吉富隆智能装备制造集团有限公司
GIFLON INTELLIGENT EQUIPMENT MANUFACTURING GROUP CO.,LTD.

总部地址：北京市经济技术开发区中和街16号
Headquarter Add: No.16, Zhonghe street, economy and development zone, Beijing, China
营销中心：北京市朝阳区北苑东路中国铁建广场D-2510
Marketing Center: Room 2510, Block D, China Railway Building Plaza, 19 East Beiyuan Road, Beijing, China

服务热线Service Hotine: 400-603-5969

Website: **www.giflon.com** **www.giflonvalve.com** Email:export@giflon.com

吉富隆集团
GIFLON

高性能球阀系列
High performance ball valve series

吉富隆智能装备制造集团有限公司
GIFLON INTELLIGENT EQUIPMENT MANUFACTURING GROUP CO.,LTD.

企业简介

吉富隆智能装备制造集团有限公司始建于2010年，是一家集自主研发、高端制造、营销服务为一体的现代化集团公司。集团总部坐落于首都北京经济技术开发区，交通十分便利。集团在北京、河北、江苏等地设有生产基地。注册资金10560万元。

公司有产品设计开发中心，现有中高级工程技术人员20余人，使用CAD、CAM辅助开发设计制造系统，采用相关三维等专业技术软件进行产品建模、有限元分析，以保证产品的设计开发。公司经过多年的创新和发展，已成为国内外具有很强的设计开发和科研与生产相结合规模的智能装备制造企业。

公司拥有先进的数控加工中心、数控机床及金加工和切削加工设备；全自动埋弧焊机、气体保护焊机等焊接设备及热处理设备；具备较强检测能力和先进检测设备，有光谱分析仪、硬度计、超声波测厚仪、超声波探伤仪等理化、无损检测设备，拥有先进的阀门综合性能测试、阀门扭矩、寿命试验装置等阀门压力、性能试验装置。

公司致力于智能装备、节能环保等领域，为智能工业系统、智慧热网、智慧水务提供节能方案设计、节能产品制造、工程节能改造、技术维护等服务。同时与哈尔滨工业大学紧密合作，为用户提供智能热网管理中心平台、热网监控、热源控制系、换热站无人值守控制等系统，针对集中供热领域全面提供从热源、热网、热力站到热用户的整体节能解决方案。

公司专业生产大口径和高压力等级的油气长输管线球阀(分体式和全焊接)和供热专用大口径全焊接球阀、轨道球阀、高性能金属密封蝶阀、旋塞阀以及平板闸阀等产品。可按GB、JB、ASME、ANSI、API、DIN、BS等标准生产，广泛应用在石油、天然气长输管线、化工、电厂、区域供热、水处理等诸多领域，产品以卓越的品质和优质服务赢得了国内外客户的信任，产品行销全国，并远销墨西哥、意大利、美国、智利、委内瑞拉、西班牙等国家和地区。

为了更好的适应市场经济，充分发挥企业优势，公司不断引进外来技术、吸纳先进的管理经验，引进培养高端人才，以一流的产品质量和周到的服务来回馈客户。作为高端阀门装备的制造厂家，为市场提供优质的智能装备产品是我们的责任，也是我们的生存发展之道。

诚信天下，合作共赢！欢迎新老客户莅临我公司参观、指导。

古富隆集团 GIFLON
高性能球阀系列
High performance ball valve series

Company's profile

GIFLON INTELLIGENT EQUIPMENT MANUFACTURING GROUP CO., LTD. was founded in 2010. It is a modern group company integrating with own R&D, high-class manufacturing, and marketing services. Its headquarter is located in the Beijing Economic and Technological Development Zone within convenience transportation. The group has production bases in Beijing, Hebei, Jiangsu and etc, within RMB 105.6 million registered capital.

The company has more than 20 senior engineers and technicians , using CAD and CAM to develop design and manufacturing systems and applying software such as Pro/E and SolidWorks for products modeling and finite element analysis to guaranty the products design and development. After years of innovation and development, the company has became an intelligent equipment manufacturingenterprise with strong design, development, research and production in both China and abroad.

The company has advanced NCPC, CNC machine tools, metal processing , lathe and milling equipment; automatic submerged arc, gas shield and other welding equipment ; heat treatment equipment; and strong test capability and advanced mechanical and chemical testers, NDT test instruments such as spectrum analyzers, hardness testers, Ultrasonic thickness gauge, ultrasonic flaw detector,etc and advanced comprehensive valve performance testers, torque, and life span testers.

The company is dedicated on intelligent equipment, energy conservation and environmental protection, and provides services such as energy-saving solution design, energy-saving products manufacturing, projects energy-saving renew, and technical maintenance for intelligent industrial systems, intelligent heating networks, and intelligent water networks. Meanwhile, we have closed cooperation withHarbin Institute of Technology to provide intelligent heating network management center platform, heating network monitoring, heat source control system, heat exchange station unattended control and etc. For collective heat supply, we provide integrated solution for energy saving from the heat source, heat network, distribution station, until the end users.

We are professional on the manufacturing of large-diameter and high-pressure ball valves(split body and fully welded) for long-distance oil and gas pipeline and heating network pipeline, orbital ball valves, high-performance metal sealing butterfly valves, plug valves, flat gate valves and other products . Valve products can be produced in accordance with standards as ASME, ANSI, API, GB, DIN, BS and are widely used in petroleum and natural gas pipelines, oil refinery , chemical industry, power plants, heating network, water treatment and many other fields. Our products have won the trust from domestic and foreign customers through excellent quality and service,and have been exported to Mexico, Italy, the USA, Chile, Venezuela, Spain and other countries.

In order to better adapt to the market economy and completely utilize the advantages of our company, We continuously introduce foreign technology, absorb advanced management experience, high class human resource , and present high quality products and thoughtful service to our customers . As a manufacturer and innovator of high-class equipment, it is our responsibility to provide high-quality intelligent equipment products to the market; creating value for our customers is our way to survival and development.

We warmly welcome every new and old customer visits and instructs our companyand look forward to build a win-win cooperation with you.

目录 Contents

产品概述 Products brief

G型区域供热球阀是本公司研究开发的国家专利产品。广泛应用在城市供热系统、热电管网的供水和供汽、石化、石油、天然气、制药等领域，作为开-关型控制装置。阀体采用碳钢或不锈钢锻造成形的焊接结构；球体有浮动式和固定式两种结构；阀座结构采用活塞效应和磨损补偿的设计，密封结构设计为单道或双道软密封圈和金属密封面与球体形成多级密封，保证该系列球阀安全可靠的密封和长期稳定的运行。具有体积小、重量轻、密封无泄漏、无需维修保养、使用寿命长、操作方便等优点。

G-type ball valve for regional heat supply is a national patented product developed by our company. It is widely used in urban heat supply systems, water supply and steam supply of thermal power plant, petrochemicals, oil, natural gas, pharmaceuticals and other fields as a throttling device. The valve body adopts a full welded formed by forged carbon steel or stainless steel; the trim can be floating ball or trunnion mounted ball structures. the valve seat structure adopts a piston effect and wear compensation design, and the sealing structure is designed as a single-channel or double-channel soft sealing ring and a metal sealing surface to form a multi-stage seal with the ball, to ensure the safe and reliable sealing and long-term stable operation.This series of ball valves has the advantages as small size, light weight, no leakage, maintenance free, long life span, and easy operation.

产品设计规范 Product design standards

设计制造 Design and Production
API 6D & GB/T 19672; API 608 & GB/T 12237; GB/T 37827; JB/T 12006；
端-端连接尺寸 Face to Face connection size
API 6D & GB/T 19672; ASME B16.10 & GB/T 12221; 厂标 Manufacturer's standard；
端部连接 Ends connection
ASME/ANSI B16.5 & B16.47a & B16.25; GB、JB、HG; JIS; EN; DIN；
试验与检验 Test and inspection
API 6D & GB/T 19672; API 598 & GB/T 26480；GB/T 13927；

产品设计特点 Products design features

※ 整体式焊接球阀，不会有外部泄漏等现象；
Integrated welded ball valve, no leakage to outside
※ 可根据管道的施工及设计的要求，调整阀体和阀杆；
The body and stem can be adjusted according to the requirement of the construction and design of pipeline
※ 全通径或缩径设计；
Full bore or reduced bore design
※ 阀杆防吹出，阀杆多级密封；
Anti-blow out stem, multi-stages stem sealing
※ 阀体采用无缝钢管或钢板压制成形的焊接结构；
Body is adopted seamless steel pipe or plate pressed welding structure
※ 防火设计，符合API 607/API 6FA；
Anti-fire design accords to API 607/API 6FA
※ 球体固定或浮动设计；
Ball is adopted trunnion mounted or floating design.
※ 防静电设计，符合BS5351；
Anti-static design, accords to BS5351
※ 双阀座，单道或双道软密封圈与金属形成多级密封；
Double seats, single or double soft sealing ring or multi-stages with metal ring
※ 中腔超压自动泄放；
Automatic relieve on the over pressure in the cavity
※ 阻塞双泄放(DBB)结构；
Double block and bleed structure
※ 球体的加工精度非常精密，开关灵活，易操作；
Precise machining on the ball, flexible open/close, easy to operate
※ 与同类行业的同规格产品相比，质量轻，外形美观；
Light weight and good appearance compare with similar products
※ 在阀门正常操作、使用的情况下，保质期更长。
Longer life span under normal operation and using

产品压力检测 Product pressure test (水压、气压密封检测 Hydro, Air tightness sealing test)

阀体/壳体水压检测
Hydro pressure test on body/shell
封闭阀门两端。阀门部分开启，向阀门壳体内充满试验液体，逐渐加压到此阀门公称压力的1.5倍，保压至规定时间，目测壳体外表面有无泄漏。
Seal two ends of the valve, open the valve partly, fill liquid into the body of the valve, rise the pressure in the valve to 1.5 times of the rated pressure of the valve, dwell the pressure to stipulated time, no leakage occurred by visual test.
高压水密封检测
High pressure hydro test
封闭阀门两端，阀门部分开启，向阀门内腔充满试验液体，逐渐加压到此阀门公称压力的1.1倍，关闭阀门启闭件，按规定时间保持一端的试验压力，释放另一端的压力，检查该端泄漏情况。重复上述步骤和动作，进行另一端的试验。
Close both ends of the valve, partially open the valve, fill the inner cavity of the valve with liquid, gradually rise pressure to 1.1 times of the rated pressure of the valve, close the ball valve, dwell the pressure at one end to the stipulated time, release the pressure at the other end, and check the leakage at that end. Repeat the above steps and actions to test the other end.
低压气密封检测
Low pressure air tightness test
阀门部分开启，向阀门壳体内冲入试验介质，非常性空气，加压到0.6MPa，关闭阀门启闭件，保持一端压力到规定时间，释放另一端的压力，无可见泄漏；另一端按同样方法进行。
Open the valve partly , fill the abnormal air into the valve body, increase the pressure to 0.6MPa. Close the ball valve, dwell the pressure at one end to the stipulated time. And release pressure in other end, no visible leakage. The other end is carried out in the same way.

材料组合 Material combo

阀体 Body	球体 Ball	阀座 Seat
ASTM A105	A105+13Cr(表面硬化防腐) Harden surface and anti--corrosion	A105+ENP+STL
阀杆 Stem	密封圈 Seal ring	弹簧 Spring
4140+ENP(表面硬化防腐) Harden surface and anti--corrosion	DEVLON + VITON B	Inconel X-750
上套筒 Upper-sleeve	袖管 Sleeve	自润滑轴承 Self lubricated bearing
Q345R	ASTM Gr.70	GCR9

产品范围 Products range

公称通径 DN：1/2”~64”（DN15~DN1600）
压力等级 Rated Pressure：ANSI/ASME 300Lb(PN1.6~PN4.0 Mpa)
适用温度 Applicable Temperature：-29~200 ℃
操作方式 Way of operation：手柄 Handle, 齿轮箱 Gearbox, 电动 Electric, 气动 Pneumatic, 液动 Hydraulic
气-液联动 Pneumo-hydraulic, 电-液联动Electric-hydraulic

古富隆集团 GiFLON
高性能供热全焊接球阀
High performance full welded ball valve for heat supply

技术说明 Specifications

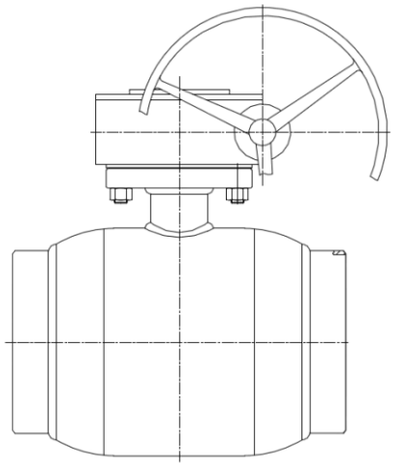
☆ 此类球阀设计为整体全焊接结构，杜绝了介质的外漏现象。
The kind of ball valve is adopted Integrated welded structure, no leakage to outside.
☆ 弹簧加载的浮动阀座，并采用双层软密封作为密封件，阀座通过弹簧施加推力紧密贴合在球体表面上，即使在介质力较低的情况下，同样确保球阀的可靠密封。特殊设计的阀座采用双活塞效应、双重密封(两道密封阀座)，能达到双重双作用密封效果，使球阀的密封性能更加优越，操作更加轻便。
The spring-loaded floating seat uses a double-layer soft seal. The valve seat is tightly attached to the surface of the ball through the thrust of the spring, ensuring reliable sealing of the ball valve even when the pressure of medium is low. The specially designed valve seat adopts a double piston effect and double seal (two sealing seats), which can achieve a double double-acts sealing effect, making the sealing performance of the ball valve more superior and easier to operate.
☆ 阀杆处由可替换的O 形圈和材料为PTFE+20%C 的V 形填料或成型柔性石墨的填料进行密封，能达到多重密封，确保阀杆密封无泄漏；同时采用柔性石墨作为填料密封还具有防火效果。
The alternative material to the O-ring at stem is a V-shaped packing made of PTFE+20%C or flexible graphite, which can achieve multiple stage sealing to ensure that the valve stem seal is leak-free; at the same time, flexible graphite packing is fire-proof.
☆ 阀门主体材质一般与管道材质一样(碳钢或不锈钢)，球体和阀杆等内件一般采用不锈钢或双向不锈钢，填料采用耐介质腐蚀的PTFE+20%C或柔性石墨材料。
The valve body material is generally the same as the pipe material (carbon steel or stainless steel), the material of the ball and stem and other trim parts are generally stainless steel or duplex stainless steel, and the packing is made of PTFE+20%C or flexible graphite that are anti-corrosion.

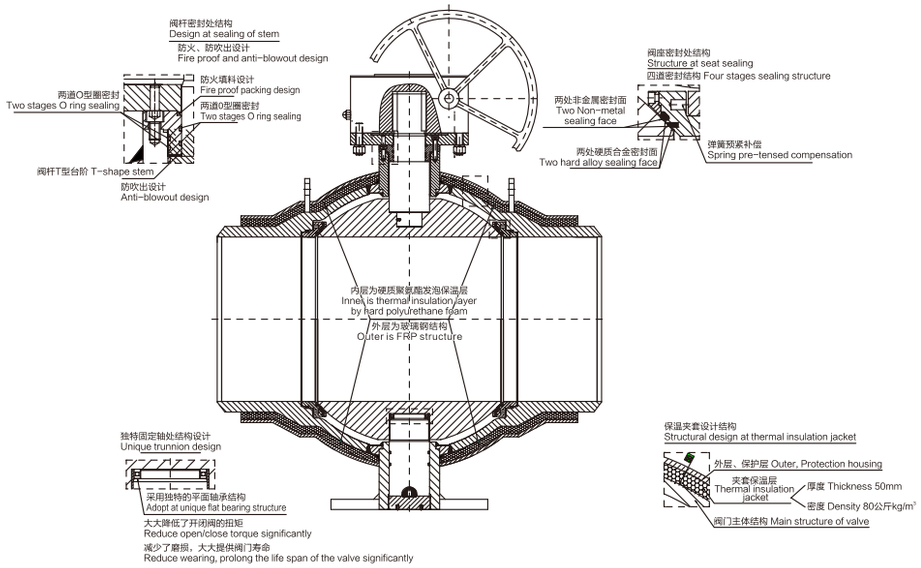
阀门安装 Valve Installation

G 型供热球阀在管线上可水平安装或垂直安装，但绝对禁止倒装；球阀安装时的状态应该是“全开”的状态。在球阀运行期间，不需要维修、调节等等。如阀门运行正常，需每半年进行一次开启和关闭操作。球阀的输送介质中不允许带有机械杂物，以免损坏球阀阀座，造成泄漏现象。
G-type ball valve for heat supply can be installed horizontally or vertically on the pipeline, but it is not allow to install it upside down; the ball valve should be installed in the "fully open" state. There is no need to maintenance or adjustment during the operation of the ball valve. If the valve operates normally, it needs to be opened and closed once in every six months. Mechanical debris is not allowed in medium to avoid damaging the ball valve seat and causing leakage.

主要零部件材料 Main Part Material

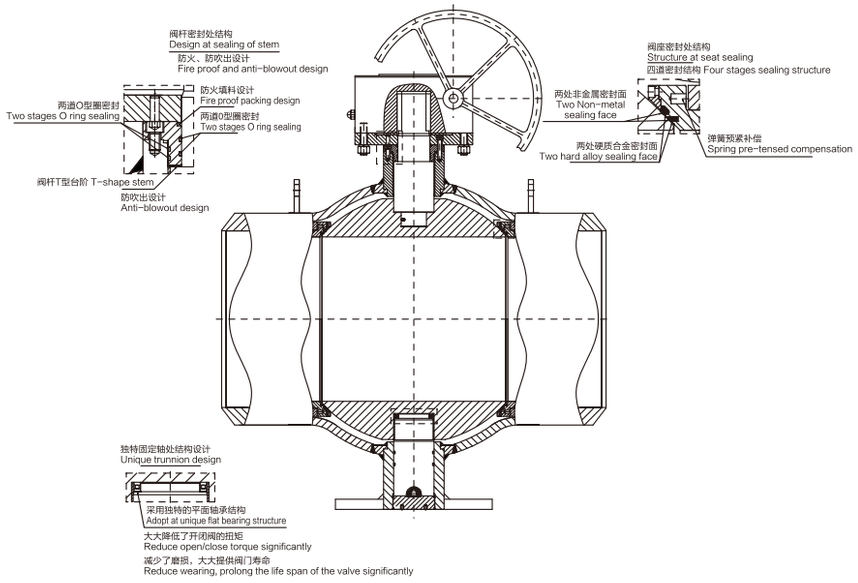
名称 Name	材质 Material
阀体 Body	ASTM A105
球体 Ball	A105+13Cr (表面硬化防腐) Harden surface and anti--corrosion
阀座 Seat	A105+ENP+STL+ DEVLON
副阀体 Ancillary body	ASTM A105
0型圈 O ring	VITON B
填料 Packing	V PTFE, 20%C或石墨 Or graphite
填料压套 Packing bushing	ASTM A182 F304
锁紧压盖 Packing gland	CS
卡环 Clamping ring	CS
自润滑轴承 Self lubricated bearing	GCR9
防静电组件 Anti-Static units	Ss304组件 Module
上垫片 Upper gasket	CS+PTFE
阀杆 Stem	4140+ENP (表面硬化防腐) Harden surface and anti--corrosion
定位板 Positioning plate	Q235.
手柄 Handle	Steel





G型全焊接球阀是吉富隆阀门公司的高性能产品，该球阀的密封阀座是特殊设计的双阀座密封，双活塞效应结构具有密封可靠，操作轻便，使用寿命长等特点；是用在供热系统的主管线上，作为开启或关闭管路的主要控制装置。

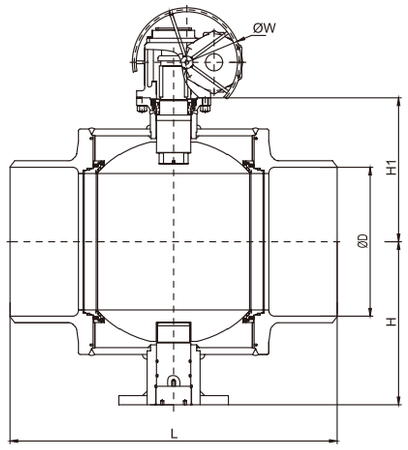
The G-type fully welded ball valve is a high-performance product of GIFLON Valve Company. The sealing of the seat of the ball valve is a specially designed double seat seal, and the double piston effect structure has the property of reliable sealing, easy operation and long life span. It is used on the main pipeline of the heat supply system as the main control device for opening or closing the pipeline.



古富隆集团 GIFLON
高性能供热全焊接球阀
High performance full welded ball valve for heat supply

序号	名称	材质 Material
1	阀体 Body	ASTM A105
2	副阀体 Auxiliary body	ASTM A105
3	阀杆 Stem	4140+ENP(表面硬化防腐 Harden surface and anti--corrosion)
4	球体 Ball	A105+13Cr(表面硬化防腐 Harden surface and anti--corrosion)
5A	N型密封圈 N Seal ring	DEVLON
5B	V型密封圈 V Seal ring	VITON B
6	阀座 Seat	A105+ENP+SIL
7	填料函 Stuffing box	CS+ENP
8	下阀杆 Down Stem	A105+ENP+SIL
9	上垫片 Upper gasket	CS+PIFE
10	底盖 Lower cap	CS
11	填料 Packing	V PIFE,20%C或石墨 Or graphite
12	填料压盖 Packing bushing	CS
13	顶法兰 Top flange	CS
14	上轴套 Upper shaft sleeve	Q345R
15	下轴套 Down shaft sleeve	Q345R
16	阀座压板 Seat clamp	Q345R
17	四开环 Pendant collet	Q345R
18	填料函垫片 Stuffing box gasket	SS304+柔性 Flexibility
19	齿轮箱 Gear case	组件 Module
W1	自润滑轴承 Self-lubricating bearing	GCR9
W2	自润滑轴承 Self-lubricating bearing	GCR9
W3	调节垫片 Adjusting gasket	CS+PTFE
B1	O型圈 O-ring	VITON B
B2	防火圈 Fire-protection ring	石墨 Graphite
B3	螺钉 Bolt	B8
B4	O型圈 O-ring	VITON B
B5	O型圈 O-ring	VITON B
B6	螺钉 Bolt	B7
B7	螺钉 Bolt	B7
B8	螺栓 Bolt	B7
B9	垫圈 Gasket	65Mn
B10	螺母 Bolt	2H
T1	预紧弹簧 Preload spring	Incone1X750
T2	防静电弹簧 Antistatic spring	SSS04

结构外形尺寸图 Structure Dimension Drawing

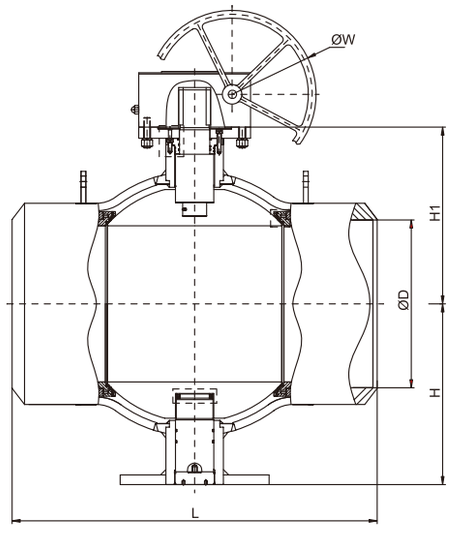


GB/T37827-2019 单位 Unit:mm

DN	PN	ϕD	标准通径系列 Standard bore series			全通径系列 Full bore series		
			L	H	H1	L	H	H1
150	16/25	150	390	190	220	520	195	287
200	16/25	201	520	195	287	635	245	337
250	16/25	252	635	245	337	689	270	360
300	16/25	303	689	270	360	762	300	435
350	16/25	334	762	300	435	838	361	460
400	16/25	385	838	361	460	915	420	510
450	16/25	436	915	420	510	991	475	565

古富隆集团 GiFLON
高性能供热全焊接球阀
High performance full welded ball valve for heat supply

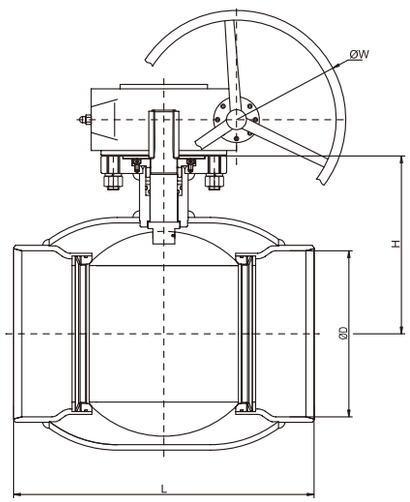
结构外形尺寸图 Structure Dimension Drawing



GB/T37827-2019 单位 Unit:mm

DN	PN	ϕD	标准通径系列 Standard bore series			全通径系列 Full bore series		
			L	H	H1	L	H	H1
400	16/25	385	838	375	405	915	415	495
450	16/25	436	915	415	495	991	465	495
500	16/25	487	991	415	495	1143	525	590
600	16/25	589	1143	525	590	1380	615	675
700	16/25	684	1380	615	675	1524	710	750
800	16/25	779	1524	710	750	1727	815	820
900	16/25	874	1727	815	820	1900	885	910
1000	16/25	976	1900	885	910	2000	1025	1025
1200	16/25	1166	2100	1020	1025	2430	1120	1165
1400	16/25	1360	2430	1120	1165	2680	1397	1360
1600	16/25	1556	2680	1397	1360	2950	1570	1585

结构外形尺寸图 Structure Dimension Drawing

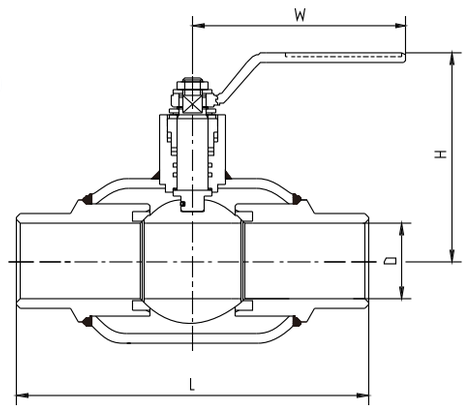


GB/T37827-2019 单位 Unit:mm

DN	PN	ϕD	标准通径系列 Standard bore series			全通径系列 Full bore series		
			L	H	W	L	H	W
150	16/25	150	350	190	250	400	210	250
200	16/25	201	400	217	250	520	255	300
250	16/25	252	520	256	300	630	320	300
300	16/25	303	630	303	300	650	350	300

古富隆集团 GiFLON
高性能供热全焊接球阀
High performance full welded ball valve for heat supply

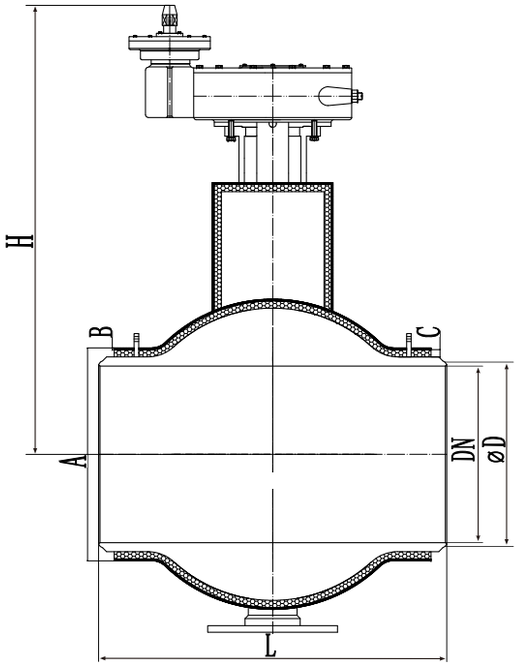
结构外形尺寸图 Structure Dimension Drawing

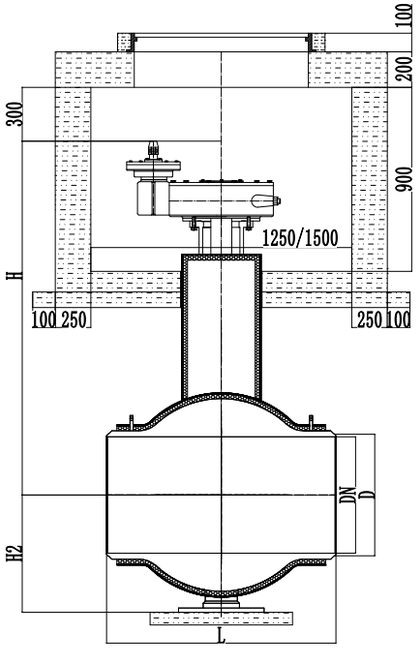


GB/T37827-2019 单位 Unit:mm

DN	PN	ϕD	标准通径系列 Standard bore series			全通径系列 Full bore series		
			L	H	H1	L	H	H1
15	16/25/40	10	210	86	145	230	88	145
20	16/25/40	15	230	88	145	230	90	145
25	16/25/40	20	230	90	145	260	95	145
32	16/25/40	25	260	95	145	360	100	180
40	16/25/40	32	360	100	180	300	105	250
50	16/25/40	40	300	105	250	300	115	250
65	16/25	50	300	115	250	300	135	280
80	16/25	65	300	135	280	325	155	280
100	16/25	80	325	155	280	325	170	420
125	16/25	100	325	170	420	350	205	570

预制保温直埋系列产品Direct bury product with preset thermal insulation





公称通径 Nominal size	标准通径系列 Standard bore series		全通径系列 Full bore series		外护管外径 Size of outer casing pipes	外护管壁厚 Thickness of outer casing pipes	保温层厚度 Thickness of thermal insulation layer	中心高度 Height of center
	ϕD	L	ϕD	L	A	B	C	H
150	159	390	159	520	250	4.5	41	根据客户要求 Depends on customers' requirement
200	219	520	219	635	315	5	43	
250	273	635	273	689	400	5.5	58	
300	325	689	325	762	450	6	56.5	
350	377	762	377	838	500	6.5	55	
400	426	838	426	915	560	7	60	
450	478	915	478	991	600	7.5	53.5	
500	529	991	529	1143	655	8	55	
600	630	1143	630	1380	760	9	56	
700	720	1380	720	1524	850	9.5	55.5	
800	820	1524	820	1727	960	10	60	
900	920	1727	920	1900	1055	11	56.5	
1000	1020	1900	1020	2100	1155	12	55.5	
1200	1220	2100	1220	2430	1400	14	76	
1400	1420	2430	1420	2680	1620	16	84	
1600	1620	2680	1620	2950	1830	18	87	

产品概述 Products brief

应用领域 Applications

API 6D高性能管线球阀是吉富隆(GIFLON)公司的高新产品，主要应用于天然气、石油、煤气、液化气等行业的管线输送系统作为管道开关控制装置，其中抗硫系列产品适用于含硫化氢、杂质多、腐蚀严重的天然气长输管线。

API 6DHigh-performance pipeline ball valve is GIFLON high-tech products, as switch control eqipment, it is mainly used in natural gas, oil, gas, liquefied natural gas pipeline transmission system and other industries, The anti-sulfur products are suitable for long-distance natural gas pipeline for the natural gas is containing hydrogen sulphide, impurities and high corrosion

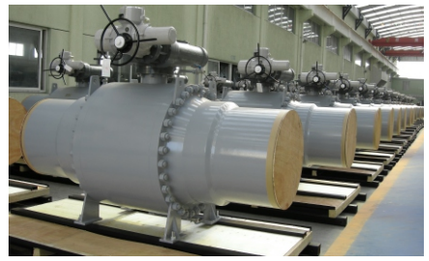
主要特点 Main Features

高性能管线球阀的阀体完全采用锻造结构，阀体和副阀体可以选用BB(螺栓连接)和WB(焊接连接)两种形式。而WB(焊接连接)和LWB(全焊接加长阀杆)结构的球阀主要适用于埋地使用，如右图所示。

Body of High-performance pipeline ball valve is forged structure.The connection type for body and vice-body can be BB (bolted connection) andWB (welded connection). The WB (welded connection) and the LWB (Fully-welded extended stem) structure isadopted for buried ball valves, as shown below.

高性能管线球阀系列，具有强度大、密封好、免维护、使用寿命长等特点。该系列球阀是采用了国际上先进的球阀设计制造技术，按照先进的材料标准选用高质量的材料并结合先进的材料成型锻造技术；同时总结了多年的球阀设计制造经验，采用先进的加工制造设备和生产加工工艺，通过一流的检测检验设备和手段，完善的质量保证管理体系和精益求精的生产制造理念保证了球阀的高性能。该系列球阀具有刚性大，强度好，无缺陷的锻造壳体；优良的密封性能，即使在最大压力差(全压差)下多次开关动作后，仍然能保证密封无泄漏，确保能安全地使用在输送石油、天然气、煤气等特殊介质的输送管线上。

High performance pipeline ball valve series has the features of High strength, perfect sealing, maintenance-free, long life and so on. This series ball valve adopts international advanced ball valve design and manufacturing technologies, selects high-quality materials in accordance with the standard and combines with advanced materials forging technology. At the same time, with the years of ball valve design and manufacturing experience, the use of advanced processing and manufacturing equipment and production and processing technology, through the first-class inspection and testing equipment and instruments, and perfect quality assurance management system can ensure the high performance and quality of valves. This series of valve has a high strength, defect-free forging body, excellent sealing performance, even at maximum pressure difference (full pressure difference), it will still be able to ensure the sealing without leakage, after frequent switching action to realize a safe usage in the conveying of oil, natural gas, coal gas, and other special medium transportation pipeline.



BB(螺栓连接)
BB(Bolt connection)

LWB(全焊接加长阀杆)
LWB(all-welded extended stem)

WB(焊接连接)
WB(Welding connection)

产品范围 Scope of Products

API 6D

NPS (in)	DN (mm)	CLASS 150 PN16～20			CLASS 300 PN 25～50			CLASS 400 PN 63			CLASS 600 PN 100			CLASS 900 PN 150			CLASS 1500 PN 250			CLASS 2500 PN 420		
		BB	WB	LWB	BB	WB	LWB	BB	WB	LWB	BB	WB	LWB	BB	WB	LWB	BB	WB	LWB	BB	WB	LWB
2	50																				N/A	N/A
3	80																				N/A	N/A
4	100																				N/A	N/A
6	150																				N/A	N/A
8	200																				N/A	N/A
10	250																				N/A	N/A
12	300																				N/A	N/A
14	350																				N/A	N/A
16	400																				N/A	N/A
18	450																				N/A	N/A
20	500																				N/A	N/A
22	550																			N/A	N/A	N/A
24	600																			N/A	N/A	N/A
26	650																			N/A	N/A	N/A
28	700																			N/A	N/A	N/A
30	750																			N/A	N/A	N/A
32	800																			N/A	N/A	N/A
34	850																			N/A	N/A	N/A
36	900																N/A	N/A	N/A	N/A	N/A	N/A
40	1000																N/A	N/A	N/A	N/A	N/A	N/A
42	1050																N/A	N/A	N/A	N/A	N/A	N/A
48	1200																N/A	N/A	N/A	N/A	N/A	N/A
56	1400													N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

古富隆集团 GIFLON
高性能管线球阀
High-performance pipeline ball valve

结构阐述 Explain for Structure

固定球 Trunnion

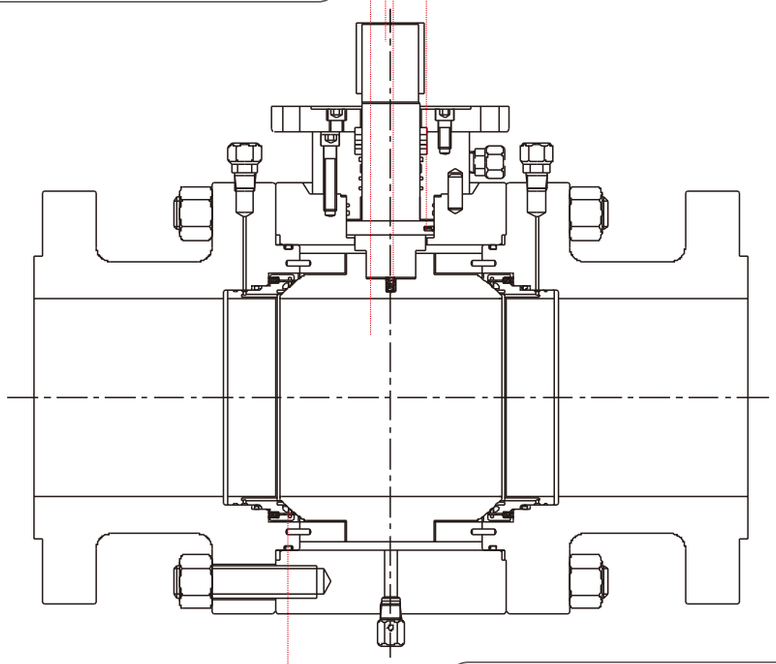
- 球体固定，浮动阀座可以沿着球阀流道轴线方向自由移动。
- 介质压力通过球体传递到轴承上，能有效降低转动扭矩。
- 在无压力或者低压力状态时，弹簧推动阀座紧贴在球体上，能有效的实现密封。
- 随着介质压力的增加，阀座在介质产生的推动作用下与球体更加紧密地贴合在一起，使密封更加可靠。
- Because the ball is fixed, floating seat can move freely in the axis direction of valve flow channel.
- Medium pressure can pass from the ball to the bearing, which can effectively reduce the torque valve.
- In the absence of pressure or low pressure condition, the springs push the seat tightly on the ball, which can effectively achieve the sealing
- With the increasing of medium pressure, seat is pushed tightly on the ball by the thrust generating from medium action, which makes the sealing much more reliable.

球体与阀杆分离
The separation design of ball and stem

球体与阀杆采用了分离设计，能使介质作用在球体上的压力对阀杆的影响减少到最低，使阀门扭矩达到最小。
The separation design of ball and stem can reduce the pressure by medium to the ball to the lowest and the same to the torque.

防静电设计 Anti-static

防静电弹簧的设计，能使阀门在任何情况下都能提供可靠的导电性能。
Anti-static spring design enables the valve in any case to be able to provide reliable electrical properties.



浮动的阀座 Floating seat

精确设计的阀座能保证在零压差下和全压差都能实现完全密封并产生最小的扭矩。
The precise designed valve seat ensure the complete sealing and min. torque under the zero or fully pressure difference.

阀门外部双重密封 Valve External Double sealing

在主副阀体及阀杆部位都设计为双重密封，能做大限度避免外漏。同时，第二重密封圈为防火材料，能在发生火灾时避免外漏。
The sealing of major body and stem are designed to be double sealing, and it can maximally avoid leakage. While the second seal adopts fireproofing material which can be able to avoid leakage in case of fire.

独特的阀座密封结构 The special structure of valve seat seal

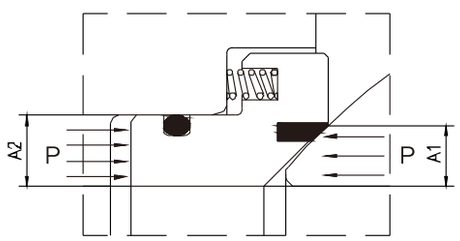
阀座设计为浮动结构，即阀座可以沿球阀的流体通道方向作往复运动，这样能保证阀座始终与球体贴合在一起。

（Ⅰ）适合不同场合和密封要求的阀座密封结构；

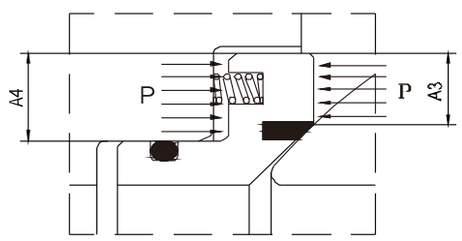
阀座可设计为标准的单活塞效应结构和特殊的双活塞效应结构。图1为单活塞效应的进口端密封结构；图2为单活塞效应的出口端密封结构；图3为特殊的双活塞效应阀座密封结构。

Floating structure means seat reciprocally can move along channel direction, so as to guarantee the ball and seat are tightly sealed.

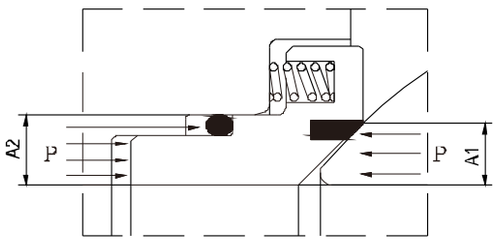
(Ⅰ) Valve seat structure suitable for different occasions and sealing requirements valvelve seat can be designed as a standard single-piston effect and specific dual piston effect. Figure 1 shows Single-piston effect-inlet-side seal; Figure 2 shows Dual Piston effect-outlet-side seal; Figure 3 shows special dual piston effect sealing structure.



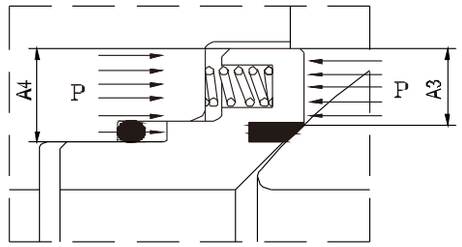
单活塞效应进口端密封 A2＞A1
Single-piston effect – inlet-side seal A2＞A1
图1 Fig.1



单活塞效应出口端密封 A4＞A3
Dual Piston effect – outlet-side seal A4＞A3
图2 Fig.2



特殊的双活塞效应A2＞A1为进口端密封
Specific dual piston effect-A2> A1 for inlet side seat



特殊的双活塞效应A4＞A3为出口端密封
Specific dual piston effect-A4> A3 for the outlet side seal

图3 Fig.3

（Ⅱ）阀座的多级密封结构 Multi-stage sealing structure of valve seat

如图4所示，在阀座圈上设置了两个弹性密封圈密封圈A和密封圈B，密封圈A通过阀座弹簧加载，使密封圈A的密封表面与球体表面紧密贴合，形成初始密封。当系统介质有压力时，由于面积差产生的活塞效应而产生的活塞力，使密封圈A产生弹性变形而使密封面与球体表面更加紧密的贴合，形成再次密封；同时由于密封圈A在介质压力下产生了弹性变形使密封圈B的密封表面也紧密贴合在球体表面上，形成第二级密封。当系统介质压力不断升高时，会产生巨大的压力作用在阀座密封圈A和密封圈B上，使两密封圈产生较大的弹性变形，这时阀座圈上的金属密封面与球体表面贴合，最终形成金属对金属的第三级密封。

As shown in Figure 4, two elastic sealing rings, sealing ring A and sealing ring B, are set on the valve seat ring. Sealing ring A is loaded by the valve seat spring, so that the sealing surface of sealing ring A fits tightly with the surface of the ball to form an initial sealing. When the medium is with pressure, a force generated by the piston effect caused by the area difference causes sealing ring A to have elastic deformation and make the sealing surface fit more tightly with the surface of the ball to form a secondary sealing; at the same time, because sealing ring A has elastic deformation under the medium pressure, the sealing surface of sealing ring B also fits tightly with the surface of the ball to form a secondary sealing. When the system medium pressure continues to increase, huge pressure will be on the valve seat sealing ring A and sealing ring B, causing the two sealing rings to have greater elastic deformation. At this time, the metal sealing surface on the valve seat ring fits with the surface of the ball, and finally forms a metal-to-metal third-stage sealing.

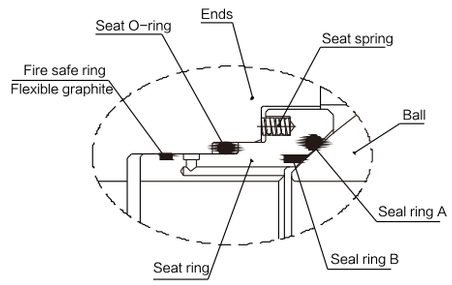


图4 Fig.4

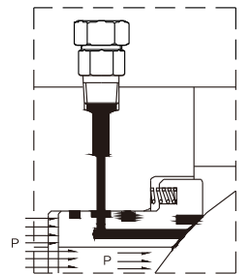


图5 Fig.5

（Ⅲ）阀座的辅助密封装置 The ancillary valve seat sealing device

可以根据球阀的实际使用工况、介质要求、密封要求等，选择是否带辅助密封装置。辅助密封装置就是安装在阀体外部的能阻止介质泄漏但又能在外力作用下注入密封油脂的单向阀。当有辅助密封要求时，在阀座圈上设计加工有与辅助密封装置相通的注脂槽和注脂孔，通过辅助密封装置注入密封油脂而使阀座与球体形成密封，达到阻止介质泄漏的目的。见图5。

Based on the actual service condition, medium requirement, sealing requirement, etc., the ancillary valve seat sealing device are optional parts for the valve. The ancillary valve seat sealing device is a one-way valve installed outside of valve that can prevent medium leakage and can inject sealing grease into valve body by external force. When the ancillary valve seat sealing device is required, valve seat ring shall be design and processed with injection groove and hole to connect the ancillary valve seat sealing device. Such equipment can prevent the medium by the sealing of injection of grease. Refer to Figure 5 for reference.

阀杆的多级密封结构 Multi-level structure of stem sealing

如图6所示，阀杆采用“O”形密封圈、柔性石墨填料以及注入密封油脂而实现多级密封：“O”形密封圈实现阀杆第一级密封；可更换的柔性石墨填料通过填料压套及填料法兰的压缩实现阀杆第二级密封；在填料箱上安装有辅助密封阀杆注脂阀，且设计有与阀杆注脂阀相通的注脂孔及注脂槽，通过阀杆注脂阀注入密封油脂而实现阀杆处的第三级密封。

Figure 6 shows the stem multi-level sealing by adopting "O" ring, flexible graphite and grease injection; "O" ring achieves the first level stem sealing; Replaceable flexible graphite realizes the second level sealing by the compression of packing sleeve and packing flange; And the third evel sealing is realized by installing assisted sealing injection valve to the packing box, and by designing with the injection groove and hole to connect with the stem injection valve, which can inject grease.

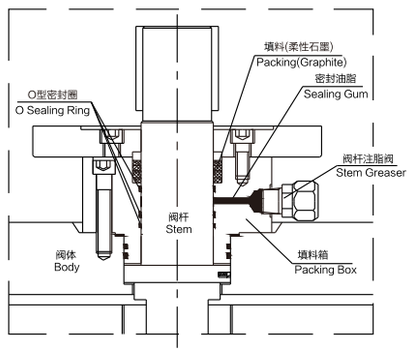


图6 Fig.6

独特而安全的阀座结构 unique and safe seat structures

球阀的防火设计执行API 607、API 6FA等标准的规定。根据工况和用户的需要，球阀可设计为防火结构。

Ball valve fireproof design is implementation of the API 607, API 6FA standards. According to service conditions and user requirements, ball valve can be designed as a fireproof structure.

(I) 阀座的防火结构 Fireproof structure of seat

如图7所示，在阀座上设置有材料为柔性石墨与不锈钢丝组合的复合防火圈，一旦发生火灾烧损软密封圈时，球阀阀座的防火圈和阀座圈通过弹簧加载与阀体形成活塞结构，将阀座圈的金属密封面推向球体表面，使阀座圈金属密封面紧密贴合在球体表面上形成密封，阻止介质从阀座处大量泄漏，防止火灾的进一步扩大。

As shown in figure 7, there is composite fireproof ring, which are combined with graphite and stainless steel wire in the seat. Once the soft ring is burnt out in case of a fire, the fireproof ring and seat ring will form a piston structure through the spring to load the valve body. That will push and closely contact the metal seal surface of the seat ring to the body surface, So as to prevent a lot of medium from leaking from the burnt place of the seat ring, and prevent the fire from expending.

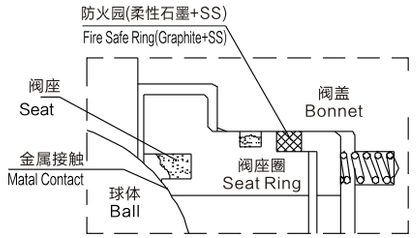
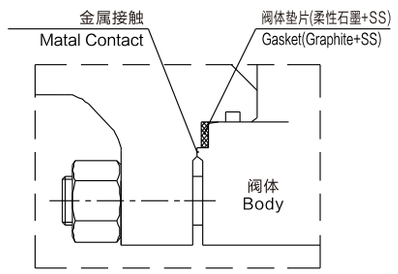


图7
Fig.7

(Ⅱ) 阀体盖的防火结构Fireproof structure (body and bonnet)

螺栓连接的阀体与阀盖密封垫片采用能耐火的柔性石墨夹不锈钢丝垫片，通过螺栓加载压缩密封垫片，最终保证阀体和阀盖间金属与金属接触使阀门能承受更高的载荷，同时也提高了阀门的防火安全性。而全焊接球阀由于阀体和阀盖是采用焊接结构，因此全焊接球阀从根本上杜绝了阀门壳体外漏的可能性，即使在严重的火灾情况下也不会发生泄漏。

The seal gasket for bolt connecting valve body and valve bonnet, are used fireproof stainless steel wire and flexible graphite gaskets. Gasket compression load through the bolts and ultimately, ensure the valve body and valve cover between the metal to metal contact, so that the valve can with stand more high load, but also improve the fire safety of the valve. But for the full welded ball valve, the valve body and cover is welded structure, that fundamentally eliminate the possibility of leakage of the valve housing. Even in the case of fire damage, there will be no leak.

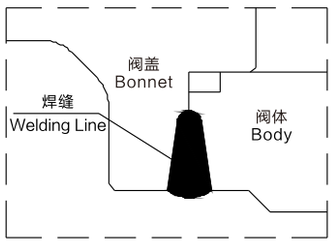


阀体阀盖螺栓连接结构
Bolt connection structure for body & cover

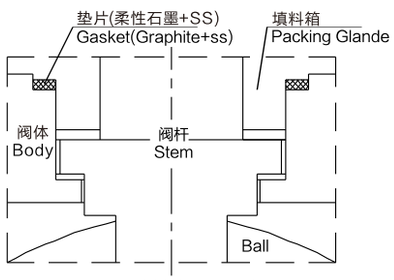
(Ⅲ)阀体与填料箱及阀杆的防火结构
Fireproof structure(body/packing and stem)

阀体与填料箱体连接垫片采用耐火的柔性石墨夹不锈钢丝垫片，阀杆填料采用柔性石墨，确保在发生火灾时球阀无外漏。

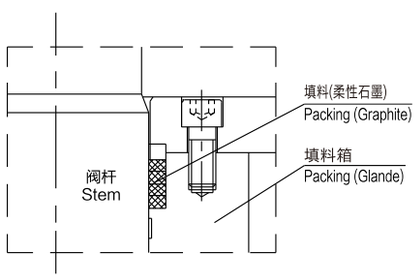
The body and packing connection gasket adopts fireproof stainless steel wire and flexible graphite gaskets. The stem packing adopts flexible graphite to ensure no leakage in case of fire.



阀体阀盖焊接结构
Bolt connection structure for body & bonnet



阀体与填料箱的防火结构
Fire proof structure for body & packing box



阀杆填料防火结构
Fire proof structure for stem packing

阀杆防飞出和防静电结构 Anti-blow out and anti-static structure of stem

如图8所示，阀杆头部设计为凸台形式的大小头结构，用填料箱体将阀杆头部压牢，当阀腔体内异常升压时阀杆不会喷出。在操作阀门时，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，为防止静电火花，在阀门的阀杆上设置防静电装置，将积聚在球体上的电荷导出。

As figure 8 shows, the stem head is designed to convex forms with a big and small head structure. And it is hold tightly by the packing box so that the stem will not blow out when the cavity pressure increasing abnormally, during the valve operation, the friction of the ball and seat will cause static, which will gather on the ball. In order to prevent static sparks, we set a stem anti-static device to derive the electric charge gathering on the ball.

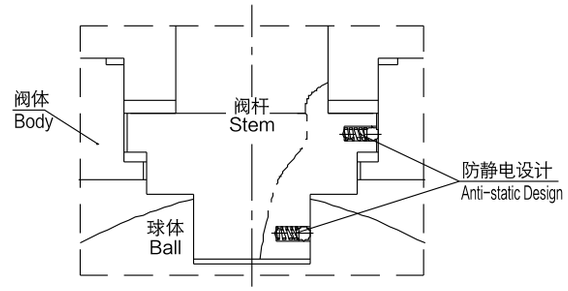
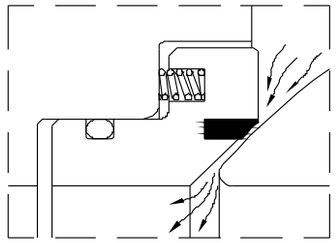


图8
Fig.8

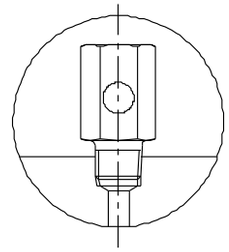
自动泄压结构 Automatic pressure relief structure

当中腔压力出现异常升高现象时，单活塞效应阀座的球阀具有自动泄压功能；而特殊的双活塞效应阀座的球阀则是通过安装在阀体上的附加泄压装置进行自动泄压。

When the cavity pressure is increasing abnormally, the single-piston seat can release the pressrue by the pressure-relief device installed on valve body; While the specific double-seat piston effect of the valve seat have automatic pressure relief function through the additional pressure relief devices installed on the valve body.



阀座自动泄压
Automatic pressure relief byseat

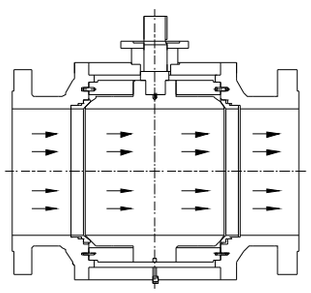


阀体上的附加泄压装置
Automatic pressure relief by accessory on Body

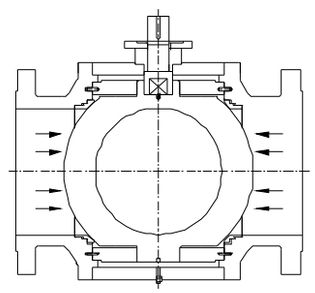
双阻塞和双排放(DBB)结构 Double Block and Bleeding Structure

所有的球阀都具有阻塞和双排放(DBB)结构，即当球阀在完全打开和完全关闭的情况下，球阀都可以通过阀体的泄放装置排泄阀体中腔的积滞物。

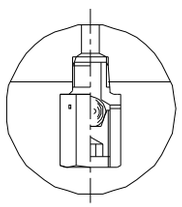
This ball valve has Double Block and Bleeding Structure, the sediments in the valve can be drained out through bleeding device in the body when the ball valve is fully open or closed.



完全打开
fully open



完全关闭
fully close

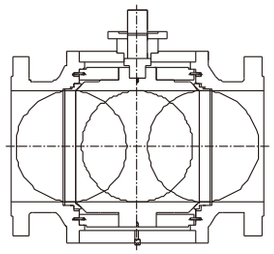


泄放装置
bleed device

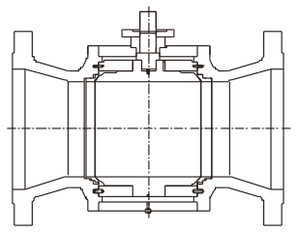
全通径结构及缩径结构 Full-bore structure and reduced-bore structure

为满足用户的不同需求，球阀产品有全径和缩径两种系列。全通径系列球阀的流道内径与管道内径一致，这样便于管线清扫；而缩径系列球阀的体积、重量等相对全径系列的球阀更小、更轻，因此，缩径系列球阀的应用十分广泛，前景也很广阔。

In order to meet the customers' various requirement, the ball valve has two series, full-bore structure and reduced-bore. For the full-bore structure, the bore diameter is equal to the pipe's, so as to clean the pipe much easier. For the reduced-bore, compared with the same size of full-bore structure, it has smaller size and lighter weight, so it is also used widely.



全通径
Full-bore



缩径
Reduced-bore

阀门驱动 valve driven

手动操作的阀门可提供带手柄和带手操器两种形式。手柄操作的阀门被限制在小于或等于以下口径：4"-Class 150； 4"-Class 300；3"-Class600；3"-Class900；2"-Class1500；1"-Class2500。

本公司可提供电动、气动、液动以及气-液联动操作装置的阀门，其连接法兰为ISO5211标准。

We can supply two types of manual operated valves, one with hand level and the other on with hand operation device. The size of hand level operation valve is limited to 4"-Class 150； 4"-Class 300；3"-Class600；3"-Class900；2"-Class1500；1"-Class2500。

We can also supply valves driven by electrical actuator, pneumatic hydraulic and hydro- pneumatic actuator, The connection flange is according to ISO5211

产品规范 Product Specification

设计规范 Design Spec	结构长度 Face to Face	连接法兰 Flange End	试验与检验 Test & Check	压力-温度 Pressure-Temp	焊接端 Weld Ends	产品标识 Marking
API 6D	API 6D	ASME B16.5, DIN, JIS, GB, JB etc.	API 6D	ASME B16.34	ASME B31.4、B31.8、B16.25	MSS SP-25

加长阀杆设计 Extended Stem Design

我们可以根据客户的具体要求对球阀阀杆进行加长(即埋地球阀)。阀杆的加长长度无具体的限制规定，但是必须在订货时予以明确。

We can extend the the ball valve stem according to the customer specific requirement(underground ball valve). No specific restriction for the length of the extended stem, but it must be specified before signing the order.

主要特点 Main Characteristics

全焊接加长阀杆设计的API 6D球阀LWB型球阀主要适用于埋地使用：阀门主体埋于地面之下，阀门的操作装置及阀门附件 (辅助密封装置、排气/超压保护装置、排泄装置)通过加长而置于地面之上，操作者能在地面上十分方便地对球阀进行开关操作以及使用阀门的附件装置。操作装置可以选用手动(蜗轮蜗杆驱动)、气动、液动、气-液联动以及电动装置，而高性能智能型的气-液联动、电-液联动球阀可按照管路系统的实际使用情况或用户要求，将球阀设计为管道的启闭装置或管线破裂紧急救护装置(带管线破裂紧急切断系统)。其中智能型的气-液联动球阀是一种自力式球阀，无须外加能源，利用管道自身介质的压力来驱动阀门动作，实现球阀的开启或关闭。

LWB ball valve is a type of API 6D fully welded ball valve with extended stem. It is mainly applied understand. Its valve body is buried understand while the operation device and accessories (assisted sealing device, exhaust/over pressure protection device, bleeding device) are above the groud by extended stem, which enable the user to operate the valve easily. This type of valve can be driven by hand (worm gear), pneumatic, hydraulic, pneumatic-hydraulic linked and electrical actuator. Moreover, according to actual service condition and end user's special requirements, high performance, intelligent hydro-pneumatic and hydro-electrical ball valve can be designed as the switch device or emergency device (with emergency shut down system). The intelligent hydro-pneumatic ball valve is a type of self-operation valve which can open or close by medium pressure in pipeline without extra assistance.

古富隆集团 GIFLON
高性能管线球阀
High-performance pipeline ball valve

阀杆加长尺寸(图9) Extended Stem size

根据客户的具体要求，可将球阀的阀杆按照客户的要求加长。加长阀杆长度无具体的限制规定，但必须提前予以明确。

The stem can be extended according to the customer's requirement. No specific restriction for the length of the extend stem, but it must be specified before signing the order.

过渡短管(袖管)(图10) Transit short pipe(sleeve pipe)

只要按照操作和安装说明，本公司的全焊接埋地球阀不需要过渡短管(袖管)。然而，如果客户有袖管要求时，本公司提供以下两种选择：

A 袖管为锻件，在终加工前焊接到阀盖端基材上。球阀与袖管组装在一起，袖管的选择可至200mm。

B 袖管为管路的一部分，其压力等级与规格与管路相同，球阀按照标准进行加工和检测，完成后再将袖管焊上。在此项选择中袖管的尺寸不受限制，除非是由于运输方面的原因。但是，如果选择非标准等级或规格的管材，则最好由客户自己提供材料。

As long as following the instruction of the operation and installation, our fully-welded underground ball valve do not need the transit short pipe (sleeve pipe). If the customer needs the sleeve pipe, we can provide the following two choices:

A.forged steel sleeve pipe, welded on the basic material of the bonnet side before finishing, installed with the ball valve, the length can be up to 200mm.

B.as a part of the pipeline, the pressure grade and the specification of the sleeve pipe is equal to the pipeline. It is welded on the valve after the valve produced and inspected according to the standard. No size restriction, unless the shipment reasons. It is better that the customer provides the material if the grade and size is not standardized.

附属配件(图11) Accessories

本公司根据客户的要求，可随球阀提供附属配件，如：排放管，泄流孔，辅助密封注脂管等。

We can supply the accessories according to the customer requirement. For example discharge pipe, bleed port, assistant grease injecting pipe, and so on.

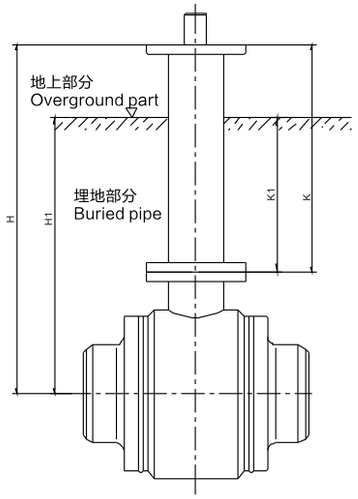


图9
Fig.9

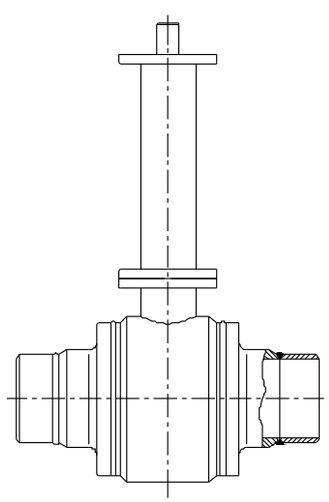


图10
Fig.10

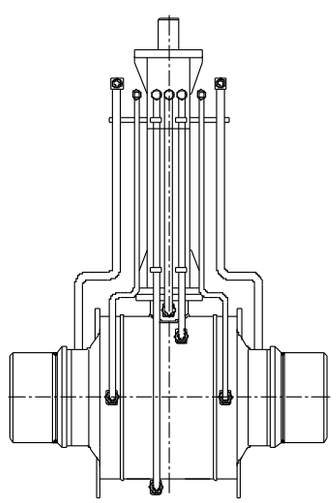
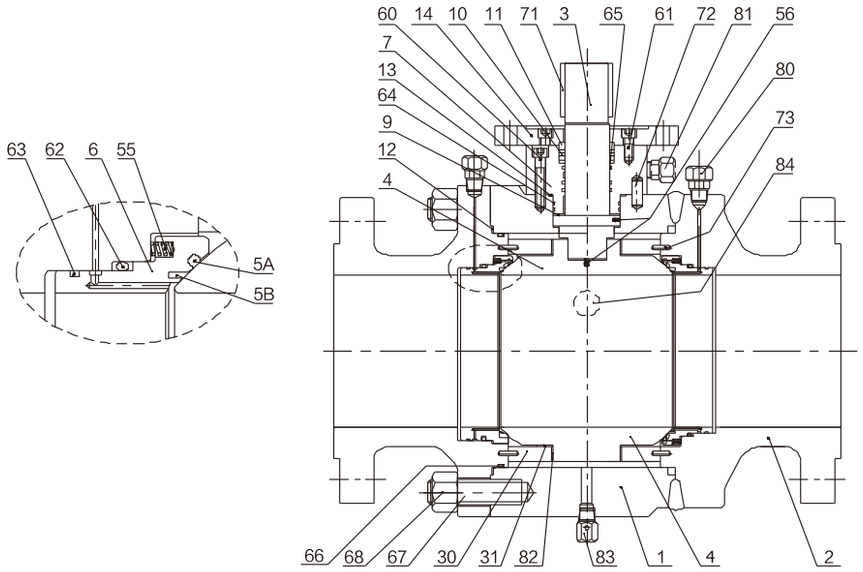


图11
Fig.11

主要零部件材料 Main Part Material



序号 No.	零件名称 Part Name	标准设计 Standard Design	低温设计 Low Temp. Design	序号 No.	零件名称 Part Name	标准设计 Standard Design	低温设计 Low Temp. Design
1	阀体 Body	ASTM A105	ASTM A350 LF2-M	61	螺钉 Bolt	ASTM A193 B7/B7M	ASTM A320 L7
2	阀盖 Bonnet	ASTM A105	ASTM A350 LF2-M	62	O形圈 O-Ring	Viton	HNBR
3	阀杆 Stem	ANSI 4410+ENP	ANSI 4410+ENP	63	防火圈 Fire-safe Ring	柔性石墨复合圈 Soft graphite	
4	球体 Ball	ASTM A105+ENP	ASTM A350 LF2+ENP	64	O形圈 O-Ring	Viton	HNBR
5A	阀座 Seat	VITON	VITON	65	O形圈 O-Ring	Viton	HNBR
5B	阀座 Seat	PTFE/NYLON/DEVLON/PEEK		66	O形圈 O-Ring	Viton	HNBR
6	阀座圈 Seat Ring	ASTM A105/A322 4140+ENP		67	螺柱 Bolt	ASTM A193 B7/B7M	ASTM A320 L7
7	填料函 Packing Chamber	ASTM A105/A322 4140+ENP		68	螺母 Nut	ASTM A194 2H/2HM	ASTM A194 4
9	阀杆垫片 Stem Gasket	RPTFE	RPTFE	71	键 Key	ASTM A322 Gr.4140	ASTM A322 Gr.4140
10	填料 Packing	PTFE/ Graphite	PTFE/ Graphite	72	定位销 Locating Pin	ASTM A322 Gr.4140	ASTM A322 Gr.4140
11	填料压套 Packing Gland	ASTM A105+ENP	ASTM A350 LF2+ENP	73	定位销 Locating Pin	ASTM A322 Gr.4140	ASTM A322 Gr.4140
12	阀体垫片 Body Gasket	SS+Graphite	SS+Graphite	80	阀座注脂阀 Seat Injection Valve	组件 (CS+ENP) Combination(CS+ENP)	
13	垫片 Gasket	SS+Graphite	SS+Graphite	81	阀杆注脂阀 Stem Injection Valve	组件 (CS+ENP) Combination(CS+ENP)	
14	顶法兰 TOP Flange	ASTM A105	ASTM A350 LF2	82	轴承 Bearing	SS+PTFE	SS+PTFE
30	支撑板 Supporting Board	ASTM A105	ASTM A350 LF2/A105	83	排污阀 Drainage Valve	SS组件 Combination	Ss组件 Combination
31	垫片 Gasket	Ч Component elements		84	排气阀 Vent Valve	Ss组件 Combination	Ss组件 Combination
55	阀座弹簧 Seat Spring	ASTM B637 Inconel X750		85	操作装置 Actuator	外购组合件 Outsourcing components	
56	防静电弹簧 Anti-static Spring	ASTM B637 Inconel X750		90	铭牌 Name Plate	SS	SS
60	螺钉 Bolt	ASTM A193 B7/B7M	ASTM A320 L7				
适用介质 Applicable Medium		天然气、石油、煤气等 Natural gas, oil, coal gas, etc.		适用介质 Applicable Medium		天然气、石油、煤气等 Natural gas, oil, coal gas, etc.	
适用温度 Applicable Temp.		-29℃～150℃	-46 150	适用温度 Applicable Temp.		-29℃～150℃	-46 150

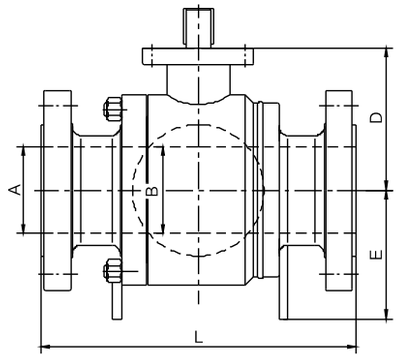
注：1、以上表中材料为常用的材料配置组合。
2、可以根据球阀实际使用的工况或客户需求而采用其他材质配置。
3、CS=碳钢；AS=合金钢；SS=不锈钢。

Notes: 1. The above materials are conventional material combinations.
2. Other material combinations may be used according to practical application conditions or customers' requirements.
3. CS=Carbon Steel; AS=Alloy Steel; Stainless Steel

古富隆集团 GIFLON
高性能管线球阀
High-performance pipeline ball valve

主要外形连接尺寸 Main connection dimensions

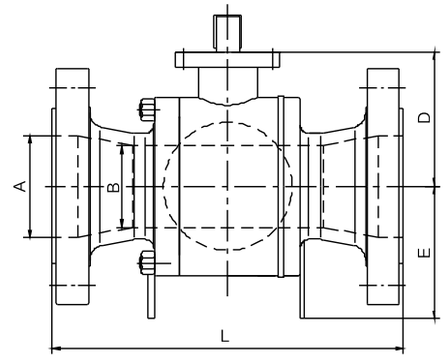
Class 150Lb/PN1.6~2.0MPa



全通径 Full bore

单位：inch

规格Spec.	A	B	L-RF	L-WE	D	E
2	1.93	1.93	7.0	8.5	4.17	4.02
3	2.91	2.91	8.0	11.13	6.18	4.96
3X2	2.91	1.93	8.0	11.13	4.17	4.02
4	3.94	3.94	9.0	12.0	7.80	6.42
4X3	3.94	2.91	9.0	12.0	6.18	4.96
6	5.91	5.91	15.5	18	9.72	7.36
6X4	5.91	3.94	15.5	18	7.80	6.42
8	7.91	7.91	18	20.5	11.02	8.82
8X6	7.91	5.91	18	20.5	9.72	7.36
10	9.92	9.92	21	22	12.6	10.94
10X8	9.92	7.91	21	22	11.02	8.82
12	11.93	11.93	24	25	13.27	12.05
12X10	11.93	9.92	24	25	12.6	10.94
14	13.15	13.15	27	30	14.72	13.15
14X12	13.15	11.93	27	30	13.27	12.05
16	15.16	15.16	30	33	16.06	14.09
16X14	15.16	13.15	30	33	14.72	13.15
18	17.17	17.17	34	36	17.28	15.35
18X16	17.17	15.16	34	36	16.06	14.09
20	19.17	19.17	36	39	19.37	17.09
20X16	19.17	15.16	36	39	16.06	14.09
20X18	19.17	17.17	36	39	17.28	15.35
22	21.18	21.18	40	43	20.79	18.78
22X18	21.18	17.17	40	43	17.28	16.35
24	23.19	23.19	42	45	23.15	20.59
24X20	23.19	19.17	42	45	19.37	17.09
26	24.92	24.92	45	49	24.69	22.2
26X22	24.92	21.18	45	49	20.79	18.78
28	26.93	26.93	49	53	25.35	25.91
28X24	26.93	23.19	49	53	23.15	20.59
30	28.94	28.94	51	55	27.20	27.72
30X24	28.94	23.19	51	55	23.15	20.59
32	30.67	30.67	54	60	29.21	29.37
32X26	30.67	24.92	54	60	24.69	22.2
32X28	30.67	26.93	54	60	25.35	25.91
34	32.68	32.68	58	64	29.88	30.43
34X28	32.68	26.93	58	64	25.35	25.91
36	34.41	34.41	60	68	31.97	31.77
36X30	34.41	28.94	60	68	27.20	27.72
40	38.43	38.43	69	77	35.43	35.35
42	40.16	40.16	70.47	82	37.13	36.89
48	45.91	45.91	78.54	94	43.19	41.97
56	53.54	53.54	97.99	97.99	51.26	49.33



缩径 Reduce bore

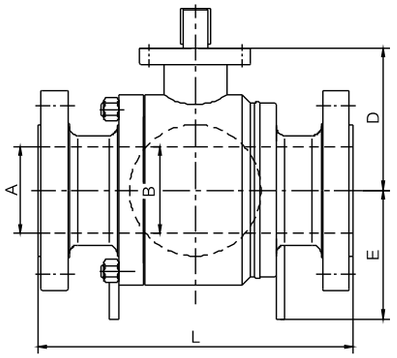
单位：mm

规格Spec.	A	B	L-RF	L-WE	D	E
50	49	49	178	216	106	102
80	74	74	203	283	157	126
80X50	74	49	203	283	106	102
100	100	100	229	305	198	163
100X80	100	74	229	305	157	126
150	150	150	394	457	247	187
150X100	150	100	394	457	198	163
200	201	201	457	521	280	224
200X150	201	150	457	521	247	187
250	252	252	533	559	320	278
250X200	252	201	533	559	280	224
300	303	303	610	635	337	306
300X250	303	252	610	635	320	278
350	334	334	686	762	374	334
350X300	334	303	686	762	337	306
400	385	385	762	838	408	358
400X350	385	334	762	838	374	334
450	436	436	864	914	439	390
450X400	436	385	864	914	408	358
500	487	487	914	991	492	434
500X400	487	385	914	991	408	358
500X450	487	436	914	991	439	390
550	538	538	991	1092	528	477
550X450	538	436	991	1092	439	390
600	589	589	1067	1143	588	523
600X500	589	487	1067	1143	492	434
650	633	633	1143	1245	627	564
650X550	633	538	1143	1245	528	477
700	684	684	1244	1347	644	658
700X600	684	589	1244	1347	588	523
750	735	735	1295	1397	691	704
750X600	735	589	1295	1397	588	523
800	779	779	1371	1524	742	746
800X650	779	633	1371	1524	627	564
800X700	779	684	1371	1524	644	658
850	830	830	1473	1626	759	773
850X700	830	684	1473	1626	644	658
900	874	874	1524	1728	812	807
900X750	874	735	1524	1728	691	704
1000	976	976	1753	1956	900	898
1050	1020	1020	1790	2083	943	937
1200	1166	1166	1995	2388	1097	1066
1400	1360	1360	2489	2489	1302	1253

注：球阀的其余尺寸和重量请联系本公司。Note: Please contact our Company for other dimensions and weights of the ball valve.

主要外形连接尺寸 Main connection dimensions

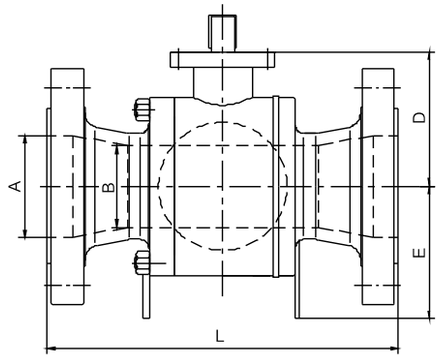
Class 300Lb/PN2.0~5.0MPa



全通径 Full bore

单位：inch

规格Spec.	A	B	L-RF	L-WE	D	E
2	1.93	1.93	8.5	8.5	4.17	4.02
3	2.91	2.91	11.1	11.1	6.18	4.96
3X2	2.91	1.93	8.5	11.1	4.17	4.02
4	3.94	3.94	12.0	12.0	7.80	6.42
4X3	3.94	2.91	12.0	12.0	6.18	4.96
6	5.91	5.91	15.9	18.0	9.72	7.36
6X4	5.91	3.94	15.9	18.0	7.80	6.42
8	7.91	7.91	19.8	20.5	11.02	8.82
8X6	7.91	5.91	19.8	20.5	9.72	7.36
10	9.92	9.92	22.4	22.0	12.6	10.94
10X8	9.92	7.91	22.4	22.0	11.02	8.82
12	11.93	11.93	25.5	25.0	13.27	12.05
12X10	11.93	9.92	25.5	25.0	12.6	10.94
14	13.15	13.15	30.0	30.0	14.72	13.15
14X12	13.15	11.93	30.0	30.0	13.27	12.05
16	15.16	15.16	33.0	33.0	16.06	14.09
16X14	15.16	13.15	33.0	33.0	14.72	13.15
18	17.17	17.17	36.0	36.0	17.28	15.35
18X16	17.17	15.16	36.0	36.0	16.06	14.09
20	19.17	19.17	39.0	39.0	19.37	17.09
20X16	19.17	15.16	39.0	39.0	16.06	14.09
20X18	19.17	17.17	39.0	39.0	17.28	15.35
22	21.18	21.18	43.0	43.0	20.79	18.78
22X18	21.18	17.17	43.0	43.0	17.28	16.35
24	23.19	23.19	45.0	45.0	23.15	20.59
24X20	23.19	19.17	45.0	45.0	19.37	17.09
26	24.92	24.92	49.0	49.0	24.69	22.2
26X22	24.92	21.18	49.0	49.0	20.79	18.78
28	26.93	26.93	53.0	53.0	25.35	25.91
28X24	26.93	23.19	53.0	53.0	23.15	20.59
30	28.94	28.94	55.0	55.0	27.20	27.72
30X24	28.94	23.19	55.0	55.0	23.15	20.59
32	30.67	30.67	60.0	60.0	29.21	29.37
32X26	30.67	24.92	60.0	60.0	24.69	22.2
32X28	30.67	26.93	60.0	60.0	25.35	25.91
34	32.68	32.68	64.0	64.0	29.88	30.43
34X28	32.68	26.93	64.0	64.0	25.35	25.91
36	34.41	34.41	68.0	68.0	31.97	31.77
36X30	34.41	28.94	68.0	68.0	27.20	27.72
40	38.43	38.43	77.0	77.0	35.43	35.35
42	40.16	40.16	82.0	82.0	38.1	37.4
48	45.91	45.91	85.4	85.4	43.3	43.3
56	53.54	53.54	108.0	108.0	50.6	50.0



缩径 Reduce bore

单位：mm

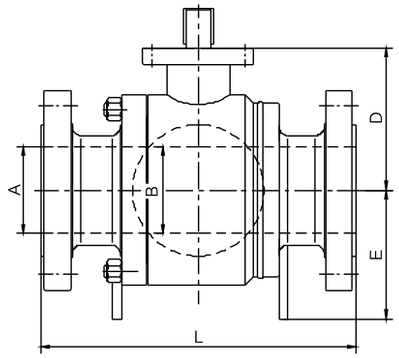
规格Spec.	A	B	L-RF	L-WE	D	E
50	49	49	216	216	106	102
80	74	74	283	283	157	126
80X50	74	49	283	283	106	102
100	100	100	305	305	198	163
100X80	100	74	305	305	157	126
150	150	150	403	457	247	187
150X100	150	100	403	457	198	163
200	201	201	502	521	280	224
200X150	201	150	502	521	247	187
250	252	252	568	559	320	278
250X200	252	201	568	559	280	224
300	303	303	648	635	337	306
300X250	303	252	648	635	320	278
350	334	334	762	762	374	334
350X300	334	303	762	762	337	306
400	385	385	838	838	408	358
400X350	385	334	838	838	374	334
450	436	436	914	914	439	390
450X400	436	385	914	914	408	358
500	487	487	991	991	492	434
500X400	487	385	991	991	408	358
500X450	487	436	991	991	439	390
550	538	538	1092	1092	528	477
550X450	538	436	1092	1092	439	390
600	589	589	1143	1143	588	523
600X500	589	487	1143	1143	492	434
650	633	633	1245	1245	627	564
650X550	633	538	1245	1245	528	477
700	684	684	1346	1346	644	658
700X600	684	589	1346	1346	588	523
750	735	735	1397	1397	691	704
750X600	735	589	1397	1397	588	523
800	779	779	1524	1524	742	746
800X650	779	633	1524	1524	627	564
800X700	779	684	1524	1524	644	658
850	830	830	1626	1626	759	773
850X700	830	684	1626	1626	644	658
900	874	874	1727	1727	812	807
900X750	874	735	1727	1727	691	704
1000	976	976	1956	1956	900	898
1050	1020	1020	2083	2083	968	950
1200	1166	1166	2170	2170	1100	1100
1400	1360	1360	2743	2743	1285	1270

注：球阀的其余尺寸和重量请联系本公司。Note: Please contact our Company for other dimensions and weights of the ball valve.

古富隆集团 GiFLON
高性能管线球阀
High-performance pipeline ball valve

主要外形连接尺寸 Main connection dimensions

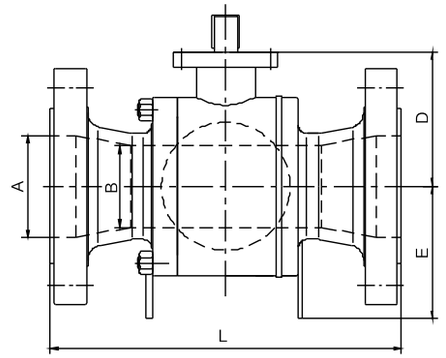
Class 600Lb/PN8.0~10.0MPa



全通径 Full bore

单位：inch

规格Spec.	A	B	L-RF	L-RFJ	L-WE	D	E
2	1.93	1.93	11.5	11.63	11.5	4.17	4.02
3	2.91	2.91	14.0	14.13	14.0	6.5	5.0
3X2	2.91	1.93	14.0	14.13	14.0	4.17	4.02
4	3.94	3.94	17.0	17.13	17.0	8.3	6.3
4X3	3.94	2.91	17.0	17.13	17.0	6.5	5.0
6	5.91	5.91	22.0	22.13	22.0	9.8	7.9
6X4	5.91	3.94	22.0	22.13	22.0	8.3	6.3
8	7.91	7.91	26.0	26.13	26.0	11.3	10.0
8X6	7.91	5.91	26.0	26.13	26.0	9.8	7.9
10	9.92	9.92	31.0	31.13	31.0	13.0	12.1
10X8	9.92	7.91	31.0	31.13	31.0	11.3	10.0
12	11.93	11.93	33.0	33.13	33.0	14.9	13.7
12X10	11.93	9.92	33.0	33.13	33.0	13.0	12.1
14	13.15	13.15	35.0	35.13	35.0	15.5	14.2
14X12	13.15	11.93	35.0	35.13	35.0	14.9	13.7
16	15.16	15.16	39.0	39.13	39.0	16.9	16.1
16X14	15.16	13.15	39.0	39.13	39.0	15.5	14.2
18	17.17	17.17	43.0	43.13	43.0	18.4	16.9
18X16	17.17	15.16	43.0	43.13	43.0	16.9	16.1
20	19.17	19.17	47.0	47.25	47.0	19.7	19.4
20X16	19.17	15.16	47.0	47.25	47.0	16.9	16.1
20X18	19.17	17.17	47.0	47.25	47.0	18.4	16.9
22	21.18	21.18	51.0	51.38	51.0	21.6	19.9
22X18	21.18	17.17	51.0	51.38	51.0	18.4	16.9
24	23.19	23.19	55.0	55.38	55.0	23.4	22.4
24X20	23.19	19.17	55.0	55.38	55.0	19.7	19.4
26	24.92	24.92	57.0	57.50	57.0	24.8	24.3
26X22	24.92	21.18	57.0	57.50	57.0	37.4	19.9
28	26.93	26.93	61.0	61.5	61.0	26.2	27.2
28X24	26.93	23.19	61.0	61.5	61.0	23.4	22.4
30	28.94	28.94	66.3	65.5	66.3	29.2	31.5
30X24	28.94	23.19	66.3	65.5	66.3	23.4	22.4
32	30.67	30.67	70.0	70.72	70.0	29.8	31.7
32X26	30.67	24.92	70.0	70.72	70.0	24.8	24.3
32X28	30.67	26.93	70.0	70.72	70.0	26.2	27.2
34	32.68	32.68	76.0	76.52	76.0	30.8	32.2
34X28	32.68	26.93	76.0	76.52	76.0	26.2	27.2
36	34.41	34.41	82.0	82.63	82.0	34.2	37.2
36X30	34.41	28.94	82.0	82.63	82.0	29.2	31.5
40	38.43	38.43	81.9	85.43	85.4	36.1	38.6
42	40.16	40.16	85.6	85.63	85.6	39.2	43.7
48	45.91	45.91	95.9	95.9	95.9	44.6	49.8
56	53.54	53.54	106.7	106.7	106.7	50.8	57.1



缩径 Reduce bore

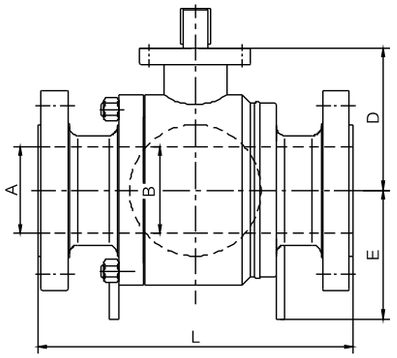
单位：mm

规格Spec.	A	B	L-RF	L-RFJ	L-WE	D	E
50	49	49	292	295	292	106	102
80	74	74	356	359	356	165	128
80X50	74	49	356	359	356	106	102
100	100	100	432	435	432	210	160
100X80	100	74	432	435	432	165	128
150	150	150	559	562	559	250	200
150X100	150	100	559	562	559	210	160
200	201	201	660	664	660	288	255
200X150	201	150	660	664	660	250	200
250	252	252	787	791	787	330	308
250X200	252	201	787	791	787	288	255
300	303	303	838	841	838	378	348
300X250	303	252	838	841	838	330	308
350	334	334	889	892	889	394	360
350X300	334	303	889	892	889	378	348
400	385	385	991	994	991	430	410
400X350	385	334	991	994	991	394	360
450	436	436	1092	1095	1092	467	430
450X400	436	385	1092	1095	1092	430	410
500	487	487	1194	1200	1194	500	492
500X400	487	385	1194	1200	1194	430	410
500X450	487	436	1194	1200	1194	467	430
550	538	538	1296	1305	1296	549	505
550X450	538	436	1296	1305	1296	467	430
600	589	589	1397	1406	1397	594	570
600X500	589	487	1397	1406	1397	500	492
650	633	633	1448	1460	1448	630	618
650X550	633	538	1448	1460	1448	549	505
700	684	684	1549	1562	1549	665	692
700X600	684	589	1549	1562	1549	594	570
750	735	735	1684	1697	1684	741	800
750X600	735	589	1684	1697	1684	594	570
800	779	779	1778	1794	1778	756	804
800X650	779	633	1778	1794	1778	630	618
800X700	779	684	1778	1794	1778	665	692
850	830	830	1930	1946	1930	782	817
850X700	830	684	1930	1946	1930	665	692
900	874	874	2083	2098	2083	869	945
900X750	874	735	2083	2098	2083	741	800
1000	976	976	2080	2170	2170	916	980
1050	1020	1020	2175	2175	2175	995	1110
1200	1166	1166	2435	2435	2435	1132	1265
1400	1360	1360	2710	2710	2710	1290	1450

注：球阀的其余尺寸和重量请联系本公司。Note: Please contact our Company for other dimensions and weights of the ball valve.

主要外形连接尺寸 Main connection dimensions

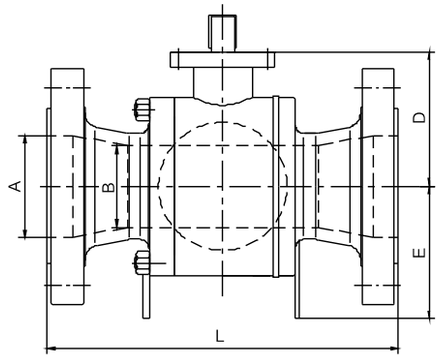
Class 900Lb/PN16.0MPa



全通径 Full bore

单位：inch

规格Spec.	A	B	L-RF	L-RTJ	L-WE	D	E
2	1.93	1.93	14.49	14.61	14.49	4.09	4.06
3	2.91	2.91	15.0	15.12	15.0	6.42	5.20
3X2	2.91	1.93	15.0	15.12	15.0	4.09	4.06
4	3.94	3.94	17.99	18.11	17.99	8.31	6.65
4X3	3.94	2.91	17.99	18.11	17.99	6.42	5.20
6	5.91	5.91	24.02	24.13	24.02	10.20	8.39
6X4	5.91	3.94	24.02	24.13	24.02	8.31	6.65
8	7.91	7.91	29.02	29.13	29.02	11.69	10.39
8X6	7.91	5.91	29.02	29.13	29.02	10.20	8.39
10	9.92	9.92	32.99	33.11	32.99	13.46	13.11
10X8	9.92	7.91	32.99	33.11	32.99	11.69	10.39
12	11.93	11.93	37.99	38.11	37.99	15.12	14.92
12X10	11.93	9.92	37.99	38.11	37.99	13.46	13.11
14	12.68	12.68	40.51	40.87	40.51	15.67	14.49
14X12	12.68	11.93	40.51	40.87	40.51	15.12	14.92
16	14.69	14.69	44.49	44.88	44.49	17.17	17.20
16X14	14.69	12.68	44.49	44.88	44.49	15.67	14.49
18	16.65	16.65	47.99	48.50	47.99	19.06	19.57
18X16	16.65	14.69	47.99	48.50	47.99	17.17	17.20
20	18.54	18.54	52.01	52.48	52.01	20.94	19.80
20X16	18.54	14.69	52.01	52.48	52.01	17.17	17.20
20X18	18.54	16.65	52.01	52.48	52.01	19.06	19.57
24	22.44	22.44	60.98	61.73	60.98	24.29	24.92
24X20	22.44	18.54	60.98	61.73	60.98	20.94	19.80
28	26.18	26.18	69.02	69.88	69.02	26.54	27.80
30	29.03	29.03	74.02	74.88	74.02	28.46	30.59
30X24	29.03	22.44	74.02	74.88	74.02	24.29	24.92
32	29.92	29.92	80.00	80.87	80.00	30.87	31.85
34	31.81	31.81	85.00	86.14	85.00	31.77	33.54
36	33.66	33.66	90.00	91.14	90.00	33.39	35.35
36X30	33.66	29.03	90.00	91.14	90.00	28.46	30.59



缩径 Reduce bore

单位：mm

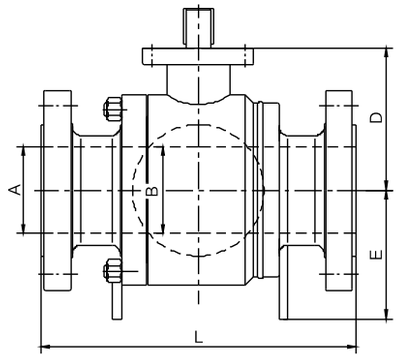
规格Spec.	A	B	L-RF	L-RTJ	L-WE	D	E
50	49	49	368	371	368	104	103
80	74	74	381	384	381	163	132
80X50	74	49	381	384	381	104	103
100	100	100	457	460	457	211	169
100X80	100	74	457	460	457	163	132
150	150	150	610	613	610	259	213
150X100	150	100	610	613	610	211	169
200	201	201	737	740	737	297	264
200X150	201	150	737	740	737	259	213
250	252	252	838	841	838	342	333
250X200	252	201	838	841	838	297	264
300	303	303	965	968	965	384	379
300X250	303	252	965	968	965	342	333
350	322	322	1029	1038	1029	398	368
350X300	322	303	1029	1038	1029	384	379
400	373	373	1130	1140	1130	436	437
400X350	373	322	1130	1140	1130	398	368
450	423	423	1219	1232	1219	484	497
450X400	423	373	1219	1230	1219	436	437
500	471	471	1321	1333	1321	532	503
500X400	471	373	1321	1333	1321	436	437
500X450	471	423	1321	1333	1321	484	497
600	570	570	1549	1568	1549	617	633
600X500	570	471	1549	1568	1549	532	503
700	665	665	1753	1775	1753	674	706
750	712	712	1880	1902	1880	723	777
750X600	712	570	1880	1902	1880	617	633
800	760	760	2032	2054	2032	784	809
850	808	808	2159	2188	2159	807	852
900	855	855	2286	2315	2286	848	898
900X750	855	712	2286	2315	2286	723	777

注：球阀的其余尺寸和重量请联系本公司。Note: Please contact our Company for other dimensions and weights of the ball valve.

古富隆集团 GiFLON
高性能管线球阀
High-performance pipeline ball valve

主要外形连接尺寸 Main connection dimensions

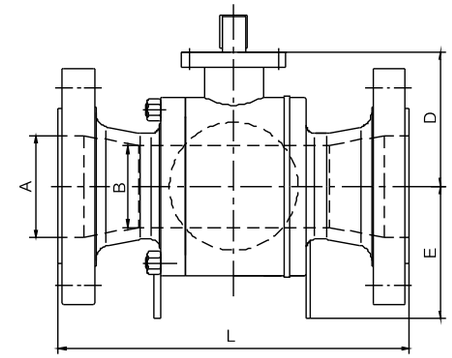
Class 1500Lb/PN25.0MPa



全通径 Full bore

单位：inch

规格Spec.	A	B	L-RF	L-RTJ	L-WE	D	E
2	1.93	1.93	14.49	14.61	14.49	4.17	4.09
3	2.91	2.91	18.50	18.62	18.50	6.57	5.04
3X2	2.91	1.93	18.50	18.62	18.50	4.17	4.09
4	3.94	3.94	21.50	21.61	21.50	7.05	6.69
4X3	3.94	2.91	21.50	21.61	21.50	6.57	5.04
6	5.67	5.67	27.76	27.99	27.76	10.24	9.17
6X4	5.67	3.94	27.76	27.99	27.76	7.05	6.69
8	7.56	7.56	32.76	33.11	32.76	11.97	11.42
8X6	7.56	5.67	32.76	33.11	32.76	10.24	9.17
10	9.41	9.41	39.02	39.37	39.02	14.29	13.86
10X8	9.41	7.56	39.02	39.37	39.02	11.97	11.42
12	11.30	11.30	44.49	45.11	44.49	16.42	16.73
12X10	11.30	9.41	44.49	45.11	44.49	14.29	13.86
14	12.40	12.40	49.49	50.24	49.49	17.20	16.77
14X12	12.40	11.30	49.49	50.24	49.49	16.42	16.73
16	14.17	14.17	54.49	55.39	54.49	18.70	19.41
16X14	14.17	12.40	54.49	55.39	54.49	17.20	16.77
18	15.94	15.94	58.15	59.01	60.15	22.17	23.94
18X16	15.94	14.17	58.15	59.01	60.15	18.70	19.41
20	17.91	17.91	65.51	66.38	65.51	24.29	25.29
20X16	17.91	14.17	65.51	66.38	65.51	18.70	19.41
20X18	17.91	15.94	65.51	66.38	65.51	22.17	23.94
24	20.87	20.87	70.15	71.25	80.43	27.48	28.50
24X20	20.87	17.91	70.15	71.25	80.43	24.29	25.29



缩径 Reduce bore

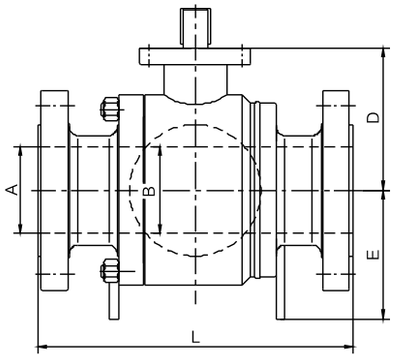
单位：mm

规格Spec.	A	B	L-RF	L-RTJ	L-WE	D	E
50	49	49	368	371	368	106	104
80	74	74	470	473	470	167	128
80X50	74	49	470	473	470	106	104
100	100	100	546	549	546	179	170
100X80	100	74	546	549	546	167	128
150	144	144	705	711	705	260	233
150X100	144	100	705	711	705	179	170
200	192	192	832	841	832	304	290
200X150	192	144	832	841	832	260	233
250	239	239	991	1000	991	363	352
250X200	239	192	991	1000	991	304	290
300	287	287	1130	1146	1130	417	425
300X250	287	239	1130	1146	1130	363	352
350	315	315	1257	1276	1257	437	426
350X300	315	287	1257	1276	1257	417	425
400	360	360	1384	1407	1384	475	493
400X350	360	315	1384	1407	1384	437	426
450	405	405	1477	1499	1537	563	608
450X400	405	360	1477	1499	1537	475	493
500	455	455	1664	1686	1664	617	645
500X400	455	360	1664	1686	1664	475	493
500X450	455	405	1664	1686	1664	563	608
600	530	530	1780	1810	2043	698	724
600X500	530	455	1780	1810	2043	617	645

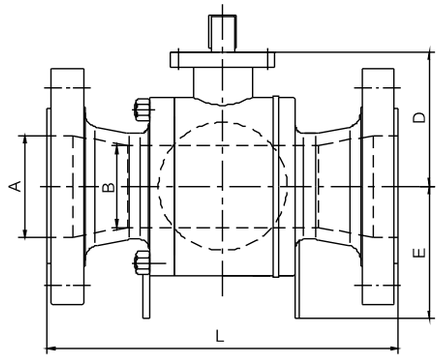
注：1、规格NPS≥18"(DN450)的球阀中部法兰连接采用螺栓连接，不适用焊接连接。
2、球阀的其余尺寸和重量请联系本公司。
Notes: 1. Bolt connection, other than welding connection, will be used for the middle flange connection of ball valves with NPS≥18"(DN450).
2. Note: Please contact our Company for other dimensions and weights of the ball valve.

主要外形连接尺寸 Main connection dimensions

Class 2500Lb/PN42.0 MPa



全通径 Full bore



缩径 Reduce bore

单位：inch

规格Spec.	A	B	L-RF	L-RTJ	L-WE	D	E
2	1.65	1.65	17.76	17.87	17.76	4.72	5.00
3	2.44	2.44	22.76	22.99	22.76	6.97	7.80
3X2	2.44	1.65	22.76	22.99	22.76	4.72	5.00
4	3.43	3.43	26.50	26.89	26.50	8.94	9.17
4X3	3.43	2.44	26.50	26.89	26.50	6.97	7.80
6	5.16	5.16	35.89	36.50	35.89	10.39	9.92
6X4	5.16	3.43	35.89	36.50	35.89	8.94	9.17
8	7.05	7.05	40.24	40.87	40.24	15.08	13.35
8X6	7.05	5.16	40.24	40.87	40.24	10.39	9.92
10	8.78	8.78	50.00	50.87	50.00	17.83	16.61
10X8	8.78	7.05	50.00	50.87	50.00	15.08	13.35
12	10.43	10.43	55.98	56.89	55.98	20.47	18.98
12X10	10.43	8.78	55.98	56.89	55.98	17.83	16.61

单位：mm

规格Spec.	A	B	L-RF	L-RTJ	L-WE	D	E
50	42	42	451	454	451	120	127
80	62	62	578	584	578	177	198
80X50	62	42	578	584	578	120	127
100	87	87	673	683	673	227	233
100X80	87	62	673	683	673	177	198
150	131	131	914	927	914	264	252
150X100	131	87	914	927	914	227	233
200	179	179	1022	1038	1022	383	339
200X150	179	131	1022	1038	1022	264	252
250	223	223	1270	1292	1270	453	422
250X200	223	179	1270	1292	1270	383	339
300	265	265	1422	1445	1422	520	482
300X250	265	223	1422	1445	1422	453	422

注：1、规格NPS≥18"(DN450)的球阀中部法兰连接采用螺栓连接，不适用焊接连接。
2、球阀的其余尺寸和重量请联系本公司。
Notes: 1. Bolt connection, other than welding connection, will be used for the middle flange connection of ball valves with NPS≥18"(DN450).
2. Note: Please contact our Company for other dimensions and weights of the ball valve.

API 6D 高性能管线球阀系列GWB型锻钢全焊接G型固定球阀
API 6D High Performance Pipeline Ball Valve Series GWB Forged Steel Full Weld G Type Trunnioned Ball Valve

GWB型高性能锻造全焊接G型球阀具有多种优点，如：结构简单、布局紧凑、重量更轻、强度更大以及易于操作等。所有型号的球阀都具有防火设计，不需要进行 任何维护。这种球阀性能可靠成本低廉，能够长时间无故障运行，是管道承包商的理想选用产品。

GWB full weld ball valve has various kinds of advantages, for example, it is simple in structure, light in weight, high in strength, easy in operation. All the types of ball valves are fire safe in design with no need of maintenance. This type of ball valve has reliable performance, low cost and long lifespan without malfunction. All these make it an ideal choice for pipeline contractor.

阀门结构图 Structure

固定球 Trunnion ball
- 球体固定，浮动阀座可以沿着球阀流道轴线方向自由移动。
- 介质压力通过球体传递到支撑板Teflon轴承上，能有效降低转动扭矩。
- 在无压力或低压力状态时，弹簧推动阀座使V形密封圈紧贴在球体上，能有效的实现密封。
- 随着介质压力的增加，阀座在介质产生的推力作用下与球体更加紧地密贴合在一起，使密封更加可靠。
- With trunnioned ball, the floating seat moves in axial direction.
- Torque can be effectively lowered when the medium pressure trasfers to the Teflon bearing by the valve body.
- With no pressure or low pressure, the spring shall push the seat, which makes the V seal ring cling to the body, enforcing reliable seal.
- With the increase of medium pressure, the seat shall, under the thrust force generated from the medium, compact closely with the ball together.

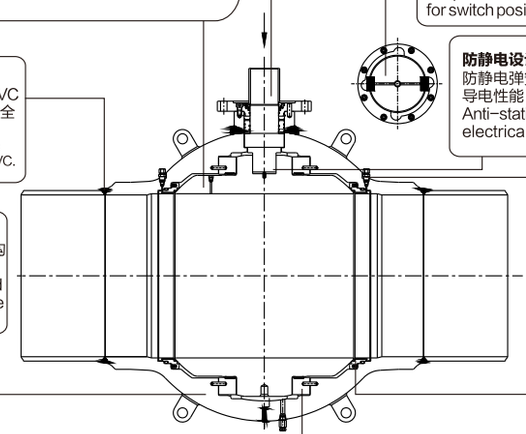
球体与阀杆分离 Sperated ball and stem
球体与阀杆采用了分离设计，能使介质作用在球体上的压力对阀杆的影响减少到最低，使阀门扭矩达到最小。
Separated ball and stem design makes the pressure of medium to the ball minimize the impact of the stem and minimize the torque of the ball valve.

阀杆键限位装置 Stem key limit device
精确定位阀门的位置状态，确保阀门的正确开关位置，并从根本防止误操作。
Pinpoint the location of valve status, to ensure the valve for switch position, and fundamental to prevent the misuse.

防静电设计 Anti-static design
防静电弹簧的设计能使阀门在任何情况下都能提供可靠的导电性能。
Anti-static spring design allows the valve to have good electrical conductivity in any case.

全焊接 Full welded
严格按照ASME B16.34及ASME BPVC第Ⅷ卷要求设计制造，实现真正的全焊接。
The design and manufacturing design is according to ASME B16.34 and ASME BPVC.

阀座密封脂注入阀
Seat grease injection valve
用于紧急情况时密封面的修复
It is used to repair the seal surface in case of emergency.



球形阀体 Spherial body
单层直焊接式球形阀体，使阀门结构更加紧凑并具有更大的强度和刚度。
The body is of single straight weld body, which makes the structure more compacted, greater strength and rigidity.

浮动的阀座 Floating seat
精确设计的阀座能保证在零压差下和全压差都能实现完全密封并产生最小的扭矩。
Precise seat design ensures full seal, generating lowest torque under zero and full differential pressure.

固定板结构 Trunnioned plate structure
球体采用上下固定板固定支撑，介质作用在球体上的力由固定板传递到左右两阀体上，使阀杆只承受开关球阀时的扭矩而不承受介质作用在球体上产生的弯矩，这样使球阀开关灵活，易操作。
Upper and lower trunnioned plate structure is used. Pressure of medium to the ball shall pass on left and right ball by trunnioend plate. That makes the stem only bear the torque under the open and close condition of ball valve not that of medium to ball. This structure makes ball valve easy in opening, closing and operating.

阀门外部多重密封 External multiple seal
左右阀体及阀杆轴套均采用焊接连接，完全消除了介质从阀门壳体外漏的可能性；阀杆部位设计为双重密封，第二重密封圈为防火材料，保证了阀杆处的密封可靠，在发生火灾时避免介质的外漏。
Left and right body and stem sleeve are weld connection. This makes it impossible for medium to leak from the body. The stem is double seal in design. The secondary seal is of fire safe material, which makes the stem seal reliable and no leakage in case of fire.

GWB型高性能锻造全焊接G型球阀除了具有API 6D高性能管线球阀的所有功能和优点外，还具有以下与众不同的特点：
GWB high performance full welded forged steel G type ball valve has its unique features besides the API 6D high performance pipeline ball valve advantages.

独特的阀体构造 Unique body structure

GWB型球阀具有完全焊接的阀体。阀体采用高质量的锻造材料，采用先进的锻造成形技术锻造成两个半球形体，在阀体的中部通过焊接整合成一体。这种焊接工艺使得RMD-GWB型球阀与众不同，并且使阀门的形状更加近 似于球形，因而阀门的结构更加紧凑，重量更轻，强度更大。同时，中部直接焊接还可以实现极高精度的GWB 型球阀的阀体制造，使球阀的阀座与球体之间能够完全充分的密封。这种完全焊接而不使用螺栓连接的阀体设计彻底 消除了外部泄露，使得GWB型球阀成为地下设施、海面作业平台以及海底设备最理想的产品。
The body of WBG Ball Valve is full welded, selects high quality forged material, and adopts the advanced forged forming technology to form two semi-spheres which are welded into a whole in the middle of the body. This welding technology differentiates the GWB ball valve from others, and makes the valve more spherically, so the valve structure is more compacter, lighter and stronger. Besides, the middle direct welding realize highly accurate valve body manufacturing, makes fully and completely sealing between the seat and ball. The full welding instead of bolts completely avoids the outside leakage, so GWB ball valve is the ideal product for under-ground, offshore working platform and under-sea equipments.

球体采用固定板或耳轴固定 Adopting fixed plates or trunnion to support the ball

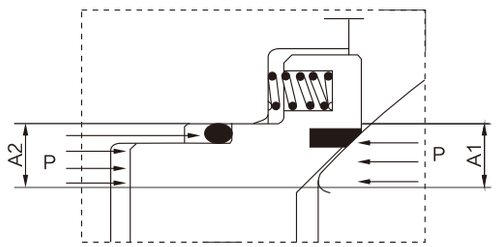
球体顶部和底部通过上下固定板或阀杆和耳轴支撑，并将球体精确地固定在球阀的中心，这样能实现完全的密封和精确的动作。采用固定板固定时介质作用在球体上的力通过固定板被分担到左右两阀体上，使阀杆不承受介质力产生的弯矩，而只是在开关球阀时转动球体所需要的扭矩；而安装在球体轴与固定板之间以及阀杆和耳轴之间的低摩擦聚四氟乙烯Teflon复合轴承可以吸收由于介质压力作用而导致的球体推移动作。这样的结构使GWB型球阀能实现动作平稳，操作容易，可以减少所要求的操作扭矩，因而可以使用较小型的执行机构，降低了成本。
The top and bottom of the ball is supported by upper and lower fixed plates or stem and trunnion, and the ball is accurately placed in the center of the ball valve to achieve complete seals and precise movements. When plate adopted, the force exerted by the medium to the ball is distributed via the plate to the left and right bodies, so that the stem does not bear the blending moment from the medium, but only the torque from the ball rotation during the opening/closing of the valve. The low-friction PTFE Teflon composite bearings installed between the ball axis and fixed plate and between the stem and the trunnion can absorb ball moving action caused by the pressure of the medium. This structure brings stable actions and easy operations for the WBG ball valves, and the required operation torque can be reduced, so smaller actuators can be used, and the cost is cut down.

独特的阀座密封结构 Unique seat sealing strcuture

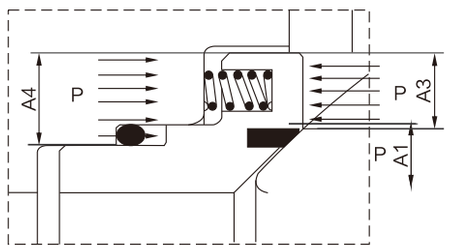
GWB型球阀的阀座均设计为浮动结构，即阀座可以沿球阀的流体通道方向作往复运动，这样能保证阀座始终与球体贴合在一起。
GWD type ball valve seat is floating structure, means the seat can move along the medium direction, so that the seat can fit against the ball all the time.

(I) 双活塞效应结构阀座 Double piston effect structure seat

阀座设计为特殊的双活塞效应结构，这样的阀座能保证介质从阀门任何方向进入阀门都能密封。如图12。
Seat design is special double pistons effect structure, it can ensure the seal wherever the medium flows into the ball valve.

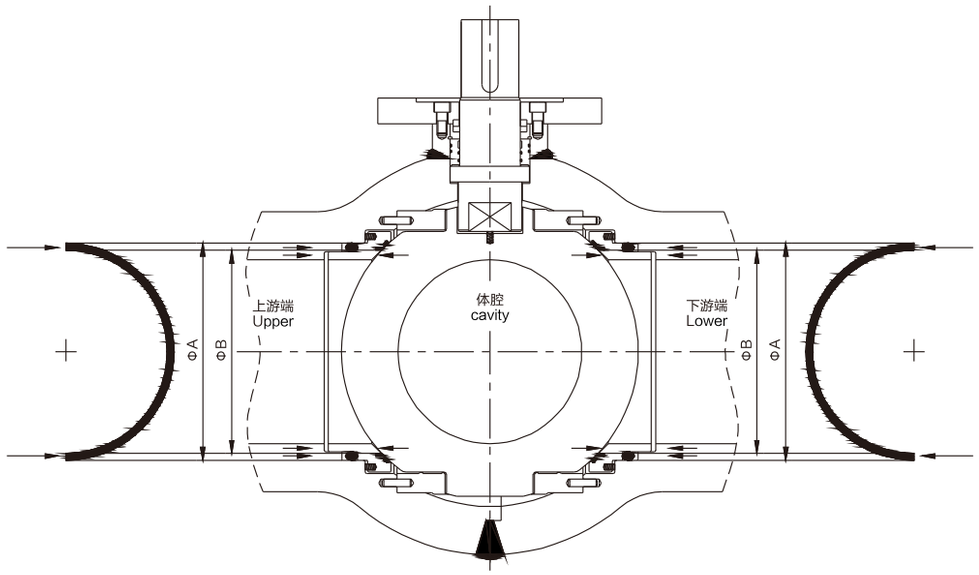


特殊的双活塞效应A2＞A1 为进口端密封
Special double piston effect A2＞A1 Inlet end seal

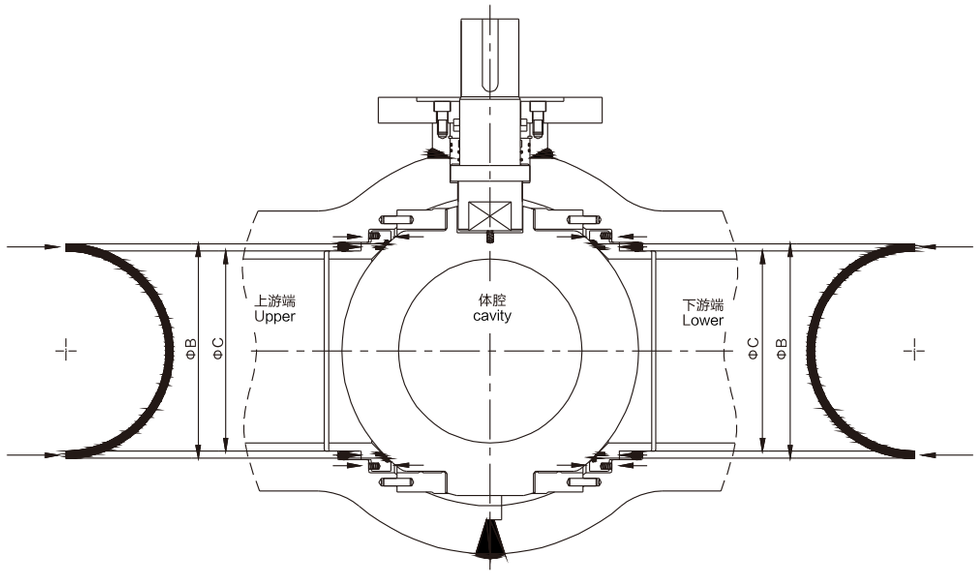


特殊的双活塞效应A4＞A3 为出口端密封
Special double piston effect A4＞A3 Outlet end seal

图12 Fig.12



介质从球阀的上游端和/或下游端进入阀门对阀座产生的活塞作用
Medium flowing into the valve from upstream and/or downstream brings piston effect.



球阀体腔内的介质内对阀座产生的活塞作用
Medium in cavity brings piston effect to the seat.

(Ⅱ) 阀座的多级密封结构 Multi-stage sealing structure of valve seat

如图13所示，在阀座圈上设置了两个弹性密封圈一密封圈A和密封圈B，密封圈A通过阀座弹簧加载，使密封圈A的密封表面与球体表面紧密贴合，形成初始密封。当系统介质有压力时，由于面积差产生的活塞效应而产生的活塞力，使密封圈A产生弹性变形而使密封面与球体表面更加紧密的贴合，形成再次密封；同时由于密封圈A在介质压力下产生了弹性变形使密封圈B的密封表面也紧密贴合在球体表面上，形成第二级密封。当系统介质压力不断升高时， 会产生巨大的压力作用在阀座密封圈A和密封圈B上，使两密封圈产生较大的弹性变形，这时阀座圈上的金属密封面 与球体表面贴合，最终形成金属对金属的第三级密封。

As shown in Figure 14, two elastic sealing rings, sealing ring A and sealing ring B, are set on the valve seat ring. Sealing ring A is loaded by the valve seat spring, so that the sealing surface of sealing ring A fits tightly with the surface of the ball to form . an initial sealing. When the medium is with pressure, a force generated by the piston effect caused by the area difference causes sealing ring A to have elastic deformation and make the sealing surface fit more tightly with the surface of the ball to form a secondary sealing; at the same time, because sealing ring A has elastic deformation under the medium pressure, the sealing surface of sealing ring B also fits tightly with the surface of the ball to form a secondary sealing. When the system medium pressure continues to increase, huge pressure will be on the valve seat sealing ring A and sealing ring B, causing the two sealing rings to have greater elastic deformation. At this time, the metal sealing surface on the valve seat ring fits with the surface of the ball, and finally forms a metal-to-metal third-stage sealing.

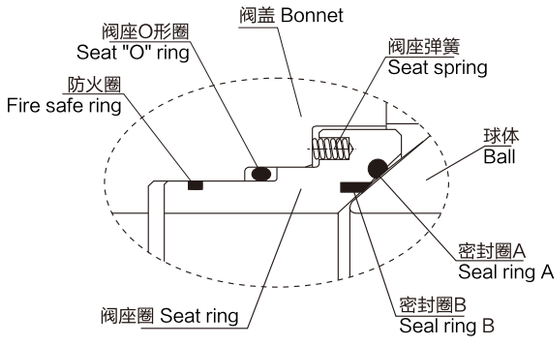


图13 Fig.13

(Ⅲ) 阀座的辅助密封装置 The ancillary valve seat sealing device

可以根据球阀的实际使用工况、介质要求、密封要求等，选择是否带辅助密封装置。辅助密封装置就是安装在阀体外部的能阻止介质泄漏但又能在外力作用下注入密封油脂的单向阀。当有辅助密封要求时，在阀座圈上设计加 工有与辅助密封装置相通的注脂槽和注脂孔，通过辅助密封装置注入密封油脂而使阀座与球体形成密封，达到阻止介质泄漏的目的。见图14。

Based on the actual service condition, medium requirement, sealing requirement, etc., the ancillary valve seat sealing device are optional parts for the valve. The ancillary valve seat sealing device is a one-way valve installed outside of valve that can prevent medium leakage and can inject sealing grease into valve body by external force. When the ancillary valve seat sealing device is required, valve seat ring shall be design and processed with injection groove and hole to connect the ancillary valve seat sealing device. Such equipment can prevent the medium by the sealing of injection of grease. Refer to Figure 14 for reference.

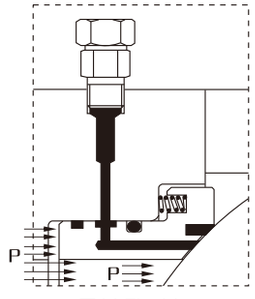


图14 Fig.14

古富隆集团 GIFLON
高性能管线球阀
High-performance pipeline ball valve

加长阀杆及袖管设计 Extension stem and sleeves design

吉富隆所有高性能管线球阀都可以根据用户的要求加长阀杆用于埋地使用。加长阀杆长度无具体的限制规定，但是必须在订货时予以明确以及相应的尺寸，如右图中的H和H1。

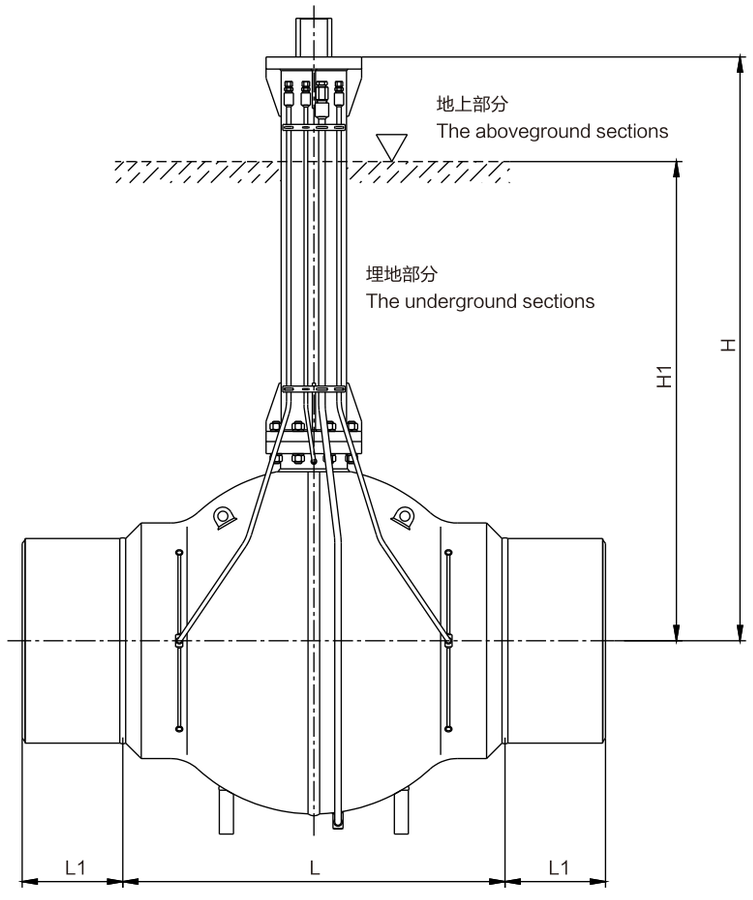
如果用户有袖管(过渡短管)要求时，吉富隆公司可以满足用户的要求，但必须在订货时予以明确，如尺寸(右图示中的L1)、材料、管材等级等内容。

吉富隆公司根据用户的要求，可随球阀提供附属配件，如：排放管、泄流管、辅助密封注脂管等，但必须在订货时予以明确。

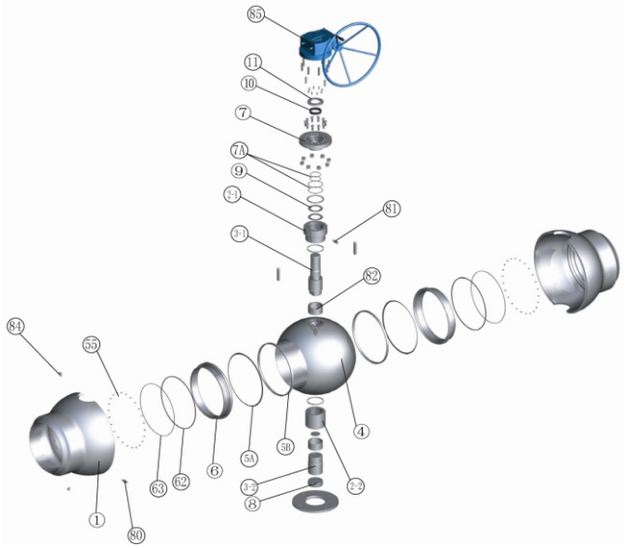
All GIFLON high performance pipeline ball valve can be of extension stem design to be used underground according to users' requirements. There are no special requirements for the length of extension stem, but the detailed length must be clearly confirmed when ordering, such as H and H1 in the right graphic.

If sleeve is required, GIFLON can meet clients' requirements, but the details of the sleeve must be clearly confirmed when ordering, such as dimension (L1 in the right graphic), material and sleeve pipe grade, etc.

GIFLON can supply ball valve accessories according to clients' requirements, such as: discharge tube, auxiliary sealing grease injection tubes, etc., but it must be clarified when ordering.



主要零部件材料 Main Part Material



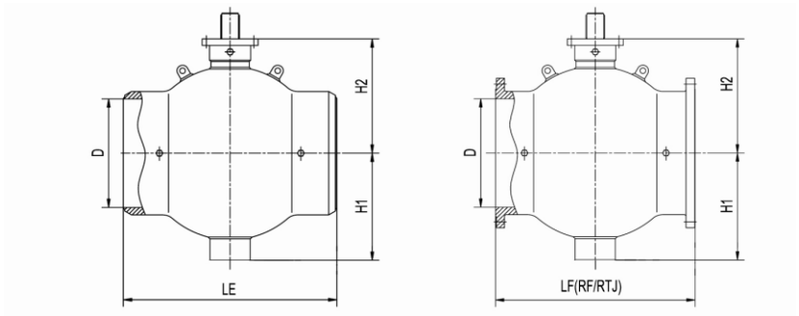
No.	零件名称 Spare Part	标准设计 Standard Design	低温设计 Low Temperature Design
1	阀体 Body	ASTM A105	ASTM A350 LF2-M
2-1	上轴套 Lower shaft sleeve	ASTM A105	ASTM A350 LF2-M
2-2	下轴套 Lower shaft sleeve	ASTM A105	ASTM A350 LF2-M
3-1	阀杆 Stem	ASTM A322 4140+ENP	ASTM A322 4140+ENP
3-2	耳轴 Trunnion	ASTM A322 4140+ENP	ASTM A322 4140+ENP
4	球体 Ball	ASTM A105+ENP	ASTM A350 LF2+ENP
5A	阀座密封圈A Seat seal ring A	VITON	VITON
5B	阀座密封圈B Seat seal ring B	PTFE/NYLON/DEVLON/PEEK	PTFE/NYLON/DEVLON/PEEK
6	阀座支撑圈 Seat bearing	ASTM A105/A322 4140+ENP	ASTM A350 LF2/A322 4140+ENP
7	填料函 Packing box	ASTM A105/A322 4140+ENP	ASTM A350 LF2/A322 4140+ENP
7A	O形密封圈 "O" seal ring	Viton	HNBR
8	底盖 Back cover	ASTM A105	ASTM A350 LF2-M
9	耳轴垫片 Trunnion gasket	PTFE	PTFE
10	填料 Packing	PTFE/ Graphite	PTFE/ Graphite
11	填料压套 Gland	ASTM A105+ENP	ASTM A350 LF2+ENP
55	阀座弹簧 Seat spring	ASTM B637 Inconel X750	ASTM B637 Inconel X750
62	阀座O形圈 Seat "O" ring	VITON	VITON
63	防火圈 Fire safe ring	柔性石墨复合圈 Flexible graphite composite ring	柔性石墨复合圈 Flexible graphite composite ring
80	阀座注脂阀 Seat grease injection	SS 组件 SS assembly part	SS 组件 SS assembly part
81	阀杆注脂阀 Stem grease injection	SS 组件 SS assembly part	SS 组件 SS assembly part
82	滑动轴承 Sliding bearing	SS+PTFE	SS+PTFE
84	排气阀 Vent valve	SS 组件 SS assembly part	SS 组件 SS assembly part
85	操作装置 Actuator	组件 Assembly part	组件 Assembly part
适用介质 Suitable Medium		天然气、石油、煤气等 Natural gas, oil, coal, etc	天然气、石油、煤气等 Natural gas, oil, coal, etc
适用温度 Suitable Temperature		29℃～150℃	46℃～150℃

注：1、以上表中材料为常用的材料配置组合。
2、可以根据球阀实际使用的工况或客户需求而采用其他材质配置。
3、CS=碳钢；AS=合金钢；SS=不锈钢。

Notes: 1. The above materials are conventional material combinations.
2. Other material combinations may be used according to practical application conditions or customers' requirements.
3. CS=Carbon Steel; AS=Alloy Steel; Stainless Steel

古富隆集团 GIFLON
高性能管线球阀
High-performance pipeline ball valve

主要外形连接尺寸 Main connection dimensions



Class 150Lb/PN1.6～2.0MPa 单位 Unit：inch

DN	D	LE	LRF	LRTJ	H1	H2
6	5.91	18	15.5	16	7.3	7.9
8	7.91	20.5	18	18.5	10	10.8
10	9.92	22	23	21.5	12	12.8
12	11.93	25	24	24.5	13.8	14.6
14	13.15	30	27	27.5	13.8	17.3
16	15.16	33	30	30.5	15.2	19.1
18	17.17	36	34	34.5	16.5	20.6
20	19.17	39	36	36.5	18.9	22.2
22	21.18	43	40	–	21.1	23.8
24	23.19	45	42	42.5	23	25.4
26	24.92	49	45	–	24.6	26.8
28	26.93	53	49	–	25.6	28.4
30	28.94	55	51	–	27	30.6
32	30.67	60	54	–	28.4	31.9
34	32.68	64	58	–	30.1	33.7
36	34.41	68	60	–	31.3	35.1
40	38.43	70	68	–	35.4	39
42	40.16	72	72	–	36.4	40.1
44	41.97	74	75	–	37.8	42
48	45.91	79.5	81	–	42.5	45.9
56	53.54	80.6	93	–	47.5	52.3

单位 Unit：mm

DN	D	LE	LRF	LRTJ	H1	H2
150	150	457	394	406	185	200
200	201	521	457	470	254	275
250	252	559	533	546	305	325
300	303	635	610	622	350	370
350	334	62	686	699	350	440
400	385	838	762	775	385	485
450	436	914	864	876	420	522
500	487	991	914	927	480	565
550	538	1092	1016	–	535	605
600	589	1143	1067	1080	585	645
650	633	1245	1143	–	625	680
700	684	1346	1245	–	650	721
750	735	1397	1295	–	685	777
800	779	1524	1372	–	720	810
850	830	1626	1473	–	765	855
900	874	1727	1524	–	795	891
1000	976	1780	1727	–	890	990
1050	1020	1830	1830	–	925	1030
1100	1066	1880	1905	–	960	1067
1200	1166	2020	2057	–	1080	1165
1400	1360	2048	2362	–	1205	1328

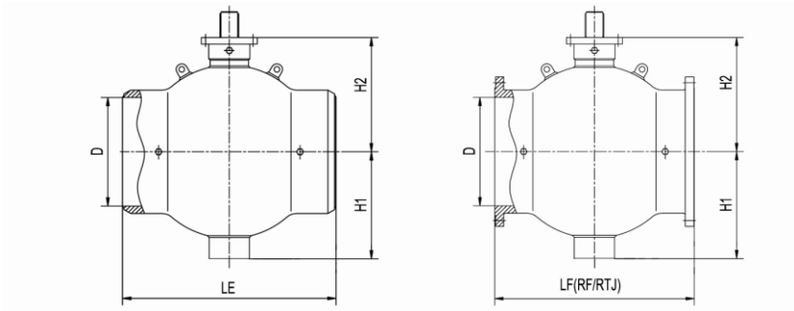
Class 300Lb/PN2.5～5.0MPa 单位 Unit：inch

DN	D	LE	LRF	LRTJ	H1	H2
6	5.91	15.9	15.9	16.5	7.3	7.9
8	7.91	20.5	19.8	20.4	10	10.8
10	9.92	22	22.4	23	12	12.8
12	11.93	25	25.5	26.1	13.8	14.6
14	13.15	30	30	30.6	13.8	17.3
16	15.16	33	33	33.6	15.2	19.1
18	17.17	36	36	36.6	16.5	20.6
20	19.17	39	39	39.8	18.9	22.2
22	21.18	43	43	43.8	21.1	23.8
24	23.19	45	45	45.9	23	25.4
26	24.92	49	49	50	24.6	26.8
28	26.93	53	53	54	25.6	28.4
30	28.94	55	55	56	27	30.6
32	30.67	60	60	61.1	28.4	31.9
34	32.68	64	64	65.1	30.1	33.7
36	34.41	68	68	69.1	31.3	35.1
40	38.43	70	71	–	35.4	39
42	40.16	72	74	–	36.4	40.1
44	41.97	75	77	–	37.8	42
48	45.91	79.5	84	–	42.5	45.9
56	53.54	80.6	98	–	47.5	52.3

单位 Unit：mm

DN	D	LE	LRF	LRTJ	H1	H2
150	150	403	403	419	185	200
200	201	521	502	518	254	275
250	252	559	568	584	305	325
300	303	635	648	664	350	370
350	334	762	762	778	350	440
400	385	838	838	854	385	485
450	436	914	914	930	420	522
500	487	991	991	1010	480	565
550	538	1092	1092	1114	535	605
600	589	1143	1143	1165	585	645
650	633	1245	1245	1270	625	680
700	684	1346	1346	1372	650	721
750	735	1397	1397	1422	685	777
800	779	1524	1524	1553	720	810
850	830	1626	1626	1654	765	855
900	874	1727	1727	1756	795	891
1000	976	1780	1803	–	890	990
1050	1020	1830	1880	–	925	1030
1100	1066	1905	1956	–	960	1067
1200	1166	2020	2134	–	1080	1165
1400	1360	2048	2489	–	1205	1328

主要外形连接尺寸 Main connection dimensions



Class 600Lb/PN10.0MPa 单位 Unit：inch

DN	D	LE	LRF	LRTJ	H1	H2
6	5.91	22	22	22.1	7.3	7.9
8	7.91	26	26	26.1	10	10.8
10	9.92	31	31	31.1	12	12.8
12	11.93	33	33	33.1	13.8	14.6
14	13.15	35	35	35.1	13.8	17.3
16	15.16	39	39	39.1	15.2	19.1
18	17.17	43	43	43.1	16.5	20.6
20	19.17	47	47	47.2	18.9	22.2
22	21.18	51	51	51.4	21.1	23.8
24	23.19	55	55	55.4	23	25.4
26	24.92	57	57	57.5	24.6	26.8
28	26.93	61	61	61.5	25.6	28.4
30	28.94	65	65	65.5	27	30.6
32	30.67	70	70	70.6	28.4	31.9
34	32.68	76	76	76.6	30.1	33.7
36	34.41	82	82	82.6	31.3	35.1
40	38.43	82.7	85	85.6	35.8	39
42	40.16	86.6	88	88.6	37.2	40.5
44	41.97	86.6	91	91.6	38.6	42
48	45.91	90.5	98	98.6	43.3	45.9
56	53.54	98.4	115	115.6	48.2	52.3

单位 Unit：mm

DN	D	LE	LRF	LRTJ	H1	H2
150	150	559	559	562	185	200
200	201	660	660	664	254	275
250	252	787	787	791	305	325
300	303	838	838	841	350	370
350	334	889	889	892	350	440
400	385	991	991	994	385	485
450	436	1092	1092	1095	420	522
500	487	1194	1194	1200	480	565
550	538	1295	1295	1305	535	605
600	589	1397	1397	1407	585	645
650	633	1448	1448	1461	625	680
700	684	1549	1549	1562	650	721
750	735	1651	1651	1664	685	777
800	779	1778	1778	1794	720	810
850	830	1930	1930	1946	765	855
900	874	2083	2083	2099	795	891
1000	976	2100	2159	2174	910	990
1050	1020	2200	2235	2250	945	1030
1100	1066	2200	2311	2327	980	1067
1200	1166	2300	2489	2504	1100	1165
1400	1384	2500	2921	2936	1225	1328

Class 900Lb/PN16.0MPa 单位 Unit：inch

DN	D	LE	LRF	LRTJ	H1	H2
6	5.91	24	24	24.1	7.3	7.9
8	7.91	29	29	29.1	10	10.8
10	9.92	33	33	33.1	12	12.8
12	11.93	38	38	38.1	13.8	14.6
14	12.68	40.5	40.5	40.9	14.4	17.9
16	14.69	44.5	44.5	44.9	16.1	19.7
18	16.65	48	48	48.5	17.5	21.3
20	18.54	52	52	52.5	19.9	22.9
22	21.18	56.3	56.3	57	22	25.3
24	22.44	61	61	61.7	24.2	27.4
26	24.29	63	63	53.8	25.8	28.7
28	26.18	67	67	67.9	26.8	30.5
30	28.94	70	70	70.9	28.1	32.1
32	30.67	74	74	74.9	29.5	33.7
34	32.68	78	78	79.1	31.3	35.3
36	34.41	84	84	85.1	32.5	37.2
40	37.48	82.7	90	91	37	40.5
42	39.29	86.6	96	86.9	37.8	42.5
44	41.18	86.6	100	101.1	40.1	44.1
48	44.92	90.5	109	110.1	44.9	47.6

单位 Unit：mm

DN	D	LE	LRF	LRTJ	H1	H2
150	150	610	610	613	185	200
200	201	737	737	740	254	275
250	252	838	838	841	305	325
300	303	965	965	968	350	370
350	322	1029	1029	1038	365	455
400	373	1130	1130	1140	410	500
450	423	1219	1219	1232	445	540
500	471	1321	1321	1334	505	582
550	522	1429	1429	1448	560	642
600	570	1549	1549	1568	615	695
650	617	1600	1600	1622	655	730
700	665	1702	1702	1724	680	775
750	712	1778	1778	1802	715	815
800	760	1880	1880	1902	750	855
850	808	1981	1981	2010	795	896
900	855	2134	2134	2162	825	945
1000	952	2100	2283	2311	940	1028
1050	998	2200	2438	2461	985	1081
1100	1046	2200	2540	2568	1020	1120
1200	1141	2300	2769	2797	1140	1210

产品概述 Products brief

球阀具有流体阻力小、流道通畅、启闭迅速、易于自动化控制的特点，因而得到了越来越广泛的应用。但由于常规球阀的阀座一般采用聚四氟乙烯等非金属材料制作，受阀座密封材料的限制，常规球阀不能在高温工况下使用，也无法用于含固体颗粒、灰渣等介质，故常规球阀的使用受到了一定的限制。为此，吉富隆经多年努力，成功研制开发了包括浮动球阀和固定球阀在内的全系列金属硬密封球阀产品，并在煤化工、多晶硅、石油、化工、冶金、轻工等行业得到广泛的应用。

Ball valves have the characteristics of low fluid resistance, smooth flow, rapid opening and closing, and easy to automatic control, so they have been used more and more widely. However, since the seat of conventional ball valves is generally made of non-metallic materials such as PTFE, due to the limitation of sealing materials of seat, conventional ball valves cannot be used for high temperature, nor for media containing solid pellets, ash, etc. Thus the use of conventional ball valves is restricted. For this reason, Giflon has successfully developed a full range of metal hard-sealed ball valve products including floating ball valves and trunnion ball valves after years of efforts, and has been widely used in coal chemical industry, polysilicon, petroleum, chemical industry, metallurgy, light industry and etc.

用途 Application

金属硬密封球阀适用于Class150-Class2500、PN16-PN160、JIS10K-J1S20K的各种管路上，用于截断或接通管路中的介质，选用不同的材质，可分别适用于非腐蚀性介质、弱腐蚀性介质、硝酸、醋酸、氧化性介质、尿素等多种介质，特别适用于含固体颗粒介质、料浆、煤粉、灰渣等苛刻工况。金属硬密封球阀的驱动方式为手动、蜗轮蜗杆传动、气动或电动。金属硬密封球阀一般采用法兰连接，也可采用对焊连接、承插焊连接螺纹连接及对夹连接。

Metal sealed ball valve can be used on various pipeline with pressure Class150-Class2500 PN16-PN160 JIS10K-JIS20K to throttle or connect medium in the line . Different materials can be applied to non-corrosive medium, weak corrosive media, nitric acid, aceticacid, oxidizing medium, urea and other mediums, especially tor medium containing solid particles,Slurry, coal ash and other harsh conditions. The operating of metal sealed ball valve can be manual, worm gear, pneumatic or electric. Metal sealed ball valve commonly are flanged connection; it also can be butted welded connection, socket weld, threaded connection and wafer connection.

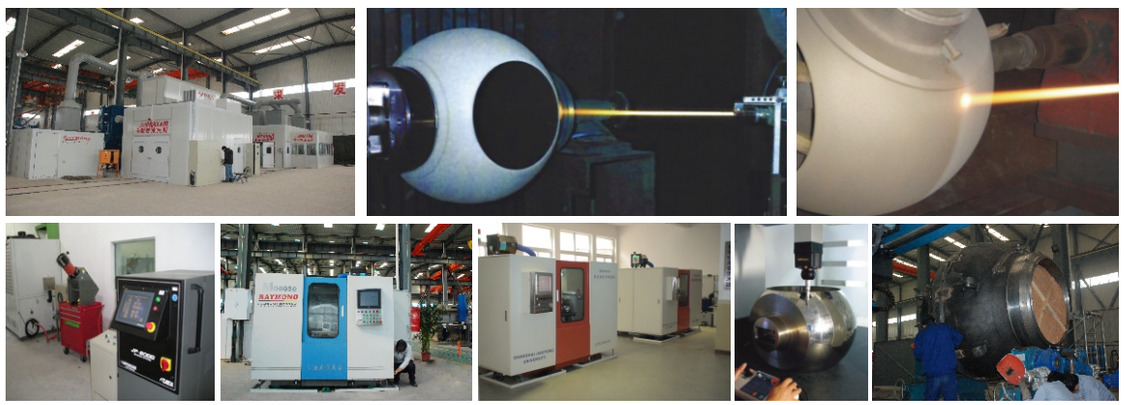
结构设计特点 Structure Design Features

金属硬密封球阀除了具有防止误操作、防止阀杆飞出、设置驱动装置安装平台等结构特点外，还具有如下独特的特点。

Beside preventing mis-operation, with Anti-blow out stem, setting the actuator installation platform , The metal sealed ball valve has the following features.

美国超音速喷涂设备及球磨机

Machine of high velocity oxygen fuel from praxair surface technologies and grinding ball machine



采用先进的球体和阀座硬化技术 Advanced hardening of the ball and seat technology

金属硬密封球阀的球体与阀座完全采用金属对金属的密封方式，为了确保阀门在各种温度和压力下的可靠密封，针对用户的不同使用工况和要求，可以采用多种先进的球体和阀座的硬化技术，包括超音速喷涂、镍基喷焊、表面特殊硬化、硬质合金喷焊以及采用高强度高硬度陶瓷材料等，球体和阀座的表面硬度一般可以达到HRC60以上，最高可达HRC74以上。密封面材料耐高温一般可达540℃，最高可达980℃。材料的结合强度可以达到10000PSI以上。密封面材料还具有很好的耐磨擦、耐冲击等性能。吉富隆金属硬密封球阀能够适用于绝大多数的苛刻工况条件。

The sealing of Metal sealed valve is completely metal to metal at the ball and seat, and in order to ensure the reliable sealing in a variety of temperature and pressure, according to user's conditions and requirements, A variety of advanced hardening technologies on ball and seat can be applied, the technologies including supersonic spraying, nickel-based spray.special surface hardening, and the use of high strength and hardness of ceramic materials,the hardness of the ball and the seat can reach to HRC60 even to HRC74 or higher. General sealing surface material can bear the temperature to 540℃, maximum to 980℃. The strength of the material can reach10000PSI or above,Sealing material also has abrasion,impact resistance and other properties. Metal seal ball valve can be applied to most of the harsh working conditions.

防止阀门在高温下的涨死 To prevent the valve block at high temperatures

高温工况下由于热膨胀而容易引起球体与阀座的涨死，从而导致阀门无法开启。吉富隆金属硬密封球阀采用了碟簧或弹簧加载的专用密封结构在高温下零部件的热膨胀可以被碟簧或弹簧所吸收，故能够保证阀门在高温下不会被涨死，并能够在高温下灵活启闭。

Ball and seat can be easy to be uo dead due to thermal expansion in hioh-temperature conditions. GIFON metal to metal sealing ball valve uses special sealing structure of disc spring or spring loaded, which can make thermal expansion be absorbed by the disc spring or spring inhigh-temperature conditions in order to ensure that the valve will not block at a high temperature, and be able to open and close at a hightemperature flexibly.mpact resistance and

优异的密封性能 Excellent sealing performance

采用独特的球体研磨工艺，通过球体与研磨器具在空间不同方位的旋转，使球体表面达到极高的圆度和光洁度，阀门的密封性能完全达到或超过标准要求。

GIFLON adopts unique ball grinding process, grinding apparatus through spheres with diferent directions of rotation in space, so that thesurface to a hiah ball roundness and finish, the valve sealing performance fuly can meet or exceed standards.

高温工况的结构设计 Structure for high temperature conditions

金属硬密封球阀通常应用于高温工况，材料在高温下的热膨胀是金属硬密封球阀设计必须考虑的问题。高温金属硬密封球阀的阀座与阀体之间的密封通常采用柔性石墨，柔性石墨材料在高温下会产生体积膨胀，如果结构设计没有考虑材料在高温下的膨胀补偿，阀门在高温下必然会因为材料的膨胀而被卡死不能动作。为了解决该问题，通常在阀座背后设置弹簧，通过弹簧来调整和补偿高温下材料膨胀的问题。弹簧可以有多种结构形式，如圆柱螺旋弹簧、蝶形弹簧、板簧及波型弹簧等。为了保证弹簧在高温下的性能，弹簧一般采用Inconel材料制造。对于蝶形弹簧和板簧，为了改善弹簧的性能，可以采用多片薄型弹簧的组合结构设计。

Metal to metal seaing ballvalve usually are uses in hiah temperaure conditions, material hermal expansion in hioh temperature conditions mustbe considered in metal to metal ball valve design. The sealing between hich-temperature metal to metal seal ballvalve seat and body usuallyadopts fexible graphite which wil produce volume expansion in high temperature conditions. If the design does not consider the material at higttemperature expansion compensation, Valve must be block due to material expansion so not as to be operated. in order to solve such problemwe usually set spring behind the seat, hrough which to adiust and compensate material expansion under high temperaure condilion sprino mavhave a variety of structural forms, such as helical springs, buterly springs, leaf springs and wave springs. in order to ensure the performance ofthe spring at a high temperature, Inconel springs commonly be used as materials. For the buterly spring and spring,in order to improve the performance of the spring, you can use a combination of multi-chip thin spring design.

古富隆集团 GIFLON
金属硬密封球阀
Metal seal ball valve

固体介质的粘结问题 Bonded solid medium problems

金属硬密封球阀通常应用于固体液体混合的介质，某些固体液体混合介质特别容易粘结在球体等零件的表面，导致阀门无法启闭。对于这样的工况介质，通常在阀座密封面的两侧设置刮刀结构，这样在阀门的启闭过程中，阀座两侧的刮刀可以自动的刮除球体表面粘结的杂质，从而确保阀门能够自如的启闭，并同时具有良好的密封性能。对用于易粘结的固体液体混合介质，尽管采用刮刀可以刮除球体表面的粘结物，但是球阀的启闭扭矩必然会有较大的增加，因此，在设计时应该考虑到这种不利的影响因素，在阀轴的强度设计、材料的选用，尤其是球体与阀轴的连接强度以及阀轴与驱动装置的连接强度应该考虑有足够的余量，在驱动装置的配置时同样应该考虑有更大的驱动力，以保证在极端的工况条件下阀门的正常启闭。

Metal to metal sealing ball valve usually used in solid-liquid mixed mediums. some mixed mediums, are easy to stick on the surface of the ball causing the valve can not open and close. For such conditions usually set scrapers on both sides of the seat sealing surface. Therefore, during the process of opening and closing the valve, the scrapers on both sides can be automatically scrape the surface of the ball bonding of impurities,thus ensuring ease of opening and closing the valve, and also has good sealing performance. For easy to bond the solid-liquid mixture, although use of scraper can scrape the surface of the bonding medium sphere, the torque to open and close will increase. Thus,the design should consider the effects of this harsh condition, for the strength of the stem and selection on the material, Especially the redundant connection strength between ball and stem. as well as stem and actuator should be considered. The actuator should has bigger driving force to ensure that the valve can be open and close normally under extreme conditions.

固体介质的粘结还可能引起阀座弹簧的失效，严重的会导致阀门卡死而无法启闭，为了防止弹簧被介质粘结而失效，通常在弹簧腔设置柔性石墨密封圈，以阻挡固体介质进入弹簧腔体。

Bonded solid medium may cause the failure of the spring on the seat, causing stuck and cannot open and close the valve. In order to prevent the failure of spring, usually set flexible graphite sealing ring in the spring chamber to stop the solid medium into the spring chamber.

硬固体颗粒介质的磨损和冲刷问题 Wear and erosion problems from hard solids medium

球阀全开时的通道相当于一个直管段，流体阻力最小，而且阀座和球体没有暴露在流动的介质中，因此，处在全开状态下的球阀基本没有磨损和冲刷的问题。而对于关闭状态下的球阀，如果阀门完全密封，则管道中的介质没有流动，因此，阀门也不会产生磨损和冲刷。对于含硬固体颗粒的高压介质，当阀门密封不良时是最容易引起磨损和冲刷的，在一些极端的工况条件下，阀门的泄漏甚至会在一、两个小时就导致阀体因为磨损而穿孔。对于密封性能良好的球阀，在阀门刚刚开启的瞬间是最容易被磨损的。此时，在阀座与球体最先脱开的部件，由于此处压差大，流速高，因此很容易被磨损。

When Ball valve is fully open, it is equivalent to a straight pipe, the fluid resistance path is at minimum, and the seat and the ball are not exposed to the medium, therefore, in a fully open status, basically there is no wear and erosion. As for the closed state, if the ball valve is completely closed, then the media does not flows in the pipeline, therefore, there is no wear and erosion on the valve. For high-pressure medium with hard solid particles, when the sealing is not good, most possible will cause wear and erosion, and in extreme working conditions, the valve leakage will cause damage on the body in one or two hours because of wearing and erosion. For the ball valves with good sealing performance, the valve is most likely to be worn at the moment of open. At this point, the parts firstly break the ball away from the seat is easy to be worn , because of large pressure difference, and high flow rate.

可以通过以下几个方面的措施来减缓阀门的磨损 By the following measures could reduce wear of the valve:

(1)提高阀门的启闭速度，使阀门迅速地从全差闭状态切换到全开启状态，可以有效地减少磨损，尤其对于开关频繁的阀门;

(2)在开启球阀之前通过旁通对球阀前后的压力进行平衡，一旦球阀上下游的压差减小了，介质的流速也会相应的减小，介质对阀门的磨损也会同时减小;

(3)设计时适当考虑增大球体的直径，使球体的密封部位不容易被磨损，即使球阀在使用过程中出现了磨损，也不会影响阀门的密封性能;

(4)在球体和阀座容易被磨损的部位喷焊耐磨材料;

(5)在球阀的通道部位增加耐磨衬套，以增强球阀的抗磨损能力。

(1) Improve the speed of opening and closing the valve, make the valve change quickly from the closed state to full open, can effectively reducethe wear and tear, especially for frequent valve switching.

(2) Through the bypass balance the front and back pressure of the ball valve, before opening the valve, once the valve pressure gap between theupstram and downstream decreases, the media fow rate is reduced accordingly, the medium wil reducing wearing on the valve at the same time.

(3) Consider to enlarger the diameter of the sphere properly when designing, make the seal pars of the sphere is not easy to wear and tear, evenif the ball appeared wear and tear in the course of using, it will not affect the sealing performance of the valve.

(4) Spray wear resistant materials in the site of the ball and valve seat easy to wear and tear.

(5) Add wear resistant bushina in the channel position of the ball valve to enhance wear resistance.

完全的防火结构设计 Complete fire proof design

阀门的密封面采用金属对金属密封结构，填料采用柔性石墨，垫片采用不锈钢+柔性石墨结构。因此，阀门即使在火灾情况也能确保可靠的密封。

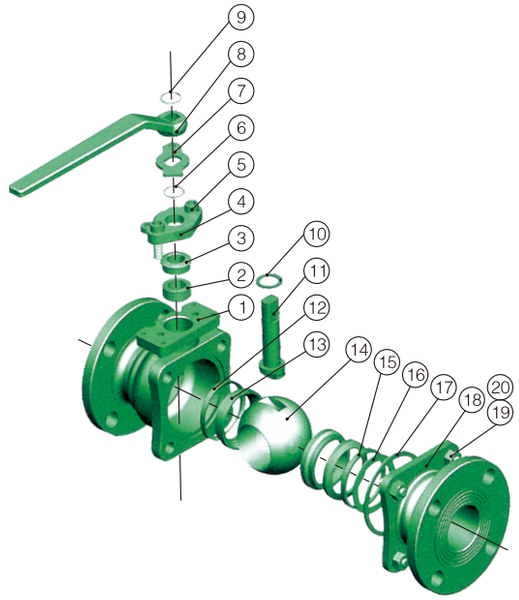
Ball valve sealing surface adopts the metal to metal seal structure, with flexible graphite packing, Gasket is stainless steel + flexible Graphite structure. Therefore, even in a fire situation the valve could ensure a reliable seal.

自然的防静电结构设计 Natural anti-static structure design

金属硬密封球阀的阀体、阀座、球体等金属零部件紧密接触，自然形成了静电通道。因此，金属硬密封球阀不需要设置专门的防静电装置。

Metal seal ball valve, the valve sealt, ball and other metal parts in close contact. formed the electrosiatic channel naturally, Therefore. themetal seal valve does not need to set a special anti-static device.

典型结构及零件组成 Typical Structure and parts



序号 No.	零件名称 Part Name	序号 No.	零件名称 Part Name
1	阀体 Body	11	阀杆 Stem
2	填料 Packing	12	阀座密封垫 Seat Sealing Gasket
3	填料压套 Packing Press-sleeve	13	阀座 Seat
4	填料压板 Packing Gland	14	球体 Ball
5	螺钉 Screw Nail	15	压圈 Ring
6	挡圈 Ring	16	弹簧 Spring
7	定位片 Locating Piece	17	垫片 Gasket
8	扳手 Wrench	18	阀盖 Bonnet
9	挡圈 Ring	19	螺柱 Bolt
10	上密封垫 Up Sealing Gasket	20	螺母 Nut

古富隆集团 GIFLON
金属硬密封球阀
Metal seal ball valve

金属硬密封浮动球阀的结构设计特点 Metal seal float ball valve structure feature

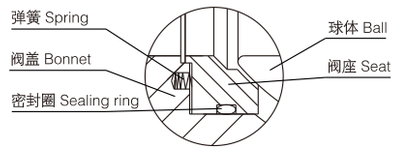
吉富隆金属硬密封浮动球阀采用进、出口端密封结构。即在阀门进口端阀座和阀体之间设置的一密封元件，利用介质压力对进口端阀座形成活塞效应，在弹簧力和介质压力的作用下，把进口阀座和球体推向出口端，从而保证阀门进、出口端通达到密封效果。

GIFLON metal seal floating ball valve is adopted inlet and outlet end sealing structure. That is, a seal part is set between the inlet seat and body Using medium pressure on the inlet seat to form a piston effect , under the spring force and the media pressure, the inlet seat and ball are pushed to the outlet to ensure the seal of the inlet and outlet of the valve.

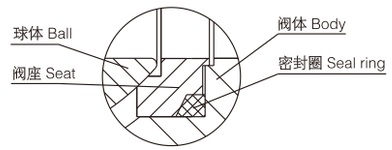
阀座的可靠密封 Seat sealing surcture

在阀座的背面设置弹簧，通过弹簧来调整和补偿高温和低温下的材料的膨胀问题。弹簧一般采用Inconel材料制造。对于不同的材料并对球体与阀座密封面进行不同的表面处理，确保阀座与球体的密封可靠，且耐高温耐磨损，耐腐蚀，使用寿命长。具有在高压、粉尘、含固体颗粒和纤维物等恶劣工况的操作能力，球体和阀座之间具有良好的剪切、自洁功能，适合对含颗粒、纤维介质的控制。根据用户要求在≤300℃的温度所选用的阀座的密封结构。

A spring is set in the back seat, through which to adjust and compensate the material expansion under high temperature and low temperalure, The spring is often made up of inconel For diferent materials, diferent surface treatment is used for body and seat seal to ensure relialble sealhigh temperature wear resistance, corrosion resistance, and long service ife. This type of ball valve has good operaling capacity under harsh condition of high-pressure, dust, solid particles and fiber. Also the function of good cut, self-cleaning is avalable between body and seat, suitable for control of particles, fiber contained media, According to user reguirements, such seat seal struclure is as below for ≤300℃。

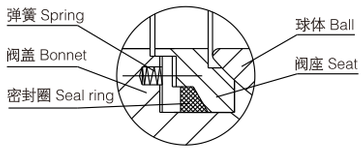


进口端 Inlet

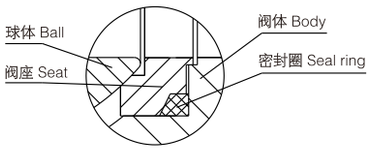


出口端 Outlet

根据用户要求在高温下所选用的阀座的密封结构
According to user reguirements, such seat seal structure is as below for high temperature



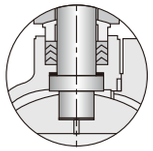
进口端 Inlet



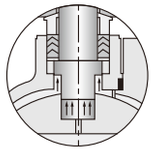
出口端 Outlet

阀杆的可靠密封 Stem sealing design

阀杆采用防吹出结构设计，即使在阀腔异常升压以及填料压板失效等极端情况下，也能保证阀杆不会被介质吹出。阀杆采用有到密封的下装式结构设计，倒密封的密封力随着介质压力的增高而增大，故能在各种压力下均能确保阀杆地可靠密封。
The ball valve is of blowout proof stem desian to ensure the stemm not to be blowout even if under extreme circumstances of an abnormal pressur in body cavity and packing plate fallure. The stem is of botom entry with back seal, back seal force is increasing with higher medum pressure ensuring a reliable stem seal under different pressure.



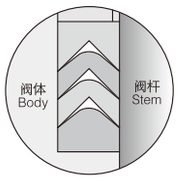
下装式阀杆不会被介质压力吹出
Remove theatrical makeup and costume type stem not be medium pressure blown out



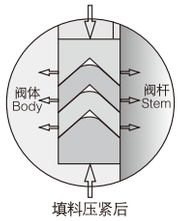
上装式阀有被介质压力吹出的可能
Jacket type valves have been medium pressure blown out possible

阀杆的防吹出结构设计
Anti-blow out structure of stem

阀杆采用V型填料密封结构，V型填料能将填料压盖的压紧力及介质力有效地转化成阀杆的密封力。
The stem is of V type packing seal to enable to transform the pressing force of packing gland and medium into stem seal force



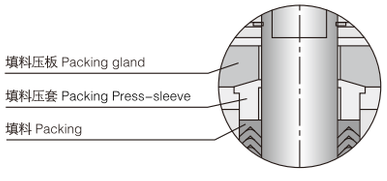
填料压紧前
Packing gland tight before



填料压紧后
Packing gland tight after

阀杆采用V型填料密封结构
The Structure of V type packing seal stem

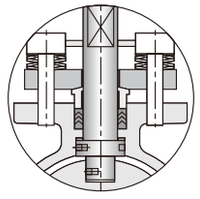
根据用户要求，可将传统的填料压盖改进为填料压板与填料压套的两体式结构设计，填料压套与填料压板采用球形接触，确保填料压套始终垂直。
According to users' requirements, traditional packing gland can be improved to packing plate and packing sleeve. Packing sleeve and packing plate are spherical in design, ensuring that the packing pressure sleeve is always vertical.



防止阀杆使用中的磨损
Prevent stem use of wear

古富隆集团 GIFLON
金属硬密封球阀
Metal seal ball valve

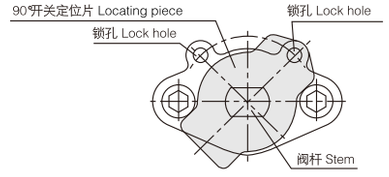
根据用户的需要，可以采用碟形弹簧加载的填料压紧机构，使阀杆填料的密封更加可靠。
According to users' requirements, disc spring loaded packing compressed structure can be used to ensure more reiable stem packing seal.



采用碟形弹簧加载的填料压紧机构
Using disc spring loaded packing gland tight institutions

防止误操作 Prevent incorrect operation structure design

设置了90°开关带孔定位片，根据需要可以加锁，防止误操作。阀杆头部安装手柄的部位采用扁形设计，当阀门开启时，手柄与管道平行，当阀门关闭时，手柄与管道垂直，能够确保阀门的开关指示不会发生错误。
90°switch hole orientation positioner is designed. According to users' requirements, locking device can be suppied to avoid wrong operation



防止误操作的结构设计
Prevent incorrect operation structure design

不同工况条件下的材料组合 Main spare parts material

适用工况 Suitable working condition	适用介质 Medium	非腐蚀性或弱腐蚀性介质 Non-corrosive and weak non-corrosive media	硝酸类腐蚀性介质 Nitric acid corrosive media		强氧化性介质 Chronic Effect	醋酸类腐蚀性介质 Acetic acid corrosive media	尿素类腐蚀性介质 Urea corrosive media	
	适用温度 Temperature	常规产品：≤200℃； 特殊设计：碳钢≤425℃，铬钼钢≤510℃，铬钼钒钢≤540℃，不锈钢≤1100℃ Standard：=200℃； Special design：Carbon steel =425℃，Cr-Mo steel=510℃， Cr-Mo vanadium steel=540℃，Stainless steel =1100℃						
主要零件材料 Main part material	阀体 Body	WCB A105	ZG1Cr18Ni9Ti 1Cr18Ni9Ti	CF8,F304	CF3,F304L	CF8M,F316	CF8M,F316L	4A,F51
	阀杆 Stem	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH、F51
	球体 Ball	F304+WC	1Cr18Ni9Ti +WC	F304+WC	F304+WC	F316+WC	F316L+WC	F51+WC
	阀座 Seat	F304+Co 或Ni合金 F304+Co or Ni alloy	1Cr18Ni9Ti +Co或Ni合金 1Cr18Ni9Ti +Coor Ni alloy	F304+Co 或Ni合金 F304+Co or Ni alloy	F304L+Co 或Ni合金 F304L+Co or Ni alloy	F316+Co或Ni合金 F316+Coor Ni alloy	F316L+Co 或Ni合金 F316L+Co or Ni alloy	F316LMOD +Co或Ni合金 F316LMOD +Coor Ni alloy
	垫片 Gasket	SS304+柔性石墨缠绕垫 Flexible graphite spiral wound gasket			SS304L+柔性石墨缠绕垫 (Flexible graphite spiral wound gasket)	SS316+Flexible graphite spiral wound gasket	SS316+柔性石墨缠绕垫 Flexible graphite spiral wound gasket	
	填料 Packing	柔性石墨 Flexible graphite						

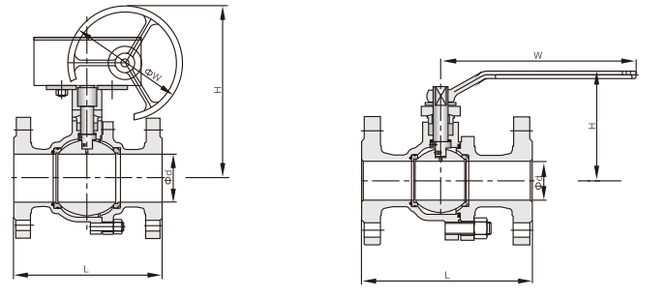
产品范围 Scope of products

通径 Drift grade range	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
	DN	15	20	25	32	40	50	65	80	100	125	150
压力等级或公称压力 Pressure grade range	Class150/PN20	☆	☆	☆	☆	☆	☆	☆	☆	△	△	△
	CLass300/PN50	☆	☆	☆	☆	☆	☆	△	△	△	–	–
	Class600/PN110	☆	☆	☆	☆	☆	△	△	△	–	–	–
	Class900/PN150	☆	☆	☆	☆	△	△	△	–	–	–	–
	Class1500/PN260	☆	☆	☆	☆	△	△	–	–	–	–	–
	PN16	☆	☆	☆	☆	☆	☆	☆	☆	△	△	△
	PN25	☆	☆	☆	☆	☆	☆	☆	△	△	△	△
	PN40	☆	☆	☆	☆	☆	☆	☆	△	△	–	–
	PN63	☆	☆	☆	☆	☆	△	△	△	–	–	–
	PN100	☆	☆	☆	☆	☆	△	△	△	–	–	–

注：对于手动球阀，☆表示建议采用扳手，△表示建议采用蜗轮蜗杆传动
Note:Handle operated ball valve:☆Stand for handle,△Stand for worm gear/lever.

古富隆集团 GiFLON
金属硬密封球阀
Metal seal ball valve

主要尺寸及重量 Main outline dimensions and weight

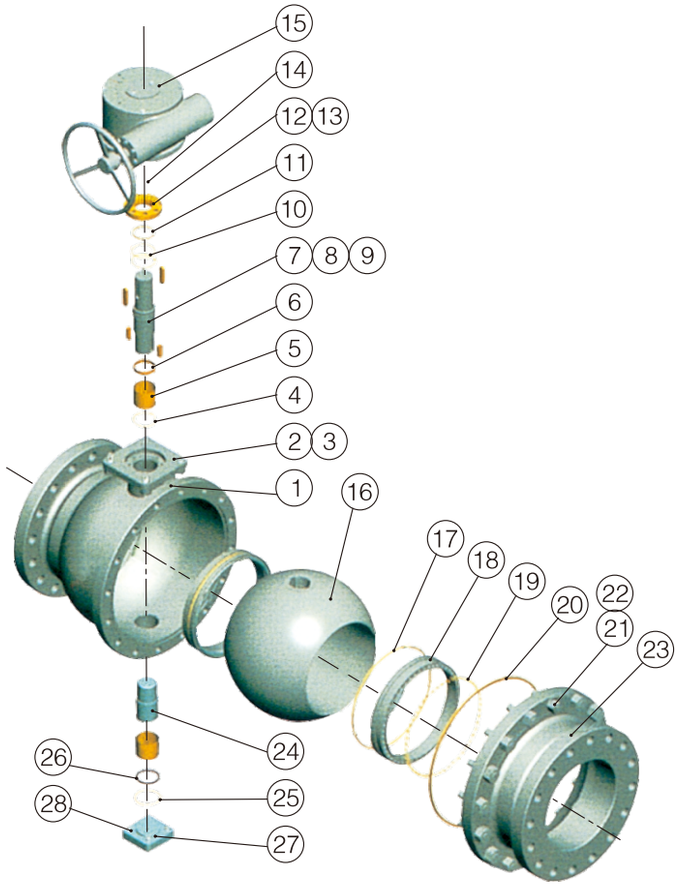


压力等级 Pressure Class	口径 Drift grade range DN	NPS	尺寸 Size(mm) L RF	L RTJ	d	W 手动 Handlewheel	W 蜗轮 worm gear/lever	H 手动 Handlewheel	H 蜗轮 worm gear/lever	重量(kg) Weight 手动 Handlewheel	重量(kg) Weight 蜗轮 worm gear/lever
Class 150 PN16 PN20 JIS10K	15	1/2	108	119	14	140	–	85	–	3	–
	20	3/4	117	130	19	140	–	90	–	4	–
	25	1	127	140	25	150	–	99	–	5	–
	32	1 1/4	140	153	32	180	–	105	–	7	–
	40	1 1/2	165	178	38	200	–	126	–	8	–
	50	2	178	191	51	250	–	140	–	12	–
	65	2 1/2	190	203	64	300	–	165	–	18	–
	80	3	203	216	76	350	–	178	–	24	–
	100	4	229	242	102	500	305	230	380	38	53
	125	5	356	369	127	800	305	280	405	60	79
	150	6	394	407	152	800	305	310	460	82	102
Class 300 PN25 PN40 PN50 JIS20K	15	1/2	140	151	14	140	–	85	–	3	–
	20	3/4	152	165	19	140	–	90	–	5	–
	25	1	165	178	25	150	–	99	–	6	–
	32	1 1/4	178	191	32	180	–	105	–	8	–
	40	1 1/2	190	203	38	200	–	126	–	11	–
	50	2	216	232	51	250	–	142	–	16	–
	65	2 1/2	241	257	64	300	–	165	–	24	–
	80	3	283	299	76	350	–	178	330	34	52
	100	4	305	321	102	500	305	230	380	56	76
	125	5	381	397	127	800	305	280	420	86	124
	150	6	403	419	152	800	305	310	480	125	163
Class 600 PN63 PN100 PN110	15	1/2	165	164	14	140	–	79	–	5	–
	20	3/4	190	190	19	140	–	83	–	7	–
	25	1	216	216	25	200	–	114	–	9	–
	32	1 1/4	229	229	32	200	–	120	–	13	–
	40	1 1/2	241	241	38	250	–	125	–	17	–
	50	2	292	295	51	300	–	156	–	25	–
	65	2 1/2	330	333	64	350	–	172	–	42	–
	80	3	356	359	76	500	305	220	370	56	76
	100	4	432	435	102	650	305	250	400	85	123
Class 900 PN150	15	1/2	216	216	14	150	–	98	–	9	–
	20	3/4	229	229	20	150	–	105	–	13	–
	25	1	254	254	25	200	–	110	–	16	–
	32	1 1/4	279	279	32	250	–	120	–	24	–
	40	1 1/2	305	305	38	250	–	125	–	31	–
	50	2	368	371	50	350	–	160	–	45	–
Class 1500 PN260	15	1/2	216	216	14	182	–	98	–	10	–
	20	3/4	229	229	20	200	–	105	–	14	–
	25	1	254	254	25	250	–	110	–	17	–
	32	1 1/4	279	279	32	300	–	120	–	25	–
	40	1 1/2	305	305	38	350	–	130	–	33	–
	50	2	368	371	50	500	–	160	–	48	–

注:吉富隆阀门除了生产全通径浮动球阀以外，还生产缩径球阀，以满足用户的不同需求。缩径球阀不仅能适当的降低成本及价格，而且能满足用户的一些特定要求。

Note: GIFLON valve not only produce full-bore fioating bal, but also produce reduced bore ball valve, in order to meet the different needs of users. reduced bore ball valve can not only appropriate cost reduction and price, and can meet the user's specific reguirements.

典型结构及零件组成 Typical Structure and parts

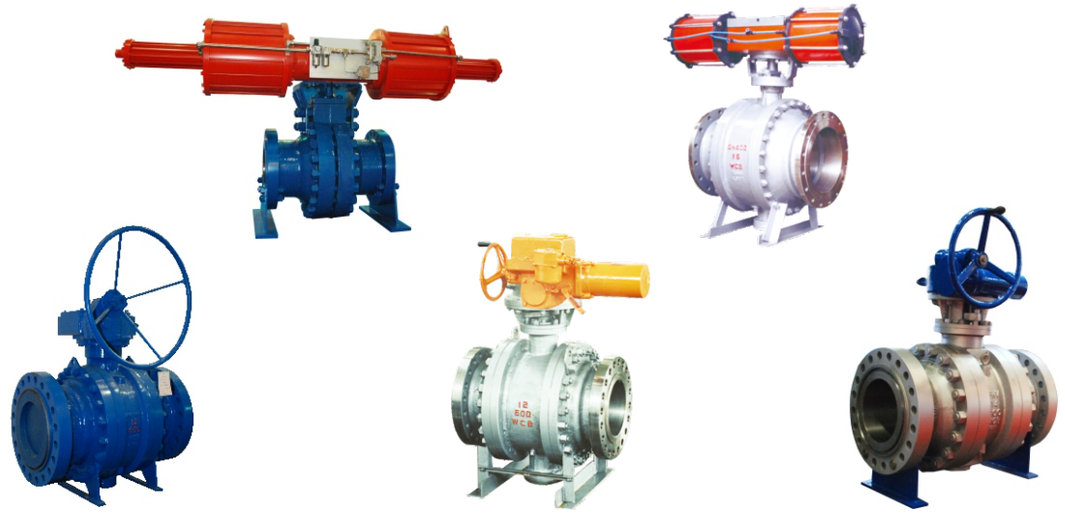


序号 No.	零件名称 Part Name
1	阀体 Body
2	螺柱 Stud
3	螺母 Nut
4	O型圈 O-Ring
5	轴套 Shaft sleeve
6	隔圈 Space ring
7	阀杆 Stem
8	键 Key
9	键 Key
10	O型圈 O-Ring
11	垫片 Gasket
12	压盖 Gland
13	螺钉 Screw
14	O型圈 O-Ring
15	蜗轮蜗杆传动装置 Worm gear actuator
16	球体 Ball
17	O型圈 O-Ring
18	阀座 Seat
19	弹簧 Spring
20	垫片 Gasket
21	螺柱 Stud
22	螺母 Nut
23	阀盖 Bonnet
24	下轴 Bottom spindle
25	O型圈 O-Ring
26	调整垫 Washer
27	下端盖 Bottom cover
28	螺钉 Screw

古富隆集团 GIFLON
金属硬密封球阀
Metal seal ball valve

不同工况条件下的材料组合 Main spare parts material

适用工况 Suitable working condition	适用介质 Medium	非腐蚀性或弱腐蚀性介质 Non-corrosive and weak non-corrosive media	硝酸类腐蚀性介质 Nitric acid corrosive media		强氧化性介质 Chronic Effect	醋酸类腐蚀性介质 Acetic acid corrosive media	尿素类腐蚀性介质 Urea corrosive media	
	适用温度 Temperature	常规产品：≤200℃； 特殊设计：碳钢≤425℃，铬钼钢≤510℃，铬钼钒钢≤540℃，不锈钢≤1100℃ Standard：=200℃； Special design：Carbon steel =425℃，Cr-Mo steel=510℃， Cr-Mo vanadium steel=540℃，Stainless steel =1100℃						
主要零件材料 Main part material	阀体 Body	WCB A105	ZG1Cr18Ni9Ti 1Cr18Ni9Ti	CF8,F304	CF3,F304L	CF8M,F316	CF8M,F316L	4A,F51
	阀杆 Stem	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH、F51
	球体 Ball	F304+WC	1Cr18Ni9Ti +WC	F304+WC	F304+WC	F316+WC	F316L+WC	F51+WC
	阀座 Seat	F304+Co 或Ni合金 F304+Co or Ni alloy	1Cr18Ni9Ti +Co或Ni合金 1Cr18Ni9Ti +Coor Ni alloy	F304+Co 或Ni合金 F304+Co or Ni alloy	F304L+Co 或Ni合金 F304L+Co or Ni alloy	F316+Co或Ni合金 F316+Coor Ni alloy	F316L+Co 或Ni合金 F316L+Co or Ni alloy	F316LMOD +Co或Ni合金 F316LMOD +Coor Ni alloy
	垫片 Gasket	SS304+柔性石墨缠绕垫 Flexible graphite spiral wound gasket			SS304L+柔性石墨缠绕垫 (Flexible graphite spiral wound gasket)	SS316+Flexible graphite spiral wound gasket	SS316+柔性石墨缠绕垫 Flexible graphite spiral wound gasket	
	填料 Packing	柔性石墨 Flexible graphite						

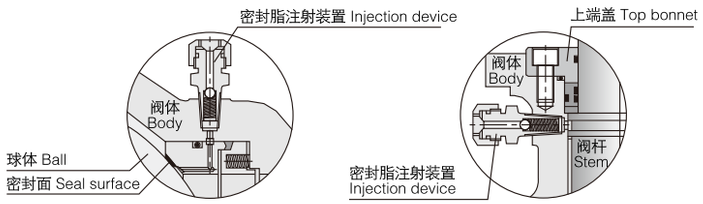


固定球阀的结构设计特点 Structure Design Features of Trunnion Ball Valve

密封脂紧急注射装置 Emergency seal grease injecting device

根据用户要求，GIFLON阀门固定球阀可以设置密封脂紧急注射装置，对于DN150(NPS6)以上的固定球阀，在阀杆和阀座上均可设计密封脂注射装置，而对于DN125以下的固定球阀，在阀杆处可设计密封脂注射装置。当阀座密封圈或阀杆O型密封圈因意外事故损坏时，可通过密封脂注射装置注射密封脂，以防止介质通过阀座密封圈和阀杆的泄漏。

According to customer requirement, we can design emergency seal grease injecting device on the trunnion ball valve. For the DN150(NPS6) and above. the device can be designed on the stem and seat, for the DN125 and bellow, the device can be designed on the stem. When the seat ring or stem O ring broken, the seal grease can be injected by the device to avoid medium leakage from the seat ring and stem.

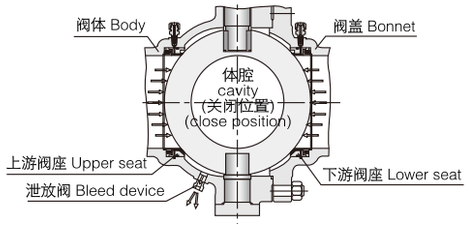


密封脂注射装置
Injection device

双阻断及泄放功能DDB(Double block and bleed)function

吉富隆阀门固定球阀一般采用球前阀座密封结构。固定球阀的两个阀座能独立切断进口端和出口端的介质，实现双阻断功能。当球阀关闭时。即使阀门进出口两端同时受压，阀门中腔和两端通道也可以被相互阻断，中腔内的剩余介质可以通过泄放阀排出。

Our trunnion ball valve generaly adopts upper seat seal structure. The two seats can cut off the meudim form upper and lower independently to achieve the double block function. When the valve closed, though the upper and lower bear pressure at the same time, the cavity and two ends is blocked, the medium in the cavity can be bleeded through the bleed valve.



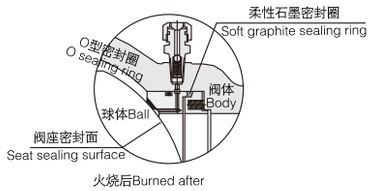
双阻断及泄放功能
DDB (Double block and bleed) function

吉富隆集团 GIFLON
金属硬密封球阀
Metal seal ball valve

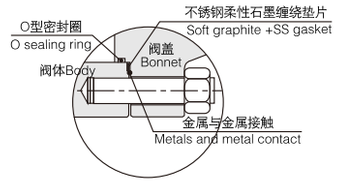
防火结构设计Fire-proof Structure Design

在阀门的使用现场发生火灾时，阀座的O型圈、阀杆的O型密封圈以及法兰O型密封圈在高温下损坏后，吉富隆阀门固定球阀能够借助特别设计的金属对金属辅助密封结构或柔性石墨密封结构，有效地控制阀门的内漏和外漏。对于用户有防火要求的固定球阀，吉富隆阀门的防火结构设计均符合API607, API6Fa, BS6755 及JBIT 6899等标准规范的要求。

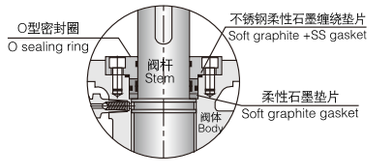
When fire happens, the metal to metal asistant seal structure can control the bleed effectively after the O ring on the seat, stem and flange are broken. For the fire-proof trunnion ball valve, our structure desin is according to API607, AP! 6Fa, BS6755 and JB/T 6899, etc.



阀座的防火结构设计
Seat fire-proof structure design



中法兰密封的防火结构设计
Middle flange sealing of fire-proof structure design

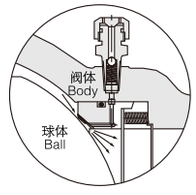


阀杆的防火结构设计
Stem fire-proof structure design

阀门中腔的自动泄压Cavity atomatic pressure relief device

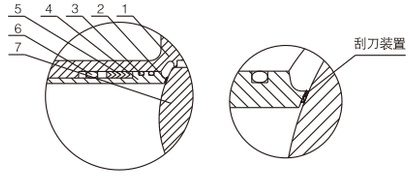
当滞留在阀门中腔的液体介质由于温度升高而汽化，导致中腔压力异常升高时，中腔内的介质能够依靠其本身的作用力推动阀座而自动泄压，从而确保阀门的安全。

When the cavitvy pressre rises because of the aasification of the medium in the cavity along with the temperature increased, the medium can push the seat to relief the pressure to ensure the safety of the valve.



阀门中腔的自动泄压
Cavity atomatic pressure relief device

根据客户要求固体介质的粘结的刮刀装置 Solid media multiaspects scraper device



序号 NO.	零件名称 PART NAME
1	阀体 Body
2	阀座密封面 Seat sealing part
3	密封圈 Sealing ring
4	阀座 Seat
5	阀座弹簧 Seat spring
6	阀座密封圈 Seat sealing ring
7	球体 Ball

球前球后双重密封结构设计 Double seal design before and afer the ball

对于某些特定的工况要求以及用户要求，固定球阀可以采用球前球后双重密封结构设计，即使其中一个密封副因意外情况密封失效，阀门仍然能够正常工作，从而提高了阀门的密封可靠性。

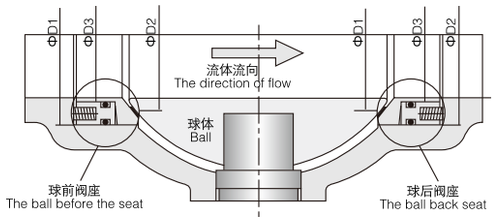
For the special work condition and customer requirements, the trunnion ball valve adopts double seal structure design before and after the ball so that if one seal broken, the valve can still work, the seal reliability is increased.

对于球前阀座，由于D1、D2的面积差形成的活塞效应，在阀座前后的介质压差作用下，加上弹簧的预紧力使球前阀座与球体紧密接触而密封并且密封力随着介质压差的增大而增大加。

For the seat before the ball. there is a piston effect because the area difference of D1 and D2, Effected by medium pressure difference before and after the seat. and pre-tense of spring, the seat before the ball push the ball hardly, and the sealing will be increased along with the pressure difference.

对于球后阀座，由D2、D3的面积差形成的活塞效应，在阀座前后的介质压差作用下，加上弹簧的预紧力使球后阀座与球体紧密接触而密封，并且密封力随着介质压差的增大而增加。

For the seat after the ball, there is a piston effect because the area difference of D2 and D3,Effected by medium pressure difference before and after the seat, and spring strength,the seat after the ball push the ball hardly, and the sealing will be increased along with the pressure difference.

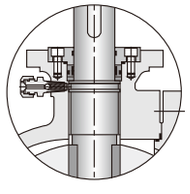


球前球后双密封结构设计
Double seal design before and afer the ball

阀杆的防吹出结构设计 Stem Blow-out Proof Structure Design

阀杆采用防吹出结构设计。阀杆大端上手用开口环将阀杆于阀杆完全固定，即使在阀腔异常升压的情况下，也能够保证阀杆不会被介质吹出。

Stem adopts blow-out proof structure design. Fasten the stem by snap ring to ensure the stem do not blow out by the medium, even the cavity pressure rises.



阀杆的防吹出结构设计
The metal seal trunnion ball valve has the anti-static function

防静电的功能 Anti-static structure

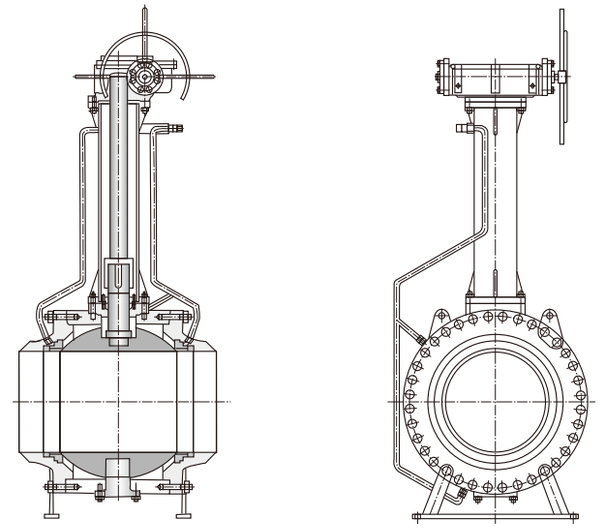
硬密封固定球阀本身就具有防静电的功能

The metal seal trunnion ball valve has the anti-static function

驱动装置安排亚台的设置 Actuator device Plate

吉富隆阀门的固定球阀均设置了安装驱动装置的支架平台，可以方便的安装蜗轮蜗杆传动装置、气动装置、电动装置、液动装置以及气液联动装置等。

Our trunnion ball valve has the actuator device yoke plate to installthe gear, pneumatic, electric, hydraulic and pneumatic-hydraulic linked actuator easily.



加长杆装置
Extension stem and sleeves

防腐蚀 Anti-corrosion

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。此外还有多种防腐蚀材料供用户选择。阀门外表使用InternationalCo.的油漆，满足了各种环境条件的要求。

There is a space when design the valve thickness, the stem, ball, seat and bonnet are plated according to ASTM B 733 and B 656. Moreover. we have more anti-corosion metrial to supply for customers. The valve surface is painted by international Co,to meet various environmental condition.

抗硫化应力裂变 Anti-sulphur Stressing Cracking

吉富隆生产系列抗硫球阀，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 MI0175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，并满足化环境工况的工艺要求。

GIFLON anti-sulphur ball valve series, allthe material contacting the medium are according to NACE Mr0175, controlled and inspected strictly during the production procedure, to auarantee the products meet the standard and anti-suiphureinvironmental condition technical requirements.

加长杆装置 Extended Stem

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

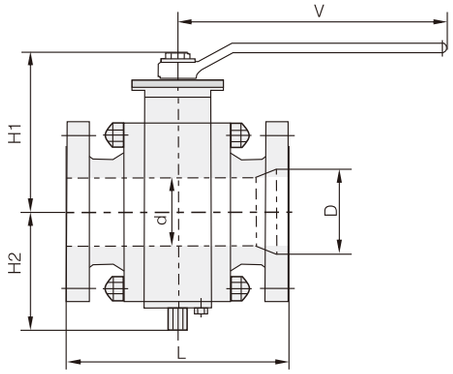
For the under ground ball valve, we can supply extended stem, including stem, grease injection valve, bleeding valve, The customers should specify the extension requirements and extended length(generally means the length from valve center to actuator center)

产品范围 Scope of products

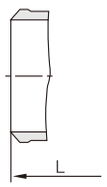
通径 Drift grade range	NPS	4	5	6	8	10	12	14	16	18	20	24	28	30	32	34	36	40
	DN	100	125	150	200	250	300	350	400	450	500	600	700	750	800	850	900	1000
压力等级或公称压力 Pressure grade range	Class150/PN20																	
	CLass300/PN50																	
	Class600/PN110																	
	Class900/PN150											-	-	-	-	-	-	-
	Class1500/PN260							-	-	-	-	-	-	-	-	-	-	-
	Class2500/PN420							-	-	-	-	-	-	-	-	-	-	-
	PN16																	
	PN25																	
	PN40																	
	PN63																	
	PN100																	
	PN160											-	-	-	-	-	-	-

注：△表示建议采用蜗轮蜗杆传动
Note:△Stand for worm gear/lever.

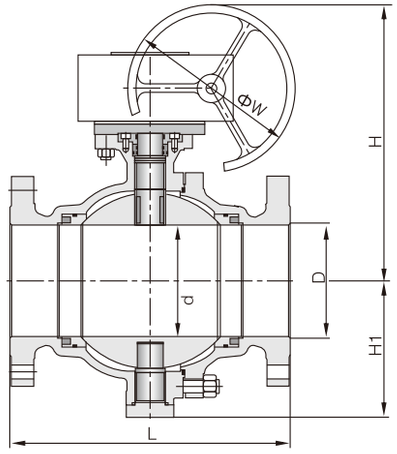
主要尺寸及重量 Main outline dimensions and weight



4''
Suitable for 4''and below metal sealed ball valves



对焊连接
Butt weld connection



6''
Suitable for 6''and below metal sealed ball valves

古富隆集团 GIFLON
金属硬密封球阀
Metal seal ball valve

全通径 Full-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)							Weight (kg)
	DN	NPS	L		d	H	H1	W	V	
			RF	BW						
Class 150	50	2	178	216	51	108	90	300	285	18
	80	3	203	283	76	280	110	300	-	30
	100	4	229	305	102	295	140	500	-	104
	150	6	394	457	152	366	175	600	-	195
	200	8	457	521	203	512	190	600	-	393
	250	10	533	559	254	590	230	700	-	505
	300	12	610	635	305	666	295	700	-	725
	350	14	666	762	337	760	360	760	-	900
	400	16	762	838	387	830	425	760	-	1250
	450	18	864	914	438	920	470	760	-	1875
	500	20	914	991	489	1003	530	760	-	2350
	550	22	991	991	540	1058	595	760	-	3100
	600	24	1067	1143	591	1115	660	760	-	3905
	700	28	1245	1346	686	1170	725	760	-	5780
	750	30	1295	1397	737	1225	805	760	-	7785
	800	32	1372	1524	781	1290	877	800	-	9165
	850	34	1473	1626	832	1350	926	800	-	10800
	900	36	1524	1727	876	1400	975	900	-	13020
	1000	40	1727	1727	978	1720	1020	900	-	18050

缩径 Reduced-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)								Weight (kg)
	DN	NPS	L		d	D	H	H1	W	V	
			RF	BW							
Class 150	50*40	2*1 1/2	178	216	39	51	105	75	-	350	15
	80*50	3*2	203	283	51	76	108	90	-	285	25
	100*80	4*3	229	305	76	102	280	110	300	-	86
	150*100	6*4	394	457	102	152	295	140	300	-	125
	200*150	8*6	457	521	152	203	366	175	500	-	235
	250*200	10*8	533	559	203	254	512	190	600	-	456
	300*250	12*10	610	635	254	305	590	230	600	-	600
	350*300	14*12	686	762	305	337	666	295	700	-	810
	400*350	16*14	762	838	337	387	760	360	700	-	1015
	450*400	18*16	864	914	387	438	830	425	760	-	1350
	500*450	20*18	914	991	438	489	920	470	760	-	1986
	550*500	22*20	991	991	489	540	1003	530	760	-	2800
	600*500	24*20	1067	1143	489	591	1058	595	760	-	3564
	700*600	28*24	1245	1346	591	686	1115	660	760	-	4325
	750*700	30*28	1295	1397	686	737	1170	725	760	-	6458
	800*750	32*30	1372	1524	737	781	1225	805	760	-	8423
	850*800	34*32	1473	1626	781	832	1290	877	800	-	9850
	900*800	36*32	1524	1727	832	876	1350	926	800	-	12150
	1000*900	40*36	1855	2083	876	978	1460	986	900	-	14250

全通径 Full-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)							重量 Weight (kg)
	DN	NPS	L		d	H	H1	W	V	
			RF	BW						
Class 300	50	2	216	216	51	107.5	90	–	285	23
	80	3	283	283	76	280	110	300		35
	100	4	605	305	102	306	140	500	–	104
	150	6	403	403	152	366	175	500	–	215
	200	8	502	521	203	551	190	700	–	387
	250	10	568	559	254	624	250	700	–	640
	300	12	648	635	305	701	316	760	–	862
	350	14	762	762	337	786	398	760	–	1350
	400	16	838	838	387	850	490	760	–	1560
	450	18	914	914	438	910	500	800	–	2106
	500	20	991	991	489	940	530	800	–	2800
	550	22	1092	1092	540	1012	587	800	–	3402
	600	24	1143	1143	591	1080	635	800	–	4200
	700	28	1346	1346	686	1250	790	800	–	6300
	750	30	1397	1397	737	1320	856	900	–	8540
	800	32	1524	1524	781	1400	920	900	–	10135
	850	34	1626	1626	832	1516	945	1000	–	11250
	900	36	1727	1727	876	1627	985	1000	–	14200
	1000	40	1930	1930	978	1725	1028	1000	–	19500

缩径 Reduced-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)								重量 Weight (kg)
	DN	NPS	L		d	D	H	H1	W	V	
			RF	BW							
Class 300	50*40	2*1 1/2	178	216	38	51	105	75	–	250	19
	80*50	3*2	203	283	51	76	107.5	90	–	285	31
	100*80	4*3	229	305	76	102	280	110	300	–	86
	150*100	6*4	394	457	102	152	306	140	500	–	162
	200*150	8*6	457	521	152	203	366	175	700	–	265
	250*200	10*8	533	559	203	254	551	190	700	–	426
	300*250	12*10	610	635	254	305	624	250	760	–	680
	250*300	14*12	686	762	305	337	701	316	760	–	915
	400*350	16*14	762	838	337	387	786	398	760	–	1406
	450*400	18*16	864	914	387	438	850	490	800	–	1652
	500*450	20*18	914	991	438	489	910	500	800	–	2204
	550*500	22*20	991	991	489	540	940	530	800	–	2950
	600*500	24*20	1067	1143	540	591	1012	587	800	–	3642
	700*600	28*24	1245	1346	591	686	1080	63.5	800	–	4361
	750*700	30*28	1295	1397	686	737	1250	790	800	–	6512
	800*750	32*30	1372	1524	737	781	1320	856	900	–	9024
	850*800	34*32	1473	1626	781	832	1400	920	900	–	10950
	900*800	36*32	1524	1727	832	876	1516	945	1000	–	12043
	1000*900	40*36	1855	2083	876	978	1627	985	1000	–	15067

全通径 Full-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)								重量 Weight (kg)
	DN	NPS	L			d	H	H1	W	V	
			RF	BW	RTJ						
Class 400	50	2	292	292	295	51	265	163	400	–	48
	80	3	356	356	359	76	275	179	400	–	90
	100	4	406	406	435	102	315	219	600	–	125
	150	6	495	495	498	152	560	208	600	–	370
	200	8	597	597	600	203	690	245	600	–	680
	250	10	673	673	676	254	633	306	600	–	1030
	300	12	762	762	765	305	665	349	760	–	1350
	350	14	826	826	829	337	619	400	700	–	1850
	400	16	902	902	905	387	738	450	760	–	2150
	450	18	978	978	981	438	783	502	900	–	2835
	500	20	1054	1054	1060	489	848	566	900	–	3640
	550	22	1143	1143	1153	540	954	592	1000	–	5320
	600	24	1232	1232	1241	591	1017	651	1000	–	7180
	700	28	1397	1397	1410	686	1058	707	1000	–	9540
	750	30	1524	1524	1537	737	1135	750	1000	–	10520
	800	32	1651	1651	1667	781	1237	786	1106	–	11250
	850	34	1778	1778	1794	832	1304	826	1106	–	12840
	900	36	1880	1880	1875	876	1443	902	1106	–	14750
	1000	40	2170	2170	2170	978	1535	987	1106	–	18700

缩径 Reduced-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)									重量 Weight (kg)
	DN	NPS	L			d	D	H	H1	W	V	
			RF	BW	BW							
Class 400	50*40	2*1 1/2	292	292	295	38	51	206	145	400	–	40
	80*50	3*2	356	356	359	51	76	265	163	400	–	76
	100*80	4*3	406	406	435	76	102	275	179	400	–	105
	150*100	6*4	495	495	498	102	152	315	219	600	–	280
	200*150	8*6	597	597	600	152	203	560	208	600	–	560
	250*200	10*8	673	673	676	203	254	690	245	600	–	750
	300*250	12*10	762	762	765	254	305	633	306	600	–	1050
	250*300	14*12	826	826	829	305	337	665	349	760	–	1580
	400*350	16*14	902	902	905	337	387	619	400	700	–	2010
	450*400	18*16	978	978	981	387	438	738	450	760	–	2450
	500*450	20*18	1054	1054	1060	438	489	783	502	900	–	3040
	550*500	22*20	1143	1143	1153	489	540	848	566	900	–	4560
	600*500	24*20	1232	1232	1241	540	591	954	592	1000	–	6350
	700*600	28*24	1397	1397	1410	591	686	1017	651	1000	–	8015
	750*700	30*28	1524	1524	1537	686	737	1058	707	1000	–	10050
	800*750	32*30	1651	1651	1667	737	781	1135	750	1000	–	10080
	850*800	34*32	1778	1778	1794	781	832	1237	786	1106	–	11020
	900*800	36*32	1880	1880	1875	832	876	1304	826	1106	–	12400
	1000*900	40*36	2170	2170	2170	876	978	1443	902	1106	–	16550

全通径 Full-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)								重量 Weight (kg)
	DN	NPS	L			d	H	H1	W	V	
			RF	BW	RTJ						
Class 600	50	2	292	292	295	51	265	163	400	–	48
	80	3	356	356	359	76	275	179	400	–	90
	100	4	432	432	435	102	315	219	600	–	150
	150	6	559	559	562	152	560	208	600	–	440
	200	8	660	660	664	203	690	245	600	–	810
	250	10	787	787	791	254	633	306	600	–	1235
	300	12	838	838	841	305	665	349	760	–	1620
	350	14	889	889	892	337	619	400	700	–	2035
	400	16	991	991	995	387	738	450	760	–	2580
	450	18	1092	1092	1095	438	783	502	900	–	3400
	500	20	1194	1194	1200	489	848	566	900	–	4360
	550	22	1295	1295	1305	540	954	592	1000	–	6380
	600	24	1397	1397	1407	591	1017	651	1000	–	8600
	700	28	1549	1549	1562	686	1058	707	1000	–	11340
	750	30	1651	1651	1664	737	1135	750	1000	–	12620
	800	32	1778	1778	1794	781	1237	786	1106	–	13500
	850	34	1880	1880	1946	832	1304	826	1106	–	15400
	900	36	1930	1930	2097	876	1443	902	1106	–	17700
	1000	40	2170	2170	2170	978	1535	987	1106	–	22400

缩径 Reduced-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)									重量 Weight (kg)
	DN	NPS	L			d	D	H	H1	W	V	
			RF	BW	BW							
Class 600	50*40	2*1 1/2	292	292	295	38	51	206	145	300	–	40
	80*50	3*2	356	356	359	51	76	265	163	400	–	76
	100*80	4*3	432	432	435	76	102	275	179	400	–	105
	150*100	6*4	559	559	562	102	152	315	219	600	–	336
	200*150	8*6	660	660	664	152	203	560	208	600	–	670
	250*200	10*8	787	787	791	203	254	690	245	600	–	900
	300*250	12*10	838	838	841	254	305	633	306	600	–	1260
	250*300	14*12	889	889	892	305	337	665	349	760	–	1890
	400*350	16*14	991	991	995	337	387	619	400	760	–	2410
	450*400	18*16	1092	1092	1095	387	438	738	450	760	–	2940
	500*450	20*18	1194	1194	1200	438	489	783	502	900	–	3640
	550*500	22*20	1295	1295	1305	489	540	848	566	900	–	5470
	600*500	24*20	1397	1397	1407	540	591	954	592	1000	–	7620
	700*600	28*24	1549	1549	1562	591	686	1017	651	1000	–	9400
	750*700	30*28	1651	1651	1664	686	737	1058	707	1000	–	12060
	800*750	32*30	1778	1778	1794	737	781	1135	750	1000	–	12090
	850*800	34*32	1930	1930	1946	781	832	1237	786	1106	–	13220
	900*800	36*32	2083	2083	2097	832	876	1304	826	1106	–	14880
	1000*900	40*36	2170	2170	2170	876	978	1443	902	1106	–	18540

全通径 Full-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)								重量 Weight (kg)
	DN	NPS	L			d	H	H1	W	V	
			RF	BW	RTJ						
Class 900	50	2	368	368	371	51	310	115	500	–	100
	80	3	381	381	384	76	282	119	400	–	150
	100	4	457	457	460	102	400	200	600	–	220
	150	6	610	610	613	152	482	223	760	–	530
	200	8	737	737	740	203	502	327	760	–	613
	250	10	838	838	841	254	529	373	800	–	1086
	300	12	965	965	968	305	935	334	900	–	2760
	350	14	1029	1029	1038	324	965	350	1000	–	3100
	400	16	1130	1130	1140	375	1120	480	1000	–	5160
	450	18	1219	1219	1232	425	1182	526	1106	–	7340
	500	20	1321	1321	1334	473	1256	579	1106	–	9023
	600	24	1549	1549	1568	570	695	615	1106	–	16580
	650	26	1600	1600	1622	617	730	655	1106	–	18980
	700	28	1702	1702	1724	665	775	680	1106	–	22310
	750	30	1778	1778	1802	712	815	715	1106	–	23150
	800	32	1880	1880	1902	760	855	750	1106	–	25120
	850	34	1981	1981	2010	808	896	795	1106	–	27109
	900	36	2134	2134	2162	855	945	825	1106	–	34410
	1000	40	2283	2283	2311	952	1028	940	1106	–	42180

缩径 Reduced-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)									重量 Weight (kg)
	DN	NPS	L			d	D	H	H1	W	V	
			RF	BW	BW							
Class 900	50*40	2*1 1/2	368	368	371	38	51	217	119	400	–	71
	80*50	3*2	381	381	384	51	76	310	115	500	–	100
	100*80	4*3	457	457	460	76	102	282	119	400	–	150
	150*100	6*4	610	610	613	102	152	400	200	600	–	220
	200*150	8*6	737	737	740	152	203	482	223	760	–	530
	250*200	10*8	838	838	841	203	254	502	327	760	–	613
	300*250	12*10	965	965	968	254	305	529	373	800	–	1086
	250*300	14*12	1029	1029	1038	305	324	935	334	900	–	2760
	400*350	16*14	1130	1130	1140	324	375	965	350	1000	–	3100
	450*400	18*16	1219	1219	1232	375	425	1120	480	1000	–	5160
	500*450	20*18	1321	1321	1334	425	473	1182	526	1106	–	7340
	600*500	22*20	1549	1549	1568	473	570	1256	579	1106	–	11250
	650*600	24*20	1600	1600	1622	570	617	695	615	1106	–	18170
	700*600	28*24	1702	1702	1724	570	665	695	615	1106	–	19220
	750*700	30*28	1778	1778	1802	665	712	680	1106	1106	–	24679
	800*750	32*30	1880	1880	1902	712	760	715	1106	1106	–	25660
	850*800	34*32	1981	1981	2010	760	808	750	1106	1106	–	26658
	900*800	36*32	2134	2134	2162	760	855	750	1106	1106	–	27669
	1000*900	40*36	2283	2283	2311	855	952	945	825	1106	–	36990

全通径 Full-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)						重量 Weight (kg)
	DN	NPS	D	H	H1	L			
						RF	BW	RJ	
Class 1500	50	2	51	230	120	368	368	372	98
	80	3	76	250	130	470	470	473	145
	100	4	102	255	135	546	546	550	243
	150	6	146	500	320	705	705	711	925
	200	8	194	550	350	832	832	842	1625
	250	10	241	690	400	991	991	1000	1940
	300	12	289	720	420	1130	1130	1146	2820
	350	14	318	800	460	1257	1257	1276	5460
	400	16	362	900	500	1384	1384	1407	6120
	450	18	410	950	550	1537	1537	1559	7650
	500	20	461	990	590	1664	1664	1686	9180
	600	24	548	1300	900	1943	1943	1972	15870
	700	28	644	1610	1210	2420	2420	2442	23845
	800	30	690	1765	1365	2593	2593	2615	30710
	850	32	736	1920	1520	2769	2769	2791	37270
	900	36	828	2230	1830	3111	3111	3133	53070
	1000	40	920	2540	2140	3457	3457	3479	72800

缩径 Reduced-bore

压力等级 Pressure grade	Size (inch)	尺寸 Size (mm)						重量 Weight (kg)
		D	H	H1	L			
					RF	BW	RJ	
Class 1500	3*2	51	230	120	470	470	473	110
	4*3	76	250	130	546	546	549	170
	6*4	102	255	135	705	705	711	255
	8*6	146	500	320	832	832	842	1110
	10*6	146	500	320	991	991	1000	1160
	10*8	194	550	350	991	991	1000	1950
	12*8	194	550	350	1130	1130	1146	2030
	12*10	241	690	400	1130	1130	1146	2330
	14*10	241	690	400	1257	1257	1276	2430
	14*12	289	720	420	1257	1257	1276	3390
	16*12	289	720	420	1384	1384	1407	3525
	16*14	318	800	460	1384	1384	1407	6550
	18*14	318	800	460	1537	1537	1559	6825
	20*16	362	900	500	1664	1664	1686	7345
	24*20	456	990	560	1943	1943	1972	11020
	30*24	548	1300	990	2593	2593	2615	19045
	32*28	644	1610	1210	2769	2769	2791	28615
	36*30	690	1765	1365	3111	3111	3133	36850
	40*36	828	2230	1830	3457	3457	3479	63690
	48*40	920	2540	2140	4174	4174	4219	87360

古富隆集团 GIFLON
金属硬密封球阀
Metal seal ball valve

全通径 Full-bore

压力等级 Pressure grade	口径 Drift grade range		尺寸 Size (mm)						重量 Weight (kg)
	DN	NPS	D	H	H1	L			
						RF	BW	RJ	
Class 2500	50	2	45	250	140	451	451	454	120
	80	3	64	300	150	578	578	584	180
	100	4	89	350	180	673	673	683	420
	150	6	133	700	465	914	914	927	1225
	200	8	181	780	530	1022	1022	1038	2060
	250	10	226	1035	745	1270	1270	1292	4060
	300	12	266	1125	825	1422	1422	1445	9020
	350	14	311	1215	905	1659	1659	1681	14375
	400	16	356	1305	985	1896	1896	1918	20625
	450	18	400	1395	1065	2133	2133	2155	27500
	500	20	445	1485	1145	2369	2369	2391	35000

缩径 Reduced-bore

压力等级 Pressure grade	Size (inch)	尺寸 Size (mm)						重量 Weight (kg)
		D	H	H1	L			
					RF	BW	RJ	
Class 2500	3*2	45	250	140	578	578	584	140
	4*3	64	300	150	673	673	683	220
	6*4	89	350	180	914	914	917	500
	8*6	133	700	465	1022	1022	1038	1470
	10*6	133	700	465	1270	1270	1292	1530
	10*8	181	780	530	1270	1270	1292	2470
	12*8	181	780	530	1422	1422	1445	2575
	12*10	226	1035	745	1422	1422	1445	4870
	14*10	226	1035	745	1660	1660	1682	5075
	14*12	266	1125	825	1660	1660	1682	10825
	16*12	266	1125	825	1896	1896	1918	11275
	16*14	311	1215	905	1896	1896	1918	17250
	18*14	311	1215	905	2133	2133	2155	17970
	20*16	356	1305	985	2369	2369	2391	24750
	24*20	445	1485	1145	2845	2845	2883	72000