	AG09	AG13	AG13	AG13

## 对夹式薄形球阀 Wafer Thin Ball Valve



### 技术规范 Specifications

结构形式 Structure type	对夹式 Wafer type
法兰连接 Flange connection	ANSI B16.5, JB/T79
驱动方式 Drive way	手动 Manual
检验与试验 Inspection and testing	API 598

### 主要零部件材料 Material of main parts

序号 No.	零件名称 Part name	材质 Material		序号 No.	零件名称 Part name	材质 Material	
		GB	ASTM			GB	ASTM
1	阀体 Body	CF8	A351-CF8	7	填料 Filler	柔性石墨 Flexible graphite	
2	阀座 Seat	0Cr18Ni9	A276-304	8	填料压圈 Packing ring	0Cr18Ni9	A276-304
3	密封圈 Sealing ring	尼龙/对位聚苯 Nylon/P-Polyphenylene		9	垫圈 Washer	0Cr18Ni9	A276-304
4	球体 Ball	0Cr18Ni9+Ni.P	A276-304+Ni.P	10	锁紧螺母 Lock nut	0Cr18Ni9	A276-304
5	阀杆 Stem	0Cr18Ni9	A276-304	11	手柄 Handle	0Cr18Ni9	A276-304
6	垫片 Gasket	PTFE		12	限位销 Limit pin	0Cr18Ni9	A276-304

注：系列阀门主要零部件及密封面的材质可根据实际工况条件或用户特殊要求设计选用。

Note: The materials of the main parts and sealing surfaces of the series valves can be designed and selected according to the actual working conditions or the special requirements of users.

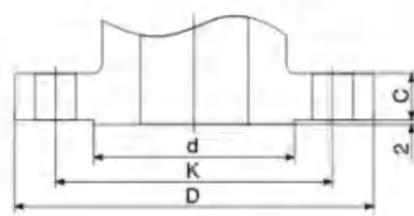
### 主要外形及连接尺寸 Main shape and connection size

PN1.0~4.0MPa Class 150~300

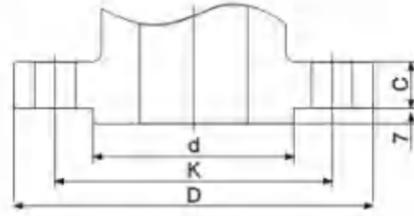
DN	L	PN1.6MPa					PN2.5MPa					PN4.0MPa					f	H	L0
		D	K	d	C	n-Th	D	K	d	C	n-Th	D	K	d	C	n-Th			
10	32	85	60	42	/	4-M12	85	60	42	/	4-M12	85	60	42	/	4-M12	2	80	150
15	32	90	65	47	/	4-M12	90	65	47	/	4-M12	90	65	47	/	4-M12	2	80	150
20	38	100	75	58	/	4-M12	100	75	58	/	4-M12	100	75	58	/	4-M12	2	85	150
25	42	110	85	68	/	4-M12	110	85	68	/	4-M12	110	85	68	/	4-M12	2	95	170
32	50	130	100	78	16	4-M16	130	100	78	16	4-M16	130	100	78	16	4-M16	2	100	180
40	60	140	110	88	16	4-M16	140	110	88	16	4-M16	140	110	88	16	4-M16	2	105	210
50	70	155	125	102	18	4-M16	155	125	102	18	4-M16	155	125	102	20	4-M16	2	115	230
65	94	180	145	125	20	4-M16	180	145	125	22	8-M16	180	145	125	22	8-M16	2	130	280
80	118	195	160	138	20	8-M16	195	160	138	24	8-M16	195	160	138	24	8-M16	2	145	300
100	140	215	180	160	22	8-M16	230	190	160	24	8-M20	230	190	160	24	8-M20	2	175	400
125	195	245	210	188	22	8-M16	270	220	188	26	8-M24	270	220	188	26	8-M24	2	190	500
150	225	280	240	212	24	8-M20	300	250	212	28	8-M24	300	250	212	28	8-M24	2	220	600
200	275	335	295	266	24	8-M22	360	310	274	30	8-M24	375	320	285	34	8-M27	2	260	700

附录A ASME钢制管法兰  
Appendix A ASME Steel Pipe Flanges

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Class 150~300



Class 600~2500

主要外形尺寸 Main dimensions

Class 150

Size		D		K		d		n-L		C		螺栓直径 Bolt diameter	双头螺栓长度 (mm) Stud length	
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	in	凸面2mm Convex 2mm	环连接 Ring connection
15	1/2"	90	3.5	60.3	2.38	34.9	1.38	4-16	4-5/8	8	0.31	1/2	55	/
20	3/4"	100	3.88	69.9	2.75	42.9	1.69	4-16	4-5/8	8.9	0.34	1/2	65	/
25	1"	110	4.25	79.4	3.12	50.8	2	4-16	4-5/8	9.6	0.38	1/2	65	75
32	1 1/4"	115	4.62	88.9	3.5	63.5	2.5	4-16	4-5/8	11.2	0.44	1/2	70	85
40	1 1/2"	125	5	98.4	3.88	73	2.88	4-16	4-5/8	12.7	0.5	1/2	70	85
50	2"	150	6	120.7	4.75	92.1	3.62	4-19	4-3/4	14.3	0.56	5/8	85	95
65	2 1/2"	180	7	139.7	5.5	104.8	4.12	4-19	4-3/4	15.9	0.62	5/8	90	100
80	3"	190	7.5	152.4	6	127	5	4-19	4-3/4	17.5	0.69	5/8	90	100
100	4"	230	9	190.5	7.5	157.2	6.19	8-19	8-3/4	22.3	0.88	5/8	90	100
125	5"	255	10	215.9	8.5	185.7	7.31	8-22	8-7/8	22.3	0.88	3/4	95	110
150	6"	280	11	241.3	9.5	215.9	8.5	8-22	8-7/8	23.9	0.94	3/4	100	115
200	8"	345	13.5	298.5	11.75	269.9	10.62	8-22	8-7/8	27	1.06	3/4	110	120
250	10"	405	16	362	14.25	323.8	12.75	12-25.5	12-1	28.6	1.12	7/8	115	125
300	12"	485	19	431.8	17	381	15	12-25.5	12-1	30.2	1.19	7/8	120	135
350	14"	535	21	476.3	18.75	412.8	16.25	12-28.5	12-1 1/8	33.4	1.31	1	135	145
400	16"	595	23.5	539.8	21.25	469.9	18.5	16-28.5	16-1 1/8	35	1.38	1	135	145
450	18"	635	25	577.9	22.75	533.4	21	16-32	16-1 1/4	38.1	1.5	1 1/8	145	160
500	20"	700	27.5	635	25	584.2	23	20-32	20-1 1/4	41.3	1.62	1 1/8	160	170
550	22"	750	29.5	692.2	27.25	641.4	25.25	20-35	20-1 3/8	44.5	1.75	1 1/4	170	185
600	24"	815	32	749.3	29.5	692.2	27.25	20-35	20-1 3/8	46.1	1.81	1 1/4	170	185
650	26"	870	34.25	806.4	31.75	749	29.5	24-35	24-1 3/8	66.7	2.63	1 1/4	210	/
700	28"	925	36.5	863.6	34	800	31.5	28-35	28-1 3/8	69.9	2.75	1 1/4	220	/
750	30"	985	38.75	914.4	36	857	33.75	28-35	28-1 3/8	73.1	2.88	1 1/4	230	/
800	32"	1060	41.75	977.9	38.5	914	36	28-41	28-1 5/8	79.4	3.13	1 1/2	255	/
850	34"	1110	43.75	1028.7	40.5	965	38	32-41	32-1 5/8	81	3.19	1 1/2	260	/
900	36"	1170	46	1085.8	42.75	1022	40.25	32-41	32-1 5/8	88.9	3.5	1 1/2	275	/
950	38"	1240	48.75	1149.4	45.25	1073	42.25	32-41	32-1 5/8	85.8	3.38	1 1/2	270	/
1000	40"	1290	50.75	1200.2	47.25	1124	44.25	36-41	36-1 5/8	88.9	3.5	1 1/2	275	/
1050	42"	1345	53	1257.3	49.5	1194	47	36-41	36-1 5/8	95.3	3.75	1 1/2	290	/
1100	44"	1405	55.25	1314.4	51.75	1245	49	40-41	40-1 5/8	100.1	3.94	1 1/2	300	/
1150	46"	1455	57.25	1365.2	53.75	1295	51	40-41	40-1 5/8	101.6	4	1 1/2	305	/
1200	48"	1510	59.5	1422.4	56	1359	53.5	44-41	44-1 5/8	108.4	4.19	1 1/2	310	/
1250	50"	1570	61.75	1479.6	58.25	1410	55.5	44-48	44-1 7/8	109.8	4.32	1 3/4	330	/
1300	52"	1625	64	1536.7	60.5	1461	57.5	44-48	44-1 7/8	114.3	4.5	1 3/4	340	/
1350	54"	1685	66.25	1593.8	62.75	1511	59.5	44-48	44-1 7/8	119.1	4.69	1 3/4	350	/
1400	56"	1745	68.75	1651	65	1575	62	48-48	48-1 7/8	122.3	4.82	1 3/4	355	/
1450	58"	1805	71	1708.2	67.25	1626	64	48-48	48-1 7/8	127	5	1 3/4	365	/
1500	60"	1855	73	1759	69.25	1676	66	52-48	52-1 7/8	130.2	5.13	1 3/4	375	/

附录A ASME钢制管法兰  
Appendix A ASME Steel Pipe Flanges



主要外形尺寸 Main dimensions

Class 300

Size		D		K		d		n-L		C		螺栓直径 Bolt diameter	双头螺栓长度 (mm) Stud length	
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	in	凸面2mm Convex 2mm	环连接 Ring connection
15	1/2"	95	3.75	66.7	2.62	34.9	1.38	4-16	4-5/8	12.7	0.5	1/2	65	75
20	3/4"	115	4.62	82.6	3.25	42.9	1.69	4-19	4-3/4	14.3	0.56	5/8	75	90
25	1"	125	4.88	88.9	3.5	50.8	2	4-19	4-3/4	15.9	0.62	5/8	75	90
32	1 1/4"	135	5.25	98.4	3.88	63.5	2.5	4-19	4-3/4	17.5	0.69	5/8	85	95
40	1 1/2"	155	6.12	114.3	4.5	73	2.88	4-22	4-7/8	19.1	0.75	3/4	90	100
50	2"	165	6.5	127	5	92.1	3.62	8-19	8-3/4	20.7	0.81	5/8	90	100
65	2 1/2"	190	7.5	149.2	5.88	104.8	4.12	8-22	8-7/8	23.9	0.94	3/4	100	115
80	3"	210	8.25	168.3	6.62	127	5	8-22	8-7/8	27	1.06	3/4	110	120
100	4"	255	10	200	7.88	157.2	6.19	8-22	8-7/8	30.2	1.19	3/4	115	125
125	5"	280	11	235	9.25	185.7	7.31	8-22	8-7/8	33.4	1.31	3/4	120	135
150	6"	320	12.5	269.9	10.62	215.9	8.5	12-22	12-7/8	35	1.38	3/4	120	140
200	8"	380	15	330.2	13	269.9	10.62	12-25.5	12-1	39.7	1.56	7/8	140	150
250	10"	445	17.5	387.4	15.25	323.8	12.75	16-28.5	16-1 1/8	46.1	1.81	1	160	170
300	12"	520	20.5	450.8	17.75	381	15	16-32	16-1 1/4	49.3	1.94	1 1/8	170	185
350	14"	585	23	514.4	20.25	412.8	16.25	20-32	20-1 1/4	52.4	2.06	1 1/8	180	190
400	16"	650	25.5	571.5	22.5	469.9	18.5	20-35	20-1 3/8	55.6	2.19	1 1/4	190	205
450	18"	710	28	628.6	24.75	533.4	21	24-35	24-1 3/8	58.8	2.31	1 1/4	195	210
500	20"	775	30.5	685.8	27	584.2	23	24-35	24-1 3/8	62	2.44	1 1/4	205	220
550	22"	840	33	743	29.25	641.4	25.25	24-41	24-1 5/8	65.1	2.56	1 1/2	230	255
600	24"	915	36	812.8	32	692.2	27.25	24-41	24-1 5/8	68.3	2.69	1 1/2	230	255
650	26"	970	38.25	876.3	34.5	749	29.5	28-44.5	28-1 3/4	77.8	3.07	1 5/8	260	285
700	28"	1035	40.75	939.8	37	800	31.5	28-44.5	28-1 3/4	84.2	3.32	1 5/8	275	300
750	30"	1090	43	997	39.25	857	33.75	28-48	28-1 7/8	90.5	3.57	1 3/4	290	320
800	32"	1150	45.25	1054.1	41.5	914	36	28-51	28-2	96.9	3.82	1 7/8	310	340
850	34"	1205	47.5	1104.9	43.5	965	38	28-51	28-2	100.1	3.94	1 7/8	315	345
900	36"	1270	50	1168.4	46	1022	40.25	32-54	32-2 1/8	103.2	4.07	2	330	360
950	38"	1170	46	1092.2	43	1029	40.5	32-41	32-1 5/8	106.4	4.19	1 1/2	310	/
1000	40"	1240	48.75	1155.7	45.5	1086	42.75	32-44.5	32-1 3/4	112.8	4.44	1 5/8	330	/
1050	42"	1290	50.75	1206.5	47.5	1137	44.75	34-44.5	32-1 3/4	117.5	4.63	1 5/8	340	/
1100	44"	1355	53.25	1263.6	49.75	1194	47	32-48	32-1 7/8	122.3	4.82	1 3/4	355	/
1150	46"	1415	55.75	1320.8	52	1245	49	28-51	28-2	127	5	1 7/8	370	/
1200	48"	1465	57.75	1371.6	54	1302	51.25	32-51	32-2	131.8	5.19	1 7/8	380	/
1250	50"	1530	60.25	1428.8	56.25	1359	53.5	32-54	32-2 1/8	138.2	5.44	2	400	/
1300	52"	1580	62.25	1479.6	58.25	1410	55.5	32-54	32-2 1/8	142.9	5.63	2	410	/
1350	54"	1660	65.25	1549.4	61	1467	57.75	28-60.5	28-2 3/8	150.9	5.94	2 1/4	435	/
1400	56"	1710	67.25	1600.2	63	1518	59.75	28-60.5	28-2 3/8	152.4	6	2 1/4	440	/
1450	58"	1760	69.25	1651	65	1575	62	32-60.5	32-2 3/8	157.2	6.19	2 1/4	450	/
1500	60"	1810	71.25	1701.8	67	1626	64	32-60.5	32-2 3/8	162	6.38	2 1/4	460	/

主要外形尺寸 Main dimensions

Class 600

Size		D		K		d		n-L		C		螺栓直径 Bolt diameter		双头螺栓长度 (mm) Stud length	
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	in	凸面7mm Convex 7mm	环连接 Ring connection	
15	1/2"	95	3.75	66.7	2.62	34.9	1.38	4-16	4-5/8	14.3	0.56	1/2	75	75	
20	3/4"	115	4.62	82.6	3.25	42.9	1.69	4-19	4-3/4	15.9	0.62	5/8	90	90	
25	1"	125	4.88	88.9	3.5	50.8	2	4-19	4-3/4	17.5	0.69	5/8	90	90	
32	1 1/4"	135	5.25	98.4	3.88	63.5	2.5	4-19	4-3/4	20.7	0.81	5/8	95	95	
40	1 1/2"	155	6.12	114.3	4.5	73	2.88	4-22	4-7/8	22.3	0.88	3/4	110	110	
50	2"	165	6.5	127	5	82.1	3.62	8-19	8-3/4	25.4	1	5/8	110	110	
65	2 1/2"	190	7.5	149.2	5.88	104.8	4.12	8-22	8-7/8	28.6	1.12	3/4	120	120	
80	3"	210	8.25	168.3	6.62	127	5	8-22	8-7/8	31.8	1.25	7/8	125	125	
100	4"	275	10.75	215.9	8.5	157.2	6.19	8-25.5	8-1	38.1	1.5	1 3/8	145	145	
125	5"	330	13	266.7	10.5	185.7	7.31	8-28.5	8-1 1/8	44.5	1.75	1	165	165	
150	6"	355	14	292.1	11.5	215.9	8.5	12-28.5	12-1 1/8	47.7	1.88	1	170	170	
200	8"	420	16.5	349.2	13.75	289.9	10.62	12-32	12-1 1/4	55.6	2.19	1 1/8	190	195	
250	10"	510	20	431.8	17	323.8	12.75	16-35	16-1 3/8	63.5	2.5	1 1/4	215	215	
300	12"	560	22	489	19.25	381	15	20-35	20-1 3/8	66.7	2.62	1 1/4	220	220	
350	14"	605	23.75	527	20.75	412.8	16.25	20-38	20-1 1/2	69.9	2.75	1 3/8	235	235	
400	16"	685	27	603.2	23.75	489.9	18.5	20-41	20-1 5/8	78.2	3	1 1/2	255	255	
450	18"	745	29.25	654	25.75	533.4	21	20-44.5	20-1 3/4	82.6	3.25	1 5/8	275	275	
500	20"	815	32	723.9	28.5	584.2	23	24-44.5	24-1 3/4	88.9	3.5	1 5/8	285	290	
550	22"	870	34.25	777.8	30.62	641.4	25.25	24-48	24-1 7/8	95.3	3.75	1 3/4	305	310	
600	24"	940	37	838.2	33	692.2	27.25	24-51	24-2	101.6	4	1 7/8	330	335	
650	26"	1015	40	914.4	36	749	29.5	28-51	28-2	108	4.25	1 7/8	350	/	
700	28"	1075	42.25	965.2	38	800	31.5	28-54	28-2 1/8	111.2	4.38	2	360	/	
750	30"	1130	44.5	1022.4	40.25	857	33.75	28-54	28-2 1/8	114.3	4.5	2	370	/	
800	32"	1195	47	1079.5	42.5	914	36	28-60.5	28-2 3/8	117.5	4.62	2 1/4	380	/	
850	34"	1245	49	1130.3	44.5	965	38	28-60.5	28-2 3/8	120.7	4.75	2 1/4	390	/	
900	36"	1315	51.75	1193.8	47	1022	40.25	28-66.5	28-2 5/8	123.9	4.88	2 1/2	410	/	
950	38"	1270	50	1162	45.75	1054	41.5	28-60.5	28-2 3/8	152.4	6	2 1/4	450	/	
1000	40"	1320	52	1212.8	47.75	1111	43.75	32-60.5	32-2 3/8	158.8	6.25	2 1/4	465	/	
1050	42"	1405	55.25	1282.7	50.5	1168	46	28-68.5	28-2 5/8	168.3	6.62	2 1/2	500	/	
1100	44"	1455	57.25	1333.5	52.5	1226	48.25	32-68.5	32-2 5/8	173.1	6.81	2 1/2	510	/	
1150	46"	1510	59.5	1390.6	54.75	1276	50.25	32-66.5	32-2 5/8	179.4	7.06	2 1/2	520	/	
1200	48"	1595	62.75	1460.5	57.5	1334	52.5	32-73	32-2 7/8	189	7.44	2 3/4	555	/	
1250	50"	1670	65.75	1524	60	1384	54.5	28-79.5	28-3 1/8	198.9	7.75	3	580	/	
1300	52"	1720	67.75	1574.8	62	1435	56.5	32-79.5	32-3 1/8	203.2	8	3	595	/	
1350	54"	1780	70	1632	64.25	1492	58.75	32-79.5	32-3 1/8	209.6	8.25	3	610	/	
1400	56"	1855	73	1695.4	66.75	1543	60.75	32-86	32-3 3/8	217.5	8.56	3 1/4	635	/	
1450	58"	1905	75	1746.2	68.75	1600	63	32-86	32-3 3/8	222.3	8.75	3 1/4	645	/	
1500	60"	1995	78.5	1822.4	71.75	1657	65.25	28-92	28-3 5/8	233.4	9.19	3 1/4	680	/	

主要外形尺寸 Main dimensions

Class 900

Size		D		K		d		n-L		C		螺栓直径 Bolt diameter		双头螺栓长度 (mm) Stud length	
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	in	凸面7mm Convex 7mm	环连接 Ring connection	
15	1/2"	120	4.75	82.6	3.25	34.9	1.38	4-22	4-7/8	22.3	0.88	3/4	110	110	
20	3/4"	130	5.12	88.9	3.5	42.9	1.69	4-22	4-7/8	25.4	1	3/4	115	115	
25	1"	150	5.88	101.6	4	50.8	2	4-25.5	4-1	28.6	1.12	7/8	125	125	
32	1 1/4"	160	6.25	111.1	4.38	63.5	2.5	4-25.5	4-1	28.6	1.12	7/8	125	125	
40	1 1/2"	180	7	123.8	4.88	73	2.88	4-28.5	4-1 1/8	31.8	1.25	1	140	140	
50	2"	215	8.5	165.1	6.5	92.1	3.62	8-25.5	8-1	38.1	1.5	7/8	145	145	
65	2 1/2"	245	9.62	190.5	7.5	104.8	4.12	8-28.5	8-1 1/8	41.3	1.62	1	160	160	
80	3"	240	9.5	190.5	7.5	127	5	8-25.5	8-1	38.1	1.5	7/8	145	145	
100	4"	290	11.5	235	9.25	157.2	6.19	8-32	8-1 1/4	44.5	1.75	1 1/8	170	170	
125	5"	350	13.75	279.4	11	185.7	7.31	8-35	8-1 3/8	50.8	2	1 1/4	190	190	
150	6"	380	15	317.5	12.5	215.9	8.5	12-32	12-1 1/4	55.6	2.19	1 1/8	190	195	
200	8"	470	18.5	393.7	15.5	269.9	10.62	12-38	12-1 1/2	63.5	2.5	1 3/8	220	220	
250	10"	545	21.5	469.9	18.5	323.8	12.75	16-38	16-1 1/2	69.9	2.75	1 3/8	235	235	
300	12"	610	24	533.4	21	381	15	20-38	20-1 1/2	79.4	3.12	1 3/8	255	255	
350	14"	640	25.25	558.8	22	412.8	16.25	20-41	20-1 5/8	85.8	3.38	1 1/2	275	280	
400	16"	705	27.75	616	24.25	469.9	18.5	20-44.5	20-1 3/4	88.9	3.5	1 5/8	285	290	
450	18"	785	31	685.8	27	533.4	21	20-51	20-2	101.6	4	1 7/8	325	335	
500	20"	855	33.75	749.3	29.5	584.2	23	20-54	20-2 1/8	108	4.25	2	350	360	
600	24"	1040	41	901.7	35.5	692.2	27.25	20-66.5	20-2 5/8	139.7	5.5	2 1/2	440	455	
650	26"	1085	42.75	952.5	37.5	749	29.5	20-73	20-2 7/8	139.7	5.5	2 3/4	455	/	
700	28"	1170	46	1022.4	40.25	800	31.5	20-79.5	20-3 1/8	142.9	5.62	3 1/4	475	/	
750	30"	1230	48.5	1085.8	42.75	857	33.75	20-79.5	20-3 1/8	149.3	5.88	3	485	/	
800	32"	1315	51.75	1155.7	45.5	914	36	20-86	20-3 3/8	158.8	6.25	3 1/4	520	/	
850	34"	1395	55	1225.6	48.25	965	38	20-92	20-3 5/8	165.1	6.5	3 1/2	540	/	
900	36"	1460	57.5	1289	50.75	1022	40.25	20-92	20-3 5/8	171.5	6.75	3 1/2	565	/	
950	38"	1460	57.5	1289	50.75	1099	43.25	20-92	20-3 5/8	190.5	7.5	3 1/2	605	/	
1000	40"	1510	59.5	1339.8	52.75	1162	45.75	24-92	24-3 5/8	196.9	7.75	3 1/2	615	/	
1050	42"	1580	61.5	1390.6	54.75	1213	47.75	24-92	24-3 5/8	206.4	8.12	3 1/2	635	/	
1100	44"	1650	64.88	1463.7	57.82	1270	50	24-98.5	24-3 7/8	214.4	8.44	3 3/4	660	/	
1150	46"	1735	68.25	1536.7	60.5	1334	52.5	24-105	24-4 1/8	225.5	8.88	4	690	/	
1200	48"	1785	70.25	1587.5	62.5	1384	54.5	24-105	24-4 1/8	233.4	9.19	4	705	/	

主要外形尺寸 Main dimensions

Class 1500

Size		D		K		d		n-L		C		螺栓直径 Bolt diameter		双头螺栓长度 (mm) Stud length	
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	in	凸面7mm Convex 7mm	环连接 Ring connection	
15	1/2"	120	4.75	82.6	3.25	34.9	1.38	4-22	4-7/8	22.3	0.88	3/4	110	110	
20	3/4"	130	5.12	88.9	3.5	42.9	1.69	4-22	4-7/8	25.4	1	3/4	115	115	
25	1"	150	5.88	101.6	4	50.8	2	4-25.5	4-1	28.6	1.12	7/8	125	125	
32	1 1/4"	160	6.25	111.1	4.38	63.5	2.5	4-25.5	4-1	28.6	1.12	7/8	125	125	
40	1 1/2"	180	7	123.8	4.88	73	2.88	4-28.5	4-1 1/8	31.8	1.25	1	140	140	
50	2"	215	8.5	165.1	6.5	92.1	3.62	8-25.5	8-1	38.1	1.5	7/8	145	145	
65	2 1/2"	245	9.62	190.5	7.5	104.8	4.12	8-28.5	8-1 1/8	41.3	1.62	1	160	160	
80	3"	265	10.5	203.2	8	127	5	8-32	8-1 1/4	47.7	1.88	1 1/8	180	180	
100	4"	310	12.25	241.3	9.5	157.2	6.19	8-35	8-1 3/8	54	2.21	1 1/4	195	195	
125	5"	375	14.75	292.1	11.5	185.7	7.31	8-41	8-1 5/8	73.1	2.88	1 1/2	250	250	
150	6"	395	15.5	317.5	12.5	215.9	8.5	12-38	12-1 1/2	82.6	3.25	1 3/8	260	265	
200	8"	485	19	393.7	15.5	269.9	10.62	12-44.5	12-1 3/4	92.1	3				

附录A ASME钢制管法兰  
Appendix A ASME Steel Pipe Flanges

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主要外形尺寸 Main dimensions

Class 2500

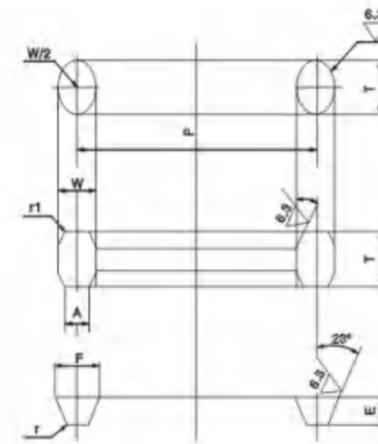
Size		D		K		d		n-L		C		螺栓直径 Bolt diameter	双头螺栓长度 (mm) Stud length	
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	in	凸面7mm Convex 7mm	环连接 Ring connection
15	1/2"	135	5.25	88.9	3.5	34.9	1.38	4-22	4-7/8	30.2	1.19	3/4	120	120
20	3/4"	140	5.5	95.2	3.75	42.9	1.69	4-22	4-7/8	31.8	1.25	3/4	125	125
25	1"	160	6.25	108	4.25	50.8	2	4-25.5	4-1	35	1.38	7/8	140	140
32	1 1/4"	185	7.25	130.2	5.12	63.5	2.5	4-25.5	4-1 1/8	38.1	1.5	1	150	150
40	1 1/2"	205	8	146	5.75	73	2.88	4-32	4-1 1/4	44.5	1.75	1 1/8	170	170
50	2"	235	9.25	171.4	6.75	92.1	3.62	8-28.5	8-1 1/8	50.9	2	1	180	180
65	2 1/2"	265	10.5	196.8	7.75	104.8	4.12	8-32	8-1 1/4	57.2	2.25	1 1/8	195	205
80	3"	305	12	226.6	9	127	5	8-35	8-1 3/8	66.7	2.62	1 1/4	220	230
100	4"	355	14	273	10.75	157.2	6.19	8-41	8-1 5/8	76.2	3	1 1/2	255	260
125	5"	420	16.5	323.8	12.75	185.7	7.31	8-48	8-1 7/8	92.1	3.62	1 3/4	300	310
150	6"	485	19	368.3	14.5	215.9	8.5	8-54	8-2 1/8	108	4.25	2	345	355
200	8"	550	21.75	438.2	17.25	269.9	10.62	12-54	12-2 1/8	127	5	2	380	395
250	10"	675	26.5	539.8	21.25	323.8	12.75	12-66.5	12-2 5/8	165.1	6.5	2 1/2	490	510
300	12"	760	30	619.1	24.38	381	15	12-73	12-2 7/8	184.2	7.25	2 3/4	540	560

主要外形尺寸 Main dimensions

Size		150Lb		600Lb		900Lb		1500Lb		2500Lb	
DN	NPS	d	E	d	E	d	E	d	E	d	E
15	1/2"	/	/	51	5.54	60.5	6.35	60.5	6.35	65	6.35
20	3/4"	/	/	63.5	6.35	66.5	6.35	66.5	6.35	73	6.35
25	1"	63.5	6.35	70	6.35	71.5	6.35	71.5	6.35	82.5	6.35
32	1 1/4"	73	6.35	79.5	6.35	81	6.35	81	6.35	102	7.92
40	1 1/2"	82.5	6.35	90.5	6.35	92	6.35	92	6.35	114	7.92
50	2"	102	6.35	108	7.92	124	7.92	124	7.92	133	7.92
65	2 1/2"	121	6.35	127	7.92	137	7.92	137	7.92	149	9.53
80	3"	133	6.35	146	7.92	156	7.92	168	7.92	168	9.53
100	4"	171	6.35	175	7.92	181	7.92	194	7.92	203	11.13
125	5"	194	6.35	210	7.92	216	7.92	229	7.92	241	12.7
150	6"	219	6.35	241	7.92	241	7.92	248	9.53	279	12.7
200	8"	273	6.35	302	7.92	308	7.92	316	11.13	340	14.27
250	10"	330	6.35	356	7.92	362	7.92	371	11.13	425	17.48
300	12"	406	6.35	413	7.92	419	7.92	438	14.27	495	17.48
350	14"	425	6.35	457	7.92	467	11.13	489	15.88	/	/
400	16"	483	6.35	508	7.92	524	11.13	546	17.48	/	/
450	18"	546	6.35	575	7.92	594	12.7	613	17.48	/	/
500	20"	597	6.35	635	9.53	648	12.7	673	17.48	/	/
550	22"	648	6.35	686	11.13	/	/	/	/	/	/
600	24"	711	6.35	749	11.13	772	15.88	794	20.62	/	/
650	26"	/	/	810	12.7	832	17.48				
700	28"	/	/	861	12.7	889	17.48				
750	30"	/	/	917	12.7	946	17.48				
800	32"	/	/	984	14.27	1003	17.48				
850	34"	/	/	1035	14.27	1067	20.62				
900	36"	/	/	1092	14.27	1124	20.62				



附录B ASME密封环尺寸  
Appendix B ASME Seal Ring Size



- 注: 1、W<22.2时r1=1.59  
2、W>25.4时r1=2.38  
3、其余加工表面未注粗糙度为  
Note: 1. When W<22.2, r1=1.59  
2. When W>25.4, r1=2.38  
3. The roughness of the rest of the processed surface without injection is

主要外形尺寸 Main dimensions

环号 Ring number	通用法兰 Applicable flange					P (±0.177)	垫片 Gasket		A (±0.203)	E (+0.3-0)	F (±0.203)	r (max)		
	150Lb	300Lb		900Lb	1500Lb		2500Lb	W (±0.203)					高度 Height (±0.39)	
		400Lb	600Lb										椭圆形 Oval	八角形 Octagon
R11		15(1/2)				34.14	6.35	11.2	9.7	4.32	5.54	7.14	0.8	
R12				15(1/2)	15(1/2)	39.70	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R13		20(3/4)				42.88	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R14			20(3/4)	20(3/4)		44.45	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R15	25(1)					47.63	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R16		25(1)	25(1)	25(1)	20(3/4)	50.80	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R17	32(1 1/4)					57.15	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R18		32(1/4)	32(1/4)	32(1/4)	20(1)	60.33	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R19	40(1 1/2)					65.10	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R20		40(1 1/2)	40(1 1/2)	40(1 1/2)		68.28	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R21					32(1 1/4)	72.24	11.13	17.5	16.0	7.75	7.92	11.91	0.8	
R22	50(2)					82.55	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R23		50(2)			40(1 1/2)	82.55	11.13	17.5	16.0	7.75	7.92	11.91	0.8	
R24			50(2)	50(2)		95.25	11.13	17.5	16.0	7.75	7.92	11.91	0.8	
R25	65(2 1/2)					101.60	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R26		65(2 1/2)			50(2)	101.60	11.13	17.5	16.0	7.75	7.92	11.91	0.8	
R27			65(2 1/2)	65(2 1/2)		107.95	11.13	17.5	16.0	7.75	7.92	11.91	0.8	
R28					65(2 1/2)	111.13	12.70	19.1	17.5	8.66	9.53	13.49	1.5	
R29	80(3)					114.30	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R30						117.48	11.13	17.5	16.0	7.75	7.92	11.91	0.8	
R31		80(3)	80(3)			123.83	11.13	17.5	16.0	7.75	7.92	11.91	0.8	
R32					80(3)	127.00	12.70	19.1	17.5	8.66	9.53	13.49	1.5	
R33	3 1/2					131.78	7.95	14.2	12.7	5.23	6.35	8.74	0.8	
R34		3 1/2				131.78	11.13	17.5	16.0	7.75	7.92	11.91	0.8	
R35				80(3)		136.53	11.13	17.5	16.0	7.75	7.92	11.91	0.8	

附录B ASME密封环尺寸  
Appendix B ASME Seal Ring Size

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环号 Ring number	通用法兰 Applicable flange					P (± 0.177)	垫片 Gasket			A (± 0.203)	E (+ 0.3-0)	F (± 0.203)	r (max)
	150Lb	300Lb	900Lb	1500Lb	2500Lb		W (± 0.203)	高度 Height (± 0.39)					
		400Lb						椭圆形 Oval	八角形 Octagon				
R36	100(4)					149.23	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R37		100(4)	100(4)			149.23	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R38					100(4)	157.18	15.88	22.4	20.6	10.49	11.13	16.66	1.5
R39				100(4)		161.93	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R40	125(5)					171.45	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R41		125(5)	125(5)			180.98	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R42					125(5)	190.50	19.05	25.4	23.9	12.32	12.7	19.84	1.5
R43	150(6)					193.68	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R44				125(5)		193.68	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R45		150(6)	150(6)			211.15	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R46				150(6)		211.15	12.70	19.1	17.5	8.66	9.53	13.49	1.5
R47					150(6)	228.60	19.05	25.4	23.9	12.32	12.7	19.84	1.5
R48	200(8)					247.65	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R49		200(8)	200(8)			269.88	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R50				200(8)		269.88	15.88	22.4	20.6	10.49	11.13	16.66	1.5
R51					200(8)	279.40	22.23	28.7	26.9	14.81	14.27	23.01	1.5
R52	250(10)					304.80	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R53		250(10)	250(10)			323.85	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R54				250(10)		323.85	15.88	22.4	20.6	10.49	11.13	16.66	1.5
R55					250(10)	342.90	28.58	36.6	35.1	19.81	17.48	30.18	2.4
R56	300(12)					381.00	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R57		300(12)	300(12)			381.00	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R58				300(12)		381.00	22.23	28.7	26.9	14.81	14.27	23.01	1.5
R59	350(14)					396.88	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R60					300(12)	406.40	31.75	39.6	38.1	22.33	17.48	33.32	2.4
R61		350(14)				419.10	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R62			350(14)			419.10	15.88	22.4	20.6	10.49	11.13	16.66	1.5
R63				350(14)		419.10	25.40	33.3	31.8	17.30	15.88	26.97	2.4
R64	400(16)					454.03	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R65		400(16)				469.90	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R66			400(16)			469.90	15.88	22.4	20.6	10.49	11.13	16.66	1.5
R67				400(16)		469.90	28.58	36.6	35.1	19.81	17.48	30.18	2.4
R68	450(18)					517.53	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R69		450(18)				533.40	11.13	17.5	16.0	7.75	7.92	11.91	0.8
R70			450(18)			533.40	19.05	25.4	23.9	12.32	12.7	19.84	1.5

附录B ASME密封环尺寸  
Appendix B ASME Seal Ring Size



环号 Ring number	通用法兰 Applicable flange					P (± 0.177)	垫片 Gasket			A (± 0.203)	E (+ 0.3-0)	F (± 0.203)	r (max)
	150Lb	300Lb	900Lb	1500Lb	2500Lb		W (± 0.203)	高度 Height (± 0.39)					
		400Lb						椭圆形 Oval	八角形 Octagon				
R71		500(20)	500(20)	450(18)		533.40	28.58	36.6	35.1	19.81	17.48	30.18	2.4
R72	500(20)					558.80	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R73						584.20	12.70	19.1	17.5	8.66	9.53	13.49	1.5
R74						584.20	19.05	25.4	23.9	12.32	12.7	19.84	1.5
R75		600(24)	600(24)	500(20)		584.20	31.75	39.6	38.1	22.33	17.48	33.32	2.4
R76	600(24)					673.10	7.95	14.2	12.7	5.23	6.35	8.74	0.8
R77						692.15	15.88	22.4	20.6	10.49	11.13	16.66	1.5
R78						692.15	25.40	33.3	31.8	17.30	15.88	26.97	2.4
R79		550(22)		600(24)		692.15	34.93	44.5	41.4	24.82	20.62	36.53	2.4
R80	550(22)					615.95	7.95	/	12.7	5.23	6.35	8.74	0.8
R81						635.00	14.30	/	19.1	9.58	11.13	15.09	1.5
R82						57.15	11.13	/	16.0	7.75	7.92	11.91	0.7
R83						/	/	/	/	/	/	/	/
R84						63.50	11.13	/	16.0	7.75	7.92	11.91	0.7
R85						79.38	12.70	/	17.5	8.66	9.53	13.49	1.5
R86						90.50	15.88	/	20.6	10.49	11.13	16.66	1.5
R87						100.03	15.88	/	20.6	10.49	11.13	16.66	1.5
R88						123.83	19.05	/	23.9	12.32	12.7	19.84	1.5
R89						114.30	19.05	/	23.9	12.32	12.7	19.84	1.5
R90						155.58	22.23	/	26.9	14.81	14.27	23.01	1.5
R91		650(26)				260.35	31.75	/	38.1	22.33	17.48	33.32	2.3
R92		700(28)				228.60	11.13	17.5	16.0	7.75	7.92	11.91	0.7
R93		750(30)				749.30	19.05	/	23.9	12.32	12.7	19.84	1.5
R94		800(32)				800.10	19.05	/	23.9	12.32	12.7	19.84	1.5
R95		850(34)				857.25	19.05	/	23.9	12.32	12.7	19.84	1.5
R96		900(36)				914.40	22.23	/	26.9	14.81	14.27	23.01	1.5
R97			650(26)			965.20	22.23	/	26.9	14.81	14.27	23.01	1.5
R98			700(28)			1022.35	22.23	/	26.9	14.81	14.27	23.01	1.5
R99			750(30)			234.95	11.13	/	16.0	7.75	7.92	11.91	1.5
R100			800(32)			749.30	28.58	/	35.1	19.81	17.48	30.18	2.3
R101			850(34)			800.10	31.75	/	38.1	22.33	17.48	33.32	2.3
R102			900(36)			857.25	31.75	/	38.1	22.33	17.48	33.32	2.3
R103						914.40	31.75	/	38.1	22.33	17.48	33.32	2.3
R104						965.20	34.93	/	41.4	24.82	20.62	36.53	2.3
R105						1022.35	34.93	/	41.4	24.82	20.62	36.53	2.3

附录C 球阀最小通道直径数据表

Appendix C Ball Valve Minimum Channel Diameter Data Sheet

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阀门尺寸 Valve size		API 6D Class						
		150	300	400	600	900	1500	2500
DN	NPS	mm	mm	mm	mm	mm	mm	mm
50	2	49	49	49	49	49	49	42
65	2 1/2	62	62	62	62	62	62	52
80	3	74	74	74	74	74	74	62
100	4	100	100	100	100	100	100	87
150	6	150	150	150	150	150	144	131
200	8	201	201	201	201	201	192	179
250	10	252	252	252	252	252	239	223
300	12	303	303	303	303	303	287	265
350	14	334	334	334	334	322	315	292
400	16	385	385	385	385	373	360	333
450	18	436	436	436	436	423	406	374
500	20	487	487	487	487	471	454	419
550	22	538	538	538	538	522	500	/
600	24	589	589	589	589	570	546	/
650	26	633	633	633	633	617	594	/
700	28	684	684	684	684	665	641	/
750	30	735	735	735	735	712	686	/
800	32	779	779	779	779	760	730	/
850	34	830	830	830	830	808	775	/
900	36	874	874	874	874	855	819	/
950	38	925	925	925	925	904	/	/
1000	40	976	976	976	976	956	/	/
1050	42	1020	1020	1020	1020	1008	/	/
1100	44	1069	1069	1069	1069	/	/	/
1150	46	1116	1116	1116	1116	/	/	/
1200	48	1166	1166	1166	1166	/	/	/
1250	50	1215	1215	1215	1215	/	/	/
1300	52	1265	1265	1265	1265	/	/	/
1350	54	1312	1312	1312	1312	/	/	/
1400	56	1360	1360	1360	1360	/	/	/
1450	58	1410	1410	1410	1410	/	/	/
1500	60	1458	1458	1458	1458	/	/	/

附录D (材料化学成份及力学性能)

Appendix D (Material Chemical Composition and Mechanical Properties)



ASTM 规范 Specifications	化学成份 Chemical composition %											力学性能 Mechanical properties					
	C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	Nb	抗拉强度 Tensile strength MPa, ≥	屈服强度 Yield strength MPa, ≥	伸长率 Elongation %, ≥	收缩率 Shrinkage %, ≥	布氏硬度 Brinell hardness HB, ≤	冲击力 Impact force J, ≥
A105	0.35	0.60~1.05	0.035	0.040	0.10~0.35	0.30	0.12	0.4	0.40	0.08	0.02	485	250	30	30	187	
A182F11	0.05~0.15	0.30~0.60	0.030	0.030	0.50~1.00	1.00~1.50	0.44~0.65					415	205	20	45	121~174	
A182F22	0.05~0.15	0.30~0.60	0.040	0.040	0.50	2.00~2.50	0.87~1.13					415	205	20	35	170	
A182F304	0.08	2.00	0.045	0.030	1.00	18.0~20.0		8.0~11.0				515	205	30	50		
A182F304L	0.030	2.00	0.045	0.030	1.00	18.0~20.0		8.0~13.0				485	170	30	50		
A182F316	0.08	2.00	0.045	0.030	1.00	16.0~18.0	2.00~3.00	10.0~14.0				515	205	30	50		
A182F316L	0.030	2.00	0.045	0.030	1.00	16.0~18.0	2.00~3.00	10.0~15.0				485	170	30	50		
A182F51	0.030	2.00	0.030	0.020	1.00	21.0~23.0	2.5~3.5	4.5~6.5				620	450	25	45		
A182F6A	0.15	1.00	0.040	0.030	1.00	11.5~13.5		0.50				585	380	18	35	167~229	
A193B7	0.37~0.49	0.65~1.10	0.035	0.040	0.15~0.35	0.75~1.20	0.15~0.25					860	720	16	50	321	
A193B7M	0.37~0.49	0.65~1.10	0.035	0.040	0.15~0.35	0.75~1.20	0.15~0.25					690	550	18	50	235	
A193B8	0.08	2.00	0.045	0.030	1.00	18.0~20.0		8.0~11.0				515	205	30	50	223	
A193B8M	0.08	2.00	0.045	0.030	1.00	18.0~18.0	2.00~3.00	10.0~14.0				515	205	30	50	223	
A193B16	0.36~0.47	0.45~0.70	0.035	0.040	0.15~0.35	0.80~1.15	0.50~0.65		0.25~0.35			860	720	18	50	321	
A1942H	≥0.40	1.00	0.040	0.050	0.04											248~352	
A1942HM	≥0.40	1.00	0.040	0.050	0.04											159~237	
A1948	0.08	2.00	0.045	0.030	1.00	18.0~20.0		8.0~11.0								126~300	
A1948	0.08	2.00	0.045	0.030	1.00	16.0~18.0	2.00~3.00	10.0~14.0								126~300	
MA216WCB	0.30	1.00	0.04	0.045	0.60	0.50	0.20	0.50	0.30	0.03		485~655	250	22	35		
A216WCC	0.25	1.20	0.04	0.045	0.60	0.50	0.2	0.50	0.30	0.03		485~655	275	22	35		
A217C5	0.20	0.40~0.70	0.04	0.045	0.75	4.00~6.50	0.45~0.65	0.50	0.50			620~795	415	18	35		
A217CA15	0.15	1.00	0.040	0.040	1.50	11.5~14.0	0.50	1.00				620~795	450	18	30		

附录D (材料化学成份及力学性能)

Appendix D (Material Chemical Composition and Mechanical Properties)

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ASTM 规范 Specifications	化学成份 Chemical composition %											力学性能 Mechanical property					
	C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	Nb	抗拉强度 Tensile strength MPa, ≥	屈服强度 Yield strength MPa, ≥	伸长率 Elongation %, ≥	收缩率 Shrinkage %, ≥	布氏硬度 Brinell hardness HB, ≤	冲击力 Impact force J, ≥
A217WC6	0.05~0.20	0.50~0.80	0.04	0.045	0.60	1.00~1.50	0.45~0.85	0.50	0.50			485~655	275	20	35		
A217WC9	0.05~0.18	0.40~0.70	0.04	0.045	0.60	2.00~2.75	0.90~1.20		0.50			485~655	275	20	35		
A276410	0.08~0.15	1.00	0.040	0.030	1.00	11.5~13.5						480	275	20	45		
A276420	≥0.15	1.00	0.040	0.030	1.00	12.0~14.0											平均 Average: 27; 最小 Min: 20
A320 L7	0.38~0.048	0.75~1.00	0.035	0.040	0.15~0.35	0.80~1.10	0.15~0.25					860	725	16	50	241	平均 Average: 27; 最小 Min: 20
A320 L7M	0.38~0.048	0.75~1.00	0.035	0.040	0.15~0.35	0.80~1.10	0.15~0.25					690	550	18	50		
A336F22	0.05~0.15	0.30~0.60	0.025	0.025	0.50	2.00~2.50	0.90~1.10					515~690	310	19	40	235	平均 Average: 19; 最小 Min: 14
A350 LF1	0.30	0.60~1.35	0.035	0.040	0.15~0.30	0.30	0.12	0.40	0.40	0.08	0.02	415~585	205	28	38		最小 Min: 20; 最小 Min: 16
A350 LF2	0.30	0.60~1.35	0.035	0.040	0.15~0.30	0.30	0.12	0.40	0.40	0.08	0.02	485~655	250	30	30		
A351 CF3	0.03	1.50	0.040	0.040	2.00	17.0~21.0	0.50	8.0~12.0				485	205	35.0			
A351 CF3M	0.03	1.50	0.040	0.040	1.50	17.0~21.0	2.0~3.00	9.0~13.0				485	205	30.0			
A351 CF8	0.08	1.50	0.040	0.040	2.00	18.0~21.0	0.50	8.0~11.0				485	205	35.0			
A351 CF8M	0.08	1.50	0.040	0.040	1.50	18.0~21.0	2.0~3.00	9.0~12.0	3.0~4.0			485	205	30.0			
A351 CF8C	0.08	1.50	0.040	0.040	2.00	18.0~21.0	0.50	9.0~12.0				485	205	30.0			
A351 CN7M	0.07	1.50	0.040	0.040	1.50	19.0~22.0	2.0~3.00	27.5~30.5				425	170	35			
A352LC1	0.25	0.50~0.80	0.04	0.045	0.60		0.45~0.85					450~620	240	24	35		
A352LC2	0.25	0.50~0.80	0.04	0.045	0.60			2.00~3.00				485~655	275	24	35		平均 Average: 20; 最小 Min: 14
A352LC3	0.15	0.50~0.80	0.04	0.045	0.60			3.00~4.00				485~655	275	24	35		平均 Average: 20; 最小 Min: 16
A352 LCB	0.30	1.00	0.04	0.045	0.60	0.50	0.20	0.50	0.30	0.03		450~620	240	24	35		平均 Average: 20; 最小 Min: 16
A352LCC	0.25	1.20	0.04	0.045	0.60	0.50	0.20	0.50		0.03		485~655	275	22	35	139~202	平均 Average: 18; 最小 Min: 14
A439 D2	3.00	0.70~1.25	0.08		1.50~3.00	1.75~2.75		18.00~22.00				400	207	8.0			平均 Average: 20; 最小 Min: 16

内件材料附表

Internal Parts Material Schedule



附表(内件材料) Attached table (internal materials)

内件号 Internal part number	阀座或本体 Seat or body	闸板、阀瓣、球或本体 Gate, disc, ball or body	阀杆 Stem	内件号 Internal part number	阀座或本体 Seat or body	闸板、阀瓣、球或本体 Gate, disc, ball or body	阀杆 Stem
01	13Cr	13Cr	13Cr	31	STELLITE	321SS	321SS
02	304SS	304SS	304SS	32	STEELITE	STELLITE	321SS
03	310SS	310SS	310SS	33	347SS	347SS	347SS
04	HARED13Cr	HARED13Cr	13Cr	34	STELLITE	347SS	347SS
05	STELLITE	STELLITE	13Cr	35	NICKELALLOY	13Cr	13Cr
06	Cu-Ni	13Cr	13Cr	36	A105/PTFE	A105+ENP	A105+ENP
07	13Cr	HARD13Cr	13Cr	37	A105/PTFE	WCB+ENP	WCB+ENP
08	STELLITE	13Cr	13Cr	38	13Cr/PTFE	13Cr	13Cr
09	Cu-Ni	Cu-Ni	Cu-Ni	39	304/PTFE	304SS	304SS
10	316SS	316SS	316SS	40	316SS/PTFE	316SS	316SS
11	Cu-Ni	STELLITE	Cu-Ni	41	A105/RPTFE	A105+ENP	A105+ENP
12	STELLITE	316SS	316SS	42	A105/RPTFE	WCB+ENP	A105+ENP
13	ALLOY20	ALLOY20	ALLOY20	43	13Cr/RPTFE	13Cr	13Cr
14	STELLITE	ALLOY20	ALLOY20	44	304SS/RPTFE	304SS	304SS
15	STELLITE	STELLITE	304SS	45	316SS/RPTFE	316SS	316SS
16	STELLITE	STELLITE	316SS	46	A105/NYLON	A105+ENP	A105+ENP
17	STELLITE	STELLITE	347SS	47	A105/NYLON	WCB+ENP	A105+ENP
18	STELLITE	STELLITE	ALLOY20	48	A105/NYLON	304SS	304SS
19	MONEL	MONEL	MONEL	49	A105/NYLON	316SS	316SS
20	BRONZE	BRONZE	13Cr	50	13Cr/NYLON	13Cr	13Cr
21	HASTELLOYB	HASTELLOYB	HASTELLOYB	51	304SS/NYLON	304SS	304SS
22	HASTELLOYB	HASTELLOYC	HASTELLOYC	52	316SS/NYLON	316SS	316SS
23	STELLITE	304SS	304SS	53	A105/PEEK	A105+ENP	A105+ENP
24	304LSS	304LSS	304LSS	54	A105/PEEK	WCB+ENP	A105+ENP
25	STELLITE	304LSS	304LSS	55	13Cr/PEEK	13Cr	13Cr
26	STELLITE	STELLITE	304LSS	56	304SS/PEEK	304SS	304SS
27	316LSS	316LSS	316LSS	57	316SS/PEEK	316SS	316SS
28	STELLITE	316LSS	316LSS				
29	STELLITE	STELLITE	316LSS				
30	321SS	321SS	321SS	99	特殊要求 Special requirements	特殊要求 Special requirements	特殊要求 Special requirements

