

BALL VALVE SERIES

球阀系列



Industrial Piping System
Solutions Expert
工业管道系统解决专家

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企业简介

Brief Introduction

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诚信立业、追求卓越
Setting Up Business
In Good Faith, Seeking
For Excellence

中国·九通集团有限公司是集研发、制造、销售各种阀门为一体的大型综合性阀门企业。是中国阀门协会会员，国家电力公司电站配件供应网络成员，中国工程建设推荐产品单位。公司先后通过了ISO9001(DNV)、环境管理ISO14001、职业健康安全OHSAS18001、美国石油协会API-6D认证、欧盟安全CE认证、压力管道安全注册TS认证。

公司总部占地62800平方米，建筑面积43960平方米，现有员工200多人，其中高级工程师16人，中级技术人员56名。公司依托国外先进的技术支持和高效的管理，为生产高品质的产品提供了强有力的保证。投资兴建的工业园内建有热模锻、精密铸造、焊接、热处理、机械加工、装配等车间；拥有数控加工中心、等离子焊接机、超频真空热处理设备、车球专用数控、高效加工专机、理化和探伤设备、无损探伤检测中心等各类加工检测设备300多台套，设备配置齐全、加工检测手段完备。公司建立有CAD阀门设计中心，三维立体模拟制造实验设计系统、公司设备完备的质保系统，按照ISO9000的管理标准，从原材料进厂的产品出厂，实行道工序层层把关，确保产品质量。

公司产品按国际ISO、美国API、ANSI、英国BS、德国DIN、法国NF、日本JIS、JPI、及GB、JB标准组织生产，阀门主要

产品有电站阀、闸阀、截止阀、止回阀、球阀、蝶阀、水力控制阀、锻钢阀、疏水阀、船用阀门、机械铸造、机械锻造、试验及检验设备等；压力级：Class150-class4500，PN10-PN420；口径范围：NPS1/2-NPS80，DN10-DN3000；驱动方式：手动、齿轮传动、气动、电动、气液联动等；连接方式：法兰连接、对焊连接、承插连接、对夹连接、螺纹连接、卡套连接等；主要材料（铸件）：WCB、WCC、LCB、LCC、LC1、LC2、LC3、CF8、CF3、CF8M、CF3M、CF8C、CN7M、CA15、C5、WC5、WC6、WC9等；主要材料（锻件）：A105、LF1、LF2、F304、F304L、F316、F316L、F11、F22、F6、F51、F316H、F321、F347等。并根据客户特殊要求进行冶炼和制造。多年来为电力、石油、化工、化肥、冶金、制药等行业引进装置进行阀门配置，产品畅销2000多家大中型企业，并致力开拓国际市场，已出口阀门数万（台）套，远销欧美、中东、东南亚等十多个国际和地区，得到用户的广泛赞誉和信赖。

展望未来，我们将与时俱进，锐意创新，时刻满怀创业的豪情和无限憧憬，昂首阔步，纵横千里，实行着又一个新的跨越。同时竭诚期待各界销售精英加盟，共建九通经销商网络，我们将以最优性价比的产品和服务，最富竞争的商务政策、回馈销售网络，与经销商朋友共谋发展，共赢未来。

China Jiutong Group Corporation is a large-scale comprehensive enterprise integrating R&D, manufacturing and sales of various valve, and one of the members of China Valve Association, State Power Corporation Power Station Accessories Supply Network and the recommending products list of Chinese engineering construction. It has passed successively the following certifications like ISO9001(DNV), Environmental Management ISO14001 and Occupational Health and Security OHSAS18001, API-6D, CE and TS for Pressure Pipeline Safety Registration.

The corporation covers an area of 62800 sq.m, and a floorage of 43960 sq.m with a staff of more than 200 involving 16 senior engineers and 56 middle-grade technicians. A powerful assurance is offered to produce high quality products based upon foreign advanced technical support and high efficient management, the industry park invested has constructed the workshops of hot-press forging, precision casting, welding, heat treatment, mechanical processing, assembling and so on and has complete equipments and testing measures in possession of over 300 sets of various processing and testing equipments like CNC processing center, plasma welding machine, ultra-frequency vacuum heat treatment machine, ball-purpose CNC and efficient processor, physical & chemical detection machine, nondestructive inspection machine and so on. It has established CAD valve design center, three-dimensional Analogue manufacturing experimental design system and complete quality control system with armed equipments. The quality of products is guaranteed in each work procedure from the entrance of raw materials to the delivery of products in accordance with the standards of ISO9000.

The products, produced in accordance with ISO, API, ANSI, BS, DIN, NF, JIS, JPI, GB and JB, include power station valve,

gate valve, globe valve, check valve, ball valve, butterfly valve, hydraulic valve, forged steel valve, drainage valve, boat-purpose valve, mechanical forging, mechanical casting, testing and examination equipments etc., under the pressure classes from Class150 to class 4500 (PN10-PN420), the diameter ranging from NPS 1/2 to NPS80 (DN10-DN3000), they are driven by the modes of manually, gears, pneumatically, electrically, pneumatically-hydraulically and the connection modes like flange, butt-welding, socket, wafer, threads, sleeve and so on, and made of the following materials (casting parts): WCB, WCC, LCB, LCC, LC1, LC2, LC3, CF8, CF3, CF8M, CF3M, CF8C, CN7M, CA15, C5, WC5, WC6, WC9 and so on, and main materials (forging parts): A105, LF1, LF2, F304, F304L, 316, F316L, F11, F22, F6, F51, F316H, F321, F347 and so on, furthermore, the products can be melt and manufactured as per special requirements of clients, which are used to configure the valves of the introducing device in the fields like power supply, petroleum, chemicals, fertilizer, metallurgy and pharmacy, and are well sold to more than 2000 large and middle-scale enterprises and strive for exploiting international markets by exporting ten thousands of valves to ten odd nations and regions including Western countries, Middle East and Southeast Asia, and are widely trusted and appraised by clients.

Looking forward to the future, we will keep pace to the times and innovation, take a leap of new summit with full ambition and expectation of enterprising, moreover, we are sincerely looking forward to the joining of sales elite in various cycles to commonly develop dealer network of Jiutong, we will commonly make development and win-win policies with friends of dealers on the basis of products and service of best cost performance and most competitive business policies and the feedback of sales network.

品质保障 Quality Guarantee

品质，是核心理念！

我们将品质融入企业运行的每一环节，赋予现实的表现。

品质之路，积跬步，至千里，济天下，
立志成为值得人们信赖的阀门品牌企业。

Quality, the Kernel Concept.

We have inoculated the quality into each step of enterprise management, not a slogan only.

The way of quality development, is accumulated step by step, then it can glow up long time,
win the world market.

We aspired to become the reliable brand of valve appliances.



我们珍惜用多年汗水铸造的品牌，珍惜每一份来之不易的荣誉。面对掌声我们没有眷恋徘徊，也不曾犹豫不决，
我们把它化作前进的动力，一步一脚印、不断锐意进取、超越自我……
We cherish the brand casted by sweat and every hard-earned honor. Facing applause,
We never wandered and hesitated. We turn it into the power pushing us forward step by step……

完善的检测保障系统 Completed Inspection Guarantee System



生产装备 Production Equipment

我们拥有先进的生产装备，运用崭新的管理概念及强大的专业技术力量，生产出符合国际标准的高品质产品。

We Own Advanced Producing Equipment ,make Sure Of Completely New Managing Concept An Strong Professional Technology Force To Produce High Quality Products That Confirm With International Standard.

先进的加工设备，可靠的质量保证。一流的检测设备，一丝不苟的检测手段，确保产品的稳定和可靠。细致是监测产品质量的保证。不让质量问题损害我们的品牌是我们的宗旨。有序的生产程序，有效的工作效率是取胜于一切的必要基础。

Advanced processing equipment, reliable quality guaranty best checking equipment, earnest checking measures, macking sure of the steadiness and reliane of our products. Meticulous monitoring is the assurance of product quality. We never allow quality defect injuring our brand. Orderly production process and effective working efficiency is quitecrucial for making success.

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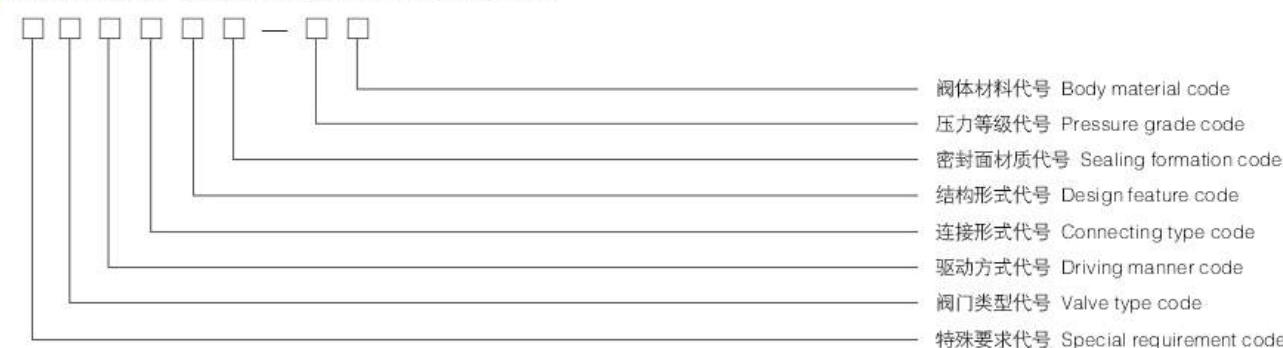
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球阀型号编制方法 Ball Valve Model Establishment Method



● 型号编制说明 Model schedule illustration



● 特殊要求代号 Special requirement code

K—抗硫型	K—Antisulphur type
D—低温型	D—Low temperature type
EX—加长杆型	EX—Pole extending type
M—埋地型	M—Ground burying type

● 阀门类型代号 Valve type code

FB—浮动球阀;	FB— Float Ball Valve;
TB—固定球阀;	TB— Fixed Ball Valve

● 驱动方式代号 Driving manner code

3—手动操作器;	3—Manual Operator;
6—气动	6—Pneumatic;
6S—气动弹簧复位;	6S— Pneumatic Spring Return;
6A—气动调节;	6A— Pneumatic Control;
5—伞齿轮传动;	5—Bevel Gear Drive;
7—液动;	7— Hydraulic;
8—气液联动;	8— Airdraulic;
8H—气液联动带紧急切断;	8H— Airdraulic with Emergency Cutoff;
9—电动;	9— Electric Driving;

● 连接形式代号 Connecting type code

RF—突面法兰;	RF—Raised Face Flange;
FF—全平面法兰;	FF—Fully Flat Face Flange;
MFM—凹凸面法兰;	MFM—Male and Female Flange;
TG—榫槽面法兰;	TG—Tongued and Grooved Flange;
RJ—环接面法兰;	RJ— Ring Junction Flange;
BW—对接焊;	BW—Butt Welding;
SW—承插焊;	SW—Socket Welding;
NPT—螺纹连接;	NPT—Threaded Connection

● 结构形式代号 Design feature code

1—全径直通;	1—Full bore straightway;
2—缩径直通;	2—Reducing Straightway;
3T—T形三通;	3T—T shaped three-way;
3L—L形三通;	3L—L shaped three-way;
4—四通;	4—Four-way
5—整体上装式(全径);	5—Overall top installed(Full bore);
5A—整体上装式(缩径);	5A—Overall top installed(Reducing);
6—轨道球阀(全径);	6—Track ball valve(Full bore);
6A—轨道球阀(缩径);	6A—Track ball valve(reducing);
7H—偏心半球;	7H—Eccentric half ball;
7F—偏心全球;	7F—Eccentric full ball;
8—全焊接(全径);	8—All Welded(Full bore);
8A—全焊接(缩径);	8A—All Welded (Reducing);

● 密封面材质代号 Sealing formation code

Y—硬质合金	Y—Hard alloy
F—增强聚四氟乙烯	F—Strengthen the polytetrafluoroethylene (PTFE)
N—尼龙	N—Nylon
PPL—对位聚苯	PPL—Counterpoint polypheny
G—碳纤维	G—Carbon Fiber
E—PEEK	E—PEEK
M—MOLON	M—MOLON

● 压力等级代号 Pressure grade code

- 1—PN16 class150;
- 2—PN25;
- 3—class300;
- 4—PN40 class400;
- 6—PN64 class600
- 9—class900;
- 10—PN100;
- 15—class1500;
- 16—PN160;
- 20—PN200;
- 25—class2500;

● 阀体材料代号 Body material code

- C—WCB;
- C5—C5;
- C6—WC6;
- C9—WC9;
- BL—LCB;
- CL—LCC
- 8—CF8;
- 8M—CF8M;
- 3—CF3;
- 3M—CF3M;
- ML—MONEL;

● 球阀技术规范 Ball technical specifications

技术规范 Technical Specifications	API系列	GB系列
设计规范 Design Specifications	API6D、API608、BS5351	GB/T12237、JB/T7745
压力温度等级 Pressure and Temperature Class	ASME B16.34	GB/T9124
结构长度 Face-to-face	ASME B16.10	GB/T12221、GB/T15188.1
法兰型式尺寸 Flange type and dimensions	ASME B16.5、ASME B16.47	GB/T9113、JB/T79
对焊端连接 Butt welded	ASME B16.25	GB/T12224
承插焊连接 Socket welded	ASME B16.11	/
螺纹端连接 Threaded	ASME B 16.1.20	/
检验与试验 Inspection and Test	API598、API6D	JB/T9092、GB/T13927

● 结构特点 Structural Features

浮动球阀系我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，它具有更新的设计特点，能满足一般工业标准的安全和方便需要。
Float ball valves are superior products developed upon the advanced technology home and abroad. Provided with updated design ideas, they meet the requirements on safety and convenience in general industrial standards.

1. 手动浮动球阀的开、关指示 Switch Indication of Hand Operated Float Ball Valve

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，能从手柄所处位置很容易辨出阀门是处于开启位置或关闭位置。当手柄或阀杆扁方与管道轴线平行时，阀门处于开启位置；当手柄或阀杆扁方与管道轴线垂直时，阀门处于关闭位置。

As the moving parts of valve, ball, valve stem and handle are an assembly unit. The head of valve stem is shaped a diploid, thus to easily distinguish whether valve is in the 'ON' position OFF' position from handle position. When handle or stem diploid is in parallel with the pipe axis, valve is in 'ON' position; when handle or stem diploid is vertical to the pipe axis, valve is in 'OFF' position.

2. 阀门锁定装置 Valve Locking Device

为防止误操作阀门，在阀门的全开和全关位置可用锁锁定阀门，特别是安装在野外的阀门或当工艺流程不允许开或关阀门时，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工艺要求。

To prevent misoperation, the fully opened or closed position of valve can be locked up, especially when valves are mounted outdoors or when valves are not allowed to be opened or closed by technical process. To prevent misoperation by other persons, it seems very important to have valve position locked up. Thereby, lockhole locating ab is designed if requested by users to meet the technological requirements of users.

3. 阀杆防飞出结构 Anti-flyout Structure of Valve Stem

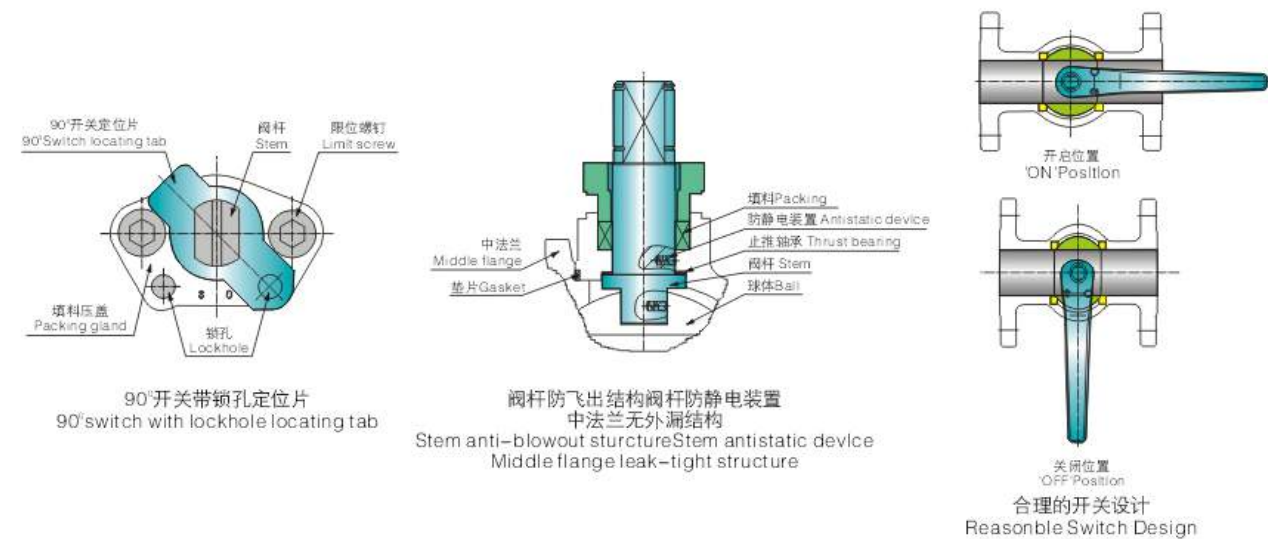
当介质通过阀门时，阀体中腔的压力可能将阀杆推出（或在维修阀门时，如果中腔有压力，拆卸阀门时阀杆、介质容易飞出，误伤人员）。为防止这种情况发生，在阀杆下部设置一凸台结构。这样，即使火灾时，填料、止推轴承被烧损或其他原因引起填料等损坏，阀体内的介质压力将使阀杆凸台与阀体上密封面紧密接触，防止介质大量从损坏的填料部位出泄漏。

When medium passes through the valve, the pressure in valve body may possibly push the stem out, or when the valve is repair, if there is pressure in the middle cavity, the stem or medium seems to easily fly out upon disassembling the valve, which can cause injuries to human beings. To prevent these possibilities, a dummy club is placed at the lower part of the stem. In this way, even if there is fire, packing and thrust bearing are burnt or packing is damaged due to other causes, the pressure of medium in valve body will make the dummy club of valve stem in close contact with the upper seal face of valve body, thus to prevent medium leading out from the damaged packing position.

4. 防静电装置 Antistatic Device

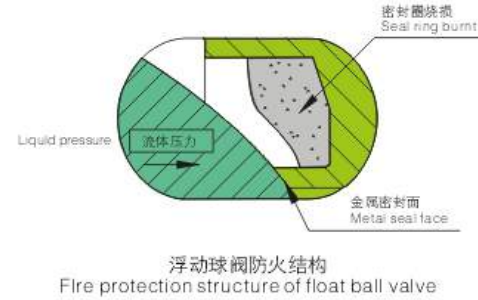
当操作阀门时，由于球体和聚四氟乙烯等非金属材料阀座之间的摩擦，会产生静电电荷并聚集在球体上。为防止产生静电火花，特在阀门上设置防静电装置，将积聚在球体上的电荷通过球体与阀杆、阀杆与阀体之间的静电通道导出。

When operating the valve, the friction between the ball and the nonmetal seat, like PTFE or etc. will produce electrostatic charge that can be accumulated on the ball. To prevent static spark, an antistatic device is placed on the valve to derive the electric charge accumulated on the ball from the static channel between the ball and the stem, or between the stem and valve body.



5. 防火结构

当发生火灾时, 填料、阀座等非金属(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, 这是阀门的防火结构可阻挡介质大量泄漏。如图, 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出泄漏。防火防静电的结构设计应符合API607、JB/T6899和BS6755第二部分的要求。



5. Fire Protection Structure

In case of fire, the nonmetal packing or seat (non-fireproof material) will be burnt, the considerable medium leakage may possibly cause fire spread. Here, the fire fire protection structure functions to prevent medium from mass leakage. As shown in the figure, once the seat is burnt, the ball will directly contact the metal face on valve body, thus to prevent medium leaking out from the burnt seat. The design of fire protection and antistatic structure shall conform to the requirements of API607, JB/T6899 and the second part of BS 6755.

6. 中部法兰无外漏结构 Middle Flange Leak-tight Structure

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, 保证无外漏。

The connection between valve body and the left body is sealed by gasket. To prevent seal leakage resulted from fire, high temperature or vibration etc. the valve body and the left body is designed metal-to-metal contacted, thus to form up a seal flange to ensure leak-tightness.

7. 可靠的阀座密封结构 Dependable Seating Structure

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、低压和真空状态下的可靠密封。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不会损坏。

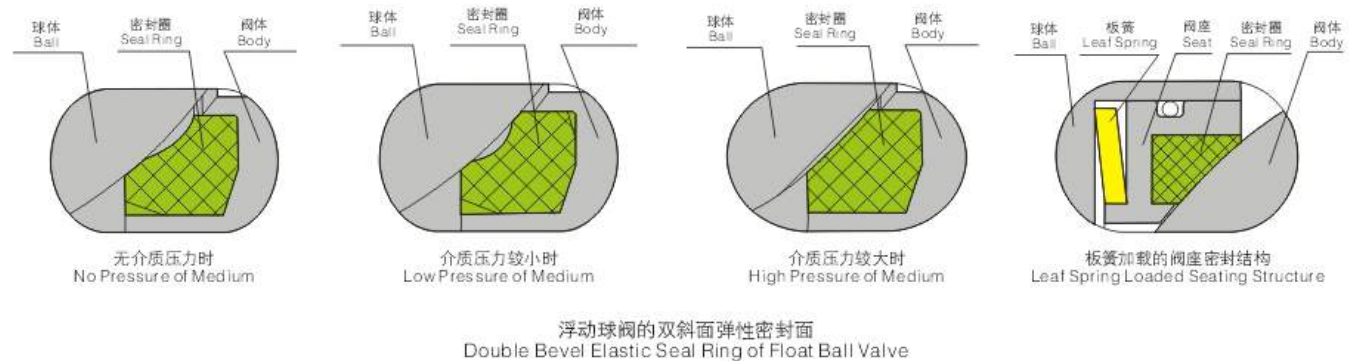
对于工作压力很低的球阀, 考虑到介质压力不能确保阀座的可靠密封, 而预紧力长期使用后会衰退, 故对于低压, 超低压或真空工况用球阀, 采用球阀, 采用板簧加载的阀座密封结构, 确保球阀长期可靠的密封。

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°C的温度, 而采用金属密封耐高温组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。

The two-way sealing structure embodying the years of our manufacturing experience in ball valves and the internationally advanced technology can release the pressure at valve seat and ensure reliable seal under high or low pressure and vacuum state. When the pressure of medium is low, the contact area between valve seat insert and ball is relatively small, thus providing high sealing load to ensure dependable seating seal. When the pressure of medium is high, the contact area between valve seat insert and ball is relatively large, so that the valve seat insert can endure the considerable medium thrust and cannot be damaged.

Regarding ball valves of very low working pressure, in consideration that the pressure of medium cannot guarantee the dependable seal of valve seat, and that the pretightening force will decrease after a longtime of service, so we apply leaf spring loaded seating structure for valves working under low and ultralow pressure or under vacuum conditions, thus to ensure persistent and dependable seal.

The seating structure of medium and high temperature ball valves use PPL for seal ring that can serve a temperature of 300°C. Ball valves with metal seal and high temperature resisting materials can be used to deal with even higher temperature. This structure takes the function of one-way seal.



8. 自动泄压结构 Self-relieving Structure

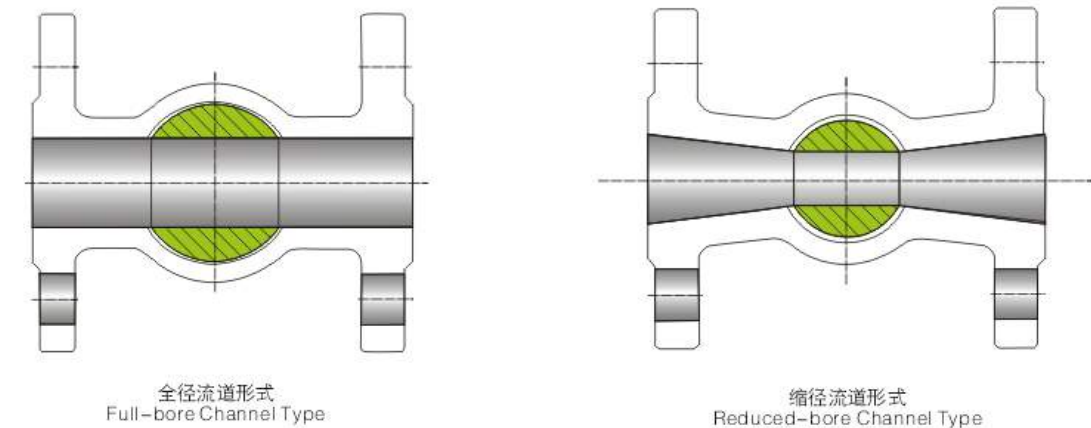
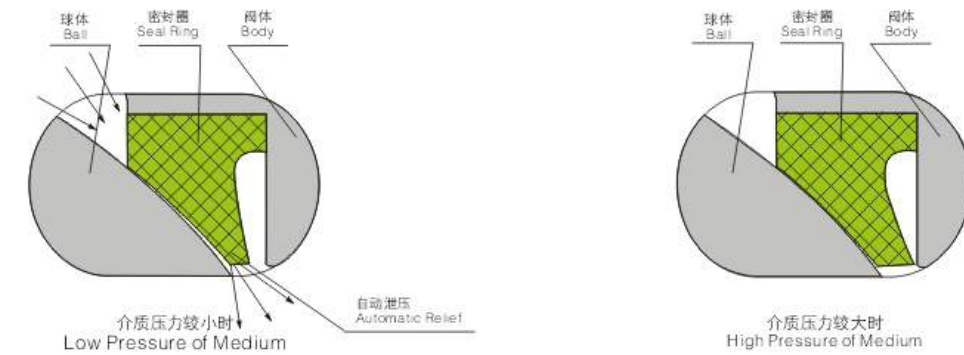
当滞留在阀门中腔的介质由于管道系统压力或介质温度等因素引起的变化, 从而出现中腔压力异常升高时, 中腔介质能依靠本身的推力推动阀座而自动泄压, 从而确保阀门的安全。

In case of abnormal rise of pressure in the middle cavity of valve resulted from the medium left there suffered from changes of pipeline pressure or medium temperature, automatic pressure relief of valve seat can be effected under the pressure of the medium itself, thus to guarantee the safety of valve.

9. 全径和缩径 Full and Reduced Bore

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。全通径球阀的通道内径与管线内径一致, 流体阻力最小, 并便于管道清扫。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。

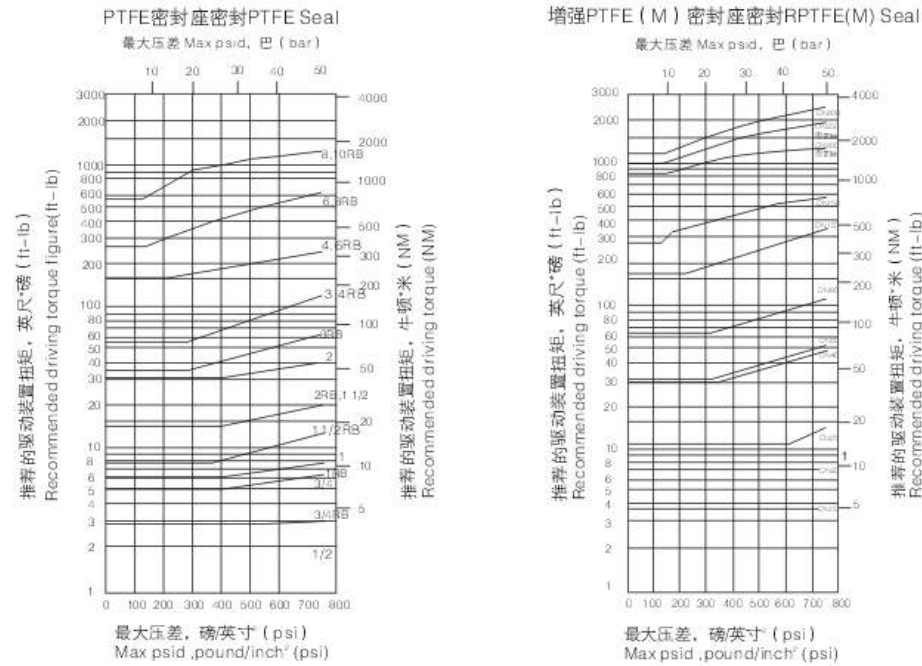
We have ball valves of full and reduced bore to meet users' different needs. Full-bore ball valves have the same inside diameter as that of pipeline, with the lowest fluid resistance for the convenience of cleaning the pipeline. While reduced-bore ball valves weighs only 70% of the full-bore ball valve with the same caliber, a saver of cost and price, and its fluid resistance coefficient is only 1/7 of that of the globe valve with the same caliber, so that reduced-bore valves are widely used abroad.



● 浮动球阀参考力矩 Floating Ball Valve Reference Torque

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需作额外因素考虑。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 table and graphic torques below are for reference to choose a drive device. According to the properties of medium, trims and the open frequency of valve shall be considered as extra factors. Valves with corrosion-resistant trims to deal with clean lubricating mediums, their torque may be lowered by 20%. However, to deal with stringent mediums like slurry, granular medium and oxygen, the torque may be increased by 50%.



● 力矩表(N.m)/Torque Form

通径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	460	770	/	/	/

注：表中数据未经实际测定，仅供参考 Notes: The data in the form are not practically measured, and just for reference.

通径Size (mm)	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
Class150	3	5	11	16	25	50	65	125	250	410	700
Class300	7	12	26	38	60	120	160	280	600	950	1550
Class400	15	30	50	90	140	240	350	540	/	/	/
Class600	19	35	68	130	190	360	460	770	/	/	/

注：表中数据未经实际测定，仅供参考 Notes: The data in the form are not practically measured, and just for reference.

● 流量数据表 Flow Coefficient Table

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。

下表为浮动球阀的流量系数。[Cv值表示在1磅英寸²(0.006894757MPa)压降下+60°F(+16°C)的水，每分钟流过阀门的美国加仑数。

Flow coefficient is an index to measure the flow capacity of a valve. A higher value of flow coefficient means less pressure loss of fluid passing through the valve. The value of flow coefficient varies according to the dimensions, type and structure of valve. Valves of different types and specifications shall be tested separately to make sure of their values of flow coefficient. Regarding valves of the same structure, flow coefficient varies according to the flow direction of fluid through the valve. These differences are caused by different pressure recoveries.

The table below is the flow coefficient of float ball valve. 'Cv' stands for the American gallons flowing through the valve per minute under 1pound/inch²(0.006894757MPa) pressure drop+60°F(+16°C)water.

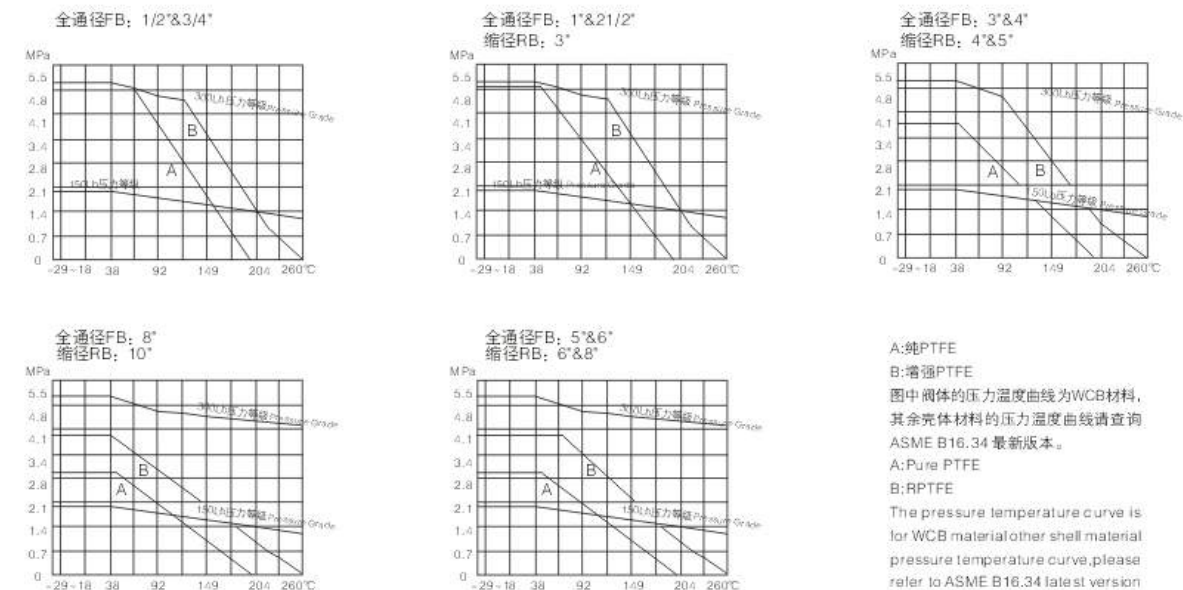
● CV 值 Value

公称 Nominal	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
通径Size	mm	15	20	25	32	40	50	65	80	100	125	150	200
缩径RB		9	19	45	-	125	165	270	350	550	670	765	1890
全径FB		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-temperature rating of ball valve is not only related to shell materials, but also to the sealing parts of seat, packing and gasket etc. The materials of sealing parts may be high molecular material, graphite asbestos or rubber etc., which depends on the composition of the medium to be handled, working temperature, working pressure and flow velocity. It is rather difficult to accurately make out the pressure temperature rating of valve under various unpredictable working conditions. Based upon the years of valve manufacturing experience and the precious feedback of users, we can offer you the pressure-temperature rating of 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:RPTFE
The pressure temperature curve is for WCB material other shell material pressure temperature curve, please refer to ASME B16.34 latest version

● 供货范围 Supply Scope

公称口径Nominal Size		压力等级Pressure Grade (class)			
DN	In	150	300	400	600
15	1/2		●/△		
20×15	3/4×1/2		●/△		
20	3/4		●/△		
25×20	1×3/4		●/△		
25	1		●/△		
32	1		-		
40×32	1 1/2×1 1/4		●/△		
40	1 1/2		●/△		
50×40	2×1 1/2		●/△		
50	2		●/△/★		
65×50	2 1/2×2		●/△/★		
65	2 1/2		●/△/★		
80×65	3×2 1/2		●/△/★		
80	3		●/△/★		
100×80	4×3		●/△/★		
100	4		●/△/★		
125×100	5×4	●/△/★			/
125	5	●/△/★			/
150×100	6×4		●/△/★		
150	6	●/△/★			/
200×150	8×6	●/△/★			/
200	8	●/△/★			/

注：●表示手柄操作阀门；☆表示齿轮箱操作阀门；△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: ●stands for handle operated valves; ☆stands for gearbox operated valves; △stands for air operated valves; ★stands for electrically operated valves; /stands for no option of this Those not covered in the table can be custom made to users' requirements.

● 产品性能规范 Products Performance Specification

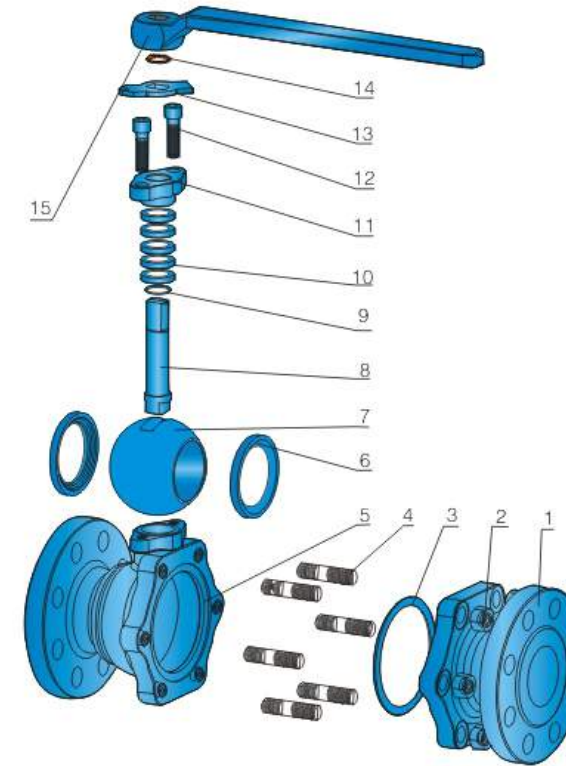
性能规范 Performance Specification		公称压力Nominal Pressure (MPa)					压力等级Pressure Grade (class)			
		1.6	2.5	4.0	6.4	10.0	150	300	400	600
试验压力 Testing Pressure (MPa)	强度试验 Shell test	2.4	3.75	6.0	9.6	15.0	2.93	7.58	10.0	15.0
	密封试验 Seal test	1.76	2.75	4.4	7.04	11.0	2.07	5.52	7.31	11.03
	气压试验 Air test	0.6MPa								
适用温度 Applicable Temperature		-196℃~550℃(注：不同工况温度，选用不同的材质) Different materials for different Operating temperature								
适用介质 Applicable Medium	普通型 Ordinary type	水、蒸汽、石油、液化气、天然气等 Water, Steam, Petroleum, LPG, Natural gas etc.								
	抗硫型 Antisulphur type	含H ₂ S、CO天然气、石油等 Natural gas containing H ₂ S and CO, petroleum, etc								

● 设计标准

1. 设计标准：API 6D、BS5351、ASME B16.34、GB/T12237
 2. 结构长度：ASME B16.10、GB/T12221
 3. 法兰尺寸：ASME B16.5、GB/T9113
 4. 试验和检验：API 598、JB/T9092
- 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 Construction

1. Design Standard: API 6D、BS5351、ASME B16.34、GB/T12237
 2. Face to Face: ASME B16.10、GB/T12221
 3. Flanged size: ASME B16.5、GB/T9113
 4. Test & Inspection: API 598、JB/T9092
- Notes: The sizes of serial valve connecting flange and butt-welding terminal can be designd according to customer's requirement.

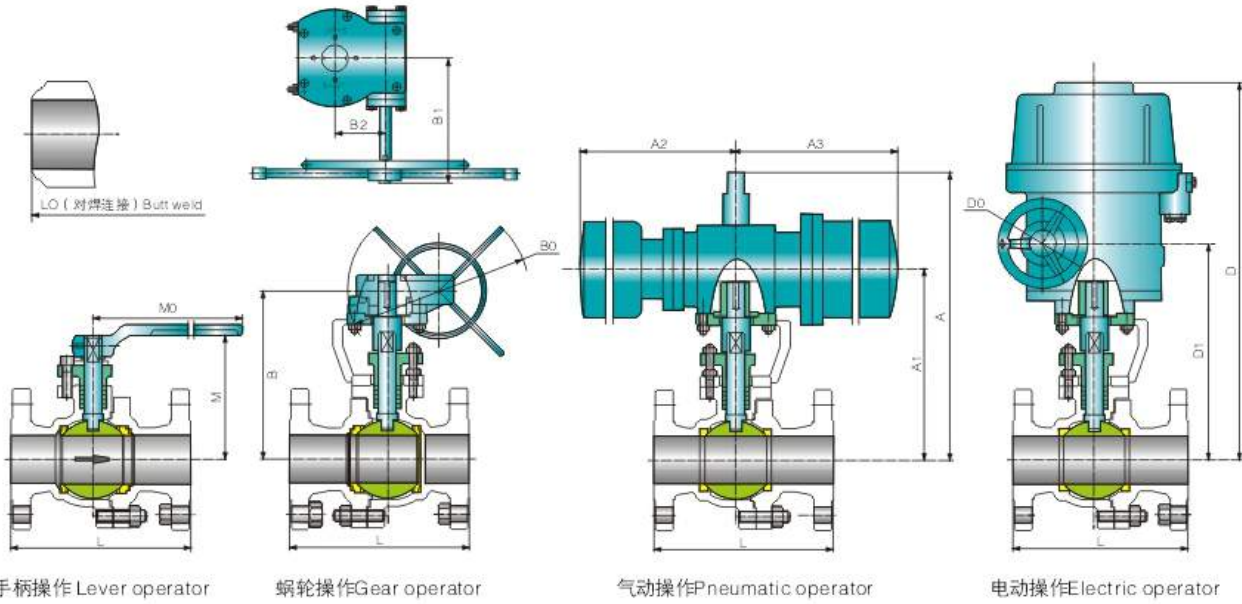


● 主要零件材料 Major Parts Material Form

序号 No.	零件名称 Accessory name	材质Material		
		碳钢系列Carbon Steel Series	不锈钢系列Stainless Steel Series	低温系列Cryogenic Steel Series
1	右体Bonnet	A216 WCB	A351-CF8、CF8M、CF3、CF3M	A352 LCB、LCC
2	螺母Nut	A194 2H	A194 8M	A194 4
3	垫片Gasket	柔性石墨+不锈钢Flexible Graphite+stainless Steel		
4	螺柱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 carbon fibre、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Gasket	A182 F6a		A182 F6a
10	填料垫片Packing gasket	柔性石墨Flexible graphite、PTFE		
11	填料压盖Gland	A216 WCB	A351 CF8、CF8M	A351 CF8
12	螺钉Screw nail	A193 B7	A193 B8、B8M	A320 L7
13	定位片Locating piece	GB/T 700 Q235A+Zn(Cr)		
14	挡圈Ring	A216 WCB		
15	手柄Wrench	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。
Notes: *The material of this part about the anti-sulphur type valve is ASTM(A182-304+Ni.P)
**The material of this part about the anti-sulphur type valve is ASTM(A276-321)Major parts of the valve series and materials of sealing surface differ according to actual working condition and customer's special requirement

● 全径浮动球阀PN1.6MPa CLASS150~PN6.4/10.0MPa CLASS 600



● 主要外形尺寸及重量 Main Size of Outside & Weight

PN1.6MPa CLASS150

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	108	117	127	165	178	190	203	229	356	394	457
Lo	BW	140	152	165	190	216	241	283	305	381	457	521
手动 Hand-operated	M	59	63	75	95	107	142	152	178	252	272	342
	MO	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 operated	A	200	204	257	264	340	370	389	594	646	646	781
	A1	122	126	162	169	209	239	258	337	437	437	537
	A2	326	326	347	420	426	426	590	523	610	610	885
	A3	136	136	181	181	257	257	257	287	378	378	530
电动 Electric Driving	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	2.5	3	5	7	10	15	19	33	58	93	160
	气动	10	15.7	19.5	42.8	46.9	50.5	70	92.7	160.7	183.5	276
	电动	/	/	/	/	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) Flange dimensions, butt weld dimensions refer to annex A,E.

● 主要外形尺寸及重量 Main Size of Outside & Weight

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 Hand-operated	M	59	63	75	95	107	142	152	178	252	272	342
	MO	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、液动 Pneumatic hydraulic operated	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 Driving	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	3	4	6	11	15	24	30	55	81	118	200
	气动	10	15.7	20	40.9	43.9	51.9	68	99.4	177.5	207.5	381
	电动	/	/	/	/	29	37	42	77	116	143	235

注：连接法兰尺寸、焊接端尺寸见附表 (A、E) Flange dimensions, butt weld dimensions refer to annex A,E.

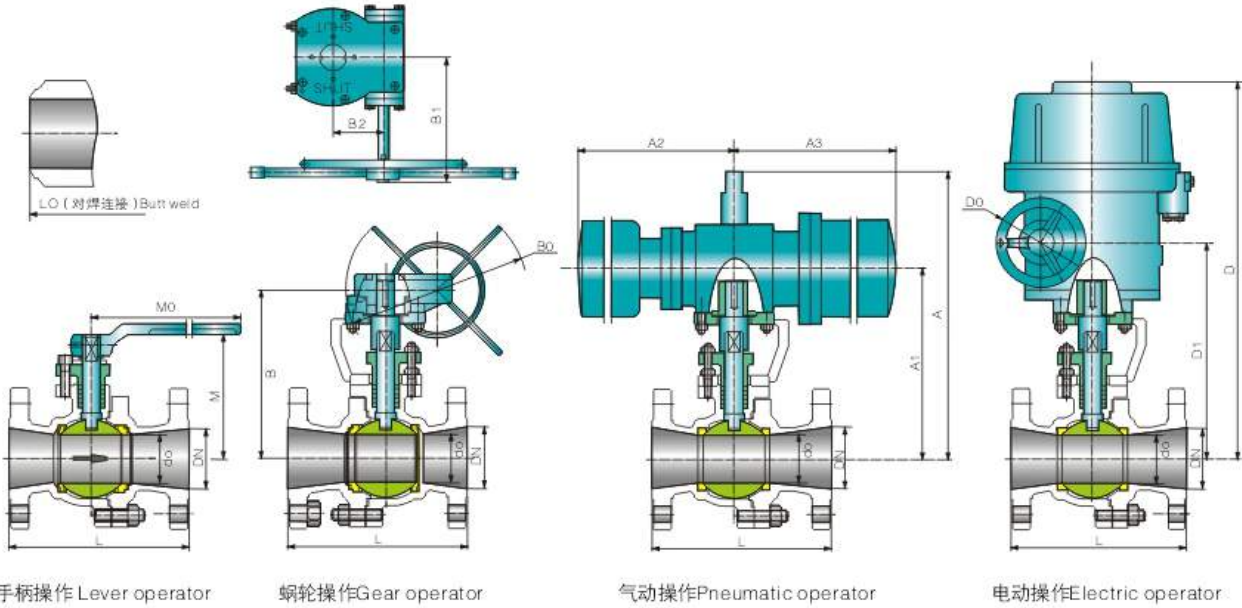
● 主要外形尺寸及重量 Main Size of Outside & Weight

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 Hand-operated	M	59	63	75	95	142	154	184	209
	MO	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、液动 Pneumatic hydraulic operated	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 Driving	D	/	/	/	/	472	599	599	632
	D1	/	/	/	/	377	449	449	472
	D0	/	/	/	/	190	190	190	190
重量 Weight Kg (RF)	手动	8	11	15	19	25	32	48	76
	气动	17.2	21	24	32	68	75	101.3	177.5
	电动	/	/	/	/	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)
The dimensions in parentheses in above table are the face to face dimensions of PN10.0(CLASS 600) Flange dimensions,butt weld dimensions refer to annex A,E.

● 缩径浮动球阀PN1.6MPa CLASS150~PN6.4/10.0MPa CLASS 600



● 主要外形尺寸及重量 Main Size of Outside & Weight

PN1.6MPa CLASS150

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 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 Hand-operated	M	59	63	75	95	107	142	152	178	178	272
	MO	130	130	160	230	230	400	400	650	650	1050
蜗轮、蜗杆 Worm gear	B	/	/	/	/	/	/	/	/	/	292
	BO	/	/	/	/	/	/	/	/	/	400
	B1	/	/	/	/	/	/	/	/	/	350
	B2	/	/	/	/	/	/	/	/	/	115.5
气动 Pneumatic operated	A	200	204	257	264	340	379	452	594	594	744
	A1	122	126	162	169	209	248	295	375	375	500
	A2	326	326	347	420	426	426	590	523	523	610
	A3	136	136	181	181	257	257	257	287	287	378
电动 Electric Driving	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	3	4	7	9	14	19	25	32	40	84.0
	气动	10	15.7	21	40.9	45.9	50.9	68	87.4	95.4	186.5
	电动	/	/	/	/	31	36	42	49	57	119

注：连接法兰尺寸、焊接端尺寸见附表 (A、E) Flange dimensions, butt weld dimensions refer to annex A,E.

● 主要外形尺寸及重量 Main Size of Outside & Weight

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 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 Hand-operated	M	59	63	75	95	107	142	152	178	178	272
	MO	130	130	160	230	230	400	400	650	650	1050
蜗轮、蜗杆 Worm gear	B	/	/	/	/	/	/	/	/	/	292
	BO	/	/	/	/	/	/	/	/	/	400
	B1	/	/	/	/	/	/	/	/	/	350
	B2	/	/	/	/	/	/	/	/	/	115.5
气动、液动 Pneumatic hydraulic operated	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 Driving	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	3	4	7	9	14	19	25	32	40	84.0
	气动	10	15.7	21	40.9	45.9	50.9	68	87.4	95.4	186.5
	电动	/	/	/	/	31	36	42	49	57	119

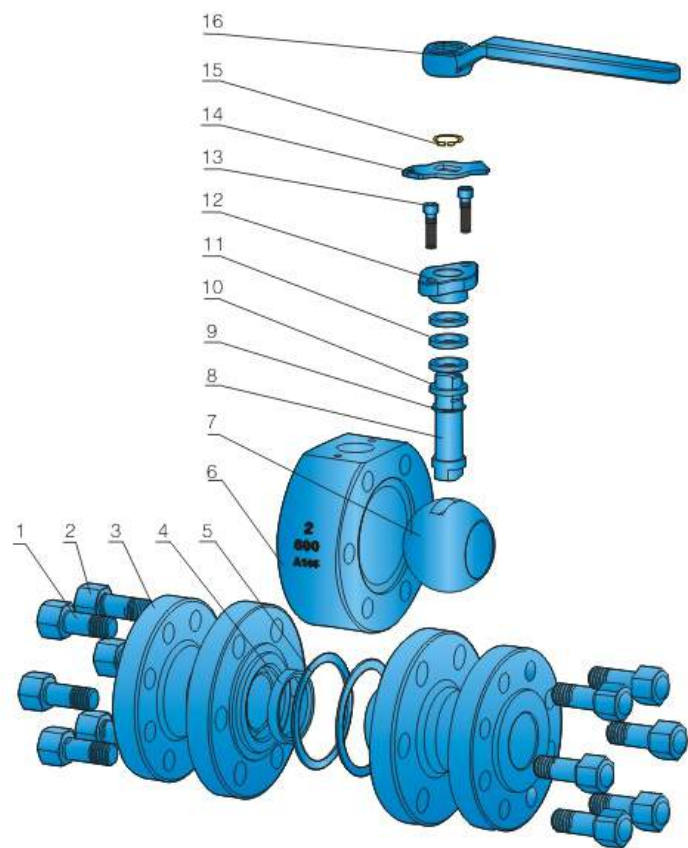
注：连接法兰尺寸、焊接端尺寸见附表 (A、E) Flange dimensions, butt weld dimensions refer to annex A,E.

● 主要外形尺寸及重量/Main Size of Outside & Weight

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 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 Hand-operated	M	59	63	75	95	142	154	184	209
	MO	160	160	230	400	400	650	650	1050
蜗轮、蜗杆 Worm gear	B	/	/	/	/	/	/	292	398
	BO	/	/	/	/	/	/	400	600
	B1	/	/	/	/	/	/	350	421
	B2	/	/	/	/	/	/	115.5	171
气动、液动 Pneumatic hydraulic operated	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 Driving	D	/	/	/	/	472	599	599	632
	D1	/	/	/	/	377	449	449	472
	D0	/	/	/	/	190	190	190	190
重量Weight Kg (RF)	手动	8	11	15	19	25	48	76	85
	气动	15	22.7	29	33	39	91	119	187.5
	电动	/	/	/	/	60	83	111	120

注：连接法兰尺寸、焊接端尺寸见附表 (A、E) Flange dimensions, butt weld dimensions refer to annex A,E.



● 设计标准

1. 设计标准: API 6D、BS5351、ASME B16.34、GB/T12237
 2. 结构长度: ASME B16.10、GB/T12221
 3. 法兰尺寸: ASME B16.5、GB/T9113
 4. 试验和检验: API 598、JB/T9092
- 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 Construction

1. Design Standard: API 6D、BS5351、ASME B16.34、GB/T12237
 2. Face to Face: ASME B16.10、GB/T12221
 3. Flanged size: ASME B16.5、GB/T9113
 4. Test & Inspection: API 598、JB/T9092
- Notes: The sizes of serial valve connecting flange and butt-welding terminal can be designed according to customer's requirement.



● 主要零件材料/Major Parts Material Form

序号 No.	零件名称 Accessory name	材质Material		序号 No.	零件名称 Accessory name	材质Material	
		ASTM				ASTM	
1	垫片Gasket	柔性石墨+不锈钢 Flexible graphite+stainless steel		9	垫片Gasket	PTFE	
2	阀座Seat	PTFE		10	填料垫Packing seat	A276-410	
3	右体Bonnet	A105		11	填料Packing	柔性石墨Flexible graphite	
4	螺母Nut	A194-2H		12	填料压盖Gland	A216-WCB	
5	螺栓Stud	A193-B7		13	螺栓Bolt	A193-B7	
6	阀体Body	A105		14	定位片Locating piece	Carbon steel	
7	球体Ball*	A105+ENP		15	挡圈Ring	AISI 1566	
8	阀杆Stem**	A182-F6a		16	手柄Wrench	A47-667 32510	

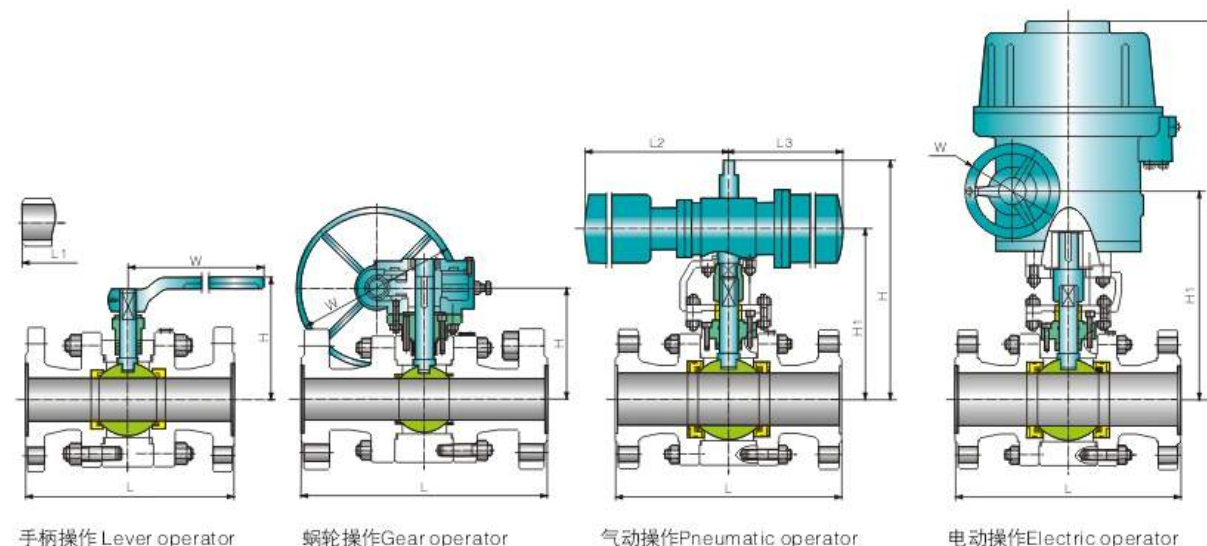
注: *抗硫型阀门的该零件的材质为ASTM(A182-304+Ni.P);

**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。

Notes: *The material of this part about the anti-sulphur type valve is ASTM(A182-304+Ni.P)

**The material of this part about the anti-sulphur type valve is ASTM(A276-321)Major parts of the valve series and materials of sealing surface differ according to actual working condition and customer's special requirement

● 浮动式锻钢球阀PN1.6MPa CLASS150~PN6.4/10.0MPa CLASS 600



● 主要外形尺寸及重量 Main Size of Outside & Weight

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	108	117	127	165	178	190	203	229	356	394	457
对焊Butt Welding	L1	140	152	165	190	216	241	282	305	381	403	419
手动 Hand-operated	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 operated	H	-	-	-	-	-	-	-	-	-	260	300
	W	-	-	-	-	-	-	-	-	-	400	600
	型号Type	-	-	-	-	-	-	-	-	-	A	B
气动 Pneumatic operated	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
	L2	326	326	347	420	426	426	590	523	610	610	885
	L3	136	136	181	181	257	257	257	287	378	378	530
型号Type	AG06	AG09	AG09	AG13	AG13	AG13	AG13	AG13	AW13	AW17	AW17	AW20
Kg	6.1	6.3	8.1	14.1	16.6	38.0	42.1	53.0	93.5	105.2	207.8	
电动 Electric Driving	H	-	-	-	-	432	443	454	493	574	646	678
	H1	-	-	-	-	337	348	359	398	424	496	528
	W	-	-	-	-	190	190	190	190	400	400	400
	型号Type	-	-	-	-	Q60-1	Q60-1	Q60-1	Q60-1	Q120-1	Q120-1	Q120-1
	Kg	-	-	-	-	23	25	60	75	97	162	226

● 主要外形尺寸及重量 Main Size of Outside & Weight

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	282	305	381	403	502
对焊Butt Welding	L1	140	152	165	190	216	241	282	305	381	403	502
手动 Hand-operated	H	73	80	86	102	136	164	191	223	240	253	307
	W	140	140	180	230	240	400	400	750	750	900	1000
蜗轮蜗杆传动 Worm gear operated	H	-	-	-	-	-	-	-	-	-	325	387
	W	-	-	-	-	-	-	-	-	-	400	600
气动 Pneumatic operated	型号Type	-	-	-	-	-	-	-	-	-	A	B
	Kg	-	-	-	-	-	-	-	-	-	148	196
手动 Hand-operated	H	204	236	242	326	359	388	415	508	621	675	824
	H1	126	141	147	195	228	257	284	351	412	466	580
蜗轮蜗杆传动 Worm gear operated	L2	326	326	347	420	426	426	590	523	610	610	885
	L3	136	136	181	181	257	257	257	287	378	378	530
气动 Pneumatic operated	型号Type	AG06	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
手动 Hand-operated	H	-	-	-	-	432	443	454	493	574	646	678
	H1	-	-	-	-	337	348	359	398	424	496	528
蜗轮蜗杆传动 Worm gear operated	W	-	-	-	-	190	190	190	190	400	400	400
	型号Type	-	-	-	-	Q60-1	Q60-1	Q60-1	Q60-1	Q120-1	Q120-1	Q120-1
气动 Pneumatic operated	Kg	-	-	-	-	23	35	60	75	100	170	245

● 主要外形尺寸及重量 Main Size of Outside & Weight

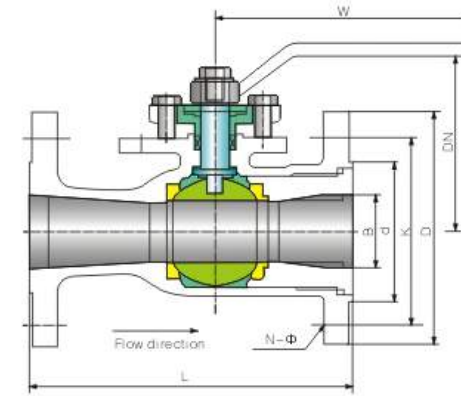
PN 6.4/10.0MPa CLASS 600

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 Hand-operated	H	73	80	86	110	142	171	185	220
	W	160	160	230	400	400	650	650	800
蜗轮蜗杆传动 Worm gear operated	Kg	4.5	6.2	7.5	12.5	26.1	38	44	65
	H	-	-	-	-	-	-	182	217
蜗轮蜗杆传动 Worm gear operated	W	-	-	-	-	-	-	280	400
	型号Type	-	-	-	-	-	-	O	A
气动 Pneumatic operated	Kg	-	-	-	-	-	-	50	95
	H	229	236	242	266	366	395	470	601
手动 Hand-operated	H1	134	141	147	171	235	264	313	392
	L2	283	283	283	350	590	590	523	610
蜗轮蜗杆传动 Worm gear operated	L3	136	181	181	181	257	257	287	378
	型号Type	AG09	AG09	AG09	AG09	AG13	AG13	AG13	AW17
气动 Pneumatic operated	Kg	6.5	6.8	9.3	17.8	33.6	45.1	55.3	81.3
	H	-	-	-	-	500	520	545	558
手动 Hand-operated	H1	-	-	-	-	350	370	395	408
	W	-	-	-	-	190	190	190	190
蜗轮蜗杆传动 Worm gear operated	型号Type	-	-	-	-	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 dimension in parentheses is for PN 10.0 MPa. Class 600

● 主要零件材料 Major Parts Material Form

零件名称 Description of parts	C	P	R
阀体Body	WCB	1Cr18Ni9Ti CF8	1Cr18Ni12Mo2Ti CF8M
阀盖Bonnet	WCB	1Cr18Ni9Ti CF8	1Cr18Ni12Mo2Ti CF8M
球体Ball	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12Mo2Ti 316
阀杆Stem	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12Mo2Ti 316
密封圈Sealing	聚四氟乙烯 Poly tetra fluor ethylene(PTFE)		
填料Packing	聚四氟乙烯 Poly tetra fluor ethylene(PTFE)		

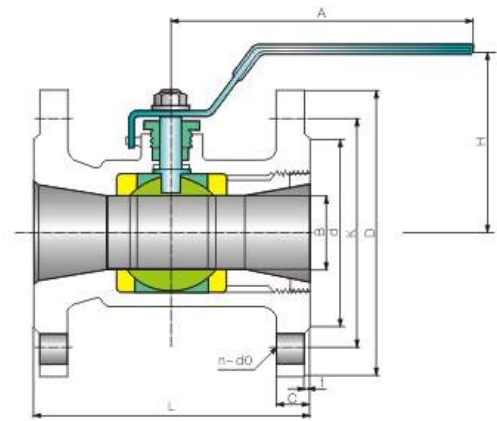


● 主要性能规范 Main Performance Parameter

公称压力 Nominal pressure	PN	Class150/300	
强度试验压力(MPa) Strength testing pressure	PT	3.0/7.5	
低压密封试验压力(MPa) Seat testing pressure(Low pressure)		0.6	
高压密封试验压力(MPa) Seat testing pressure (High pressure)		2.2/5.5	
适用介质 Applicable media	C	P	R
	水、油品、气 Water、Oil、Steam	硝酸类 Nitric acid	醋酸类 Acetic acid
适用温度 Applicable Temperature	-40~180℃		

● 主要外形尺寸及重量 Main Size of Outside & Weight

SIZE	B	W	L	D	K	N-Φ
1/2	15	120	108	89	60.5	4 × 15
3/4	20	120	117	98	70	4 × 15
1	25	140	127	108	79.5	4 × 15
1 1/4	32	160	140	117	89	4 × 15
1 1/2	40	180	165	127	98.5	4 × 15
2	50	200	178	152	120.5	4 × 19
2 1/2	65	240	190	78	139.5	4 × 19
3	80	260	203	190	152.5	4 × 19
4	100	320	229	229	190.5	8 × 19
5	125	600	356	254	216	8 × 22
6	150	600	394	279	241.3	8 × 22
8	200	800	457	343	298.5	8 × 25
10	250	1000	533	406	362	12 × 25
12	300	1200	610	483	431.8	12 × 25



●主要零件材料 Major Parts Material Form

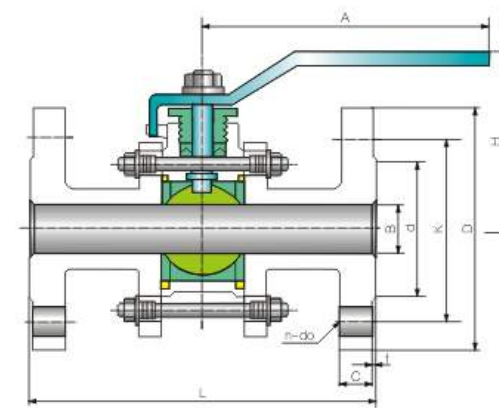
零件名称 Description of parts	C	P	R
阀体Body	WCB	1Cr18Ni9Ti CF8	1Cr18Ni12Mo2Ti 316
球体Ball	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12Mo2Ti 316
阀杆Stem	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12Mo2Ti 316
密封圈Sealing	聚四氟乙烯 Poly tetra fluor ethylene(PTFE)		
填料Packing	聚四氟乙烯 Poly tetra fluor ethylene(PTFE)		

●主要性能规范 Main Performance Parameter

公称压力 Nominal pressure	PN	1.6,2.5,4.0,6.4		
强度试验压力(MPa) Strength testing pressure	PT	2.4,3.8,6.0,9.6		
低压气密封试验压力(MPa) Seat testing pressure(Low pressure)		0.6		
高压密封试验压力(MPa) Seat testing pressure(High pressure)		1.8,2.8,4.4,7.1		
适用介质 Applicable media	C	P	R	
	水、油品、气 Water、Oil、Steam	硝酸类 Nitric acid	醋酸类 Acetic acid	
适用温度 Applicable Temperature	-40~180℃			

●主要外形尺寸及重量 Main Size of Outside & Weight

DN	B	L	D	K	d	C	F	H	A	N-do
15	12	90	95	65	46	14	2	60	110	4-14
20	15	105	105	75	56	14	2	65	120	4-14
25	20	110	115	85	65	15	2	75	150	4-14
32	25	125	135	100	76	16	3	83	160	4-18
40	32	136	145	110	85	18	3	90	160	4-18
50	38	155	160	125	100	18	3	100	180	4-18
65	50	170	180	145	118	20	3	110	200	4-18
80	65	200	195	160	132	20	3	130	250	8-18
100	80	230	215	180	150	22	3	150	270	8-18



●主要零件材料 Major Parts Material Form

零件名称 Description of parts	C	P	R
阀体Body	WCB	1Cr18Ni9Ti CF8	1Cr18Ni12Mo2Ti CF8M
阀盖Bonnet	WCB	1Cr18Ni9Ti CF8	1Cr18Ni12Mo2Ti CF8M
球体Ball	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12Mo2Ti 316
阀杆Stem	1Cr18Ni9Ti 304	1Cr18Ni9Ti 304	1Cr18Ni12Mo2Ti 316
密封圈Sealing	聚四氟乙烯 Poly tetra fluor ethylene(PTFE)		
填料Packing	聚四氟乙烯 Poly tetra fluor ethylene(PTFE)		

●主要性能规范 Main Performance Parameter

公称压力 Nominal pressure	PN	1.6,2.5,4.0,6.4		
强度试验压力(MPa) Strength testing pressure	PT	2.4,3.8,6.0,9.6		
低压气密封试验压力(MPa) Seat testing pressure(Low pressure)		0.6		
高压密封试验压力(MPa) Seat testing pressure(High pressure)		1.8,2.8,4.4,7.1		
适用介质 Applicable media	C	P	R	
	水、油品、气 Water、Oil、Steam	硝酸类 Nitric acid	醋酸类 Acetic acid	
适用温度 Applicable Temperature	-40~180℃			

●主要外形尺寸及重量 Main Size of Outside & Weight

DN	B	A	H	PN		16					40					150lb				
				ANSI	L	D	K	d	C	n-do	D	K	d	C	n-do	D	K	d	C	n-do
15	10	125	75	35	95	65	45	14	4-14	95	65	45	14	4-14	89	60.5	35	11	4-15	
20	11	140	80	37	105	75	58	16	4-14	105	75	58	16	4-14	98	70	43	12	4-15	
25	12	140	85	42	115	85	68	16	4-14	115	85	68	16	4-18	108	79.5	51	13	4-15	
32	14	170	100	53	135	100	78	16	4-18	135	100	78	16	4-18	117	89	64	13	4-15	
40	16	200	110	62	160	110	88	16	4-18	160	110	88	16	4-18	127	98.5	73	15	4-15	
50	17	220	120	78	180	125	102	18	4-18	180	125	102	18	4-18	152	120.5	92	16	4-19	
65	18	280	130	90	185	145	122	18	4-18	185	145	122	18	4-18	178	139.5	105	18	4-19	
80	18	300	140	110	200	160	138	20	8-18	200	160	138	20	8-18	190	152.5	127	20	4-19	
100	19	340	160	134	215	180	158	20	8-18	215	180	162	20	8-22	229	190.5	157	24	8-19	

● 固定球阀结构特点 Structural Features of Fixed Ball Valve

1. 自动泄压结构 Self-relieving Structure

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机能，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。

In case of abnormal rise of pressure at middle cavity, ball valve of single seal structure is provided with self-relieving function, while ball valve of dual seal structure uses the auxiliary pressure relief device on valve body to carry out pressure relief.

2. 密封的紧急救护 Emergency Seal System

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，或出现紧急情况下而不能密封时，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的紧急密封系统。

The valve is designed with an auxiliary seating emergency seal system, as shown in the figure. In case of soft seal damaged, or failure of seal in an emergency circumstances, emergency seal may be effected by injecting in sealant through auxiliary sealing system if needed, emergency seal assembly can be used to rinse and lubricate the seating area. Plus, valve stem can also be designed with an auxiliary emergency sealing system.

3. 防火结构 Fire Safe Design

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/T6899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泄漏，防止火灾的进一步扩大。

The ball valve can be fire safe design according to working circumstances and customers' needs. The fireproofing design of ball valve is to the the standards of API 607 and GB/T6899. In case of soft seal ring burnt in fire, the fire protection structure of ball valve functions to prevent mediums from mass leakage, thus to avoid fire spreading.

4. 防静电结构 Antistatic Structure

当操作阀门时，由于球体和阀座之间的摩擦，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导出（如图所示）。

When operating the valve, the friction between the ball and seat will produce electrostatic charge that can be accumulated on the ball. To prevent static spark, an antistatic device is placed on the valve to derive the electric charge accumulated on the ball (as shown in the figure).

5. 锁定装置 Locking Device

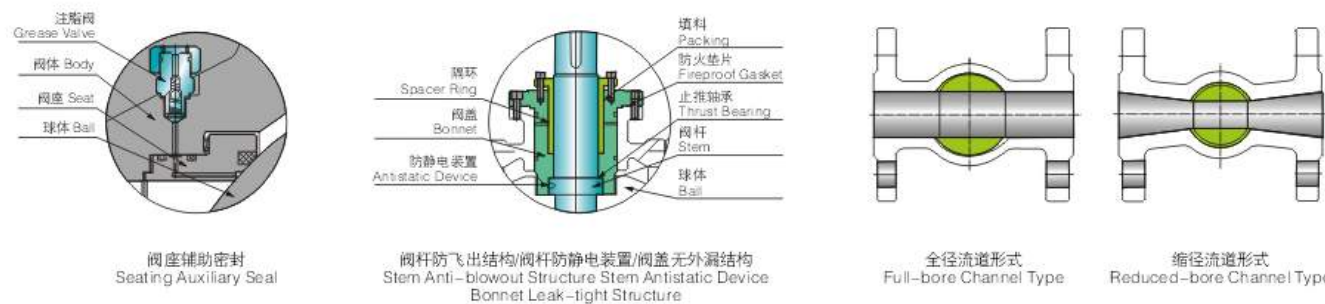
在手动球阀的全开、全闭两点位置上设计可上锁的结构，这样，可防止误操作以及不可预知的线路振动而产生的不应有的开关现象，特别是在可燃性介质的石油类和化学药品的生产线，以及阀门在室外配管时，这种设计体现出的优点和实际效果特别好。

To prevent misoperation and the unexpected open or close caused by the unpredicted circuit vibration, a locking device is designed at the fully opened and closed positions of hand operated ball valve. This design is proven to be especially good and effective in the production line of inflammable mediums of petroleum and chemicals, or when valves are mounted outdoors.

6. 全通径结构及缩径结构 Full And Reduced Bore Structure

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。

To meet the different requirements of users, we have full and reduced bore ball valves series (as shown in the figure). Full bore ball valve is for convenience of cleaning, while reduced-bore series ball valve is comparatively lighter in weight, but fluid resistance is only 1/7 of that of globe valve of the same caliber, so reduced-bore ball valves boast of wider prospects.



7. 阀体的泄放装置 Discharge Device On Valve Booy

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对阀体内的长期淤积物进行冲洗与排放。

According to user or device system requirement, discharge valve will be mounted on the body of ball valve. In case the two ends of valve have been sealed, the pressure in valve will be released through the discharge valve on the body. Besides the function of DBB, this discharge valve also functions to rinse and blow out the deposits inside valve body.

8. 防腐蚀 Corrosion Resistance

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。

Corrosion allowance is left for the design of body thickness, the stem, fixed shaft, ball, seat and bottom cover of carbon steel valve are all chemical plated in surface to ASTM B733 and B656. Use of paint from international standard to deal with all kinds of conditions.

9. 抗硫化应力裂化 Sulfide Stress Cracking Resistance

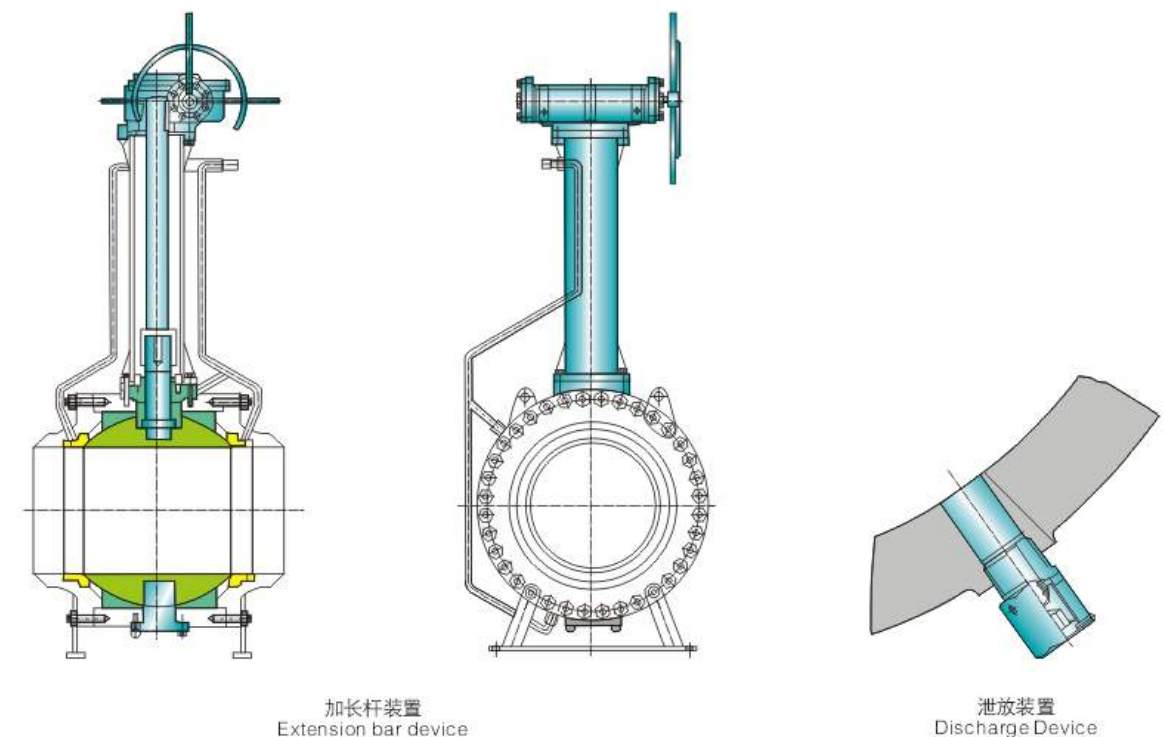
我公司生产系列抗硫球阀，阀门接触介质的材料（包括紧固件）都是按美国腐蚀工程师协会标准NACE Mr0175的要求进行选择，并在制造过程中作严格的质量控制和质量检测，以求完全符合标准的规定，并满足硫化环境工况的工艺要求。

The materials exposed to fluid of our sulfur resisting ball valves including fastening components are all selected to NACE Mr0175, and rigorous quality control and inspection is implemented in the manufacturing process to make our products conformed to the standard and suitable for vulcanizing conditions.

10. 加长杆装置 Extension Bar Device

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。如右图，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）。

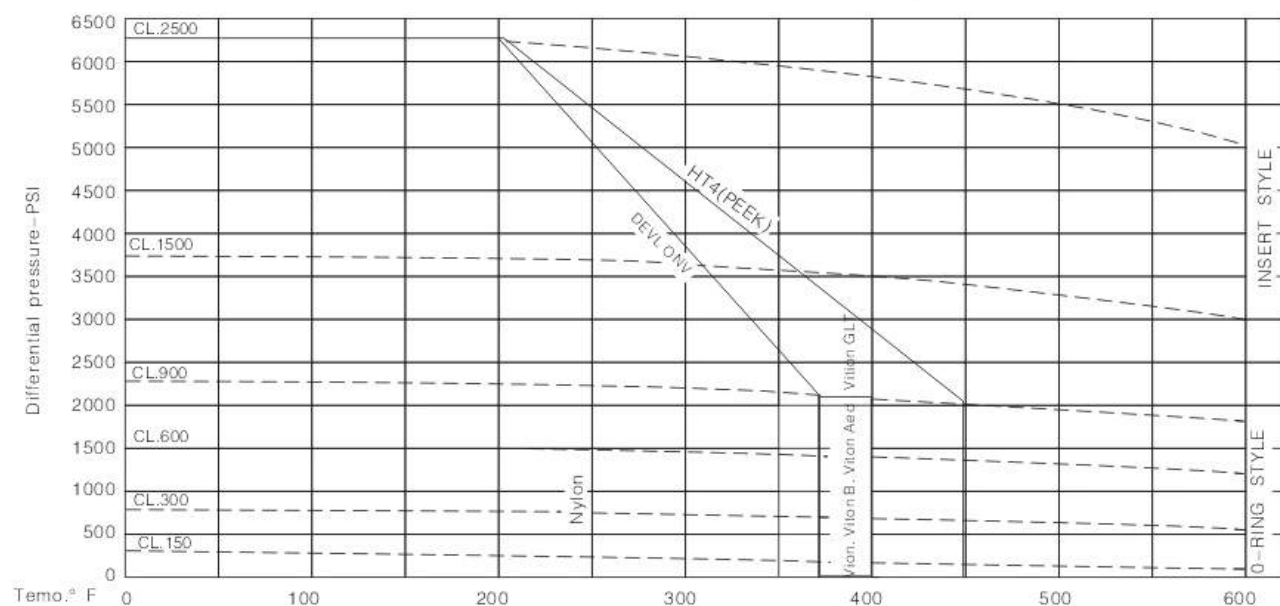
Extension device may be provided for buried ball valves, which include the extension of valve stem, greasing valve and discharge valve. As shown in the figure on the right, users shall specify the requirements and length to be extended (The length is generally the distance from the center of valve channel to the center of operating device).



● 密封阀座材料性能数据表 Material Performance Data Sheet For Sealing Seat

测试标准 Test criteria	测试项目 Test item	单位 Unit	PEEK	MOLON	DEVLON	PPL	PTFE	PTFE+石墨 Graphite	PTFE+玻纤 Bolivian filament	NYLON66
D638	拉伸强度23°C/-40°C Longitudinal strength	MPa	93.08	75/100	79.92/ 109.52	72	24.82	25	24.2	60/80
D638	断裂伸长率23°C Break elongation ratio	%	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24hours Consistent with deformation under	%	~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	1/K	0.48x10 ⁻⁴	0.6x10 ⁻⁴	1.1x10 ⁻⁴	0.43x10 ⁻⁴	1.2x10 ⁻⁴	1x10 ⁻⁴	1x10 ⁻⁴	0.7x10 ⁻⁴
E648	热变形温度 1.82MPa/0.46MPa Heat distortion temperature	°C	160 /	150/190 /	93 209	163 /	55 132	63 /	78 /	90 235
D792	密度Density	G/cm3	1.34~1.36	1.15	1.14	1.48	2.20	2.22	2.1	1.12
D570	24hours 吸水率 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 Rating For Sealing Seat



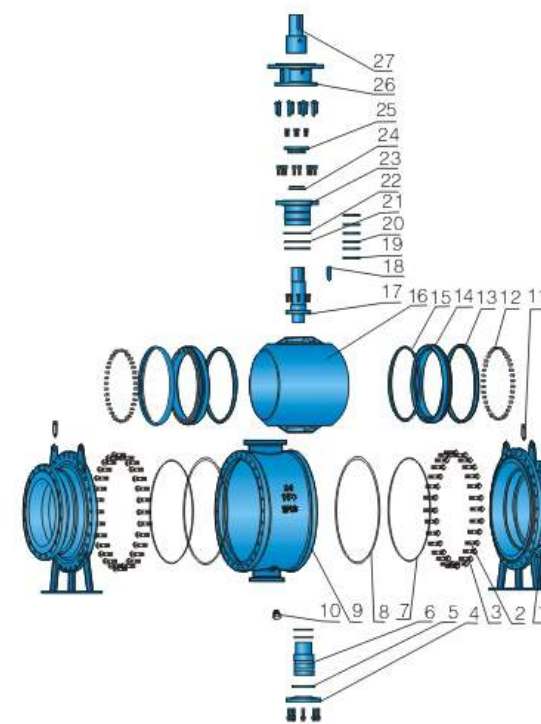
上表中给了nylon、devlonv、PEEK、viton 等材料的温度压力值，其中150Lb、300Lb、600Lb的温度压力值同样适用于O型密封圈形式的阀座设计。
Above table gives the temperature and pressure ratings of nylon, devlonv, PEEK, viton and etc., and the temperature and pressure ratings of 150Lb, 300Lb and 600Lb equally apply to seat design with O-ring.

● 设计标准

1. 设计标准: API 6D、GB/T12237
 2. 结构长度: ASME B16.10、GB/T12221
 3. 法兰尺寸: ASME B16.5、ASME B16.47、GB/T9113
 4. 试验和检验: API 598、JB/T9092
- 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》

● Design Construction

1. Design Standard: API 6D、GB/T12237
 2. Face to Face: ASME B16.10、GB/T12221
 3. Flanged size: ASME B16.5、ASME B16.47、GB/T9113
 4. Test & Inspection: API 598、JB/T9092
- Notes: 1. The sizes of serial valve connecting flange ends can be designed according to customer's requirement.
2. DN > 1000 (40"), the design standard is accordance with 《Specification of the length pipe valve》



● 主要零件材料 Major Parts Material Form

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

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。
Notes: *The material of this part about the anti-sulphur type valve is ASTM(A276-321)
**The material of this part about the anti-sulphur type valve is ASTM(A182-304、CF8+Ni.P)
Major parts of the valve series and materials of sealing surface differ according to actual working condition and customer's special requirement.

● 主要零件材料 Major Parts Material Form

PN10.0MPa CLASS600

尺寸Nominal	L				d	手动 Hand operated		蜗轮蜗杆传动Worm gear				气动Pneumatic operated				电动Electric driving			重量Weight(kg)	
	DN	NPS	RF	BW		RJ	M	M0	B	B0	B1	B2	A	A1	A2	A3	D	D1	D0	RF
80	3×2	356	356	359	49	107	400	/	/	/	/	234	174	148	257	/	/	/	44	34
100	4×3	432	432	435	74	152	650	/	/	/	/	343	258	287	287	/	/	/	89	65
150	6×4	559	559	562	100	178	1050	/	/	/	/	407	322	287	287	/	/	/	160	110
200	8×6	660	660	664	150	/	/	389	400	200	108	500	457	378	378	522	337	508	310	240
250	10×8	787	787	791	201	/	/	449	600	330	144	562	595	378	378	606	421	508	570	500
300	12×10	838	838	841	252	/	/	497	600	330	144	725	630	530	530	684	482	508	850	680
350	14×12	889	889	892	303	/	/	550	800	370	220	760	630	530	530	751	549	508	1180	970
400	16×14	991	991	994	336	/	/	550	800	370	220	760	758	530	530	751	549	508	1390	1140
450	18×16	1092	1092	1095	385	/	/	687	800	370	220	1319	1154	1455	1455	960	687	305	1765	1415
500	20×18	1194	1194	1200	435	/	/	687	800	370	220	1319	1154	1455	1455	960	687	305	2170	1690
600	24×20	1397	1397	1407	487	/	/	780	800	515	279	1459	1294	1665	1665	1045	772	305	3390	2540

● 主要零件材料 Major Parts Material Form

PN15.0MPa CLASS900

尺寸Nominal	L				d	手动 Hand operated		蜗轮蜗杆传动Worm gear				气动Pneumatic operated				电动Electric driving			重量Weight(kg)	
	DN	NPS	RF	BW		RJ	M	M0	B	B0	B1	B2	A	A1	A2	A3	D	D1	D0	RF
80	3×2	381	381	384	49	123	650	/	/	/	/	234	174	148	257	/	/	/	58	48
100	4×3	457	457	460	74	/	/	185	400	200	106	343	258	287	287	/	/	/	105	90
150	6×4	610	610	613	100	/	/	225	400	200	108	427	322	378	378	/	/	/	230	162
200	8×6	737	737	740	150	/	/	389	600	330	144	587	457	530	530	522	337	508	470	370
250	10×8	838	838	841	201	/	/	449	600	330	144	725	595	530	530	606	421	508	530	410
300	12×10	965	965	968	252	/	/	497	800	370	220	795	630	680	680	684	482	508	1200	1030
350	14×12	1029	1029	1038	303	/	/	550	800	370	220	837	728	1455	1455	822	549	508	1695	1440
400	16×14	1130	1130	1140	303	/	/	550	800	370	220	837	728	1455	1455	822	549	508	1790	1480
450	18×16	1219	1219	1232	373	/	/	687	800	515	279	1314	1154	1665	1665	991	687	305	2520	2100
500	20×18	1321	1321	1334	373	/	/	687	800	515	279	1314	1154	1665	1665	991	687	305	2970	2430
600	24×20	1549	1549	1568	471	/	/	780	800	515	279	1459	1294	1665	1665	1105	772	305	5580	4520

● 主要零件材料 Major Parts Material Form

PN25.0MPa CLASS1500

尺寸Nominal	L				d	蜗轮蜗杆传动Worm gear				气动Pneumatic operated				电动Electric driving			重量Weight(kg)	
	DN	NPS	RF	BW		RJ	B	B0	B1	B2	A	A1	A2	A3	D	D1	D0	RF
80	3×2	470	470	473	49	154	400	200	106	259	174	287	287	/	/	/	75	49
100	4×3	546	546	549	74	187	600	330	144	363	258	378	378	/	/	/	130	73
150	6×4	705	705	711	100	217	600	330	144	452	322	530	530	/	/	/	300	181
200	8×6	832	832	841	144	346	800	370	220	587	457	530	530	522	337	508	615	491
250	10×8	991	991	1000	192	384	800	370	220	760	595	680	680	623	421	508	1085	879
300	12×10	1130	1130	1146	239	452	800	370	220	739	630	1455	1455	755	482	508	1850	1547
350	14×12	1257	1257	1276	287	512	800	515	279	837	728	1455	1455	822	549	508	2620	2214
400	16×14	1384	1384	1407	287	512	800	515	279	837	728	1455	1455	822	549	508	2890	2365
450	18×16	1537	1537	1559	360	601	800	515	279	1314	1154	1665	1665	1020	687	305	3856	3156
500	20×18	1664	1664	1686	360	601	800	515	279	1314	1154	1665	1665	1020	687	305	5005	4105
600	24×20	1943	1943	1972	416	727	800	570	368	1459	1294	1960	1960	1272	772	305	11377	9980

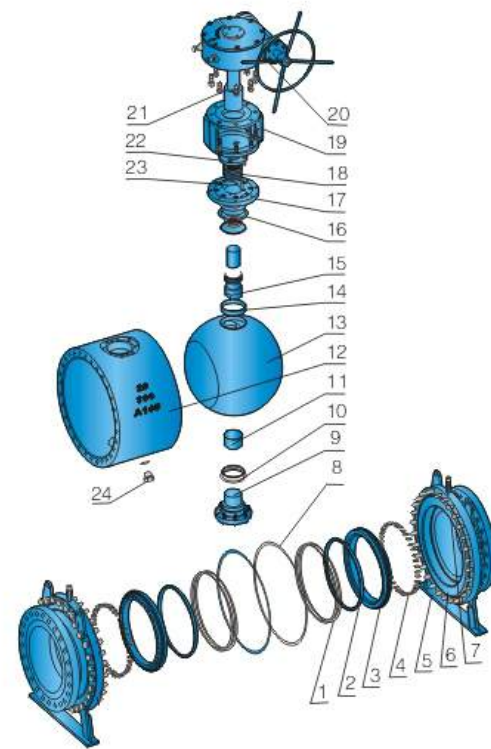
注: 连接法兰尺寸、焊接端尺寸见附录(A) Flange dimensions, butt weld dimensions refer to annex A.

● 设计标准

1. 设计标准: API 6D、GB/T12237
 2. 结构长度: API 6D、ASME B16.10、GB/T12221
 3. 法兰尺寸: ASME B16.5、ASME B16.47、GB/T9113
 4. 试验和检验: API 598、JB/T9092
- 注: 1. 系列阀门连接法兰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》

● Design Construction

1. Design Standard; API 6D、GB/T12237
 2. Face to Face; API 6D、ASME B16.10、GB/T12221
 3. Flanged size; ASME B16.5、ASME B16.47、GB/T9113
 4. Test & Inspection; API 598、JB/T9092
- Notes: 1. The sizes of serial valve connecting flange ends can be designed according to customer's requirement.
2. DN > 1000 (40°), the design standard is accordance with 《Specification of the length pipe valve》



● 主要零件材料 Major Parts Material Form

序号 No.	零件名称 Part name	材质Material		序号 No.	零件名称 Part name	材质Material	
			ASTM				ASTM
1	O型圈 O'Ring		Viton	13	球体 Ball**		A105+ENP
2	密封圈 Sealing ring		PTFE	14	衬套 Bushing		PTFE&Nikelium
3	阀座 Seat		A105	15	上阀杆 Stem*		A182-F6a
4	弹簧 Spring		Inconel X-750	16	垫片 Gasket		柔性石墨+不锈钢 Flexible graphite+stainless steel
5	螺柱 Bolt		A193-B7	17	阀盖 Cover		A105
6	左右体 Bonnet		A105	18	填料 Packing		Graphite
7	注脂阀 Grease injection valve		Assembled	19	支架 Yoke		A216-WCB
8	垫片 Gasket		柔性石墨+不锈钢 Flexible graphite+stainless steel	20	驱动装置 Driving		Assembled
9	下阀杆 Stem*		柔性石墨+不锈钢 Flexible graphite+stainless steel	21	连接套 Connection set		AISI C1045
10	垫片 Gasket		A182-F6a	22	填料压盖 Gland		A216-WCB
11	衬套 Bushing		PTFE&Nikelium	23	定位销 Stop pin		A276-410
12	阀体 Body		A105	24	排污堵头 Drain plug		A105

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。

Notes: *The material of this part about the anti-sulphur type valve is ASTM(A276-321)

**The material of this part about the anti-sulphur type valve is ASTM(182-304、CF8+Ni.P)

Major parts of the valve series and materials of sealing surface differ according to actual working condition and customer's special requirement.

● 主要外形尺寸及重量 Main Size of Outside & Weight

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	12	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	2376
手动 Hand-operated	H	148	191	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	W	650	650	650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Kg	50	55	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
蜗轮传动 Worm gear operated	H	-	-	-	270	384	435	518	657	693	762	866	894	965	1160	1240	1310	1420	1530
	W	-	-	-	600	800	800	800	800	800	800	800	800	800	1000	1000	1000	1000	1000
	Type	-	-	-	B	-	C	D	D	DA	DB	DC	DD	DH	DH	DJ	DJ	DK	DK
Kg	-	-	-	150	360	620	1100	1600	1850	2200	2800	4250	7000	12500	14500	18000	22000	32000	
气动 Air-operating	H	519	-	728	842	1014	1120	1124	13747	1490	1615	1760	1760	1760	-	-	-	-	-
	H1	295	-	519	595	770	815	1004	1154	1210	1335	1410	1410	1410	-	-	-	-	-
	L2	287	-	378	530	530	680	1455	1455	1665	1665	1960	1960	1960	-	-	-	-	-
	L3	287	-	378	530	530	680	1455	1455	1665	1665	1960	1960	1960	-	-	-	-	-
	Type	AW17	-	AW17	AW20	AW20	AW28	AW28	C1-355	C1-355	C2-490	C2-490	C2-490	C3-600	-	-	-	-	-
	Kg	80	-	145	225	380	700	1200	1750	1900	2300	2900	4350	8100	-	-	-	-	-
电动 Electric Driving	H	-	-	-	418	625	612	817	908	866	1035	1139	1167	1279	1854	1934	2004	2114	2224
	H1	-	-	-	270	384	435	518	657	693	762	866	894	956	1130	1210	1280	1390	1500
	W	-	-	-	200	280	280	280	305	305	305	400	400	600	600	600	600	600	600
	Type	-	-	-	SMC-04 +H1BC	SMC-04 +H1BC	SMC-00 +H3BC	SMC-00 +H3BC	SMC-0 +H4BC	SMC-0 +H4BC	SMC-1 +H5BC	SMC-3 +H6BC	SMC-3 +H6BC	SMC-4 +H7BC	SMC-4 +H7BC	SMC-5 +H7BC	SMC-5 +H7BC	SMC-5 +H7BC	SMC-5 +H7BC
	Kg	-	-	-	240	390	710	1300	1780	2000	2410	3110	4420	8250	13200	16000	19500	23500	33100

● 主要外形尺寸及重量 Main Size of Outside & Weight

PN25.0MPa CLASS 1500

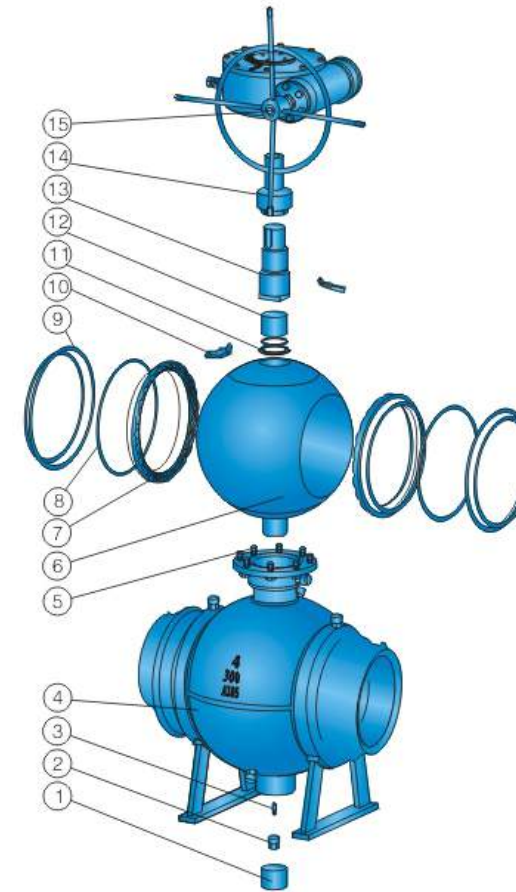
DN	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
NPS	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
法兰 Flange	L	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	2043
对焊 Butt Welding	L1	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	2043
手动 Hand-operated	H	175	191	216	-	-	-	-	-	-	-	-	-	-
	W	650	650	750	-	-	-	-	-	-	-	-	-	-
	Kg	60	70	85	-	-	-	-	-	-	-	-	-	-
蜗轮传动 Worm gear operated	H	175	91	216	247	329	492	428	640	670	700	755	830	952
	W	400	400	600	600	800	800	800	800	800	800	800	800	800
	Type	A	A	B	B	C	D	D	DA	DB	DC	DD	DH	DH
Kg	65	82	100	210	500	850	1600	2300	2950	4200	5000	5600	2200	
气动 Air-operating	H	519	728	842	1014	1120	1124	1374	1490	1615	1760	1760	1760	-
	H1	295	519	595	770	815	1004	1154	1210	1335	1410	1410	1410	-
	L2	287	378	530	530	680	1455	1455	1665	1665	1960	1960	1960	-
	L3	287	378	530	530	680	1455	1455	1665	1665	1960	1960	1960	-
	Type	AW17	AW17	AW17	AW20	AW28	AW28	C1-355	C1-355	C2-490	C2-490	C2-429	C3-600	-
	Kg	90	135	155	280	510	900	1710	2350	3100	4410	5100	6100	-
电动 Electric Driving	H	-	-	388	488	506	591	679	813	943	973	1048	1153	-
	H1	-	-	216	247	329	392	428	640	670	700	755	830	-
	W	-	-	200	280	280	280	305	305	305	400	400	600	-
	Type	-	-	SMC-04 +H1BC	SMC-04 +H1BC	SMC-00 +H3BC	SMC-00 +H3BC	SMC-0 +H4BC	SMC-0 +H4BC	SMC-1 +H5BC	SMC-3 +H6BC	SMC-3 +H6BC	SMC-3 +H6BC	SMC-4 +H7BC
	Kg	-	-	160	280	520	950	1800	2400	3300	4510	6200	7200	-

● 设计标准

1. 设计标准: API 6D、GB/T12237
 2. 结构长度: API 6D、ASME B16.10、GB/T12221
 3. 法兰尺寸: ASME B16.5、ASME B16.47、GB/T9113
 4. 试验和检验: API 598、JB/T9092
- 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》

● Design Construction

1. Design Standard; API 6D、GB/T12237
 2. Face to Face; API 6D、ASME B16.10、GB/T12221
 3. Flanged size; ASME B16.5、ASME B16.47、GB/T9113
 4. Test & Inspection; API 598、JB/T9092
- Notes: 1. The sizes of serial valve connecting flange ends can be designed according to customer's requirement.
2. DN > 1000(40"), the design standard is accordance with 《Specification of the length pipe valve》



● 主要零件材料 Major Parts Material Form

序号 No.	零件名称 Part name	材质 Material		序号 No.	零件名称 Part name	材质 Material	
		ASTM				ASTM	
1	衬套 Bushing	Nikelium+PTFE		9	板簧 Plate spring	AISI 9260	
2	垫片 Machine screw	A105		10	旋转装置 Device for seat rotating		
3	弹簧 Spring	Inconel x-750		11	阀杆密封 Sealing ring for stem	PTFE	
4	阀体 Body	A105		12	衬套 Bushing	Nikelium+PTFE	
5	螺柱 Stud	A193-B7		13	阀杆 Stem*	A182-F6a	
6	球体 Ball**	WCB+ENP		14	连接套 Connection set	AISI C 1045	
7	阀座 Seat	A105		15	驱动装置 Driving		
8	密封圈 Sealing ring	PTFE					

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。

Notes: *The material of this part about the anti-sulphur type valve is ASTM(A276-321)

**The material of this part about the anti-sulphur type valve is ASTM(182-304、CF8+Ni.P)

Major parts of the valve series and materials of sealing surface differ according to actual working condition and customer's special requirement.

● 主要外形尺寸及重量 Main Size of Outside & Weight

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	12	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	2376
手动 Hand-operated	H	217	241	259	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	W	650	650	650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Kg	58	76	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
蜗轮传动 Worm gear operated	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
	Kg	-	-	-	115	125	225	377	559	776	1124	1503	2049	3351	6008	7147	9908	11500	19000
气动 Pneumatic operated	H	519	-	728	842	1014	1120	1224	1374	1490	1615	1760	1760	-	-	-	-	-	-
	H1	295	-	519	595	770	815	1004	1154	1210	1335	1410	1410	-	-	-	-	-	-
	L2	287	-	378	530	530	680	1455	1455	1665	1665	1960	1960	1960	-	-	-	-	-
	L3	287	-	378	530	530	680	1455	1455	1665	1665	1960	1960	1960	-	-	-	-	-
	Type	AW17	-	AW17	AW20	AW20	AW28	AW28	C1-355	C1-355	C2-490	C2-490	C2-490	C3-600	-	-	-	-	-
	Kg	70	-	115	125	165	240	390	620	790	1240	1700	2250	3420	-	-	-	-	-
电动 Electric Driving	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	1060	1120	1200	1320
	W	-	-	-	200	280	280	280	305	305	305	400	400	600	600	600	600	600	600
	Type	-	-	-	SMC-04 +H1BC	SMC-00 +H3BC	SMC-00 +H3BC	SMC-00 +H4BC	SMC-0 +H4BC	SMC-1 +H5BC	SMC-3 +H6BC	SMC-3 +H6BC	SMC-4 +H7BC	SMC-4 +H7BC	SMC-5 +H7BC	SMC-5 +H7BC	SMC-5 +H7BC	SMC-5 +H7BC	SMC-5 +H7BC
	Kg	-	-	-	128	175	265	395	635	812	1320	1750	2350	3560	4200	8100	11800	12500	20000

● 主要外形尺寸及重量 Main Size of Outside & Weight

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 Hand-operated	H	217	241	259	-	-	-	-	-	-	-	-	-	-
	W	650	650	650	-	-	-	-	-	-	-	-	-	-
	Kg	75	82	105	-	-	-	-	-	-	-	-	-	-
蜗轮传动 Worm gear operated	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	DA	DB	DC	DD	DH	DH
	Kg	85	98	115	125	145	240	395	610	820	1250	1680	2400	3580
气动 Pneumatic operated	H	519	728	842	1014	1120	1124	1374	1490	1615	1760	1760	1760	-
	H1	295	519	595	770	815	1004	1154	1210	1335	1410	1410	1410	-
	L2	287	378	530	530	680	1455	1455	1665	1665	1960	1960	1960	-
	L3	287	378	530	530	680	1455	1455	1665	1665	1960	1960	1960	-
	Type	AW17	AW17	AW17	AW20	AW28	AW28	C1-355	C1-355	C2-490	C2-490	C2-429	C3-600	-
	Kg	95	115	120	145	180	290	420	700	890	1300	1820	2610	-
电动 Electric Driving	H	-	-	542	641	651	711	801	823	965	1085	1168	1238	-
	H1	-	-	370	400	474	512	550	650	690	785	895	915	-
	W	-	-	200	280	280	280	305	305	305	400	400	600	-
	Type	-	-	SMC-04 +H1BC	SMC-04 +H3BC	SMC-00 +H3BC	SMC-00 +H4BC	SMC-0 +H4BC	SMC-0 +H4BC	SMC-1 +H5BC	SMC-3 +H6BC	SMC-3 +H6BC	SMC-4 +H7BC	-
	Kg	-	-	142	160	196	320	452	850	910	1420	1960	2820	-

● 结构特点 Structural 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、整体式阀本设计，顶装式耳轴固定支持，法兰或对接焊结构。
- 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ISO5211的标示，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 entry ball valves are new products developed upon the advanced technology abroad and through many years of the designing and manufacturing experience of ours. With technology up to domestic leading level, these products can compete with international counterparts. Besides the features borne by the side entry fixed ball valve (see fixed ball valve), they are also given the features below:

1. One-piece valve body, top entry trunnion to fix and support, flanged or butt welded structure.
2. Inconel bellows spring makes the sealed metal seat moving toward the ball, providing the two way seal function of inlet and out let.
3. Adopting distinctive technology of retractable valve seat, on side replace stem, valve stem sealing ring, metal seat and bellow spring, and torque down to the minimum for the ease of operation.
4. Easy to repair and install, long performance life. Access for repair and replacement of trims can be done without removing the valve from the pipeline, thus to lengthen the service life.
5. Low torque, reliable sealing, and spherical seat different from ordinary ball valves, which can automatically adjust the position of seal.
6. Preset platform and bolt holes for drive device, and to ISO5211. Drive device can be installed according to users' different requirements.
7. DBB (double block and bleed) function.
8. Hand operated top entry ball valve adopts high strength one-piece stem structure to ensure the precise positioning of the ball.
9. Anti-blowout protective structure of valve stem to enhance the operational safety of the valve.

● 球阀技术规范 Ball valve technical specifications

技术规范 Technical specification	API系列 Series
设计规范 Design codes	API6D、API608、BS5351
压力温度等级 Pressure/Temperature rating	ASME B16.34
结构长度 Face to face dimension	ASME B16.10
法兰连接 Flange ends	ASME B16.5、ASME B16.47
对焊端连接 Butt weld ends	ASME B16.25
检验与试验 Inspection and test	API598/API6D
防火试验 Firesafe test	API 6FA
铸钢件质量检验 Inspection of castings quality	MSS-SP-55

● 力矩表(N.M) Torque table

下表所列的扭矩值供选择驱动装置时参，介质的特性，内件及阀门的开启频率高需作额外因素考虑。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口所对应的通径的阀门操作扭矩选用。(具体选择按实际为准)

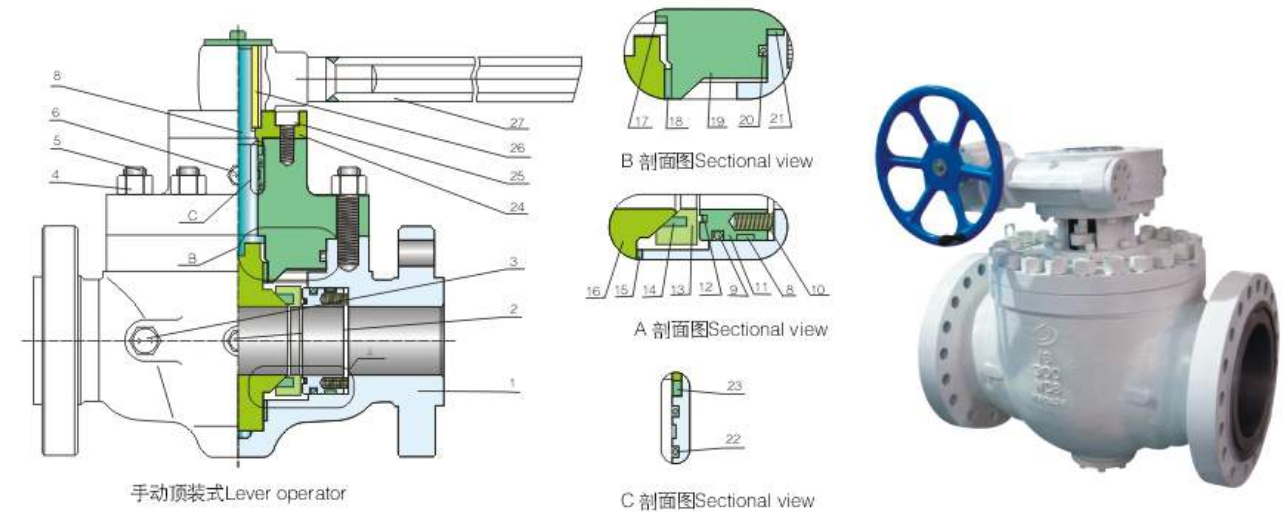
The torque figure listed below are for the reference to choose a drive device. The properties of medium, trims and valve open frequency shall be considered as extra factors. For instance, valves with corrosion-resistant trims to deal with clean lubricating mediums, their torque may be lowered by 20%. However, to deal with stringent mediums like slurry, granular medium and oxygen, the torque may be increased by 50%. The operating torque for reduced bore valves is subject to the corresponding full bore valve diameter. (Specific options as per the actual).

通径 Nominal		CLASS						
DN	in	150	300	400	600	900	1500	2500
50×40	11/2	61	81	85	102	149	/	/
50	2	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	36490	45269	60368	/	/	/
1050	42	27034	40425	53515	70277	/	/	/
1200	48	42606	64985	79311	112293	/	/	/

● 产品性能规范 Product function specification

性能规范Function specification	CLASS							
	150	300	400	600	900	1500	2500	
试验压力 Test pressure (MPa)	强度试验Shell test	2.93	7.58	10.0	150	22.5	37.5	63.0
	密封试验Seat test	2.07	5.52	7.31	11.03	16.5	27.5	46.2
	气压试验Air test	0.6MPa						
适用温度Applicable temperature	-196℃~550℃ (注: 不同工况温度, 选用不同的材质) -196℃~550℃ (Note: Choosing a suitable material based on different working temperature in service)							
适用介质 Applicable medium	水、蒸汽、石油、液化气、天然气等 Water, Steam, Petroleum, LPG, Natural gas etc.							
尺寸范围Size range	DN50~1200 (NP2"-48")。可根据客户的要求制造DN50~1200(NP2"-48") Design and manufacture on customer's requirements							
主体/内体材料Body/Trim material	碳钢、不锈钢、双相不锈钢、镍合金、钛材Carbon steel, Stainless steel, Duplex SS, Nickel alloy, Titanium alloy							
端部连接Ends connection	法兰连接、对接焊连接 Flange ends, Butt weld ends							
驱动装置Operator	手动、蜗轮蜗杆传动、电动、气动 Lever, Gear, Electric, Pneumatic							

● 阀门结构示意图(手动顶装式球阀) Structural drawing (lever operator)



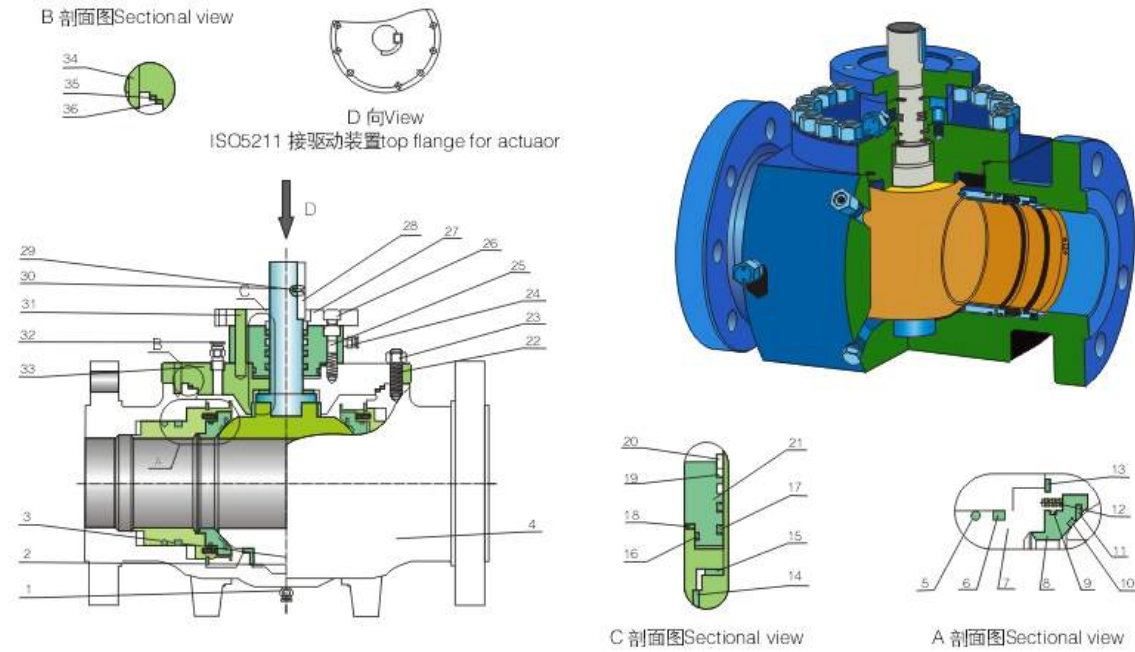
● 主要零部件材料 Main parts material

序号 No	零件名称 Name of part	材料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 LCC
2	排泄阀Drain plug	A105+ENP	A182 F316	A350 LF3
3	注脂阀 Sealant fitting	A105+ENP	A182 F316	A350 LF3
4	螺母Nut	A194 2H	A194 8	A194 7
5	螺栓Bolt	A193 B7	A193 B8	A320 L7
6	注脂阀 Sealant fitting	A105+ENP	A182 F316	A350 LF3
7	阀杆Stem	A182 F6a	A182 F316	A182 F316
8	防火垫 Firesafe gasket	柔性石墨 Flexible graphite		
9	O型圈O-ring	氟橡胶Viton		
10	弹簧Coil spring	Incone 1600		
11	支撑圈 Spring holder	A105+ENP	A182 F316	A350 LF3
12	垫片Seat gasket	柔性石墨+SS Flexible graphite+SS		
13	阀座Seat retainer	A105+ENP	A182 F316	A350 LF3
14	密封圈Seat ring	PTFE, NYLON, PEEK, PCTFE		

序号 No	零件名称 Name of part	材料Material		
		碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel
15	下轴衬 Lower bushing	PTFE+CS	PTFE+SS	PTFE+SS
16	球体Ball	A105+ENP	A182 F316	A350 LF3
17	平面轴衬 Thrust washer	PTFE+CS	PTFE+SS	PTFE+SS
18	上轴衬 Upper bushing	PTFE+CS	PTFE+SS	PTFE+SS
19	阀盖Bonnet	A216 WCB	A351 CF8M	A352 LCC
20	O型圈O-ring	氟橡胶Viton		
21	垫片Seat gasket	柔性石墨+SS Flexible graphite+SS		
22	O型圈O-ring	氟橡胶Viton		
23	填料Packing	柔性石墨 Flexible graphite		
24	压盖Gland	A105+ENP	A182 F316	A350 LF3
25	螺钉Screw	A193 B7	A193 B8	A320 L7
26	键Key	ANSI 1045	ANSI 1045	ANSI 1045
27	手柄Lever	Q235A		

注: 可根据不同工矿和用户要求选用不同的材料
Note: 1. Choosing a suitable material based on different service

● 阀门结构示意图(顶装式球阀) Structural drawing (lever operator)



● 主要零部件材料 Main parts material

序号 No	零件名称 Name of part	材料Material		
		碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel
1	排泄阀Drain plug	A105+ENP	A182 F316	A350 LF3
2	下轴衬 Lower bushing	PTFE+CS	PTFE+SS	PTFE+SS
3	球体Ball	A105+ENP	A182 F316	A350 LF3
4	阀杆Stem	A216 WCB	A351 CF8M	A352 LCC
5	O型圈O-ring	氟橡胶Viton	氟橡胶Viton	氟橡胶Viton
6	防火垫 Firesafe gasket	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
7	支撑圈 Spring holder	A105+ENP	A182 F316	A350 LF3
8	阀座Seat retainer	A105+ENP	A182 F316	A350 LF3
9	O型圈O-ring		氟橡胶Viton	
10	O型圈O-ring		氟橡胶Viton	
11	密封圈Seat ring	PTFE, NYLON, PCTFE, MOLON		
12	弹簧Coil spring	Incone 1600		
13	C型弹簧 C type spring	17-4		
14	上轴衬 Upper bushing	PTFE+CS	PTFE+SS	PTFE+SS
15	平面轴衬 Thrust washer	PTFE+CS	PTFE+SS	PTFE+SS
16	O型圈O-ring		氟橡胶Viton	
17	O型圈O-ring		氟橡胶Viton	
18	垫片Seat gasket	柔性石墨+SSFlexible graphite+SS		
19	填料Packing	柔性石墨 Flexible graphite		
20	压套Gland	A182 F6a	A182 F316	A182 F6a

序号 No	零件名称 Name of part	材料Material		
		碳钢 Carbon steel	不锈钢 Stainless steel	低温钢 Low temperature steel
21	上阀杆座 Upper stem holder	A105+ENP	A182 F316	A350 LF3
22	螺栓Bolt	A193 B7	A193 B8	A320 L7
23	螺母Nut	A194 2H	A194 8	A194 7
24	注脂阀 Sealant fitting	A105+ENP	A182 F316	A350 LF3
25	螺钉Screw	A193 B7	A193 B8	A320 L7
26	螺钉Screw	A193 B7	A193 B8	A320 L7
27	连接盘 Mounting pad		A105+ENP	
28	键Key		ANSI 1045	
29	螺钉Screw		A193 B7	
30	阀杆Stem	A182 F6a	A182 F316	A182 F316
31	定位销Sop pin		A182 F6a	
32	排泄阀Drain plug	A105+ENP	A182 F316	A350 LF3
33	阀盖Bonnet	A216 WCB	A351 CF8M	A352 LCC
34	定位销Stop pin		A182 F6a	
35	垫片Seat gasket	柔性石墨+SSFlexible graphite+SS		
36	O型圈O-ring		氟橡胶Viton	

注: 1、根据工矿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)适用于酸性气体工矿的材料。
Note:
1. Choosing a suitable material of seat ring based on the temperature and pressure of medium.
2. Except for the material listed in the above table, others are also available on customer's request.
3. Materials conforming to NACE MR-01-75 (latest edition) are available for sour gas service.

● 主要外型及连接尺寸 Main appearance and connection size

DN	NPS	A			B	B1	D	E	F	H	L1	W	重量 Weight kg/RF
		RF	RJ	BW									
50 × 40	2 × 1 1/2	292	295	292	38	51	/	85	180	212	450	/	25
50	2	292	295	295	51	51	/	85	180	212	450	/	28
80 × 50	3 × 2	356	395	356	51	77	/	85	180	212	450	/	37
80	3	356	395	356	77	77	/	112	230	228	600	/	55
100 × 80	4 × 3	432	435	432	77	102	/	112	230	228	600	/	75
100	4	432	435	432	102	102	/	145	283	272	600	/	105
150 × 100	6 × 4	559	562	559	102	152	/	145	283	272	600	/	140
150	6	559	562	559	152	152	281	220	325	333	297	350	235
200 × 150	8 × 6	660	664	660	152	203	281	220	325	333	297	350	265
200	8	660	664	660	203	203	320	260	405	384	360	500	430
250 × 200	10 × 8	787	791	787	203	254	320	260	405	384	360	500	480
250	10	787	791	787	254	254	360	311	490	424	360	500	475
300 × 250	12 × 10	838	841	838	254	305	360	311	490	424	360	500	510
350 × 250	14 × 10	889	892	889	254	337	360	311	490	424	360	500	690
300	12	838	841	838	305	305	403	366	570	467	340	700	610
350 × 300	14 × 12	889	892	889	305	337	403	366	570	467	340	700	820
400 × 300	16 × 12	991	994	991	305	387	403	366	570	467	340	700	970
350	14	889	892	889	337	337	453	428	660	517	340	700	795
400 × 350	16 × 14	991	994	991	387	337	453	428	660	517	340	700	955
400	16	991	994	991	387	387	459	450	700	549	545	700	1160
450 × 400	18 × 16	1092	1095	1092	387	438	450	450	700	549	545	700	1295
500 × 400	20 × 16	1194	1200	1194	387	489	459	450	700	549	545	700	1590
450	18	1092	1095	1092	438	438	502	473	755	577	575	700	1570
500 × 450	20 × 18	1194	1200	1194	438	489	502	473	755	577	575	700	1800
500	20	1194	1200	1194	489	489	551	580	870	626	575	700	2000
600 × 500	24 × 20	1397	1406	1397	489	591	551	580	870	626	575	700	2440
550	22	1295	1305	1295	540	540	578	590	955	653	575	700	2830
600	24	1397	1406	1397	591	591	606	600	1030	696	579	700	3300
750 × 600	30 × 24	1651	1664	1651	591	736	606	600	1030	696	579	700	4100
650	26	1448	1460	1448	635	635	675	635	1075	765	570	700	3970
700	28	1549	1562	1549	686	686	735	700	1165	825	579	700	4755
750	30	1651	1664	1651	736	736	795	775	1250	865	579	700	5820
900 × 750	36 × 30	2083	2098	2083	736	876	795	775	1250	865	579	700	7200

● 用途Applicability

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、液氢等。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。

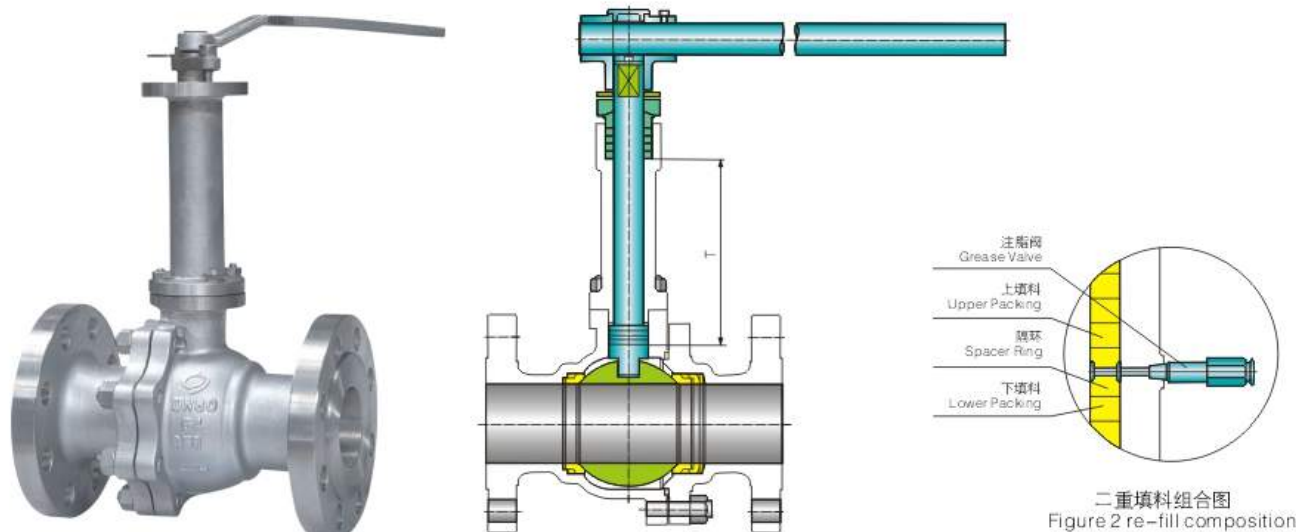
Low temperature ball valves are mainly used in the chemical equipment of ethylene and LNG etc. to handle low temperature liquid medium like ethylene, liquid oxygen, liquid hydrogen and so on. These types of inflammable and explosive medium can be volumetrically expanded by several hundred times when being gasified under temperature rise, and are difficult to manufacture due to their highly penetrative and leaky properties.

● 结构特性 Structural Properties

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，其目的保护填料函的功能，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。

1. The materials of compression parts can endure the expansion and shrinkage resulted from the temperature variation of medium, and seal structure is away from permanent deformation under temperature changes. To work under the conditions below -100°C, the parts of valve shall be subject to deep cooling treatment before precision machining. Namely, have the parts cooled in liquid nitrogen box, when the temperature of parts reaches -196°C, keep the temperature for 1-2h, then take them out to have them to the normal temperature naturally, and do in this way twice.
2. Bonnet is extended for the purpose to protect the function of packing box, making packing box somewhat away from low temperature to ensure good seal of packing. Besides, it can be wound with cold insulating materials to prevent loss of cold energy. The length of neck(H, see the drawing on the left) depends on service temperature and the thickness of cold insulating material. When the effect of packing seal turns lower, fill in grease to form up oil seal layer from the middle of packing box. (see combined packing structure) to lower the differential pressure of packing box and enhance the reliability of seal.
3. To serve a temperature below -100°C, the material of valve stem shall be treated with chromeplating or nitriding to enhance the surface hardness of valve stem and the sealing reliability of packing.
4. Low temperature ball valve takes a structure to avoid abnormal pressure rise. As the medium in low temperature valve is gasified and rapidly expanded in volume, the pressure will goes extremely high. When the pressure in the middle cavity of valve rises, the middle cavity and the inlet side can be communicated, or a relief can be mounted at the inlet side of valve, thus to ensure the safe use of valves.
5. The gaskets used on low temperature ball valves may function reliable seal and restoration under normal and low temperature or under the conditions of temperature changes.

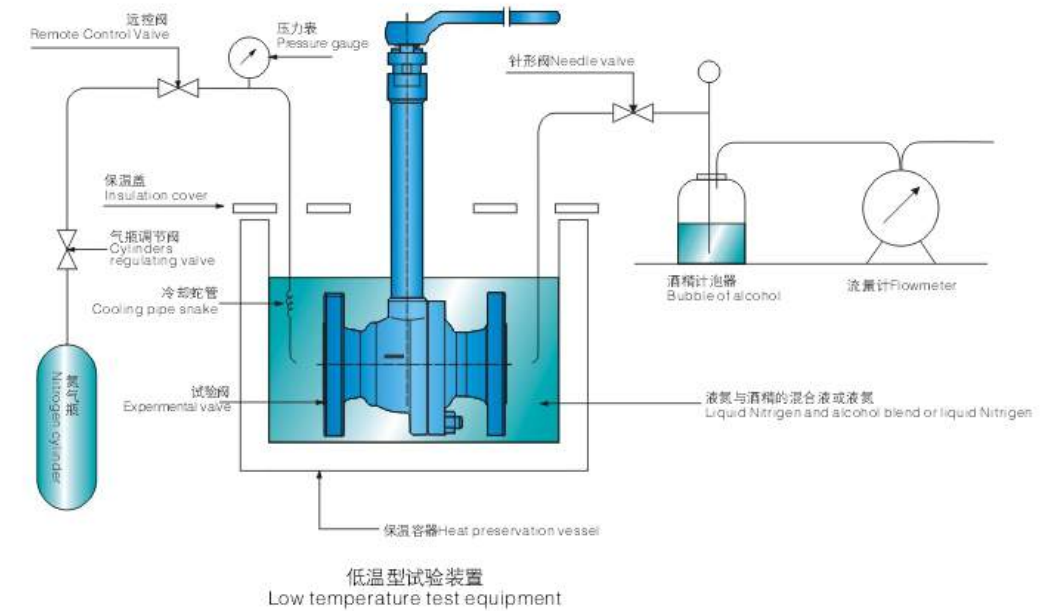
● 产品结构型式 Structural Type



● 低温球阀型式试验 Type Test Of Low Temperature Ball Valves

按照有关标准要求，低温球阀型式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：

In accordance with the requirements of relative standards, the type test low temperature ball valves shall be carried out under both normal and low temperatures. With its principle as following:



● 低温球阀主要外形连接尺寸 Main Overall Connection Dimensions Of Low Temperature Ball Valves

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 overall connection dimensions of low temperature ball valve may be referred to side-mounted float ball valve and fixed ball valve, with extra height added to that basis, and the dimensions list is omitted here.

● 低温球阀技术规范 Low Temperature Ball Valve Technical Specifications

技术规范 Technical specification	API系列 Series	GB系列 Series
基本设计规范 Design codes	ANSI B 16.34、JB/T7749	
压力温度等级 Pressure/Temperature rating	ANSI B 16.34	GB/T 12224
结构长度 Face to face dimension	ASME B16.10	
连接法兰 Flange ends	ASME B16.5	GB/T9113/HG20596
检验与试验 Inspection and test	API598*	JB/T9092*

*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。其原理见低温阀门型式图。

Low temperature ball valves shall be subject to pressure test under low temperature after the pressure test under normal temperature with its principle referred to the type drawing of low temperature ball valve.

● 低温球阀阀盖加长颈部长度的参考
Extension Length Of Stem Neck For Low Temp. Service(reference Only)

公称通径Nominal size		颈部长度的Extension lengthH(mm)		
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 Supply Scope

公称通径Nominal size		Pressure压力等级 CLASS
DN	in	150Lb、300Lb、PN1.6~10.0MPa
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	△★/●
300	12	△★/●
350	14	△★/●
400	16	△★/●

注：★表示电动操作阀门；△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: ★ stands for electrically operated valves; △ stands for air operated valves; ● stands for handle operated valves; — stands for no option of this. Those not covered in the table can be custom made to users' requirements.

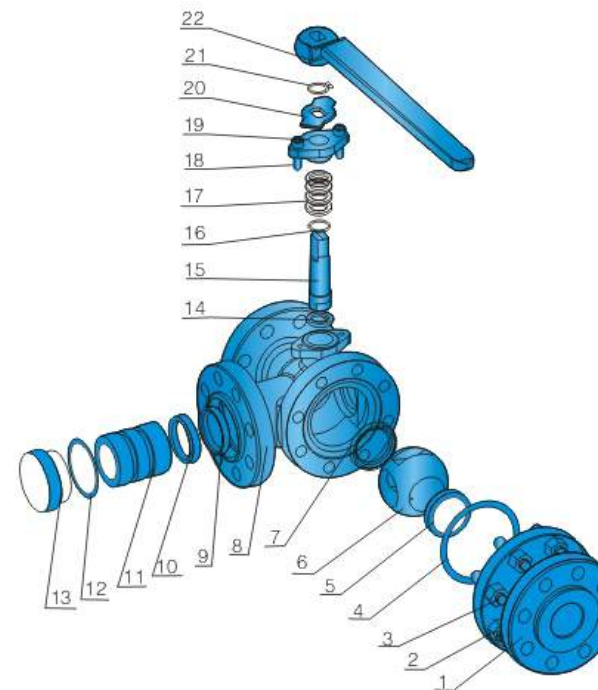
● 球阀阀体低温材料最低使用温度 Working Temperature For Different Material

锻件Forging		铸件Casting	
标准、材料牌号 Standards, materials code	最低温度℃ Lowest temp	标准、材料牌号 Standards, materials code	最低温度℃ Lowest temp
ASTM A350 LF2	-45.6℃	ASTM A352 LCB, LCC	-46℃
ASTM A350 LF5	-59.4℃	ASTM A352LC1	-59℃
ASTM A350 LF9	-73.3℃	ASTM A352 LC2	-73℃
ASTM A350 LF3	-101.1℃	ASTM A352 LC3	-101℃
ASTM A 182 F304	-254℃	ASTM A351 CF8	-254℃
ASTM A 182 F316	-254℃	ASTM A351 CF8M	-254℃
ASTM A 182 F304L	-254℃	ASTM A351 CF3	-254℃
ASTM A 182 F316L	-254℃	ASTM A351 CF3M	-254℃

● 三通球阀制造规范 3-Way Ball Valve Manufacture Norms

标准Standards	API系列API Series	DIN系列 Series
基本设计规范 Design standards	ANSI B 16.34	
压力温度等级 Pressure/Temperature rating	ANSI B 16.34	DIN3356
结构长度 Face to face dimensions	ASME B 16.10	
连接法兰Flange ends	ASME B 16.5 DIN 2543-2551	
检验与试验 Inspection and test	API598	DIN3230

● 阀门结构示意图(侧装浮动式爆炸图)
Structural Drawing (Side Entry Floating Type Explosion Drawing)



序号No.	零件名称Name of part	序号No.	零件名称Name of part
1	阀盖Bonnet	12	O型圈O-ring
2	螺母Nut	13	螺塞Insert plug
3	螺栓Bolt	14	阀杆Stem
4	垫片Gasket	15	垫片Stem washer
5	密封圈1Seat ring 1	16	填料Stem packing
6	球体Ball	17	螺钉Gland screw
7	密封圈2Seat ring 2	18	填料压盖Gland
8	阀体Body	19	限位片Stop plate
9	密封圈3Seat ring 3	20	挡圈Snap ring
10	密封圈4Seat ring 4	21	手柄Lever
11	阀座Seat		

● 球阀功能 Function

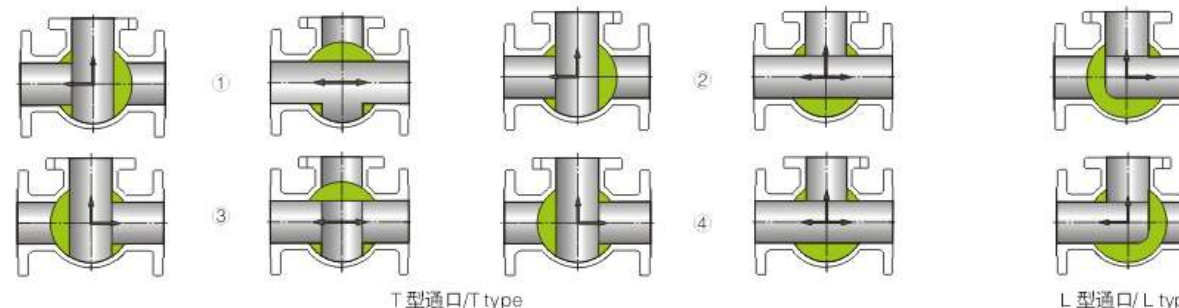
三通球阀适用于在-46℃~+200℃温度下对腐蚀或非腐蚀性液体、气体、粉末介质实现切换、混合和分流；开闭过程中，流路通畅减小了压力损失，操作省力、维修方便；五种流向（见右图：L型一种、T型四种）类型满足不同工艺要求，可进行手、气动、电动控制。

Three-way ball valves are used to switch over, mix and divide the flow of corrosive or non corrosive liquid, gas or powdery mediums. Upon opening and closing, the smooth flow channel effects less pressure loss, making operation quite labor-saving and maintenance fairly easy. The five types of flow direction (figure on the right, 1 for L-shaped and 4 for T-shaped) to meet different tech-nological requirements. It can be hand, air and electrically operated.

● 结构特点 Structural Features

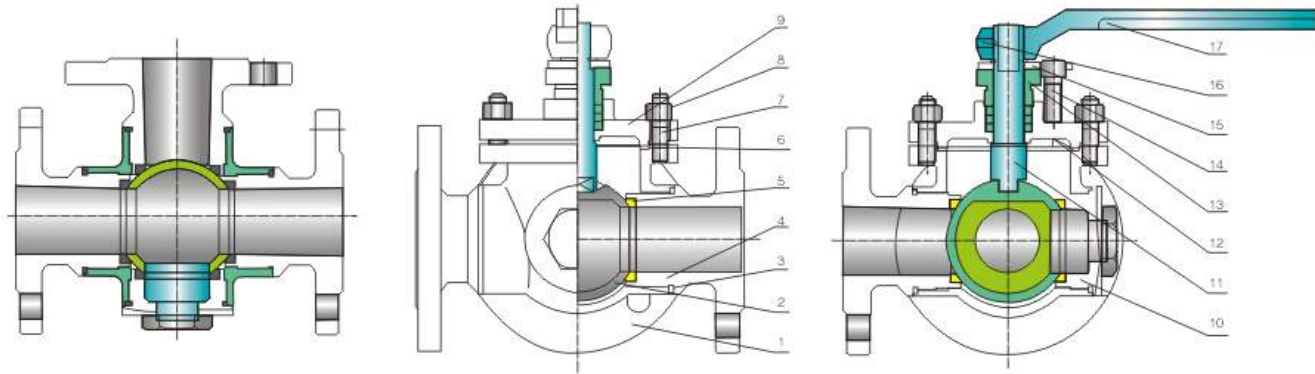
1. 阀座可设计成四面座浮动球和固定球，流态稳定，密封可靠；
2. 结构可设计成侧装式和顶装式，双向密封设计；流向切换绝无串流；
3. 防飞出阀杆设计；
4. 防静电设计；
5. 两位（开合关位置）锁定设计。

1. Valve seat can be designed into four-side seated float ball and fixed ball, with smooth fluid state and reliable seal;
2. The structure can be designed into side entry type and top entry type, with two way seal, no series flow upon switch over of flow direction;
3. Anti-blowout design of valve stem;
4. Antistatic design;
5. Two position (ON and OFF) lockup design.



T型通口/T type

L型通口/L type



● 主要零部件 Main Parts Materials

序号No.	零件名称Name of part	序号No.	零件名称Name of part
1	阀体Body	10	阀座圈Seat retainer
2	球体Ball	11	阀杆Stem
3	O型圈O-ring	12	填料Stem packing
4	法兰盘Adapter	13	填料压盖Packing gland
5	密封圈Seat ring	14	限位螺钉Stop screw
6	垫片Gasket	15	限位片Stop plate
7	螺栓Bolt	16	紧定螺钉Set screw
8	螺母Nut	17	手柄Lever
9	阀盖Bonnet		

● 供货范围 Supply Scope

公称口径Nominal size		压力等级Class	
DN	in	150	300
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	☆	☆

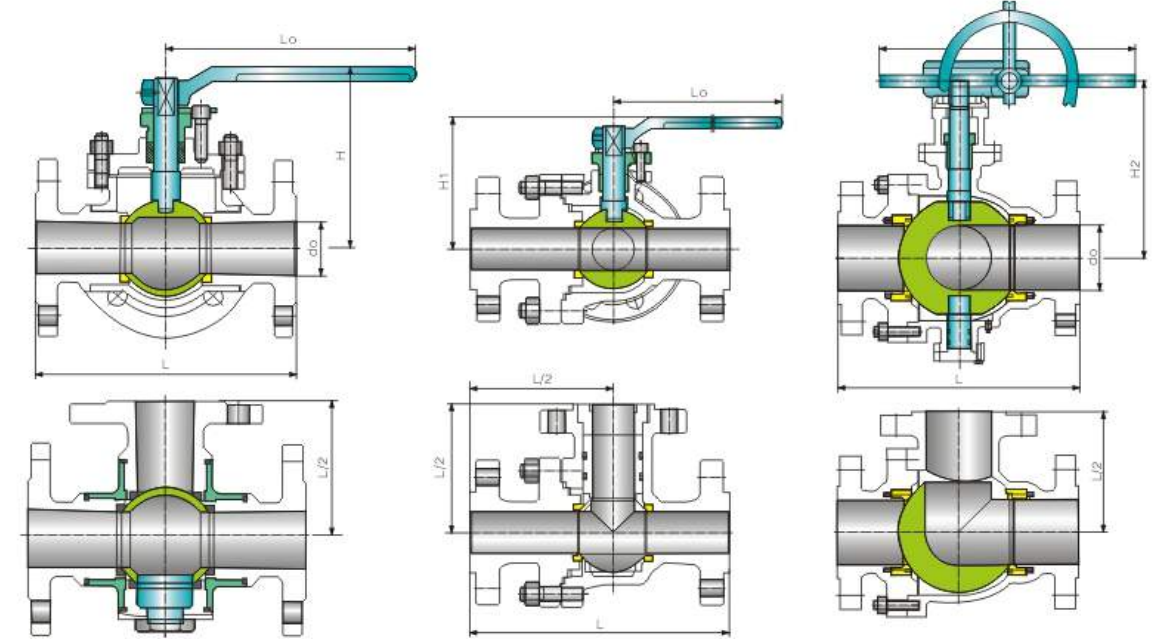
注: ●表示手柄操作阀门;
☆表示齿轮箱操作阀门;
—表示没有此选项,
表中未涉及的可按用户的要求制造。

Note: ●stands for handle operated valves;
☆stands for gearbox operated valves;
—stands for no option of this.
Those not covered in the table can be custom made to users' requirements.

● 主要零部件材料(侧装式结构) Main Parts Materials(Side Entry Type)

序号No.	零件名称Name of part	材料Material			序号No.	零件名称Name of part	材料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 Viton		
2	螺母Nut	A194 2H	A194 8	A194 4	13	螺塞Insert plug	A105+ENP	A182 F316	A350 LF3
3	螺栓Bolt	A193 B7	A193 B8	A320 L7	14	阀杆Stem	A182 F6a	A182 F316	A182 F316
4	垫片Gasket	柔性石墨+SS Flexible graphite+SS			15	垫片Gasket	PTFE/RPTFE		
5	密封圈Seat ring	PTFE/RPTFE			16	填料Stem packing	PTFE/柔性石墨PTFE/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Seat 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Stop plate	A105+ENP		
9	密封圈Seat ring	PTFE/RPTFE			20	挡圈Snap ring	65Mn		
10	密封圈Seat ring	PTFE/RPTFE			21	手柄Lever	Q235A		
11	阀座Seat retainer	A105+ENP	A182 F316	A350 LF3					

● 三通球阀PN1.6MPa CLASS 150 PN2.5、4.0MPa CLASS 300



● 主要外形尺寸及重量 Main Size of Outside & Weight

PN1.6MPa CLASS 150									
DN	NPS	L	do	H	H1	H2	Lo	W	重量Weight(kg)
15	1/2	140	13	90	70	/	160	/	3
20	3/4	150	15	106	86	/	230	/	4
25	1	160	25	109	88	/	230	/	6
32	1 1/4	/	32	125	106	/	400	/	10
40	1 1/2	210	38	149	132	/	400	/	14
50	2	220	51	154	137	/	400	/	20
65	2 1/2	250	64	189	162	/	700	/	25
80	3	260	76	198	170	/	700	/	32
100	4	330	102	254	229	/	1050	/	45
125	5	430	127	273	247	/	1050	/	/
150	6	510	152	/	/	314	/	450	/
200	8	580	203	/	/	430	/	600	/
250	10	670	250	/	/	475	/	600	/

● 主要外形尺寸及重量 Main Size of Outside & Weight

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	140	13	90	70	/	160	/	3	3
20	3/4	150	15	106	86	/	230	/	4	4
25	1	160	25	109	88	/	230	/	6.5	6.5
32	1 1/4	/	32	125	106	/	400	/	11	11
40	1 1/2	210	38	149	132	/	400	/	15	15
50	2	220	51	154	137	/	400	/	21.5	21.5
65	2 1/2	250	64	189	162	/	700	/	/	/
80	3	260	76	198	170	/	700	/	35	35
100	4	330	102	254	229	/	1050	/	49	49
125	5	430	127	273	247	/	1050	/	/	/
150	6	510	152	/	/	314	/	450	/	/
200	8	580	203	/	/	430	/	600	/	/
250	10	670	250	/	/	475	/	600	/	/

●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、同步性好。(见图2)

Four-way ball valve is also called multi-way water service rotary valve in power stations, and air reversing change over valve in petrochemical system. They are applicable for circulating system of liquid, gas, dust, slurry and medium containing solid particles. For example, the forward and reverse circulating water supply system of unit cooler in power station. The conventional piping for forward and reverse circulating water supply has the defects of large occupation, high cost, complicated operation (to operate four valves for each changeover), for forward water supply, valve 1 and 3 to be opened and valve 2 and 4 to be closed, for reverse water supply, valve 2 and 4 to be opened and valve 1 and 3 to be closed. (See figure 1). Use of four-way ball valve instead of the conventional piping and valve group can simplify operational procedures, lower the cost, facilitate the control and improve its asynchronism. (See figure 2)

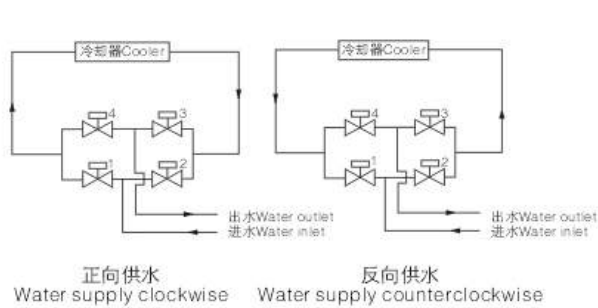


图1 Figure 1

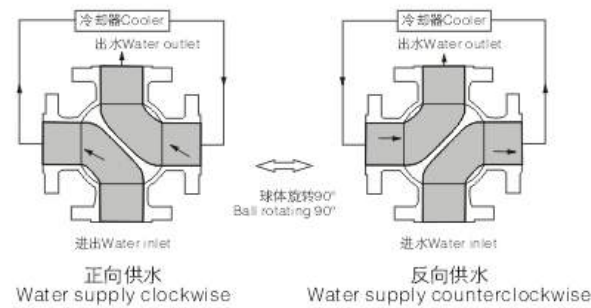


图2 Figure 2

●结构特点 Structural Features

- 针对电力系统冷却器正反向供水特定工艺过程设计,功能适用、可靠;
- 顶装式固定球四面座阀芯结构密封性能好、耐砂粒磨损、使用寿命长;
- 电动、气动操作(必要时可切换到手动操作);
- 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供水的自动切换。

- Designed to meet the process of forward and reverse water supply of coolers in electric power system, with suitable and reliable functions;
- Top mounted fixed ball four-side seated valve core, with sound sealing performance, resistance to sand abrasion, and long service life;
- Electric and pneumatic operation (switched to hand operation if necessary);
- Ensure facilitated control, good information channel and operating interface between control cabinet and valve, and upper-level machine. If requested, automatic switchover of forward and reverse water supply may be actualized by a certain interval.

●四通球阀制造规范 4-Way Ball Valve Manufacture Norms

标准 Standards	API系列 API series	DIN系列 DIN series
基本设计规范 Design codes	ANSI B16.34	
压力温度等级 Pressure/Temperature rating	ANSI B16.34	DIN3356
结构长度 Face to face dimensions	ASME B16.10	
连接法兰 Flange ends	ASME B16.5	DIN2543-2551
检验与实验 Inspection test	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:
Four-way ball valve may be field controlled, or through control cabinet or central control system for remote centralized control. The functions of control interface as follows:

一、开关 Switch

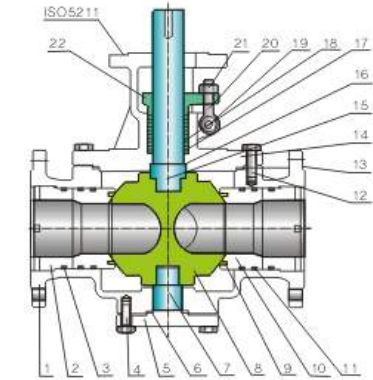
- 电源开关 Power Switch
- 现场控制/远程控制转换开关 Field Control/Remote Control Changeover Switch
- 手动循环/自动循环转换开关 Manual Circulation/Automatic Circulation Changeover Switch

二、按钮 Button

- 正向供水 Forward Water Supply
- 反向供水 Reverse Water Supply
- 停 Pause

三、指示灯 Indicator Light

- 电源指示
Power Indicator
- 正向供水指示
Forward Water Supply Indicator
- 反向供水指示
Reverse Water Supply Indicator
- 中位停顿指示
Middle Position Pause Indicator (Flash and Alarm upon Overtime/Pause)
- 阀门或电装卡阻过力矩指示(闪烁并报警)
Valve or Electric Fitting Jammed Over-moment Indicator (Flash and Alarm)



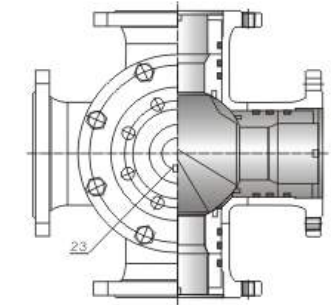
四、开度指示表 Opening Indicator

五、与上位机通讯 Communication with Upper Machine

电器参数:

电源AC 280V/50HZ,环境温度-20~+40℃,相对湿度≤90%(25℃时),防护等级IP67,电气原理图以使用说明书为准。

Electrical Parameters: Power supply AC 380V/50HZ, ambient temperature -20~+40℃, relative humidity = 90% (at 25%), level of protection Ip67, schematic electrical diagram subject to instruction manual.



●主要零部件材料 Main Parts Materials

序号 No.	零件名称 Name of part	材料 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 Insert	A105+ENP	A182 F316	A350 LF3
3	O型圈 O-ring	氟橡胶 Viton		
4	螺栓 Screw	A 193 B7	A193 B8	A320 L7
5	底盖 End plate	A105+ENP	A182 F316	A350 LF3
6	垫片 Gasket	柔性石墨 Flexible graphite+SS		
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 Seat ring	PTFE/RPTFE		
10	阀座 Seat retainer	A105+ENP	A182 F316	A350 LF3
11	O型圈 O-ring	氟橡胶 Viton		
12	螺栓 Bolt	A 193 B7	A193 B8	A320 L7
13	垫片 Body gasket	柔性石墨+SS Flexible graphite+SS		
14	阀盖 Bonnet	A216 WCB	A351 CF8M	A352 LCB
15	阀杆 Stem	A182 F6a	A182 F316	A182 F316
16	垫片 Thrust washer	PTFE+SS		
17	填料垫 Packing gasket	A182 F6a	/	A182 F6a
18	填料 Stem packing	柔性石墨+SS Flexible graphite/PTFE		
19	销轴 Pin	A182 F6a		
20	活接螺栓 Eyelet bolt	A 193 B7	A193 B8	A320 L7
21	螺母 Nut	A194 2H	A194 8	A 194 4
22	填料压盖 packing gland	A216 WCB	A351 CF8M	A352 LCB
23	键 Key	ANSI 1215		

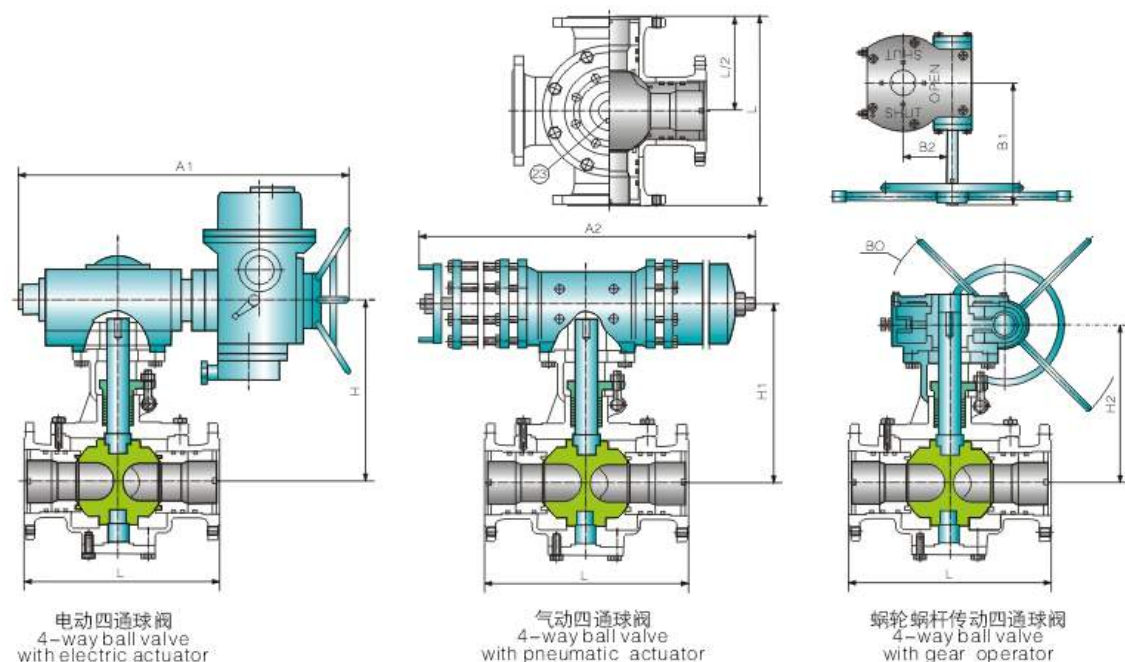
●供货范围 Supply Scope

公称通径 Nominal size		压力等级 Class	
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,表示未涉及的可按用户的要求制造。

Note: ●stands for handle operated valves;
☆Stands for gearbox operated valves;
—Stands for no option of this.
Those not covered in the table can be custom made to users' requirements.

● 四通球阀PN1.6MPa CLASS 150 PN2.5、4.0MPa CLASS 300



● 主要外形尺寸及重量 Main Size of Outside & Weight

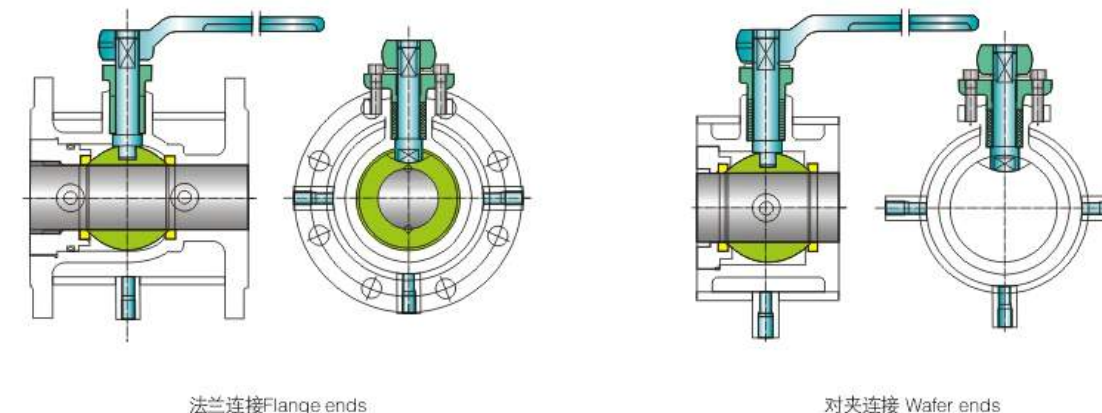
PN1.0/1.6MPa CLASS150

DN	NPS	L	do	H	A1	H1	A2	H2	Bo	B1	B2	重量Weight(kg)
												G.O
50	2	265	51	220	433	217	405	200	250	106	52	28
65	2 1/2	280	64	295	433	248	405	260	250	106	52	48
80	3	310	76	367	433	335	574	320	250	106	52	87
100	4	370	102	440	520	412	574	400	300	143	80	137
125	5	440	127	535	520	495	756	500	300	143	80	240
150	6	510	152	660	520	613	756	600	400	200	108	270
200	8	580	203	870	520	824	756	800	400	200	108	585
250	10	665	250	1080	896	1025	1060	1000	600	200	108	765
300	12	760	305	1200	896	1176	1060	1160	600	200	108	1121
350	14	850	337	1250	896	1239	1360	1225	800	330	140	1450
400	16	940	387	1420	910	1388	1360	1350	800	330	140	1780
450	18	1050	438	1610	910	1596	1360	1575	800	330	140	2435
500	20	1180	489	1830	910	1725	2910	1750	1000	370	220	3108

PN2.5/4.0MPa CLASS300

DN	NPS	L	do	H	A1	H1	A2	H2	Bo	B1	B2	重量Weight(kg)
												G.O
50	2	265	51	390	433	217	405	200	250	106	52	28.5
65	2 1/2	280	64	420	433	248	405	260	250	106	52	49
80	3	350	76	490	520	335	574	320	250	106	52	87
100	4	420	102	570	520	412	574	400	300	143	80	139
125	5	490	127	680	520	495	756	500	300	143	80	240
150	6	580	152	830	896	613	756	600	400	200	108	270
200	8	640	203	1020	896	824	756	800	400	200	108	585
250	10	740	250	1140	896	1025	1060	1000	600	200	108	765
300	12	820	305	1220	896	1176	1060	1200	600	200	108	1125
350	14	910	337	1390	910	1239	1360	1225	800	330	140	1455
400	16	1000	387	1580	910	1388	1360	1350	800	330	140	1785
450	18	1150	438	1790	910	1596	1360	1575	800	330	140	2467
500	20	1300	489	1960	936	1725	2910	1750	1000	370	220	3150

法兰尺寸见附表 Flange dimensions refer to Annexes.



● 用途 Application

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黏度介质。其球阀的夹套焊接在阀门的两端密封之间，阀门的侧面和底部设有夹套的标准连接口。由于增加了夹套，此种阀门的端部连接尺寸比同一规格的连接尺寸大一两个规格，阀门的结构长度与同一规格的阀门相同。阀门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阀门。

Jacketed ball valves are mainly used in the industries of petroleum, chemicals, pharmaceuticals, metallurgy, electric power and etc. to handle high viscosity medium that can be solidified at ordinary temperature. The jacket of ball valve is welded between the seal faces at both ends of the valve. On the side and at the bottom of the valve there are standard connection ports for jacket. Provided with a jacket, the types of end connection may be flanged and wafer. Steam or other heat insulating mediums may freely pass through the jacket, to ensure pasty mediums smoothly through the valve.

● 结构特点 Structural Features

- 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。
- 采用碳钢管焊接夹套比铸造的更加耐压、牢固和可靠。
- 由于阀门的通径与管道内径一致，介质呈直线流动，流阻小，最适用于易凝固，高粘性液体介质。
- 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。

- To prevent the pasty medium in pipeline from being solidified and to lower the heat loss of the low-temperature medium in pipeline.
- The carbon steel pipe welded jackets are more over pressure resistance and reliable than cast ones.
- Due to the conformity of valve diameter and pipe inside diameter, medium makes linear flow of low resistance, most suitable for easily solidified and highly viscous liquid mediums.
- One-piece structure of ball valve body, small volume and light weight compared with their counterparts.

● 夹套球阀制造规范 Wafer Ball Valve Manufacture Norms

标准 Standards	API系列 API series
基本设计规范 Design codes	ANSI B16.34
压力温度等级 Pressure/temperature rating	ANSI B16.34
结构长度 Face to face dimensions	ASME B16.10
连接法兰 Flange ends	ASME B16.5
检验与实验 Inspection and test	API598

● 主要零部件材料 Main Parts Materials

序号No.	零件名称 Part Name	材料Materials	
		ASTM	
1	阀体Body	A216 WCB	
2	连接口Ends sock	A105	
3	夹套Jacketed	A105	
4	锁紧螺母Locking nut	A105	
5	O型圈O-ring	氟橡胶 Viton	
6	密封圈Seat ring	对位聚苯、尼龙PTFE/RPTFE/NYLON/PEEK	
7	球体Ball	A105+ENP/F304	
8	阀杆Stem	A182 F6a	
9	垫片Gasket	PTFE+SS	
10	填料垫Packing Seat	A182 F6a	
11	填料Packing	柔性石墨Flexible graphite/PTFE	
12	填料压盖 Packing gland	A216 WCB	
13	螺钉Screw	A193 B7	
14	定位片Stop pland	Q235+Zn	
15	挡圈Snap ring	65Mn	
16	螺钉Screw	A 193 B7	
17	手柄Lever	Q235+Zn	

● 供货范围 Supply Scope

公称通径Nominal size		压力等级 class	
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: ●stands for handle operated valves;
★stands for gearbox operated valves;
—stands for no option of this.
Those not covered in the table can be custom made to users' requirements.

● 阀门驱动装置选配表 The valve Door Drives Device To Choose To Go Together With Watch

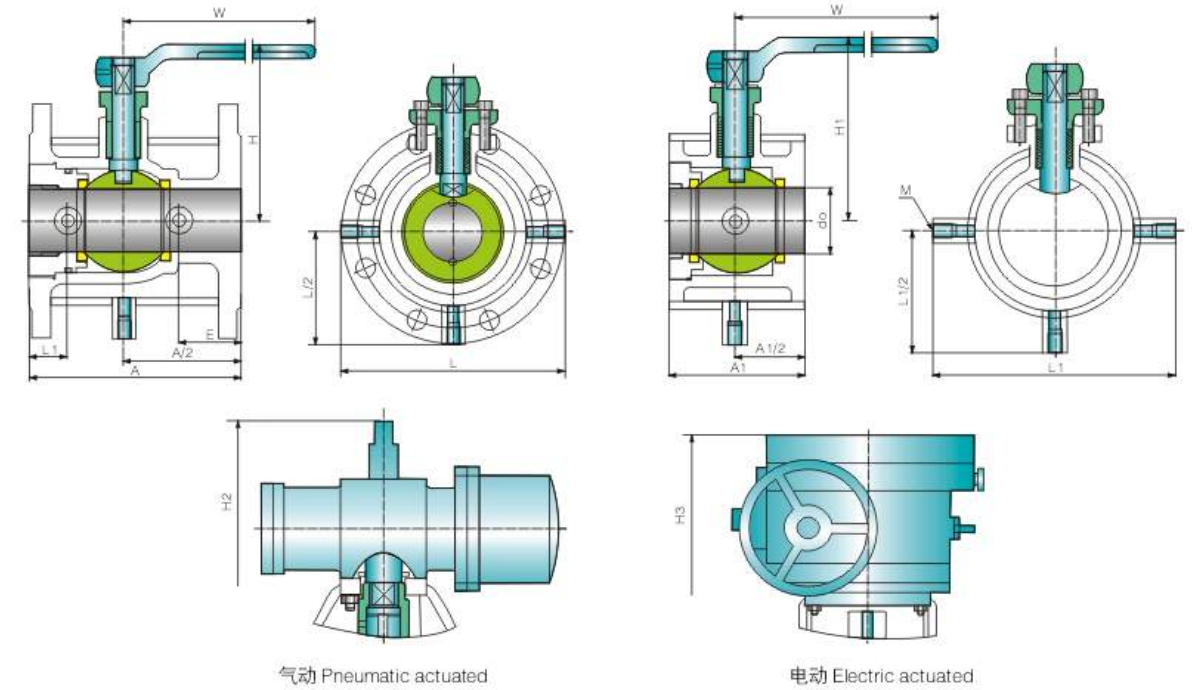
SIZE		150Lb		300Lb	
DN	NPS	气动 air-operated	电动Electric Operated	气动 air-operated	电动Electric Operated
15	1/2	AG06	/	AG06	/
20	3/4	AG06	/	AG06	/
25	1	AG09	/	AG09	/
40	1 1/2	AG09	/	AG09	/
50	2	AG09	QT12.5	AG13	QB12.5
80	3	AG13	QT12.5	AW13	QB25
100	4	AW13	QT25	AW13	QB50
150	6	AW17	QT50	AW17	QB100
200	8	AW17	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 operated device type is produced by ALFA company, The electric operated device type is produced by changzhou Auxiliary Power Plant.

● 电动装置输出扭矩值 Electric Device Forge Output Figure

型号 Model	输出转矩 Torque output	阀杆直径 Stem	输出转速 Rotating speed output	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

● 夹套保温球阀 PN1.6MPa CLASS 150/PN2.5、4.0MPa CLASS 300



● 主要外形尺寸及重量 Main Size of Outside & Weight

PN1.0、1.6MPa CLASS150															
DN	NPS	A	A1	do	H	H1	H2	H3	W	M	L	L1	E	法兰规格 Flange size	重量Weight(kg) 手动Lever(PN16)
15	1/2	110	50	15	63	101	126	/	130	ZG3/4	147	110	58.5	DN40(11/2)	7.04
20	3/4	117	55	20	82	101	126	/	160	ZG3/4	147	117	58.5	DN40(11/2)	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	40	100	125	169	/	230	ZG3/4	181	165	62.5	DN65(2 1/2)	14.5
50	2	178	90	51	153	135	179	576	230	ZG3/4	218	178	68	DN80(3)	17.9
80	3	229	120	76	195	217	258	643	400	ZG3/4	275	229	82	DN150(6)	37.3
100	4	254	140	102	213	265	322	715	700	ZG3/4	300	254	83	DN200(8)	56
150	6	292	160	152	235	355	415	848	1100	ZG1	403	292	95	DN250(10)	93
200	8	330	180	203	342	410	527	903	1500	ZG1	492	330	100	DN300(12)	160

● 主要外形尺寸及重量 Main Size of Outside & Weight

PN2.5/4.0MPa CLASS300															
DN	NPS	A	A1	do	H	H1	H2	H3	W	M	L	L1	E	法兰规格 Flange size	重量Weight(kg) 手动Lever(PN40)
15	1/2	110	50	15	63	101	126	/	130	ZG3/4	147	110	58.5	DN40(11/2)	7.24
20	3/4	117	55	20	82	101	126	/	160	ZG3/4	147	117	58.5	DN40(11/2)	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	40	100	125	169	/	230	ZG3/4	181	165	62.5	DN65(2 1/2)	18.4
50	2	178	90	51	153	135	179	576	230	ZG3/4	218	178	68	DN80(3)	25.1
80	3	229	120	76	195	217	258	643	400	ZG3/4	275	229	82	DN150(6)	55.4
100	4	254	140	102	213	265	322	715	700	ZG3/4	300	254	83	DN200(8)	76.4
150	6	292	160	152	235	355	415	848	1100	ZG1	403	292	95	DN250(10)	118
200	8	330	180	203	342	410	527	903	1500	ZG1	492	330	100	DN300(12)	200

● 产品结构特点 Product Design Features

系列螺纹连接端球阀主要用于以氢气为介质的海洋勘探设备中，同时也适用于水、油、酸等各类介质的系统中，以实现气体和液体的断流及放流。其中要结构特点有：

1. 结构紧凑、重量轻、流阻低。
2. 启闭扭矩小、密封性能优异。
3. 结构形式有整体式、两体式及三体式三种结构，维修和更换内件均十分方便。
4. 两侧用内、外螺纹与管道连接，安装方便。
5. 根据用户需要，可提供左右不同形式的连接端。
6. 根据用户需要，可装上相应的电动及气动装置以实现遥控或自动控制。

The series of the threaded ends ball valves are mainly used in the equipment for sea prospecting, which takes helium as medium, and also applied to the system which takes water, oil, acid etc, as medium, for cutting or releasing the gas or liquid. The main features of construction

1. Compact construction, light weight, little flow resistance.
2. Quick start and stop, excellent seal performance.
3. The type of construction divided into one-side type, two-side type, three-side type, and the parts be maintained and changed conveniently.
4. Two sides are connected with pipe by internal and outer threaded screw. Installed quickly.
5. Can provide different type of connecting ends on the right or left side, according to user's demand.
6. Can set up the corresponding electric or pneumatic installations for remote control or automatic control, according to user's demand.

● 技术规范 Technical Specification

结构长度 Face to face	内螺纹连接端 Internal thread screw connecting	GB/T15188.3
	外螺纹连接端 Outer thread screw connecting	GB/T15188.4
内螺纹连接端 Internal thread screw connecting end		GB/T 7073
外螺纹连接端 Outer thread screw connecting end		JB/T1752、JB/T 1754、JB/T 1755
试验和检验 Test and Inspection		JB/T9092

● 产品性能规范 Form Of Major Parts Materials

压力等级 Pressure	公称压力(PN) Nominal pressure		
	1.6	2.5	4.0
试验压力 Test pressure (MPa)	壳体试验 Shell test 2.4	3.75	6.0
	密封试验 Sealing test 1.76	2.75	4.4
适用温度 Applicable medium	-29°C~300°C (注：不同工况温度，选用不同的材质 Different raw material for different work temperature)		
适用介质 Applicable medium	水、油、气各类腐蚀性介质等 Water, oil, gas and other corrosive mediums		

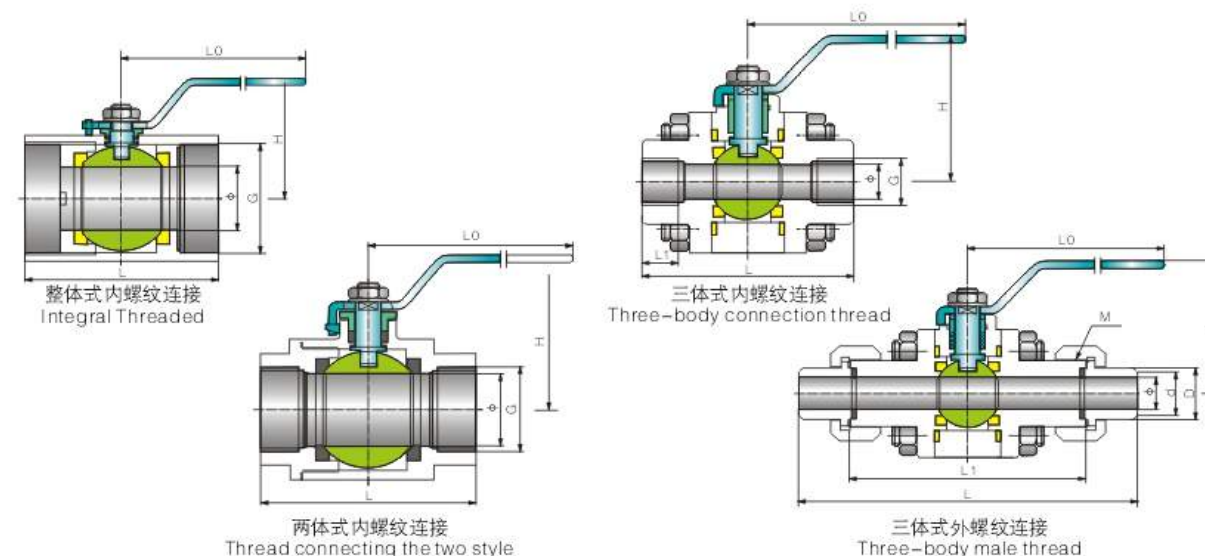
● 主要外形尺寸 Main Size Of Outside

序号No.	零件名称 Accessory name	材 质 Material	
		GB	ASTM
1	阀体 Body	WCB CF8、CF8M、CF3、CF3M	A216-WCB、 A351-CF8、CF8M、CF3、CF3M
2	阀盖 Bonnet	WCB CF8、CF8M、CF3、CF3M	A216-WCB、 A351-CF8、CF8M、CF3、CF3M
3	球体 Ball	1Cr13、0Cr18Ni9、1Cr18N12Mo2Ti	A276-410、304、316、304L、316L
4	阀杆 Stem	1Cr13、0Cr18Ni9、1Cr18N12Mo2Ti	A276-410、304、316、304L、316L
5	密封圈 Sealing ring	尼龙、对位聚苯 Nylon PTFE、RTFE	PTFE、PTFE、尼龙、对位聚苯

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。

Notes: Major parts of the valve series and materials of sealing surface differ according to actual working condition and customer's special requirement.

● 螺纹连接端球阀PN1.6~4.0



● 内螺纹连接 Internal Thread Screw Connecting

DN (mm)	整体式 One-sided type					两体式 Two-sided type					三体式 Three-sided type					
	φ	G	L	L ₀	H	φ	G	L	L ₀	H	φ	G	L	L ₁	L ₀	H
6	4.2	1/4	40	80	22	10	1/4	55	95	42	-	-	-	-	-	-
10	6	3/8	45	80	26	10	3/8	55	95	42	12	3/8	65	12	95	46
15	8	1/2	57	88	31	15	1/2	64	108	51	15	1/2	75	14	110	46
20	12	3/4	60	88	34	20	3/4	75	115	58	20	3/4	85	16	110	54
24	15	1	72	105	38	25	1	85	135	77	25	1	90	18	140	65
32	19	1 1/4	79	105	43	32	1 1/4	102	150	83	32	1 1/4	112	20	140	69
40	24	1 1/2	85	124	50	38	1 1/2	108	175	97	38	1 1/2	120	22	155	76
50	32	2	101	124	57	50	2	124	190	106	50	2	145	24	180	86
65	-	-	-	-	-	65	2 1/2	163	220	122	65	2 1/2	170	28	220	120
80	-	-	-	-	-	80	3	185	250	133	80	3	200	32	260	150

● 外螺纹连接 Outer Thread Screw Connecting

DN (mm)	外螺纹连接 Outer thread screw connecting							
	φ	d	D	L	L ₁	L ₀	M	H
6	8	10	14	150	85	96	20×1.5	57
10	10	12	18	150	85	96	24×1.5	57
15	15	17	22	175	108	110	30×2	68
20	20	22	28	190	120	120	36×2	70
25	25	27	33	200	132	135	42×2	80
32	32	34	40	230	158	160	52×2	84

● 产品结构特征 Products Design Features

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，以截断或接通过路中的介质。对夹式球阀根据结构长度的长短可分为普通型及薄型两面三刀种系列，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。

The series of the wafer type ball valves can be applied to petroleum, chemical industry, metallurgy, pharmacy, etc, used to block or connect the medium in the pipe. The wafer type ball valve divided into normal type and thin type, by its length of construction. The series of the thin types are the improved products, designed and developed by ourselves, which combine the advanced technology of abroad with the feature of the normal type, according to user's demand. Compared with other ball valves, the main characters of construction of the water type ball valve are: with one sided, and compact construction, small volume, light weight, well-sealed, non-limitation of medium direction, little flow resistance, quick start and stop, convenient operation. And it is possible for the normal type to set up the corresponding electric or pneumatic installarions, for remote control or automatic control, according to user's demand.

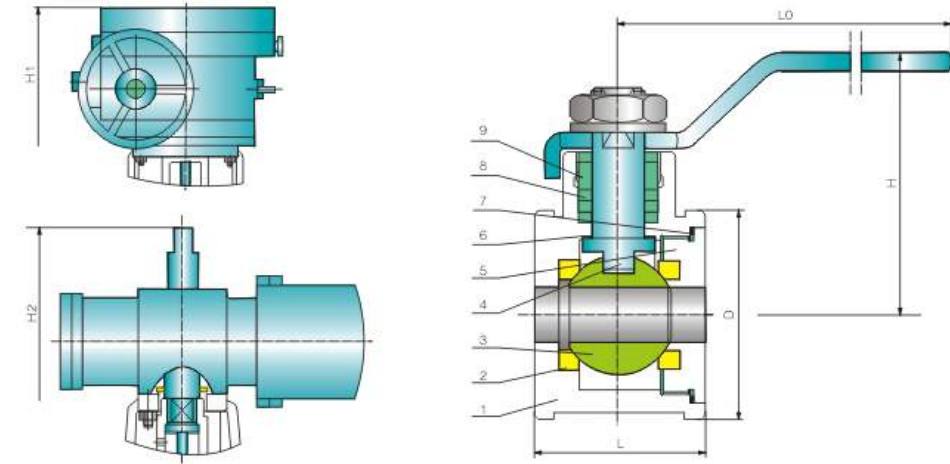
● 产品规格 Products Specification

系列型号 Serial models	Q71、Q671、Q971	Q7b1
压力等级 Pressure	PN1.6-MPa、Class150	PN1.6-4.0MPa
口径 Size	DN15-100mm、1/2"-4"	DN10-200
驱动方式及适用范围 Driving manner and scope of application	手柄驱动、气动、电动 Wrench operated、 Air operateel & Electric driving	手柄驱动 Wrench operated

注：本公司可根据用户要求提供产品
Notes: Our Company can provide products at customres' request.

● 产品性能规范 Products Performance Specification

公称压力 Nominal Pressure	壳体强度试验压力 Shell test pressure	密封试验压力 Sealingtest pressure
1.0MPa	1.5MPa	2.0MPa
1.6MPa	2.4MPa	1.76MPa
2.0MPa	3.1MPa	2.2MPa
2.5MPa	3.75MPa	2.75MPa
4.0MPa	6.0MPa	4.4MPa
Class 150	3.03MPa	2.2MPa
介质温度 Temperature	≤300℃	
适用介质 Medium	水、油及腐蚀性介质 Water、oil & corrosive medium	



● 技术规范 Technical Specification

结构形式 Structure form	对夹式 Wafer type
连接法兰 Flanged ends	ANSI B 16.5、JB/T79
驱动方式 Driving manner	手动、电动、气动 Wrench、Electroc driving、Air operated
试验和检验 Test & Inspection	API 598

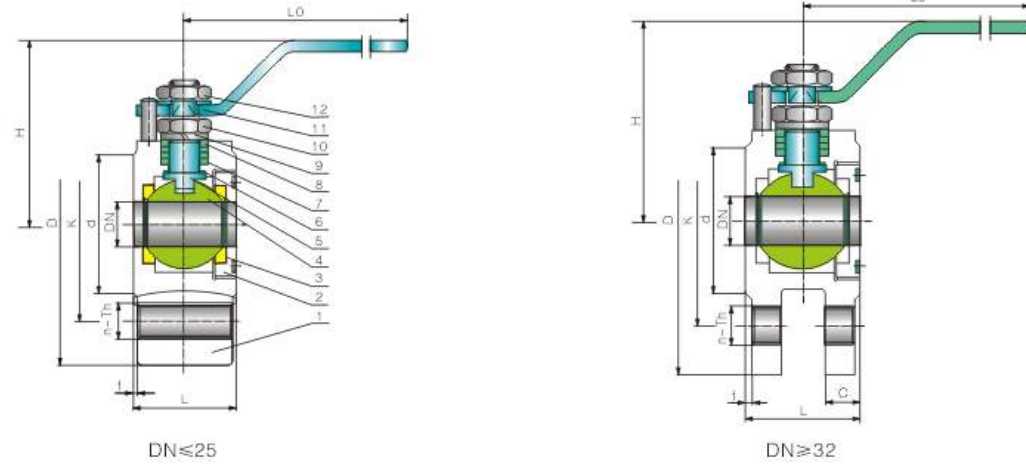
● 主要零件材质表 Form Of Major Parts Materials

序号 No	零件名称 Accessory name	材质 Material		序号 No	零件名称 Accessory 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 PTFE、RTFE		7	垫片 Gasket	柔性石墨+不锈钢 Graphite+stainless steel	
3	球体 Ball	0Cr18Ni9+Ni.P	A276-304+Ni.P	8	填料 Packing	柔性石墨 Graphite	
4	阀杆 Stem	0Cr18Ni9	A276-304	9	压套 Stuffing cover	0Cr18Ni9	A276-304
5	阀座 Seat	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。
Notes: Major parts of the valve series and materials of sealing surface differ according to actual working condition and customer's special requirement.

● 主要外形尺寸 Main Size Of Outside

		PN1.0-2.5MPa CLASS15C									
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	164	
	PN2.5MPa	53	63	73	84	94	109	129	144	170	
	PN2.0MPa、Class150	47	57	66	75	85	103	122	135	173	
手动 Hand Operated	H	82	82	104	113	122	132	144	155	183	
	L ₀	140	180	180	200	200	250	300	350	450	
电动 Electric Driving	H ₁	324	323	345	354	363	373	385	455	495	
	电动装置 Electric Driving Device	Q45-1	Q45-1	Q45-1	Q245-1	Q60-1	Q60-1	Q60-1	Q60-1	Q60-1	
气动 Air-operating	H ₂	228	228	238	263	275	284	365	382	425	
	气动装置 Air-operating Device	AG06	AG06	AG09	AG09	AG09	AG13	AG13	AG13	AW17	



● 技术规范 Technical Specification

结构形式 Structure form	对夹式 Wafer type
连接法兰 Flanged ends	ANSI B 16.5、JB/T79
驱动方式 Driving manner	手动 Wrench
试验和检验 Test & Inspection	API 598

● 主要零件材质表 Form Of Major Parts Materials

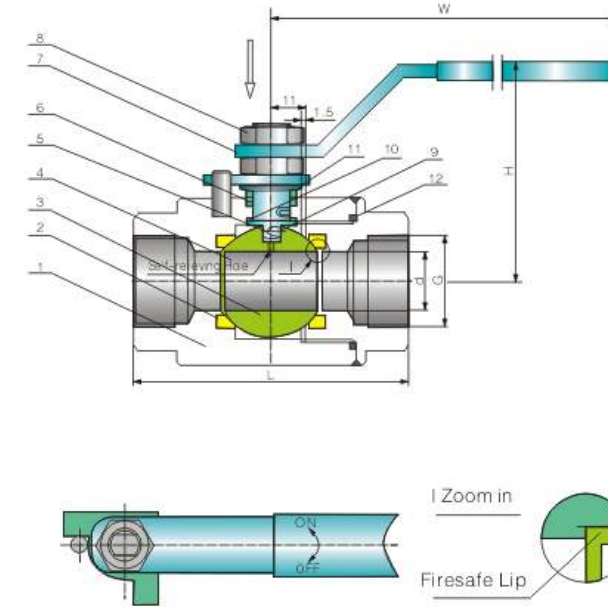
序号 No	零件名称 Accessory name	材质 Material		序号 No	零件名称 Accessory name	材质 Material	
		GB	ASTM			GB	ASTM
1	阀体 Body	CF8	A351-CF8	7	填料 Packing	柔性石墨 Graphite	
2	阀座 Seat	0Cr18Ni9	A276-304	8	填料压圈 Stuffing cover	0Cr18Ni9	A276-304
3	密封圈 Sealing ring	尼龙、对位聚苯 Nylon	PTFE、RTFE	9	垫圈 spring lock washers	0Cr18Ni9	A276-304
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 Wrench	0Cr18Ni9	A276-304
6	垫片 Gasket	PTFE		12	限位销 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。
Notes: Major parts of the valve series and materials of sealing surface differ according to actual working condition and customer's special requirement.

● 主要外形尺寸 Main Size Of Outside

PN1.0~2.5MPa CLASS150

DN	L	PN1.6MPa					PN2.5MPa					PN4.0MPa					f	H	L ₀
		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	18	4-M16	2	100	180
40	60	140	110	88	16	4-M16	140	110	88	16	4-M16	140	110	88	18	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



● 特点 Feature

2PC结构设计, 全通径流量
设计制造: BS 5351
检验和试验按: API598
产品规格从1/2"到2"
防静电结构设计
工作压力: 800Lb(2000psi)
防火设计
螺纹端可按: BSPT、NPT、DIN2999制造

● 主要零件材料 Major Parts Material Form

序号 NO.	部件名称 Part name	材料 Material	QTYI
1	阀体Body	A105N F316	1
2	阀座Seat	PTFE	2
3	球Ball	316	1
4	端盖Cap	A105N F316	1
5	阀杆Stem	316	1
6	填料Packing	石墨 Graphite	1
7	手柄Handle	304	1
8	螺母Stem nut	304	2
9	防静电Anti static devise	SS304	2
10	杆密封Stem sealing	PTFE	1
11	压盖Gland	SS316	1
12	密封垫Gasket	石墨 Graphite	2

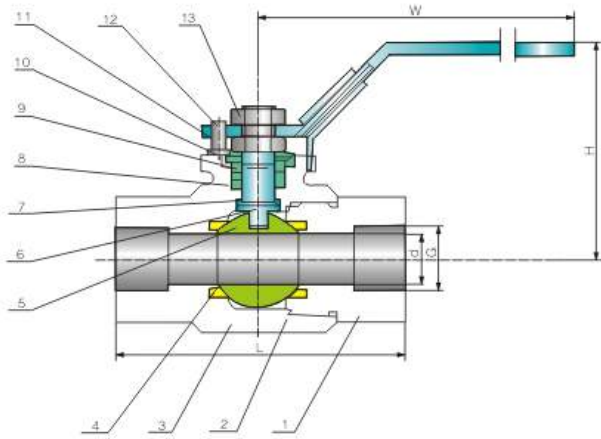
2PC Body full bore
Design and manufacture: BS 535
Test and check API598
Size: 1/2"to2"
Anti-static device
Working Pressure: class800(2000psi)
Firen safely
Threaded End BSPT, NPT, DIN29999

● 主要外形尺寸及重量 Main Size of Outside & Weight

NPS	φd	G	L	H	W
1/4	6	1/4"-18NPT	60	55	120
3/8	10	3/8"-18NPT	60	60	120
1/2	12.7	1/2"-14NPT	75	65	150
3/4	17.5	3/4"-14NPT	80	72	150
1	22	1"-11-1/2NPT	90	80	170
1-1/4	28.5	1-1/4"-11-1/2NPT	110	80	170
1-1/2	35	1-1/2"-11-1/2NPT	120	105	240
2	47.5	2"-11-1/2NPT	140	114	240

● 主要零件材料 Major Parts Material Form

序号 NO.	部件名称 Part name	材料 Material	QTY
1	阀盖 End cap	A105 SS304 SS316	1
2	密封垫 Seal Gasket	PTFE	1
3	阀体 BOdy	A105 SS304 SS316	1
4	阀座 Seat	Delrin	2
5	球 Ball	SS316	1
6	阀杆 Stem	SS630(17-4PH)	1
7	杆密封 Stem sealing	RPTFE	1
8	填料 Packing	PTFE OR NYLON(尼龙)	1
9	填料压套 Packing gland	SS304	1
10	弹簧 Stem washer	SS304	2
11	手柄 Handle	SS304	2
12	定位销 Stop pin	SS304	1
13	螺母 Nut	SS304	1



● 特点 Feature

2PC 结构设计, 全口径流量
设计制造: ANSI B16.34
检验和测试按: API 598
产品规格从1/4"到2"
防静电结构设计
工作压力: 1500Lb(3000psi)
防火设计
螺纹端可按: BSPT、NPT、DIN2999制造
ISO5211驱动平台

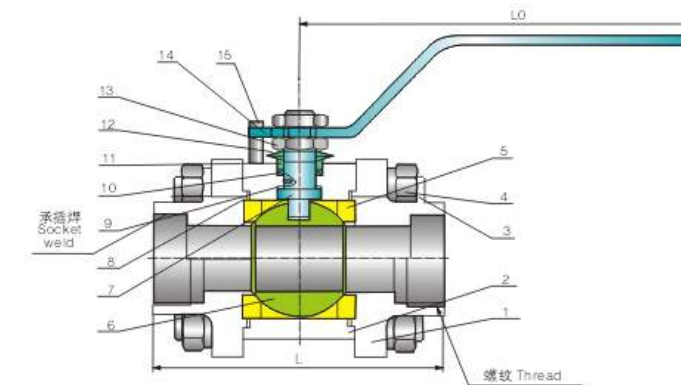
2PC Body full bore
Design and manufacture: ANSI B16.34
Test and check: API 598
Size 1/4" to 2"
Anti-Static device
Working pressure class 1500(3000psi)
Fire-safety
Threaded end: BSPT, NPT, DIN2999
ISO5211 Mounting pad

● 主要外形尺寸及重量 Main Size of Outside & Weight

NPS	d	G	L	H	W	正方(厚)口	螺孔中心圆Dim 上平台(ISO5211pad)	N-M
1/4	9	1/4-18NPT	102	62	170	46(6)	φ42	4-M6
3/8	9	3/8-18NPT	102	62	170	46(6)	φ42	4-M6
1/2	13	1/2-14NPT	102	62	170	46(6)	φ42	4-M6
3/4	19	3/4-14NPT	110	90	170	46(6)	φ50	4-M6
1	25	1-11.5NPT	114	90	170	46(6)	φ50	4-M6
1-1/2	38		133	125	280	65(8)	φ70	4-M8
2	50	2-11.5NPT	159	142	300	65(8)	φ70	4-M8

● 主要零件材料 Major Parts Material Form

序号 NO.	零件名称 Part name	CS ASTM		SS ASTM
		Type A105N	Type F304(L)	Type F316(L)
1,2	阀本接体, 阀盖 Body/Bornet	ASTM A105N	A182 F304(L)	A182 F316(L)
3	等长双头螺栓 Bolt	A193 B7+镀锌	A193 B8	A193 B8M
4	螺母 Nut	A194 2H+镀锌	A194 8	A194 8M
5,8	密封圈/垫片 Seal ring/Gasket	RTFE+Cu粉/尼龙1010/PPL		
6	球体 Ball Body	A182 F304	A182 F304 (L)	A182 F316 (L)
7	阀杆 Stem	A182 F410	A182 F304 (L)	A182 F316 (L)
9,10	止推片填料 Stem Packing	RTFE+Cu粉/尼龙1010/PPL		
11	压套 Gland	A182 F410	A182 F304 (L)	A182 F316 (L)
12	蝶形弹簧 Spring	65Mn		
13	扁螺母 Nut	A194 B7+镀锌	A194 8	A194 8
14	手柄 Wrench	Q235A		
15	圆柱销 Pin	A194 B7+镀锌	F316	F316

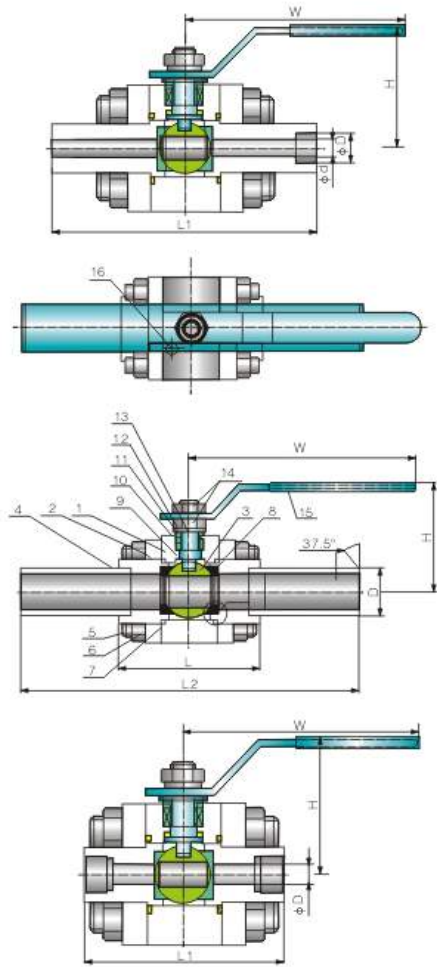


● 主要性能规范 Main Performance Parameter

公称压力 Nominal pressure		900LB	1500LB
试验压力 (MPa) Test pressure	强度试验 Strength test	22.7	37.8
	密封试验 Seat test	16.7	28.1
	气密试验 Gas seal test	0.6	0.6
最高工作温度 Maximum operating temperature	尼龙<80°C, PTFE<150°C, PPL<220°C		
适用介质 Suitable Medium	水、油及腐蚀性介质 Water, oil & corrosive medium		

● 主要外形尺寸及重量 Main Size of Outside & Weight

尺寸 Dimensions	口径 Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L		92	111	127	140	152	178
S		21.8	27.1	33.8	42.8	48.7	61.1
B		9.6	12.7	12.7	12.7	12.7	15.9
L0		123	160	160	195	195	250
NPT		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"



● 主要零件材料 Major Parts Material Form

序号 NO.	部件名称 Part name	材料 Material	QTY
1	阀体 Body	A105 SS316	1
2	阀盖 Cap	A105 SS316	1
3	球 Ball	SS410 SS316	1
4	焊管 Nipple	A105 SS316	2
5	螺栓 Bolt	A193 B7 A193 B8M	4
6	螺母 Nut	A194 2H A194 B8	8
7	密封垫 Seal Gasket	RPTFE	2
8	阀座 Seat	RPTFE	2
9	密封 seal	RPTFE	1
10	填料 Packing	RPTFE	1
11	填料压盖 Packing gland	SS304	1
12	弹簧 Belleville washer	SS301	2
13	阀杆 Stem	A276 410 SS316	1
14	螺母 Nut	A194 2H A194 B8	2
15	手柄 Handle	SS301+PVC	1
16	定位销 Stoper	SS304	1

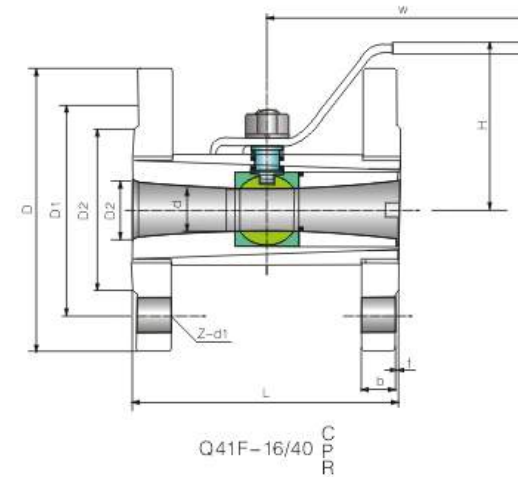
● 特点 Feature

3-pcs 阀体结构
全口径流量
从1/2"到2"压力为800Lb(2000psi)
螺纹端可按BSPT、NPT、DIN2999制造
承插焊端口按ANSI 16.11制造
防火结构设计
可为防静电结构图

3-pcs body
Full bore
Size 1/2" to 2" 800Lb(2000psi)
Threaded end BSPT, NPT, DIN2999
Socket weld end ANSI 16.11
Fire-safety
Anti-static available

● 主要外形尺寸及重量 Main Size of Outside & Weight

NPS	d	D	L	L1	L2	H	W
1/2	12.7	22	100	130	200	65	150
3/4	17.5	28	120	130	220	72	150
1	22	34	135	130	235	80	170
1-1/4	28.5	43	165	180	265	80	170
1-1/2	38	49	200	210	300	105	240
2	47.5	61	220	250	320	114	240



● 应用规范

公称压力: 1.6-4.0MPa
适用温度范围: -20~232°C~350°C
适用介质: 水、油、气及某些腐蚀性液体 (W.O.G)。

● Application Norm

Working Pressure: 1.6-4.0MPa
Temperature Range: -20~232°C~350°C
Suitable medium: Water, oil, air and some Corrosive liquid

● 主要零件材料 Major Parts Material Form

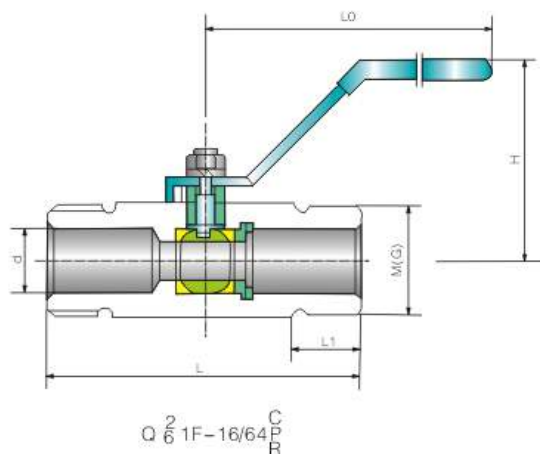
适用介质 Suitable medium	型号 Type	阀体 Body	球体、阀杆 Ball, Stem	手柄 Handle	密封圈 Gasket	垫片、填料 Shim, Packing
水、蒸汽、油品 Water, steam, oil	Q41F-16C, Q41F-25C Q41F-40C	A105, 45	1Cr18/1Cr18Ni9Ti	不 锈 钢 SS304	聚四氟乙烯 PTFE 增强聚四氟乙烯 VUJLUK PTFE 对位聚苯 PPL	聚四氟乙烯 PTFE 对位聚苯 PPL
硝酸类 Nitric Acid	Q41F-16P, Q41F-25P Q41F-40P	SS304/1Cr18Ni9Ti	SS304/1Cr18Ni9Ti			
醋酸类 Acetic Acid	Q41F-16R, Q41F-25R Q41F-40R	SS316/1Cr18Ni12Mo2Ti	SS316/1Cr18Ni12Mo2Ti			

● 主要外形尺寸及重量 Main Size of Outside & Weight

公称口径 Nominal diameter		d	d2	L	D	D1	D2	b	f	Z-d1	H	W
DN(mm)	in											
15	1/2"	10	15	92	95	65	45	14	2	4-14	60	110
20	3/4"	12.6	20	106	105	75	55	14	2	4-14	65	110
25	1"	17	24	109	115	85	65	16	2	4-14	70	110
32	1 1/4"	22	32	126	135	100	78	16	2	4-18	85	145
40	1 1/2"	25	38	136	145	110	85	16	3	4-18	90	145
50	2"	32	46	154	160	125	100	18	3	4-18	98	177
65	2 1/2"	44	60	170	180	145	120	20	3	8-18	110	190
80	3"	50	72	195	195	160	135	22	3	8-18	130	240
100	4"	65	92	215	215	180	155	22	3	8-18	150	260

法兰标准: JB79-59
亦可按国标 GB9113设计制造。

Flange standard: JB79-59
Flange also can be designed and manufactured according to GB9113.



● 应用规范

公称压力: 1.6-6.4MPa
适用温度范围: -20~232°C~350°C
适用介质: 水、油、气及某些腐蚀性液体 (W.O.G)。
螺纹类型: ZG.G · NPT.BSPT.BSP.DIN259/2999

● Application Norm

Working Pressure: 1.6-6.4MPa
Temperature Range: -20~232°C~350°C
Suitable medium: Water, oil, air and some Corrosive liquid
Thread type: ZG.G · NPT.BSPT.BSP.DIN259/2999

● 主要零件材料 Major Parts Material Form

零件名称 Part name	阀体 Body	球体、阀杆 Ball, Stem	手柄 Handle	密封圈 Seal ring	垫片、填料 Shim, Packing
Q21F-16C、Q21F-25C、 Q21F-40C、Q21F-64C	A105、45	1Cr18/1Cr18Ni9Ti	不 锈 钢 SS304	聚四氟乙烯 PTFE 对位聚苯 PPL	聚四氟乙烯 PTFE 对位聚苯 PPL
Q21F-16P、Q21F-25P、 Q21F-40P、Q21F-64P	1Cr18Ni9Ti	SS304/1Cr18Ni9Ti			
Q21F-16R、Q21F-25R、 Q21F-40R、Q21F-64R	SS316/1Cr18Ni12Mo2Ti	SS316/1Cr18Ni12Mo2Ti			

● 主要外形尺寸及重量 Main Size of Outside & Weight

公称直径(mm) Nominal diameter	尺 寸 (mm) Dimensions					
	d	L	L1	M	Lo	Q61 带对焊接头总长
6	8	85	15	20×1.5	110	166
10	10	85	16	24×1.5	110	166
15	10	85	18	30×2	110	172
20	13	90	18	36×2	110	187
25	17	100	20	42×2	110	227
32	22	120	20	52×2	150	235
40	25	135	25	60×3	150	255
50	32	140	25	72×3	180	291

螺纹标准: GB196 Thread Standard: GB196



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