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Butterfly valve and ball valve

蝶阀 球阀系列



工恒阀门（上海）有限公司
GongHeng Valve（ShangHai）CO.,LTD

Brief Introduction
企业简介

工恒阀门（上海）有限公司核心领导人员出身于国内知名阀门厂，工恒阀门藉近多年的科研、发展创新和诚信经营，在阀门、自控阀门、执行器领域得到迅猛发展，公司集科研、产品开发、制造、销售、服务于一体的科技创新企业。公司拥有铸造、锻造、热处理、焊接、金切、装配、试验、无损检测等生产加工设备和试验检测设备，多年来形成了一套颇具特色的生产工艺，是具有较强专业化制造特征的企业。公司通过与国内外先进制造商进行技术引进和技术交流，结合公司的实际情况，通过上海各大学院校及科研院所的培训基地，建立公司的研发队伍，调整行业的组织结构、产品结构和技术结构，不断提高产品质量和技术水平、提高产品制造水平、提高行业经济效益。同时加快技术创新，建立建全现代化管理体制，发挥人才效益，提高企业核心竞争力。

工恒致力于打造专业化发展的科技企业，主要从事电动阀、气动阀、调节阀、蝶阀、闸阀、截止阀、止回阀、浆液阀、泥浆阀、美标阀、日标阀、德标阀等，主要材质有铸钢、碳钢、青铜、黄铜、不锈钢、合金钢、PVC、UPVC、球墨铸铁、铸铁、稀有金属等，产品使用温度-196℃~+1000℃，压力范围0.1Mpa~56Mpa，磅级150LB~3500LB，公称通径为DN3～3600mm。生产、销售的产品近千种型号，上万个规格，广泛应用于发电厂、热电厂、化工、天然气、冶金、轻工纺织、造纸、市政、建筑、自来水、环保、液压、冷藏等行业，产品覆盖全国31个省、市、自治区、直辖市，并出口俄罗斯、巴基斯坦、越南、印度、苏丹等国家和地区，深受国内外用户欢迎和好评。

“提高全员的质量意识，强化科学的质量管理，生产让顾客满意的产品，提供全面的优质服务”是工恒坚定不移的方针，公司将充分发挥企业优势，持续改进质量，全面提升产品技术水平和服务水平，向用户提供高质量的产品和完善的服务，为社会作出更大的贡献。

展望未来，我们激情高昂，工恒精神将继续渗透在与众不同的创新产品和服务之中。工恒竭诚欢迎国内外客商、各界用户和友仁前来考察、洽谈贸易，展望未来。工恒人愿与您在成功的道路上携手合作，再创辉煌。工恒的口号是“工匠精神、品质永恒”。期待您的访问与咨询。

精益求精，源于每个细节 . . . . . .

Butterfly valve & Ball Valve
部分蝶阀、球阀产品总汇



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产品简介

三偏心金属密封蝶阀是我公司自行研制开发的新一代蝶阀产品。广泛适用于冶金、石油、化工、电力、市政建设等工业管道上作截断或调节介质流量用。

❖ **该产品主要有如下特点：**

1、桁架式蝶板结构：蝶板强度高，过流面积大，流阻小。

2、三偏心结构：阀杆轴线与蝶板密封面间偏置一个尺寸A，并与阀体通道轴线偏置一个尺寸B,阀座回转轴线与阀体通道轴线形成一个偏心角a，故形成三偏心。蝶阀从0°~90°开启时，蝶板密封面会在开启的瞬间立即脱离阀座封面，在其 90°~0° 关闭时，只有在关闭的瞬间，蝶板密封面才会接触并压紧阀座密封面，但可以通过外加驱动力矩的改变，实现对密封比压的任意调整。所以阀座与蝶板上的密封面之间无任何磨擦，去除了磨损和泄漏的可能性。

3、扭矩密封：三偏心的结构使蝶阀关闭时，其密封副两密封面之间的密封比压由外加于阀杆的驱动力矩产生。不仅消除了常规弹性阀座弹性材料老化、冷流、弹性失效等因素造成的密封比压降低和消失，而且可以通过外加驱动力矩的改变，实现对其密封比压的任意调整，从而使三偏心蝶阀的密封性能改善，蝶阀的使用寿命也大大提高。

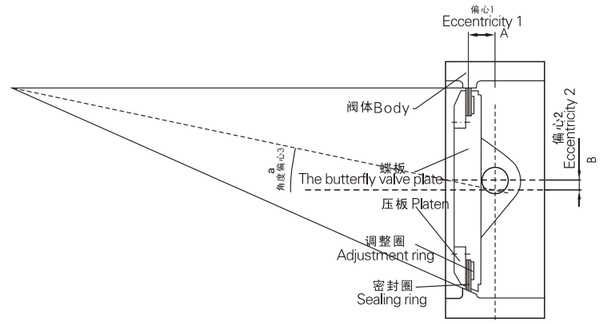
4、软硬层叠式金属密封结构：蝶板密封圈采用软硬层叠式不锈钢片和柔性石墨组合，使其具有金属硬密封和弹性密封的双重优点，无论在低温和高温工况下均具有优良的密封性能。

5、双向密封：因密封面锥角小于密封材料的磨擦角，蝶板关到密封位置时立即实现自锁，并能承受一定的反向压力冲击。

6、防火结构：全金属结构本身具有火灾安全的特性。

7、阀体密封面：采用堆焊硬质合金或不锈钢使得密封面强度高、硬度好、耐磨损，可连续启闭60000次以上而无损伤。

8、密封圈：密封圈由压板夹在蝶板上，易于安装、调节和更换。阀杆的上、下部位装有轴套，防止磨损和粘连，提高了使用寿命。



三偏心金属密封结构示意图
Schematic of three eccentric metal sealed butterfly valve.

新老密封结构对比

老密封结构主要有U形、半O形和唇形等弹性密封环，均存在着下列三大缺点：（1）密封环均为冲压成形，有严重的应力集中，在高温下，因材料退火，失去弹性引起阀门密封环变形而泄漏。(2）密封材料热处理硬度过硬，弹性不佳，脆性增加，当密封环座经常受蝶板挤压或在低温工况下容易造成阀座疲劳脆裂。(3）上述三种结构目前都采用直接冲压成形，只能制作小口径，大口径需通过冲压、定形、接头焊接来完成，这种制造工艺均存在接头焊接应力变形和焊接处不平引起泄漏，严重影响蝶阀的使用寿命。（详见图1）

三偏心金属密封蝶阀的密封结构对上述传统弹性密封结构，有了突破性改进。本蝶阀密封是采用金属片层叠组成，通过高精度机械切削加工形成，嵌装在蝶板上与阀座吻合，这种密封结构在高温和低温工况下，不存在冲压应力、焊接应力、弹性退火变形或咬环脆裂等现象，彻底解决传统蝶阀应力变形而造成泄漏的弊病。（详见图2）

Brief Introduction

Three eccentric metal sealed butterfly valve is a new generation product designed and manufactured by our company own, it is widely used in Industrial pipelines such as metallurgical, petroleum, chemicals, electricity, municipal construction etc to cut–off or adjust the media flow.

Features of product

1. The strength of butterfly valve is high, the flow area is large and the flow resistance is small.
2. Three eccentric structure: Stem axis and sealing surface of plate will form A, stem axis and body channel axis will form B, Seat rotation axis and body channel axis will form an eccentric angle a, so it is three eccentric. The valve open from 0~90℃，the sealing surface of the plate will leave the seat sealing surface at the moment of valve's opening. When the valve closed from 0~90℃, the sealing surface of the plate and the seat sealing surface will touch and close tightly at the moment of closing. We can change sealing pressure through changing the driving torque. So there is no friction between seat and sealing surface of the plate, the possibility of wear and leakage will down.
3. Torque Sealing: When the valve closes, the three eccentric structure will make the sealing surface and the driving torque happen. We can change sealing pressure through changing the driving torque. So the using life of butterfly will improve.
4. Hard and soft metal seal structure: Sealing ring of butterfly valve plate used soft and hard stainless steel , so it has both advantage of soft sealed metal and hard sealed metal butterfly valve, it has good performance whether in low temperature of high temperature.
5. Bi–directional sealing: Because of the cone angle of sealing surface is smaller than friction angle, the plate will realize self–locking when it is closed in sealing position, it can bear the impact of the reverse pressure.
6. Fire–proof structure: All–metal structure is fire–proof.
7. Sealing surface of body: The body uses carbide and stainless steel to make the sealing surface has good strength and hardness and wear–resistantance. It can open and close 6000 times continuously.
8. Sealing ring : The sealing ring is folded in the butterfly plate by platen. It is convenient to installation, adjustment and replacement. The sleeve installed by upper and lower parts of stem to prevent wear , so it improve the using life of the

Comparison between old and new sealing structure

The old sealing structure has three main shape : U type, half O type, a labial shape. There are three shortcoming: (1)Sealing ring is stamped , it has serious stress concentration, in high temperature , because of material annealed, the sealing ring will change its original shape and can cause leakage.(2) Excellent heat hardness sealing material , brittleness is increased, the valve seat will rattle when the sealing ring has extrusion or work in low temperature.(3) Direct metal forming can just used for small diameter butterfly valve but not large diameter valve. The large diameter valve need to be finished by welding, distortion of welding stress will cause leakage and make the valve out of its original shape.(See Figure 1)

The three eccentric metal sealed butterfly valve has a breakthrough in compare to the traditional sealing structure of the butterfly valve. The sealing of three eccentric metal sealed butterfly valve is superposition by sheet metal, processed by high–precision mechanical cutting. So it don't have the impact of stress、welding stress、elastic deformation annealing or central teeth rattle, the problem of leakage has been solved completely due to stress and deformation of butterfly valve.

金属密封蝶阀系列
Metal sealed butterfly valve
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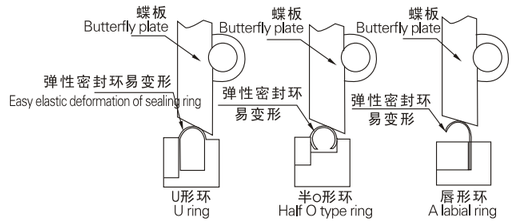
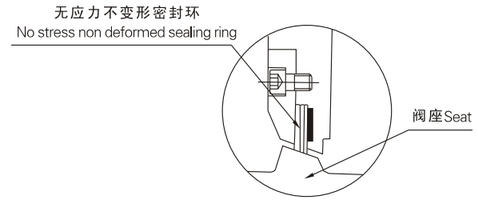


老结构密封示意（图1）
Schematic diagram of the old sealing structure (Figure 1)



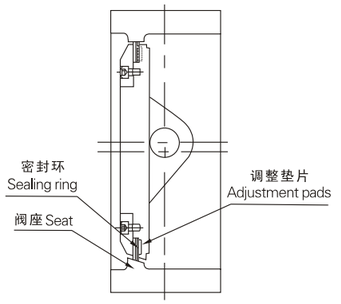
新结构密封示意（图2）
Schematic diagram of the new sealing structure (Figure 2)

调节装置延长寿命

Regulating device to extend the life

本蝶阀设有密封调节装置，长期使用后，若密封性能下降，可调节蝶板密封圈向阀座靠近，即可恢复原有密封性能，大大地提高使用寿命。（详见图3）

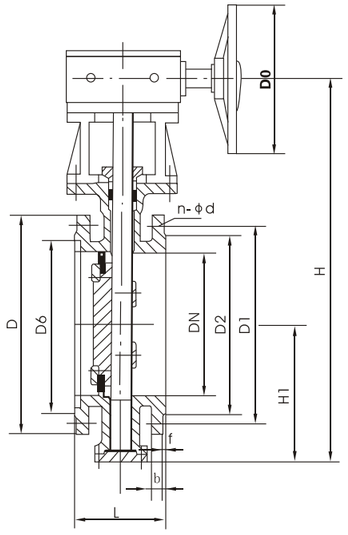
The valve has regulating device to regulate the sealing ring to make it close to valve seat. Sealing performance will resume and the life will be longer.(See Figure 3)



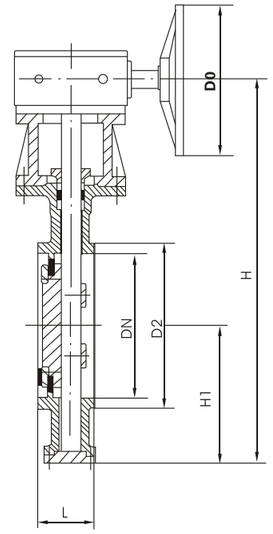
密封调整示意图（图3）
Schematic diagram of sealing the adjustment（ Figure 3 ）

标准与规范 *Standards and norms*

制造标准 Manufacturing standards		JB/T8527 GB/T12238-89
结构长度 Face to face and end to end connection		GB/T12221
配管法兰 Piping flange		JB/T74~90、HGJ44~76、GB/T9113
质量保证 Quality Assurance		ISO9001
压力-温度等级 Pressure–temperature rating		GB/T9131、HGJ67、JB/T74
试验与检验 Inspection and test		GB/T13927 JB/T9092
公称通径DN Nominal diameter		50~3000mm
公称压力PN Nominal pressure		0.25~6.4Mpa
试验压力Ps Testing pressure	密封：Sealing	1.1PN
	壳体强度：Shell strength	1.5XPN
工作压力 Working temperature		1.0XPN



法兰式 Flanged



对夹式Wafer type

主要零件材料选用适用工况 The working conditions of Main parts material

阀体材料代号 Body material code	C	I	P	P8	P3	R	R8	R3
阀体 Body	WCB	ZG1Cr5Mo	ZG1Cr18Ni9Ti	CF8(304)	CF3(304L)	ZGlCr18Ni12Mo2Ti	CF8M(316)	CF3M(316L)
蝶板 Butterfly plate	WCB	ZG1Cr5Mo	ZG1Cr18Ni9Ti	CF8(304)	CF3(304L)	ZGlCr18Ni12Mo2Ti	CF8M(316)	CF3M(316L)
压圈 Ring	WCB	ZG1Cr5Mo	ZG1Cr18Ni9Ti	CF8(304)	CF3(346L)	ZGlCr18Ni12Mo2Ti	CF8M(316)	CF3M(316L)
阀杆 Stem	2Cr13	25Cr2Mo1V	1Cr18Ni9Ti	0Cr19Ni9	00Cr19Nill	1Cr18Ni12Mo2Ti	0Cr17Ni12Mo2	00Cr17Ni14Mo2
阀座 Seat	1Cr18Ni9Ti		0Cr19Ni9	00Cr19Nill	00Cr19Nill	0Cr17Ni12Mo2	00Cr17Ni14Mo2	00Cr17Ni14Mo2
适用介质 The media	水、蒸汽、气体、油品等 Water , steam and oil etc.		硝酸等腐蚀性介质 Nitric acid and other corrosive media		强氧化性介质 Strong oxidizing medium	醋酸等腐蚀性介质 Acetic acid and other corrosive media		尿素等腐蚀性介质 Urea and other corrosive media
适用温度(℃) The application of temperature	-29～425	-29～550	-196～600					

注：高温600°C~850°C，采用高铬镍钢、铬硅钼钢等耐热钢。
Notes: We use high–chromium–nickel steel, chromium steel, such as silicon–molybdenum heat–resistant steel when the temperature is 600℃~850℃.

金属密封蝶阀系列
Metal sealed butterfly valve
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❖ 主要连接尺寸Main connection dimensions

单位Unit :(mm)

型号 Model	PN (Mpa)	DN	L对夹 wafer type	L法兰 flanged	D	D1	D2	b	f	n—d	Do	H1	H
D 43 343 H 73 373 Y 943 F 973	0.25	50	43	108	140	110	88	16	2	4－14	120	80	330
		65	46	112	160	130	108	16	2	4－14	120	85	350
		80	64	114	190	150	124	18	2	4－18	120	105	380
		100	64	127	210	170	144	18	2	4－18	160	110	410
		125	70	140	240	200	174	18	2	8－18	160	130	490
		150	76	140	265	225	199	20	2	8－18	240	140	600
		200	89	152	320	280	254	22	2	8－18	240	165	660
		250	114	165	375	335	309	24	2	12－18	240	195	750
		300	114	178	440	395	363	24	2	12－22	240	230	820
		350	127	190	490	445	413	24	2	12－22	240	255	870
		400	140	216	540	495	463	24	2	16－22	310	280	920
		450	152	222	695	550	518	24	2	16－22	310	355	1075
		500	152	229	645	600	568	26	2	20－22	400	330	1025
		600	178	267	755	705	667	26	2	20－26	400	390	1135
		700	229	292	860	810	772	26	5	24－26	400	440	1240
		800	241	318	975	920	878	26	5	24－30	400	495	1355
		900	241	330	1075	1020	978	26	5	24－30	400	550	1455
		1000	300	410	1175	1120	1078	26	5	28－30	500	595	1555
		1200	360	470	1375	1320	1295	26	5	32－30	500	695	1755
		1400	390	530	1575	1520	1510	26	5	36－30	500	800	1955
		1600	440	600	1790	1730	1710	26	5	40－30	500	910	2170
		1800	490	670	1990	1930	1918	26	5	44－30	500	1020	2370
		2000	540	760	2190	2130	2125	26	5	48－30	500	1105	2570
		2200	/	1000	2405	2340	2295	28	6	52－33	500	1220	2785
		2400	/	1100	2605	2540	2495	28	6	56－33	500	1320	2985
		2600	/	1200	2805	2740	2695	28	6	60－33	500	1420	3185

❖ 主要连接尺寸Main connection dimensions

单位 Unit :(mm)

型号 Model	PN (Mpa)	DN	L对夹 wafer type	L法兰 flanged	D	D1	D2	b	f	n—d	Do	H1	H
D 43 343 H 73 373 Y 943 F 973	0.6	50	43	108	140	110	88	16	2	4－14	120	80	330
		65	46	112	160	130	108	16	2	4－14	120	85	350
		80	64	114	190	150	124	18	2	4－18	120	105	380
		100	64	127	210	170	144	18	2	4－18	160	110	410
		125	70	140	240	200	174	18	2	8－18	160	130	490
		150	76	140	265	225	199	20	2	8－18	240	140	600
		200	89	152	320	280	254	22	2	8－18	240	165	660
		250	114	165	375	335	309	24	2	12－18	240	195	750
		300	114	178	440	395	363	24	2	12－22	240	230	820
		350	127	190	490	445	413	24	2	12－22	240	255	870
		400	140	216	540	495	463	24	2	16－22	310	280	920
		450	152	222	695	550	518	24	2	16－22	310	355	1075
		500	152	229	645	600	568	26	2	20－22	400	330	1025
		600	178	267	755	705	667	26	2	20－26	400	390	1135
		700	229	292	860	810	772	26	5	24－26	400	440	1240
		800	241	318	975	920	878	26	5	24－30	400	495	1355
		900	241	330	1075	1020	978	26	5	24－30	400	550	1455
		1000	300	410	1175	1120	1078	26	5	28－30	500	595	1555
		1200	360	470	1405	1340	1295	28	5	32－33	500	715	1790
		1400	390	530	1630	1560	1510	32	5	36－36	500	830	2010
		1600	440	600	1830	1760	1710	34	5	40－36	500	930	2220
		1800	490	670	2045	1970	1918	36	5	44－39	500	1035	2435
		2000	540	760	2265	2180	2125	38	5	48－42	500	1145	2655
		2200	/	1000	2475	2390	2335	42	6	52－42	500	1260	2865
		2400	/	1100	2685	2600	2545	44	6	56－42	500	1360	3080
		2600	/	1200	2905	2810	2750	46	6	60－48	500	1470	3300

注：（1）以上数据仅供参考，可根据用户要求采用其它标准设计与制造。
（2）其它压力、口径规格可按用户要求生产。

Note: (1) We can design and manufacture products in other criteria on basis of customer's demands, the above figures are for reference only.
(2)Other pressure and diameter specification will be produced according to the customers' demand.

❖ 主要连接尺寸Main connection dimensions

单位 *Unit* :(mm)

型号 Model	PN (Mpa)	DN	L对夹 wafer type	L法兰 flanged	D	D1	D2	b	f	n—d	Do	H1	H
43 343 H D 73 373 Y 943 F 973	1.0	50	43	108	165	125	99	20	2	4－18	120	90	350
		65	46	112	185	145	118	20	2	4－18	120	95	370
		80	64	114	200	160	132	20	2	8－18	120	105	401
		100	64	127	220	180	156	22	2	8－18	160	120	430
		125	70	140	250	210	184	22	2	8－18	160	140	510
		150	76	140	285	240	211	24	2	8－23	240	160	620
		200	89	152	340	295	268	24	2	8－23	240	200	680
		250	114	165	395	350	320	26	2	12－23	240	260	760
		300	114	178	445	400	370	26	2	12－23	310	280	960
		350	127	190	505	460	430	26	2	16－23	310	320	1010
		400	140	216	565	515	480	26	2	16－26	310	340	1070
		450	152	222	615	565	530	28	2	20－26	400	370	1130
		500	152	229	670	620	582	28	2	20－26	400	410	1210
		600	178	267	780	725	682	34	5	20－30	400	480	1320
		700	229	292	895	840	794	34	5	24－30	400	600	1610
		800	241	318	1015	950	901	36	5	24－33	500	710	1710
		900	241	330	1115	1050	1001	38	5	28－33	500	850	2000
		1000	300	410	1230	1160	1112	38	5	28－36	500	970	2130
		1200	360	470	1455	1380	1328	44	5	32－39	500	1030	2230
		1400	390	530	1675	1590	1530	48	5	36－42	500	1050	2419
		1600	440	600	1915	1820	1750	52	5	40－48	500	1085	2515
		1800	490	670	2115	2020	1950	56	5	44－48	500	1230	2730
		2000	540	760	2325	2230	2150	60	5	48－48	500	1350	2975
		2200	/	1000	2550	2440	2370	60	5	52－56	500	1380	3200
		2400	/	1100	2760	2650	2570	65	6	56－56	500	1450	3450

注：（1）以上数据仅供参考，可根据用户要求采用其它标准设计与制造。

（2）其它压力、口径规格可按用户要求生产。

Note: (1) We can design and manufacture products in other criteria on basis of customer's demands, the above figures are for reference only.
(2)Other pressure and diameter specification will be produced according to the customers' demand.

金属密封蝶阀系列
Metal sealed butterfly valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

❖ 主要连接尺寸Main connection dimensions

单位*Unit*:(mm)

型号 Model	PN (Mpa)	DN	L对夹 wafer type	L法兰 flanged	D	D1	D2	b	f	n—d	Do	H1	H
43 343 73 H D 373 Y 943 F 973	1.6	50	43	108	165	125	100	16	3	4－18	120	98	330
		65	46	112	185	145	120	18	3	4－18	120	100	340
		80	64	114	200	160	135	20	3	8－18	120	105	355
		100	64	127	220	180	155	20	3	8－18	120	122	395
		125	70	140	250	210	185	22	3	8－18	160	142	442
		150	76	140	285	240	210	24	3	8－23	160	151	517
		200	89	152	340	295	265	26	3	12－23	240	192	572
		250	114	165	405	355	320	30	4	12－25	240	235	677
		300	114	178	460	140	375	30	4	12－25	310	245	740
		350	127	190	520	470	435	34	4	16－25	310	280	795
		400	140	216	580	525	485	36	4	16－30	310	295	880
		450	152	222	640	585	545	40	4	20－30	400	320	925
		500	152	229	715	650	608	44	4	20－34	400	380	1014
		600	178	267	840	770	718	48	5	20－41	400	510	1260
		700	229	292	910	840	788	50	5	24－41	400	550	1390
		800	241	318	1025	950	898	52	5	24－41	500	630	1550
		900	241	330	1125	1050	998	54	5	28－41	500	675	1660
		1000	300	410	1250	1170	1110	56	5	28－48	500	70	1870
		1200	360	470	1485	1390	1325	58	5	32－54	500	890	2180
		1400	390	530	1685	1590	1525	60	5	36－54	500	920	2260
		1600	440	600	1930	1820	1750	68	5	40－58	500	1085	2620
		1800	490	670	2130	2020	1950	68	5	44－56	500	1230	3010
		2000	540	760	2345	2230	2150	70	5	48－62	500	1350	3400
43 343 73 H D373 Y 943 F 973	2.5	50	43	108	165	125	100	20	3	4－18	120	98	330
		65	46	112	185	145	120	22	3	8－18	120	100	340
		80	64	114	200	160	135	22	3	8－18	120	105	355
		100	64	127	230	190	160	24	3	8－23	120	122	395
		125	70	140	270	220	188	28	3	8－25	160	142	442
		150	76	140	300	250	218	30	3	8－25	160	157	517
		200	89	152	360	310	278	34	3	12－25	240	192	572
		250	114	165	425	370	332	36	3	12－30	240	235	677
		300	114	178	485	430	390	40	4	16－30	310	245	740
		350	127	190	555	490	448	44	4	16－34	310	280	795

注：（1）以上数据仅供参考，可根据用户要求采用其它标准设计与制造。

（2）其它压力、口径规格可按用户要求生产。

Note: (1) We can design and manufacture products in other criteria on basis of customer's demands, the above figures are for reference only.
(2)Other pressure and diameter specification will be produced according to the customers' demand.

❖ 蝶阀主要连接尺寸Main connection dimensions

单位Unit:(mm)

型号 Model	PN (Mpa)	DN	L对夹 wafer type	L法兰 flanged	D	D1	D2	b	f	n — d	Do	H1	H
43 343 73 H D 373 Y 943 F 973	2.5	400	140	216	620	550	505	48	4	16—34	310	295	880
		450	152	222	670	600	555	50	4	20—34	400	320	925
		500	152	229	730	660	610	52	4	20—41	400	380	1014
		600	178	267	845	770	718	56	4	20—41	400	510	1260
		700	229	292	960	875	815	60	5	24—48	400	550	1390
		800	241	318	1085	990	930	64	5	24—48	500	630	1550
		900	241	330	1185	1090	1020	66	5	28—54	500	675	1660
		1000	300	410	1320	1210	1140	68	5	28—58	500	750	1870
		1200	360	470	1520	1420	1350	72	5	32—58	500	890	2180
		1400	390	530	1755	1640	1560	78	5	36—65	500	920	2260
		1600	440	600	1975	1860	1785	84	5	40—62	500	1085	2620
		1800	490	670	2195	2070	1985	90	5	44—70	500	1230	3010
		2000	540	760	2422	2300	2210	96	5	48—70	500	1350	3400

型号 Model	PN (Mpa)	DN	L对夹 wafer type	L法兰 flanged	D	D1	D2	b	f1	f2	n — d	Do	D6	H1	H
43 343 73 H D 373 Y 943 F 973	4.0	50	53	108	165	125	100	20	3	4	4—18	120	88	112	336
		65	56	112	185	145	120	22	3	4	8—18	120	110	122	356
		80	74	114	200	160	135	22	3	4	8—18	120	121	125	375
		100	74	127	235	190	160	24	3	4.5	8—23	120	150	135	405
		125	80	140	270	220	188	28	3	4.5	8—25	160	176	165	465
		150	86	140	300	250	218	30	3	4.5	8—25	160	204	195	555
		200	97	160	375	320	282	38	3	4.5	12—30	240	260	250	595
		250	122	177	450	385	345	42	3	4.5	12—34	240	313	215	692
		300	122	194	515	450	408	46	4	4.5	16—34	310	364	250	750
		350	135	206	580	510	465	52	4	5	16—34	310	422	295	810
		400	148	236	660	585	535	58	4	5	16—41	310	474	320	910
		450	160	238	685	610	560	60	4	5	20—41	400	524	370	947
		500	160	245	755	670	612	62	4	5	20—48	400	576	412	1064
43 343 73 H D 373 Y 943 F 973	6.4	50	55	153	175	135	105	26	3	4	4 —23	120	88	117	346
		65	58	157	200	160	130	28	3	4	8—23	120	110	128	372
		80	78	159	210	170	140	30	3	4	8—23	120	121	132	385
		100	78	160	250	200	168	32	3	4.5	8—25	120	150	140	415
		125	90	203	295	240	202	36	3	4.5	8—30	160	176	175	485
		150	96	214	340	280	240	38	3	4.5	8—34	160	204	210	485
		200	109	226	405	345	300	44	3	4.5	12—34	240	260	228	620
		250	134	244	470	400	352	48	3	4.5	12—41	240	313	258	707
		300	138	261	530	460	412	54	4	4.5	16—41	310	364	265	760
		350	155	277	595	525	475	60	4	5	16—41	310	422	310	825

注：（1）以上数据仅供参考，可根据用户要求采用其它标准设计与制造。
（2）其它压力、口径规格可按用户要求生产。

Note: (1) We can design and manufacture products in other criteria on basis of customer's demands, the above figures are for reference only.
(2)Other pressure and diameter specification will be produced according to the customers' demand.

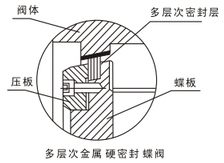
D 363 H- 10/16/25/40 C、P、R **蜗轮、气动、电动传动**
Turbine, pneumatic, electric

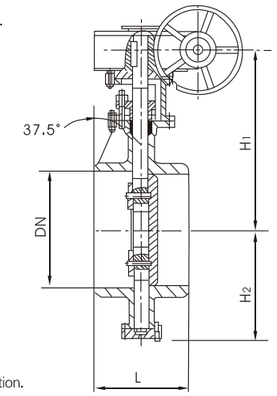
公称通径 Nominal diameter	DN（100~1200）mm、in4~48
公称压力 Nominal pressure	强度试验 Strength test（1.5XPN） 密封试验 Seal test（1.1XPN）
适用温度 The application of temperature	碳钢 Carbon steel：-29 C~425 C 不锈钢 stainless steel:-196 C~600 C
适用介质 The application of media	水、供热，蒸汽、油品 Water, heating, steam, oil
焊接标准 Welding standard	GB12224、ANSIB16.25、DIN2559
压力等级(Mpa) Pressure rating	1.0、1.6、2.5、4.0、6.4、2.0、5.0
驱动形式 Driven type	蜗轮传动、气动、电动、电动防爆等 Turbine, pneumatic, electric, electrical explosion-proof

阀体 Body	蝶板 Butterfly plate	阀座 Seat	轴套 Sleeve	阀杆 Stem	填料 Packing
碳钢 Carbon steel 合金钢 Alloy Steel 不锈钢 Stainless steel 铬钼钢 Cr-Mo steel	碳钢 Carbon steel 合金钢 Alloy Steel 不锈钢 Stainless steel 铬钼钢 Cr-Mo steel	不锈钢 Stainless steel 钴基硬质合金 Co-based cemented carbide	不锈钢 Stainless steel	不锈钢 Stainless steel 特殊材料 Special material	柔性石墨 Flexible Graphite

公称通径 Nominal diameter		L		主要尺寸 Main size	
in	DN(mm)			H1	H2
4	100	127	190	195	100
5	125	140	200	208	115
6	150	140	210	240	130
8	200	152	230	265	205
10	250	165	250	295	235
12	300	178	270	340	280
14	350	190	290	385	315
16	400	216	310	470	360
18	450	222	336	470	375
20	500	229	350	505	410
24	600	267	390	620	470
28	700	292	430	745	560
32	800	318	470	810	630
36	900	330	510	880	700
40	1000	410	550	950	780
48	1200	470	630	1100	820

注：可根据ANSI、JIS、DIN标准及非标尺寸生产
Note: We can manufacture the valve according to ANSI、JIS、DIN standards and other non-standards.





特点

1、 采用三偏心蝶阀堪称顶尖过程阀门，此设计使阀门为高温、高压、防火应用中气泡级密封的理想硬密封蝶阀；
2、 由于采用焊接结构，使阀门与管道平面达到永久性能零泄漏；
3、 此阀无法兰，对管道和保温包扎带来了很大的方便和美观。

Features

1、Three eccentric structure is applied to the high-temperature and high-pressure and fire-proof situation.
2、Because of the welded structure, there will no leakage between valves and pipelines plane.
3、There is no flange in the valve, so it brings convenience and beautiful outlook of pipes and insulation package.

D363 $\begin{matrix}H\\W\end{matrix}$ - $\begin{matrix}150Lb\\300Lb\end{matrix}$ C、P、R

❖美标363 $\begin{matrix}H\\W\end{matrix}$ 对焊式硬密封蝶阀系列外形尺寸（C·P·R）

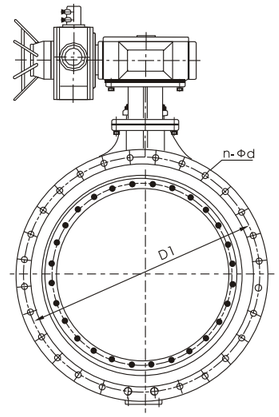
The outside size of API butt welded hard sealed butterfly valve D363H/W

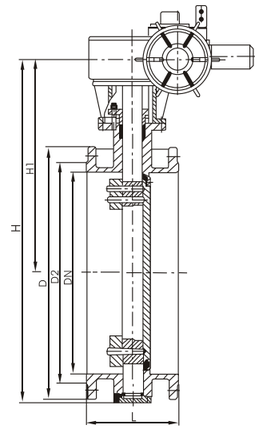
公称通径Nominal diameter		ANSI 150Lb			
In	mm	L	DN	H1	H2
3	76	114	89.1	186	90
4	100	127	114.3	195	100
5	125	140	139.8	208	113
6	150	140	165.2	240	130
8	200	152	216.3	265	202
10	250	165	267.4	295	235
12	300	178	318.5	340	280
14	350	190	355.6	383	315
16	400	216	406.4	427	355
18	450	222	457.2	467	370
20	500	229	508	499	406
24	600	267	609.6	618	464
28	700	292	711.2	745	560
32	800	318	812.5	809	630
36	900	330	914.4	873	697
42	1050	410	1066.8	946	777

公称通径Nominal diameter		ANSI 300Lb			
In	mm	L	DN	H1	H2
3	76	180	89.1	242	108
4	100	190	114.3	204	108
5	125	200	139.8	214	120
6	150	210	165.2	259	135
8	200	230	216.3	276	202
10	250	250	267.4	313	235
12	300	270	318.5	363	280
14	350	290	355.6	406	315
16	400	310	406.4	441	355
18	450	330	457.2	523	370
20	500	350	508	602	420
24	600	390	609.6	695	490

注：以上数据仅供参考，可根据用户要求设计与制造。

Note: We can design and manufacture the valves according to customers' demand, the above figures are for reference only.





采用标准 Using standards

制造标准 Manufacturing standards	GB/T 12238 JB/T8527	法兰标准 Flange standards	HG20592 GB/T9113
校验标准 Calibration standards	JB/T 9092	结构长度标准 Face to face and end to end connection standards	GB/T 12221

主要性能规范 Main Performance Specifications

零件名称 Parts Name	阀体、蝶板 Body and butterfly plate	阀 杆 Stem	密封圈 Ring	填 料 Packing
材 料 Materials	灰铸铁 Gray Cast Iron 球墨铸铁 Ductile Iron 铸钢 casting steel 不锈钢 Stainless steel	中碳钢 Medium carbon steel 不锈钢（2Cr13） Stainless steel 1Cr18Ni9Ti	丁腈橡胶 NBR(Nitrile-butadiene rubber) 乙丙橡胶 EPDM 聚四氟乙烯 PTFE 1Cr18Ni9Ti/柔性石墨 Flexible Graphite	石墨石棉 Graphite asbestos 柔性石墨 Flexible Graphite

主要连接尺寸 Main connection dimensions

公称通径 Nominal diameter（DN）	主要尺寸 Main Dimensions			法兰尺寸和螺栓规格 Flange size and bolt specification								
				0.25MPa			0.6MPa			1.0MPa		
	L	H1	H	D	D1	n-Φd	D	D1	n-Φd	D	D1	n-Φd
1000	410	990	1620	1175	1120	28-30	1175	1120	28-30	1230	1160	28-36
1200	470	1115	1865	1375	1320	32-30	1405	1340	32-33	1455	1380	32-39
1400	530	1228	2078	1575	1520	36-30	1630	1560	36-36	1675	1590	36-42
1600	600	1340	2330	1790	1730	40-30	1830	1760	40-36	1915	1820	40-48
1800	670	1570	2670	1990	1930	44-30	2045	1970	44-39	2115	2020	44-48
2000	760	1680	2850	2190	2130	48-30	2265	2180	48-42	2325	2230	48-48
2200	590	2042	3673	2405	2340	52-33	2475	2390	52-42	2550	2440	52-52
2400	650	2187	3937	2605	2540	56-33	2685	2600	56-42	2760	2650	56-56
2600	700	2372	4248	2805	2740	60-33	2905	2810	60-48	2960	2850	60-56
2800	760	2500	4551	3030	2960	64-36	3115	3020	64-48	3180	3070	64-56
3000	810	2700	4776	3230	3160	68-36	3315	3220	68-48	3405	3290	68-62

注：以上数据仅供参考，可根据用户要求设计与制造。

Note: We can design and manufacture the valves according to customers' demand, the above figures are for reference only.

D 6 9 41W- 3 2.5 0.5 6 C、P、R、V **手动、蜗轮、气动、电动传动** Manual, turbine, pneumatic, electric.

用途及特点 Usage and characteristics

本蝶阀采用与阀体相同材料加工成密封圈，其适用温度随阀体选材料而定，公称压力≤0.6Mpa，一般适用于工业、冶金、环保等管道作通风调节介质流量之用。其主要特点为：

1、设计新颖、合理、结构独特，重量轻，启闭迅速。

2、力矩小，操作方便，省力灵巧。

3、采用适应的材料以满足低、中、高不同介质温度其及腐蚀性介质等。

The material for ring is the same as the material for body, the working temperature depends on the body material, the nominal pressure is ≤0.6Mpa. It is widely used in industry, metallurgy, environmental protection pipeline for ventilation. The main characteristics are:

1. Unique and rational design, light weight and rapidly sluicegate .

2.Short torque , easy to operate and quick opening and closing.

3.The material should applied to low , medium and high temperature corrosive media.

采用标准 *Using standards*

设计标准：GB/T12238、JB/T8692 — Design standards：GB/T12238、JB/T8692

法兰连接尺寸：GB/T9113、GB/T9115 — Flange connection size ：GB/T9113、GB/T9115

结构长度：GB/T12221 — Face to face and end to end connection ：GB/T12221

压力试验：GB/T13927、JB/T9092 — Pressure test：GB/T13927、JB/T9092

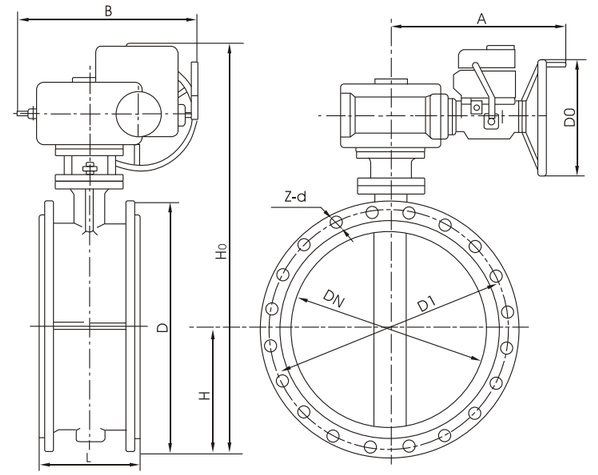
性能规范Performance Specifications

公称通径 Nominal diameter	DN（mm）	50~2000		
公称压力 Nominal pressure	PN（MPa）	0.05	0.25	0.6
试验压力 Test pressure	强度试验 Strength test	0.075	0.375	0.9
	密封试验 Seal test	≤1.5% 泄漏量 Leakage		
适用介质 The media	煤气、含尘气体、烟道气等 Gas, dust gases, flue gas			
驱动形式 Driving mode	手动、蜗轮、气动、电动传动 Manual, turbine, pneumatic, electric			

主要零件材料 Materials for the main parts

零件名称 Parts Name	材　料 Material
阀　体 Body	铸钢、不锈钢、铬镍钼钛钢、铬钼钛钢等特殊材料 Casting steel , stainless steel, Ti–Cr–Ni–Mo steel, Ti–Cr–Mo steel special materials
蝶　板 Butterfly plate	铸钢、合金钢、铬镍钼钛钢特殊材料 Casting steel, Alloy Steel, Ti–Cr–Ni–Mo steel special materials
密封圈　Ring	铸钢、不锈钢、铬镍钼钛钢、铬钼钛钢等特殊材料 Casting steel, stainless steel, Ti–Cr–Ni–Mo steel, Ti–Cr–Mo steel special materials etc.
阀　杆　Stem	碳钢、2Cr13、不锈钢、铬镍钼钛钢 Carbon steel、2Cr13、stainless steel 、Ti–Cr–Mo steel
填　料 Packing	氟塑料、柔性石墨 Fluoro–plastics and Flexible Graphite

法兰式通风蝶阀
Flanged ventilation butterfly valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司



❖ **通风D341W– 0.5 2.5 6 C、P、R、V连接尺寸Connection size**　　单位*Unit*:(mm)

通径（DN） Nominal diameter	L	D	D1	Z-d	H	H0	A	B	D0
50	108	140	110	4-14	70	445	193	125	80
65	112	160	130	4-14	80	465	193	125	80
80	114	190	150	4-18	95	483	193	125	80
100	127	210	170	4-18	105	498	193	125	80
125	140	240	200	8-18	120	685	193	245	150
150	140	265	225	8-18	135	726	193	245	150
200	152	320	280	8-18	160	800	283	245	150
250	165	375	335	12-18	190	895	283	313	200
300	178	440	395	12-22	220	956	334	313	200
350	190	495	445	12-22	245	1029	334	313	250
400	216	540	495	16-22	270	1105	425	313	250
450	222	595	550	16-22	300	1280	425	439	300
500	229	645	600	20-22	330	1186	425	431	360
600	267	755	705	20-26	380	1320	425	556	360
700	292	860	810	24-26	430	1430	620	556	360
800	318	975	920	24-30	490	1545	620	556	360
900	330	1075	1020	24-30	540	1800	620	706	360
1000	410	1175	1120	28-30	590	2365	620	706	360
1200	470	1375	1320	32-30	710	2583	620	706	360
1400	530	1575	1520	36-30	805	2780			
1600	600	1790	1730	40-33	910	3085			
1800	670	1990	1930	44-30	1010	3290			
2000	760	2190	2130	48-30	1105	3520			

注：以上数据仅供参考，可根据用户要求设计与制造。

Note: We can design and manufacture the valves according to customers' demand, the above figures are for reference only.

❖ 通风D641W– 0.5 2.5 6 C、P、R、V连接尺寸Connection size

单位Unit:(mm)

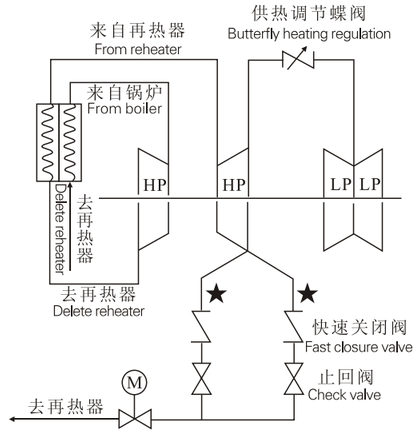
通径（DN）Nominal diameter	L	D	D1	Z-d	H	H0	A	B
50	108	140	110	4-14	70	337	180	65
65	112	160	130	4-14	80	357	180	65
80	114	190	150	4-18	95	385	180	65
100	127	210	170	4-18	105	405	180	65
125	140	240	200	8-18	120	483	245	72
150	140	265	225	8-18	135	508	245	72
200	152	320	280	8-18	160	566	245	72
250	165	375	335	12-18	190	623	245	72
300	178	440	395	12-22	220	75	355	93
350	190	490	445	12-22	245	803	355	93
400	216	540	495	16-22	270	852	355	93
450	222	595	550	16-22	300	907	355	93
500	229	645	600	20-22	330	960	355	93
600	267	755	705	20-26	380	1080	355	350
700	292	860	810	24-26	430	1185	550	350
800	318	975	920	24-30	490	1300	550	350
900	330	1075	1020	24-30	540	1400	550	350
1000	410	1175	1120	28-30	590	1500	550	350
1200	470	1375	1320	32-30	710	1825	600	350

❖ 通风D941W– 0.5 2.5 6 C、P、R、V连接尺寸 Connection size

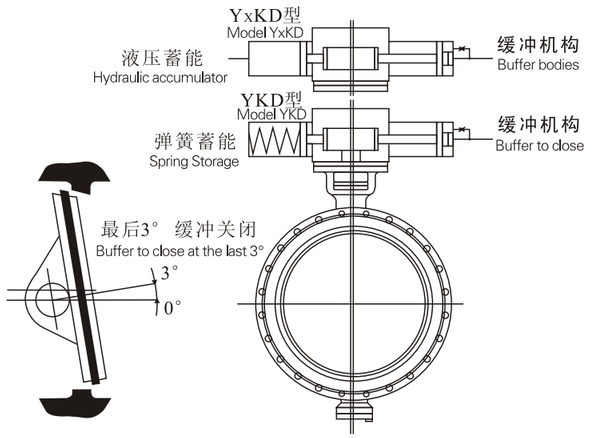
单位Unit:(mm)

通径（DN）Nominal diameter	L	D	D1	Z-d	H	H0	A	B	D0
50	108	140	110	4-14	70	418	125	125	80
65	112	160	130	4-14	80	438	125	125	80
80	114	190	150	4-18	95	466	125	125	80
100	127	210	170	4-18	105	486	125	125	80
125	140	240	200	8-18	120	516	125	125	80
150	140	265	225	8-18	135	541	125	125	80
200	152	320	280	8-18	160	779	325	245	150
250	165	375	335	12-18	190	836	325	245	150
300	178	440	395	12-22	220	901	325	245	150
350	190	495	445	12-22	245	954	325	245	150
400	216	540	495	16-22	270	1003	325	245	150
450	222	595	550	16-22	300	1058	325	245	150
500	229	645	600	20-22	330	1111	325	245	150
600	267	755	705	20-26	380	1233	325	245	150
700	292	860	810	24-26	430	1338	325	245	150
800	318	975	920	24-30	490	1452	325	245	150
900	330	1075	1020	24-30	540	1588	363	313	200
1000	410	1175	1120	28-30	590	1689	363	313	200
1200	470	1375	1320	32-30	690	1910	363	313	250
1400	530	1575	1520	36-30	805	2670			
1600	600	1790	1730	40-33	910	2810			
1800	670	1990	1930	44-30	1010	3020			
2000	760	2190	2130	48-30	1105	3220			

注：以上数据仅供参考，可根据用户要求设计与制造。
Note: We can design and manufacture the valves according to customers' demand, the above figures are for reference only.



快速关闭阀安装位置示意图(图1)
Schematic diagram of the installation location(Figure 1)



快速关闭阀传动执行器和缓冲装置示意图(图2)
Schematic diagram of drive actuator and buffer

概 述

在供热机组甩负荷或邻机并联供汽中，由于阀门关闭不严或关闭不够快，大量的蒸汽倒流入汽机，造成汽机超速。目前，部分供热机组在供热抽汽管道上仅设置电动截止蝶阀、止回阀，电动截止蝶阀关闭时间长,仅能作为隔断汽源使用，而止回阀不能快速关闭(一般关闭时间>1秒),如果一旦止回阀出现故障，将不能有效的防止汽轮机尾部蒸汽和冷凝水倒灌，将会造成汽轮机超速事故或汽轮机叶片等管路设备的损坏。为解决此问题，现在许多场合在抽汽管道靠近主机抽汽点处再设置一台快速关闭阀,但是若采用进口，价格昂贵，本公司集进口快速关闭阀主要功能，并进行改进,增加缓冲装置,大大延长了使用寿命。

本YKD型系列阀门采用液压-弹簧传动结构，YxKD型采用液压-蓄能器结构。当阀门开启时，通过压力油进入油缸推动活塞带动阀板旋转开启，当汽轮机抽汽供热系统出现故障时,通过电信号或液压信号传递给快关阀执行系统，阀门在弹簧或者蓄能器压力油的作用下带动阀板迅速关闭，关闭时间为≤0.5～1秒，有效防止汽机尾部蒸汽和冷凝水倒灌超速事故，从而起到保护汽轮机和管路设备的作用。同时为了保护阀门，执行机构在阀门关闭到最后3度时设有缓冲装置，保护阀门密封面免受惯性的冲击，延长了阀门使用寿命。

In heating unit or parallel steam, because the closing of the valve is not tight or is not fast, a large number of steam flows down to turbine, the turbine will overspeed. At present electrical butterfly valve, electrical check valve are used in heating unit, but the electrical butterfly valve can be used only for cutting off gas source due to the closing time is too long and the electrical check valve
cannot achieve rapid closure, once it doesn't work the steam and condensate of turbine tail will flow back to cause the overspeed of turbine or damage of turbine blade. To solve this problem out company design the new fast closure valve on the basis of the original valve..

Model YKD is hydraulic spring driven and model YxKD is Hydraulic accumulator body. When the valve is open , oil enter into the fuel tank, piston driven rotary valve plate to open. When the extraction steam turbine heating system doesn't work, the hydraulic signal be covey to the implementation system, the valve will close quickly under the role of spring and accumulator. The cut–off time is ≤0.5~1 second, so the accident caused by vapor or cool water is prevented .Buffer has been set to protect the sealing

流量系数表 Table of flow coefficient

公称通径 Nominal diameter DN	mm	200	250	300	350	400	450	500
	in	8	10	12	14	16	18	20
流量系数Cv Flow coefficient		2250	3170	4940	6320	8605	11050	13850

公称通径 Nominal diameter DN	mm	600	700	800			
	in	24	28	32			
流量系数Cv Flow coefficient		21490	33870	42640			

Cv值是阀门两端压降为1PSI的标准状况下测得的。
The value of Cv is measured when the pressure of both ends down to 1PSI.

产品用途 Application

液控快速关闭阀主要安装于汽轮机抽汽管路、高炉煤气余压发电装置(TRT)进气管路等高安全等级系统，作紧急切断阀用；在系统出现危机工况时，在0.3~0.8秒钟内实施紧急关闭，实现管路的可靠截止，有效 防止汽机尾部蒸汽和冷凝水倒灌或切断煤气管路，保护透平机组的安全。

It is widely used in steam extraction piping、TRT admission passage and other high level security system as emergency shut-off valve. When the working system is in dangerous condition, the valve will cut-off in emergency , the pipeline will

型号说明 Model Description

※ D 7 4 3 H-※ ※

- 阀门材料：C碳钢 P不锈钢 R铬镍钼钛钢 Material of body: Carbon steel, P: stainless steel, R : Ti-Cr-Ni-Mo steel
- 公称压力：（单位：kg/cm^2） Nominal pressure: (Unit: kg/cm2)
- 密封材料：H不锈钢 W本体不锈钢 Sealing material: H: stainless steel ; W: Body material or stainless steel
- 结构形式：三偏心结构 Structure: Three eccentric
- 连接方式：法兰连接 Connection: Flange
- 驱动方式：液压控制 Driven mode: Hydraulic
- 产品类别：蝶阀 Product: Butterfly valve
- 功能特征：YK 弹簧蓄能快关 Functional characteristics : YK Spring storage switch
  YxK 蓄能器蓄能快关 YxK Accumulator storage switch

结构及特点 Structure and characteristics

我厂生产的液控快速关闭阀由主阀、齿轮齿条油缸传动装置、液压系统、电气控制系统四大部分组成。各部分高度集成为一个整体，结构紧凑，大大节省了占地空间。

主阀为三偏心金属密封蝶阀，在传统的双偏心结构基础上配置独特的角偏心设计，充分利用凸轮效应，使阀门启闭时密封副瞬时接触、瞬时脱离、消除了摩擦和卡挤，磨损小，耐高温，启闭轻松，密封可靠。

The fast closure hydraulic control valve is made up four main parts as: main valve、the fuel tank gear、hydraulic System and electrical control system. The four parts are compact to save the room.
The main valve is three eccentric metal sealed butterfly valve, the unique eccentric angle design has cam effects to make

0.5秒液控快速关闭阀
0.5 s Fast closure hydraulic control valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

齿轮齿条传动箱结构紧凑，直接与油缸相联；油缸尾部设有缓冲装置，消除快关时的惯性冲击，延长阀门使用寿命。

液压系统根据快关动力源的不同分为弹簧蓄能快关(YKD)和蓄能器蓄能快关(YxKD)两大类。阀门正常启闭动力源一般由液压系统中的油泵机组提供，也可来源于汽轮机主机配套液压站，正常启闭速度由流量阀调节控制。

电气控制系统按主逻辑元件类别分为普通继电型和PLC智能控制型，出厂配套一般为普通继电型，需PLC智能控制型应在订货时说明。系统除设有正常开阀、正常关阀、停止、快速关闭等常规动作外，还设置了全开状态15%行程“游动”功能，以避免阀门卡阻。

系统中配有就地控制回路和远程联动控制回路。就地控制回路主要用于现场调试，正常工作时一般均使用远程联动控制回路。

液压系统电磁换向阀控制特征一般为正作用型，即：电磁阀得电蝶阀开阀、失电蝶阀关闭；反之则为反作用型。常规配套电磁换向阀为正作用型，采用反作用型应在订货时说明。

系统动力电源为AC380V，控制电源可以是AC220V、DC220V、DC110V或其他电源等级。

电液控制原理详细说明请参看产品《安装使用说明书》。

Gear and rack transmission case has compact structure, it is associated directly with the fuel.
The rear of tank has buffer device to decrease the inertial impact and prolong the using life of valve.
Hydraulic system is made up of spring storage switch (YKD) and accumulator storage switch. Power source of normal opening and closing is provided by pump unit of hydraulic system or host turbine package. The speed of normal opening and closing is controlled by flow valve.

Electrical control system can be divided of common relay type and PLC intelligent control type. The factory support is common relay type, if you need PLC intelligent control type, please let us know in the order. Except normal opening、normal closing、stop、fast closing, the system also set the moment of 15% in the position of totally opening.
Local control loop and long-range linkage control loop is in the system. Local control loop used in debugging on the scene while the long-range linkage control loop is used in the work.

Solenoid directional valve is the role direction, solenoid directional valve get the energy the butterfly valve will be open and as it reverse. If you need opposite direction-type please let us know in the order.
Power supply is AC380V, control power is AC220V, DC220V, DC110V or other power rating.

标准与规范 Standards and norms

制造标准：Manufacturing standards		JB/T8527
结构长度：Structure length		GB/T12221
配管法兰：Piping flange		JB/T74、GB/T9113
压力温度等级：Pressure – temperature rating		GB/T9131、HGJ67
质量保证：Quality Assurance		ISO9001
试验与检验：Test and Inspection		GB/T13927、JB/T9092
公称通径：Nominal diameter		100~1800mm
公称压力：Nominal pressure		0.25~4.0MPa、150~300LB
试验压力：Testing pressure	密封：Sealing	1.1×PN
	壳体强度：Shell strength	1.5×PN
工作压力：Working pressure		1.0×PN

主要零件选用材料及适用工况
Materials for the main parts and working conditions

阀体材料代号 Body Material Code	C	I	P	P8	P3	R	R8	R3
阀　体 Body	WCB	ZG1Cr5Mo	ZG1Cr18Ni9Ti	CF8(304)	CF3(304L)	ZG1Cr18Ni12Mo2Ti	CF8M(316)	CF3M(316L)
蝶　板 Butterfly Plate	WCB	ZG1Cr5Mo	ZG1Cr18Ni9Ti	CF8(304)	CF3(304L)	ZG1Cr18Ni12Mo2Ti	CF8M(316)	CF3M(316L)
压　圈 Ring	WCB	ZG1Cr5Mo	ZG1Cr18Ni9Ti	CF8(304)	CF3(304L)	ZG1Cr18Ni12Mo2Ti	CF8M(316)	CF3M(316L)
阀　杆 Stem	2Cr13	25Gr2Mo1V	1Cr18Ni9Ti	0Cr19Ni9	00Cr19Ni11	1Cr18Ni12Mo2Ti	0Cr17Ni12Mo2	00Cr17Ni14Mo2
阀　座 Seat	1Cr18Ni9Ti		0Cr19Ni9	00Cr19Ni11	00Cr19Ni11	0Cr17Ni12Mo2	00Cr17Ni14Mo2	00Cr17Ni14Mo2
适用介质 Media	水、蒸汽、气体、油品等 Water、steam、gas and oil, etc		硝酸等腐蚀性介质 Nitric acid and other corrosive media		强氧化性介质 Strong oxidizing medium	醋酸等腐蚀性介质 Acetic acid and other corrosive media		尿素等腐蚀性介质 Urea and other corrosive media
适用温度(℃) Working temperature	-29~425	-29~550	-196~600					

维护保养 Maintenance

1、出厂时各部分都已根据用户要求调节设定好，一般不得随意调节改动。
2、本设备需在提供电源条件下工作，且要求稳定可靠。
3、由于本系统控制阀组采用了众多螺纹插装阀，需特别注意油液的清洁度，建议三个月旁路过滤油一次。
4、根据使用工况，24小时连续工作制，每半年必须更换油液一次，且需同时更换高压滤芯；8小时间断工作制可按累计使用2400小时更换一次，同时更换高压滤芯。系统发出油液污染报警信号时，也必须更换高压滤芯，同时说明油液清洁度不好。
5、定期检查油管液位高度。第一次加油建议加至满液位计，正常工作状态下油位求满足在液位计1/2以上高度位置，低于1/3高度时必须加油。
6、应定期(一个月)检查蓄能器内气体压力，正常充气压力在100 Bar，低于90 Bar时需充气。
7、液压装置投入运行后，需经常到工作现场观察运行情况，看是否有指示故障、漏油等异常现象发生，如有需及时处理。
8、定期进行游动试验，以防止阀门卡阻。

1. The main parts of the valve have been regulated well according to the customer's demand, so the adjustment is not available.
2. Stable and reliable power supply is necessary when the valve is in working process.
3. Oil should be clean, we advice that the oil of bypass should be filtered once three months.
4. Oil and high pressure filter should be changed half a year under 24–hour work system, while under 8–hour work system the oil should be changed when using time is 2400 hours and at the same time change the high pressure filter. When the system have warn about oil pollution alarm signal, the high pressure filter should be changed also.
5. Check the high oil level regularly. Level Gauge should be full when it is the first time to add oil. In normal condition the level should higher than 1/2 and when the level is no up to 1/3 oil is need urgently.
6. Gas pressure in accumulator should be checked every month, the normal gas pressure is 100 bar, when it is lower than 90 bar, the gas is in need.
7. When the hydraulic devices are operated, site inspection is necessary ,if there are any instruction fault or oil leakage, timely processing is in need.
8. Check the valve regularly to prevent the damage of the valve.

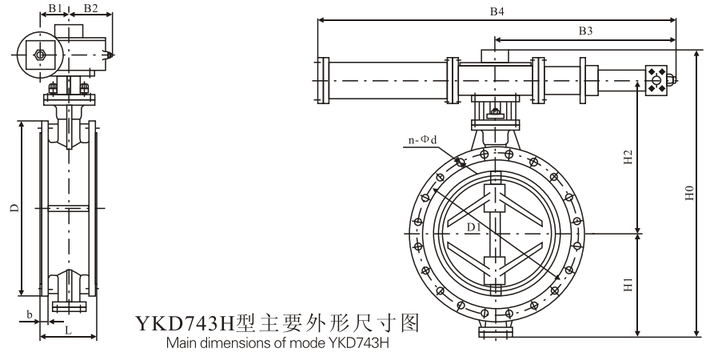
0.5秒液控快速关闭阀
0.5 s Fast closure hydraulic control valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

储运及安装 Storage and packaging

1、运输要求包装可靠，且有防尘防雨设施，吊装过程应注意缓慢、平稳、轻放，避免因强烈撞击振荡而导致零部件受损。
2、设备长时间不用应放掉油液和氮气，且注意防尘防雨。
3、按照阀体上标示管道压力方向安装阀门。
4、本阀液压装置可采用与阀体整体式安装，通过油缸出轴端面直接到阀体上，要求牢固可靠。但油箱底部必须有支撑。
5、本阀禁止露天存放。

1. The package should be wear–resistant and water–proof and dust–proof, it should be installed slowly, smoothly to prevent the damage of the spare parts.
2. Oil and nitrogen should be released when they are not in use, and water–proof and dust–proof should be in care.
3. The installation of valve should according to the the direction of pipeline pressure.
4. Hydraulic devices and valve can be installed totally.

外形及连接尺寸 Shape and connectivity Size



YKD743H型主要外形尺寸图
Main dimensions of mode YKD743H

❖ YKD743H型液控快速关闭阀外形及连接尺寸 (PN=0.6MPa)
Chart of shape and connection size of YxKD743H

单位Unit:(mm)

公称通径DN Nominal diameter	L	D	D1	b	n	d	B1	B2	B3	B4	H1	H2	H0
200	152	320	280	24	8	19	128	150	880	1340	176	481	887
250	165	375	335	26	12	19	128	150	880	1340	210	518	958
300	178	440	395	26	12	23	128	150	880	1340	238	577	1045
350	190	490	445	26	12	23	135	160	1066	1722	270	617	1140
400	216	540	495	26	16	23	135	160	1066	1722	302	659	1214
450	222	595	550	28	16	23	135	160	1066	1722	332	678	1263
500	229	645	600	28	20	23	180	205	1380	2220	370	738	1370
600	267	755	705	30	20	28	180	205	1380	2220	432	827	1521
700	292	860	810	30	24	28	180	205	1380	2220	470	875	1607
800	318	975	920	32	24	31	195	220	1550	2510	530	953	1763
900	330	1075	1020	34	24	31	195	220	1550	2510	580	1000	1860
1000	410	1175	1120	34	28	31	195	220	1550	2510	650	1092	2022
1200	470	1405	1340	38	32	34	221	250	1745	2777	765	1238	2307
1400	530	1630	1560	42	36	37	221	250	1745	2777	890	1319	2513
1600	600	1830	1760	46	40	37	221	250	1745	2777	1010	1429	2743

注：以上数据仅供参考，可采用其它法兰标准或按用户要求制造。
Note: We can manufacture in other flange size or according to customer's demand , the above is reference.

❖ YKD743H型液控快速关闭阀外形及连接尺寸（PN=1.0MPa）
Chart of shape and connection size of YxKD743H

单位Unit:(mm)

公称通径DN Nominal diameter	L	D	D1	b	n	d	B1	B2	B3	B4	H1	H2	H0
200	152	340	295	24	8	23	128	150	880	1340	176	481	887
250	165	395	350	26	12	23	128	150	880	1340	210	518	958
300	178	445	400	26	12	23	128	150	880	1340	238	577	1045
350	190	505	460	26	16	23	135	160	1066	1722	270	617	1140
400	216	565	515	26	16	28	135	160	1066	1722	302	659	1214
450	222	615	565	28	20	28	135	160	1066	1722	332	678	1263
500	229	670	620	28	20	28	180	205	1380	2220	370	738	1370
600	267	780	725	30	20	31	180	205	1380	2220	432	827	1521
700	292	895	840	30	24	31	180	205	1380	2220	470	875	1607
800	318	1015	950	32	24	34	195	220	1550	2510	530	953	1763
900	330	1115	1050	34	28	34	195	220	1550	2510	580	1000	1860
1000	410	1230	1160	34	28	37	195	220	1550	2510	650	1092	2022
1200	470	1455	1380	38	32	40	221	250	1745	2777	765	1238	2307
1400	530	1675	1590	42	36	43	221	250	1745	2777	890	1319	2513
1600	600	1915	1820	46	40	49	221	250	1745	2777	1010	1429	2743

❖ YKD743H型液控快速关闭阀外形及连接尺寸（PN=1.6MPa）
Chart of shape and connection size of YxKD743H

单位Unit:(mm)

公称通径DN Nominal diameter	L	D	D1	b	n	d	B1	B2	B3	B4	H1	H2	H0
200	152	340	295	24	12	23	128	150	880	1340	176	4814	887
250	165	405	355	26	12	27	128	150	880	1340	210	518	958
300	178	460	410	28	12	27	128	150	880	1340	238	577	1045
350	190	520	470	30	16	27	135	160	1066	1722	270	617	1140
400	216	580	525	32	16	31	135	160	1066	1722	302	659	1214
450	222	640	585	34	20	31	135	160	1066	1722	332	678	1263
500	229	715	650	36	20	34	180	205	1380	2220	370	738	1370
600	267	840	770	38	20	37	180	205	1380	2220	432	827	1521
700	292	910	850	40	24	37	180	205	1380	2220	470	875	1607
800	318	1025	950	42	24	40	195	220	1550	2510	530	953	1763
900	330	1125	1050	44	28	40	195	220	1550	2510	580	1000	1860
1000	410	1255	1170	46	28	43	195	220	1550	2510	650	1092	2020
1200	470	1485	1390	52	32	49	221	250	1745	2777	765	1238	2307
1400	530	1685	1590	58	36	49	221	250	1745	2777	890	1319	2513
1600	600	1930	1820	64	40	56	221	250	1745	2777	1010	1429	2743

注：以上数据仅供参考，可采用其它法兰标准或按用户要求制造。

Note: We can manufacture in other flange size or according to customer's demand , the above is reference.

0.5秒液控快速关闭阀
0.5 s Fast closure hydraulic control valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

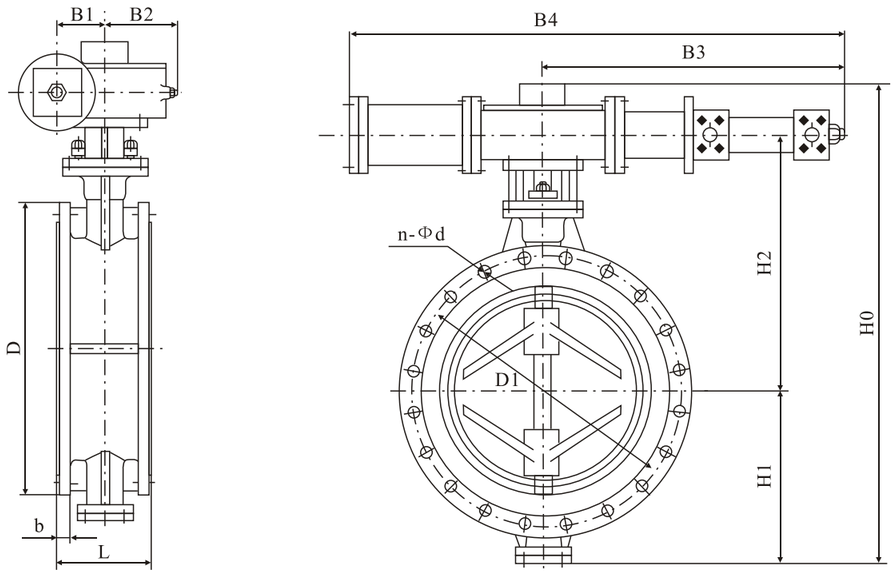
❖ YKD743H型液控快速关闭阀外形及连接尺寸（PN=2.5MPa）
Chart of shape and connection size of YxKD743H

单位Unit:(mm)

公称通径DN Nominal diameter	L	D	D1	b	n	d	B1	B2	B3	B4	H1	H2	H0
200	152	360	310	30	12	28	135	160	1066	1722	176	481	887
250	165	425	370	32	12	31	135	160	1066	1722	210	518	958
300	178	485	430	34	16	31	135	160	1066	1722	238	577	1045
350	190	555	490	38	16	34	180	205	1380	2220	270	617	1140
400	216	620	550	10	16	37	180	205	1380	2220	302	659	1214
450	222	670	640	42	20	37	180	205	1380	2220	332	678	1263
500	229	730	660	44	20	37	180	205	1380	2220	370	738	1370
600	267	845	770	46	20	40	195	220	1550	2510	432	837	1521
700	292	960	875	50	24	43	195	220	1550	2510	470	875	1607
800	318	1085	990	54	24	49	195	220	1550	2510	530	953	1763
900	330	1185	1090	58	28	49	221	250	1745	2777	580	1000	1860
1000	410	1320	1210	62	28	56	221	250	1745	2777	650	1092	2022
1200	470	1530	1420	70	32	56	221	250	1745	2777	765	1238	2307
1400	530	1755	1640	76	36	62	270	290	1920	3120	890	1319	2513
1600	600	1975	1860	84	40	62	270	290	1920	3120	1010	1429	2743

注：其它压力、通径规格阀门可按用户要求生产。

Note: We can manufacture other pressure rating and diameter valve according to the customer's demand.



YxKD743H型外形及连接尺寸图
Chart of shape and connection size of YxKD743H

❖ YxKD743H型液控快速关闭阀外形及连接尺寸 (PN=0.6MPa)
Chart of shape and connection size of YxKD743H

单位*Unit*:(mm)

公称通径DN Nominal diameter	L	D	D1	b	n	d	B1	B2	B3	B4	H1	H2	H0
200	152	320	280	24	8	19	96	104	633	948	176	481	887
250	165	375	335	26	12	19	96	104	633	948	210	518	958
300	178	440	395	26	12	23	96	104	633	948	238	577	1045
350	190	490	445	26	12	23	160	110	755	1070	270	617	1140
400	216	540	495	26	16	23	160	110	755	1070	302	659	1214
450	222	595	550	28	16	23	160	110	755	1070	332	678	1263
500	229	645	600	28	20	23	243	170	694	1388	370	738	1370
600	267	755	705	30	20	28	243	170	694	1388	432	827	1521
700	292	860	810	30	24	28	243	170	694	1388	470	875	1607
800	318	975	920	32	24	31	291	220	817	1634	530	953	1763
900	330	1075	1020	34	24	31	291	220	817	1634	580	1000	1860
1000	410	1175	1120	34	28	31	291	220	817	1634	650	1092	2022
1200	470	1405	1340	38	32	34	374	280	1132	2264	765	1238	2307
1400	530	1630	1560	42	36	37	374	280	1132	2264	890	1319	2513
1600	600	1830	1760	46	40	37	374	280	1132	2264	1010	1429	2743

❖ YxKD743H型液控快速关闭阀外形及连接尺寸 (PN=1.0MPa)
Chart of shape and connection size of YxKD743H

单位*Unit*:(mm)

公称通径DN Nominal diameter	L	D	D1	b	n	d	B1	B2	B3	B4	H1	H2	H0
200	152	340	295	24	8	23	96	104	633	948	176	481	887
250	165	395	350	26	12	23	96	104	633	948	210	518	958
300	178	445	400	26	12	23	96	104	633	948	238	577	1045
350	190	505	460	26	16	23	160	110	755	1070	270	617	1140
400	216	565	515	26	16	28	160	110	755	1070	302	659	1214
450	222	615	565	28	20	28	160	110	755	1070	332	678	1263
500	229	670	620	28	20	28	243	170	694	1388	370	738	1370
600	267	780	725	30	20	31	243	170	694	1388	432	827	1521
700	292	895	840	30	24	31	243	170	694	1388	470	875	1607
800	318	1015	950	32	24	34	291	220	817	1634	530	953	1763
900	330	1115	1050	34	28	34	291	220	817	1634	580	1000	1860
1000	410	1230	1160	34	28	37	291	220	817	1634	650	1092	2022
1200	470	1455	1380	38	32	40	374	280	1132	2264	765	1238	2307
1400	530	1675	1590	42	36	43	374	280	1132	2264	890	1319	2513
1600	600	1915	1820	46	40	49	374	280	1132	2264	1010	1429	2743

注：以上数据仅供参考，可采用其它法兰标准或按用户要求制造。
Note: We can manufacture in other flange size or according to customer's demand , the above is reference.

0.5秒液控快速关闭阀
0.5 s Fast closure hydraulic control valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

❖ YxKD743H型液控快速关闭阀外形及连接尺寸 (PN=1.6MPa)
Chart of shape and connection size of YxKD743H

单位*Unit*:(mm)

公称通径DN Nominal diameter	L	D	D1	b	n	d	B1	B2	B3	B4	H1	H2	H0
200	152	340	295	24	12	23	96	104	633	948	176	481	887
250	165	405	355	26	12	27	96	104	633	948	210	518	958
300	178	460	41	28	12	27	96	104	633	948	238	577	1040
350	190	520	470	30	16	27	160	110	755	1070	270	617	1140
400	216	580	525	32	16	31	160	110	755	1070	302	659	1214
450	222	640	585	34	20	31	160	110	755	1070	332	678	1263
500	229	715	650	36	20	34	243	170	694	1388	370	738	1370
600	267	840	770	38	20	37	243	170	694	1388	432	827	1521
700	292	910	850	40	24	37	243	170	694	1388	470	875	1607
800	318	1025	950	42	24	40	291	220	817	1634	530	853	1763
900	330	1125	1050	44	28	40	291	220	817	1634	580	1000	1860
1000	410	1255	1170	46	28	43	291	220	817	1634	650	1092	2022
1200	470	1485	1390	52	32	49	374	280	1132	2264	765	1380	2307
1400	530	1685	1590	58	36	49	374	280	1132	2264	890	1319	2513
1600	600	1930	1820	64	40	56	374	280	1132	2264	1010	1429	2743

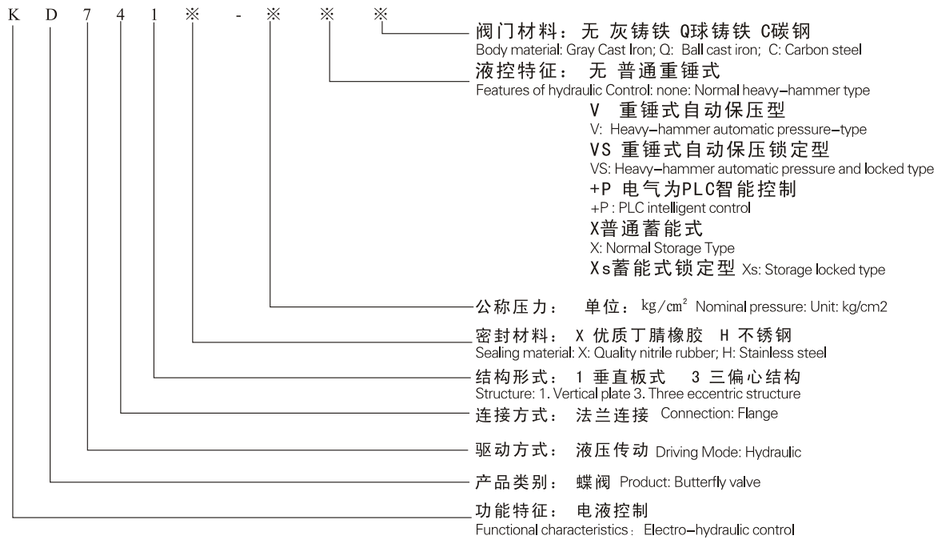
❖ YxKD743H型液控快速关闭阀外形及连接尺寸 (PN=2.5MPa)
Chart of shape and connection size of YxKD743H

单位*Unit*:(mm)

公称通径DN Nominal diameter	L	D	D1	b	n	d	B1	B2	B3	B4	H1	H2	H0
200	152	360	310	30	12	28	160	110	755	1070	176	481	887
250	165	425	370	32	12	31	160	110	755	1070	210	518	958
300	178	485	430	34	16	31	160	110	755	1070	238	577	1045
350	190	555	490	38	16	34	243	170	694	1388	270	617	1140
400	216	620	550	40	16	37	243	170	694	1388	302	659	1214
450	222	670	640	42	20	37	243	170	694	1388	332	678	1263
500	229	730	660	44	20	37	243	170	694	1388	370	738	1370
600	267	845	770	46	20	40	291	220	817	1634	432	827	1521
700	292	960	875	50	24	43	291	220	817	1634	470	875	1607
800	318	1085	990	54	24	49	291	220	817	1634	530	953	1763
900	330	1185	1090	58	28	49	374	280	1132	2264	580	1000	1860
1000	410	1320	1210	62	28	56	374	280	1132	2264	650	1092	2022
1200	470	1530	1420	70	32	56	374	280	1132	2264	765	1238	2307
1400	530	1755	1640	76	36	62	480	320	1340	2530	890	1319	2513
1600	600	1975	1860	84	40	62	480	320	1340	2530	1010	1429	2743

注：其它压力、通径规格阀门可按用户要求生产。
Note: We can manufacture other pressure rating and diameter valve according to the customer's demand.

1.型号说明 Model Description



2.产品简介

液控缓闭止回蝶阀是目前国内外较先进的管路控制设备，主要安装于水电站水轮机进口，用作水轮机进口阀；或安装于水利、电力、给排水等各类泵站的水泵出口，替代止回阀和闸阀的功能。工作时，阀门与管道主机配合，按照水力过渡过程原理，通过预设的启闭程序，有效消除管路水锤，实现管路的可靠截止，起到保护管路系统安全的作用。

本公司生产的液控缓闭止回蝶阀流阻系数小、自动化程度高、功能齐全、性能稳定可靠，是我公司设计人员在广泛搜集、研究、总结国内外同类产品性能的基础上，引入阀门、液压、电气等行业的多项研究成果，厚积而薄发，开发出来的新一代智能高效节能产品。公司技术力量雄厚，并可根据用户的特殊要求单独进行设计，多方位满足广大用户对该类产品的需要。

Brief introduction

Hydraulic control relieve butterfly valve is the advanced pipeline as control equipment, which is widely used in turbine of hydropower station or water, electricity, water supply and drainage, it can instead of gate valve and check valve. The valve and pipe will work together to diminish the water hammer and realize the reliable check of the pipeline to make the security of the pipeline system.

Our hydraulic control relieve butterfly valve has small flow resistance coefficient、a high degree of automation、full-featured and stable and reliable performance, it is designed on the basis of researching the similar products at home and abroad. Our company has strong technical

该产品主要有如下特点：

1、可取代水泵出口处原电动闸阀和止回阀的功能,且机、电、液系统集成为一个整体,减少占地面积及基建投资。

2、电液控制功能齐全，无需另外配置即可以作为一个独立的系统单机就地调试、控制；也可以作为集散性控制系统（DCS）的一个设备单元，通过I/O通道由中央计算机进行集中管理，与水泵、水轮机、旁通阀及其他管道设备实现联动操作；并配有手动功能，无动力电源时也可以实现手动开、关阀，满足特殊工况下的阀门调试、控制要求。

3、可控性好，调节范围大、适应性强。电液控制系统设有多处调节点，可以按不同的管道控制要求进行启闭的程序设置，保证在满足开、关阀条件时，阀门能够自动按预先设定的时间、角度开启和分快、慢二阶段关闭。并能实现无电关阀，有效消除破坏性水锤，防止水泵和水轮机组飞逸事故的发生，降低管网系统的压力波动，保障设备的安全可靠运行。

4、主阀密封副为三偏心金属密封或双偏心橡胶密封结构，启闭轻松、密封可靠；并有一道额外加大的偏心，使阀门具有良好的自关闭、自密封性能。中、小口径蝶板设计成流线型平板结构，大口径蝶板设计面双平板桁架式结构，排挤小，水流平顺，阀门流阻系数仅为0.1~0.6远小于止回阀的流阴系数（1.7~2.6），节能效果明显。

The main features of the product

1. It can replace the electrical gate valve and check valve in pump outlet. Mechanical, electrical and hydraulic systems are be one unity, so it reduces the area of cover and infrastructure.
2. The functions of electro-hydraulic control functions are complete, local debugging and control is available. It also can be one unit of DSC to realize the centralized management by central computer, realize the unit operation with pumps, turbine, bypass valve and other pipeline equipment. The valve also has manual function, so it also can be regulated by manually.
3. The controllable performance is well and the adjustment range is large. There are many adjustment points in electro-hydraulic control system, the valve can open and close according to the pre-set. The valve will close without power supply to prevent the accident of pumps, and turbin. So the valve will under safe operation.
4. Three eccentric metal sealed and double-eccentric rubber sealed structure will make easy opening and closing and good sealing. The additional eccentricity make the valve have good self-locked and self-sealed performance. The medium and small size diameter is linear slab

3、标准与规范 Standards and norms

产品标准 Product Standards	GB/T14478、GB/T12238、JB/T8527	
传动装置 Gear	JB/T5299	
结构长度 Face to face and end to end connection	GB/T12221	
配管法兰 Piping flange	灰铸铁法兰 Gray cast iron flange	GB/T17241.6
	球墨铸铁法兰 Ductile Iron Flange	GB/T12380.1~12380.3
	钢制法兰 Steel flange	GB/T9112~9131
畜能器标准 Accumulator standards	GB/T2352	
试验与检验 Inspection and test	GB/T14478、GB/T13927、JB/9092-99	
质量保证 Quality assurance	ISO9001	

注：可采用其它有关标准和国外标准，法兰尺寸可按用户要求制造，但应在订货合同中写明。

Note: Other related standards and overseas standards are available, the flange size is manufactured according to the customers' needs but should be clarified in the contract.

4、基本参数 Basic parameters

公称通径 Nominal diameter DN（mm）		150~3500
公称压力级 Nominal pressure PN（MPa）		0.25~2.5
试验压力 Testing pressure Ps（MPa）	密封 Seal	1.1XPN
	强度 Intensity	1.5XPN
工作压力（MPa）Working pressure		1.0XPN
介质温度（℃）Medium temperature		金属密封 Metal seal ≤425, 软密封 Soft sealing ≤80
适用介质 Media		水、海水、泥沙水、油品等非腐蚀性流体 Water, seawater, sediment water, oil and other non-corrosive fluid

注：1、1MPa=10.2kgf/cm² 2、用于水电站时，密封试验压力可按电站最高静水头计算值。

Note：1、1Mpa=10.2kg/cm2

2、For the hydropower station, the seal test station can be a maximum hydrostatic pressure of the first calculated value.

5、特殊参数 Special parameters

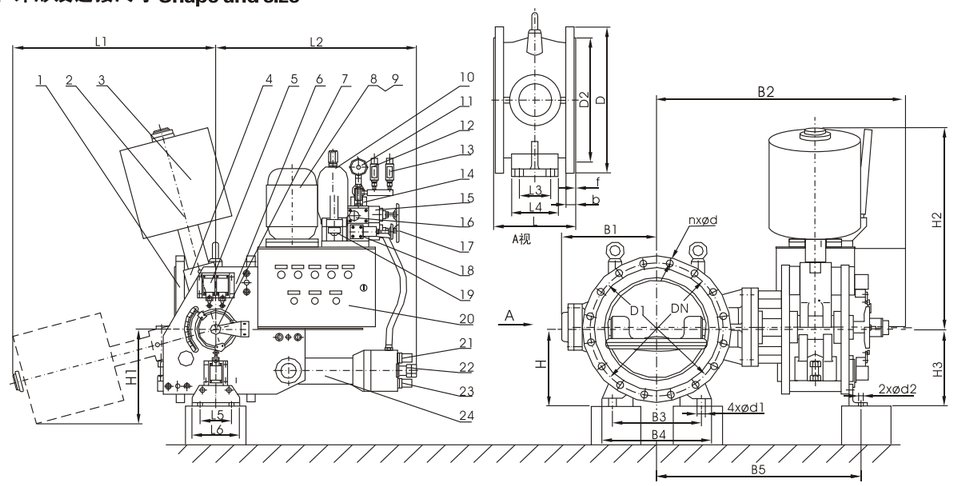
项　目 Item		可调范围 Adjustable range	出厂调节 Factory adjustment
开阀时间（可调）opening valve time	20~60秒(s)		30秒 (s)
关阀时间（可调） Closing valve time	快关 quick-closing	2.5~25秒 (s)	8秒 (s)
	慢关 slow-closing	6~90秒 (s)	20秒 (s)
关阀角度（可调） Angle of closing the valve	快关 quick-closing	70±10度	65秒 (s)
	慢关 slow-closing	20±10度	25秒 (s)
最小流阻系数 Minimum flow resistance coefficient	0.1		

6、主要零件选用材料 Materials for the main parts

零件名称 Name of the part	材　料 Material
阀　体 Body	灰铸铁、球墨铸铁、碳素钢 Gray cast iron, ductile iron, carbon steel
蝶　板 Butterfly plate	灰铸铁、球墨铸铁、碳素钢 Gray cast iron, ductile iron, carbon steel
阀　轴 Valve shaft	不锈钢、碳素钢 Stainless steel 、carbon steel
阀体密封面 Sealing surface of body	铜合金、不锈钢 Copper alloy、stainless steel
蝶板密封圈 Ring of butterfly plate	优质丁腈橡胶、不锈钢/柔性石墨层叠 Quality nitrile rubber、stainless steel、flexible graphite
滑动轴承 Sliding bearing	铜合金 Copper alloy
填　料 Packing	V形密封圈、柔性石墨 V-type ring、flexible graphite
墙　板 Panel	碳素钢 Carbon steel

液控缓闭止回蝶阀
Hydraulic control relieve butterfly valves
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

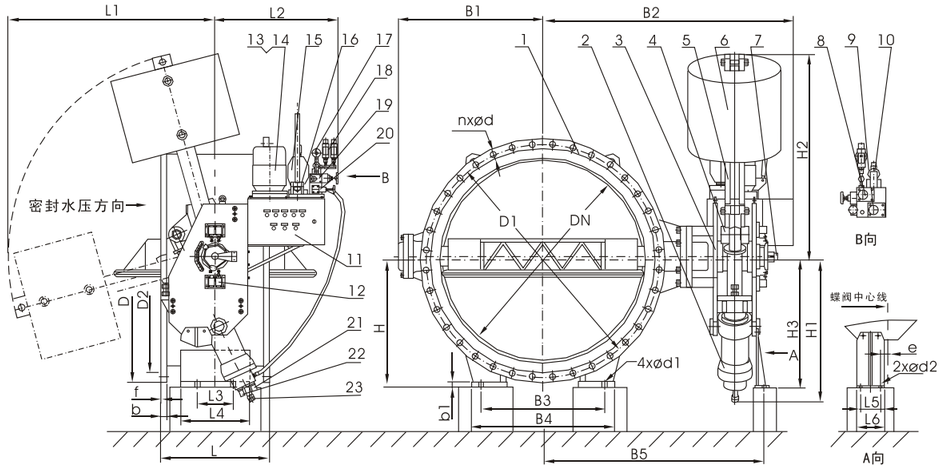
7、外形及连接尺寸 Shape and size



重锤式自动保压液控缓闭止回蝶阀外形及连接尺寸图（DN≤500）

Heavy hammer type automatic packing Hydraulic control relieve butterfly valves(DN≤500)

1.阀体Body 2.杠杆Lever 3.重锤 Heavy hamme 4.摇臂 Rocker 5.行程开关 Switch of moment 6.墙板 Panel 7.开度定位器 Opening Locator 8.电机 Motor 9.油泵 Pump 10.蓄能器 Accumulator 11.耐震压力表 Seismic pressure gauge 12.低压力开关 Low pressure switch 13.高压力开关 High pressure switch 14.电磁阀 Solenoid valve 15.截止阀(长开)Globe valve(Open) 16.流量控制阀 Flow control valve 17.溢流阀 Overflow valve 18.手动泵 Manual pump 19.截止阀(常闭) Globe valve(close) 20.电气控制箱 Electric control box 21.快关调节阀 Fast-closing regulated valve 22.快慢角度调节 Angle regulation of speed 23.慢关调节阀 Slow-closing regulated valve 24.油缸 Tanks



自动保压重锤式液控制缓闭止回蝶阀外形及连接尺寸图（DN≥600）

Heavy hammer type automatic packing Hydraulic control relieve butterfly valves(DN≥600)

1.阀体Body 2.油缸Tanks 3.传动支架Drive bracket 4.摇臂Rocker 5杠杆Lever 6.重锤Heavy hammer 7.开度定位器: Opening Locator 8.常开截止阀Globe valve(Open) 9.常闭截止阀Globe valve(Close) 10.主电磁阀Solenoid valve 11.电气控制箱Electric control box 12.行程开关The switch of moment 13.电机Motor 14.油泵Oil pump 15.蓄能器Accumulator 16.手动泵Manual pump 17.压力表Pressure gauge 18.压力开关Pressure Switch 19.电流控制阀Current control valve 20.溢流阀Overflow valve 21.快关调节阀Fast-closing regulated valve 22.慢关调节阀Slow-closing regulated valve 23.快慢角度调节Angle regulation of speed

❖主要外形及连接尺寸（PN=0.25MPa) Shape and size of the main connections

单位Unit:(mm)

公称通径 Nominal diameter (DN)	L	D	D1	D2	b	f	n	d	L1	L2	L3	L4	L5	L6	H	H1	H2	H3	B1	B2	B3	B4	B5	b1	d1	e	d2
350	290	490	445	413	28	4	12	23	800	850	100	140	120	180	300	365	780	280	305	930	320	380	713	30	30		24
400	310	540	495	463	32	4	16	23	900	850	120	180	120	180	300	390	880	280	365	980	340	420	765	30	30		24
500	350	645	600	568	34	4	20	23	1100	850	150	220	120	180	350	443	1070	280	440	1045	400	500	830	40	32		24
600	390	755	705	667	35	5	20	26	1275	860	150	250	160	220	405	860	1245	610	525	1210	430	546	965	40	32	65	24
700	430	860	810	772	35	5	24	26	1275	860	180	290	160	220	460	860	1245	610	555	1250	570	700	1005	40	32	65	24
800	470	975	920	878	40	5	24	31	1275	860	180	310	160	220	520	860	1245	610	605	1300	610	740	1055	40	32	65	24
900	510	1075	1020	978	40	5	24	31	1385	860	180	320	160	220	570	935	1350	685	670	1360	700	860	1110	40	35	40	24
1000	550	1175	1120	1078	42	5	28	31	1385	860	200	360	160	220	640	935	1350	685	755	1480	740	900	1237	40	35	40	24
1200	630	1375	1320	1280	45	5	32	31	1385	860	200	360	160	220	750	935	1350	685	855	1580	790	950	1337	40	35	40	24
1300	710	1475	1420	1380	30	5	32	31	1510	870	260	460	160	220	780	1065	1475	820	935	1695	820	960	1468	40	42	40	28
1400	710	1575	1520	1480	30	5	36	31	1510	870	260	460	160	220	835	1065	1475	820	1010	1760	840	1000	1536	40	42	40	28
1500	790	1690	1630	1590	30	5	36	31	1510	870	260	500	160	220	900	1065	1475	820	1055	1800	900	1040	1572	40	42	40	28
1600	790	1790	1730	1690	32	5	40	31	1765	870	270	500	160	220	950	1075	1720	820	1120	1875	960	1140	1598	40	42	40	28
1750	870	1935	1880	1840	32	5	44	31	1765	870	270	500	160	220	1000	1075	1720	820	1175	1910	1350	1500	1682	45	42	40	28
1800	870	1990	1930	1890	34	5	44	31	1765	870	270	500	160	220	1040	1075	1720	820	1210	1940	1370	1570	1708	45	42	40	28
2000	950	2190	2130	2090	34	5	48	31	2060	910	360	600	200	280	1130	1180	1990	910	1380	2080	1370	1650	1848	45	42	40	32
2200	1000	2405	2340	2295	36	6	52	34	2060	910	360	600	200	280	1240	1180	1990	910	1480	2180	1600	1880	1948	45	42	40	32
2400	1100	2605	2540	2495	38	6	56	34	2150	910	450	800	200	280	1340	1250	2080	980	1590	2350	1740	2020	2118	45	42	40	32
2600	1200	2805	2740	2695	40	6	60	37	2150	910	500	900	200	280	1440	1250	2080	980	1770	2470	1850	2200	2238	50	42	40	32
2800	1300	3030	2960	2910	42	6	64	37	2050	950	600	950	200	280	1560	1180	1990	1050		2640	2000	2400	2355	50	48	20	32
3000	1400	3230	3160	3110	42	6	68	37	2050	950	600	1000	200	280	1660	1180	1990	1050		2820	2160	2560	2532	50	48	20	32
3200	1500	3430	3360	3310	44	6	72	37	2150	950	700	1100	200	280	1760	1250	2080	1180		2980	2360	2760	2695	50	48	20	32
3400	1600	3630	3560	3510	46	6	76	37	2150	950	750	1200	200	280	1860	1250	2080	1180		3140	2420	2920	2855	50	48	20	32
3500	1650	3730	3660	3610	48	6	78	37	2150	950	750	1200	200	280	1910	1250	2080	1180		3210	2680	3180	2925	50	48	20	32

❖主要外形及连接尺寸（PN=0.6MPa) Shape and size of the main connections

单位Unit:(mm)

公称通径 Nominal diameter (DN)	L	D	D1	D2	b	f	n	d	L1	L2	L3	L4	L5	L6	H	H1	H2	H3	B1	B2	B3	B4	B5	b1	d1	e	d2
300	270	440	395	366	26	4	12	23	800	850	100	150	120	180	300	365	780	280	280	900	320	380	683	30	30		24
350	290	490	445	413	28	4	12	23	800	850	100	140	120	180	300	365	780	280	305	930	320	380	713	30	30		24
400	310	540	495	463	32	4	16	23	900	850	120	180	120	180	300	390	880	280	365	980	340	420	765	30	30		24
500	350	645	600	568	34	4	20	23	1100	850	150	220	120	180	350	443	1070	280	440	1045	400	500	830	40	32		24
600	390	755	705	667	35	5	20	28	1275	860	150	250	160	220	405	860	1245	610	525	1210	430	546	965	40	32	65	24
700	430	860	810	772	35	5	24	28	1275	860	180	290	160	220	460	860	1245	610	555	1250	570	700	1005	40	32	65	24
800	470	975	920	878	40	5	24	31	1275	860	180	310	160	220	520	860	1245	610	605	1300	610	740	1055	40	32	65	24
900	510	1075	1020	978	40	5	24	31	1385	860	180	320	160	220	570	935	1350	685	670	1360	700	860	1110	40	35	40	24
1000	550	1175	1120	1078	42	5	28	31	1385	860	200	360	160	220	640	935	1350	685	755	1480	740	900	1237	40	35	40	24
1200	630	1405	1340	1295	45	5	32	34	1385	860	200	360	160	220	750	935	1350	685	855	1580	790	950	1337	40	35	40	24
1300	710	1520	1450	1405	35	5	32	37	1510	870	260	460	160	220	800	1065	1475	820	935	1695	820	960	1468	40	42	40	28
1400	710	1630	1560	1510	46	5	36	37	1510	870	260	460	160	220	865	1065	1475	820	1010	1760	840	1000	1536	40	42	40	28
1500	790	1730	1660	1610	40	5	36	37	1510	870	260	500	160	220	925	1065	1475	820	1055	1800	900	1040	1572	40	42	40	28
1600	790	1830	1760	1710	50	5	40	37	1765	870	270	500	160	220	980	1075	1720	820	1120	1875	960	1140	1598	40	48	40	28
1750	870	1995	1920	1868	50	5	44	40	1765	870	270	500	160	220	1070	1075	1720	820	1175	1910	1350	1500	1682	45	48	40	28
1800	870	2045	1970	1918	52	5	44	40	1765	870	270	500	160	220	1110	1075	1720	820	1210	1940	1370	1570	1708	45	48	40	28
2000	950	2265	2180	2125	40	5	48	43	2060	910	360	600	200	280	1185	1180	1990	910	1380	2080	1370	1650	1848	45	48	40	32
2200	1000	2475	2390	2335	42	6	52	43	2060	910	360	600	200	280	1300	1180	1990	910	1480	2180	1600	1880	1948	45	48	40	32
2400	1100	2685	2600	2545	45	6	56	43	2150	910	450	800	200	280	1410	1250	2080	980	1590	2350	1740	2020	2118	45	48	40	32
2600	1200	2905	2810	2750	46	6	60	49	2150	910	500	900	200	280	1480	1250	2080	980	1770	2470	1850	2200	2238	50	56	40	32
2800	1300	3115	3020	2960	48	6	64	49	2050	950	600	950	200	280	1580	1180	1990	1050		2640	2000	2400	2355	50	56	20	32
3000	1400	3315	3220	3160	50	6	68	49	2050	950	600	1000	200	280	1680	1180	1990	1050		2820	2160	2560	2532	50	56	20	32
3200	1500	3525	3430	3370	54	6	72	49	2150	950	700	1100	200	280	1780	1250	2080	1180		2980	2360	2760	2695	50	56	20	32
3400	1600	3735	3640	3580	56	6	76	49	2150	950	750	1200	200	280	1800	1250	2080	1180		3140	2420	2920	2855	50	56	20	32

注：以上数据仅供参考，可采用其它有关标准，法兰尺寸可按用户要求制造。
Note: Other related standards can be used and other flange size can be manufactured according to the customers' demands, the above figures are just for reference.

❖主要外形及连接尺寸（PN=1.0MPa) Shape and size of the main connections

单位Unit:(mm)

公称通径 Nominal diameter (DN)	L	D	D1	D2	b	f	n	d	L1	L2	L3	L4	L5	L6	H	H1	H2	H3	B1	B2	B3	B4	B5	b1	d1	e	d2
300	270	445	400	370	26	4	12	23	800	850	100	150	120	180	300	365	780	280	280	900	320	380	683	30	30		24
350	290	505	460	429	28	4	16	23	800	850	100	140	120	180	300	365	780	280	305	930	320	380	713	30	30		24
400	310	565	515	480	32	4	16	28	900	850	120	180	120	180	300	390	880	280	365	980	340	420	765	30	30		24
500	350	670	620	582	34	4	20	28	1100	850	150	220	120	180	350	443	1070	280	440	1045	400	500	830	40	32		24
600	390	780	725	682	35	5	20	31	1275	860	150	250	160	220	405	860	1245	610	525	1210	430	546	965	40	32	65	24
700	430	895	840	794	35	5	24	31	1275	860	180	290	160	220	460	860	1245	610	555	1250	570	700	1005	40	32	65	24
800	470	1015	950	901	40	5	24	34	1275	860	180	310	160	220	520	860	1245	610	605	1300	610	740	1055	40	32	65	24
900	510	1115	1050	1001	40	5	28	34	1385	860	180	320	160	220	570	935	1350	685	670	1360	700	860	1110	40	35	40	24
1000	550	1230	1160	1112	42	5	28	37	1385	860	200	360	160	220	640	935	1350	685	755	1480	740	900	1237	40	35	40	24
1100	550	1340	1270	1222	42	5	28	37	1385	860	200	360	160	220	710	935	1350	685	805	1530	760	920	1287	40	35	40	24
1200	630	1455	1380	1328	45	5	32	40	1385	860	200	360	160	220	750	935	1350	685	855	1580	790	950	1337	40	35	40	24
1250	630	1505	1430	1378	45	5	32	40	1510	870	200	360	160	220	810	1065	1475	760	910	1670	1140	1280	1442	40	42	40	24
1300	710	1575	1490	1425	45	5	32	43	1510	870	260	460	160	220	800	1065	1475	820	935	1695	820	960	1468	40	42	40	28
1400	710	1675	1590	1530	46	5	36	43	1510	870	260	460	160	220	865	1065	1475	820	1010	1760	840	1000	1536	40	42	40	28
1500	790	1785	1700	1640	46	5	36	49	1510	870	260	500	160	220	925	1065	1475	820	1055	1800	900	1040	1572	40	42	40	28
1600	790	1915	1820	1750	50	5	40	49	1765	870	270	500	160	220	980	1075	1720	820	1120	1875	960	1140	1598	40	48	40	28
1750	870	2065	1870	1900	50	5	44	49	1765	870	270	500	160	220	1070	1075	1720	820	1175	1910	1350	1500	1682	45	48	40	28
1800	870	2115	2020	1950	52	5	44	49	1765	870	270	500	160	220	1110	1075	1720	820	1210	1940	1370	1570	1708	45	48	40	28
2000	950	2325	2230	2150	54	5	48	49	1960	910	360	600	200	280	1185	1180	1895	910	1380	2080	1370	1650	1848	45	48	40	32
2200	1000	2550	2440	2370	58	5	52	56	2060	910	360	600	200	280	1300	1180	1990	910	1480	2180	1600	1880	1948	45	56	40	32
2250	1000	2600	2490	2420	60	5	52	56	2060	910	360	600	200	280	1330	1180	1990	910	1510	2210	1600	1880	1978	45	56	40	32
2400	1100	2760	2650	2570	65	6	56	56	2150	910	450	800	200	280	1410	1250	2080	980	1590	2350	1740	2020	2118	45	56	40	32

❖主要外形及连接尺寸（PN=1.6MPa) Shape and size of the main connections

单位Unit:(mm)

公称通径 Nominal diameter (DN)	L	D	D1	D2	b	f	n	d	L1	L2	L3	L4	L5	L6	H	H1	H2	H3	B1	B2	B3	B4	B5	b1	d1	e	d2
300	270	460	410	375	26	4	12	27	800	850	100	150	120	180	300	365	780	280	280	900	320	380	683	30	30		24
350	290	520	470	429	28	4	16	27	800	850	100	140	120	180	300	365	780	280	305	930	320	380	713	30	30		24
400	310	580	525	480	32	4	16	31	900	850	120	180	120	180	300	390	880	280	365	980	340	420	765	30	30		24
500	350	715	650	609	34	4	20	34	1100	850	150	220	120	180	350	443	1070	280	440	1045	400	500	830	40	32		24
600	390	840	770	720	35	5	20	37	1275	860	150	250	160	220	405	860	1245	610	525	1210	430	546	965	40	32	65	24
700	430	910	840	794	35	5	24	37	1275	860	180	290	160	220	460	860	1245	610	555	1250	570	700	1005	40	32	65	24
800	470	1025	950	901	40	5	24	40	1275	860	180	310	160	220	520	860	1245	610	605	1300	610	740	1055	40	32	65	24
900	510	1125	1050	1001	40	5	28	40	1385	860	180	320	160	220	570	935	1350	685	670	1360	700	860	1110	40	35	40	24
1000	550	1255	1170	1112	42	5	28	43	1385	860	200	360	160	220	640	935	1350	685	755	1480	740	900	1237	40	35	40	24
1100	550	1370	1280	1222	42	5	28	43	1385	860	200	360	160	220	710	935	1350	685	805	1530	760	920	1287	40	35	40	24
1200	630	1485	1390	1328	45	5	32	49	1510	860	200	360	160	220	750	935	1475	760	855	1605	790	950	1337	40	35	40	24
1250	630	1535	1440	1378	46	5	32	49	1510	870	200	360	160	220	810	1065	1475	760	910	1670	1140	1280	1442	40	42	40	24
1300	710	1585	1490	1425	50	5	32	49	1510	870	260	460	160	220	800	1065	1475	820	935	1695	820	960	1468	40	42	40	28
1400	710	1685	1590	1530	54	5	36	49	1510	870	260	460	160	220	865	1065	1475	820	1010	1760	840	1000	1536	40	42	40	28
1500	790	1820	1710	1640	54	5	36	49	1765	870	260	500	160	220	925	1065	1720	820	1055	1800	900	1040	1572	40	42	40	28
1600	790	1930	1820	1750	56	5	40	56	1765	870	270	500	160	220	980	1075	1720	820	1120	1875	960	1140	1598	40	48	40	28
1750	870	2080	1970	1900	60	5	44	56	1765	870	270	500	160	220	1070	1075	1720	820	1175	1910	1350	1500	1682	45	48	40	28
1800	870	2130	2020	1950	60	5	44	56	1765	870	270	500	160	220	1110	1075	1720	820	1210	1940	1370	1570	1708	45	48	40	28
2000	950	2345	2230	2150	65	5	48	62	1960	910	360	600	200	280	1185	1180	1895	910	1380	2080	1370	1650	1848	45	48	40	32
2200	1000	2555	2440	2360	70	5	52	62	2060	910	360	600	200	280	1300	1180	1990	910	1480	2180	1600	1880	1948	45	56	40	32
2250	1000	2605	2490	2410	70	5	52	62	2060	910	360	600	200	280	1330	1180	1990	910	1510	2210	1600	1880	1978	45	56	40	32

注：以上数据仅供参考，可采用其它有关标准，法兰尺寸可按用户要求制造。
Note: Other related standards can be used and other flange size can be manufactured according to the customers' demands, the above figures are just for reference.

❖主要外形连接尺寸(PN=2.5Mpa)Shape and size of the main connections　　单位Unit:(mm)

公称通径 Nominal diameter (DN)	L	D	D1	D2	b	f	n	d	L1	L2	L3	L4	L5	L6	H	H1	H2	H3	B1	B2	B3	B4	B5	b1	d1	e	d2
300	270	485	430	389	34	4	16	31	800	850	100	150	120	180	300	365	780	280	280	838	320	380	683	30	32		24
350	290	555	490	448	38	4	16	34	800	850	100	140	120	180	300	365	780	280	305	868	320	380	713	30	32		24
400	310	620	550	503	40	4	16	37	1275	860	120	180	160	220	330	860	1245	610	365	970	340	420	815	30	32	65	24
500	350	730	660	609	44	4	20	37	1275	860	150	220	160	220	380	860	1245	610	440	1090	400	500	880	40	35	65	24
600	390	845	770	720	46	5	20	40	1275	860	150	250	160	220	430	860	1245	610	525	1210	430	546	965	40	35	40	24
700	430	960	875	820	50	5	24	43	1385	860	180	290	160	220	500	935	1350	685	555	1250	570	700	1005	40	35	40	24
800	470	1085	990	928	54	5	24	49	1385	860	180	310	160	220	550	935	1350	685	605	1300	610	740	1055	40	38	40	24
900	510	1185	1090	1028	58	5	28	49	1385	860	200	320	160	220	610	935	1350	685	670	1360	700	860	1110	40	38	40	24
1000	550	1320	1210	1140	62	5	28	56	1510	870	200	360	160	220	670	1065	1475	760	755	1505	740	900	1287	40	42	40	24
1100	550	1425	1315	1245	65	5	28	56	1510	870	200	360	160	220	750	1065	1475	760	805	1555	760	920	1337	40	42	40	24
1200	630	1530	1420	1350	70	5	32	56	1510	870	200	360	160	220	780	1065	1475	760	855	1605	790	950	1387	40	48	40	24
1250	630	1575	1470	1400	70	5	32	56	1510	870	200	360	160	220	800	1065	1475	760	910	1670	1140	1280	1442	40	48	40	24
1300	710	1640	1530	1450	74	5	32	62	1510	870	260	460	160	220	840	1065	1475	820	935	1695	820	960	1468	40	48	40	28
1400	710	1755	1640	1560	76	5	36	62	1765	870	260	460	160	220	890	1075	1720	820	1010	1760	840	1000	1536	40	52	40	28
1500	790	1865	1750	1670	80	5	36	62	1765	870	260	500	160	220	960	1075	1720	820	1055	1800	900	1040	1572	40	52	40	28
1600	790	1975	1860	1780	84	5	40	62	1765	870	270	500	160	220	1010	1075	1720	820	1120	1875	960	1140	1598	40	56	40	28
1750	870	2145	2020	1935	90	5	44	70	1960	910	270	500	200	280	1100	1180	1895	910	1175	1935	1350	1500	1732	45	56	40	28
1800	870	2195	2070	1985	90	5	44	70	1960	910	270	500	200	280	1110	1180	1895	910	1210	1965	1370	1570	1758	45	56	40	28

8. 产品结构说明

液控缓闭止回蝶阀按照控制系统蓄能类型分为重锤式和蓄能器式两大系列,其中重锤式控制系统又分为普通重锤式、重锤式自动保压型（V）和重锤式自动保压锁定型（VS）;蓄蓄能器式控制系统则分为普通蓄能器式（X）和蓄能　器式锁定型（XS）。

- 阀门主要由阀门本体、传动机构、液压站、电控箱等四部分组成。
- 阀门本体由阀体、蝶板、阀轴、滑动轴承、密封组件等主要零件组成。
- 重锤式阀体均采用卧式结构，阀轴采用半轴结构。
- 蓄能器式一般采用卧式布置；也可根据用户要求采用立式布置。
- 传动机构主要由液压缸、摇臂、支撑墙板（重锤式还有重锤、杠杆、锁定油缸等）等连接、传动件组成，是液压动力开、关阀门的主要执行机构。
- 传动液压缸上设有快关时间调节阀、慢关时间调节阀和快、慢关角度调节阀。
- 卧式布置时，传动机构一般采用正向安装；受现场空间限制时也可根据用户要求采用反装型。
- 液压站包括油泵机组、手动泵、蓄能器、电磁阀、溢流阀、流量控制阀、截止阀、液压集成块、油箱等零部件。重锤式自动保压型系统中，蓄能器用作系统压力的补偿。
- 重锤式自动保压锁定型系统中，蓄能器用作系统压力的补偿和锁定油缸的退锁
- 蓄能器式系统中，两个蓄能器互为备用，为阀门启闭提供主动力源。
- 流量控制阀用于开阀时间调节。
- 手动泵用于系统调试和特殊工况下的阀门启闭。
- 液压系统电磁换向阀控制特征一般为正作用型，　即：电磁阀得电蝶阀开阀、失电蝶阀关闭；反之侧为反作用型，常规配套电磁换向为正作用型，采用反作用型应在订货时说明。
- 液压系统与阀门本体可以是整体式安装，也可以分开安装。用户未作特殊说明时为整体式安装。蓄能器式采有立式布置时均分体式安装。

9. 电液工作原理及操作说明（水泵工况）

本阀电气控制系统按主逻辑元件类别分为普通继电型和PLC智能控制型，出厂配套一般为普通继电型，需PLC智能控制型应在订货时说明。各类型又分以下几种主要工况：

① 开阀离心泵工况（包括离心式混流泵):先启动泵，延迟预定时间后开阀，或泵阀同时开启。

② 开阀轴流泵工况（包括轴流式混流泵）：泵阀同时开启，或先开阀至一定角度，再启动泵。

③ 开阀水轮机工况：先开启旁通阀平衡压力，再开阀，后开启水轮机。

各种工况一般均要求在停机或停电的同时关闭阀门。本阀电气控制系统均配有就地控制回路和远程联动控制回路。就地控制回路主要用于现场调试，正常工作时一般均使用远程联动控制回路。

系统动力电源为AC380V，控制电源可以是AC220V、DC220V、DC110V或其它电源等级。

9.1 就地操作

合上电源开关QF,220V电源指示灯亮:DC24V电源指示灯亮:全关指示灯亮。将转换开关SA旋至“就地”位。

9.1.1开阀

按就地开阀按钮SB1，电磁阀YV带电闭合，交流接触器KM带电，主触头闭合，油泵启动，油泵指示灯亮。液压油经流量控制阀、高压胶管进入油缸推动活塞，带动与之相连的杠杆举起重锤开阀。

开阀到位后行程开关SQ1压合，全开指示灯亮；同时自动保压系统启动:电机继续给蓄能器充压；当压力达高压力开关设定点KP1时，油泵停机。

调整开阀时间可通过旋转流量控制阀手轮来实现，其开度变化后可以达到不同的开阀时间和适应实际工况，时间调整范围见前表＜特殊参数＞。

9.1.2自动保压

系统泄漏,压力降至低压力开关设定点KP2,油泵自动启动补压，达高压力开关设定点KP1后停机。KP2设定为5Mpa,Kp1设定为14Mpa，一般出厂时均已调好。

若KP2设置有误（偏低），重锤开始下降而油泵仍未启动,当全开位行程开关释放时，油泵也会自动补压至Kp1值。

若KP1与溢流阀设置配合有误，油压先到达溢流点,则油泵不能停机;当运行超过预定时间时，系统即发出报警信号，提醒操作人员检漏或重新设置。

9.1.3关阀

按就地关阀按钮SB3，电磁阀失电换向，油缸内压力油经快、慢关节流阀、高压胶管、电磁阀回到油箱，阀杆及蝶板旋转实现关阀。

关阀分为快关、慢关两阶段，通过旋转油缸尾部的快、慢关节流阀可分别予以调节。其调节范围见前表＜特殊参数＞。

9.1.4停止

在正常开阀或关阀过程中，均可以通过停止按钮SB2中止动作，让阀门停止在任意位置，以方便用户调试。快关过程中应避免使用此功能，以免对液压系统形成冲击。

9. 2远程操作

将转换开关SA旋至“远程”位，远控指示灯亮；此时即可通过远控开关SB4、SB5、SB6对阀门分别进行开阀、关阀、停止的控 制；并可与管道主机联锁，实现泵阀联控。

9. 2. 1联控开阀

❖ 先启泵、后开阀

中控室启动水泵，水泵控制继电器常开接点KA（4-5）闭合，延迟预定时间后，KTI(4,12）闭合，阀门按预定程序自动开启、保压。

将KT1时间调定为零，即可实现泵阀同时启动。

❖ 先开阀、后启泵

按远程开阀按钮SB4,油泵启动，阀门随之开启。当阀门开启到一定角度，单向行程开关SQ3压合，SQ3（42，43）信号发出,中控室启动水泵。此时时间继电器KT2设定值应大于SQ2释放至SQ3压合间的时间差。

SB4若同时发出启泵信号，也可实现泵阀同时启动。

9. 2. 2联控关阀

❖ 泵阀正常同时关闭

水泵停机，KA（4-5）断开，KT1（22-6）闭合，关阀继电器KA1得电，电磁阀YV失电换向，阀门按预定程序关阀。

❖ 先关阀、后停泵

按下远程关阀按钮SB5，阀门关闭；当关至约75度位置时，单向行程开关SQ4压合，发出信号，中控室停泵。

9. 2. 3远程监控信号

控制系统除可接收远程开阀、关阀、停止、水泵状态信号外,还输出各种状态信号供远程DCS监控，主要有：阀门开度位置信号（0°、15°、75°、90°）、远程状态信号、油泵状态信号、电机过载、开阀超时故障信号、阀门开度4~20mA模拟信号等：除模拟量信号外、其余信号均为无源的干接点开关量信号。

9. 3手动操作

关闭液压系统常开截止阀，摇动手动泵，压力油即直接经高压胶管进入油缸，推动活塞，带动连杆系统开阀。打开常开截止阀，或电磁阀带电时开常闭截止阀，油缸内压力油经快、慢关节流阀、高压胶管、截止阀回到油箱，在重锤和水力矩作用下，阀杆及蝶板旋转实现关阀。

其它工况电液控制原理详细说明参看我公司相关产品出厂的＜安装使用说明书＞。

故障失电保护一般工况下，机组正常工作时，若阀门控制系统故障失电，阀门自动关闭。也可在系统中设置DC24V保安电源。当阀门控制系统故障失电时，若水泵仍在工作，则DC24V保安电源自动接入，保证蝶阀继续开启；直至水泵停机，YD2断开时，阀门才按预定程序自动关闭。

Description of product structure

Hydraulic control relieve butterfly valve has heavy–hammer and accumulator, and the heavy–hammer type have normal heavy–hammer type and automatic heavy–hammer type.

The valve is made up of valve body、transmission、hydraulic station and electronic control box.

Body of the heavy–hammer type is horizontal type, the shaft is half.

Accumulator is horizontal type, but we can use vertical structure according to the customers' demand.

Transmission is made up of hydraulic cylinder、rocker、support panel etc, is the main parts of hydraulic system.

Hydraulic cylinder has fast–closing regulated valve、slow–closing regulated valve and angle valve.

Hydraulic Station includes main parts as pump unit、manual pump、accumulator、solenoid valve、overflow valve、flow control valve、globe valve、hydraulic manifold and oil box etc .

In heavy hammer automatic locking pressure system, the accumulator is used for pressure compensation and locking fuel tank.

In accumulator–type system, there are two accumulators for standby and active power source of the valve.

Flow control valve is used for regulating the open time of valve.

Manual pump is used for system debugging and opening and closing of the valve in special working condition.

The butterfly valve will open when the solenoid valve gets the power supply and it will close when the power supply is shut–off.

The hydraulic System and the valve will installed as one unit and they can be installed as two different parts also. If the customers have special requirements, they should

9.1.Electro–hydraulic working principle and operating instructions(Pump working condition)

The electrical control valve system has two control type as common relay type and PLC intelligent control type according to the original logical master. The factory support is common relay type and if you need PLC intelligent control type please let us know in the prefer order.

1)The working condition of centrifugal pump: firstly open the pump and then open the valve after the scheduled time, or open the pump and valve at the same time.

2)The working condition of axial flow pump: open the pump and the valve at the same time or open the valve firstly and then open the pump.

3) The working condition of water turbine: firstly open the bypass valve to balance the pressure and then open the valve, at last open the water turbine.

Close the valve at the same time with power supply shut–off or turn–off of the machine.

The electrical control system has local control loop and long–distance linkage control loop. And the local control loop is used for debugging at the scene, and the long–distance linkage control loop is used under the normal working condition.

The power supply of the system is AC380V and the control power is AC220V, DC220V and DC220V or other power rating.

9.1.1(Local operation)

Close the power switch which named QF, Power indicator light of 220V will lighten, and DC220V power indicator light will lighten and full indicator light is lighten too. Rotated the switch of SA to “Local”.

9.1.2 (Open the valve)

Press “SB1”, solenoid valve YV close with power supply, AC contactor has power supply, the main contact point will close, oil pump works and the indicator of oil pump is light. Hydraulic oil enters into the fuel tank to promote pistons by flow control valve and high–pressure hose. The lever holds the heavy hammer to open the valve. When the valve is in open the switch of SQ1 is close and the full light is light. Pressure system start automatically and electrical machine gives the pressure to the accumulator. When the pressure is up to KP1, the oil pump will stop working.

Rotate handwheel of flow control valve to control the time of opening valve.

9.1.2 (Automatic Pressure–protecting)

Set–point of low pressure switch is KP2, when the system is in leak, the oil pump will operate to fill the pressure. The high–pressure set–point is KP2. The value of KP1 is 14Mpa while KP2 is 5Mpa.

9.1.3 (Close the valve)

Local stop press is SB3, the solenoid valve will change the direction without power supply. Pressure oil in oil tanks be regulated through throttle valve and high–pressure hose.

9.1.4 (Stop)

You can let the vale stop in any location by pressing “SB2” in the process of normal opening and closing valve. Don't use this function during the fast closing to avoid impact on hydraulic system.

10、吊装及调试维护

♦吊运

运输起吊时不得翻转、倒入；开箱后用吊车运蝶阀，起吊时注意在四个起吊点中选取平衡位置。大修起吊前，重锤式阀门应将重锤从阀门本体拆下。吊装过程应注意缓慢、平稳、轻放。

♦储存

a.本阀门长时间存放时，应放于干燥处，封闭二端通道，在加工面涂上防锈油。临时停放时可在外墙板位置增加辅助支承以保持平稳。半年不安装，液压系统需清洗换油。

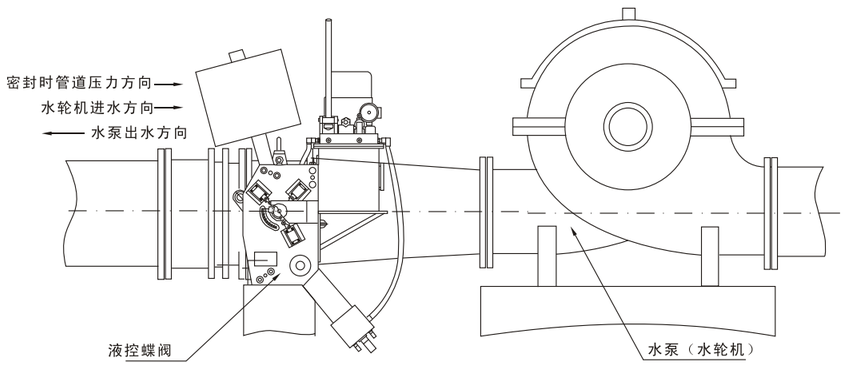
b.本阀禁止露天存放。

♦安装

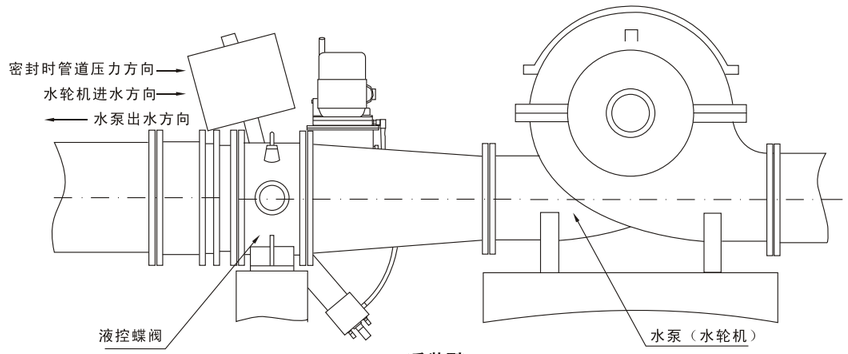
安装前应核对本阀铭牌参数是否符合使用要求；清洗阀体内孔及蝶板、检查各部位有无损坏现象，各零部件联接螺栓是否紧固。

正、反装重锤式阀门分别按下图所示方向，确认液压传动系统与水泵、水轮机进、出水管道的相对方向，将阀门安装在泵出口端或水轮机进口端。

蝶阀安装在基础上应校正水平，保证阀轴不倾斜。阀门支脚及辅助支撑主要用于保证阀门安装运行平稳，不宜大承受与其垂直的管道轴向水推力；轴向水推力应通过阀前或阀后管道传递到承重基础上。



(**正装型**)



(**反装型**)

♦**调试**

系统各电液元件在厂内均已调试到位，若需要现场调试，主要注意以下事项：

1、检查手动启闭功能

2、接上总电源，点动电机观察电机风叶，顺时针旋转则接线正确。

3、常开截止阀应打开，常闭截止阀应关闭。

4、流量控制阀应打开，开阀时慢慢上调，控制开阀速度。速度调定后用锁紧螺母锁定。

5、溢流阀先全部打开，开阀时慢慢上调，压力上升，最终调定压力应大于高压力开关KP1设定值1~2Mpa。压力调动后用锁紧螺母锁定。

6、通过油缸上的快、慢关节流阀进行快慢关速度调节。两节流阀为快→慢→快→慢360度循环调节，速度调定后用锁紧螺母锁定。

7、阀门启闭、锁定投入与锁定解除（如果有的话）动作到位后,相应各种位置开关均应有信号输出。

8、通过常闭截止阀的开、闭检查系统是否能够完成自动保压程序。

9、液压系统不得有泄漏,阀体轴封不得有泄漏。

♦ **联动运行**

确定联动启闭控制方式，配置联动控制电路，与水泵联动操作空负荷运行核实程序及延时等有关参数，合格即可进入负荷运行试验（动水状态下），运行时主要检查：

1、开阀过程中阀前阀后压力变化平稳，全开后基本相近。

2、能按程序与水泵、水轮机联动开关阀。

♦ **日常维护**

1、本蝶阀液压控制系统油箱标定容积为63升，介质为N46~N68号液压油。油位应不低于油标底线以上的三分之一，液压系统投入使用3个月后，应将液压油过滤一次，并清洗油箱。

2、以后应定期检查，对已变质和污染的油液应及时更换新油。新油或过滤加入新油时，应通过过滤油车加入，滤油车区的过滤精度不低于20μm,并注意使用同牌号的液压油。

3、定期检查蓄能器内充气压力。当充气压力低于4Mpa时，应及时充装氮气。氮气压力检查：屏蔽自动保压功能，打开常闭截止阀至一定开度慢慢泄压，观察压力表显示压力慢慢下降，当降至某一值时，压力表指示急速下降至零，指示下降速度变化值即为充氮压力。

4、装置投入运行后，应经常到工作现场观察运行情况，如有漏油、指示故障等异常现象应及时处理。

5、蝶阀调试、工作时，重锤下禁止人员通过或停留。

9.2 (Long–distance operation)

Let the exchange switch SA be in “Long–distance”, the indicator of long–distance will light. At the same time we can realize the opening、closing、stop control by switch SB4、SB5、SB6.

9.2.1 (Open the valve by joint control)

1)Firstly open the pump and then open the valve
2)Firstly open the valve and then open the pump

9.2.2(Close the valve by joint control)

1) Pump and valve open and close at the same time
2)Firstly close the valve and then stop the pump

9.2.3 (Remote monitor and control signal)

Signal of valve opening、long–distance signal、pump state signal、fault signal of motor overload and overtime.

9.3Manual operation

Please see the manual installation.

10. Hoisting and maintenance

1) Hoisting 吊运

Transport may not be upset when lifting, lifting point should be in balance position. The heavy hammer should be removed when the butterfly valve is lifted. The process of lifting should be slow、smooth and light.

2) Storage 储运

a. When the valve is in long term storage, the valve should be in dry condition. The anti–rust oil should be coated on the machined surface.
b. Hydraulic system need to change the oil after half a year's absent using.

3）Installation 安装

Check if the nameplate parameter is qualified for the using needs. Clean the body and butterfly plate and if there are any damage on the various parts and if the bolts are fasten.

Natural order type and Inverted type

The butterfly valve should revise on the basis of installation to make sure the axis not tilt. The feet and the auxiliary support can make the installation be smoother .

Debugging

Notes of debugging at the scene
1. Check the manual hoist .
2. Connect to the total power supply and check if the motor blade is workable, if it works clockwise the connection is right.
3. Open the normally open globe valve and close the normally close valve.
4. Open the flow control valve slowly, the pressure will raise up, the final pressure should be higher than KP1. When the pressure up to the setting value , locked the nut.
5. Open the relief valve, the pressure will raise up, the final pressure should be higher than KP1. When the pressure up to the setting value , locked the nut.
6. Regulate the speed through throttle valve .
7. There is signal output in related position.
8. Check the automatic pressure system by normally opening and closing valve.
9. There is no leakage of the hydraulic system.

Joint operation

Check the linkage control circuit. The main check tasks are as follows:
1.The pressure change during the process of opening the valve and closing the valve is smooth .
2. Connect the pumps and hydraulic turbine.

Routine maintenance

1. The volume of tank of the hydraulic system is 63 L, the media is N46–N68 hydraulic oil. Clean the hydraulic oil filter three month one time and clean the tank.
2. Periodic inspection , change the polluted and bad oil on time. When change the new oil please firstly filter the oil filter.
3. Check the inflation pressure within the accumulator. When the inflation pressure is lower than 4 Mpa, Nitrogen should be added promptly.
4. Check the operation at the scene, if there were any leakage or instruction fault, dealing with the problem promptly.

D 3 6 9 42X- 10 16

手动、蜗轮、气动、电动传动
Driven by manual、 turbine, pneumatic, electric

采用标准 Standards

制造标准 Manufacturing standards	GB/T12238	法兰标准 Flange standards	GB/T17241 GB/T 9113
结构长度标准 Face to face and end to end standards	GB/T 12221	检验标准 Test standards	GB/T13927 JB/T9092

主要性能规范 Main Performance Specifications

型 号 Model	公称压力 Nominal pressure PN(MPa)	壳体试验压力 Shell Test Pressure PS(MPa)	密封试验压力 Sealing test pressure PS(Mpa)	工作温度 Working temperature (°C)	适用介质 The media
D 6 43X- 3 9 10 16	1.0 1.6	1.5 2.4	1.1 1.8	≤80°C	水、油品 Water、oil

主要零件材料 Materials for the main parts

零件名称 Name of the parts	阀体、蝶板 Body and butterfly plate	阀 杆 Stem	密封圈 Ring	填 料 Packing
材 料 Material	灰铸铁 Gray cast iron 球墨铸铁 ductile iron 铸钢 cast steel 不锈钢 stainless steel	中碳钢、不锈钢 Medium carbon steel, stainless steel (2Cr13) 1Cr18Ni9Ti	丁腈橡胶 NBR 乙丙橡胶 EPDM 聚四氟乙烯 PTFE 氟橡胶 Fluoroelastomer	柔性石墨 Flexible Graphite

用途：

本蝶阀适于冶金、化工电力和市政工程及水厂等介质为水、油品和空气管道上，起切断流体和调介质流量等作用。

特点：

1、本蝶阀设计结构新颖，整体尺寸小，重量轻。
2、启闭迅速，操作轻便省力。
3、蝶板与密封圈间无滑动磨擦，密封面耐磨损,使用寿命长密，密封可靠,易调整。

工作原理：

旋转蝶阀手轮，通过蜗杆蜗轮传动，带动阀杆蝶板在90度范围内自由旋转，使蝶阀处于开启或关闭状态，达到连通或切断介质的目的。

Application

This kind of butterfly valve is widely used in mtallurgical, chemical and municipal power projects, and the media can be water、oil and air etc. It will cut–off the fluid and regulates the media.

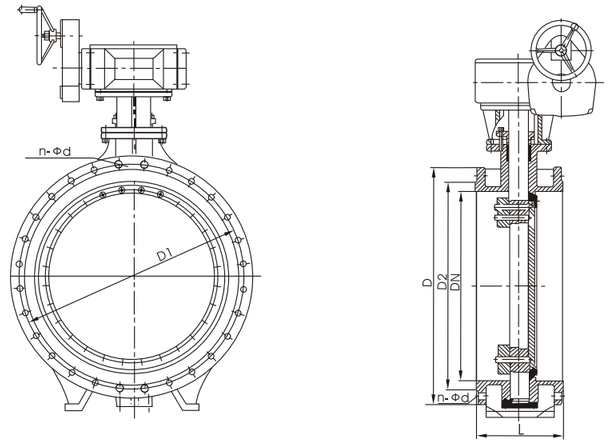
Features

1.The structure is novel and the size is small , the weight is light.
2.The opening and the closing is quick and it is convenient to operate.
3. There is no sliding friction between butterfly plate and the ring, the sealing surface is wear–resistant and the using life is long.

Working Principle

Rotate the handwheel of the butterfly valve, turbine was driven by worm. The butterfly plate and stem will rotate freely in the range of 90℃ and

法兰式双偏心软密封蝶阀
Flanged double eccentric soft sealing butterfly valve



❖ 主要外形尺寸 Main Dimensions

单位：Unit(mm)

公称通径 Nominal diameter (DN)	1.0MPa					1.6Mpa			
	L	D	D1	D2	n-d	D	D1	D2	n-d
100	127	220	180	156	8-Φ18	220	180	156	8-Φ18
125	140	250	210	184	8-Φ18	250	210	184	8-Φ18
150	140	285	240	211	8-Φ22	285	240	211	8-Φ22
200	152	340	295	266	8-Φ22	340	295	266	12-Φ22
250	165	395	350	319	12-Φ22	405	355	319	12-Φ26
300	178	445	400	370	12-Φ22	460	410	370	12-Φ26
350	190	505	460	429	16-Φ22	520	470	429	16-Φ26
400	216	565	515	480	16-Φ26	580	525	480	16-Φ30
450	220	615	565	530	20-Φ26	640	585	548	20-Φ30
500	229	670	620	528	20-Φ26	715	650	609	20-Φ33
600	267	780	725	682	20-Φ30	840	770	720	20-Φ36
700	292	895	840	794	24-Φ30	910	840	794	24-Φ36
800	318	1015	950	901	24-Φ33	1025	950	901	24-Φ39
900	330	1115	1050	1001	28-Φ33	1125	1050	1001	28-Φ39
1000	410	1230	1160	1112	28-Φ36	1255	1170	1112	28-Φ42
1200	470	1455	1380	1328	32-Φ39	1485	1390	1328	32-Φ48
1400	530	1675	1590	1530	36-Φ42	1685	1590	1530	36-Φ48
1600	600	1915	1820	1750	40-Φ48	1930	1820	1750	40-Φ55
1800	670	2155	2020	1950	44-Φ48	2130	2020	1950	44-Φ55
2000	760	2325	2230	2150	48-Φ48	2345	2230	2150	48-Φ60

注：以上数据仅供参考，可根据用户要求设计与制造。
Note: We can design and manufacture the valve according to the customers' demands, the above figures are just for reference.

中线对夹式软密封蝶阀
entral-line soft-sealed butterfly valve

D671X-10 16　D6 71X-10 16　D6 71X-10 16

手动、蜗轮、气动、电动传动
Driven by manual、 turbine, pneumatic, electric

产品特点 Features

1、小型轻便，容易维修，并可在任意位置安装。
1.It is small and has light weight, it is convenient to maintain. It can be installed at any location.
2、结构简单，开启迅速。 2.The structure is easy and the opening and closing is easy too.
3、寿命长，启闭次数多。 3. The using life is long and opening and closing times are many.
4、双向密封，试验泄漏为零。 4. Double-directional sealing and the leakage is zero.
5、流量特性趋于直线，调节性能好。 5. Flow tends to a straight line

采用标准 Standards

制造标准 Manufacturing standards	GB/T12238	法兰标准 Flange standards	GB/T17241 GB/T9113
结构长度标准 Face to face and end to end standards	GB/T 12221	检验标准 Test standards	JB/T9092

主要性能规范：Main Performance Specifications

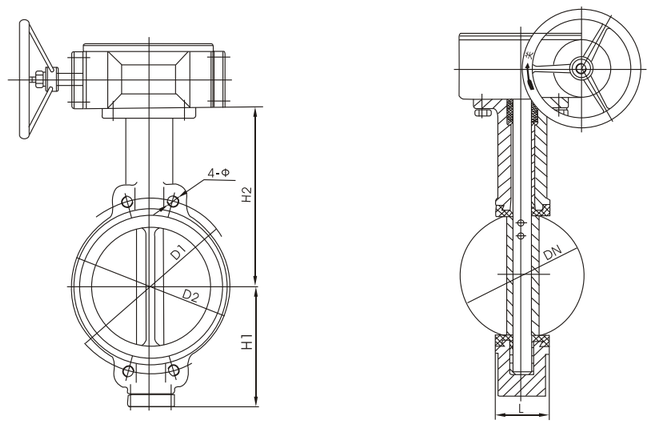
型 号 Model	公称压力 Nominal pressure PN(MPa)	壳体试验压力 Shell Test Pressure PS(MPa)	密封试验压力 Sealing test pressure PS(Mpa)	工作温度 Working temperature (°C)	适用介质 The media
3 6 D671X-10 9 16	0.6 1.0 1.6	0.9 1.5 2.4	0.66 1.1 1.76	≤80°C	水、油品 Water、oil

主要零件材料 Materials for the main parts

零件名称 Name of the parts	阀体、蝶板 Body and butterfly plate	阀 杆 Stem	密封圈 Ring	填 料 Packing
材 料 Material	灰铸铁 Gray cast iron 球墨铸铁 ductile iron 铸钢 cast steel 不锈钢 stainless steel	中碳钢 Medium carbon steel 不锈钢（2Cr13） stainless steel 1Cr18Ni9Ti	丁腈橡胶 NBR 乙丙橡胶 EPDM 聚四氟乙烯 PTFE 氟橡胶 Fluoroelastomer	柔性石墨 Flexible Graphite

D671x-10 3 6 9 16

手动、蜗轮、气动、电动传动
Driven by manual、 turbine, pneumatic, electric



❖ **主要连接尺寸 Main connection size**

单位Unit:(mm)

公称通径 Nominal diameter （DN）	主要尺寸 Main size			法兰尺寸和螺栓规格 Flange size and Bolt specifications					
				0.6MPa		1.0MPa		1.6MPa	
	L	H1	H2	D1	n-Φ-M	D1	n-Φ-M	D1	n-Φ-M
50	43	80	160	110	4-Φ13.5	120	4-Φ17.5	125	4-Φ17.5
65	46	88	175	130	4-Φ13.5	136	4-Φ17.5	145	4-Φ17.5
80	46	96	180	150	4-Φ17.5	160	4-Φ17.5	160	4-Φ17.5
100	52	115	200	170	4-Φ17.5	185	4-Φ17.5	180	4-Φ17.5
125	56	128	213	200	4-Φ17.5	215	4-Φ17.5	210	4-Φ17.5
150	56	140	225	225	4-Φ17.5	238	4-Φ22	240	4-Φ22
200	60	175	260	280	4-Φ17.5	295	4-Φ22	295	4-Φ22
250	68	202	290	335	4-Φ17.5	357	4-Φ22	355	4-Φ26
300	78	242	330	395	4-Φ22	407	4-Φ22	410	4-Φ26
350	78	266	60	445	4-Φ22	467	4-Φ22	470	4-Φ30
400	102	298	390	495	4-Φ22	515	4-Φ26	525	4-Φ33
450	114	315	410	550	4-Φ22	565	4-Φ26	585	4-Φ36
500	127	348	430	600	4-Φ22	620	4-M24	650	4-M30
600	154	400	490	705	4-Φ26	725	4-M27	770	4-M33
700	165	520	550	810	4-Φ26	840	4-M27	840	4-M33
800	190	591	610	920	4-Φ30	950	4-M30	950	4-M36
900	203	660	680	1020	4-M27	1050	4-M30	1050	4-M36
1000	216	670	730	1120	4-M27	1160	4-M33	1170	4-M39
1200	254	780	835	1340	4-M30	1380	4-M36	1390	4-M45
1400	390	890	945	1560	4-M33	1590	4-M39	1590	4-M45
1600	440	1050	1060	1760	4-M33	1820	4-M45	1820	4-M52

注：以上数据仅供参考,可根据ANSI、JIS、DIN标准及非标尺寸生产
Note: We can manufacture according to ANSI 、JIS and DIN and other non-standards , the above figures are just for reference.

用途及特点

伸缩蝶阀温度适用于温度≤425℃，公称压力≤1.6Mpa的食品、医药、化工、石油、电力、轻纺、造纸等给排水、气体管道上作调节流量和截流介质的作用，具有补偿管道热胀冷缩的功能。

主要特点

1、设计新颖、合理，结构独特，重量轻，操作方便，启闭迅速；
2、伸缩蝶阀除了能作调节和截流作用，补偿管道温差所产生的热胀冷缩功能外，还能为安装更换、维修阀门提供方便；
3、密封部位可调节更换，密封性能可靠等特点。

Application and characteristics

The working temperature is lower than 425℃, the nominal pressure is lower than 1.6Mpa and it is widely used in food, medicine, chemical、oil, electricity, textile, paper making and other industries.

Main characteristics

1. The design is novel and unique, and the structure is unique, the weight is light. It is easy to operate and quick to open and close.
2. The function of telescopic not only can regulate and retain the media but also convenient to installation and maintenance.

采用标准

设计标准：GB/T12238
法兰连接尺寸：GB/T9113；GB4216
压力试验：GB/T13927；JB/T9092

Using standards

Design standards ： GB/T12238
Flange connection size ： GB/T9113；GB4216
Pressure test：GB/T13927；JB/T9092

主要技术参数 Main technical parameters

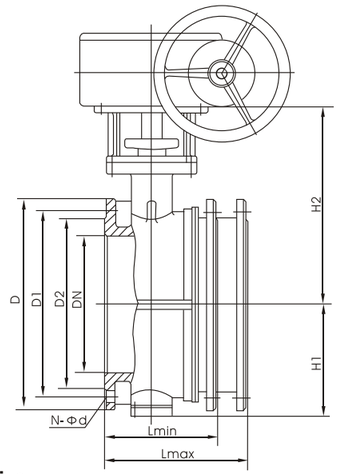
公称通径 Nominal diameter	DN（mm）	50~2000		
公称压力 Nominal pressure	PN(MPa)	0.6	1.0	1.6
试验压力 Test pressure	强度试验(MPa) Strength test	0.9	1.5	2.4
	密封试验(MPa) Seal test	0.66	1.1	1.76
	气密封试验(MPa) Gas Seal Test	0.6	0.6	0.6
适用温度 Working temperature	≤80℃			
适用介质 Media	空气、水、蒸气 Air 、water and steam		煤气、油品 Gas and oil	
驱动形式 Driven form	手动、蜗轮传动、气动、电动 Driven by manual、turbine, pneumatic, electric			

主要零件材料 Materials for the main parts

零件名称 Name of the parts	材 料 Materials
阀 体 Body	铸铁、碳钢、不锈钢、合金钢 Cast iron, carbon steel, stainless steel, alloy steel
蝶 板 Butterfly plate	碳钢、合金钢、不锈钢、铬钼钢 Carbon steel, stainless steel, alloy steel, Cr-Mo steel
密 封 圈 Ring	橡胶、聚四氟、聚内脂、不锈钢 Rubber, PTFE, polyethylene 、stainless steel
阀 杆 Stem	2Cr13、不锈钢、铬钼钢 2Cr13、stainless steel、Cr-Mo steel
伸 缩 管 Refueling boom	铸铁、碳钢、不锈钢、铬钼钢 Cast iron, carbon steel, stainless steel, alloy steel
填 料 Packing	柔性石墨 Flexible Graphite

法兰式伸缩蝶阀
Flanged telescopic butterfly valve

SD341 X 6 / F - 10 / H 16 **蜗轮、气动、电动传动**
Driven by turbine, pneumatic, electric



主要连接尺寸Main connection size

规格 Specification	D	D1	D2	Lmax	Lmin	H1	H2	N-Φd
100	220	180	158	216	174	110	170	8-Φ18
125	250	210	184	232	186	123	182	8-Φ18
150	280	240	212	239	194	140	210	8-Φ22
200	340	295	268	264	214	170	238	8-Φ22
250	395	350	320	296	235	195	270	12-Φ22
300	445	400	370	300	250	222	300	12-Φ22
350	505	460	430	320	270	252	330	16-Φ22
400	565	515	482	332	282	285	368	16-Φ26
450	615	565	532	355	305	310	402	20-Φ26
500	670	620	585	365	315	337	438	20-Φ26
600	780	725	685	420	370	393	490	20-Φ30
700	895	840	800	446	396	450	558	24-Φ30
800	1015	950	905	476	426	515	625	24-Φ33
900	1115	1050	1005	506	456	560	685	28-Φ33
1000	1230	1160	1110	516	466	610	750	28-Φ36
1200	1445	1380	1330	560	510	725	880	32-Φ39
1400	1675	1590	1530	590	540	840	987	36-Φ42
1600	1915	1820	1750	630	585	960	1158	40-Φ48
1800	2115	2020	1950	680	630	1060	1258	44-Φ48
2000	2325	2230	2150	730	680	1165	1365	48-Φ48

注：(1)表中铸铁法兰尺寸1.0MPa标准按GB4216标准,钢制法兰按GB/T9113
(2)其它压力，通径规格阀门可按用户要求生产。

Note: (1)The flange size of cast iron is 1.0Mpa , and the standard is GB4216, and the steel flange is manufactured according to GB/T 9113.
(2) Other pressure and diameter valve can be manufactured according to other customers' requirements.

XD371 X 6 / - 10-C、P、R / 16 **手动、蜗轮、气动、电动传动**
Driven by manual、 turbine, pneumatic, electric

主要性能规范
Main Performance Specifications

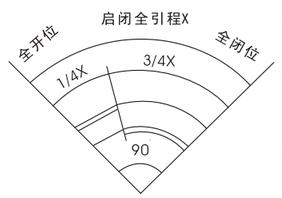
公称压力（MPa） Nominal pressure	1.0	1.6	2.5
强度试验（MPa） Strength test	1.5	2.4	3.75
密封试验（MPa） Seal test	1.1	1.76	2.75
适用温度 Working temperature	≤80℃		
适用介质 Media	水 Water		
电流、电压 Current, voltage	交直流通用 AC and DC are both useful		

主要零件材料Materials for the main parts

阀 体 Body	蝶 板 Butterfly plate	阀 杆 Stem	阀 座 Seat
铸铁 Cast iron 铸钢 Cast steel	球墨铸铁 Ductile Iron 不锈钢 Stainless steel	中碳钢 Medium carbon steel 不锈钢 stainless steel	丁腈橡胶 NBR

主要连接尺寸 Main connection dimensions

公称通径 Nominal diameter （DN）	D1	L	H1	H2	4-Φd
50	125	43	80	160	4-Φ18
65	145	46	88	75	4-Φ18
80	160	46	96	180	4-Φ18
100	180	52	115	200	4-Φ8
125	210	56	128	213	4-Φ18
150	240	56	140	225	4-Φ23
200	295	60	175	260	4-Φ23
250	350	68	202	290	4-Φ23
300	400	78	242	330	4-Φ23



全开位：Totally opening position
启闭全引程：Whole process of opening and closing
全闭位：Totally closing position
蝶板旋转90℃：Butterfly plate rotates 90℃
输出信号特性：Characteristics of output signal

蝶板旋转90
Butterfly plate rotates 90℃
输出信号特性
Characteristics of output signal
断 Off
通 On

用途

在信号蝶阀的顶部设有阀门启闭电信号装置，当阀门被误关闭25%（全开度的1/4）时，电信号装置便输出被误关闭的信号到消防控制中心。所以此蝶阀是消防自动喷水灭火系统的最佳配套产品。

结构特点及工作原理

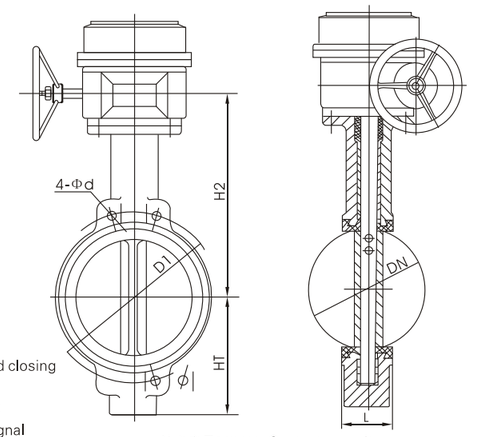
该蝶阀的电信号装置设计于蜗杆、蜗轮驱动装置的顶部，并与阀杆直接传动，在精密全封闭的机电装置内，设有阀门开启度机械指示器和进口电气元件及防锈机件。输出信号长期稳定可靠。

Application

There is signal device in the top of the valve, when the valve is closed wrongly by 25%, the electrical signal will transported to the fire control center. So the signal butterfly valve is the best product for sprinkler systems.

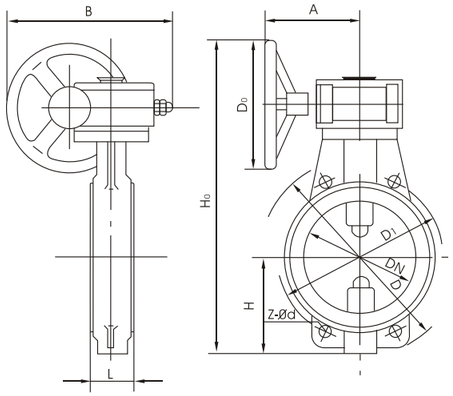
Structural characteristics and working principle

The signal device is in the top of worm and turbine–driven devices, and it is directly connected with stem. There are mechanical indicator and electrical components and antirust mechanical in the electrical and mechanical installations.



触点容量24V/1A Contact capacity
信号引出端1：3（常开触点）
Leading point of signal1:3 (Normally opening contact point)
信号引出端1：3（常闭触点）
Leading point of signal1:3 (Normally closing contact point)

采用标准Adoptive standard	
法兰连接尺寸 Flange standard	GB2416.4　GB/T9115.8
结构长度 face-to-face dimension	GB/T12221
压力试验 Test pressure	GB/T13927 JB/T9092



主要技术参数　Specification			
公称通径（mm） Nominal diameter		50~1000	
公称压力PN（MPa） Nominal pressure		1.0	1.6
试验压力 PS(Mpa)Test pressure	强度试验 Shell test	1.5	2.4
	密封实验 Seal test	1.1	1.8
适用介质 Suitable medium	水、蒸气、油品、强酸、强碱 Water、Steam、Oil、Acid、Alkali		
适用温度 Suitable temperature	-40℃~200℃		

主要零部件材料 Mostly material	
名称Name	材料 Material
阀体 Disc	HT250、WCB、ZG1Cr18Ni9Ti、均衬F4、F46
阀板Disc	2Cr13、1Cr18Ni9Ti
阀杆Spindle	HT250、WCB、ZG1Cr18Ni9Ti、均衬F4、F46
密封圈 Seal	由阀体衬四氟构成、阀板不 锈钢与阀板全衬四氟
填料Packing	柔性石墨

特点 Features

本蝶阀为中线式，蝶板各向对称，无偏置，密封比压来自蝶板与阀座产生过盈挤压而形成的弹性力。关闭时，密封接触点的移动轨迹，从蝶板与阀座接触的上下两端起始，逐渐向蝶板与阀座的左右两侧连续性推移，直到完成一个闭合的圆形密封线。打开时过程与之相反。这一密封点连续移动直到完成闭合的启闭特点，使蝶板密封面与阀体密封面具有良好的互为擦试功效。所以此类蝶阀对各种不同粘度或半流体状态的介质以及颗状介质，均可适应。

F_{46}具有与F_4等效的防腐性能，由于它在一定温度下融化而具有可流动性，因而使高分子聚合物家族的使用范围大为扩展，与金属融洽的贴和性能使它成为钢铁产品优秀的衬里材料，柔度适宜的优质橡胶，作为F_{46}阀座的弹性填充物将为弹性欠佳而防腐性能超群的F_{46}阀座提供久而有效的弹性力。这一最佳的互补型组合方式使蝶阀的综合性能达到一个全新的理想境界，不但密封性能与防腐性能具佳，而且开闭力矩的磨擦力也大幅度减低。理想的F_{46}阀座密封副厚度与硬度适中的优质填充橡胶的合理搭配，橡胶硬度对F_{46}阀座硬度的恰当选取，对阀门的密封性能与开闭力矩的大小以及阀门的使用寿命都将产生重要的影响。

此外，简洁明快的中线式结构形式又更具出色的调节功能。我厂对此类蝶阀的蝶板采取了更趋流线的外形设计，使管线的压力损失明显的降低。目前，经过技术部门的努力攻关，并采取一系列技术改进措施，通过对此类蝶阀各项性能指标的测试，在降低管线沿程阻力方面，已取得了明显令人满意的效果。

This kind of valve is central–lined and every part is symmetrical. The pressure between the plate and the seat will produce the elasticity. When the valve is closed, motion path of sealed contact point, from the upper and lower ends of contact points between the plate and the seat to their beside ends until the closed circle sealing ring is completed. The process of opening is reverse. The sealing surface between plate and body has good wipe effect. So the valve can be widely used in different viscosity and semi–liquid and other media.

F_{46} has the same antiseptic property with F_4, because of it will melt at a certain temperature and mobile, so the using range of high molecular polymer will enlarge. And F_{46} is the qualified lining material for steels due to it can be good metal with the mental. High–quality with rubber appropriate flexibility appropriate will provide long–lasting elasticity as filler of the seat of F_{46}. So the antiseptic property and sealing property is good and also the frictional force of opening and closing the torque will reduce dramatically.

Additional the central–lined design makes the valve has better excellent regulated function. Our factory design and manufacture the streamlined plate to make the loss of pipeline pressure reduced. At present, we have achieved good results after the hard work of our technical

用途 Application

该阀采用蜗轮传动启闭，具有良好的定位和自锁性能，阀体与蝶阀均采用聚四氟乙烯衬垫，故此类阀门是耐化工、食品医药工业的强酸、强碱等强腐蚀性介质的首选阀门。

This kind valve has good position–oriented and self–locked function, and it is driven by turbine. Body and butterfly valve are lined with

❖ $D371\frac{F}{F_{46}}-10C_F(P_F \cdot R_F \cdot Z_F)$ 连接尺寸Connection Size

通径(DN) Nominal meter	L	D_1	D	Z-Φd	H	H_0	A	B	D_0	Wt/Kg
50	43	125	165	4-18	63	193	240	270	150	3
65	46	145	185	4-18	87	234	240	270	150	4.5
80	46	160	200	8-18	92	255	240	270	150	6
100	52	180	220	8-18	100	267	240	270	150	7.5
125	56	210	250	8-18	112	330	250	280	180	11
150	56	240	285	8-22	135	355	250	280	180	16
200	60	295	340	8-22	160	535	280	320	240	48
250	68	350	395	12-22	206	606	280	320	240	60
300	78	400	445	12-22	232	720	300	400	320	70
350	78	460	505	16-22	263	785	300	400	320	80
400	102	515	565	16-26	298	1000	350	480	400	130
450	114	565	615	20-26	330	1060	350	480	400	150
500	127	620	670	20-26	358	1123	350	480	400	180
600	154	725	780	20-30	474	1350	420	520	500	225
700	165	840	895	24-30						320
800	190	950	1015	24-33						395
900	203	1050	1115	28-33						450
1000	216	1160	1230	28-36						600
1200	254	1380	1450	32-39						825

注：若需PN1.6MPa及半衬（即阀体衬氟、阀板不锈钢）或全衬（阀板、阀体均衬氟）等特殊需要订货时应注明

Note: If you need the valve as PN 1.6Mpa and lined valve and other special treatment , please specified in the order.

用途Use

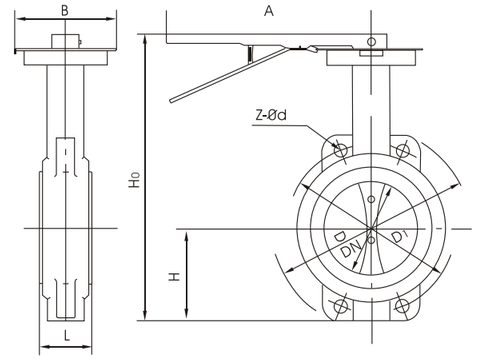
本蝶阀适用于食品、饮料、医药、化工等纯净管路及工业环保、水处理、高层建筑、给排水管路作启闭或调节流量之用。

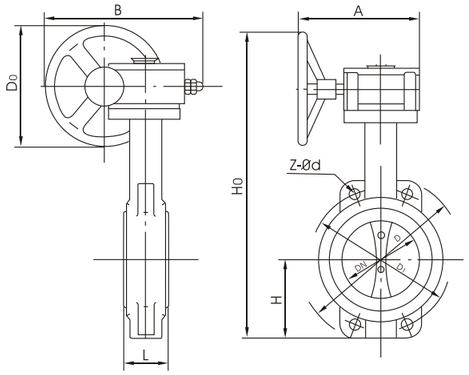
Application

This kind of valve is widely used for food, beverage, pharmaceutical and chemical purity of line and industrial environmental protection, water treatment, high–rise

采用标准Adoptive standard	
法兰连接尺寸 Flange standard	GB2416.4　GB/T9115.8
结构长度 face-to-face dimension	GB/T12221
压力试验 Test pressure	GB/T13927　JB/T9092

主要技术参数　Specification		
公称通径（mm） Nominal diameter		40~1200
公称压力PN（MPa） Nominal pressure		1.0
试验压力 PS(Mpa) Test pressure	强度试验 Shell test	1.5
	密封实验 Seal test	1.1
适用介质 Suitable medium	水、蒸气、油品、海水、酸类 Water、Steam、Oil、Sea water、Acid	
适用温度 Suitable temperature	-40℃~160℃	





主要零部件材料 Mostly material

名 称 Name	材料 Material
阀 体 Disc	WCB、ZG1Cr18Ni9Ti、HT250、ZG1Cr18Ni12Mo2Ti衬胶
阀 板 Disc	WCB、ZG1Cr18Ni9Ti、QT400、ZG1Cr18Ni12Mo2Ti阀板衬胶 (Plate lined with rubber)
阀 杆 Spindle	2Cr13、1Cr18Ni9Ti、1Cr18Ni12Mo2Ti
密封圈 Seal	CR、NBR、EPDM、FPM
填 料 Packing	柔性石墨、NBR、V型垫 Flexible Graphite、NBR、VV-cushion

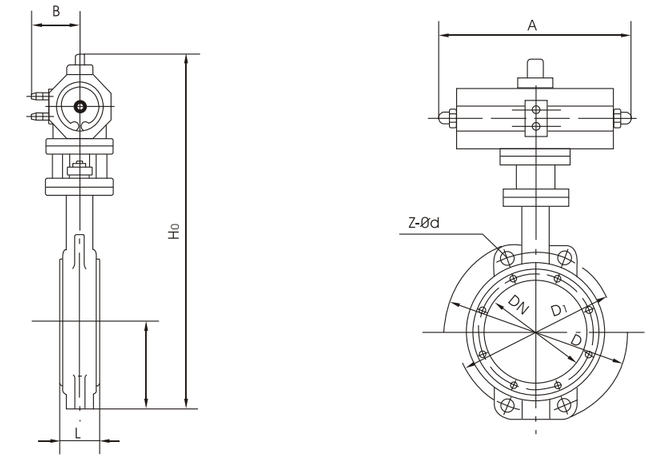
❖ D71J-10C(P · R · Z) 连接尺寸 Connection Size

通径（DN） Nominal meter	L	D1	D	Z-Φd	H	H0	A	B	Wt/Kg
32	33	100		4-18					2.8
40	33	110		4-18		220			3.1
50	43	125	165	4-18	80	270	270	118	3.5
65	46	145	185	4-18	90	295	270	118	4.4
80	46	160	200	8-18	95	305	270	118	5.5
100	52	180	220	8-18	115	340	270	118	6.5
125	56	210	250	8-18	125	370	310	118	9
150	56	240	285	8-22	140	395	310	118	12
200	60	295	340	8-22	175	475	370	165	22

❖ $D_3^2 71_{JE}^{J}$ -10C(P · R · Z) 连接尺寸 Connection Size

通径（DN） Nominal meter	L	D1	D	Z-Φd	H	H0	A	B	D0	Wt/Kg
50	43	125	165	4-18	80	360	193	125	150	8
65	46	145	185	4-18	90	385	193	125	150	9
80	46	160	200	8-18	95	395	193	125	150	10
100	52	180	220	8-18	115	430	193	125	150	11
125	56	210	250	8-18	125	460	193	125	150	13
150	56	240	285	8-22	140	485	193	125	150	14
200	60	295	340	8-22	175	630	283	165	220	30
250	68	350	395	12-22	206	690	283	165	220	40
300	78	400	445	12-22	240	770	334	175	280	78
350	78	460	505	16-22	270	830	334	175	280	81
400	102	515	565	16-26	315	910	425	210	320	140
450	114	565	615	20-26	320	938	425	210	320	160
500	127	620	670	20-26	343	993	425	210	320	190
600	154	725	780	20-30	413	1131	425	210	320	315
700	165	840	895	24-30	478	1476	620	320	400	480
800	190	950	1015	24-33	525	1533	620	320	400	516
900	203	1050	1115	28-33	585	1655	620	320	400	780
1000	216	1160	1230	28-36	640	1765	620	400	400	950
1200	254	1380	1455	32-39	755	1995	620	400	400	1150

注：1、以上蝶阀的密封试验压力DN32~DN800为1.0Mpa:DN900~DN1000为0.6Mpa:DN1200~DN2000为0.25Mpa:
2、如工作压力超过1.0Mpa建议选用三偏心蝶阀：
3、以上蝶阀的连接尺寸均按1.0Mpa标准制造，如阀板衬橡胶等特殊需要，订货时需注明：
4、地下管网式蝶阀，订货时应注明：
1、The sealing pressure of the above butterfly valve is
2、We use three-eccentric butterfly valve if the working pressure over 1Mpa.
Note: The above butterfly valves are manufactured according to the 1Mpa, if you need rubber plate , please specified in order.
Please give us specification when in order if you need underground pipe network-type valve.



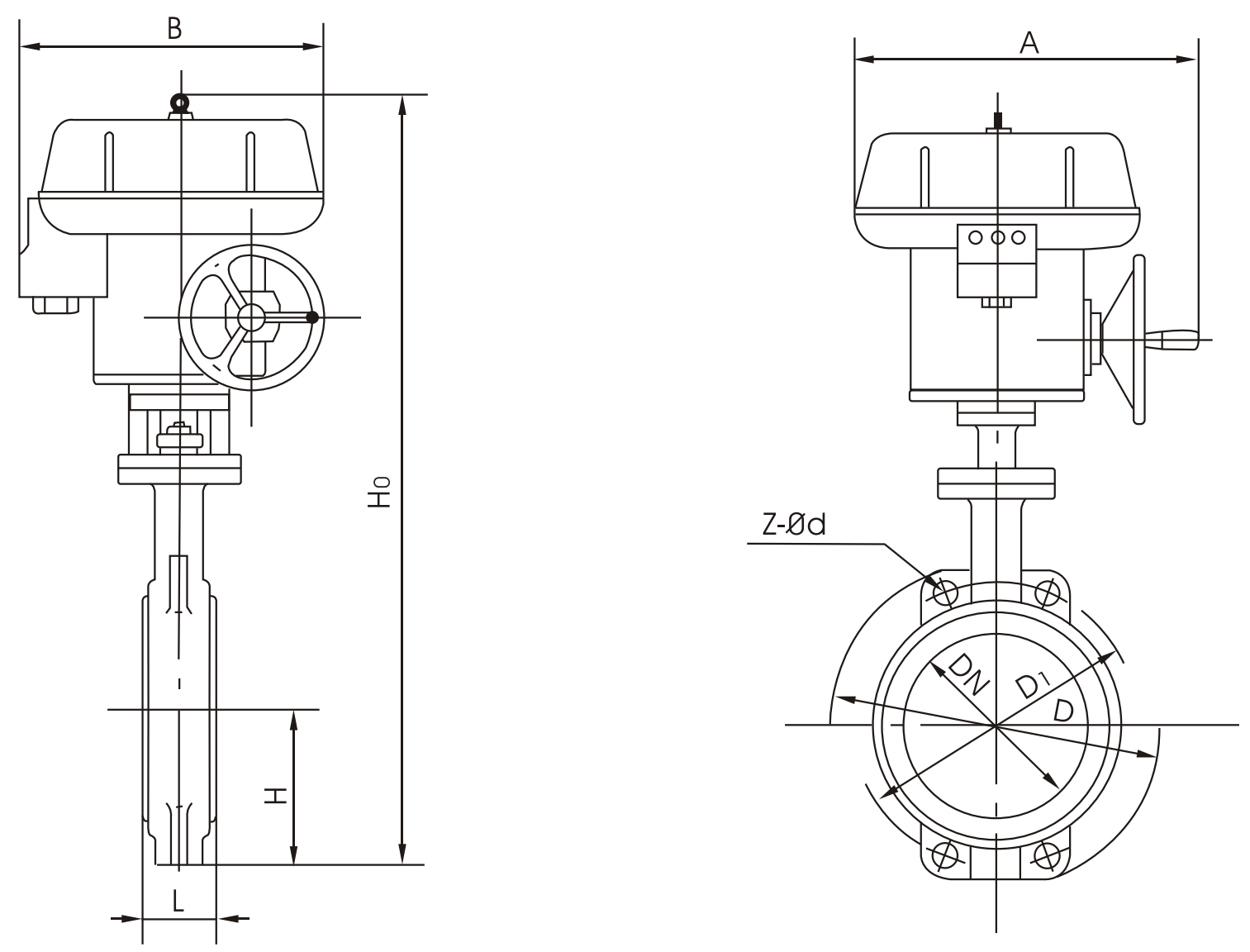
❖ $D671X\text{-}6^{JE}_{J}$ · 10C(P · R · Z) 连接尺寸 Connection Size

通径（DN） Nominal meter	L	D1	D	Z-Φd	H	H0	A	B	Wt/Kg
50	43	125	165	4-18	80	370	180	64	9
65	46	145	185	4-18	90	395	180	65	10
80	46	160	200	8-18	95	440	245	72	11
100	52	180	220	8-18	115	475	245	72	26
125	56	210	250	8-18	125	505	245	72	28
150	56	240	285	8-22	140	665	355	93	30
200	60	295	340	8-22	175	775	350	93	52
250	68	350	395	12-22	206	844	350	350	63
300	78	400	445	12-22	240	890	600	350	98
350	78	460	505	16-22	270	950	600	350	120
400	102	515	565	16-26	315	1005	600	350	160
450	114	565	615	20-26	320	1043	750	380	180
500	127	620	670	20-26	343	1098	750	380	220
600	154	725	780	20-30	413	1236	750	380	390
700	165	840	895	24-30	478	1431	750	380	510
800	190	950	1015	24-33	525	1488	750	380	540

注：以上蝶阀的连接尺均按1.0MPa标准制造，如用户阀板需要衬橡胶等特殊需要，订货时应注明。
Note: The above butterfly valves are manufactured according to the 1Mpa, if you need rubber plate ,please specified in order.

衬胶密封耐腐蚀蝶阀

Corrosion-resistant soft-sealed butterfly valve lined with rubber



❖ D971X-10C(P · R · Z）连接尺寸 Connection Size (F / J)

通径（DN） Nominal meter	L	D_1	D	Z-Φd	H	H_0	A	B	D_0	Wt/Kg
50	43	125	165	4-18	80	490	125	125	80	36
65	46	145	185	4-18	90	515	125	125	80	37
80	46	160	200	8-18	95	525	125	125	80	38
100	52	180	220	8-18	115	560	125	125	80	39
125	56	210	250	8-18	125	760	325	245	150	46
150	56	240	285	8-22	140	785	325	245	150	69
200	60	295	340	8-22	175	900	325	245	150	89
250	68	350	395	12-22	206	990	363	313	200	100
300	78	400	445	12-22	240	1045	363	313	200	120
350	78	460	505	16-22	270	1115	363	313	250	170
400	102	515	565	16-26	315	1170	363	313	250	180
450	114	565	615	20-26	320	1328	465	439	300	190
500	127	620	670	20-26	343	1226	546	431	360	230
600	154	725	780	20-30	413	1394	546	556	360	350
700	165	840	895	24-30	478	1534	546	556	360	500
800	190	950	1015	24-33	525	1591	546	556	360	530
900	203	1050	1115	28-33	585	1748	617	706	360	880
1000	216	1160	1230	28-36	640	1805	632	706	360	1050
1200	254	1380	1455	32-39	755	2035	632	706	360	1200
1400	390	1590	1675	36-42						2300
1600	440	1820	1915	40-48						2700
1800	490	2020	2115	44-48						3500
2000	540	2230	2325	48-48						4100

注：1、以上蝶阀的密封试验压力DN32~DN800为1.0Mpa;DN900~DN1000为0.6MpaDN1200~DN12000为0.25Mpa
2、如工作压力超过1.0M pa建议选用三偏心蝶阀
3、地下管网式蝶阀，订货时需注明。
1、The sealing pressure of the aboved butterfly valve is
2、We use three-eccentric butterfly valve if the working pressure over 1Mpa.
Please give us specification when in order if you need underground pipe network-type valve.

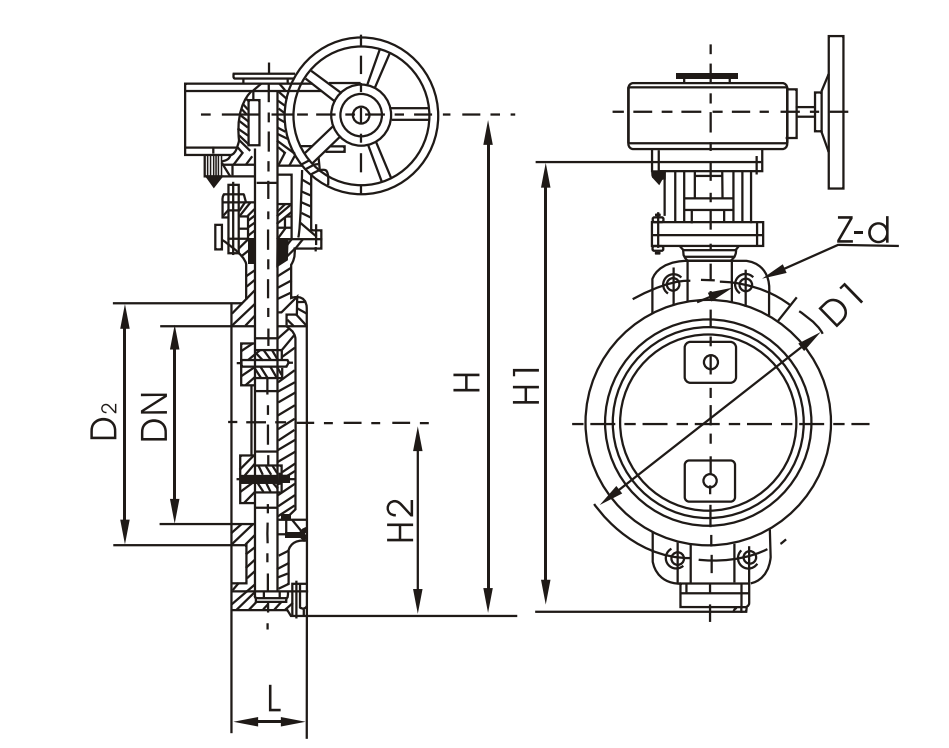
美标蝶阀

API butterfly valve

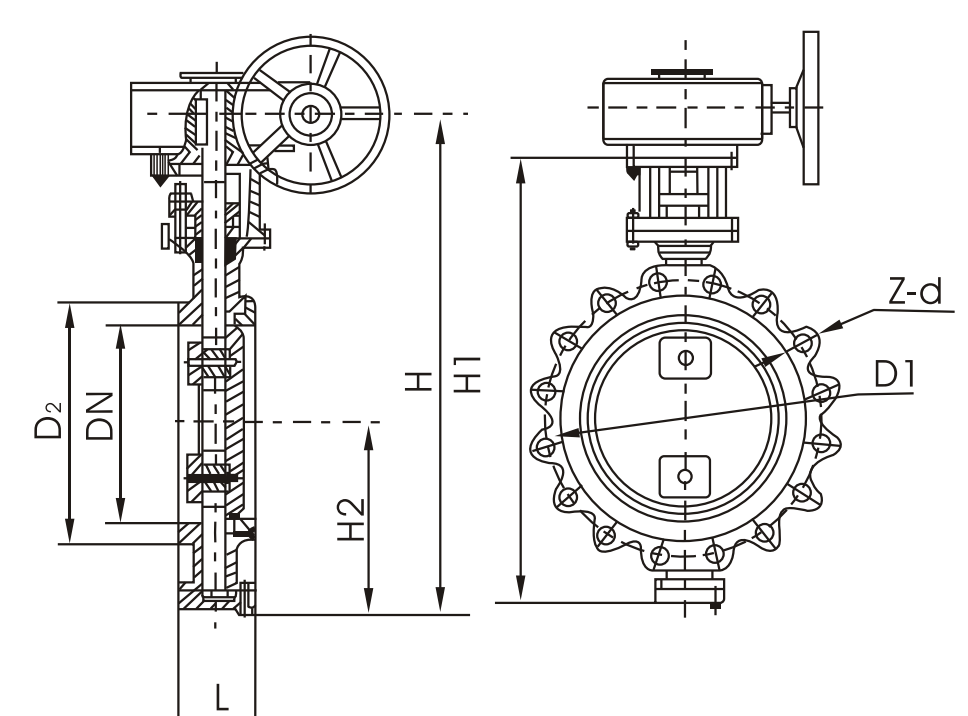
Application and characteristics

It is widely used in low pressure and medium pressure and high pressure、Iron and steel, metallurgy 、petroleum, chemicals and power generation and other pipe lines to regulate the media flow.

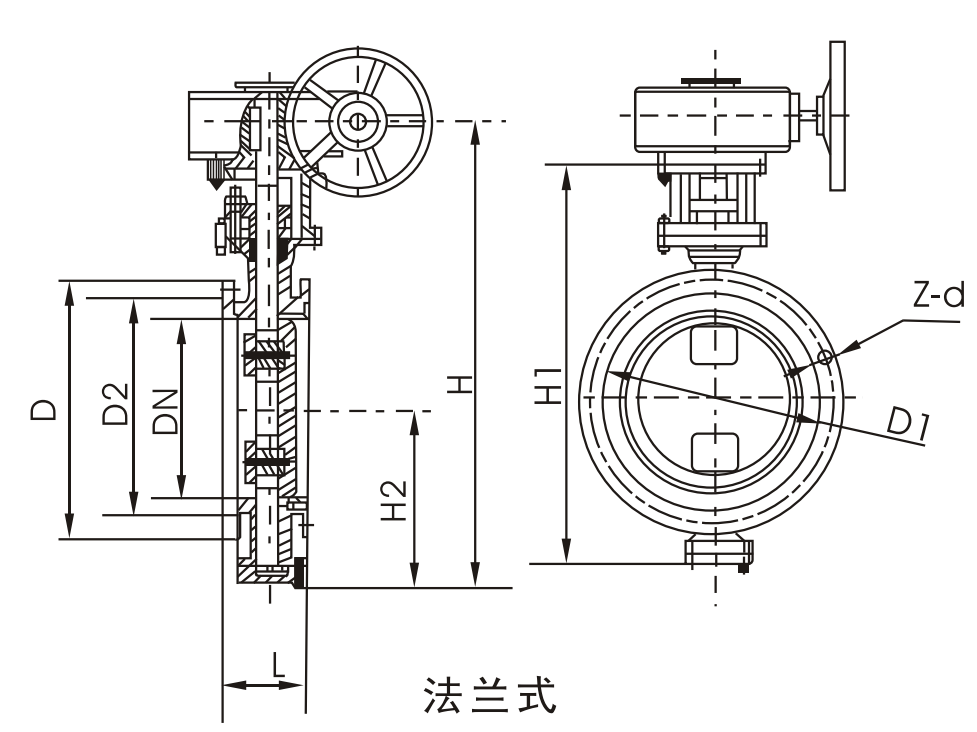
The sealing performance is reliable to make sure the sealing surface is safe.
It can be used in high temperature and will never expanded to leak..
We choose different materials according to the different media and wear-resistant 、erosion



对夹式
wafer



凸耳式（单法兰式）
lug type(single-flange)



法兰式
Flange type

美标对夹、凸耳、双法兰式偏心蝶阀 API Butterfly Valve

用途及特点

广泛适用于低压、中压、高压、钢铁、冶金、石油、化工、电力等工业管道上作截止或调节介质流量用。

该阀门采用三偏心斜锥形阀座密封副，蝶板密封采用新型金属片与弹性材料层叠而成，嵌装在蝶板上与阀座吻合。利用蝶板转动压紧密封，所以密封面磨擦阻力小，关闭时具有越关越紧功能，这样密封性能可靠，开启确保密封面完全脱离接触，保证了密封面不受损伤。

该蝶阀结构特点排除了其它类型蝶阀开过位而不能密封的缺点，且在高温下能正常使用，克服了其它类型阀门的高温使用时因膨胀而容易泄漏的缺点。

该蝶阀根据使用介质要求，选用不同密封面材料，以保证密封面耐磨损、耐冲刷、耐腐蚀、使用寿命长。

采用标准 Using Standards

法兰连接尺寸 Flange connection size：ANSI B16.5 API 605
结构长度 Face to face and end to end connection ：API609
压 力 试 验 Pressure test:API598

主要零技术参数 Specification

公称通径 Nominal diameter	Dn(in)	2"-36"	2"-36"
公称压力 Nominal pressure	PN	150Lb	300Lb
试验压力 Ps（MPa） Test pressure	强度试验 Strength test	3.0	7.5
	密封试验 Seal test	2.2	5.5
适用介质 The media	水、蒸气、油品、酸碱类、海水等 Water、steam、oil 、nitric acid and sea water etc.		
适用温度 Working temperature	-40℃~425℃		

主要零部件材料 Materials for the main parts

名 称 Name	材料 Material
阀 体 Body	WCB、CF8、CF8M
阀 板 Plate	WCB、CF8、CF8M
阀 杆 Stem	304、316、1Cr13
密 封 圈 Ring	316、304
填 料 Packing	柔性石墨、氟塑料 Sophie ink stone 、Fluoroplastics

型号 Modelv	DN	L		D		D1		D2		H2		H1		H		Z-d
	英寸 Inch	英寸 Inch	毫米 mm	英寸 Inch	毫米 mm	英寸 Inch	毫米 mm	英寸 Inch	毫米 mm	英寸 Inch	毫米 mm	英寸 Inch	毫米 mm	英寸 Inch	毫米 mm	
对夹式 凸耳式 wafer lug type 150Lb	2"	1.69	43	6.00	152	4.75	120.5	3.62	92	4.33	110	11.05	280	13.58	345	4-19
	3"	1.88	48	7.50	190	6.00	152.5	5.00	127	4.92	125	12.04	315	14.96	380	4-19
	4"	2.12	54	9.00	229	7.50	190.5	6.19	157	5.70	145	13.78	350	16.34	415	8-19
	5"	2.19	56	10.00	254	8.50	216	7.32	186	6.50	165	15.35	390	17.91	455	8-22
	6"	2.25	57	11.00	279	9.50	241.5	8.50	216	6.89	175	17.91	455	21.45	545	8-22
	8"	2.50	64	13.50	343	11.75	298.5	10.62	270	8.26	210	20.67	525	24.21	615	8-22
	10"	2.81	71	16.00	406	14.25	362	12.75	324	9.84	250	23.81	605	27.36	695	12-25
	12"	3.19	81	19.00	483	17.00	432	15.00	381	11.24	285	28.74	730	32.78	830	12-25
	14"	3.62	92	21.00	533	18.75	476	16.25	413	12.60	320	31.50	800	35.43	900	12-29
	16"	4.00	102	23.50	597	21.25	540	18.50	470	13.98	355	34.25	870	38.58	980	16-29
	18"	4.50	114	25.00	635	22.75	578	21.00	533	14.96	380	36.22	920	40.55	1030	16-32
	20"	5.00	127	27.50	699	25.00	635	23.00	584	16.34	415	39.37	1000	43.70	1110	20-32
	24"	6.06	154	32.00	813	29.50	749.5	27.25	692	18.70	475	45.51	1155	51.37	1305	20-35
	30"	6.50	165	34.94	888	33.31	846	32.00	813	22.38	580	54.13	1375	60.03	1525	44-23
	32"	7.50	190	37.06	942	35.44	900	34.00	864	24.80	630	56.50	1435	62.40	1585	48-23
	36"	7.88	200	41.62	1050	39.75	1010	38.25	927	26.77	680	62.40	1585	69.48	1765	20-35
对夹式 凸耳式 wafer lug type 300Lb	6"	2.75	57	11.00	279	9.50	241.5	8.50	216	6.89	175	17.91	455	21.45	545	8-22
	8"	2.80	64	13.50	343	11.75	298.5	10.62	270	8.26	210	20.67	525	24.21	615	8-22
	10"	3.00	71	16.00	406	14.25	362	12.75	324	9.84	250	23.81	605	27.36	695	12-25
	12"	3.38	81	19.00	483	17.00	432	15.00	381	11.24	285	28.74	730	21.78	830	12-25
	14"	3.63	92	21.00	533	18.75	476	16.25	413	12.64	320	31.50	800	35.43	900	12-29
	16"	4.00	102	23.50	597	21.25	540	18.25	470	13.98	355	34.25	870	38.58	980	16-29
	18"	4.50	114	25.00	635	22.75	578	21.00	533	14.96	380	36.22	920	40.55	1030	16-32
	20"	5.00	127	27.50	699	25.00	635	23.00	584	16.34	415	39.37	1000	43.70	1110	20-32
	24"	6.06	154	32.00	813	29.50	749.5	27.25	692	18.70	475	45.51	1155	51.37	1305	20-35
	30"	6.50	165	34.94	888	33.31	846	32.00	813	22.38	580	54.13	1375	6.03	1525	40-23
	36"	8.00	200	41.62	1050	39.75	1010	38.25	972	26.77	680	62.40	1585	69.48	1765	44-26
法兰式 flange type 150Lb	2"	1.72	43	6.50	165	5.00	127	3.62	92	4.33	110	11.02	280	13.58	345	8-19
	3"	2.50	48	8.26	210	6.63	168.5	5.00	127	4.92	125	12.40	315	14.96	380	8-22
	4"	2.50	54	10.00	245	7.87	200	6.18	157	5.70	145	13.78	350	16.34	415	8-22
	5"	2.75	56	11.00	279	9.25	235	7.32	186	6.30	165	15.35	390	17.91	455	8-22
	6"	3.00	59	12.50	318	10.63	270	8.50	216	6.89	175	17.91	455	21.45	545	12-22
	8"	3.50	73	15.00	381	13.00	330	10.62	270	8.26	210	20.67	525	24.21	615	12-25
	10"	4.50	83	17.50	445	15.24	387.5	12.75	324	9.84	256	23.81	605	27.36	695	16-29
	12"	4.50	92	20.50	521	17.76	451	15.00	381	11.24	285	28.74	730	32.78	830	16-32
	14"	5.00	117	23.00	584	20.24	514.5	16.26	413	12.60	320	31.50	800	35.43	900	20-32
	16"	5.50	133	25.50	648	22.50	571.5	18.50	470	13.98	355	34.25	870	38.58	980	20-35
	18"	5.98	149	28.00	711	24.72	628.5	21.00	533	14.96	380	36.22	920	40.55	1030	24-35
	20"	5.98	159	30.50	775	27.00	686	23.00	584	16.34	415	39.37	1000	43.70	1110	24-35
	24"	7.00	181	36.00	914	32.00	813	27.24	692	18.70	475	45.51	1156	51.37	1305	24-41
	30"	9.01	165	39.00	991	36.25	921	33.25	845	22.38	580	54.13	1375	60.03	1525	36-38
	36"	9.88	200	46.12	1172	42.88	1089	39.75	1010	26.77	680	62.40	1858	69.48	1765	32-45
法兰式 flange type 300Lb	6"	3.00	59	12.50	318	10.63	270	8.50	216	6.89	175	17.01	455	21.45	545	12-22
	8"	3.50	73	15.00	381	13.00	330	10.62	270	8.26	210	20.67	525	24.21	615	12-25
	10"	4.50	83	17.50	445	15.24	387.5	12.75	324	9.84	250	23.81	605	28.36	695	16-29
	12"	4.50	92	20.50	521	17.76	451	15.00	381	11.24	285	28.74	730	32.78	830	16-32
	14"	5.00	117	23.00	584	20.24	514.5	16.26	413	12.60	320	31.50	800	35.43	900	20-32
	16"	5.50	133	25.50	648	22.50	571.5	18.50	470	13.98	355	34.25	870	38.58	980	20-35
	18"	5.98	149	28.00	711	24.72	628.5	21.00	533	14.96	380	36.22	920	40.55	1030	24-35
	20"	5.98	159	30.50	775	27.00	686	23.00	584	16.34	415	39.37	1000	43.70	1110	24-35
	24"	7.00	181	36.00	914	32.00	813	27.24	692	18.70	475	45.51	1156	51.39	1305	24-41
	30"	9.01	165	39.00	911	36.25	921	33.25	845	22.38	580	54.13	1375	60.03	1525	36-38
	36"	9.88	200	46.12	1172	42.88	1089	39.75	1010	26.77	680	62.40	1585	69.48	1765	32-45

注：以上数据仅供参考，可根据用户要求设计与制造。
Note: We can design and manufacture the valve according to the customers' demands, the above information is just for reference.

Q41F型浮动式软密封球阀结构特征

1、先进的阀座：确保阀门密封，磨擦系数低，操作力矩小。多种阀座材料，适应范围广。
2、开关无误的手柄：采用扁头阀杆，与手柄的连接不会错位，从而保证手柄指示的开关状态与阀门一致。
3、锁紧装置：为防止阀门开关误操作，在阀门全开、全关位置有锁定孔，确保阀门处于正确的位置。
4、阀杆防飞结构：阀杆为下装式，防止受压飞出，同时可在火灾后，与阀体形成金属接触，确保阀杆密封。
5、防静电性能：在球体、阀杆、阀体之间设置弹簧，能将开关过程产生的静电导出。
6、耐火结构：各个部位（球与阀体、中法兰、阀杆与阀体）设计成金属接触，满足耐火要求，符合AP16FA，API607的规定。

Features of mode Q41F floating soft sealed ball valve

1. Advanced seat: To make sure the valve is sealed, coefficient of friction is low, the operating torque is small. There are many materials and can be used widely.
2. Correct switch handle: Stem has flat head and so there is no dislocation between handle and stem.
3. Locking device: To prevent the wrong operation, there is lock hole in the position of valve when it is widely open and close.
4. Anti-fly stem structure : The structure of the valve is down entry to prevent fly. When the fire accident happened the stem will get sealed.
5. Anti-static properties: There are spring among ball、stem、body so it can derive electrostatic in the process of opening and closing of switch .
6. Fire-proof structure: All parts are designed to contact with mental, such as ball and body 、central flange and stem and body. The fire-proof standards are API 6FA and API 607.

执行标准The implementation of standards:

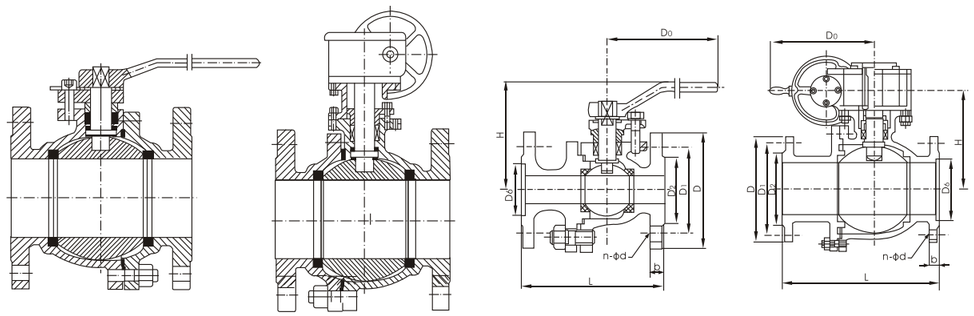
设计与制造 Design And Manufacture	结构长度 Face to face	法兰尺寸 Flange Dimension	压力-温度 Pressure Temperature Lating	试验-检验 Inspection And Test
GB/T12237	GB/T12221	GB/T 9113 GB/T79	GB/T 9131	GB/T13927 JB/T9092

压力试验 Pressure test

公称压力PN (Mpa) Nominal Pressore	1.6	2.5	4.0
强度试验 Shell Test (Mpa)	2.4	3.8	6.0
水密封试验 Water Seal Test (Mpa)	1.8	2.8	4.4
气密封试验 Air Seal Test (Mpa)	0.5-0.7		

主要零件材料及性能 Main materials and Performance

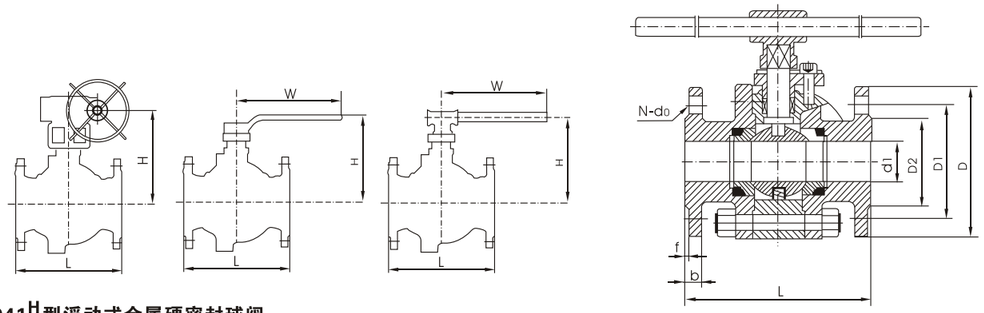
阀 体 body	WCB	ZG1Cr18Ni9Ti	CF8	CF3	ZG1Cr18Ni12Mo2Ti	CF8M	CF3M
球体 阀杆 Ball Stem	2Cr13	1Cr18Ni9Ti	304	304L	1Cr18Ni12Mo2Ti	316	316L
阀 座 Seat	聚四氟乙烯PTFE 加玻纤增强聚四氟乙烯PTFE+Glass 对位聚笨PPL						
垫 片 Shim	聚四氟乙烯PTFE 不锈钢/柔性石墨Stainless Steel/flexible Graphite 齿形垫片 Tooth Profile Gasket						
阀杆座 Stem Seat	聚四氟乙烯PTFE 不锈钢/柔性石墨 Stainless Steel/flexible Graphite						
填 料 Packing	聚四氟乙烯PTFE 增强柔性石墨 Enhanced Flexible Graphite						
填料压盖 Gland	WCB	1Cr18Ni9Ti	304	304L	1Cr18Ni12Mo2Ti	316	316L
工作温度 Working Temperature	-29~150(聚四氟乙烯PTFE) -29~200(加玻纤增强聚四氟乙烯PTFE+Glass) -29~300(对位聚笨PPL)						
适用介质 suitable Medium	水、蒸气、油品 Water、steam and oil etc	硝酸类 Nitric acid	强氧化介质 Strong oxidizing medium		醋酸类 Acetic acid		尿素类 Urea-type



规格 主要尺寸和重量 Specification Main size and weight

1.6Mpa	DN	L	D	D1	D2	b	n-φd	H	D0	重量(kg) Weight
凸面法兰 Convex flange RF 16C 16P 16R	15	130	95	65	45	14	4-14	75	100	3
	20	130	105	75	55	14	4-14	75	160	4
	25	140	115	85	65	14	4-14	85	160	5.5
	32	165	135	100	78	16	4-18	110	250	9
	40	165	145	110	85	16	4-18	135	250	12
	50	203	160	125	100	16	4-18	142	350	15
	65	222	180	145	120	18	4-18	173	350	20
	80	241	195	160	135	20	8-18	183	450	27
	100	305	215	180	155	20	8-18	255	450	38
	125	356	245	210	185	22	8-18	264	600	58
	150	394	280	240	210	24	8-23	290	800	81
	200	457	335	295	265	26	12-23	395	1200	95
2.5MPa	15	130	95	65	45	16	4-14	75	100	3
凸面法兰 concave flange RF 25 25P 25R	20	130	105	75	55	16	4-14	75	160	4
	25	140	115	85	65	16	4-14	85	160	5.5
	32	165	135	100	78	18	4-18	110	250	9
	40	165	145	110	85	18	4-18	135	250	12
	50	203	160	125	100	20	4-18	142	350	15
	65	222	180	145	120	22	8-18	173	350	20
	80	241	195	160	135	22	8-18	183	450	27
	100	305	230	190	160	24	8-23	255	450	40
	125	356	270	220	188	28	8-25	315	600	62
	150	394	300	250	218	30	8-25	340	800	85
	200	457	360	310	278	34	12-25	395	1200	102

4.0MPa	DN	L	D	D1	D2	D6	b	n-φd	H	D0	重量(kg) Weight
凹凸法兰 Convex and concave flange MFM 40 40P 40R	15	130	95	65	45	40	16	4-14	75	100	3.5
	20	150	105	75	55	51	16	4-14	75	160	4.5
	25	160	115	85	65	58	16	4-14	85	160	6
	32	180	135	100	78	66	18	4-18	110	250	10
	40	200	145	110	85	76	18	4-18	135	250	14
	50	230	160	125	100	88	20	4-18	142	350	20
	65	290	180	145	120	110	22	8-18	173	350	25
	80	310	195	160	135	121	22	8-18	183	450	50
	100	350	230	190	160	150	24	8-23	255	450	70
	125	400	270	220	188	176	28	8-25	315	600	80
	150	480	300	250	218	204	30	8-25	340	800	101
	200	600	375	320	282	260	38	12-30	395	1200	216



Q41$^{H}_{Y}$型浮动式金属硬密封球阀

由于从根本上改变了传统球阀的密封形式和密封材料，提高了阀门的耐高温高压能力，本阀阀座结构和造形独特，密封面在关闭状态下受力均匀，变形小，承压能力高。密封圈底部设置有弹簧，使密封圈底部脱离阀体内壁，产生一定的空间、当球芯压在阀座密封圈上时，密封圈压缩底部弹簧并富有弹性，起预紧与补偿作用，由于阀座具有弹性，减少了阀座与球芯的磨损，且操作轻便，使本阀在任何条件下都能保持良好的密封性能。采用耐高温的密封材料，使用温度可超过600℃。具有耐高温、高压、腐蚀、磨损等特点。相应的球芯可根据介质性质有三种硬化处理方法，其表面硬度可达HRC70。气泡级密封，经测定可达零泄漏，本阀有极佳的防火与切断性能。可应用于高温高压蒸汽和温度急剧变化的管道、超低温管道，及催化裂化装置的催化剂、油浆系统以及焦化装置的焦炭塔油气管道。

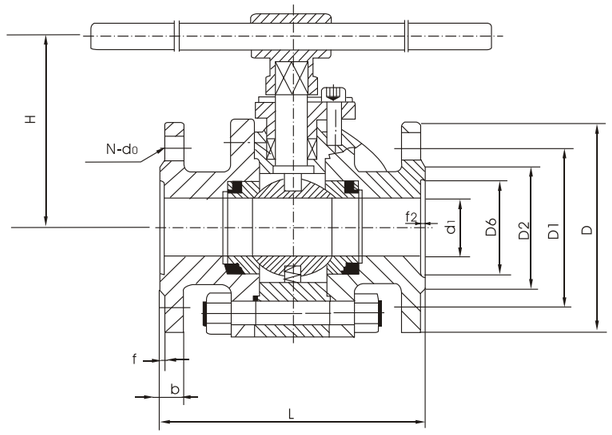
Q41H（Y）Floating Hard-sealed mental butterfly valve

It Changes the traditional sealing forms and sealing materials of the ball valve, enhanced the high temperature and high voltage capacity. The structure of valve is unique and the sealing surface can sustain the strong pressure. There is spring under the bottom of sealing ring and so there is space between the body wall and the sealing ring. Because the seat has flexibility, the wear between the seat and disc is small. The valve will keep good sealing performance and the sealing material will use high temperature , the temperature can exceed 600 ℃, corrosion of high temperature, high pressure,

主要连接尺寸Main connection dimensions **单位Unit:(mm)**

PN16(1.6MPa)											
DN	d1	L	D	D1	D2	b	f	n-d0	H	W	重量（kg）
20	20	130	105	75	55	14	2	4-14	75	130	3.2
25	25	140	115	85	65	14	2	4-14	85	130	3.5
32	32	165	140/135	100	78	16	2	4-18	110	180	6.5
40	40	165	150/145	110	85	16	3	4-18	135	230	7.2
50	50	203	165/160	125	100	16	3	4-18	142	230	8.5
65	65	222	185/180	145	120	18	3	4-18	173	400	14.8
80	80	241	200/195	160	135	20	3	8-18	183	400	25
100	100	305	220/215	180	155	20	3	8-18	255	650	35
125	125	356	250/245	210	185	22	3	8-18	264	650	75
150	150	394	285/280	240	210	24	3	8-23	290	1000	135
PN25(2.5MPa)											
20	20	152	105	75	55	16	2	4-14	75	130	3.25
25	25	165	115	85	65	16	2	4-14	85	130	3.9
32	32	178	140/135	100	78	18	2	4-18	110	180	7.25
40	40	190	150/145	110	85	18	3	4-18	135	230	8.6
50	50	216	165/160	125	100	20	3	4-18	142	230	11.5
65	65	241	185/180	145	120	22	3	8-18	173	400	22.5
80	80	283	200/195	160	135	22	3	8-18	183	400	25
100	100	305	230	190	160	24	3	8-23	250	650	35
125	125	381	270	220	188	28	3	8-25	315	650	75
150	150	403	300	250	218	30	3	8-25	340	1000	146

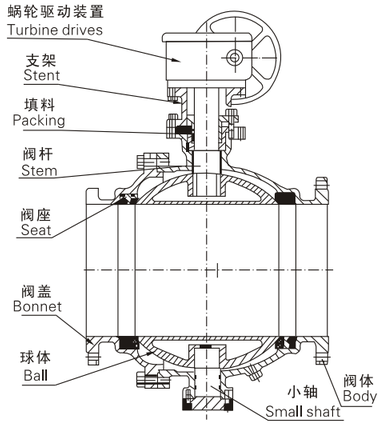
注：以上数据仅供参考，可根据用户要求设计与制造。
Note: We can design and manufacture the valve according to the customers' demands, the above information is just for reference.



主要连接尺寸 Main connection dimensions

单位Unit:(mm)

PN40(4.0MPa)											
DN	d_1	L	D	D_1	D_2	D_6	b	f	n-d0	H	f_2
20	20	152	105	75	55	51	16	2	4-14	75	4
25	25	165	115	85	65	58	16	2	4-14	85	4
32	32	178	140/135	100	78	66	18	2	4-18	110	4
40	40	190	150/145	110	85	76	18	3	4-18	135	4
50	50	216	165/160	125	100	88	20	3	4-18	142	4
65	65	241	185/180	145	120	110	22	3	8-18	173	4
80	80	283	200/195	160	135	121	22	3	8-23	183	4
100	100	305	235/130	190	160	150	24	3	8-25	250	4.5
125	125	381	270	220	188	176	28	3	8-25	315	4.5
150	150	403	300	250	218	204	30	3	8-25	340	4.5
PN63(6.3MPa)											
20	20	152	130/125	90	68	51	20	2	4-18	75	4
25	25	165	140/135	100	78	58	22	2	4-18	85	4
32	32	178	155/150	110	82	66	24	2	4-23	110	4
40	40	190	170/165	125	95	76	24	3	4-23	135	4
50	50	216	180/175	135	105	88	26	3	4-23	142	4
65	65	241	205/200	160	130	110	28	3	8-23	173	4
80	80	283	215/210	170	140	121	30	3	8-23	183	4
100	100	305	250	200	168	150	32	3	8-25	250	4.5
125	125	381	295	240	202	176	36	3	8-30	315	4.5
150	150	403	345/340	280	240	204	38	3	8-34	340	4.5



Q47 Fixed fire-type ball valve

Q47 Fixed fire-type ball valve is a new generation of high-performance ball valve, it is widely used in long-distance pipelines and general industrial pipeline. The safety and harsh resistance environment has been in consideration when it is designed. Corrosive media and non-corrosive media are both available. The ball will not move and the sealing is realized by spring and media pressure promoting the valve seat. The valve seat. The seat will not bear the over pressure, so the seat of Q47 fixed fire-type ball valve will change slightly and the torque is small, the sealing performance is reliable and using life is long. It is used specially for the

Q47型固定式防火型球阀（管线球阀）

Q47型固定式球阀是新一代高性能球阀，适用于长输管线和一般工业管线，其安全、耐恶劣环境性等在设计时均已进行了特殊考虑，适用于各种腐蚀性和非腐蚀性介质。它与浮动式球阀相比，工作时管道中阀前流体压力在球体上产生的作用力全部传递给上下轴承，球体不会移动，阀门密封靠弹簧和介质压力推动阀座实现，因而阀座不会承受过大压力，所以Q47型固定式球阀阀座变形小，操作力矩轻，密封性能可靠，使用寿命长。特别适用于高压，大口径的场合。

基本设计Basic design

阀门设计：GB12237
Valve design AP16D

形式：直通对开式阀门DN50~400mm（2”~16”）
Form: Through off-type valves

直通三块式阀门DN200~800mm(8”~32”)
Through 3-type valve

结构长度: GB/T 12221 ANSI B16.10
Face to face and end to end connection

公称压力:PN1.6~16.0Mpa CLASS150~1500Lb
Nominal pressure

连接形式： a、法兰 JB/T79 GB/T 9112-9131 ANSIB16.5
Connection form: a、Flange

b、焊接GB12224 ANSI B16.25
b、Welding

使用温度： a、常温 -28~180℃
Working temperature: a、Normal temperature

b、中温 -28~200℃ -28~250℃ -28~300℃
b、Middle temperature

适用介质：水、气、油品及腐蚀性介质
Media: Water、gas and oil and other corrosive media

主要零部件材料表 Materials for the main parts

零件名称 Name of part	材 质 Materials			
	碳钢 Carbon steel		不锈钢 Stainless steel	
	GB	ASTM	GB	ASTM
阀体、阀盖 Body and bonnet	WCB	A216-WCB	ZG1Cr18Ni9Ti ZG0Cr18Ni12Mo2Ti	A315-CF8 A315-CF8M A351-CF3 A351-CF3M
球体、密封座 Ball and sealing seat	1Cr18Ni9	A276-304		
阀杆、小轴 Stem and small shaft	2Cr13	A276-410	1Cr18Ni9 0Cr18Ni12Mo2Ti	A276-304 A276-316 A276-304L A276-316L
密封圈 Ring	PTFE/尼龙/填充F4/碳纤维 PTFE/Nylon/Packing F4/Carbon Fiber			
填料、垫片 Packing and gasket	PTFE/柔性石墨 PTFE/Flexible Graphite			
上、下轴承 Bearings	金属衬PTFE/烧结碳纤维 PTFE lined with mental / Sintered Carbon Fiber			
螺母 Nut	35	A105-1035	不锈钢 Stainless steel	
双头螺柱 Double-headed stud	35CrMoA	A193-B7	不锈钢 Stainless steel	

结构与特点 Structure and characteristics

Q47型固定式球阀有二块式和三块式两种阀体结构，每阀有两个阀座，每个方向都能密封，因而没有流向限制，是双向阀。中法兰用螺柱连接，上下阀杆均设有滑动轴承，减少磨擦，使操作省力、平稳。小轴底部设有调整垫片，保证球体与密封圈的接触位置。密封圈采用聚四氟乙烯镶入不锈钢密封座内，阀座后部设有弹簧保证低压时阀座预紧力，保证密封。阀座弹簧预紧组件，具有自紧特性，实现上游密封。

全通径：阀门流量孔径与管线内径一致，以便管线清扫。

Q47 ball valve has two structure as two-pieces type and three-pieces type, every valve has two seats and can be sealed in two direction so there is no flow limit. Flange is connected by stud, Sliding bearing is set on the stem to reduce friction and make the operation be labor-saving and smooth.

排泄孔的作用和特性 Role and features of plug hole

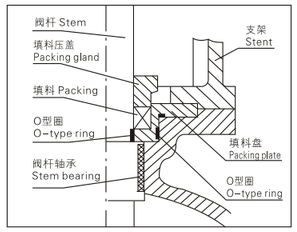
(1)拧开排泄螺塞，可检查阀座是否发生泄漏。
(2)在工作中，阀门处于全开或全关时，卸掉中腔压力，可直接更换阀杆填料。
(3)可排放中腔滞留物，减少介质对阀门的污染。长输管线球阀（埋地及低温球阀）阀杆加长适用于埋地及低温场合，加长尺寸可根据需要确定，操作方式有手动、气动、电动、液动等。

1)Open the plug screw to check if the valve seat has leakage.
2)When the valve is in totally opening or closing, relieve the pressure in the cavity and then change the parking directly.
3)Discharge the emissions in the middle chamber to reduce the pollution caused by media. Extent the length of the stem to make the valve buried underground or used in low temperature. The extended size should be confirmed firstly and mode

阀杆部位结构：（见图）Part structure of stem(See Figure)

填料压盖部位密封采用PTFE密封填料和O型密封圈双重密封，特别适合气体介质的密封，填料装在填料盘内，可随时更换填料。阀杆运动部位采用磨擦系数低的新型SF型自动润滑滑动轴承，因而操作力矩小。

Sealing of packing gland use dual seal with PTFE sealing and O-type sealing ring, and it is particularly applied to gas sealing. The packing is in plate so the packing can be changed anytime. Self-lubricating sliding



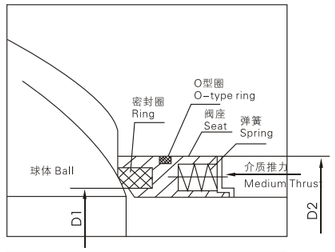
防火结构阀座 Fire-proof seat

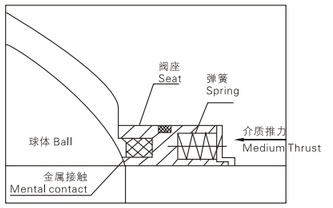
（1）正常情况：低压时阀座密封依靠弹簧预紧力使阀座紧贴球体达到密封。高压时由于D1、D2的面积差在阀座上形成活塞效应，在上游介质压力作用下，使阀座压紧球体达到密封。

（2）万一发生火灾或由于异常升温使阀座烧毁时，在弹簧和介质压力作用下，使支撑圈球面部位和球体形成紧密的金属接触，达到暂时的密封效果。符合AP16FA的规定。

(1)Normal condition: The seat realizes sealing by spring preload to make the seat close to the sphere in low pressure. When the valve works in high pressure, the area adjustment of D1 and D2 will form piston effect. Under the pressure of upstream medium the valve seat will close and the sphere will be sealed.

(2)In case there is any fire accident or the valve seat is burned down by abnormal rising temperature, under the role of spring and media pressure, the ball surface and sphere will have mental contact and the sealing is

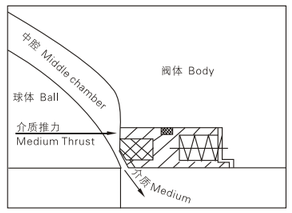




自动泄压功能：（见图）Automatic pressure relief feature（See Figure）

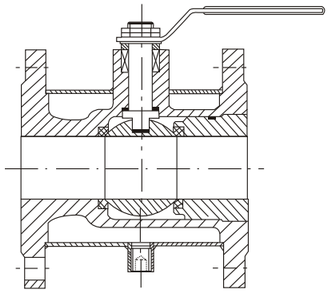
当阀门中腔停滞的介质压力异常升温超过弹簧的预紧力时，阀座后退脱离球体，达到自动泄压的效果，卸压后阀座自动复位。

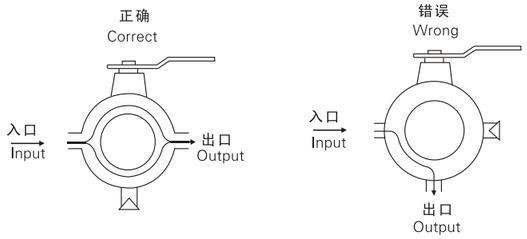
When the media pressure in middle chamber surpass the spring preload, the seat will leave the ball to realize automatically relief pressure. After relief



规格 主要尺寸和重量 Specification Main size and weight

1.6Mpa	DN	L	D	D1	D2	b	z-Φd	H	D0	重量weight
凸面法兰 Convex flange RF 16C Q47F-16P 16R	50	203	160	125	100	16	4-18	107	250	9.5
	65	222	180	145	120	18	4-18	142	400	15
	80	241	195	160	135	20	8-18	152	400	19
	100	305	215	180	155	20	8-18	178	500	33
	125	356	245	210	185	22	8-18	235	500	58
	150	394	280	240	210	24	8-23	272	500	93
	200	457	335	295	265	26	12-23	342	700	160
2.5MPa 凸面法兰 Concave flange RF 25 Q47F-25P 25R	50	216	160	125	100	20	4-18	108	250	11.5
	65	241	180	145	120	22	8-18	145	400	18
	80	283	195	160	135	22	8-18	152	400	23
	100	305	230	190	160	24	8-23	180	500	40
	125	381	270	220	188	28	8-25	255	500	70
	150	403	300	250	218	30	8-25	275	500	103
	200	502	360	310	278	34	12-25	345	700	195
4.0MPa 凹凸法兰 Concave and convex flange MFM 40 Q47F-40P 40R	50	216	160	125	88	20	4-18	110	250	15
	65	241	180	145	110	22	8-18	148	400	24
	80	283	195	160	121	22	8-18	152	400	30
	100	305	230	190	150	24	8-23	180	500	55
	125	381	270	220	176	27	8-25	255	500	80
	150	403	300	250	204	30	8-25	275	700	120
	200	502	375	320	260	38	12-30	345	700	245
蜗轮传动固定式球阀 Fixed ball valve driven by turbine 1.6MPa 2.5MPa										
1.6MPa 16C Q347F-16P 16R	200	475	335	295	265	26	12-23	398		180
	250	533	405	355	320	30	12-25	495		240
	300	610	460	410	375	30	12-25	580		390
	350	686	520	470	435	34	16-25	625		510
	400	762	580	525	485	36	16-30	720		750
	450	864	640	585	545	40	20-30	770		950
	500	914	705	650	608	44	20-34	840		1190
2.5MPa 25 Q347F-25P 25R	200	502	360	310	278	34	12-25	398		185
	250	568	425	370	332	36	12-30	495		245
	300	648	485	430	390	40	16-30	580		395
	350	762	550	490	448	44	16-34	625		516
	400	838	610	550	505	48	16-34	720		756
	450	914	660	600	555	50	20-24	770		958
	500	991	730	660	610	52	20-41	840		1200





夹套保温球阀

该阀具有良好的保温、保冷特性，结构合理，重量轻，密封性好，其操作方式有手动、电动、气动等。设计可按GB、API、JIS等标准，广泛用于石油、化工、冶金、制药等行业。

Insulation Jacket Ball

The valve has good thermal insulation, a reasonable structure, light weight and good sealing performance, the operation can be manual, electric, pneumatic, etc. The design standards are GB、API and JIS etc, it is widely used in petroleum, chemical, metallurgical, pharmaceutical and other

常温下的工作压力及试验压力 Working temperature and test temperature at the normal temperature

公称压力（PN）Nominal pressure	常温下最高使用压力（Mpa）The maximum pressure at room temperature	壳体试验压（Mpa）Shell Test Pressure	阀座试验压力（Mpa）Seat Test Pressure	
			低压气密封试验 Low pressure gas seal test	高压密封试验 High-pressure sealing test
1.6MPa	1.6	2.4	0.6	1.8
2.5MPa	2.5	3.8	0.6	2.8
4.0MPa	4.0	6.0	0.6	4.4
6.4MPa	6.4	9.6	0.6	7.1
Class150	1.93	3.0	0.6	2.1
Class300	5.1	7.7	0.6	5.6
JIS10K	1.37	2.4	0.6	1.5
JIS20K	3.64	5.8	0.6	4.0
夹套部试验压力 Test pressure of Jacket	1.0	1.5		
夹套部介质适用温度 Working temperature of media of Jacket		-29℃～100℃		

主要零件材料Materials of the main parts

阀体 Body	WCB	CF8	CF8M	CF3	CF3M
球体Ball	WCB+Cr	CF8	CF8M	CF3	CF3M
阀杆Stem	2Cr13	0Cr18Ni9	0Cr17Ni12Mo2	00Cr18Ni9	00Cr17Ni14Mo2
填料 Packing	PTFE	PTFE	PTFE	PTFE	PTFE

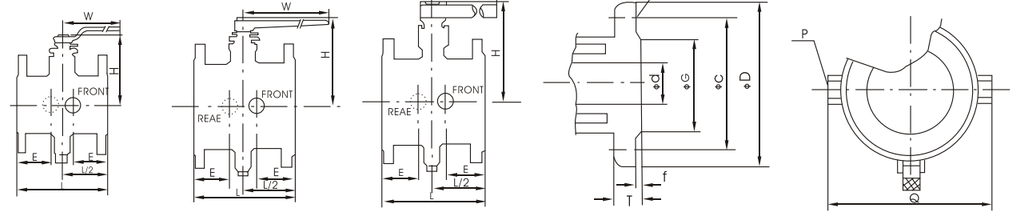
密封副配对表 Matching table vice-seal

球 体 Ball	WCB	CF8	CF8M	CF3	CF3M
球体表面 Ball surface	H.Cr/焊 WeldingSTL				
阀 座 Seat	PTFE/金属Mental+STL				

主要连接尺寸 Main connected size

DN	结构尺寸 Structure Size			H	W
	E	Q	P		
20	58.5	147	ZG3/4"	101	160
25	63.5	156	ZG3/4"	106	160
40	62.5	181	ZG3/4"	125	230
50	68	218	ZG3/4"	135	230

DN	结构尺寸 Structure Size			H	W
	E	Q	P		
80	82	275	ZG3/4"	193	400
100	83	300	ZG3/4"	265	700
150	95	403	ZG1"	355	1100
200	100	492	ZG1"	410	1500



DN	L	PN16(1.6MPa)							PN25（2.5MPa）						
		法兰 Flange	D	G	T	f	C	n-d0	法兰 Flange	D	G	T	f	C	n-d0
20	117	40	145	85	16	3	110	4-18	40	145	85	18	3	110	4-18
25	127	50	160	100	16	3	125	4-18	50	160	100	20	3	125	4-18
40	165	65	180	120	18	3	145	4-18	65	180	120	22	3	145	8-18
50	178	80	195	135	20	3	160	8-18	80	195	135	22	3	160	8-18
80	229	150	280	210	24	3	240	8-23	150	300	218	30	3	250	8-25
100	254	200	335	265	26	3	295	12-23							
150	292	250	405	320	30	3	355	12-25							
200	330	350	520	435	34	3	470	16-25							

DN	L	JIS10K(ANSI150Lb)							JIS20K(ANSI300Lb)						
		法兰 Flange	D	G	T	f	C	n-d0	法兰 Flange	D	G	T	f	C	n-d0
20	117	40	140 (127)	85 (73)	16 (14.3)	2 (1.6)	105 (98.5)	4-19 (4-16)	40	140 (156)	85 (73)	19 (20.7)	2 (1.6)	105 (114.5)	4-19 (4-22)
25	127	50	155 (152)	100 (92)	16 (15.9)	2 (1.6)	120 (120.5)	4-19 (4-19)	50	155 (165)	100 (92)	18 (22.3)	2 (1.6)	120 (127)	8-19 (8-19)
40	165	65	175 (178)	120 (105)	18 (17.5)	2 (1.6)	140 (139.5)	4-19 (4-19)	65	175 (190)	120 (105)	20 (22.4)	2 (1.6)	140 (149)	8-19 (8-22)
50	178	80	185 (190)	130 (127)	18 (19.1)	2 (1.6)	150 (152.5)	8-19 (4-19)	80	200 (210)	135 (127)	22 (28.6)	2 (1.6)	160 (168)	8-23 (8-22)
80	229	150	280 (279)	215 (265)	22 (25.4)	2 (1.6)	240 (241.5)	8-23 (8-22)							
100	254	200	330 (343)	265 (270)	22 (28.6)	2 (1.6)	290 (298.5)	12-23 (8-22)							
150	292	250	400 (406)	325 (324)	24 (30.2)	2 (1.6)	355 (362)	12-25 (12-25)							
200	330	350	490 (533)	415 (413)	26 (35.0)	3 (1.6)	445 (476)	16-25 (12-29)							

注：（1）内尺寸为ANSI标准尺寸，可根据用户需要提供气动、电动驱动型

（2）以上数据仅供参考，可根据用户要求设计与制造。

Note:(1) The above size used ANSI standards, we can provide pneumatic and electrical valve according to the customers' demands.

(2)We can design and manufacture the valve according to the customers' demands , the above is for reference.



一、概述

撑开式轨道双向硬密封球阀是本公司根据闸阀和球阀的密封原理开发的高新技术产品，广泛应用于各炼油厂、石化行业，具有良好的密封性能。

二、工作原理和结构特点

(一)工作原理

撑开式轨道双向硬密封球阀的主要特点是球体由三块组成，称为组合球体，中间一块为楔式锥体，两侧各有5° 斜面，斜面上铣有燕尾槽。组合球体的两侧各有一块球形阀瓣，简称球瓣，其球面即为密封面，球瓣和楔式锥体连接处也铣有燕尾槽，它们相互配合。楔式锥体可由阀杆带动，可上下移动或旋转。球瓣的上方和下方分别有限位环和调整垫限制，不能随楔式锥体上升或下降，只能沿燕尾槽相对滑动，在水平方向平移或随楔式锥体旋转。阀杆的下端通过螺纹和轴销与楔式锥体固为一体，上端梯形螺纹与阀杆螺母相配合，阀杆螺母的转动由手轮(手轮阀门)，伞齿轮头或电动头、气动头驱动。阀杆的中部有一轨道销，销的两端各装一只滚轮，滚轮可在支架的导向槽内滚动，阀杆的运动轨迹由导向槽限制。

当阀门需要关闭时，顺时针旋转手轮，带动阀杆螺母旋转，阀杆螺母带动阀杆和楔式锥体旋转90° ，然后沿轴线下移，球瓣也随楔式锥体旋转90° 到阀门关闭位置，然后向两侧平移撑开，靠向阀体密封面，实现阀门关闭。当阀门需要打开时，反时针旋转手轮，通过阀杆螺母和阀杆，带动楔式锥体上升，使球瓣向中间收拢，脱离阀体密封面，然后楔式锥体带球瓣旋转90° ，将阀门打开。

(二)结构

1、关闭时，球瓣与阀体密封面间不产生相对磨擦，密封性能好，使用寿命长，平均寿命比闸阀提高几倍到几十倍。

2、流通面积大，流阻小，密封副硬度高。

3、阀体和球瓣密封面可堆焊或喷涂高硬度、耐腐蚀的合金材料，能适用高温、高压、低温和强腐蚀的介质管道中，其功能完全可以取代闸阀。

4、本阀门启闭力矩小，只有闸阀的二分之一到三分之一。启闭时间短，只有闸阀的五分之一到十分之一，可以实现快速关闭。

5、本阀门和摆动球阀(轨道球阀)相比，具有以下优点：

A、本阀门为双向密封。

B、启闭时间只有摆动球阀的一半。

1、 Overview

It is designed by sealing principle of gate valve and ball valve ， and used in oil refineries and chemical industry.

2、 Working principle and structure characteristics

(1)Working principle

The Sphere is composed by three ball which is called combination of spherical. Both sides of the combination of spherical are ball disc, and the surface of the ball is sealing surface. Stem nut is driven by hand–wheel、bevel gear 、electric, or pneumatic actuator.

Rotate hand–wheel Clockwise the valve will be closed and the otherwise.

(2)Structure

a. Good sealing performance and long using life. The average life is longer than common gate valve.

b. Large circulation area, small flow resistance .

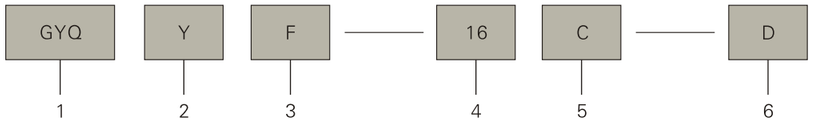
c. The sealing surface is painted with corrosion–resistant alloy. This valve can be used in high–pressure、high–temperature 、low–pressure and weak corrosive media.

d. The torque of opening and closing the valve is smaller than gate valve, the time of opening and closing is short.

e. Advantages

三、型号说明Model Description

撑开式轨道双向硬密封球阀的型号由以下六个单元组成：
The model of orbit ball valve is made up of six units



1 单元——冈野牌撑开式轨道双向硬密封球阀。

2 单元——密封面材料代号：H–合金钢，Y–硬质合金，M–蒙乃尔合金，W–与阀体材料相同。

3 单元——连接形式代号：F–法兰连接，W–对焊连接。

4 单元——公称压力代号：国标阀门以MPa数值的10倍表示，磅级阀门以PSI数值加“Lb”表示。

5 单元——阀体材质代号：同JB/T308–2004标准。

6 单元——传动方式代号：S–伞齿轮传动，D–电动，Q–气动，(手轮传动省略)。

举例：GYQHF–16C–Q 法兰连接气动碳钢“H”密封面，PN1.6MPa撑开式轨道双向硬密封球阀。

GYQWW–300LbP–D 对焊连接电动不锈钢300磅级撑开式轨道双向硬密封球阀。

Unit 1: Valve's name: Two–way orbit ball valve with Gangye brand.

Unit 2: Material code for sealing surface: H stands for Alloy Steel; M stands for Monel alloy; W stands for that the material of sealing surface is the same with valve body.

Unit 3: Connection code: F stands for Flange connection; W stands for Welded connection.

Unit 4: PN code: If the valve used GB standard(Chinese standard) the PN is ten times of figure of Mpa while add "Lb" before PSI if use the API standard.

Unit 5: Materials for body: JB/T308–2004.

四、技术规范 Technical specifications

1、技术规范 Technical specifications

产品设计制造标准 Design Standard	JB/T10673
结构长度标准 Face to face	GB12221/ANSI B16.10
法兰尺寸标准 Flange size	HG20596、JB/T79、ANSI B16.5
检验和试验标准 Inspection and testing standards	JB/T9092、API598

2、技术性能 Technical performance

性能 Performance	碳素钢阀门 Carbon steel valves	高温合金钢阀门 High-temperature alloy steel valves	不锈耐酸钢阀门 Acid-resistant stainless steel valves
工作温度 Working temperature	–29℃~425℃	–29℃~550℃	–196℃~650℃
工作介质 Media	水、油品、蒸汽 Water、oil and stem etc	轻微腐蚀的高温油品 Minor corrosion of the high-temperature oil	腐蚀性介质 Corrosive media

五、主要零件材料 Materials for the main parts

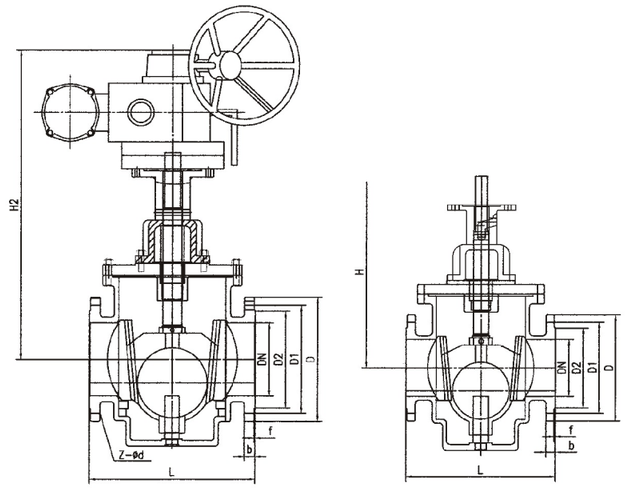
零件名称 Name of parts	碳素钢 Carbon steel valve GYQHF–16C	高温合金钢 High-temperature alloy steel valves GYQHF–16I	不锈耐酸钢 Cid-resistant stainless steel valves GYQW–16P
阀体、阀盖、球体、支架 Body、bonnet、Sphere、Yoke	WCB	ZG1Cr5Mo	ZG0Cr18Ni9
球瓣 Disc	2Cr13	1Cr5Mo	0Cr18Ni9
阀杆 Stem	2Cr13	25Cr2Mo1V	0Cr18Ni9
螺栓 Bolt	35CrMoA	25Cr2Mo1V	1Cr17Ni2
密封面 Sealing surface	Cr13/304	STL/STL	STL/304
填料 Packing	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite

说明 Notes：1、主要零件材料不随公称压力和传动方式的不同而改变。

2、阀门材料根据用户要求，可设计抗硫式(型号前加K)，低温式(型号前加D)以及其它材料阀门。

(1)The materials of main parts will never change due to the change of the PN and DN;

(2) We can manufacture other valves according to the customers' demand.



外形尺寸和连接尺寸**Dimensions and connection size:**PN1.6MPa，DN50–800

规格 Specification (mm)	L	D	D1	D2	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected			
																手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
50	216	160	125	100	240	16	3	4–Φ18	409	-	-	-	-	-	-	34	-	-	-
65	241	180	145	120	240	18	3	4–Φ18	460	-	-	-	-	-	-	39	-	-	-
80	283	195	160	135	260	20	3	8–Φ18	470	-	-	-	-	-	-	53	-	-	-
100	305	215	180	155	280	20	3	8–Φ18	488	-	-	-	-	-	-	70	-	-	-
125	381	245	210	185	300	22	3	8–Φ18	532	-	-	-	-	-	-	105	-	-	-
150	394	280	240	210	320	24	3	8–Φ23	539	-	-	-	-	-	-	140	-	-	-
200	502	335	295	265	360	26	3	12–Φ23	650	-	-	-	-	-	-	218	-	-	-
250	568	405	355	320	400	30	3	12–Φ25	744	-	-	-	-	-	-	295	-	-	-
300	648	460	410	375	450	30	4	12–Φ25	870	1050	1118	1545	362	394	467	402	415	530	520
350	762	520	470	435	520	34	4	16–Φ25	980	1054	1220	1635	362	413	597	635	640	785	765
400	838	580	525	485	600	36	4	16–Φ30	1010	1078	1300	1720	440	413	597	905	915	1030	1005
450	914	640	585	545	-	40	4	20–Φ30	-	1127	1440	1905	513	455	730	-	1300	1390	1375
500	991	705	650	608	-	44	4	20–Φ34	-	1660	1670	2060	588	505	800	-	1710	1850	1825
600	1143	840	770	720	-	38	5	20–Φ36	-	1910	1945	2345	588	505	800	-	2630	2830	2750
700	1346	910	840	794	-	40	5	24–Φ36	-	2195	2230	2550	645	568	885	-	3680	4020	3910
800	1524	1025	950	901	-	42	5	24–Φ39	-	2525	2620	2860	645	568	885	-	5230	5710	5600

外形尺寸和连接尺寸**Dimensions and connection size:**PN2.5MPa，DN50–800

规格 Specification (mm)	L	D	D1	D2	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected			
																手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
50	216	160	125	100	240	20	3	4–Φ18	409	-	-	-	-	-	-	34	-	-	-
65	241	180	145	120	240	22	3	4–Φ18	460	-	-	-	-	-	-	39	-	-	-
80	283	195	160	135	260	22	3	8–Φ18	470	-	-	-	-	-	-	53	-	-	-
100	305	235	190	156	280	24	3	8–Φ23	488	-	-	-	-	-	-	70	-	-	-
125	381	270	220	188	300	28	3	8–Φ25	523	-	-	-	-	-	-	105	-	-	-
150	394	300	250	218	320	30	3	8–Φ25	539	-	-	-	-	-	-	140	-	-	-
200	502	360	310	278	360	34	3	12–Φ25	650	-	-	-	-	-	-	218	-	-	-
250	568	425	370	332	400	36	3	12–Φ30	744	-	-	-	-	-	-	295	-	-	-
300	648	485	430	390	450	40	4	16–Φ30	810	1050	1118	1545	362	394	467	402	427	550	540
350	762	550	490	448	520	44	4	16–Φ34	980	1054	1220	1635	362	413	597	635	660	805	785
400	838	610	550	505	600	48	4	16–Φ34	1010	1078	1300	1720	440	413	597	905	960	1080	1050
450	914	660	600	555	-	50	4	20–Φ34	-	1127	1440	1905	513	455	730	-	1380	1460	1445
500	991	730	660	610	-	52	4	20–Φ41	-	1660	1670	2060	588	505	800	-	1840	1980	1855
600	1143	845	770	20	-	46	5	20–Φ39	-	1910	1945	2345	588	505	800	-	2770	2975	2895
700	1346	960	875	820	-	50	5	24–Φ42	-	2195	2230	2550	645	568	885	-	3930	4225	4115
800	1524	1085	990	928	-	54	5	24–Φ48	-	2525	2620	2860	645	568	885	-	5585	5990	5880

外形尺寸和连接尺寸**Dimensions and connection size:**PN4.0MPa，DN50–800

规格 Specification (mm)	L	D	D1	D2	D3	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected			
																	手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
50	216	160	125	100	88	240	20	3	4–Φ18	409	-	-	-	-	-	-	35	-	-	-
65	241	180	145	120	110	240	22	3	4–Φ18	460	-	-	-	-	-	-	40	-	-	-
80	283	195	160	135	121	260	22	3	8–Φ18	470	-	-	-	-	-	-	54	-	-	-
100	305	230	190	160	150	280	24	3	8–Φ23	488	-	-	-	-	-	-	72	-	-	-
125	381	270	220	188	176	300	28	3	8–Φ26	523	-	-	-	-	-	-	107	-	-	-
150	394	300	250	218	204	320	30	3	8–Φ26	539	-	-	-	-	-	-	143	-	-	-
200	502	375	320	282	260	360	38	3	12–Φ30	650	914	-	-	-	-	-	230	-	-	-
250	568	445	385	345	313	400	42	3	12–Φ34	744	949	-	-	-	-	-	330	-	-	-
300	648	510	450	408	364	450	46	4	16–Φ34	900	1051	1148	1575	362	394	467	450	475	595	585
350	762	570	510	465	422	520	52	4	16–Φ36	960	1095	1250	1675	440	413	597	680	735	855	835
400	838	655	585	535	474	600	58	4	16–Φ41	-	1202	1340	1765	440	413	597	980	1035	1155	1120
450	914	680	610	560	524	-	60	4	20–Φ41	-	1319	1480	1970	513	455	730	-	1500	1600	1585
500	991	755	670	612	576	-	62	4	20–Φ48	-	1710	1680	2130	588	505	800	-	2050	2180	2055
600	1143	890	795	735	678	-	60	5	20–Φ48	-	1970	2060	2425	588	505	800	-	3050	3310	3230
700	1346	995	900	840	768	-	64	5	24–Φ48	-	2266	2320	2655	645	568	885	-	4330	4700	4590
800	1524	1140	1030	960	876	-	72	5	24–Φ56	-	2610	2780	2980	645	568	885	-	6150	6670	6560

外形尺寸和连接尺寸**Dimensions and connection size:**PN6.4MPa，DN50–500

规格 Specification (mm)	L	D	D1	D2	D3	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected			
																	手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
50	292	175	135	105	88	240	26	3	4–Φ23	433	-	-	-	-	-	-	44	-	-	-
65	330	200	160	130	110	260	28	3	8–Φ23	480	-	-	-	-	-	-	50	-	-	-
80	356	210	170	140	121	280	30	3	8–Φ23	505	-	-	-	-	-	-	71	-	-	-
100	432	250	200	168	150	300	32	3	8–Φ25	496	-	-	-	-	-	-	105	-	-	-
125	508	295	240	202	176	320	36	3	8–Φ30	530	-	-	-	-	-	-	140	-	-	-
150	559	340	280	240	204	360	38	3	8–Φ34	574	739	-	-	-	-	-	220	-	-	-
200	660	405	345	300	260	400	44	3	12–Φ34	740	892	990	1450	362	394	467	370	395	430	415
250	787	470	400	352	313	450	48	3	12–Φ41	-	1030	1080	1570	362	394	467	520	545	670	650
300	838	530	460	412	364	520	54	4	16–Φ41	-	1210	1180	1675	440	413	597	690	715	870	845
350	889	595	525	475	422	600	60	4	16–Φ41	-	1280	1285	1770	440	413	597	1030	1085	1210	1185
400	991	670	585	525	474	680	66	4	16–Φ48	-	1420	1460	1970	513	455	730	1480	1585	1750	1670
500	1194	800	705	640	576	-	70	4	20–Φ54	-	1860	1820	2425	588	590	860	-	2210	2400	2310

外形尺寸和连接Dimensions and connection size:尺寸PN10MPa，DN50–400

规格 Specification (mm)	L	D	D1	D2	D3	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected			
																	手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
50	292	195	145	112	88	240	28	3	4–Φ25	433	-	-	-	-	-	-	46	-	-	-
65	330	220	170	138	110	260	32	3	8–Φ25	480	-	-	-	-	-	-	54	-	-	-
80	356	230	180	148	121	280	34	3	8–Φ25	505	-	-	-	-	-	-	78	-	-	-
100	432	265	210	172	150	300	38	3	8–Φ30	496	-	-	-	-	-	-	115	-	-	-
125	508	310	250	210	176	320	42	3	8–Φ34	530	-	-	-	-	-	-	160	-	-	-
150	559	350	290	250	204	360	46	3	12–Φ34	574	739	-	-	-	-	-	270	-	-	-
200	660	430	360	312	260	400	54	3	12–Φ41	740	892	990	1450	362	394	467	430	458	494	475
250	787	500	430	382	313	450	60	3	12–Φ41	-	1030	1080	1570	440	413	597	580	608	730	700
300	838	585	500	442	364	520	70	4	16–Φ48	-	1210	1180	1675	440	413	597	770	825	950	910
350	889	655	560	498	422	600	76	4	16–Φ54	-	1280	1285	1770	513	455	730	1120	1180	1300	1240
400	991	715	620	558	474	680	80	4	16–Φ54	-	1420	1460	1970	588	505	800	1690	1800	1960	1880

外形尺寸和连接尺寸**Dimensions and connection size**:class 150Lb，NPS2"~32"

规格 Specification (mm)	L	D	D1	D2	D0	b	f	Z-Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
2	250	152	120.5	92	240	16	2	4-Φ19	435	-	-	-	-	-	-	33	-	-	-
2 1/2	270	178	139.5	105	240	18	2	4-Φ19	460	-	-	-	-	-	-	39	-	-	-
3	280	190	152.5	127	260	19	2	4-Φ19	490	-	-	-	-	-	-	52	-	-	-
4	300	229	190.5	157	280	24	2	8-Φ19	525	-	-	-	-	-	-	73	-	-	-
5	325	254	216	186	300	24	2	8-Φ22	570	-	-	-	-	-	-	110	-	-	-
6	350	279	241.5	216	320	26	2	8-Φ22	625	-	-	-	-	-	-	155	-	-	-
8	400	343	298.5	270	360	29	2	8-Φ22	700	-	-	-	-	-	-	218	-	-	-
10	450	406	362	324	400	31	2	12-Φ25	780	-	-	-	-	-	-	284	-	-	-
12	500	483	432	381	450	32	2	12-Φ25	870	1050	1118	1545	362	394	467	410	435	550	540
14	550	533	476	413	520	35	2	12-Φ29	980	1160	1220	1635	362	413	597	630	655	800	780
16	600	597	540	470	600	37	2	16-Φ29	1010	1290	1300	1720	440	413	597	890	945	1060	1030
18	650	635	578	533	-	40	2	16-Φ32	-	1430	1440	1905	513	455	730	-	1280	1370	1355
20	700	699	635	584	-	43	2	20-Φ32	-	1660	1670	2060	588	505	800	-	1710	1850	1825
24	800	813	749.5	692	-	48	2	20-Φ35	-	1910	1945	2345	588	505	800	-	2620	2810	2750
28	900	837	795.3	762	-	45	2	40-Φ23	-	2195	2230	2550	645	568	885	-	3610	3950	3910
32	1000	941	900.2	864	-	46	2	40-Φ23	-	2525	2620	2860	645	568	885	-	5110	5590	5600

外形尺寸和连接尺寸**Dimensions and connection size**:class 300Lb，NPS2"~32"

规格 Specification (mm)	L	D	D1	D2	D0	b	f	Z-Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
2	216	165	127	92	240	23	2	8-Φ19	440	-	-	-	-	-	-	36	-	-	-
2 1/2	241	190	149	105	240	26	2	8-Φ22	470	-	-	-	-	-	-	42	-	-	-
3	283	210	168.5	127	260	29	2	8-Φ22	500	-	-	-	-	-	-	57	-	-	-
4	305	254	200	157	280	32	2	8-Φ22	540	-	-	-	-	-	-	78	-	-	-
5	381	279	235	186	300	35	2	8-Φ22	585	-	-	-	-	-	-	109	-	-	-
6	394	318	270	216	320	37	2	12-Φ22	640	-	-	-	-	-	-	148	-	-	-
8	502	381	330	270	360	42	2	12-Φ25	720	-	-	-	-	-	-	238	-	-	-
10	565	445	387.5	324	400	48	2	16-Φ29	800	-	-	-	-	-	-	350	-	-	-
12	648	521	451	381	450	51	2	16-Φ32	900	1100	1148	1575	362	394	467	490	515	635	615
14	762	584	514.5	413	520	54	2	20-Φ32	960	1240	1250	1675	440	413	597	730	785	905	885
16	838	648	571.5	470	600	58	2	20-Φ35	1050	1330	1340	1765	400	413	597	1050	1105	1225	1180
18	914	711	628.5	533	-	61	2	24-Φ35	-	1490	1480	1970	513	455	730	-	1610	1710	1635
20	991	775	686	584	-	64	2	24-Φ35	-	1710	1680	2130	588	505	800	-	2230	2360	2265
24	1143	914	813	692	-	70	2	24-Φ41	-	1970	2060	2425	588	505	800	-	3450	3710	3550
28	1346	921	857	787	-	89	2	36-Φ36	-	2266	2320	2655	645	568	885	-	4360	4730	4660
32	1524	1054	978	902	-	103	2	32-Φ42	-	2610	2780	2980	645	568	885	-	6250	6770	6620

外形尺寸和连接尺寸 **Dimensions and connection size**:class 600Lb，NPS2"~20"

规格 Specification (mm)	L	D	D1	D2	D0	b	f	Z-Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
2	292	165	127	92	240	26	7	8-Φ19	440	-	-	-	-	-	-	44	-	-	-
2 1/2	330	190	149	105	260	29	7	8-Φ22	480	-	-	-	-	-	-	52	-	-	-
3	356	210	168	127	280	32	7	8-Φ22	510	-	-	-	-	-	-	76	-	-	-
4	432	275	216	157	300	38	7	8-Φ25	550	-	-	-	-	-	-	118	-	-	-
5	508	330	266.5	186	320	47	7	8-Φ29	600	-	-	-	-	-	-	165	-	-	-
6	559	355	292	216	360	48	7	12-Φ29	660	-	-	-	-	-	-	272	-	-	-
8	660	420	349	270	400	56	7	12-Φ32	740	940	990	1450	362	394	467	430	458	494	475
10	787	510	432	324	450	64	7	16-Φ35	830	1030	1080	1570	362	394	467	590	618	740	710
12	838	560	489	381	520	67	7	20-Φ35	930	1210	1180	1675	440	413	597	750	805	930	905
14	889	605	527	413	600	70	7	20-Φ38	1000	1280	1285	1770	440	413	597	1080	1140	1260	1230
16	991	685	603	470	680	77	7	20-Φ41	1100	1420	1460	1970	513	455	730	1640	1750	1910	1860
18	1092	745	654	533	-	83	7	20-Φ44	-	1610	1680	2130	588	505	800	2380	2530	2760	2685
20	1194	815	724	584	-	89	7	24-Φ44	-	1830	1980	2425	660	580	920	3150	3380	3880	3780



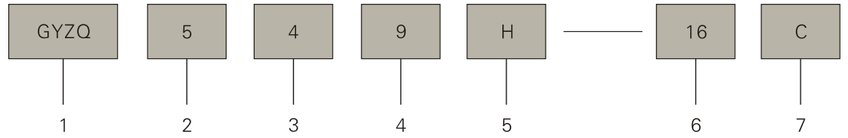
一、概述 Overview

球形闸阀和撑开式轨道双向硬密封球阀的工作原理和结构特点完全一样，只是阀门结构长度不同，前者按闸阀的结构长度，后者按球阀的结构长度。由于PN1.6和PN2.5MPa的闸阀的结构长度较短，所以DN200以上的球面闸阀必须缩径。对于磅级球面闸阀，例如CLASS150Lb，由于结构长度太短，无法设计，只有选用 PN2.5MPa 系列的结构长度，连接法兰仍为150Lb法兰。

The working principle and structure characteristic between two-way orbit ball valve and global gate

二、型号说明2、Model Description

球型闸阀的型号由以下7个单元组成 The model of global gate valve is made up of seven units:：



1 单元——冈野牌球形闸阀。

2 单元——传动方式代号：5-伞齿轮，6-气动，9-电动，(手轮传动省略)。

3 单元——连接形式代号：4-法兰连接，6-对焊连接。

4 单元——结构形式代号：9-撑开式密封结构。

5 单元——密封面材质代号：H-合金钢，Y-硬质合金，M-蒙乃尔合金，W-同阀体材质。

6 单元——公称压力代号：国标阀门　公称压力MPa数值的十倍；

美标阀门　磅级(PSI)数值加“Lb”。

7 单元——阀体材质代号：同JB308标准。

举例：GYZQ549H-150LbC 法兰连接伞齿轮传动150Lb级碳钢球型闸阀。

Unit 1: Valve's name: global gate valve with Gangye brand.

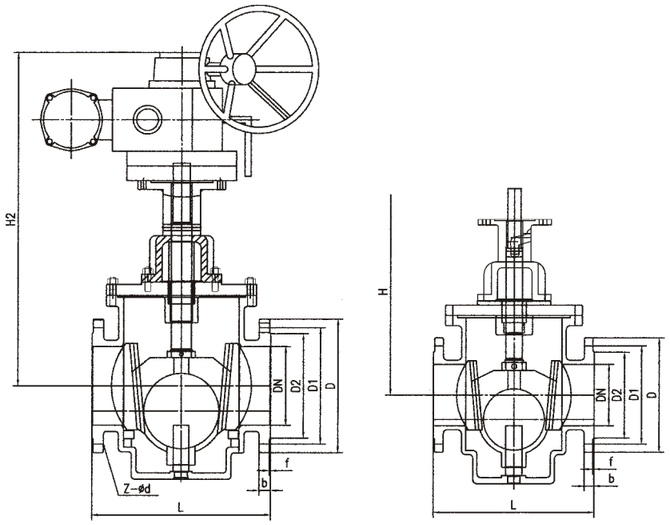
Unit 2: Driven code: 5 stands for Bevel gear; 6 stands for pneumatic; 9 standard for electric-driven.

Unit 3: Connection form：F stands for Flange connection; W stands for Welded connection.

Unit 4: Face to face: 9 stands for Seal open structure.

Unit 5: Material code of sealing surface：H-Alloy steel; Y- Hard alloy; M- Monel; W- the material of sealing surface is the same as valve's body.

Unit 6: PN code: If the valve used GB standard(Chinese standard) the PN is ten times of figure of Mpa while add "Lb" before PSI if use the API standard.



三、技术规范 Technical specifications

1、技术规范 Technical specifications

产品设计制造标准 Design Standard	GB/T12234
结构长度标准 Face to face	GB/T12221
法兰尺寸标准 Flange size	HG20596、JB/T79、ANSI B16.5
检验和试验标准 Inspection and testing standards	JB/T9092、API598

2、技术性能Technical performance

性能 Performance	碳素钢阀门 Carbon steel valves	高温合金钢阀门 High-temperature alloy steel valves	不锈耐酸钢阀门 Acid-resistant stainless steel valves
工作温度 Working temperature	-29℃~425℃	-29℃~550℃	-196℃~650℃
工作介质 Media	水、油品、蒸汽 Water、oil and stem etc	轻微腐蚀的高温油品 Minor corrosion of the high-temperature oil	腐蚀性介质 Corrosive media

四、主要零件材料 Materials for the main parts

零件名称 Name of parts	碳素钢 Carbon steel valve	高温合金钢 High-temperature alloy steel valves	不锈耐酸钢 Acid-resistant stainless steel valves
阀体、阀盖、球体、支架 Body、bonnet、Sphere、Yoke	WCB	ZG1Cr5Mo	ZG0Cr18Ni9
球瓣 Disc	2Cr13	1Cr5Mo	0Cr18Ni9
阀杆 Stem	2Cr13	25Cr2Mo1V	0Cr18Ni9
螺栓 Bolt	35CrMoA	25Cr2Mo1V	1Cr17Ni2
密封面 Sealing surface	Cr13/304	STL/STL	STL/304
填料 Packing	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite

外形尺寸和连接尺寸 **Dimensions and connection size**:PN1.6MPa，DN50–800

规格 Specification (mm)	L	D	D1	D2	D4	D0	b	f	Z-Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric-driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected			
																	手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric-driven	气动 Pneumatic
50	250	165	125	100	49	240	20	2	4-Φ18	409	-	-	-	-	-	-	38	-	-	-
65	270	185	145	120	64	240	20	2	4-Φ18	460	-	-	-	-	-	-	45	-	-	-
80	280	200	160	135	75	260	20	2	8-Φ18	470	-	-	-	-	-	-	60	-	-	-
100	300	220	180	155	98	280	22	2	8-Φ18	488	-	-	-	-	-	-	70	-	-	-
125	325	250	210	185	123	300	22	2	8-Φ18	532	-	-	-	-	-	-	95	-	-	-
150	350	285	240	210	148	320	24	2	8-Φ23	539	-	-	-	-	-	-	140	-	-	-
200	400	340	295	265	183	360	24	2	12-Φ22	703	-	-	-	-	-	-	195	-	-	-
250	450	405	355	320	220	400	26	2	12-Φ22	738	-	-	-	-	-	-	255	-	-	-
300	500	460	410	375	250	450	28	2	12-Φ26	771	949	1118	1545	362	394	467	320	355	450	440
350	550	520	470	435	285	520	30	2	16-Φ26	820	994	1220	1635	362	413	597	510	545	685	665
400	600	580	525	485	320	600	32	2	16-Φ30	-	1105	1300	1720	440	413	597	685	765	830	805
450	650	640	585	545	350	-	36	2	20-Φ30	-	1137	1440	1905	513	455	730	-	1020	1110	1090
500	700	715	650	608	380	-	40	2	20-Φ34	-	1169	1670	2060	588	505	800	-	1480	1550	1525
600	800	840	770	720	440	-	44	2	20-Φ36	-	1320	1945	2345	588	505	800	-	2130	2330	2250
700	900	910	840	794	600	-	40	5	24-Φ36	-	1495	2230	2550	645	568	885	-	2880	3180	3150
800	1000	1025	950	901	660	-	42	5	24-Φ39	-	1625	2620	2860	645	568	885	-	4130	4410	4400

外形尺寸和连接尺寸 **Dimensions and connection size**:PN2.5MPa，DN50–800

规格 Specification (mm)	L	D	D1	D2	D4	D0	b	f	Z-Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric-driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected			
																	手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric-driven	气动 Pneumatic
50	250	165	125	100	49	240	20	2	4-Φ18	409	-	-	-	-	-	-	40	-	-	-
65	270	185	145	120	64	240	22	2	8-Φ18	460	-	-	-	-	-	-	48	-	-	-
80	280	200	160	135	75	260	24	2	8-Φ18	470	-	-	-	-	-	-	65	-	-	-
100	300	235	190	160	98	280	24	2	8-Φ22	488	-	-	-	-	-	-	78	-	-	-
125	325	270	220	188	123	300	25	2	8-Φ26	532	-	-	-	-	-	-	105	-	-	-
150	350	300	250	218	148	320	28	2	8-Φ26	539	-	-	-	-	-	-	150	-	-	-
200	400	360	310	278	183	360	30	2	12-Φ26	703	-	-	-	-	-	-	210	-	-	-
250	450	425	370	332	220	400	32	2	12-Φ30	738	-	-	-	-	-	-	275	-	-	-
300	500	485	430	390	250	450	34	2	16-Φ30	771	949	1118	1545	362	394	467	340	355	480	470
350	550	555	490	448	285	520	38	2	16-Φ33	820	994	1220	1635	362	413	597	530	565	705	685
400	600	620	550	505	320	600	40	2	16-Φ36	-	1105	1300	1720	440	413	597	715	790	880	655
450	650	670	600	555	350	-	46	2	20-Φ36	-	1137	1440	1905	513	455	730	-	1100	1180	1160
500	700	730	660	610	380	-	48	2	20-Φ36	-	1169	1670	2060	588	505	800	-	1590	1680	1655
600	800	845	770	720	440	-	58	2	20-Φ39	-	1320	1945	2345	588	505	800	-	2170	2475	2490
700	900	960	875	820	600	-	50	5	24-Φ42	-	1495	2230	2550	645	568	885	-	2930	3385	3350
800	1000	1085	990	928	660	-	54	5	24-Φ48	-	1625	2620	2860	645	568	885	-	4330	4790	4680

外形尺寸和连接尺寸**Dimensions and connection size** PN4.0MPa，DN50–800

规格 Specification (mm)	L	D	D1	D2	D4	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
50	250	160	125	100	88	240	20	2	4–Φ18	440	-	-	-	-	-	-	45	-	-	-
65	280	180	145	120	110	240	22	2	8–Φ18	470	-	-	-	-	-	-	55	-	-	-
80	310	195	160	135	121	260	22	2	8–Φ18	500	-	-	-	-	-	-	75	-	-	-
100	350	230	190	160	150	280	24	2	8–Φ23	540	-	-	-	-	-	-	95	-	-	-
125	400	270	220	188	176	300	28	2	8–Φ26	585	-	-	-	-	-	-	138	-	-	-
150	450	300	250	218	204	320	30	2	8–Φ26	640	-	-	-	-	-	-	185	-	-	-
200	550	375	320	282	260	360	38	2	12–Φ30	720	-	-	-	-	-	-	330	-	-	-
250	650	445	385	345	313	400	42	2	12–Φ34	800	-	-	-	-	-	-	450	-	-	-
300	750	510	450	408	364	450	46	2	16–Φ34	900	1100	1148	1575	362	394	467	680	715	815	800
350	850	570	510	465	422	520	52	2	16–Φ36	960	1240	1250	1675	440	413	597	980	1055	1155	1125
400	950	655	585	535	474	600	58	2	16–Φ41	1050	1330	1340	1765	440	413	597	1350	1415	1550	1520
450	1050	680	610	560	524	-	60	2	20–Φ41	-	1490	1480	1970	513	455	730	-	1700	1820	1790
500	1150	755	670	612	576	-	62	2	20–Φ48	-	1710	1680	2130	588	505	800	-	1250	2480	2450
600	1350	890	795	735	678	-	60	2	20–Φ48	-	1970	2060	2425	588	505	800	-	3450	3560	3530
700	1450	995	900	840	768	-	64	5	24–Φ48	-	2266	2320	2655	645	568	885	-	4830	4980	4940
800	1650	1140	1030	960	876	-	72	5	24–Φ56	-	2610	2780	2980	645	568	885	-	6950	7150	7105

外形尺寸和连接尺寸**Dimensions and connection size** PN6.4MPa，DN50–500

规格 Specification (mm)	L	D	D1	D2	D3	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
50	250	175	135	105	88	240	26	3	4–Φ23	440	-	-	-	-	-	-	47	-	-	-
65	280	200	160	130	110	260	28	3	8–Φ23	480	-	-	-	-	-	-	57	-	-	-
80	310	210	170	140	121	280	30	3	8–Φ23	510	-	-	-	-	-	-	79	-	-	-
100	350	250	200	168	150	300	32	3	8–Φ25	550	-	-	-	-	-	-	105	-	-	-
125	400	295	240	202	176	320	36	3	8–Φ30	600	-	-	-	-	-	-	148	-	-	-
150	450	340	280	240	204	360	38	3	8–Φ34	660	-	-	-	-	-	-	220	-	-	-
200	550	405	345	300	260	400	44	3	12–Φ34	740	940	990	1450	362	394	467	370	395	430	415
250	650	470	400	352	313	450	48	3	12–Φ41	830	1030	1080	1570	362	394	467	520	545	670	650
300	750	530	460	412	364	520	54	4	16–Φ41	930	1210	1180	1675	440	413	597	690	715	870	845
350	850	595	525	475	422	600	60	4	16–Φ41	1000	1280	1285	1770	440	413	597	1030	1085	1210	1185
400	950	670	585	525	474	680	66	4	16–Φ48	1100	1420	1460	1970	513	455	730	1480	1585	1750	1670
500	1150	800	705	640	576	-	70	4	20–Φ54	-	1860	1820	2425	588	590	860	-	2210	2400	2310

外形尺寸和连接尺寸 **Dimensions and connection size** PN10MPa，DN50–400

规格 Specification (mm)	L	D	D1	D2	D3	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
50	250	195	145	112	88	240	28	3	4–Φ25	440	-	-	-	-	-	-	49	-	-	-
65	280	220	170	138	110	260	32	3	8–Φ25	480	-	-	-	-	-	-	59	-	-	-
80	310	230	180	148	121	280	34	3	8–Φ25	510	-	-	-	-	-	-	83	-	-	-
100	350	265	210	172	150	300	38	3	8–Φ30	550	-	-	-	-	-	-	115	-	-	-
125	400	310	250	210	176	320	42	3	8–Φ34	600	-	-	-	-	-	-	160	-	-	-
150	450	350	290	250	204	360	46	3	12–Φ34	660	-	-	-	-	-	-	270	-	-	-
200	550	430	360	312	260	400	54	3	12–Φ41	740	940	990	1450	362	394	467	430	458	494	475
250	650	500	430	382	313	450	60	3	12–Φ41	830	1030	1080	1570	440	413	597	580	608	730	700
300	750	585	500	442	364	520	70	4	16–Φ48	930	1210	1180	1675	440	413	597	770	825	950	910
350	850	655	560	498	422	600	76	4	16–Φ54	1000	1280	1285	1770	513	455	730	1120	1180	1300	1240
400	950	715	620	558	474	680	80	4	16–Φ54	1100	1420	1460	1970	588	505	800	1690	1800	1960	1880

外形尺寸和连接尺寸 **Dimensions and connection size** class 150Lb，NPS2"~32"

规格 Specification (mm)	L	D	D1	D2	D4	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
2	250	152	120.5	92	49	240	16	2	4–Φ19	409	-	-	-	-	-	-	35	-	-	-
2 1/2	270	178	139.5	105	64	240	18	2	4–Φ19	460	-	-	-	-	-	-	42	-	-	-
3	280	190	152.5	127	75	260	19	2	4–Φ19	470	-	-	-	-	-	-	56	-	-	-
4	300	229	190.5	157	98	300	24	2	8–Φ19	488	-	-	-	-	-	-	73	-	-	-
5	325	254	216	186	123	300	24	2	8–Φ22	532	-	-	-	-	-	-	120	-	-	-
6	350	279	241.5	216	148	300	26	2	8–Φ22	539	-	-	-	-	-	-	160	-	-	-
8	400	343	298.5	270	183	450	29	2	8–Φ22	703	-	-	-	-	-	-	205	-	-	-
10	450	406	362	324	220	450	31	2	12–Φ25	738	-	-	-	-	-	-	264	-	-	-
12	500	483	432	381	250	500	32	2	12–Φ25	771	949	1118	1545	362	394	467	365	355	480	470
14	550	533	476	413	285	520	35	2	12–Φ29	820	994	1220	1635	362	413	597	520	565	705	685
16	600	597	540	470	320	600	37	2	16–Φ29	-	1105	1300	1720	440	413	597	718	790	880	655
18	650	635	578	533	350	-	40	2	16–Φ32	-	1137	1440	1905	513	455	730	-	1100	1180	1160
20	700	699	635	584	380	-	43	2	20–Φ32	-	1169	1670	2060	588	505	800	-	1590	1680	1655
24	800	813	749.5	692	440	-	48	2	20–Φ35	-	1320	1945	2345	588	505	800	-	2170	2475	2490
28	900	837	795.3	762	600	-	45	2	40–Φ23	-	1495	2230	2550	645	568	885	-	2930	3385	3350
32	1000	941	900.2	864	660	-	46	2	40–Φ23	-	1625	2620	2860	645	568	885	-	4330	4790	4680

外形尺寸和连接尺寸 **Dimensions and connection size** class 300Lb，NPS2"~32"

规格 Specification (mm)	L	D	D1	D2	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
2	216	165	127	92	240	23	2	8–Φ19	440	-	-	-	-	-	-	36	-	-	-
2 1/2	241	190	149	105	240	26	2	8–Φ22	470	-	-	-	-	-	-	45	-	-	-
3	283	210	168.5	127	260	29	2	8–Φ22	500	-	-	-	-	-	-	60	-	-	-
4	305	254	200	157	280	32	2	8–Φ22	540	-	-	-	-	-	-	80	-	-	-
5	381	279	235	186	300	35	2	8–Φ22	585	-	-	-	-	-	-	130	-	-	-
6	403	318	270	216	320	37	2	12–Φ22	640	-	-	-	-	-	-	175	-	-	-
8	502	381	330	270	360	42	2	12–Φ25	720	-	-	-	-	-	-	205	-	-	-
10	568	445	387.5	324	400	48	2	16–Φ29	800	-	-	-	-	-	-	295	-	-	-
12	648	521	451	381	450	51	2	16–Φ32	900	1100	1148	1575	362	394	467	390	515	635	615
14	762	584	514.5	413	520	54	2	20–Φ32	960	1240	1250	1675	440	413	597	730	785	905	885
16	838	648	571.5	470	600	58	2	20–Φ35	1050	1330	1340	1765	400	413	597	1050	1105	1225	1180
18	914	711	628.5	533	-	61	2	24–Φ35	-	1490	1480	1970	513	455	730	-	1610	1710	1635
20	991	775	686	584	-	64	2	24–Φ35	-	1710	1680	2130	588	505	800	-	2230	2360	2265
24	1143	914	813	692	-	70	2	24–Φ41	-	1970	2060	2425	588	505	800	-	3450	3710	3550
28	1346	921	857	787	-	89	2	36–Φ36	-	2266	2320	2655	645	568	885	-	4360	4730	4660
32	1524	1054	978	902	-	103	2	32–Φ42	-	2610	2780	2980	645	568	885	-	6250	6770	6620

外形尺寸和连接尺寸 **Dimensions and connection size** class 600Lb，NPS2"~20"

规格 Specification (mm)	L	D	D1	D2	D0	b	f	Z–Φd	H 手动 Manual	H1 齿轮 Gear	H2 电动 Electric -driven	H3 气动 Pneumatic	L2	L3	L4	重量(kg)(法兰连接) Weight Flange connected 手轮 hand-wheel	伞齿轮 Bevel gear	电动 Electric -driven	气动 Pneumatic
2	292	165	127	92	240	26	7	8–Φ19	440	-	-	-	-	-	-	44	-	-	-
2 1/2	330	190	149	100	260	29	7	8–Φ22	480	-	-	-	-	-	-	52	-	-	-
3	356	210	168	127	280	32	7	8–Φ22	510	-	-	-	-	-	-	76	-	-	-
4	432	275	216	157	300	38	7	8–Φ25	550	-	-	-	-	-	-	118	-	-	-
5	508	330	266.5	186	320	47	7	8–Φ29	600	-	-	-	-	-	-	165	-	-	-
6	559	355	292	216	360	48	7	12–Φ29	660	-	-	-	-	-	-	272	-	-	-
8	660	420	349	270	400	56	7	12–Φ32	740	940	990	1450	362	394	467	430	458	494	475
10	787	510	432	324	450	64	7	16–Φ35	830	1030	1080	1570	362	394	467	590	618	740	710
12	838	560	489	381	520	67	7	20–Φ35	930	1210	1180	1675	440	413	597	750	805	930	905
14	889	605	527	413	600	70	7	20–Φ38	1000	1280	1285	1770	440	413	597	1080	1140	1260	1230
16	991	685	603	470	680	77	7	20–Φ41	1100	1420	1460	1970	513	455	730	1640	1750	1910	1860
18	1092	745	654	533	-	83	7	20–Φ44	-	1610	1680	2130	588	505	800	2380	2530	2760	2685
20	1194	815	724	584	-	89	7	24–Φ44	-	1830	1980	2425	660	580	920	3150	3380	3880	3780

一、用途Application

轨道式球形蝶阀广泛应用于石油、化工、天然气、冶金、电力、水处理、军工等部门，特别适用于有毒、有害、易燃、易爆等危险性气液、介质。

It is widely used in Petroleum, chemical, natural gas、electricity, water, military and other toxic, hazardous, flammable, explosive or other dangerous gases and liquids.

二、结构特点及作用原理 Working principle and structure characteristics

轨道式球形蝶阀结构独特，性能优越，具有时代领先地位，完全可以替代进口，更具有以下优点：

1. 设有先导副阀，主阀开启力矩小,启闭轻便。
2. 外壁轨道改为内轨道，有效降低摩擦、减少磨损。
3. 阀门设有水封装置，若阀前发生故障、泄漏或火警，可完全阻断介质的泄露，进一步改善产品的安全可靠性，减少事故。
4. 阀门在启闭过程中，密封副是分离的；无摩擦，扭矩小，启闭轻便灵活，不擦伤，使用寿命长。
5. 阀门开启时，随着阀杆的上升，副阀先打开，介质部分导通，排除中腔压力，有效降低阀门前后压差；在转换块的作用下，板收缩，主阀密封副脱开，然后逆时针转动90°，流道导通。
6. 阀门关闭时，阀杆向下作直线运动的同时阀杆轨道促使阀板顺时针先转动90°、而后阀板向两连扩张，对密封面施加机械挤压外力，先关闭副阀，再关闭主阀，密封安全可靠。
7. 阀门在开启、关闭的过程中，密封副保持一定空间，介质高速冲洗密封面，以使其洁净。

(1)It is convenient to open and close and the torque value is small.

(2)The outside orbit change into inside orbit and this can reduce friction, reduce wear and tear.

(3)The valve have water seal device to enhance the safety.

(4)Long life .

(5)The medium flow is in good condition.

(6) Safe and reliable sealing

(7) The medium washed the sealing surface and make it keep clean.



三、型号说明 Model Description

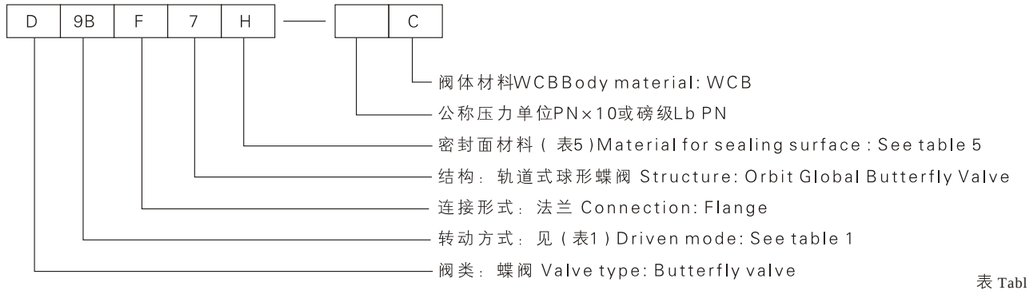


表 Table 1

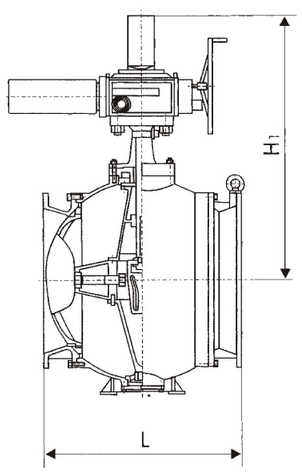
操作方式 Operation mode	手动 Manual	锥齿轮传动 Bevel gearing	气动双作用 Pneumatic double acting	电动 Electric	电动（隔爆型） Electric
代号 Code	--	5	6_A	9	9_B

四、主要性能参数 The main performance parameters

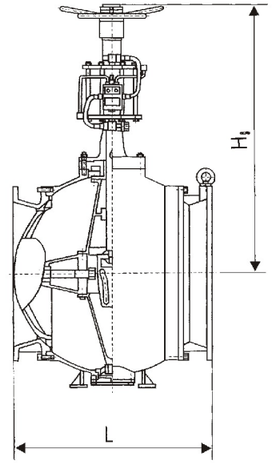
表 Table 2

公称压力PN	(Mpa)	0.2	0.5
试验压力(Mpa)PS	壳体试验 Shell Test	0.3	0.75
	密封试验 Seal test	0.22	0.55
	低压气密性试验 Low pressure seat test	0.015	0.015
适用介质Media	煤气、空气、有毒有害气体、液体等 Gas、air 、poisonous and harmful gases, liquids		
工作温度(℃)Working temperature	-20~150		
气源压力(Mpa)Air pressure	0.3~0.5		

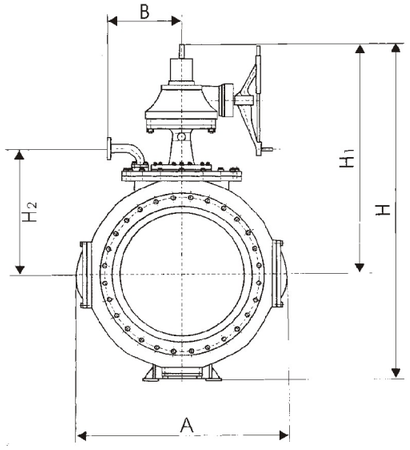
切断时间 Cut off time	DN(mm)	450 600	650 800	900 1000	1200 1350	1500
	(S)	≤15	≤20	≤25	≤32	≤40



D 9 B F 7型
电 动(隔 爆)轨 道 式 球 型 蝶 阀
Electric (Flameproof)Obit Global Butterfly Valve



D6AF7型
气 动 双 作 用 轨 道 式 球 型 蝶 阀
Double Acting Pneumatic Obit Global Butterfly Valve



D5F7型
伞齿轮传动轨道式球型蝶阀
Obit Global Butterfly Valve driven by bevel gear

气源压力、耗气量和切断时间 The pressure of gas source、Air consumption、Cut-off time. 表 Table 3

气源压力(MPa) The pressure of gas source	0.3~0.5								
气动摆动式球阀气缸单行程耗气量(m^3) Air consumption	DN(mm)	≤50	65	80-100	125	150	200-250	300	350
	耗气量 Air consumption	0.0005	0.0006	0.0013	0.0022	0.0026	0.0068	0.0102	0.013
	DN(mm)	400	450	500	600	700	800	900	
	耗气量	0.0195	0.031	0.04	0.06	0.10	0.15	0.25	
气动轨道式球形蝶阀开关单行程耗时 Pneumatic butterfly valve	DN(mm)	≤40	50-100	125-200	250-350	400-600	700-900		
	时间Time(s)	<1	<3	<8	<15	<25	<40		
电动轨道式球形蝶阀开关单行程耗时 Electric time-consuming	DN(mm)	≤40	50-100	125-250	300-450	500-700	800-900		
	时间Time(s)	<6	<8	<9	10-16	11-20	20-60		

气动执行器控讯箱Control message box of pneumatic actuators

表 Table 4

型号规格：Model specifications / 性能参数：Performance parameters			25D2X-L6-d / 25D2X-L6-ia	25D2X-L10-d / 25D2X-L10-ia
工作压力(Mpa)：Working pressure			0.15~0.8	
工作介质：Media			经净化的压缩空气：Compressed air after purification	
介质温度(℃)：The temperature of media			5~55(低于℃的压缩空气需经特殊除水处理 Special water treatment)	
工作环境：Working environment	温度(℃)：Temperature		-40~60	
	相对温度(%)Relative temperature		<95	
工作电压与电流 Working voltage and current	隔爆型Flameproof	DC	24V	80mA
	本安型The security-type	DC	12V	20mA
线圈温升(℃) Coil temperature rise	隔爆型Flameproof		当环境温度不超过40℃ When the temperature is lower than 40℃	80℃
	本安型The security-type		当环境温度不超过40℃ When the temperature is lower than 40℃	60℃
绝缘等级：Insulation Class			B	
本安型关联设备：Associated equipment			Lb873齐纳安全栅 Zenner diode safety barrier with mode of Lb873	

注：25为二位五通、D2为双电控、X为控讯箱、L为螺纹连接、d为隔爆型、ia为本安型。
Note: 25 is Two-position Five-way, D2 is double electrical control , D2 is message controlling box, L is thread connection, d is flame-proof type, ia is the security-type.

五、主要零件材料Materials for the main parts

表 Table 5

零件名称 Name of parts	材料Material
阀体、阀盖、阀板、支架 Body、Bonnet、Plate、Stent	WCB(WCC)
阀杆 Stem	45(镀硬铬hard chrome plating)
阀板密封面 Sealing surface of valve plate	PTFE不锈钢与柔性石墨多层密封(H) PTFE and Flexible Graphite
阀座密封面 sealing surface of seat	2Cr13

注：阀座密封面材料、填料亦可由用户选定。

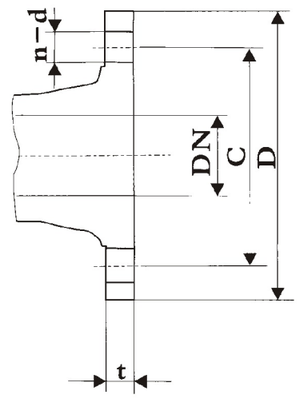
六、主要外形尺寸 (mm) Main Dimensions

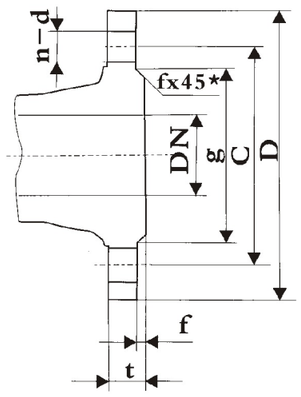
PN 0.2 0.5 (MPa)

表 Table 6

公称通径 DN mm Nominal diameter	缩径 Reduced bore D1	结构长度 Face to face dimension L	高 度height					宽 度width		注水孔DN* Water injection hole
			H≈		H1≈		H2≈	A	B	
			PN0.2	PN0.5	PN0.2	PN0.5				
450	400	650	1735	1758	1170	1185	405	680	235	25
500	450	720	1799	1812	1185	1198	460	775	265	25
550	500	800	1860	1874	1195	1215	510	850	295	25
600	550	900	1938	1956	1210	1245	565	945	325	25
650	600	950	2105	2125	1270	1290	605	1100	350	25
700	650	1000	2170	2190	1295	1315	665	1115	385	25
800	700	1150	2572	2592	1352	1370	715	1185	410	25
900	800	1250	2601	2625	1486	1507	815	1355	475	50
1000	900	1350	2685	2710	1578	1602	920	1525	535	50
1200	1100	1710	2856	2886	1615	1645	1105	1835	640	50
1350	1200	1900	3015	3050	1720	1755	1210	2005	700	50
1500	1350	2210	3278	3316	1868	1910	1365	2260	795	50

七、法兰连接尺寸 Flange connection size





PN 0.2 0.5 (Mpa) (JIS 2210、2211)

表 Table 7

公称通径DN Nominal diameter	连接尺寸 Connection Size				密封面尺寸Sealing surface size		法兰厚度 Flange thickness	
	法兰外径D Outside diameter of flange	螺栓孔中心圆直径C Center diameter C of bolt hole	孔数孔径 n-d Number and diameter of hole		g	f	t	
			PN0.2	PN0.5	PN0.5		PN0.2	PN0.5
25*	95	75	4-φ12	4-φ12	62	1	10	10
50*	130	105	4-φ15	4-φ15	88	2	14	14
450	605	555	16-φ23	16-φ25	525	3	22	24
500	655	605	20-φ23	20-φ25	575	3	22	24
550	720	665	20-φ25	20-φ27	630	3	24	26
600	770	715	20-φ25	20-φ27	680	3	24	26
650	825	770	24-φ25	24-φ27	735	3	24	26
700	875	820	24-φ25	24-φ27	785	3	24	26
800	995	930	24-φ27	24-φ33	890	3	24	28
900	1095	1030	24-φ27	24-φ33	990	3	24	30
1000	1195	1130	28-φ27	28-φ33	1090	3	26	32
1200	1420	1350	32-φ27	32-φ33	1305	3	26	34
1350	1575	1505	32-φ27	32-φ33	1460	3	26	34
1500	1730	1660	36-φ27	36-φ33	1615	3	28	36

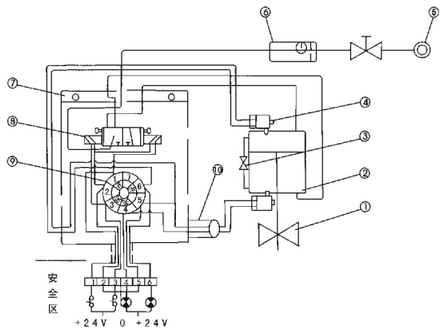
注：带*的公称通径用于注水孔法兰 Note: Nominal diameter with ★ used for water-hole flange.

八、气动轨道式球形碟阀电控原理图 Electronic control schematic diagram of valve

隔爆型双电控 Double electrical control of flameproof

1、气动轨道式球形碟阀 2、执行机构 3、平衡阀
4、回讯器 5、气源 6、气源组合三大件 7、控讯箱
8、二位五通电磁阀 9、接线座 10、防爆软管

(1) Pneumatic Orbit Global Butterfly Valve (6) Combination of gas sources
(2) Executing agency(Actuator) (7) Control message box
(3) Balance valve (8) Solenoid valve
(4) Devices (9) Wiring Block
(5) Gas source (10)Explosion-proof hose



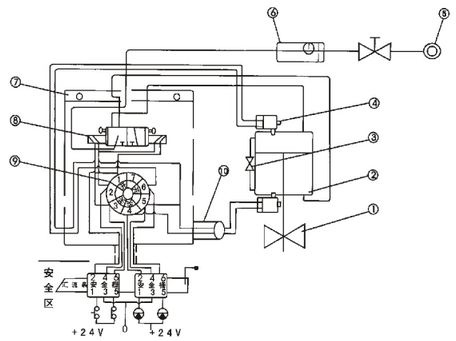
隔爆型双电控原理图

[注] 端子标记接线法：接线端子标记1，3接电源24V进线，
2接双线圈共用0线， 4、6接回讯器信号返回线，
5接双回讯器共用线，3为关，4为下，6为上。

本安型双电控Double electrical control of the security-type

1、气动轨道式球形碟阀 2、执行机构 3、平衡阀
4、回讯器 5、气源 6、气源组合三大件 7、控讯箱
8、二位五通电磁阀 9、接线座 10、防爆软管

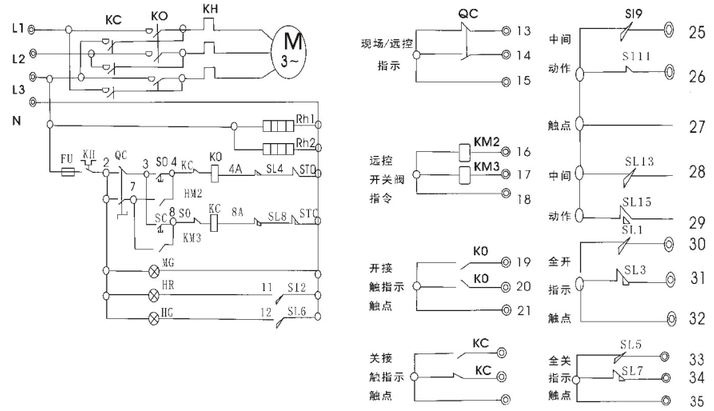
(1) Pneumatic Orbit Global Butterfly Valve (6) Combination of gas sources
(2) Executing agency(Actuator) (7) Control message box
(3) Balance valve (8) Solenoid valve
(4) Devices (9) Wiring Block
(5) Gas source (10)Explosion-proof hose



本安型双电控原理图

[注]端子标记接线法：接线端子标记1，3接电源12V进线，
2接双线圈共用0线， 4、6接回讯器信号返回线，
5接双回讯器共用线，标记1为开，3为关，4为下，6为上。

九、电动轨道式球形碟阀电控原理图
Electronic control schematic diagram of Electrical Orbit Global Butterfly Valve



十、安装和使用注意事项 Installation instructions

阀门的注意事项 Notes of the valve

1、阀门应直立或水平安装，不允许倒装；在水平管线上，当DN≥200时，应直立安装。带传动机构的球形蝶阀一般应直立安装。
2、安装前，管路内必须清扫干净，不得有异特存在；
3、安装时，球形蝶阀应处在关闭状态，以防杂质进入腔内；
4、手轮、传动装置均不允许作超吊用，并严禁碰撞。

(1) Vertical or horizontal installation, inverted installation is not allowed; When DN≥200,the valve should be installed vertically.
(2) Tube should be clean completely before its installation.
(3) The butterfly valve should be close when the installation is in.
(4) Driving device and hand-wheel are not allowed to use inappropriately.Notes of gas and electricity systemExplosion-proof mark; Install according to the installation.

气、电系统的注意事项

1、在防爆环境中安装使用时必须有防爆标志，并具有防爆合格证号；
2、防爆阀门控讯箱体上“P”为气源气口，“A”和“B”为输出工作口，“O”为箱底排气口；
3、控讯箱内接线座要与线路连接牢靠后，再旋紧防爆软管接头压紧螺母；
4、控讯箱手控按钮操作时，手按下并要转动按钮，使阀门锁死处于工作或关闭状态；
5、气源必须经净化处理，安装气源组合三大件(空气过滤器、油雾器和减压阀)，垂直方向安装时，按箭头表示 的方向为气体流动方向来安装管路，
将分水滤气器装于进气的前面，其次减压阀，最后油雾器；应注意：
(1) 分水滤气器视工作期间积水情况，将怀下面的手柄向上一拉即可把污水放掉；
(2) 减压阀在通气前，逆时针旋转手轮，使减压阀定值弹簧卸荷，然后打开气源，按顺时针方向逐渐转动手轮，压力渐增，直到压力表指示所需输出压力；
(3) 油雾器油面不得超过最高油位，当油临近最低油位时要及时补油，保持一定油位，不得排空。用油种类应根据粘度为5-7度E范围内选择。
6、WFB型位置信号返回器防爆标志为dmIICT4。安装时应检查阀门在全关或全开状况下能否正确发讯。
7、电动轨道式球形蝶阀应按电动装置使用说明书进行调试，如使用过程中出现异常情况时，应立即查明原因，采取相应措施消除故障；

Notes of gas and electricity system

1. Explosion-proof mark is necessary when the valve installed in the explosion environment and the explosion-proof certificate is necessary.
2. “P” is gas intake in the message control box, “A” and “B” is output of export, “O” is exhaust window.
3. The insider block linked with the line solidly and then fasten explosion-proof hose connector and hold down the nut.
4. Operate the manual button of message control box , press the button and rotate the button, to make the valve in the closing or opening.
5. Gas source must be approved by the purification, Combination of gas sources(Air filter、oil mist device、relief valve), when the valve installed vertically, installed the valve by arrows, firstly install the air filter and then install the relief valve and at last install the oil mist device. Please notice that:
(1) Pull the handle and release the sewage.
(2) Rotate hand wheel counterclockwise, remove the pressure of the relief valve spring and then open the gas source; and then rotate hand wheel clockwise, the pressure valve will rise until the pressure gauge indicate the output pressure of the valve.
(3) Oil level of the oil mist device shall not exceed the highest oil level, when the oil close to the lowest oil level, add the oil timely and keep the oil level. The viscosity of the oil is 5-7 degrees.
6. Explosion-proof device of WFB return browser is dmIICT4. When in installation please check if the valve can take the signal in the totally open or close.
7. Electrical orbit globe butterfly valve debug according to the operating instruction of manual electrical devices. When the abnormal condition comes up, please identify the reasons and take corresponding measures to eliminate the faults.





一、概述

PQ双偏心半球阀是在吸收消化国内外的先进技术而研发成功的新产品，应用于石油、化工、电力和冶金等行业。它设计独特、结构新颖。阀门结构采用偏心契紧原理，通过传动机构达到闸紧、调节、关闭的目的，密封圈与球体都是金属面环带硬面接触密封，双偏心结构阀门在开启时球体藏于阀腔内，流通截面大，且阀门不被冲刷，无流阻。关闭时阀芯不被冲刷，关闭时阀芯球面沿阀座渐进，具有剪切功能，有效地切除结垢障碍，实现可靠密封。它对容易结垢的介质输送特别有效。阀门与半球采用双金属，在球体上堆焊不同的合金，阀座也作相应堆焊合金，经特殊的处理，密封面组合成防腐、耐磨、耐高温等各种类型，满足不同场合需求。阀门密封严紧，输

二、产品的主要用途及产品特点

1、通用类：适用于污水处理、纸浆、氧化铝、城市采暖供热要求严紧的场合。

2、油化工专用类：适用于原油、重油等各类油品、化工行业耐腐蚀、两相混流介质。耐温可达425℃。

3、燃气专用类：适用于煤气、天然气、液化气的输送控制。产品结构特点是密封圈堆焊阀不同的含铬合金，密封严紧，抗腐蚀。

4、料浆专用类：适用于液态、固态两相混流或液态输送中化学反应有结晶析出或结垢的工业管道输送。产品结构特点根据顾客所需介质、温度要求不同，球体受用铬钼、钒合金堆焊，阀座采用铬、钼合金、铬合金、不锈钢合金焊条堆焊满足不同料浆输送的需要。

5、煤粉灰渣专用类：适用于电厂、水力除渣或气态输送管道的控制。产品要求耐磨性能，球体采用组合球式双金属，具有相当高的刚度

三、优点

1、阀座设计外台阶与阀体设计内台阶相配合的结构，非常有效的防止球体与阀座发生卡阻、阀座脱离等现象。

2、流通面积大无流阻：这是因为开启后球体藏于阀腔内，无流阻直流通道，流道畅通不会出现积灰或卡死现象，压力损失小，介质不会沉积在阀腔内。

3、开关轻便：由于偏心的原理，开启时球体与阀座完全脱离开，无任何接触，启闭扭矩小，转90度即可启闭完成，操作轻便。

4、密封可靠，使用寿命长：在双偏心的作用下本阀在关闭时，偏心球体与阀座越关越紧，完全达到良好的密封目的；半球切口的球体与阀座之间具有剪切和挤切作用，能有效的除去密封面的结垢或污垢，保持良好的密封。在双偏心的作用下本阀在开启时，球体与阀座完全脱离开，无任何接触，球体与阀座不会产生摩擦，非常有效克服了传统球阀的球体密封面与阀座密封面始终摩擦的问题，故密封面受到良好的保护。密封面耐磨，阀座与球体留有补偿量，当阀座磨损后，关增长时再转动少许，仍能可靠密封，另阀座可调整或更换，延长使用寿命。这是半球阀最显著的特点。

1、Overview

PQ double eccentric semi-ball valve is designed on the basis of domestic and oversea technology , and is widely used in petroleum, chemical, electric power, metallurgy industry.

2、 Main application and characteristics of products

(1)General valve: It is widely used in sewage Treatment、pulp, alumina, urban heating supply industry.

(2)Chemical and oil specific type : It is used in crude oil, heavy oil and other products and medium corrosion resistance of the chemical industry.

(3)Special type of gas: Gas, natural gas, liquefied petroleum gas.

(4)Serous- specific type: Liquid and solid-state mixture.

(5)Coal, ash-specific category: It is used in power plants, water or gas pipelines.

3、 Advantage

(1)The design of body and base is scientific so it can make ball and the base link together.

(2) Circulation area is large and non-flow resistance is small.

(3) The open and close is convenient and the operation is easy.

(4)Sealing is reliable, long service life.

(5) We can produce wear-resistant, corrosion-resistance, high temperature valves according to different temperature and

四、执行标准 Implementation of standards

1、设计和制造：GB/T12237； API 608
Design and manufacture:

2、检验和试验：JB/T9092； API 598
Inspection and test:

3、法兰连接：JB/T79，HG20596，SH3046 ASME/ANSI B16.5
Flange connection:

4、结构长度：GB/T12221； ASME/ANSI B16.10
Face to face:

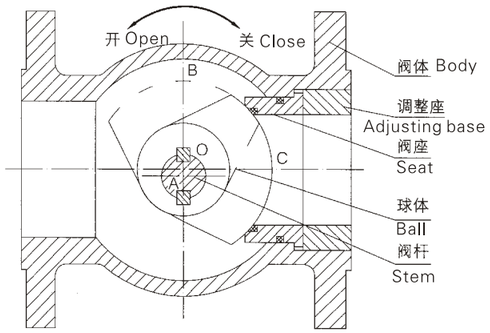
五、性能规范 Performance Specifications

公称压力 PN	0.6	1.0	1.6	2.5	4.0	6.4	Class150	Class300
常温最大工作压力 (MPa) Maximum working pressure at room temperature	0.6	1.0	1.6	2.5	4.0	6.4	2.0	5.0
壳体强度试验压力 (MPa) Test pressure on shell strength	0.9	1.5	2.4	3.8	6.0	9.6	3.0	7.5
气密封试验压力 (MPa) Gas Seal Test Pressure	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
高压密封试验压力 (MPa) High-pressure sealing test pressure	0.66	1.1	1.76	2.75	4.4	7.1	2.2	5.5
适用温度(℃) Temperature	软密封Soft sealing：-40℃~350℃；硬密封Hard sealing：-50℃~600℃							
适用介质 Media	天然气、水蒸汽、油品类、酸类、碱类、煤粉、煤灰、废渣、泥浆、含颗粒状、含纤维等各类介质 Natural gas, steam, oil type, acids, bases, coal, coal ash, sludge, mud, including granular, medium containing various types of fiber							
传动形式 Transmission form	蜗轮传动、电动传动、气动传动、液动传动 Turbo-drive, electric、pneumatic 、hydraulic							

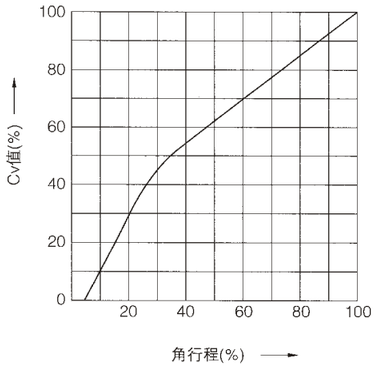
六、主要零件材料Materials for main parts

阀体、压板 Body and Plate	GB	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
	ASTM	WCB	CF8	CF8M	WC9
球体 Ball	GB	WCB+铬Cr	1Cr18Ni9Ti 表面特殊处理 Special treatment on surface	0Cr18Ni12Mo2Ti 表面特殊处理 Special treatment on surface	25Cr2Mo1V 表面特殊处理 Special treatment on surface
	ASTM	WCB+铬Cr	304+HF	316+HF	F22a+HF
阀杆 Stem	GB	2Cr13	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
	ASTM	420	304	316	F22a
阀座 Seat	GB	Q235A+PTFE 堆焊	1Cr18Ni9Ti/PTFE	0Cr18Ni12Mo2Ti/PTFE	25Cr2Mo1V/PTFE
	ASTM	420/PTFE	304/PTFE	316/PTFE	F22a/PTFE
填料 Packing	GB	柔性石墨：Flexible Graphite	柔性石墨：Flexible Graphite	柔性石墨：Flexible Graphite	柔性石墨：Flexible Graphite
	ASTM	柔性石墨：Flexible Graphite	柔性石墨：Flexible Graphite	柔性石墨：Flexible Graphite	柔性石墨：Flexible Graphite
螺栓 Bolt	GB	35	0Cr18Ni9	0Cr18Ni9	15Cr1Mo1V
	ASTM	A193 B7	A320-B8	A320-B8	A193 B16
螺母 Nut	GB	45	0Cr18Ni9	0Cr18Ni9	20CrMo
	ASTM	A194 B7	194-8	194-B	A194-4

注：可根据用户要求选用其它材料。
Note: We can select the other materials according to the customers' demands.



工作原理图： Working schematic



Rotary motion
等百分比特性： Features of Equal percentage

流量系数(Cv) **Flow coefficient**

阀门通径 DNmm Valve diameter		标准通道的阀门，球的开度(%) Valves for standard channels 、mouth of ball									
in	mm	10	20	30	40	50	60	70	80	90	100
3	80	8.40	18.90	33.60	46.20	63.00	92.40	147.00	210.00	319.20	420.00
4	100	15.40	34.70	61.60	84.70	115.50	169.40	269.50	385.00	585.00	770.00
6	150	36.00	81.00	144.00	198.00	270.00	396.00	630.00	900.00	1368.00	1800.00
8	200	68.00	153.00	272.00	374.00	50.00	748.00	1190.00	1700.00	2584.00	3400.00
10	250	118.00	265.00	472.00	649.00	885.00	1298.00	2065.00	2950.00	4484.00	5900.00
12	300	160.00	360.00	640.00	880.00	1200.00	1760.00	2800.00	4000.00	6080.00	8000.00
14	350	240.00	540.00	960.00	1320.00	1800.00	2640.00	4200.00	6000.00	9120.00	12000.00
16	400	280.00	630.00	1120.00	1540.00	2100.00	3080.00	4900.00	7000.00	10640.00	14000.00
18	450	360.00	810.00	1440.00	1980.00	2700.00	3960.00	6300.00	9000.00	13680.00	18000.00
20	500	440.00	99.00	1760.00	2420.00	3300.00	4840.00	7700.00	11000.00	16720.00	22000.00

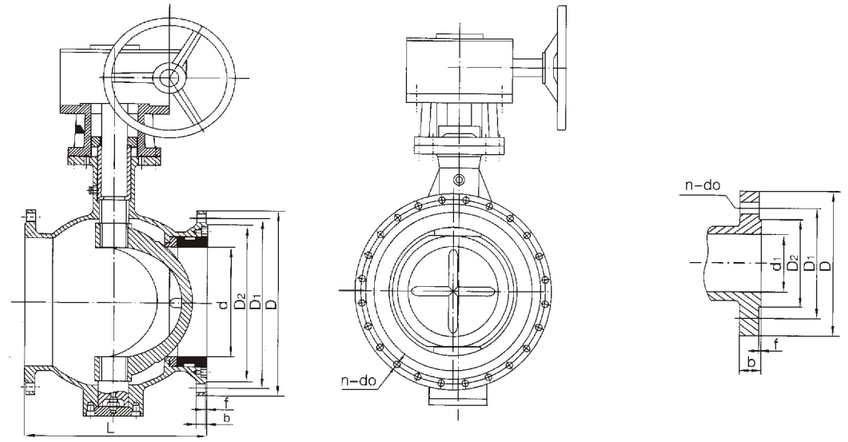
注：Cv流量系数。

流量系数是在压降1Lbf/in^{2}下，每分钟流过给定开度阀门的水的加仑数(USgal)。

表示球阀的所有Cv值都是根据60° F(16℃)的水得出的。(1Usgal=0.0038m^3)

Notes:

The flow coefficient of a device is a relative measure of its efficiency at allowing fluid flow. It describes the relationship between the pressure drop



主要外形和连接尺寸**Main external and connecting dimensions**

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension							
		L	D 系列1/系列2 Series 1 and series 2	D_1	D_2	D_6	b	f	Z–Φd
0.6	40	125	130	100	80	-	16	3	4-14
	50	140	140	110	90	-	16	3	4-14
	65	190	160	130	110	-	16	3	4-14
	80	178	190/185	150	125	-	18	3	4-18
	100	200	210/205	170	145	-	18	3	4-18
	125	254	240/235	200	175	-	20	3	8-18
	150	267	265/260	225	200	-	20	3	8-18
	200	292	320/315	280	255	-	22	3	8-18
	250	330	375/370	335	310	-	24	3	12-18
	300	356	440/435	395	362	-	24	4	12-23
	350	430	490/485	445	412	-	26	4	12-23
	400	530	540/535	495	462	-	28	4	16-23
	450	580	595/590	550	518	-	28	4	16-23
	500	630	645/640	600	568	-	30	4	16-23
	600	800	755	705	670	-	30	5	20-25

注：可根据其它法兰标准设计制造 We can design and manufacture other products according to other flange standard.

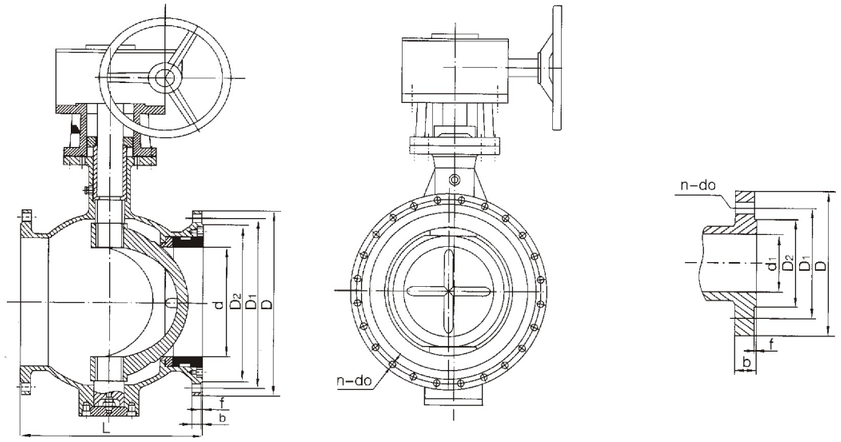
主要外形和连接尺寸 Main external and connecting dimensions

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension							
		L	D	D_1	D_2	D_6	b	f	Z–Φd
1.0	40	125	145	110	85	–	16	3	4-18
	50	140	160	125	100	–	16	3	4-18
	65	190	180	145	120	–	18	3	4-18
	80	178	195	160	135	–	20	3	4-18
	100	200	215	180	155	–	20	3	8-18
	125	254	245	210	185	–	22	3	8-18
	150	267	280	240	210	–	24	3	8-23
	200	292	335	295	265	–	24	3	8-23
	250	330	390	350	320	–	26	3	12-23
	300	356	440	400	368	–	26	4	12-23
	350	430	500	460	428	–	28	4	16-23
	400	530	565	515	482	–	28	4	16-25
	450	580	615	565	532	–	30	4	20-25
	500	630	670	620	585	–	30	4	20-25
	600	800	780	725	685	–	34	5	20-30
	700	900	895	840	800	–	38	5	24-30
	800	1000	1010	950	905	–	42	5	24-34
1.6	40	125	145	110	85	-	16	3	4-18
	50	140	160	125	100	-	16	3	4-18
	65	190	180	145	120	-	18	3	4-18
	80	178	195	160	135	-	20	3	8-18
	100	200	215	180	155	-	20	3	8-18
	125	254	245	210	185	-	22	3	8-18
	150	267	280	240	210	-	24	3	8-23
	200	292	335	295	265	-	26	3	12-23
	250	330	405	355	320	-	30	3	12-25
	300	356	460	410	375	-	30	4	12-25
	350	430	520	470	435	-	34	4	16-25
	400	530	580	525	485	-	36	4	16-30
	450	580	640	585	545	-	40	4	20-30
	500	630	705	650	608	-	44	4	20-34
	600	800	840	770	718	-	48	5	20-41
	700	900	910	840	788	-	50	5	24-41
	800	1000	1020	950	898	-	52	5	24-41

偏心半球阀
Eccentric semi-ball valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

主要外形和连接尺寸 Main external and connecting dimensions

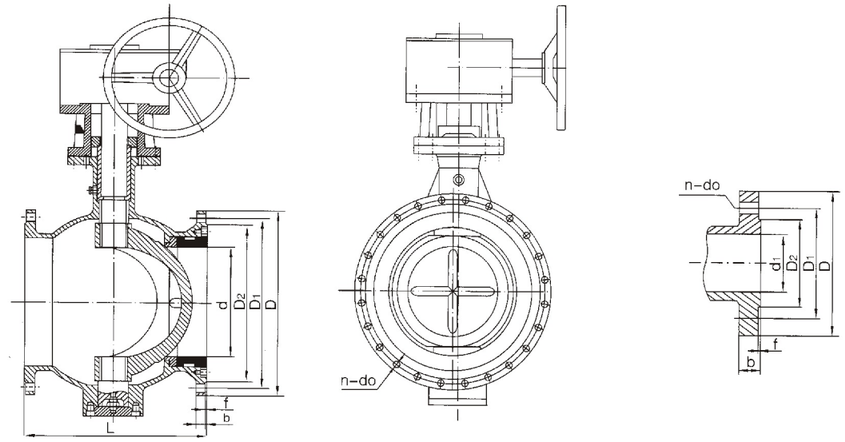
公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension							
		L	D	D_1	D_2	D_6	b	f	Z–Φd
2.5	40	125	145	110	85	-	18	3	4-18
	50	140	160	125	100	-	20	3	4-18
	65	190	180	145	120	-	22	3	8-18
	80	178	195	160	135	-	22	3	8-18
	100	200	230	190	160	-	24	3	8-23
	125	254	270	220	188	-	28	3	8-25
	150	267	300	250	218	-	30	3	8-25
	200	292	360	310	278	-	34	3	12-25
	250	330	425	370	332	-	36	3	12-30
	300	356	485	430	390	-	40	4	16-30
	350	430	550	490	448	-	44	4	16-34
	400	530	610	550	505	-	48	4	16-34
	450	580	660	600	555	-	50	4	20-34
	500	630	730	660	610	-	52	4	20-41
	600	800	840	770	718	-	56	5	20-41
	700	900	955	875	815	-	60	5	24-48
	800	1000	1070	990	930	-	64	5	24-48
4.0	40	125	145	110	85	76	18	3	4-18
	50	140	160	125	100	88	20	3	4-18
	65	190	180	145	120	110	22	3	8-18
	80	178	195	160	135	121	22	3	8-18
	100	200	230	190	160	150	24	3	8-23
	125	254	270	220	188	176	28	3	8-25
	150	267	300	250	218	204	30	3	8-25
	200	292	375	320	282	260	38	3	12-30
	250	330	445	385	345	313	42	3	12-34
	300	356	510	450	408	364	46	4	16-34
	350	430	570	510	465	422	52	4	16-34
	400	530	655	585	535	474	58	4	16-41
	450	580	680	610	560	524	60	4	20-41
	500	630	755	670	612	576	62	4	20-48
	600	800	890	795	730	678	62	5	20-54
	700	900	995	900	835	768	68	5	24-54
	800	1000	1135	1030	960	876	76	5	24-58



石油化工专用阀连接尺寸表 **Connection size table of dedicated petrochemical valves**

尺寸 Size / 口径英寸 Diameter (inch)	阀体长度 Length of valve body L	法兰连接尺寸 (mm) Flange connection size					
		D	D1	D2	n-do	b	f
ANSI CLASS 150磅级 Class (Lb)							
2	140	152	120.5	92	4-19	19	1.6
2 1/2	190	178	139.5	105	4-19	22	1.6
3	203	190	152.5	127	4-19	23.9	1.6
4	200	229	190.5	157	8-19	23.9	1.6
5	254	254	216	186	8-22	23.9	1.6
6	267	279	241.5	216	8-22	25.4	1.6
8	292	343	298.5	270	8-22	28.6	1.6
10	330	406	362	324	12-25	30.2	1.6
12	356	483	432	381	12-25	31.8	1.6
14	430	533	476.5	413	12-29	35	1.6
16	530	597	539.5	470	16-29	36.6	1.6
20	630	698	635	584	20-32	42.9	1.6
24	800	813	749.5	692	20-35	47.8	1.6
28	900	927	863.6	800.1	28-35	71.4	1.6

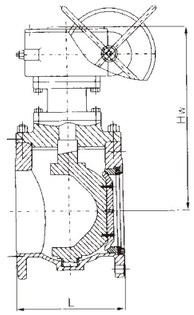
偏心半球阀
Eccentric semi-ball valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

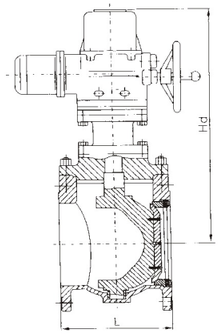


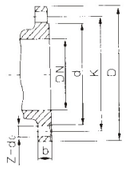
石油化工专用阀连接尺寸表 **Connection size table of dedicated petrochemical valves**

尺寸 Size / 口径英寸 Diameter (inch)	阀体长度 Length of valve body L	法兰连接尺寸 (mm) Flange connection size					
		D	D1	D2	n-do	b	f
ANSI CLASS 300磅级 Class (Lb)							
2	140	165	127	92	8-19	22.3	1.6
2 1/2	190	190	149	105	8-22	25.4	1.6
3	203	210	168	127	8-22	28.6	1.6
4	200	254	200	157	8-22	31.8	1.6
5	254	279	235	186	8-22	35	1.6
6	267	318	270	216	12-22	36.5	1.6
8	292	381	330	270	12-25	41.3	1.6
10	330	444	387.5	324	16-29	47.7	1.6
12	390	520.8	451	381	16-32	50.8	1.6
14	430	584.2	514.4	412.8	20-32	53.8	1.6
16	530	647.8	571.5	469.9	20-35	57.2	1.6
20	630	774.8	685.8	584.2	24-35	63.5	1.6
24	800	914.4	812.8	692.2	24-41	69.8	1.6
28	900	1035	939.8	800.1	28-45	85.9	1.6









一、概述

上装式偏心半球阀是在吸收消化国内外的先进技术而研发成功的新产品，它是将金属球冠固定在偏心球体上，通过偏心曲轴的90度旋转，实现阀门的启闭，与金属球冠密封面接触的金属阀座在轴向和径向浮动，以补偿球冠与阀座的配合。该阀应用于石油、化工、电力和冶金等行业，阀门结构采用偏心楔紧原理，通过传动机构达到开阀、调节、关闭的目的，密封圈与球冠都是金属面环带硬面接触密封，双偏心结构阀门在开启时球体藏于阀腔内，流通截面大，且阀门不被冲刷，无流阻。关闭时阀芯不被冲刷，关闭时阀芯球面沿阀座渐进，具有剪切功能，有效地切除结垢障碍，实现可靠密封。它对容易结垢的介质输送特别有效。本阀半球是将金属球冠固定在偏心球体上，在球体上装不同合金的球冠，阀座也作相应堆焊合金，经特殊的处理，密封面组合成防腐、耐磨、耐高温等各种类型，满足不同场合需求。阀座与球冠留有补偿量，当阀座磨损后，关闭时再转动少许，仍能可靠密封，延长使用寿命。本阀的最大的特点是在工况装

二、适用

1、适用于清水，原水(含泥砂)，污水，海水，蒸汽水，油，氧化铝，城市采暖供热等要求严格的系统中。

2、软密封偏心半球阀适用温度-40摄氏度~200摄氏度；而硬密封偏心半球阀适用温度为常温至600摄氏度左右。

3、适用于水坝底部放空阀和控制阀(高流速状态)，煤粉灰渣，适用于液态、固态两相混流或液态输送中化学反应有结晶析出或结垢的工业管道输送。产品结构特点根据顾客所需介质、温度要求不同，球冠采用铬钼、钒合金，阀座堆焊铬、钼合金、铬合金、不锈钢合金满足不同料浆输送的需要。

4、适用于泵输送系统的阀门，如加压系统，中央空调系统。

1、Overview

Top entry style eccentric semi-ball valve is widely used in petroleum, chemical, electric power, metallurgy and other industries.

2、Application

（1）The media can be clean water、raw water (including sediment)、sewage 、sea water, distilled water、oil、 alumina and urban heating supply system.

（2）The application of temperature for soft sealed top entry style eccentric semi-ball valve is -40℃-200℃; and for hard sealed top entry style eccentric semi-ball valve is from room temperature to 600℃.

（3）It is used in industrial pipeline and other pipeline according to the needs of customers.

（4）It is used in pump delivery system such as pressurized system and central air-conditioning system.

（5）It is used in water system, gas system, natural gas system and other underground pipelines.

三、特点

1、压力损失小：全开时水损为零，流道完全畅通；内腔自动清洗，阀芯90度旋转，自动冲洗阀体内腔，将介质中的杂物清洗干净并且介质不会沉积在阀腔内。球体为半球形，流通具有最高的Cv值，增强了泵的系统效率，并使磨蚀降为最低程度。

2、耐颗粒磨损：利用双偏心的原理在关闭过程中，只在最后一刻球冠才靠向阀座，而不形成摩擦；且阀座上的密封环堆焊耐磨自润滑合金，不易磨损，不易被冲刷；刀形球口的球冠与阀座之间具有擦拭清扫和剪切作用，不易结垢。

3、自动补偿密封可靠：正压时，利用偏心的原理，球体与阀座越关越紧，从而得到良好的密封；反压时，浮动式阀座在受压作用下，阀座自动向球体推紧，压力越高，阀座向球体越推越紧，从而得到良好的密封；可保持持久的紧密封，能适应苛刻的工况。在长期的使用下，阀座密封如有磨损或损伤，在弹簧作用下阀座自动向球体推紧，从而得到良好的自动补偿功能。

4、适合高流速介质：因球体隐藏在阀腔的一侧而形成直通流道无流阻，坚固的偏心固定曲轴，在高流速的介质中无振动、无噪音。

5、寿命长开关轻松：无易损部件，由于偏心的作用，阀门启闭过程中球体与阀座的密封面完全脱离，使阀座表面与球冠球面间无擦伤做无摩擦转动，有效地减少了操作力矩扭，操作轻巧，阀门的自动补偿功能，大大的提高了阀门的寿命。

6、维修方便：本阀上装式设计，球冠和支球体从阀门上部装入；检修时只需打开阀盖吊出球冠和支球体即可进行维修和密封环及其他配件，不必将整个阀门从管道上卸下来，这给地下管线，特别是原子能工业用球阀带来很大方便。

7、本阀门在维修作业的同时可以酌情保留管道中的介质，不会造成能源的浪费；这便免除了使用方许多前期辅助工作，使维修变得较为简捷。

8、在一些特定的场合，本阀门在进行抢修期间可以不影响管道系统的正常运行，只要在取出球体组合件后迅速封闭上口便可立即恢复管

3、Features

（1）The pressure loss is small. Water loss is zero when the valve is totally open and the flow is completely smooth.

（2） Wear-resistant granules: It adopt the principle of double eccentric, the spherical cap will close to the valve base and so the friction is small.

(3) Automatic compensation on good sealing: If it was long used the spring will operate.

(4) Suitable for high-velocity medium: Because of the ball is hidden behind the valve chamber so the flow is smooth.

(5) Long service life, easy switch: No fragile parts

(6) Convenient maintenance: The valve adopts top entry structure.

(7) We can save the media at the same time with maintenance, so this will not waste any resource.

四、执行标准 Implementation of standards

1、设计和制造：GB/T12237
Design and manufacture:

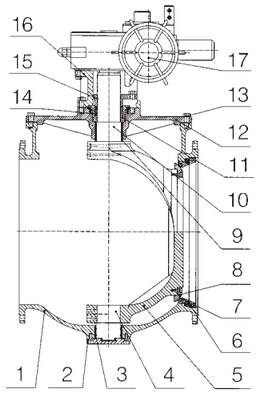
2、检验和试验：JB/T9092
Inspection and testing:

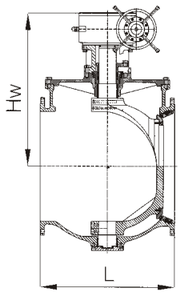
3、法兰连接：GB/T9113，JB/T79，HG20596，SH3406；
Flange connection:

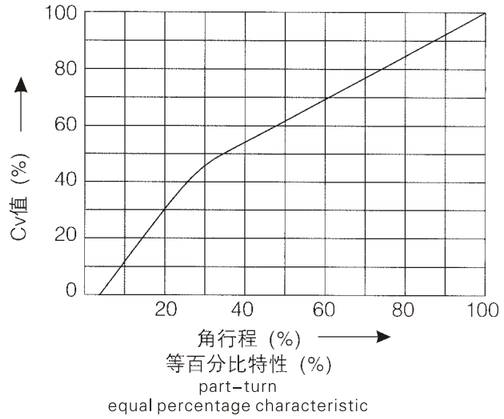
4、结构长度：JD-2004
Face to face and end to end connection:

五、性能规范 Performance Specifications

公称压力 PN PN	1.0	1.6	2.5	4.0
常温最大工作压力 (MPa) Maximum working pressure at room temperature	1.0	1.6	2.5	4.0
壳体强度试验压力 (MPa) Test pressure on shell strength	1.5	2.4	3.8	6.0
气密封试验压力 (MPa) Gas Seal Test Pressure	0.6	0.6	0.6	0.6
高压密封试验压力 (MPa) High-pressure sealing test pressure	1.1	1.76	2.75	4.4
适用温度(℃) Temperature	软密封Soft sealing：-40℃~200℃；硬密封Hard sealing：-29℃~600℃			
适用介质 Media	天然气、水蒸汽、油品类、酸类、碱类、煤粉、煤灰、废渣、泥浆、含颗粒状、含纤维等各类介质。 Natural gas, steam, oil type, acids, bases, coal, coal ash, sludge, mud, including granular, medium containing various types of fiber			
传动形式 Transmission form	蜗轮传动、电动传动、气动传动、液动传动 Turbo-drive, electric、pneumatic 、hydraulic			



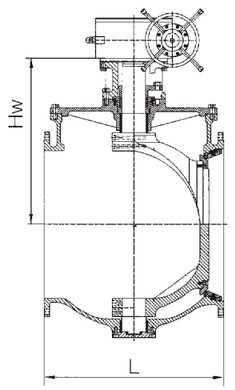


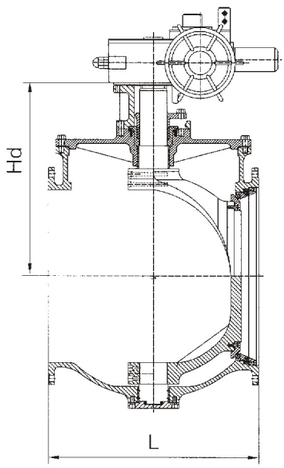


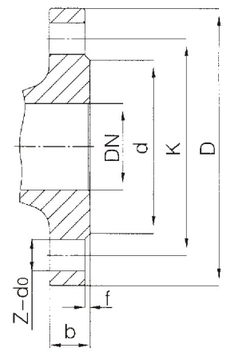
六、主要零件材料 Materials for the main parts

序号 Item	名称 Name	材质：Material			
1	阀体 Body	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
2	后盖 Back bonnet	Q235A	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
3	轴套 Sleeve	SF-1	FB090	FB316	FB090
4	下阀杆 Top Stem	2Cr13	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	1Cr18Ni9Ti
5	球体 Ball	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
6	压板 Platen	Q235A	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
7	阀座 Seat	Q235A+PTFE	1Cr18Ni9Ti/PTFE	0Cr18Ni12Mo2Ti/PTFE	25Cr2Mo1V/PTFE
8	球冠 Spherical cap	1Cr18Ni9Ti 特殊处理 Special treatment	1Cr18Ni9Ti 特殊处理 Special treatment	0Cr18Ni12Mo2Ti 特殊处理 Special treatment	1Cr18Ni9Ti 特殊处理 Special treatment
9	轴套 Sleeve	SF-1	FB090	FB316	FB090
10	上阀杆 top stem	2Cr13	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	1Cr18Ni9Ti
11	填料盘 Filler plate	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
12	阀盖 Bonnet	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
13	螺栓 Bolt	35	0Cr18Ni9	0Cr18Ni9	15Cr1Mo1V
	螺母 Nut	35/45	0Cr18Ni9	0Cr18Ni9	20CrMo
14	填料 Packing	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite
15	压盖 Gland	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
16	支架 Stent	WCB	WCB	WCB	WCB
17	电动头 Electric device	组合件Assembly			

注：可根据用户要求选用其它材料。
Note: We can use other materials in accordance with customers' requirments.







主要连接尺寸 Main connecting size

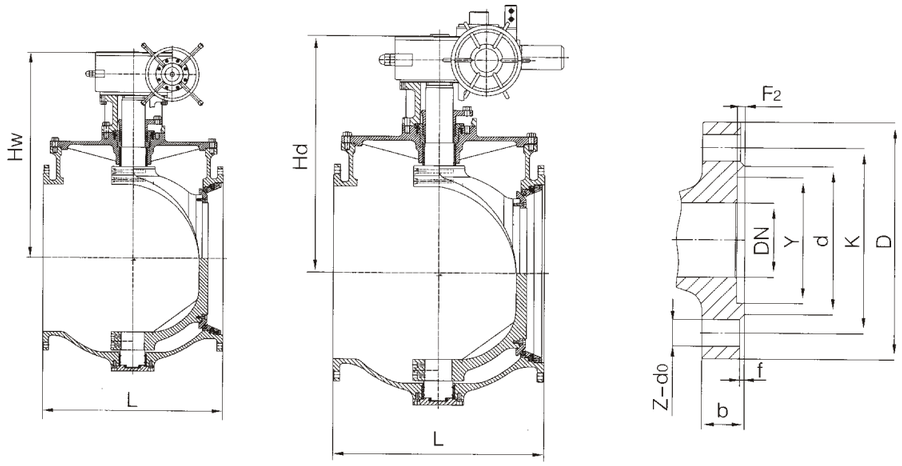
公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺寸 (mm) Dimension								
		L	D	K	d	b	f	z-do	Hw	Hd
1.0MPa	100	229	220	180	156	22	2	8-Φ18	330	380
	125	254	250	210	184	22	2	8-Φ18	345	405
	150	267	285	240	211	24	2	8-Φ22	370	440
	200	292	340	295	266	24	2	8-Φ22	405	470
	250	330	395	350	319	26	2	12-Φ22	480	540
	300	356	445	400	370	26	2	12-Φ22	520	580
	350	430	505	460	429	26	2	16-Φ22	570	630
	400	530	565	515	480	26	2	16-Φ26	630	710
	450	580	615	565	530	28	2	20-Φ26	690	770
	500	660	670	620	582	28	2	20-Φ26	740	820
	600	840	780	725	682	34	2	20-Φ30	840	940
	700	900	895	840	794	34	5	24-Φ30	960	1040
	800	1000	1015	950	901	36	5	24-Φ33	1080	1180
	900	1100	1115	1050	1001	38	5	28-Φ33	1190	1280
	1000	1200	1230	1160	1112	38	5	28-Φ36	1310	1420
	1100	1250	1340	1270	1222	42	5	28-Φ36	1390	1480
	1200	1300	1455	1380	1328	44	5	32-Φ39	1420	1530
	1400	1500	1675	1590	1530	48	5	36-Φ42	1540	1650
	1600	1800	1915	1820	1750	52	5	40-Φ48	1660	1750
	1800	2000	2115	2020	1950	56	5	44-Φ48	1790	1860
	2000	2200	2325	2230	2150	60	5	48-Φ48	1920	1990

注：可根据其它法兰标准设计制造
Notes：We can design and manufacture other flange standards.

主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension								
		L	D	K	d	b	f	z-d0	Hw	Hd
1.6MPa	100	229	220	180	156	22	2	8-Φ18	330	380
	125	254	250	210	184	22	2	8-Φ18	345	405
	150	267	285	240	211	24	2	8-Φ22	370	440
	200	292	340	295	266	24	2	12-Φ22	405	470
	250	330	405	355	319	26	2	12-Φ26	480	540
	300	356	460	410	370	28	2	12-Φ26	520	580
	350	430	520	470	429	30	2	16-Φ26	570	630
	400	530	580	525	480	32	2	16-Φ30	630	710
	450	580	640	585	548	40	2	20-Φ30	690	770
	500	660	715	650	609	44	2	20-Φ33	740	820
	600	840	840	770	720	54	2	20-Φ36	840	940
	700	900	910	840	794	50	5	24-Φ36	960	1040
	800	1000	1025	950	901	42	5	24-Φ39	1080	1180
	900	1100	1125	1050	1001	44	5	28-Φ39	1190	1280
	1000	1200	1255	1170	1112	46	5	28-Φ42	1310	1420
	1100	1250	1370	1290	1222	48	5	28-Φ42	1390	1480
	1200	1300	1485	1390	1328	52	5	32-Φ48	1420	1530
	1400	1500	1685	1590	1530	58	5	36-Φ48	1540	1650
	1600	1800	1930	1820	1750	64	5	40-Φ55	1660	1750
	1800	2000	2130	2020	1950	68	5	44-Φ55	1790	1860
	2000	2200	2345	2230	2150	70	5	48-Φ60	1920	1990
2.5MPa	100	229	235	190	156	24	2	8-Φ22	330	380
	125	254	270	220	184	26	2	8-Φ26	345	405
	150	267	300	250	211	28	2	8-Φ26	370	440
	200	292	360	310	274	30	2	12-Φ26	405	470
	250	330	425	370	330	32	2	12-Φ30	480	540
	300	356	485	430	389	34	2	16-Φ30	520	580
	350	430	555	490	448	38	2	16-Φ33	570	630
	400	530	620	550	503	40	3	16-Φ36	630	710
	450	580	670	600	548	46	3	20-Φ36	690	770
	500	660	730	660	609	48	3	20-Φ36	740	820
	600	840	845	770	720	48	3	20-Φ39	840	940
	700	900	960	875	820	50	5	24-Φ42	960	1040
	800	1000	1085	990	928	54	5	24-Φ48	1080	1180
	900	1100	1185	1090	1028	58	5	28-Φ48	1190	1280
	1000	1200	1320	1210	1140	62	5	28-Φ55	1310	1420
	1100	1250	1425	1315	1245	65	5	28-Φ55	1390	1480
	1200	1300	1530	1420	1350	70	5	32-Φ55	1420	1530
	1400	1500	1755	1640	1560	76	5	36-Φ60	1540	1650
	1600	1800	1975	1860	1780	84	5	40-Φ60	1660	1750
	1800	2000	2195	2070	1985	90	5	44-Φ68	1790	1860
	2000	2200	2425	2300	2210	96	5	48-Φ68	1920	1990

上装式偏心半球阀
Top entry eccentric semi-ball valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司



主要连接尺寸 Main connecting size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	f	F2	b	z-d0	Hw	Hd
4.0MPa	100	229	235	190	160	150	3	4.5	24	8-Φ22	330	380
	125	254	270	220	188	176	3	4.5	26	8-Φ26	345	405
	150	267	300	250	218	204	3	4.5	28	8-Φ26	370	440
	200	292	375	320	282	260	3	4.5	34	12-Φ30	405	470
	250	330	450	385	345	313	3	4.5	38	12-Φ34	480	540
	300	356	515	450	408	364	4	4.5	42	16-Φ34	520	580
	350	430	580	510	465	422	4	5	46	16-Φ34	570	630
	400	530	660	585	535	474	4	5	50	16-Φ41	630	710
	450	580	685	610	560	524	4	5	57	20-Φ41	690	770
	500	660	755	670	612	576	4	5	57	20-Φ48	740	820
	600	840	890	795	730	678	5	6	62	20-Φ54	840	940
	700	900	995	900	835	768	5	6	68	24-Φ54	960	1040
	800	1000	1140	1030	960	876	5	6	76	24-Φ58	1080	1180
	900	以下产品为非标产品，如有需要请与厂方沟通定购 The products as follows are non-standard products, if you are in need please contact the manufacturer to order.										
	1000											
	1200											
	1400											

一、概述

上装式双向硬(软)偏心球阀是在吸收消化国内外的先进技术而研发成功的新产品，也是根据上装式偏心半球阀的原理设计创新，也是填补国内阀门品种空白的创新产品，是在认真权衡普通球阀、蝶阀、闸阀等多种阀门优缺点的前提下。本系列球阀是传统球阀富有灵性变化的结晶；它是将两个金属球冠固定在偏心球体上，通过偏心曲轴的90度旋转，实现阀门的启闭，与金属球冠密封面接触的金属阀座在轴向和径向浮动，以补偿球冠与阀座的配合误差。简单可靠的结构及有效的密封方式使它不但可以更具优势地替代闸阀，而且可适用于它不可使用的系统中。其核心技术属国内首创，它设计独特、结构新颖。

第一个特点：阀门结构采用偏心楔紧原理，通过传动机构达到开阀、调节、关闭的目的，密封圈与球冠都是金属面环带硬面接触密封，双偏心结构阀门在开启时球孔与管道完全畅通，流通截面大，且阀门不被冲刷，无流阻。关闭时阀芯不被冲刷，关闭时阀芯球面沿阀座渐进，具有擦试剪切功能，有效地切除结垢障碍，实现可靠密封。它对容易结垢的介质输送特别有效。

第二个特点：双阀座双球冠阀组成双面密封，双向受压，和Q47的原理一样，不受介质流向的限制，可以任意安装；座与球冠留有补偿量，当阀座磨损后，关闭时再转动少许，仍能可靠密封，延长使用寿命。本阀的最大特点是在工况装置系统卸压后，阀门可在线检查和检修，检修时只需打开阀盖吊出球冠和支承体而不必将整个阀门从管道上卸下来，这给地下管线，特别是原子能工业用球阀带来很大方便。

二、适用

1、适用于清水，原水(含泥砂)，污水，海水，蒸水，油，氧化铝，城市采暖供热等要求严紧的系统中。

2、双向软密封偏心半球阀适用温度-40摄氏度~200摄氏度；而双向硬密封偏心半球阀适用温度为常温至600摄氏度左右。

3、适用于水坝底部放空阀和控制阀(高流速状态)，煤粉灰渣，适用于液态、固态两相混流或液态输送中化学反应有结晶析出或结垢的工业管道输送。产品结构特点根据顾客所需介质、温度要求不同，球冠采用铬钼、钒合金，阀座堆焊铬、钼合金、铬合金、不锈钢合金满足不同料浆输送的需要。

4、适用于泵输送系统的阀门，如加压系统，中央空调系统。

三、特点

1、压力损失小：上装式双向硬(软)偏心球阀由不同心的两个偏心球冠组成，全开时，其流道为直流通道，水头损失极小，水损为零，流通完全畅通；内腔自动清洗，阀芯90度旋转，自动冲洗阀体内腔，将介质中的杂物清洗干净并且介质不会沉积在阀腔内。

2、耐颗粒磨损：关闭时，利用双偏心的原理在关闭过程中，由两个不同偏心球冠分别与双向偏移的两个阀座只在最后一刻接触并实现双向密封，而不形成摩擦；且阀座上的密封环堆焊耐磨自润滑合金，不易磨损，不易被冲刷；刀形球口的球冠与阀座之间具有擦拭清扫和剪切作用，不易结垢，即使严重结垢的介质也不影响密封和关闭。

3、自动补偿密封可靠：由两个不同偏心双球冠双阀座构成了双密封，双向受压都有非常良好的密封；工作原理利用偏心，球体与阀座越关越紧，从而得到良好的密封；在则阀座在受压时，阀座自动向球体推紧，压力越高阀座向球体越推越紧，从而得到良好的密封；因此本阀属于双向压，双向压也能达到100%的零泄漏；在长期的使用下，阀座密封如有磨损或损伤，在弹簧作用下阀座自动向球体推紧，从而得到良好的自动补偿功能。

4、适合高流速介质：因球体隐藏在阀腔的一侧而形成直通流道无流阻，坚固的偏心固定曲轴，在高流速的介质中无振动、无噪音。

5、寿命长开关轻松：无易损部件，由于偏心的作用，阀门启闭过程中两个球冠与阀体上两个阀座的密封面完全脱离，使阀座表面与球冠球面间无擦伤做无摩擦转动，有效地减少了操作力矩扭，操作轻巧，阀门的自动补偿功能，大大的提高了阀门的寿命。

6、维修方便：本阀上装式设计，球冠和支球体从阀门上部装入；检修时只需打开阀盖吊出球冠和支球体即可进行维修和密封环及其他配件，不必将整个阀门从管道上卸下来，这给地下管线，特别是原子能工业用球阀带来很大方便。

7、本阀门在维修作业的同时可以酌情保留管道中的介质，不会造成能源的浪费；这便免除了使用方许多前期辅助工作，使维修变得较为简捷。

8、在一些特定的场合，本阀门在进行抢修期间可以不影响管道系统的正常运行，只要在取出球体组合件后迅速封闭上口便可立即

上装式双向偏心半球阀
Top entry style two-way eccentric semi-ball valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司

1、Overview

It is designed and manufactured on the basis of ball vale 、butterfly valve、gate valve. The first feature is the valve adopt eccentric structure and it will be open or close through transmission structure.
The second feature is double sealed sealing.

2、Application

（1）The media can be clean water、raw water (including sediment)、sewage 、sea water, distilled water、oil、 alumina and urban heating supply system.
（2）The application of temperature for soft sealed top entry style eccentric semi-ball valve is -40℃-200℃; and for hard sealed top entry style eccentric semi-ball valve is from room temperature to 600℃.
（3）It is used in industrial pipeline and other pipeline according to the needs of customers.
（4）It is used in pump delivery system such as pressurized system and central air-conditioning system.
（5）It is used in water system, gas system, natural gas system and other underground pipelines.

3、Features

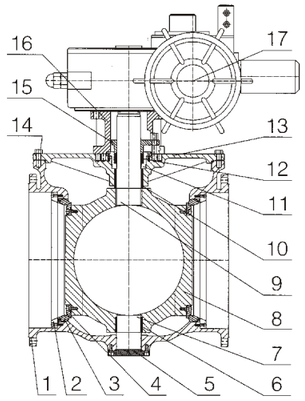
（1）The pressure loss is small. Water loss is zero when the valve is totally open and the flow is completely smooth.
（2）Wear-resistant granules： It adopt the principle of double eccentric, the spherical cap will close to the valve base and so the friction is small.
(3) Automatic compensation on good sealing: If it was long used the spring will operate.
(4) Suitable for high-velocity medium: Because of the ball is hidden behind the valve chamber so the flow is smooth.
(5) Long service life, easy switch: No fragile parts
(6) Convenient maintenance: The valve adopts top entry structure.
(7) We can save the media at the same time with maintenance, so this will not waste any resource.

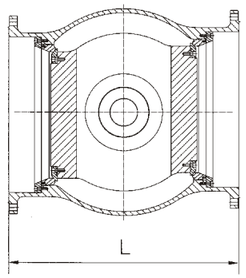
四、执行标准 Implementation of standards

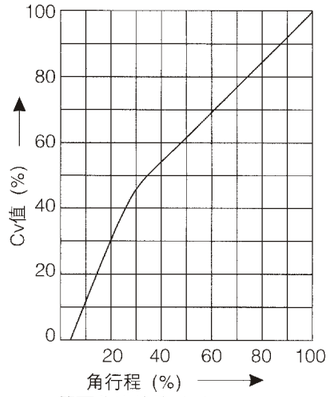
1、设计和制造：GB/T12237
Design and manufacture:
2、检验和试验：JB/T9092
Inspection and testing:
3、法兰连接：GB/T9113，JB/T79，HG20596，SH3406
Flange connection:
4、结构长度：JD-2004
Face to face and end to end connection:

五、性能规范 Performance Specifications

公称压力 PN PN	1.0	1.6	2.5	4.0	6.4	Class150	Class300
常温最大工作压力 (MPa) Maximum working pressure at room temperature	1.0	1.6	2.5	4.0	6.4	2.0	5.0
壳体强度试验压力 (MPa) Test pressure on shell strength	1.5	2.4	3.8	6.0	9.6	3.0	7.5
气密封试验压力 (MPa) Gas Seal Test Pressure	0.6	0.6	0.6	0.6	0.6	0.6	0.6
高压密封试验压力 (MPa) High-pressure sealing test pressure	1.1	1.76	2.75	4.4	7.1	2.2	5.5
适用温度(℃) Temperature	软密封Soft sealing:-40℃~200℃； 硬密封Hard sealing:-29℃~600℃						
适用介质 Media	天然气、水蒸汽、油品类、酸类、碱类、煤粉、煤灰、废渣、泥浆、含颗粒状、含纤维等各类介质。 Natural gas, steam, oil type, acids, bases, coal, coal ash, sludge, mud, including granular, medium containing various types of fiber						
传动形式 Transmission form	蜗轮传动、电动传动、气动传动、液动传动 Turbo-drive, electric、pneumatic 、hydraulic						







等百分比特性 (%)
part-turn
equal percentage characteristic

六、主要零件材料 Materials for the main parts

序号Item	名称 Name	材质：Material			
1	阀体 Body	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
2	压板：Platen	Q235A	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
3	阀座：Seat	Q235A+PTFE	1Cr18Ni9Ti/PTFE	0Cr18Ni12Mo2Ti/PTFE	25Cr2Mo1V/PTFE
4	球冠 Spherical cap	1Cr18Ni9Ti 特殊处理 Special treatment	1Cr18Ni9Ti 特殊处理 Special treatment	0Cr18Ni12Mo2Ti 特殊处理 Special treatment	1Cr18Ni9Ti 特殊处理 Special treatment
5	后盖 Back bonnet	Q235A	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
6	轴套 Sleeve	SF-1	FB090	FB316	FB090
7	下阀杆 Top Stem	2Cr13	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	1Cr18Ni9Ti
8	球体：Ball	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
9	上阀杆：top stem	2Cr13	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	1Cr18Ni9Ti
10	轴套：Sleeve	SF-1	FB090	FB316	FB090
11	填料盘：Filler plate	Q235A	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
12	填料：Packing	柔性石墨Flexible Graphite	柔性石墨Flexible Graphite	柔性石墨Flexible Graphite	柔性石墨Flexible Graphite
13	阀盖：Bonnet	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
14	螺栓：Bolt	35	0Cr18Ni9	0Cr18Ni9	15Cr1Mo1V
	螺母：Nut	45	0Cr18Ni9	0Cr18Ni9	20CrMo
15	压盖：Gland	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
16	支架：Stent	WCB	WCB	WCB	WCB
17	电动头 Electric device	组合件 Assembly			

注：可根据用户要求选用其它材料。
Note: We can use other materials in accordance with customers' requirments.

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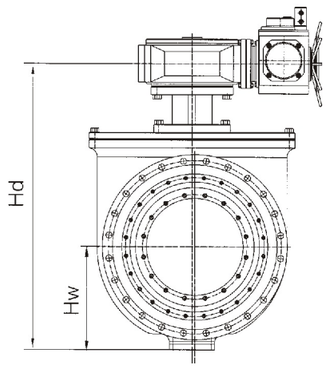

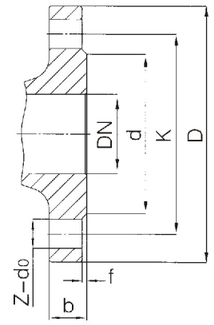

主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension								
		L	D	K	d	f	b	z-do	Hw	Hd
1.0MPa	250	450	395	350	319	2	26	12-Φ22	230	850
	300	520	445	400	370	3	26	12-Φ22	245	1000
	350	580	505	460	429	3	26	16-Φ22	280	1050
	400	650	565	515	480	4	26	16-Φ26	310	1220
	450	720	615	565	530	4	28	20-Φ26	350	1250
	500	800	670	620	582	4	28	20-Φ26	390	1450
	600	980	780	725	682	5	34	20-Φ30	445	1530
	700	1080	895	840	794	5	34	24-Φ30	500	1850
	800	1180	1015	950	901	5	36	24-Φ33	560	1950
	900	1300	1115	1050	1001	5	38	28-Φ33	630	2200
	1000	1420	1230	1160	1112	5	38	28-Φ36	700	2400
	1100	1550	1340	1270	1222	5	42	28-Φ36	780	2700
	1200	1700	1455	1380	1328	5	44	32-Φ39	860	2900
	1400	1900	1675	1590	1530	5	48	36-Φ42	980	3150

注：可根据用户要求选用其它材料。
Note: We can use other materials in accordance with customers' requirments.

主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension								
		L	D	K	d	f	b	z-d0	Hw	Hd
1.6MPa	250	450	405	350	319	2	26	12-Φ26	230	850
	300	520	460	410	370	3	28	12-Φ26	245	1000
	350	580	520	470	429	3	30	16-Φ26	280	1050
	400	650	580	525	480	4	32	16-Φ30	310	1220
	450	720	640	585	548	4	40	20-Φ30	350	1250
	500	800	715	650	609	4	44	20-Φ33	390	1450
	600	980	840	770	720	5	54	20-Φ36	445	1530
	700	1080	910	840	794	5	50	24-Φ36	500	1850
	800	1180	1025	950	901	5	42	24-Φ39	560	1950
	900	1300	1125	1050	1001	5	44	28-Φ39	630	2200
	1000	1420	1255	1160	1112	5	46	28-Φ42	700	2400
	1100	1550	1370	1280	1222	5	48	28-Φ42	780	2700
	1200	1700	1485	1380	1328	5	52	32-Φ48	860	2900
	1400	1900	1685	1590	1530	5	58	36-Φ48	980	3150
2.5MPa	250	450	425	370	330	2	32	12-Φ30	230	850
	300	520	485	430	389	2	34	16-Φ30	245	1000
	350	580	555	490	448	2	38	16-Φ33	280	1050
	400	650	620	550	503	3	40	16-Φ36	310	1220
	450	720	670	600	548	3	46	20-Φ36	350	1250
	500	800	730	660	609	3	48	20-Φ36	390	1450
	600	980	845	770	720	3	48	20-Φ39	445	1530
	700	1080	960	875	820	5	50	24-Φ42	500	1850
	800	1180	1085	990	928	5	54	24-Φ48	560	1950
	900	1300	1185	1090	1028	5	58	28-Φ48	630	2200
	1000	1420	1320	1210	1140	5	62	28-Φ55	700	2400
	1100	1550	1425	1315	1245	5	65	28-Φ55	780	2700
	1200	1700	1530	1420	1350	5	70	32-Φ55	860	2900
	1400	1900	1755	1640	1560	5	76	36-Φ60	980	3150

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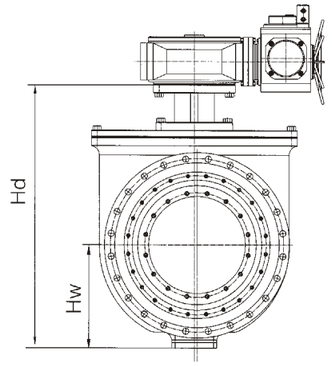
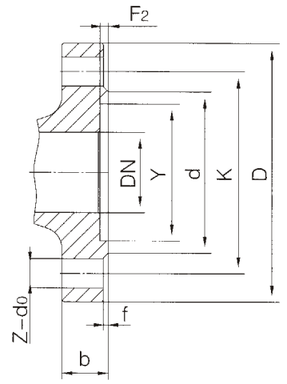


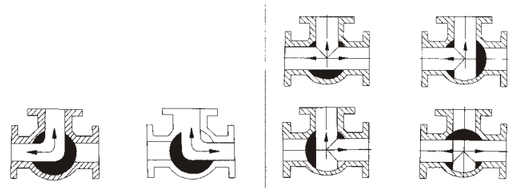


主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	f	F2	b	z-d0	Hw	Hd
4.0MPa	250	450	450	385	345	313	3	4.5	38	12-Φ34	230	850
	300	520	515	450	408	364	3	4.5	42	16-Φ34	245	1000
	350	580	580	510	465	422	3	4.5	46	16-Φ34	280	1050
	400	650	660	585	535	474	4	5	50	16-Φ41	310	1220
	450	720	685	610	560	524	4	5	57	20-Φ41	350	1250
	500	800	755	670	612	576	4	5	57	20-Φ48	390	1450
	600	980	890	795	730	678	5	6	62	20-Φ54	445	1530
	700	1080	995	900	835	768	5	6	68	24-Φ54	500	1850
	800	1180	1140	1030	960	876	5	6	76	24-Φ58	560	1950
	900	以下产品为非标产品，如有需要请与厂方沟通定购 The products as follows are non-standard products, if you are in need please contact the manufacturer to order.										
	1000											
	1200											
	1400											

Q44F、Q45F





一、结构特点及用途Structure and usage

1、结构紧凑、启闭迅速、流道畅通、流体阻力小。
2、密封性能好：利用四面阀座材料聚四氟乙烯弹性变形实现无泄漏密封。
3、一阀多用：任一通口可用作入口而无泄漏，三通既可制成L型通口，也可制成T型通口。
4、维修方便：在系统卸压后，无需拆下整个代体就可进行检查和维修。
5、广泛适用于供水、石化、冶金、矿山、轻纺、能源、造纸、食品、钢铁等管路系统中对介质流向进行切换以及对介质的分流或混合流体。

(1) Compact structure, quickly open and close, smooth flow, fluid resistance is small.
(2) Good sealing performance: The material of valve base is PTFE.
(3) Multiple usage: L and T type entrance hole.
(4) Convenient maintenance: After pressure relief, inspection and maintenance will be going .

二、执行标准 Implementation of standards

1、设计和制造Design and manufacture：GB/T12237；API 608
2、检验和试验Inspection and testing：JB/T9092；API 598
3、法兰连接Flange connection：JB/T79.1~2；ASME/ANSI B16.5
4、结构长度Face to face and end to end connection：JD-2002

三、三通球阀介质流向原理The principle of media flows

三通球阀分L型和T型，介质流通方向见图。L型三通球阀适用于介质流向的切换，能使相互垂直的两个通道连通；T型三通球阀适用于介质的分流、合流或流向切换，T型孔道可以使三个通道互相连通或使其中两个通道连通。三通球阀一般采用两个阀座结构，亦可根据用户要求采用四阀座结构。

Three-way ball valve have T type and L type. L type is applied to the switch of media direction while T type streaming media, the merging of the flow switch.In general condition, three-way valve uses two valve seats.

四、性能规范 Performance Specifications

试验压力Testing pressure　　单位Unit：MPa

公称压力 Nominal pressure PN	常温最大工作压力 Maximum working pressure at room temperature	壳体试验压力 Shell test pressure	气密封试验压力 Gas pressure sealing test	高压密封试验压力 High-pressure sealing test pressure:
1.6	1.6	2.4	0.6	1.76
2.5	2.5	3.8	0.6	2.75
4.0	4.0	6.0	0.6	4.4
Class150	2.0	3.0	0.6	2.2

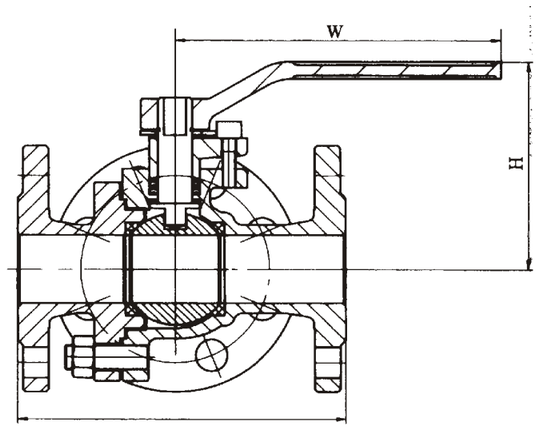
使用范围Using range

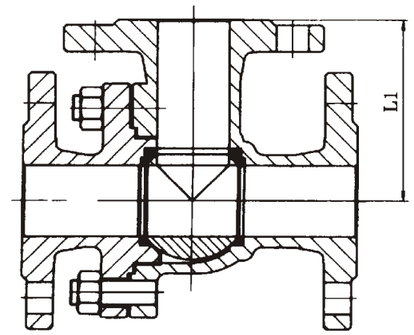
壳体材料 Material of shell	阀座材料 Material of seat	适用温度 The application of temperature	适用介质 The application of media
碳钢C型 Carbon steel C type	聚四氟乙烯 PTFE	≤150℃	水、蒸汽、油品等 water、steam、oil etc
	对位聚苯 Polystyrene	≤300℃	
铬镍钛钢P型 Ti-Cr-Ni steel P-type	聚四氟乙烯 PTFE	≤150℃	硝酸类 Nitric acid
	对位聚苯 Polystyrene	≤200℃	
铬镍钼钛钢R型 Ti-Cr-Ni-Mo steel R-type	聚四氟乙烯 PTFE	≤150℃	醋酸类 Acetic acid
	对位聚苯 Polystyrene	≤200℃	

五、主要零件材料 Materials for the main parts

阀体、阀盖 Body and bonnet	GB	WCB		ZG1Cr18Ni9Ti		ZG0Cr18Ni12Mo2Ti	
	ASTM	WCB		CF8		CF8M	
球体 Ball	GB	2Cr13		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti	
	ASTM	420		304		316	
阀杆 Stem	GB	2Cr13		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti	
	ASTM	420		304		316	
阀座、密封面 Seat and sealing surface	GB	聚四氟乙烯PTFE	对位聚苯Polystyrene	聚四氟乙烯PTFE	对位聚苯Polystyrene	聚四氟乙烯PTFE	对位聚苯Polystyrene
	ASTM	聚四氟乙烯PTFE	对位聚苯Polystyrene	聚四氟乙烯PTFE	对位聚苯Polystyrene	聚四氟乙烯PTFE	对位聚苯Polystyrene
填料 Packing	GB	聚四氟乙烯PTFE	对位聚苯Polystyrene	聚四氟乙烯PTFE	对位聚苯Polystyrene	聚四氟乙烯PTFE	柔性石墨Flexible Graphite
	ASTM	聚四氟乙烯PTFE	对位聚苯Polystyrene	聚四氟乙烯PTFE	对位聚苯Polystyrene	聚四氟乙烯PTFE	柔性石墨Flexible Graphite
螺栓 Bolt	GB	35		0Cr18Ni9		0Cr18Ni9	
	ASTM	A193 B7		A320-B8		A320-B8	
螺母 Nut	GB	45		0Cr18Ni9		0Cr18Ni9	
	ASTM	A194 2H		A194-8		A194-8	

法兰连接三通球阀
Flange connected three-way ball valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司



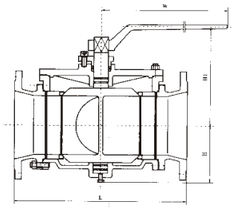


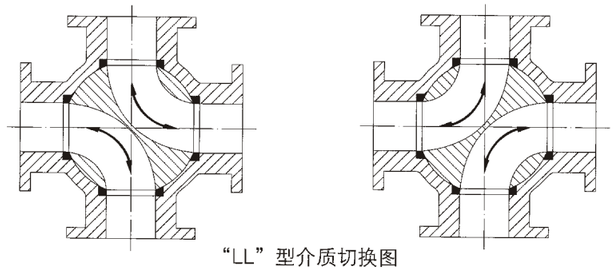
主要连接尺寸 Main connection size

公称压力PN Nominal pressure	主要连接尺寸 Connection size	L	L1	H	W	重量（Kg）Weight				
MPa	mm	mm	mm	mm	mm	1.6	2.5	4.0	CL 150	JIS 10K
1.6 MPa	15	130	65	62	100	2.5	3.0	3.5	2.5	2.5
	20	150	75	68	160	3.0	3.5	4.5	3.0	3.6
	25	160	80	75	160	4.8	5.0	6	5.0	5.0
	32	180	90	85	200	6.5	7	8.5	7	7
	40	200	100	95	200	8.5	9	10.5	9	9
	50	230	115	110	250	11	12	14	12	11
	65	290	145	130	300	15	17	20	16	16
	80	310	155	155	400	21	22	32	21	22
	100	350	175	180	500	33	36	50	36	36
	125	400	200	250	600	65	70	80	68	70
	150	480	240	275	800	103	110	120	105	105
	200	580	290	325	1000	152	168	180	160	160

注：可按其它压力等级设计制造
Note: We can design and manufacture products according to other pressure class.







“LL”型介质切换图
Figures of exchange media of LL

一、结构特点及用途 Structure and application

1、流体阻力小：球体和阀体的连接管道截面相等，且球体通道采用圆弧连接，且介质通过球体时，流体阻力小。

2、密封性能好：阀座采用具有一定弹性变形和高强度的PTFE材料，达到良好密封性能，保证了阀门的稳定性。

3、使用寿命长：阀门的阀芯和光颈材料采用奥氏不锈钢，阀座材料选

(1) Fluid resistance is small;

(2) Good sealing performance;

(3) Long using life.

二、四通球阀介质流向原理 Medium flow of four-way ball valve

如图所示，“LL”型四通球阀只需操作扳手或执行器将球体转动90°，同时对两种介质的流向进行切换，即方便而迅速，实现一阀多用的效果。

"LL" type four-way valve can change the flow of medium by manual operation or rotate the ball by 90℃.

三、执行标准 Implementation of standards

1、设计和制造Design and manufacture：GB/T12237； API 608

2、检验和试验Inspection and test：JB/T9092； API 598

3、法兰连接Flange connection：JB/T79.1~2； ASME/ANSI B16.5

四、性能规范 Performance Specifications

试验压力 Testing pressure 单位Unit：MPa

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使用范围 Using range

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	对位聚苯 Polystyrene	≤200℃	
铬镍钼钛钢R型 Ti-Cr-Ni-Mo steel R-type	聚四氟乙烯 PTFE	≤150℃	醋酸类 Acetic acid
	对位聚苯 Polystyrene	≤200℃	

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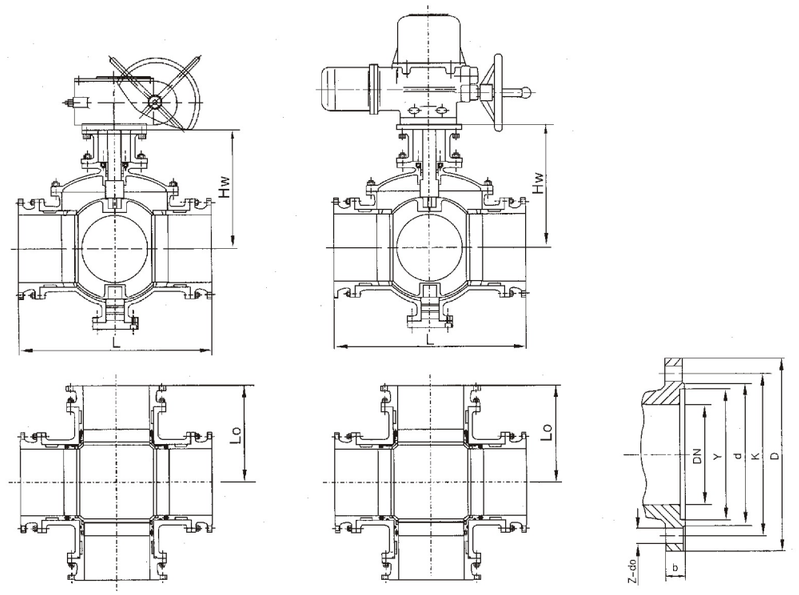
阀体、阀盖 Body and bonnet	GB	WCB		ZG1Cr18Ni9Ti		ZG0Cr18Ni12Mo2Ti	
	ASTM	WCB		CF8		CF8M	
球体 Ball	GB	2Cr13		ZG1Cr18Ni9Ti		ZG0Cr18Ni12Mo2Ti	
	ASTM	420		304		316	
阀杆 Stem	GB	2Cr13		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti	
	ASTM	420		304		316	
阀座、密封面 Seat and sealing surface	GB	2Cr13/PTFE		1Cr18Ni9Ti/PTFE		0Cr18Ni12Mo2TI/PTFE	
	ASTM	420/PTFE		304/PTFE		316/PTFE	
填料 Packing	GB	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite
	ASTM	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite
螺栓 Bolt	GB	35		0Cr18Ni9		0Cr18Ni9	
	ASTM	A193 B7		A320-B8		A320-B8	
螺母 Nut	GB	45		0Cr18Ni9		0Cr18Ni9	
	ASTM	A194 2H		A194-8		A194-8	

法兰连接四通球阀
Flange connected Four-way ball valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司



主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension									
		L	Lo	D	K	d	Y	b	z-do	Hw	Hd
1.6 MPa	50	260	130	165	125	100	–	16	4-Φ18	205	265
	65	320	160	185	145	120	–	18	4-Φ18	245	295
	80	320	160	200	160	135	–	20	8-Φ18	305	345
	100	370	185	220	180	155	–	20	8-Φ18	340	420
	125	510	255	250	210	185	–	22	8-Φ18	425	465
	150	510	255	285	240	210	–	24	8-Φ23	450	505
	200	580	290	340	295	265	–	26	12-Φ23	480	525
	250	670	335	405	355	320	–	30	12-Φ25	530	565
	300	760	380	460	410	375	–	30	12-Φ25	585	630
	350	850	425	520	470	435	–	34	16-Φ25	625	675
	400	980	490	580	525	485	–	36	16-Φ30	670	710
	450	1080	540	640	585	545	–	40	20-Φ30	705	770
	500	1220	610	715	650	608	–	44	20-Φ34	765	825
	600	1360	680	840	770	718	–	48	20-Φ41	840	945
	700	1750	875	910	840	788	–	50	24-Φ41	1050	1110
	800	1850	925	1025	950	898	–	52	24-Φ41	1125	1220
	900	2050	1025	1125	1050	998	–	54	28-Φ41	1260	1315
	1000	2150	1075	1255	1170	1110	–	56	28-Φ48	1325	1385
	1200	2450	1225	1485	1390	1325	–	58	32-Φ54	1395	1450

主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension									
		L	Lo	D	K	d	Y	b	z-do	Hw	Hd
2.5 MPa	50	260	130	165	125	100	-	20	4-Φ18	205	265
	65	320	160	185	145	120	-	22	8-Φ18	245	295
	80	320	160	200	160	135	-	22	8-Φ18	305	345
	100	370	185	230	190	160	-	24	8-Φ23	340	420
	125	510	255	270	220	188	-	28	8-Φ25	405	465
	150	510	255	300	250	218	-	30	8-Φ25	450	505
	200	580	290	360	310	278	-	34	12-Φ25	480	525
	250	670	335	425	370	332	-	36	12-Φ30	530	565
	300	760	380	485	430	390	-	40	16-Φ30	585	630
	350	850	425	555	490	448	-	44	16-Φ34	625	675
	400	980	490	620	550	505	-	48	16-Φ34	670	710
	450	1080	540	670	600	555	-	50	20-Φ34	705	770
	500	1220	610	730	660	610	-	52	20-Φ41	765	825
	600	1360	680	845	770	718	-	56	20-Φ41	840	945
	700	1750	875	960	875	815	-	60	24-Φ48	1050	1110
	800	1850	925	1085	990	930	-	64	24-Φ48	1125	1220
	900	2050	1025	1185	1090	1025	-	66	28-Φ54	1260	1315
	1000	2150	1075	1320	1210	1140	-	68	28-Φ58	1325	1385
	1200	2450	1225	1520	1420	1350	-	72	32-Φ58	1395	1450
4.0 MPa	50	260	130	165	125	100	88	20	4-Φ18	245	285
	65	320	160	185	145	120	110	22	8-Φ18	265	315
	80	320	160	200	160	135	121	22	8-Φ18	320	365
	100	370	185	235	190	160	150	24	8-Φ23	355	465
	125	510	255	270	220	188	176	28	8-Φ25	425	495
	150	510	255	300	250	218	204	30	8-Φ25	470	535
	200	580	290	375	320	282	260	38	12-Φ30	480	565
	250	670	335	450	385	345	313	42	12-Φ34	530	605
	300	760	380	515	450	408	364	46	16-Φ34	585	675
	350	850	425	585	510	465	422	52	16-Φ34	625	705
	400	980	490	660	585	535	474	58	16-Φ41	670	745
	450	1080	540	685	610	560	524	60	20-Φ41	705	795
	500	1220	610	755	670	612	576	62	20-Φ48	765	855
	600	1360	680	890	795	730	678	62	20-Φ54	840	985
Class 150	2"	260	130	152	120.5	92	-	19	4-Φ19	205	265
	2 1/2"	320	160	178	139.5	105	-	22.5	4-Φ19	245	295
	3"	320	160	190.5	152.5	127	-	24	4-Φ19	305	345
	4"	370	185	229	190.5	157	-	24	8-Φ19	340	420
	5"	510	255	254	216	186	-	24	8-Φ22	425	465
	6"	510	255	279	241.5	216	-	26	8-Φ22	450	505
	8"	580	290	343	298.5	270	-	29	8-Φ22	530	525
	10"	670	335	406	362	324	-	31	12-Φ25	630	565
	12"	760	380	483	432	381	-	32	12-Φ25	680	630
	14"	850	425	533	476	413	-	35	12-Φ29	625	675
	16"	980	490	597	540	470	-	37	16-Φ29	670	710
	18"	1080	540	635	578	533	-	40	16-Φ32	705	770
	20"	1220	610	699	635	584	-	43	20-Φ32	765	825
	24"	1360	680	813	749.5	692	-	48	20-Φ35	840	945
	28"	1750	875	927	864	800	-	71	28-Φ35	1050	1110
	32"	1850	925	1060	978	914	-	81	28-Φ41	1125	1220
	36"	2050	1025	1168	1086	1022	-	90	32-Φ41	1260	1315
	40"	2150	1075	1289	1200	1124	-	90	36-Φ41	1325	1385
	48"	2450	1225	1511	1422	1359	-	108	44-Φ41	1395	1450

一、结构特点及用途 Structure and usage

1、密封性能好：金属阀座尾端设置弹簧保证密封面有足够的预紧力，阀门在使用过程中密封面磨损时，在弹簧作用下阀门保证良好密封性能；而当介质压力较高时，介质在球体产生的不平衡力保证密封。

2、采用下装式阀杆，设置倒密封结构，能确保填料处可靠密封。

3、顶装设备：只要卸下阀盖即可进行维修或更换零件。

4、广泛适用于粉尘、颗粒、高粘度等介质。

(1) Good sealing performance: under the operation of spring the valve will keep good sealing.

(2) Top entry style make the packing is reliable.

(3) Convenient maintenance: Unload the valve cover then you can repair the valve, it is so easy.

(4) The media is dust, particles, and other sticky medium.

二、执行标准 Implementation of standards

1、设计和制造Design and manufacture：GB/T12237； API 608

2、检验和试验Inspection and test：JB/T9092； API 598

3、法兰连接Flange connection：JB/T79.1~2； ASME/ANSI B16.5

4、结构长度Face to face and end to end connection：GB/T12221； ASME/ANSI B16.10

三、性能规范 Performance Specifications

试验压力 Testing pressure　　单位Unit：MPa

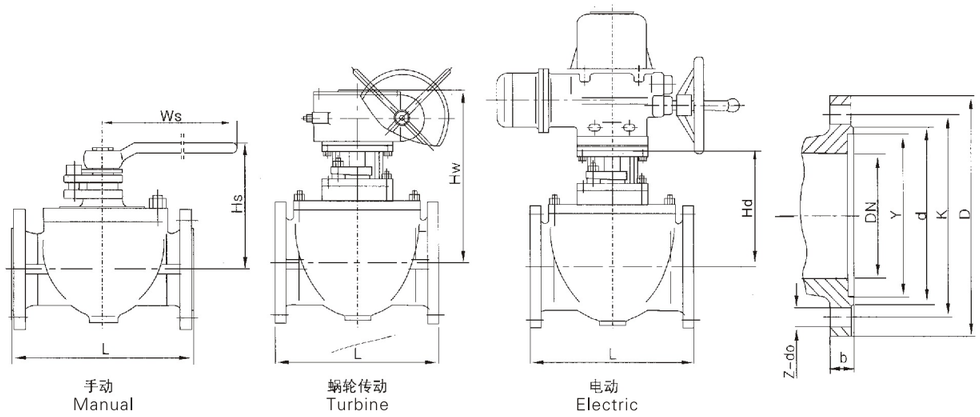
公称压力PN Nominal pressure	常温最大工作压力 Maximum working pressure at room temperature	壳体试验压力 Shell test pressure	气密封试验压力 Gas pressure sealing test	高压密封试验压力 High-pressure sealing test pressure:
1.6	1.6	2.4	0.6	1.76
2.5	2.5	3.8	0.6	2.75
4.0	4.0	6.0	0.6	4.4
6.4	6.4	9.6	0.6	7.1
10.0	10.0	15.0	0.6	11.0
Class150	2.0	3.0	0.6	2.2
Class300	5.0	7.5	0.6	5.5
Class600	10.0	15.0	0.6	11.0

使用范围 Using range

壳体材料 Material of shell	阀座材料 Material of shell	适用温度 The application of temperature	适用介质 The application of media
碳钢C型 Carbon steel C type	PTFE	≤150℃	水、蒸汽、油品等 The application of media
	不锈钢 stainless steel	≤425℃	
铬镍钛钢P型 Ti-Cr-Ni steel P-type	PTFE	≤150℃	硝酸类 Nitric acid
	不锈钢	≤200℃	
铬镍钼钛钢R型 Ti-Cr-Ni-Mo steel R-type	PTFE	≤150℃	醋酸类 Acetic acid
	不锈钢	≤200℃	
铬钼钒钢Ⅱ型 Cr-Mo-V steel Ⅱ-type	硬质合金 Carbide	≤550℃	蒸汽、冶炼、能源等 water、steam、oil etc

四、主要零件材料 Materials for the main parts

阀体、阀盖 Body and bonnet	GB	WCB		ZG1Cr18Ni9Ti		ZG0Cr18Ni12Mo2Ti		ZG15Cr1Mo1V
	ASTM	WCB		CF8		CF8M		WC9
球体 Ball	GB	ZG2Cr13/表面特殊处理 Special treatment on the surface		ZG1Cr18Ni9Ti 表面特殊处理 Special treatment on the surface		ZG0Cr18Ni12Mo2Ti 表面特殊处理 Special treatment on the surface		ZG25Cr2Mo1V 表面特殊处理 Special treatment on the surface
	ASTM	CA15+HF		CF8+HF		CF8M+HF		WC9+HF
阀杆 Stem	GB	2Cr13		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti		25Cr2Mo2V
	ASTM	420		304		316		F22a
阀座、密封面 Seat and sealing surface	GB	PTFE	2Cr13	PTFE	1Cr18Ni9Ti	PTFE	0Cr18Ni12Mo2Ti	D517
	ASTM	PTFE	420	PTFE	304	PTFE	420	HF
填料 Packing	GB	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
	ASTM	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
螺栓 Bolt	GB	35		0Cr18Ni9		0Cr18Ni9		15Cr1Mo1V
	ASTM	A193 B7		A320-B8		A320-B8		A193 B16
螺母 Nut	GB	45		0Cr18Ni9		0Cr18Ni9		20CrMo
	ASTM	A194 2H		A194-8		A194-8		A194-4



手动 Manual　　蜗轮传动 Turbine　　电动 Electric

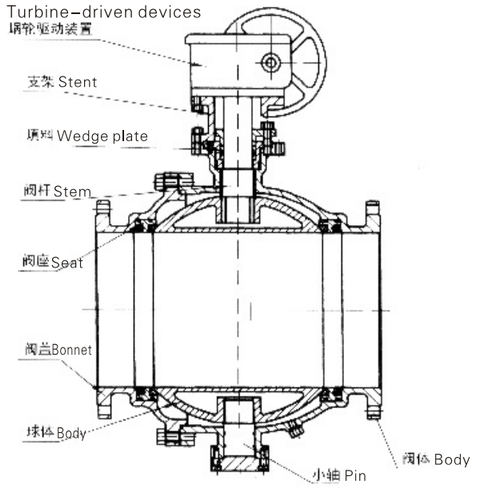
主要外形和连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺　寸 (mm) Dimension										
		L	D	K	d	Y	b	z-do	Ws	Hs	Hw	Hd
1.6 MPa	50	203	165	125	100	-	16	4-Φ18	250	194	-	-
	65	222	185	145	120	-	18	4-Φ18	350	215	-	-
	80	241	200	160	135	-	20	8-Φ18	500	218	-	-
	100	305	220	180	155	-	20	8-Φ18	800	232	-	-
	125	356	250	210	185	-	22	8-Φ18	800	255	-	-
	150	394	285	240	210	-	24	8-Φ23	1000	340	445	490
	200	457	340	295	265	-	26	12-Φ23	1200	410	490	540
	250	533	405	355	320	-	30	12-Φ25	-	-	560	620
	300	610	460	410	375	-	30	12-Φ25	-	-	630	705
	350	686	520	470	435	-	34	16-Φ25	-	-	710	790
	400	762	580	525	485	-	36	16-Φ30	-	-	840	920
	450	864	640	585	545	-	40	20-Φ30	-	-	960	1060
	500	914	715	650	608	-	44	20-Φ34	-	-	1110	1230
2.5 MPa	50	216	165	125	100	-	20	4-Φ18	250	195	-	-
	65	241	185	145	120	-	22	8-Φ18	350	215	-	-
	80	283	200	160	135	-	22	8-Φ18	500	218	-	-
	100	305	230	190	160	-	24	8-Φ23	800	232	-	-
	125	381	270	220	188	-	28	8-Φ25	800	255	-	-
	150	403	300	250	218	-	30	8-Φ25	1000	340	445	490
	200	502	360	310	278	-	34	12-Φ25	1200	410	490	540
	250	568	425	370	332	-	36	12-Φ30	-	-	560	620
	300	648	485	430	390	-	40	16-Φ30	-	-	630	705
	350	762	555	490	448	-	44	16-Φ34	-	-	710	790
	400	838	620	550	505	-	48	16-Φ34	-	-	840	920
	450	914	670	600	555	-	50	20-Φ34	-	-	960	1060
	500	991	730	660	610	-	52	20-Φ41	-	-	1110	1230

主要外形和连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺　寸 (mm) Dimension										
		L	D	K	d	Y	b	z-do	Ws	Hs	Hw	Hd
4.0 MPa	50	216	165	125	100	88	20	4-Φ18	350	210	-	-
	65	241	185	145	120	110	22	8-Φ18	500	230	-	-
	80	283	200	160	135	121	22	8-Φ18	650	250	-	-
	100	305	235	190	160	150	24	8-Φ23	800	260	-	-
	125	381	270	220	188	176	28	8-Φ25	1000	275	-	-
	150	403	300	250	218	204	30	8-Φ25	1200	360	470	520
	200	502	375	320	282	260	38	12-Φ30	-	-	515	570
	250	568	450	385	345	313	42	12-Φ34	-	-	585	650
	300	648	515	450	408	364	46	16-Φ34	-	-	660	740
	350	762	580	510	465	422	52	16-Φ34	-	-	740	830
	400	838	660	585	535	474	58	16-Φ41	-	-	870	950
6.4 MPa	50	292	180	135	105	88	26	4-Φ23	350	210	-	-
	65	330	205	160	130	110	28	8-Φ23	500	230	-	-
	80	356	215	170	140	121	30	8-Φ23	800	250	-	-
	100	406	250	200	168	150	32	8-Φ25	800	270	-	-
	125	400	295	240	202	176	36	8-Φ30	1000	285	-	-
	150	495	345	280	240	204	38	8-Φ34	1200	365	470	520
	200	597	405	345	300	260	44	12-Φ34	-	-	520	570
	250	673	470	400	352	313	48	12-Φ41	-	-	590	660
	300	762	530	460	412	364	54	16-Φ41	-	-	670	750
10.0 MPa	50	292	195	145	112	88	28	4-Φ25	500	230	-	-
	65	330	220	170	138	110	32	8-Φ25	650	250	-	-
	80	356	230	180	148	121	34	8-Φ25	800	270	-	-
	100	432	265	210	172	150	38	8-Φ30	1000	305	-	-
	125	508	315	250	210	176	42	8-Φ34	1200	385	-	-
	150	559	355	290	250	204	46	12-Φ34	-	-	490	540
	200	660	430	360	312	260	54	12-Φ41	-	-	550	600
	250	787	505	430	382	313	60	12-Φ41	-	-	620	690
	300	838	585	500	442	364	70	16-Φ48	-	-	705	780
Class 150	2"	178	152	120.5	92	-	16	4-Φ19	250	195	-	-
	2 1/2"	190	178	139.5	105	-	18	4-Φ19	350	215	-	-
	3"	203	190	152.5	127	-	19	4-Φ19	500	218	-	-
	4"	229	229	190.5	157	-	24	8-Φ19	800	232	-	-
	5"	356	254	216	186	-	24	8-Φ22	800	255	-	-
	6"	394	279	241.5	216	-	26	8-Φ22	1000	340	445	490
	8"	457	343	298.5	270	-	29	8-Φ22	1200	410	490	540
	10"	533	406	362	324	-	31	12-Φ25	-	-	560	620
	12"	610	483	432	381	-	32	12-Φ25	-	-	630	705
	14"	686	533	476	413	-	35	12-Φ29	-	-	710	790
	16"	762	597	540	470	-	37	16-Φ29	-	-	840	920
	18"	864	635	578	533	-	40	16-Φ32	-	-	960	1060
	20"	914	699	635	584	-	43	20-Φ32	-	-	1110	1230
Class 300	2"	216	165	127	92	-	23	8-Φ19	350	210	-	-
	2 1/2"	241	190	149	105	-	26	8-Φ22	500	230	-	-
	3"	283	210	168.5	127	-	29	8-Φ22	650	250	-	-
	4"	305	254	200	157	-	32	8-Φ22	800	260	-	-
	5"	356	279	235	186	-	35	8-Φ22	1000	275	-	-
	6"	403	318	270	216	-	37	12-Φ22	1200	360	470	520
	8"	502	381	330	270	-	42	12-Φ25	-	-	515	570
	10"	568	445	387.5	324	-	48	16-Φ29	-	-	585	650
	12"	648	521	451	381	-	51	16-Φ32	-	-	680	740
Class 600	2"	292	165	127	108	-	26	8-Φ19	500	230	-	-
	2 1/2"	330	190	149	127	-	29	8-Φ22	650	250	-	-
	3"	356	210	168	146	-	32	8-Φ22	800	270	-	-
	4"	432	273	216	175	-	38	8-Φ25	1000	305	-	-
	5"	508	330	266.5	210	-	45	8-Φ29	1200	385	-	-
	6"	559	356	292	241	-	48	12-Φ29	-	-	490	540
	8"	660	419	349	302	-	56	12-Φ32	-	-	550	600
	10"	787	508	432	356	-	64	16-Φ35	-	-	620	690
	12"	838	559	489	413	-	67	20-Φ35	-	-	705	780





一、固定式防火型球阀(管线球阀)

固定式球阀是新一代高性能球阀，适用于长输管线和一般工业管线，其安全、耐恶劣环境性等在设计时均已进行了特殊考虑，适用于各种腐蚀性和非腐蚀性介质。它与浮动式球阀相比，工作时管道中阀前流体压力在球体上产生的作用力全部传递给上下轴承，球体不会移动，阀门密封靠弹簧和介质压力推动阀座实现，因而阀座不会承受过大压力，所以固定式球阀门座变形小，操作力矩轻，密封性能可靠，使用寿命长。特别适用于高压、大口径的场合。

二、结构特点及用途

(1) 操作省力：球体由上下轴支撑，减少摩擦，消除了由于进口压力推动球体与密封座形成的巨大密封负荷而造成过大的扭矩。

(2) 密封性能可靠(见图1)：PTFE弹性材料密封圈嵌于不锈钢阀座内，金属阀座尾端设有弹簧保证密封圈足够的预紧力，阀门在使用过程中密封面磨损时，在弹簧作用下阀门继续保证良好密封性能。

(3) 防火结构(见图2)：为防止由于骤热或火灾的出现，使聚四氟乙烯密封圈烧毁，发生较大泄漏，而助长火势，在球体与阀座间设置防火密封环，在密封圈烧毁时，在弹簧力作用下，将阀座密封环迅速推向球体上，形成金属与金属密封，起到一定程度的密封效果。耐火试验符合API 6FA和API 607标准要求。

(4) 自动泄压功能(见图3)：当阀门中腔停滞的介质压力异常升高超过弹簧的预紧力时，阀座后退脱离球体，达到自动泄压的效果，卸压后阀座自动复位。

(5) 排泄管路：阀体上下均设置排泄孔，可检查阀座是否发生泄漏，在工作中，阀门处于全开或全关时，卸掉中腔压力，可直接更换填料；可以排放中腔滞留物，减少介质对阀门的污染。

辅助密封设置系统(客户需要请在订购时说明)

(6) 见图4：本阀门设计有辅助的阀座紧急密封系统，一旦密封受损或出现紧急情况而不能密封时，通过辅助密封系统向密封面注射相应的密封剂即可修复密封面，达到紧急密封。当输送的介质不洁或含有少量颗粒时，为保护密封面，确保达到可靠的密封，还可给这一装置注射相应的清洗剂或润滑剂对密封面进行清洗。

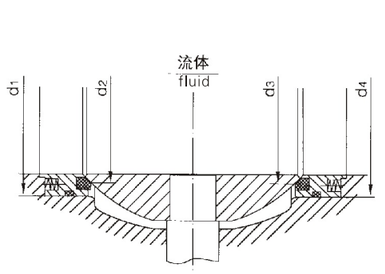
(7) 广泛适用于食品、医药、石油、化工、天然气、钢铁、环保、造纸等输送管路介质的切断或流通。还可给这一装置注射相应的清洗剂或润滑剂对密封面进行清洗。

1. Fixed fire-against ball valve

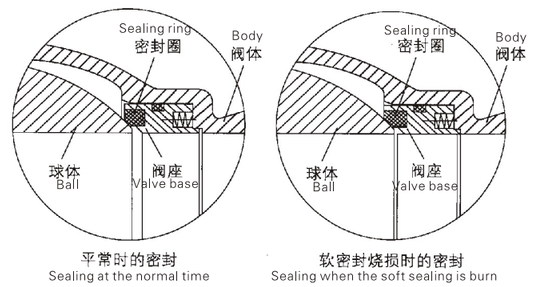
It is widely used in long-distance pipelines and general industrial pipeline and it is applicable to corrosive and non-corrosive media. The seat will not bear so much more pressure than the float ball valve. So the seat will keep its shape for long time and has short torque and has long using life.

2.Structure and application

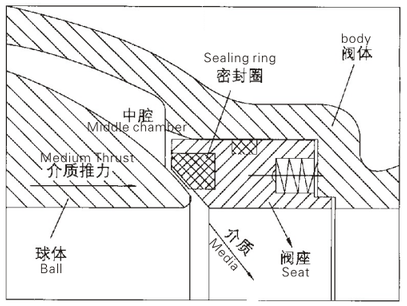
(1)Labor-saving operation: The ball is supported by axis and this reduce the friction.
(2)Good sealing performance (See Figure I): The sealing material is PTFE.
(3)Anti-fire structure (See Figure II): Sealing ring of anti-fire is set between ball and seat. Fire resistance test adopt the standard of API 6FA and API 607.
(4)Automatic pressure relief feature (Figure III): When the pressure of media is higher than expected effect, the seat will leave the ball and accomplish pressure relief.
(5)Discharge pipe: There are discharge pipe in the valve body, when the valve is totally open or close, we can change packing materials; and it can discharge occlusion to reduce the pollution.
(6)Please see figure 4: The valve is designed with emergency seat sealing systems, when the sealing doesn't work, through aid sealing system the sealing material will be put into surface. When the media is not clean we can inject clean agent or lubricant to clean it.
(7)It is widely used in food, medicine, petroleum, chemical, natural gas, steel, environmental protection, paper and other pipeline transportation.



图一
figure 1

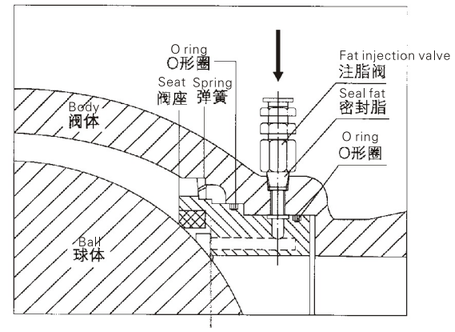


图二
figure 2



自动卸压功能
Automatic pressure relief feature

图三
figure 3



图四
figure 4

三、执行标准 Executive Standard

1、设计和制造 Design and manufacture：GB/T12237； API 608

2、检验和试验Inspection and test：JB/T9092； API 598

3、法兰连接Flange connection：JB/T79.1~2； ASME/ANSI B16.5

4、结构长度Face to face and end to end connection：GB/T12221； ASME/ANSI B16.10

四、性能规范 Performance Specifications

试验压力 Testing pressure 单位Unit：MPa

公称压力PN Nominal pressure	常温最大工作压力 Maximum working pressure at room temperature	壳体试验压力 Shell test pressure	气密封试验压力 Gas pressure sealing test	高压密封试验压力 High-pressure sealing test pressure:
1.6	1.6	2.4	0.6	1.76
2.5	2.5	3.8	0.6	2.75
4.0	4.0	6.0	0.6	4.4
6.4	6.4	9.6	0.6	7.1
Class150	2.0	3.0	0.6	2.2
Class300	5.0	7.5	0.6	5.5

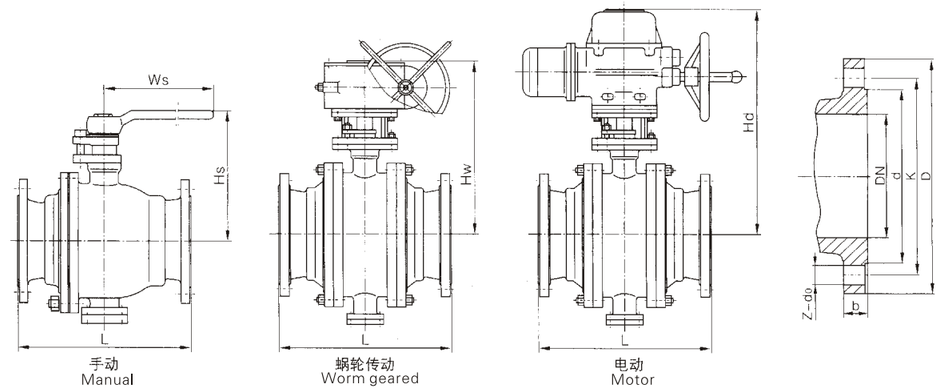
使用范围 Using range

壳体材料 Material of shell	阀座材料 Material of shell	适用温度 The application of temperature	适用介质 The application of media
碳钢C型 Carbon steel C type	聚四氟乙烯 PTFE	≤150℃	水、蒸汽、油品等 The application of media
	对位聚苯 Polystyrene	≤250℃	
铬镍钛钢P型 Ti-Cr-Ni steel P-type	聚四氟乙烯 PTFE	≤150℃	硝酸类 Nitric acid
	对位聚苯 Polystyrene	≤200℃	
铬镍钼钛钢R型 Ti-Cr-Ni-Mo steel R-type	聚四氟乙烯 PTFE	≤150℃	醋酸类 Acetic acid
	对位聚苯 Polystyrene	≤200℃	

五、主要零件材料 Materials for the main parts

阀体、阀盖 Body and bonnet	GB	WCB	ZG1Cr18Ni9Ti	ZG1Cr18Ni12Mo2Ti
	ASTM	WCB	CF8	CF8M
球体 Ball	GB	2Cr13	1Cr18Ni9Ti	1Cr18Ni12Mo2Ti
	ASTM	420	304	316
阀杆 Stem	GB	2Cr13	1Cr18Ni9Ti	1Cr18Ni12Mo2Ti
	ASTM	420	304	316
阀座 Seat	GB	2Cr13/PTFE	1Cr18Ni9Ti/PTFE	1Cr18Ni12Mo2Ti/PTFE
	ASTM	420/PTFE	304/PTFE	316/PTFE
填料 Packing	GB	PTFE	PTFE	PTFE
	ASTM	PTFE	PTFE	PTFE
螺栓 Bolt	GB	35	0Cr18Ni9	0Cr18Ni9
	ASTM	A193 B7	A320-B8	A320-B8
螺母 Nut	GB	45	0Cr18Ni9	0Cr18Ni9
	ASTM	A194 2H	A190-8	A190-8

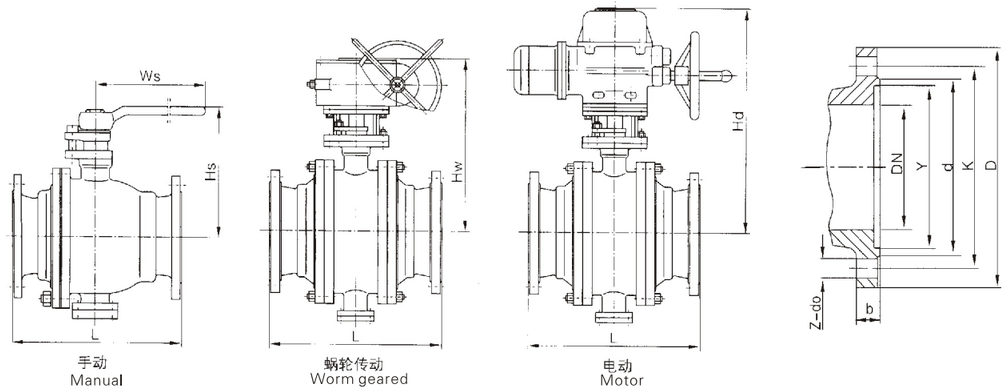
固定式软密封球阀
Soft sealed fixed ball valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司



Q47F、Q347F、Q947F

主要连接尺寸 Main connecting dimensions

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension							
		L	D	K	d	b	z-do	Hw	Hd
1.6MPa	150	394	285	240	210	24	8-23	470	540
	200	457	340	295	265	26	12-23	520	580
	250	533	405	355	320	30	12-25	610	640
	300	610	460	410	375	30	12-25	650	690
	350	686	520	470	435	34	16-25	740	785
	400	762	580	525	485	36	16-30	795	830
	450	864	640	585	545	40	20-30	860	910
	500	914	715	650	608	44	20-34	945	990
	600	1067	840	770	718	48	20-41	1040	1090
	700	1245	910	840	788	50	24-41	1150	1210
	800	1372	1025	950	898	52	24-41	1280	1340
	900	1524	1125	1050	998	54	28-41	1430	1510
	1000	1753	1255	1170	1110	56	28-48	1580	1640
	1200	2032	1485	1390	1325	58	32-54	1810	1910
	1400	2300	1685	1590	1525	60	36-54	2010	2115
2.5MPa	150	403	300	250	218	30	8-25	470	555
	200	502	360	310	278	34	12-25	540	595
	250	568	425	370	332	36	12-30	630	655
	300	648	485	430	390	40	16-30	650	705
	350	762	555	490	448	44	16-34	740	795
	400	838	620	550	505	48	16-34	795	830
	450	914	670	600	555	50	20-34	860	910
	500	991	730	660	610	52	20-41	945	990
	600	1143	845	770	718	56	20-41	1040	1090
	700	1346	960	875	815	60	24-48	1150	1210
	800	1524	1085	990	930	64	24-48	1305	1340
	900	1727	1185	1090	1025	66	28-54	1505	1600
	1000	1880	1320	1210	1140	68	28-58	1615	1705
	1200	2184	1520	1420	1350	72	32-58	1925	2035
	1400	2300	1755	1640	1560	78	36-65	2110	2185

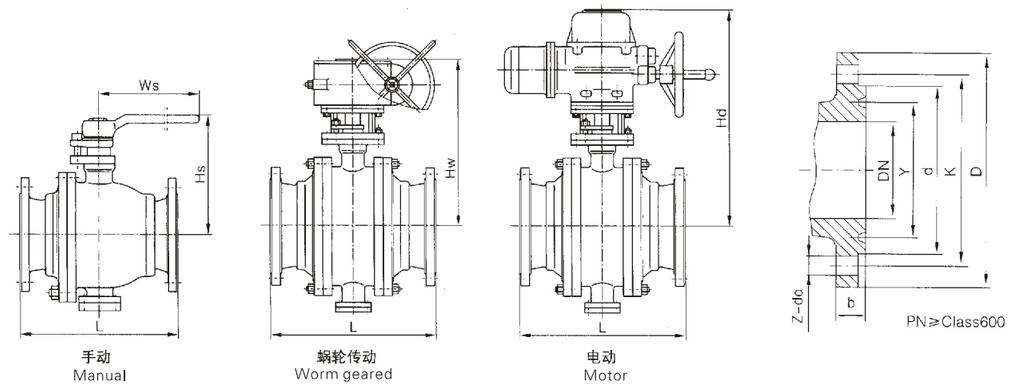


手动 Manual　蜗轮传动 Worm geared　电动 Motor

Q47F、Q347F、Q947F

主要连接尺寸 Main connecting dimensions

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension								
		L	D	K	d	Y	b	z-do	Hw	Hd
4.0MPa	150	403	300	250	218	204	30	8-25	485	590
	200	502	375	320	282	260	38	12-30	580	640
	250	568	450	385	345	313	42	12-34	665	680
	300	648	515	450	408	364	46	16-34	760	810
	350	762	580	510	465	422	52	16-34	820	890
	400	838	660	585	535	474	58	16-41	860	940
	450	914	685	610	560	524	60	20-41	930	1010
	500	991	755	670	612	576	62	20-48	980	1130
	600	1143	890	795	730	678	62	20-54	1040	1090
	700	1346	995	900	835	768	68	24-54	1150	1210
	800	1524	1140	1030	960	876	76	24-58	1305	1340
	900	1727	1270	1168	1022	-	105	32-54	1505	1600
	1000	1880	1238	1156	1086	-	114	32-44	1615	1705
	1200	2184	1467	1372	1302	-	133	32-51	1925	2035
	1400		1708	1600	1518	-	154	28-60	2110	2185
6.4MPa	150	495	345	280	240	204	38	8-34	485	590
	200	597	405	345	300	260	44	12-34	580	650
	250	673	470	400	352	313	48	12-41	665	720
	300	762	530	460	412	364	54	16-41	760	840
	350	826	600	525	475	422	60	16-41	820	930
	400	902	670	585	525	474	66	16-48	970	990
	500	1054	800	705	640	576	70	20-54	995	1150
	600	1232	930	820	750	678	76	20-58	1100	1180
	700	1397	1035	940	800	-	95	28-51	1180	1230
	800	1651	1149	1054	914	-	108	28-54	1345	1385
	900	1880	1270	1168	1022	-	114	32-54	1550	1655
	1000	1981	1270	1175	1092	-	133	32-51	1675	1745
	1200	2311	1511	1403	1308		152	28-60	1945	2075



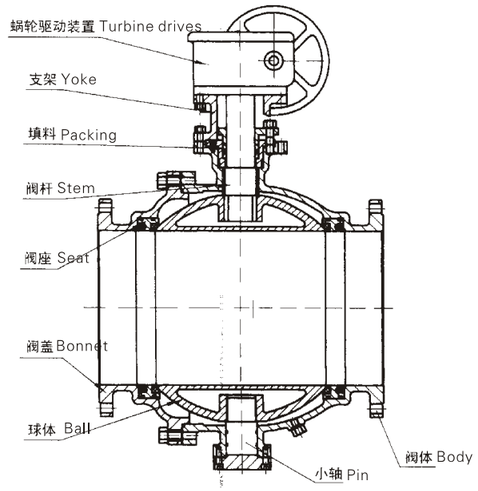
手动 Manual　蜗轮传动 Worm geared　电动 Motor

Q47F、Q347F、Q947F

主要连接尺寸 Main connecting dimensions

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	b	z-do	Ws	Hs	Hw	Hd
Class 150	2"	178	152	120.5	92	-	16	4-19	260	155	-	-
	2 1/2"	190	178	139.5	105	-	18	4-19	350	185	-	-
	3"	203	190	152.5	127	-	19	4-19	500	205	-	-
	4"	229	229	190.5	157	-	24	8-19	650	255	390	500
	5"	356	254	216	186	-	24	8-22	800	285	410	520
	6"	394	279	241.5	216	-	26	8-22	1000	305	470	540
	8"	457	343	298.5	270	-	29	8-22	-	-	520	580
	10"	533	406	362	324	-	31	12-25	-	-	610	640
	12"	610	483	432	381	-	32	12-25	-	-	650	690
	14"	686	533	476	413	-	35	12-29	-	-	740	785
	16"	762	597	540	470	-	37	16-29	-	-	795	830
	18"	864	635	578	533	-	40	16-32	-	-	860	910
	20"	914	699	635	584	-	43	20-32	-	-	945	990
	24"	1067	813	749.5	692	-	48	20-35	-	-	1040	1090
	28"	1245	927	864	800	-	71	28-35	-	-	1150	1210
	32"	1372	1060	978	914	-	81	28-41	-	-	1280	1340
Class 300	2"	216	165	127	92	-	23	8-19	260	155	-	-
	2 1/2"	241	190	149	105	-	26	8-22	350	185	-	-
	3"	283	210	168.5	127	-	29	8-22	500	205	-	-
	4"	305	254	200	157	-	32	8-22	800	270	410	530
	5"	381	279	235	186	-	35	8-22	1000	305	470	560
	6"	403	318	270	216	-	37	12-22	1200	340	485	590
	8"	502	381	330	270	-	42	12-25	-	-	580	640
	10"	568	445	387.5	324	-	48	16-29	-	-	665	680
	12"	648	521	451	381	-	51	16-32	-	-	760	810
	14"	762	584	514.5	413	-	54	20-32	-	-	820	890
	16"	838	648	571.5	470	-	58	20-35	-	-	860	940
	18"	914	711	628.5	533	-	61	24-35	-	-	930	1010
	20"	991	775	686	584	-	64	24-35	-	-	980	1130
Class 600	2"	292	165	127	108	82.5	26	8-19	350	175	-	-
	2 1/2"	330	190	149	127	101.6	29	8-22	500	200	-	-
	3"	356	210	168	146	123.8	32	8-22	650	235	-	-
	4"	432	273	216	175	149.2	38	8-25	1000	275	395	550
	5"	508	330	266.5	210	180.9	45	8-29	1200	325	430	580
	6"	559	356	292	241	211.1	48	12-29	-	-	495	620
	8"	660	419	349	302	269.8	56	12-32	-	-	595	680
	10"	787	508	432	356	323.8	64	16-35	-	-	680	740
	12"	838	559	489	413	381.0	67	20-35	-	-	790	850





一、概述

本厂为金属硬密封球阀的专业生产厂家。多年来为石化、冶金、电力、轻工等行业提供了各种金属硬密封球阀的系列产品，满足了用户对压力、温度、介质及口径等参数的不同要求。尤其对一些恶劣工况条件，使用本公司产品后大大延长了系统上更换检修阀门的时间间隔，深受用户欢迎。其中，偏心金属硬密封球阀是我厂研制开发的第一个高性能的专利球阀产品，又相继开发了第二个高性能的专利球阀产品自补式高温金属硬密封球阀。此外，通过采用不同的表面处理方法，解决了防密封表面粘滞和高温卡阻，研制了浮动球金属

二、结构特点及用途

1、操作省力：介质压力在球体上产生作用力全部传递给上下轴承，球体不会相对位置移动，两端阀座密封受力均匀，操作力矩低。
2、介质弹簧预加载荷的可动金属阀座结构，能适用高温、高压以及各种介质管路。
3、根据客户要求，可以设计能适用于含颗粒、料浆等介质。
4、广泛适用于食品、医药、石油、化工、天然气、钢铁、环保、造纸等介质管路。

三、执行标准 Implementation of standards

1、设计和制造Design and manufacture：GB/T12237； API 608
2、检验和试验Inspection and testing：JB/T9092； API 598
3、法兰连接Flange size：JB/T79.1~2； ASME/ANSI B16.5
4、结构长度Face to face and end to end connection：GB/T12221； ASME/ANSI B16.10

1、Overview

Our factory is specialized in manufacturing fixed sealed ball valve, and the products are widely used in petrochemical, metallurgical, power and light industry. We can meet different demands of our customers for pressure、temperature、media and diameter etc. Eccentricity metal hard sealing ball valve is the first patent ball valve we produce and high-performance ball valve. We use surface treatments to solve the high temperature resistance of sealing surface.

2、Structure and usage

(1)Labor-saving operation: The pressure of media and ball will convey to lower bearing, and operating torque is low.
(2)Metal valve seat will apply to high-pressure and high-temperature media.
(3)We can design the valve applied to containing particles, slurry media piping line according to the customers' demands.
(4)It is widely used in food, medicine, petroleum, chemical, natural gas, steel, environmental protection, paper and other media pipeline.

四、性能规范 Performance Specifications

试验压力 Testing pressure 单位Unit：MPa

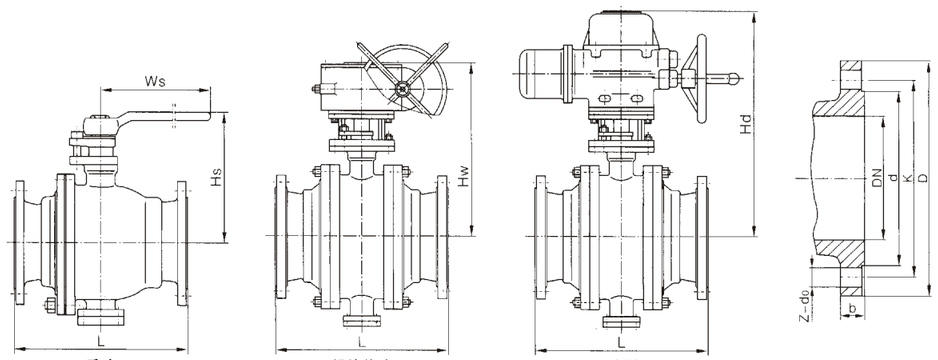
公称压力PN Nominal pressure	常温最大工作压力 Maximum working pressure at room temperature	壳体试验压力 Shell test pressure	气密封试验压力 Gas pressure sealing test	高压密封试验压力 High-pressure sealing test pressure:
1.6	1.6	2.4	0.6	1.76
2.5	2.5	3.8	0.6	2.75
4.0	4.0	6.0	0.6	4.4
6.4	6.4	9.6	0.6	7.1
10.0	10.0	15.0	0.6	11.0
Class150	2.0	3.0	0.6	2.2
Class300	5.0	7.5	0.6	5.5
Class600	10.0	15.0	0.6	11.0

使用范围 Using range

壳体材料 Material of shell	适用温度 The application of temperature	适用介质 The application of media
碳钢C型 Carbon steel C type	≤425℃	水、蒸汽、油品等 The application of media
铬镍钛钢P型 Ti-Cr-Ni steel P-type	≤200℃	硝酸类 Nitric acid
铬镍钼钛钢R型 Ti-Cr-Ni-Mo steel R-type	≤200℃	醋酸类 Acetic acid
铬钼钒钢I型 Cr-Mo-V steel I-type	≤550℃	蒸汽、冶炼、能源等 water、steam、oil etc

五、主要零件材料 Materials for the main parts

阀体、阀盖 Body and bonnet	GB	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
	ASTM	A216 WCB	CF8	CF8M	WC9
球体 Ball	GB	2Cr13/表面特殊处理 Special treatment on the surface	1Cr18Ni9Ti/表面特殊处理 Special treatment on the surface	0Cr18Ni12Mo2Ti/表面特殊处理 Special treatment on the surface	25Cr2Mo1V/表面特殊处理 Special treatment on the surface
	ASTM	420+HF	304+HF	316+HF	F22a+HF
阀杆、固定轴 Stem,fixed shaft	GB	2Cr13	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
	ASTM	420	304	316	F22a
阀座 Seat	GB	2Cr13	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
	ASTM	420	304	316	F22a
填料 Packing	GB	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
	ASTM	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
螺栓 Bolt	GB	35	0Cr18Ni9	0Cr18Ni9	15Cr1Mo1V
	ASTM	A193 B7	A320-B8	A320-B8	A193 B16
螺母 Nut	GB	45	0Cr18Ni9	0Cr18Ni9	20CrMov
	ASTM	A194 2H	A194-8	A194-8	A194-4

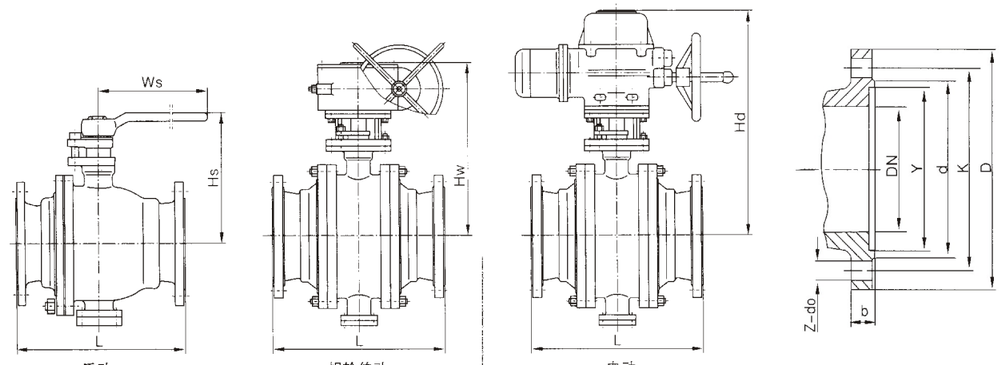


手动 Manual　蜗轮传动 Worm geared　电动 Motor

$Q47^{H}_{Y}$ 、$Q347^{H}_{Y}$ 、$Q947^{H}_{Y}$

主要连接尺寸 Main connecting dimensions

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension							
		L	D	K	d	b	z-do	Hw	Hd
1.6MPa	150	394	285	240	210	24	8-23	470	540
	200	457	340	295	265	26	12-23	520	580
	250	533	405	355	320	30	12-25	610	640
	300	610	460	410	375	30	12-25	650	690
	350	686	520	470	435	34	16-25	740	785
	400	762	580	525	485	36	16-30	795	830
	450	864	640	585	545	40	20-30	860	910
	500	914	715	650	608	44	20-34	945	990
	600	1067	840	770	718	48	20-41	1040	1090
	700	1245	910	840	788	50	24-41	1150	1210
	800	1372	1025	950	898	52	24-41	1280	1340
	900	1524	1125	1050	998	54	28-41	1430	1510
	1000	1753	1255	1170	1110	56	28-48	1580	1640
	1200	2032	1485	1390	1325	58	32-54	1810	1910
	1400	2300	1685	1590	1525	60	36-54	2010	2115
2.5MPa	150	403	300	250	218	30	8-25	470	555
	200	502	360	310	278	34	12-25	540	595
	250	568	425	370	332	36	12-30	630	655
	300	648	485	430	390	40	16-30	650	705
	350	762	555	490	448	44	16-34	740	795
	400	838	620	550	505	48	16-34	795	830
	450	914	670	600	555	50	20-34	860	910
	500	991	730	660	610	52	20-41	945	990
	600	1143	845	770	718	56	20-41	1040	1090
	700	1346	960	875	815	60	24-48	1150	1210
	800	1524	1085	990	930	64	24-48	1305	1340
	900	1727	1185	1090	1025	66	28-54	1505	1600
	1000	1880	1320	1210	1140	68	28-58	1615	1705
	1200	2184	1520	1420	1350	72	32-58	1925	2035
	1400	2300	1755	1640	1560	78	36-65	2110	2185

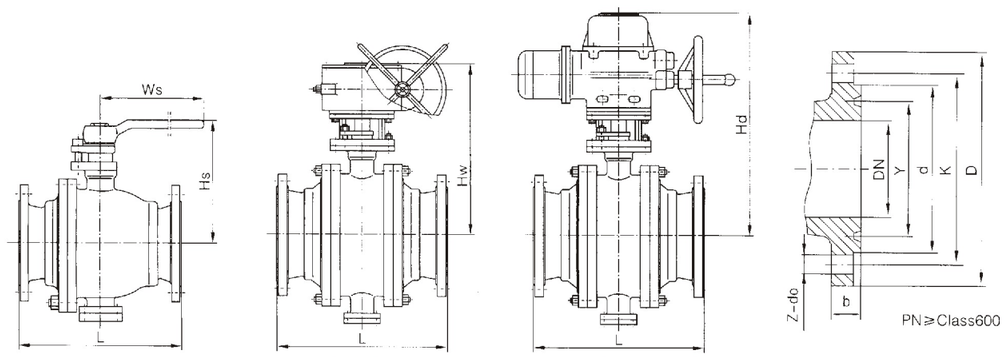


手动 Manual　蜗轮传动 Worm geared　电动 Motor

$Q47^{H}_{Y}$ 、$Q347^{H}_{Y}$ 、$Q947^{H}_{Y}$

主要连接尺寸 Main connecting dimensions

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension								
		L	D	K	d	Y	b	z-do	Hw	Hd
4.0MPa	150	403	300	250	218	204	30	8-25	485	590
	200	502	375	320	282	260	38	12-30	580	640
	250	568	450	385	345	313	42	12-34	665	680
	300	648	515	450	408	364	46	16-34	760	810
	350	762	580	510	465	422	52	16-34	820	890
	400	838	660	585	535	474	58	16-41	860	940
	450	914	685	610	560	524	60	20-41	930	1010
	500	991	755	670	612	576	62	20-48	980	1130
	600	1143	890	795	730	678	62	20-54	1040	1090
	700	1346	995	900	835	768	68	24-54	1150	1210
	800	1524	1140	1030	960	876	76	24-58	1305	1340
	900	1727	1270	1168	1022	-	105	32-54	1505	1600
	1000	1880	1238	1156	1086	-	114	32-44	1615	1705
	1200	2184	1467	1372	1302	-	133	32-51	1925	2035
	1400		1708	1600	1518	-	154	28-60	2110	2185
6.4MPa	150	495	345	280	240	204	38	8-34	485	590
	200	597	405	345	300	260	44	12-34	580	650
	250	673	470	400	352	313	48	12-41	665	720
	300	762	530	460	412	364	54	16-41	760	840
	350	826	600	525	475	422	60	16-41	820	930
	400	902	670	585	525	474	66	16-48	970	990
	500	1054	800	705	640	576	70	20-54	995	1150
	600	1232	930	820	750	678	76	20-58	1100	1180
	700	1397	1035	940	800	-	95	28-51	1180	1230
	800	1651	1149	1054	914	-	108	28-54	1345	1385
	900	1880	1270	1168	1022	-	114	32-54	1550	1655
	1000	1981	1270	1175	1092	-	133	32-51	1675	1745
	1200	2311	1511	1403	1308		152	28-60	1945	2075



手动 Manual
蜗轮传动 Worm geared
电动 Motor

$Q47^{H}_{Y}$ 、$Q347^{H}_{Y}$ 、$Q947^{H}_{Y}$

主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension								
		L	D	K	d	Y	b	z-dо	Hw	Hd
Class 150	2"	178	152	120.5	92	-	19	4-19	-	-
	2 1/2"	190	178	139.5	105	-	22.5	4-19	-	-
	3"	203	190	152.5	127	-	24	4-19	-	-
	4"	229	229	190.5	157	-	24	8-19	390	500
	5"	356	254	216	186	-	24	8-22	410	520
	6"	394	279	241.5	216	-	26	8-22	470	540
	8"	457	343	298.5	270	-	29	8-22	520	580
	10"	533	406	362	324	-	31	12-25	610	640
	12"	610	483	432	381	-	32	12-25	650	690
	14"	686	533	476	413	-	35	12-29	740	785
	16"	762	597	540	470	-	37	16-29	795	830
	18"	864	635	578	533	-	40	16-32	860	910
	20"	914	699	635	584	-	43	20-32	945	990
	24"	1067	813	749.5	692	-	48	20-35	1040	1090
	28"	1245	927	864	800	-	71	28-35	1150	1210
	32"	1372	1060	978	914	-	81	28-41	1280	1340
Class 300	2"	216	165	127	92	-	23	8-19	-	-
	2 1/2"	241	190	149	105	-	26	8-22	-	-
	3"	283	210	168.5	127	-	29	8-22	-	-
	4"	305	254	200	157	-	32	8-22	410	530
	5"	381	279	235	186	-	35	8-22	470	560
	6"	403	318	270	216	-	37	12-22	485	590
	8"	502	381	330	270	-	42	12-25	580	640
	10"	568	445	387.5	324	-	48	16-29	665	680
	12"	648	521	451	381	-	51	16-32	760	810
	14"	762	584	514.5	413	-	54	20-32	820	890
	16"	838	648	571.5	470	-	58	20-35	860	940
	18"	914	711	628.5	533	-	61	24-35	930	1010
	20"	991	775	686	584	-	64	24-35	980	1130
Class 600	2"	292	165	127	108	82.5	26	8-19	-	-
	2 1/2"	330	190	149	127	101.6	29	8-22	-	-
	3"	356	210	168	146	123.8	32	8-22	-	-
	4"	432	273	216	175	149.2	38	8-25	395	550
	5"	508	330	266.5	210	180.9	45	8-29	430	580
	6"	559	356	292	241	211.1	48	12-29	495	620
	8"	660	419	349	302	269.8	56	12-32	595	680
	10"	787	508	432	356	323.8	64	16-35	680	740
	12"	838	559	489	413	381.0	67	20-35	790	850

一、结构特点及用途 Structure and usage

1、抗硫化应力裂化：阀门接触介质的材料都是按美国腐蚀工程师协会NACE01-75的标准进行选择，且按标准进行表面镀镍，能满足硫化环境工况的要求。
2、用聚合物或金属作密封材料，在高温、高压工况具有优良的密封性能。
3、设置填料箱，防止阀门内腔压力异常升高而使阀杆飞出，增置倒密封结构，能确保填料可靠密封。
4、广泛适用于化工、炼油、油气、天然气、钢铁等零介质管路。

(1)Anti-sulfide: The material is according to the standard of NACE, and the surface of the material is plated with Nickel.
(2)Sealing materials are Polymer or metal, so it has good sealing performance in high-pressure and high-temperature condition.
(3)Packing box is set to prevent outing of stem because of the rising pressure of inside chamber. The inverted sealed structure and make sure the packing is reliable.
(4)It is widely used in chemical, oil refining, oil and gas, natural gas, iron and steel, etc.

二、执行标准 Executive Standard

1、设计和制造Design and manufacture：GB/T12237； API 608
2、检验和试验Inspection and test：JB/T9092； API 598
3、法兰连接Flange connection：JB/T79.1~4； ASME/ANSI B16.5
4、结构长度Face to face and end to end connection：GB/T12221； GB/T15188.1； ASME/ANSI B16.10

三、性能规范 Performance Specifications

试验压力 Testing pressure 单位Unit：MPa

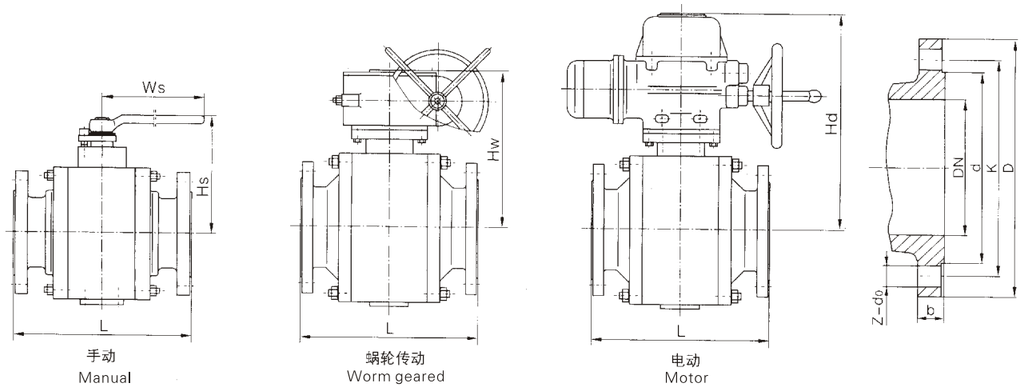
公称压力PN Nominal pressure	常温最大工作压力 Maximum working pressure at room temperature	壳体试验压力 Shell test pressure	气密封试验压力 Gas pressure sealing test	高压密封试验压力 High-pressure sealing test pressure:
1.6	1.6	2.4	0.6	1.76
2.5	2.5	3.8	0.6	2.75
4.0	4.0	6.0	0.6	4.4
6.4	6.4	9.6	0.6	7.1
10.0	10.0	15.0	0.6	11.0
16.0	16.0	24.0	0.6	17.6
20.0	20.0	30.0	0.6	22.0
25.0	25.0	37.5	0.6	27.5
Class150	2.0	3.0	0.6	2.2
Class300	5.0	7.5	0.6	5.5
Class600	10.0	15.0	0.6	11.0
Class900	15.0	22.5	0.6	16.5
Class1500	25.0	37.5	0.6	27.5

使用范围 Using range

壳体材料 Material of shell	阀座材料 Material of shell	适用温度 The application of temperature	适用介质 The application of media
碳钢C型 Carbon steel C type	PTFE	≤150℃	水、蒸汽、油品等 The application of media
	不锈钢 stainless steel	≤425℃	
铬镍钛钢P型 Ti-Cr-Ni steel P-type	PTFE	≤150℃	硝酸类 Nitric acid
	不锈钢 stainless steel	≤200℃	
铬镍钼钛钢R型 Ti-Cr-Ni-Mo steel R-type	PTFE	≤150℃	醋酸类 Acetic acid
	不锈钢 stainless steel	≤200℃	
铬钼钒钢I型 Cr-Mo-V steel I-type	硬质合金 Carbide	≤550℃	蒸汽、冶炼、能源等 water、steam、oil etc

四、主要零件材料 Materials for the main parts

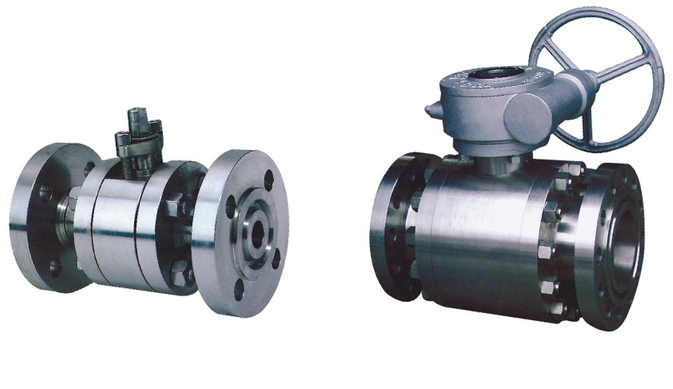
阀体、阀盖、填料箱 Body and bonnet	GB	25		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti		15Cr1Mo1V
	ASTM	1025		304		316		WC9
球体 Ball	GB	2Cr13/表面特殊处理 Special treatment on surface		1Cr18Ni9Ti/表面特殊处理 Special treatment on surface		ZG0Cr18Ni12Mo2Ti/表面特殊处理 Special treatment on surface		25Cr2Mo1V/表面特殊处理 Special treatment on surface
	ASTM	420		304+HF		316+HF		F22a+HF
阀杆、固定轴 Stem,fixed shaft	GB	2Cr13		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti		25Cr2Mo1V
	ASTM	420		304		316		F22a
阀座 Seat	GB	PTFE	2Cr13	PTFE	1Cr18Ni9Ti	PTFE	0Cr18Ni12Mo2Ti	25Cr2Mo1V
	ASTM	PTFE	420	PTFE	304	PTFE	316	F22a
填料 Packing	GB	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
	ASTM	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
螺栓 Bolt	GB	35		0Cr18Ni9		0Cr18Ni9		15Cr1Mo1V
	ASTM	A193 B7		A320-B8		A320-B8		A193 B16
螺母 Nut	GB	45		1Cr13		1Cr13		20CrMo
	ASTM	A194 2H		A194-8		A194-8		A194-4



手动 Manual　　蜗轮传动 Worm geared　　电动 Motor

主要连接尺寸 Main connection size

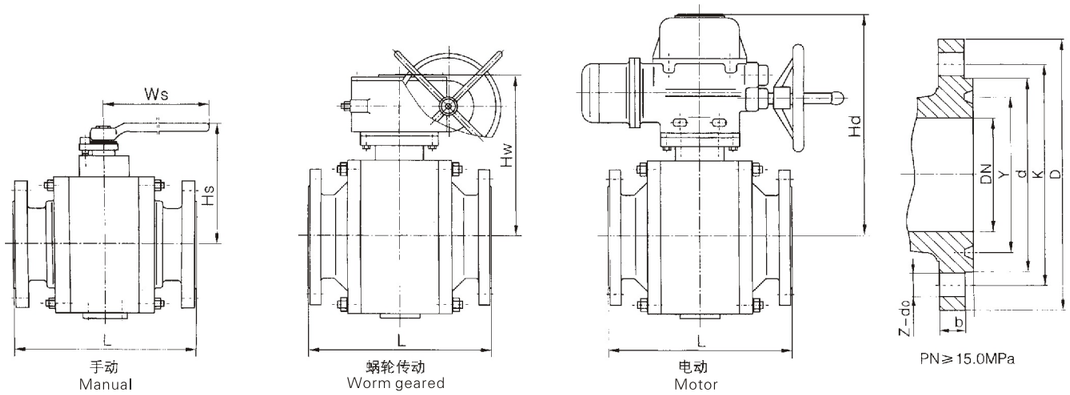
公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺　寸 (mm) Dimension									
		L	D	K	d	b	z-d0	Ws	Hs	Hw	Hd
1.6MPa	40	165	150	110	85	16	4-18	230	135	-	-
	50	203	165	125	100	16	4-18	260	150	-	-
	65	222	185	145	120	18	4-18	350	180	-	-
	80	241	200	160	135	20	8-18	500	195	-	-
	100	305	220	180	155	20	8-18	650	245	310	420
	125	356	250	210	185	22	8-18	800	270	330	440
	150	394	285	240	210	24	8-23	1000	295	390	470
	200	457	340	295	265	26	12-23	-	-	440	510
	250	533	405	355	320	30	12-25	-	-	490	560
	300	610	460	410	375	30	12-25	-	-	530	600
	350	686	520	470	435	34	16-25	-	-	620	670
	400	762	580	525	485	36	16-30	-	-	675	720
	450	864	640	585	545	40	20-30	-	-	740	790
	500	914	715	650	608	44	20-34	-	-	825	870
	600	1067	840	770	718	48	20-41	-	-	920	960
2.5MPa	40	190	150	110	85	18	4-18	230	135	-	-
	50	216	165	125	100	20	4-18	260	150	-	-
	65	241	185	145	120	22	8-18	350	180	-	-
	80	283	200	160	135	22	8-18	500	195	-	-
	100	305	230	190	160	24	8-23	650	245	310	420
	125	381	270	220	188	28	8-25	800	270	330	440
	150	403	300	250	218	30	8-25	1000	295	390	470
	200	502	360	310	278	34	12-25	-	-	440	510
	250	568	425	370	332	36	12-30	-	-	490	560
	300	648	485	430	390	40	16-30	-	-	530	600
	350	762	555	490	448	44	16-34	-	-	620	670
	400	838	620	550	505	48	16-34	-	-	675	720
	450	914	670	600	555	20	20-34	-	-	740	790
	500	991	730	660	610	52	20-41	-	-	825	870
	600	1143	845	770	718	56	20-41	-	-	920	960



PN4.0~10.0MPa

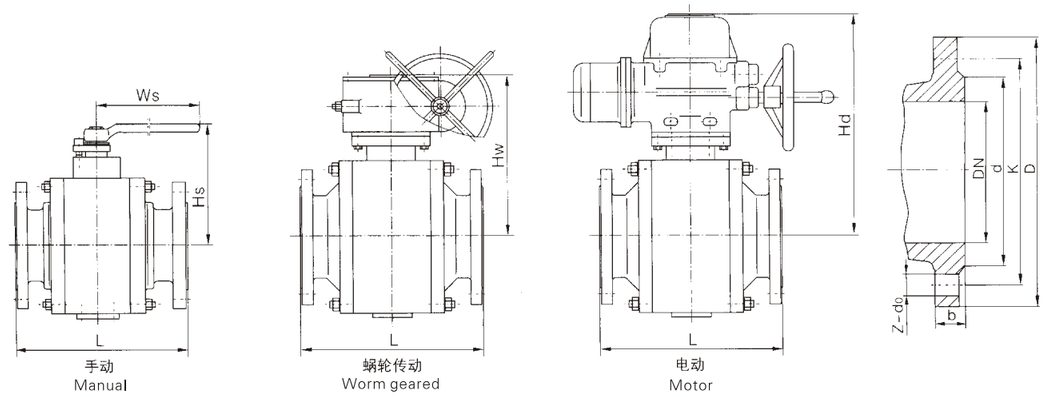
主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺　寸 (mm) Dimension										
		L	D	K	d	Y	b	z-d0	Ws	Hs	Hw	Hd
4.0MPa	40	190	150	110	85	76	18	4-18	230	135	-	-
	50	216	165	125	100	88	20	4-18	260	150	-	-
	65	241	185	145	120	110	22	8-18	350	180	-	-
	80	283	200	160	135	121	22	8-18	500	195	-	-
	100	305	235	190	160	150	24	8-23	800	250	320	430
	125	381	270	220	188	176	28	8-25	1000	280	340	450
	150	403	300	250	218	204	30	8-25	1200	300	405	480
	200	502	375	320	282	260	38	12-30	-	-	450	530
	250	568	450	385	345	313	42	12-34	-	-	505	590
	300	648	515	450	408	364	46	16-34	-	-	545	620
	350	762	580	510	465	422	52	16-34	-	-	640	690
	400	838	660	585	535	474	58	16-41	-	-	690	740
	450	914	685	610	560	524	60	20-41	-	-	760	810
	500	991	755	670	612	576	62	20-48	-	-	850	900
6.4MPa	40	241	170	125	95	76	24	4-23	260	140	-	-
	50	292	180	135	105	88	26	4-23	260	160	-	-
	65	330	205	160	130	110	28	8-23	350	80	-	-
	80	356	215	170	140	121	30	8-23	500	220	-	-
	100	406	250	200	168	150	32	8-25	800	250	320	430
	125	400	295	240	202	176	36	8-30	1000	295	340	450
	150	495	345	280	240	204	38	8-34	1200	340	405	480
	200	597	405	345	300	260	44	12-34	-	-	450	530
	250	673	470	400	352	313	48	12-41	-	-	505	590
	300	762	530	460	412	364	54	16-41	-	-	545	620
	350	826	600	525	475	422	60	16-41	-	-	640	690
	400	902	670	585	525	474	66	16-48	-	-	690	740
	500	1054	800	705	640	576	70	20-54	-	-	760	810
10.0MPa	40	241	170	125	95	76	26	4-23	260	160	-	-
	50	292	195	145	112	88	28	4-25	350	180	-	-
	65	330	220	170	138	110	32	8-25	500	200	-	-
	80	356	230	180	148	121	34	8-25	800	240	310	410
	100	432	265	210	172	150	38	8-30	100	270	340	450
	125	508	315	250	210	176	42	8-34	1200	320	360	505



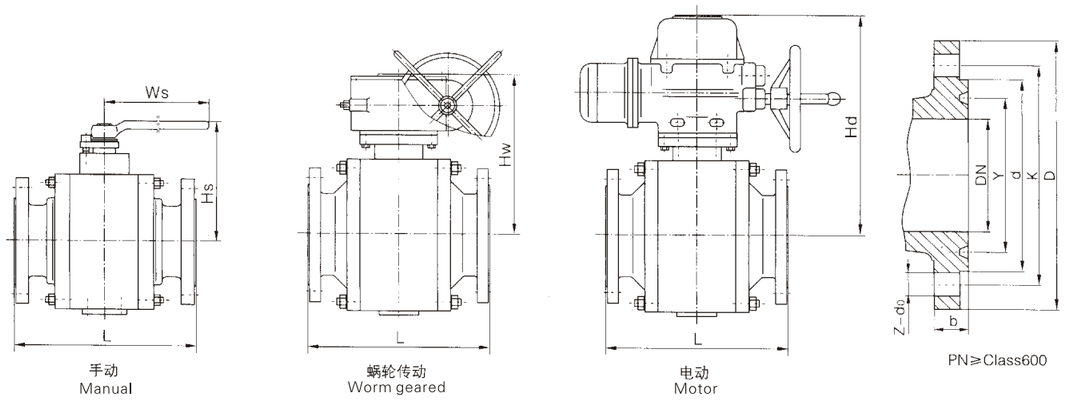
主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	b	z-do	Ws	Hs	Hw	Hd
10.0MPa	150	559	355	290	250	205	46	12-34	-	-	425	555
	200	660	430	360	312	265	54	12-41	-	-	470	625
	250	787	505	430	382	320	60	12-41	-	-	525	645
	300	838	585	500	442	375	70	16-48	-	-	565	715
	350	889	655	560	498	420	76	16-54	-	-	670	770
	400	991	715	620	558	480	80	16-54	-	-	720	840
16.0MPa	40	305	175	125	92	75	32	4-27	350	160	-	-
	50	368	215	165	132	95	36	8-25	500	180	-	-
	65	419	245	190	152	110	44	8-30	800	200	-	-
	80	381	260	205	168	130	46	8-30	1000	240	310	410
	100	457	300	240	200	160	48	8-34	1200	270	340	450
	125	559	355	285	238	190	60	8-41	-	-	360	505
	150	610	390	318	270	205	66	12-41	-	-	425	560
	200	737	480	400	345	275	78	12-48	-	-	530	630
	250	838	580	485	425	330	88	12-54	-	-	570	720
	300	965	665	570	510	380	100	16-54	-	-	680	780
20.0MPa	40	305	170	124	90	75	34	4-27	500	180	-	-
	50	368	210	160	128	95	40	8-25	650	200	-	-
	65	419	260	203	165	110	48	8-30	800	220	-	-
	80	470	290	230	190	160	54	8-34	1000	260	320	420
	100	546	360	292	245	190	66	8-41	1200	290	360	470
	125	673	385	318	270	205	76	12-41	-	-	380	530
	150	705	440	360	305	240	82	12-48	-	-	440	580
	200	832	535	440	380	305	92	12-54	-	-	550	650
	250	991	670	572	508	380	110	16-58	-	-	590	740
25.0MPa	40	305	180	124	92	68.2	32	4-29.5	500	180	-	-
	50	368	215	165	124	95.2	38.5	8-26	650	200	-	-
	65	419	245	190.5	137	107.9	41.5	8-29.5	800	220	-	-
	80	470	265	203	168	136.5	48	8-32.5	1000	260	320	420
	100	546	310	241.5	194	161.9	54	8-35.5	1200	290	360	470
	125	673	375	292	229	193.6	73.5	8-42	-	-	380	530
	150	705	395	317.5	248	211.1	83	12-39	-	-	440	580
	200	832	485	393.5	318	269.8	92	12-45	-	-	550	650



主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm)									
		L	D	K	d	b	z-do	Ws	Hs	Hw	Hd
Class 150	1 1/2"	165	127	98.5	73	15	4-15	230	135	-	-
	2"	178	152	120.5	92	19	4-19	260	150	-	-
	2 1/2"	190	178	139.5	105	22.5	4-19	350	180	-	-
	3"	203	190.5	152.5	127	24	4-19	500	195	310	420
	4"	229	229	190.5	157	24	8-19	650	245	330	440
	5"	356	254	216	186	24	8-22	800	270	390	470
	6"	394	279	241.5	216	26	8-22	1000	295	440	510
	8"	457	343	298.5	270	29	8-22	-	-	490	560
	10"	533	406	362	324	31	2-25	-	-	530	600
	12"	610	483	432	381	32	12-25	-	-	620	670
	14"	686	533	476	413	35	12-29	-	-	675	720
	16"	762	597	540	470	37	16-29	-	-	740	790
	18"	864	635	578	533	40	16-32	-	-	825	870
	20"	914	699	635	584	43	20-32	-	-	920	960
	24"	1067	813	749.5	692	48	20-35	-	-	-	-
Class 300	1 1/2"	190	156	114.5	73	21	4-22	230	135	-	-
	2"	216	165	127	92	23	8-19	260	150	-	-
	2 1/2"	241	190	149	105	26	8-22	350	180	-	-
	3"	243	210	168.5	127	29	8-22	500	195	320	430
	4"	305	254	200	157	32	8-22	800	250	340	450
	5"	356	279	235	186	35	8-22	1000	280	405	480
	6"	403	318	270	216	37	12-22	1200	300	450	530
	8"	502	381	330	270	42	12-25	-	-	505	590
	10"	568	445	387.5	324	48	16-29	-	-	545	620
	12"	648	521	451	381	51	16-32	-	-	640	690
	14"	762	584	514.5	413	54	20-32	-	-	690	740
	16"	838	648	571.5	470	58	20-35	-	-	760	810
	18"	914	711	628.5	533	61	24-35	-	-	850	900
	20"	991	775	686	584	64	24-35	-	-		



手动 Manual　　蜗轮传动 Worm geared　　电动 Motor　　PN≥Class600

主要连接尺寸Main connection size

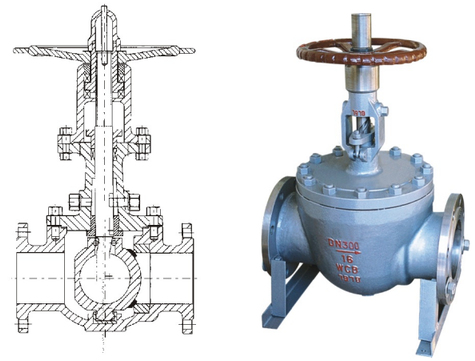
公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺　寸 (mm) Dimension										
		L	D	K	d	Y	b	z-do	Ws	Hs	Hw	Hd
Class 600	1 1/2"	241	156	114.5	90	68.2	23	4-22	260	160	-	-
	2"	292	165	127	108	82.5	26	8-19	350	180	-	-
	2 1/2"	330	190	149	127	101.6	29	8-22	500	200	-	-
	3"	356	210	168	146	123.8	32	8-22	800	240	310	410
	4"	432	273	216	175	149.2	38	8-25	1000	270	340	450
	5"	508	330	266.5	210	180.9	45	8-29	1200	320	360	505
	6"	559	356	292	241	211.1	48	12-29	-	-	425	555
	8"	660	419	349	302	269.8	56	12-32	-	-	470	625
	10"	787	508	432	356	323.8	64	16-35	-	-	525	645
	12"	838	559	489	413	381.0	67	20-35	-	-	565	715
	14"	889	603	527	457	419.1	70	20-38	-	-	670	770
	16"	991	686	603	508	469.9	77	20-41	-	-	720	840
	18"	1092	743	654	575	533.4	83	20-44	-	-	780	920
	20"	1194	813	724	635	584.2	89	24-44	-	-	820	995
Class 900	1 1/2"	305	178	123.8	73	-	32.0	4-29	350	160	-	-
	2"	368	216	165.1	92	-	38.5	8-26	500	180	-	-
	2 1/2"	419	244	190.5	105	-	41.5	8-29	800	200	-	-
	3"	381	241	190.5	156	123.8	38.5	8-26	1000	240	310	410
	4"	457	292	234.9	181	149.2	44.5	8-32	1200	270	340	450
	5"	559	349	279.4	216	180.9	51.0	8-35	-	-	360	505
	6"	610	381	317.5	211	211.1	56.0	12-32	-	-	425	560
	8"	737	470	393.7	308	269.8	63.5	12-39	-	-	530	630
	10"	838	545	469.9	362	323.8	70.0	16-39	-	-	570	720
	12"	965	610	533.4	419	381.0	79.5	20-39	-	-	680	780
	14"	1029	640	558.8	467	419.1	86.0	20-42	-	-	800	905
	16"	1130	705	615.9	524	469.9	89.0	20-45	-	-	910	1010
Class 1500	1 1/2"	305	178	123.8	92	68.2	32.0	4-29	500	180	-	-
	2"	368	216	165.1	124	95.2	38.5	8-26	650	200	-	-
	2 1/2"	419	244	190.5	137	107.9	41.5	8-29	800	220	-	-
	3"	470	267	203.2	168	136.5	48.0	8-32	1000	260	320	420
	4"	546	311	241.3	194	161.9	54.0	8-35	1200	290	360	470
	5"	673	375	292.1	229	193.6	73.5	8-42	-	-	380	530
	6"	705	394	317.5	248	211.1	83.0	12-39	-	-	440	580
	8"	832	483	393.7	318	269.8	92.9	12-45	-	-	550	650

一、轨道球阀(导轨式摆动球阀)

通常阀门在开关过程，由于环境不同和压力升高，会增加阀门开启的扭矩，从而引起阀座磨损和驱动装置增大。轨道球阀的阀芯是通过机械收缩动作装置增大。轨道球阀的阀芯是通过机械收缩动作拉离阀座，阀芯旋转时不接触阀座，做无磨擦传动，当阀门关闭时，靠机械增压来密封，这意味着可以使用经济的驱动装置，同时能保证有足够的驱动器推力来开关阀门。

由于轨道球阀独特的结构设计，做到开关无磨损、关断性能好等特点，能适合各种苛刻工况的要求。防火型设计、全金属结构设计，能适应低温-200℃至最高+600℃的各种工作温度，以及含颗粒、纤维等工况的特殊要求。

标准的抗硫型轨道阀，阀门接触介质的材料都是按美国腐蚀工程师协会标准NACE MR01-75的要求进行设计，并在制造过程中作严格的质量控



1、Orbit ball valve

The torque will change during the the opening and closing of the valve, the valve seat will wear and the device will enlarge. The disc of orbit ball valve will apart from seat and does frictionless operation. When the valve is closed, sealed by increasing the pressure, so we can use economical device .

Due to the unique design of orbit ball valve, the switch is free from wear, turn-off performance is good also, so it can work in harsh working conditions. Fire safety design and all-metal design, the temperature will be from -200℃to 600℃, and the media will contain

二、基本设计 Basic design

公称通径：DN25~500mm，1"~20"
Nominal diamete

公称压力：1.6~16.0MPa，Class 150~1500Lb
Nominal pressure

主要介质：天然气、氢气、氨气、热油、LPG、烷、烃类等
Main media: Natural gas, hydrogen, ammonia、hot oil、LPG、hydrocarbon.

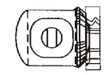
驱动形式：手动、气动、电动、液动等
Driving type: Manual, pneumatic, electric, hydraulic.

三、启闭原理 the principle of closing and opening

开启过程 Opening process

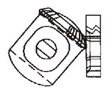
在关闭位置，球芯受阀杆的机械施压作用，紧压在阀座上。

The ball disc bores mechanical pressure by stem, and lean on the base.



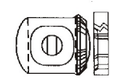
阀杆继续提升，并与阀杆螺旋槽内的导销相互作用，使阀芯开始无摩擦旋转。

The stem continues to rise and interact with guide pin, and the valve disc will do friction-free rotation.



当逆时针转动手轮时，阀杆则向上运动，其底部的角形平面使阀芯倾离阀座。

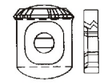
When the handwheel rotated counterclockwise the stem will rise , the triangle plane will make the valve disc apart from the seat.



到全开位置，阀杆升到极限位置，阀芯转到全(直)通位置。

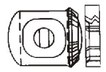
When it fully open to the limit location, the valve disc will turn to all-pass position.

关闭过程 Closing process



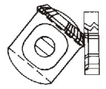
关阀时，顺时针转动手轮，阀杆开始下降并使球芯开始旋转。

When closing the valve, rotated the valve clockwise and the stem begin to down and the ball



快要关闭时，阀芯已在与阀座无接触的情况下旋转了90° 。

When the valve is near closed then valve trim has rotated 90



继续转动手轮，阀杆受到嵌于其上螺旋槽内的导向销的作用，使阀杆和阀芯同时旋转90° 。

Continue to rotate the handwheel to make the valve



手轮转动的最后几圈，阀杆底部的角形平面机械地楔向压迫球芯，使其紧密压在阀座上。

At the last circles of rotated ring, the ball disc will close to the

四、执行标准 Implementation of standards

1、设计和制造Design and manufacture：GB/T12237； API 608

2、检验和试验Inspection and testing：JB/T9092； API 598

3、法兰连接Flange connection：JB/T79.1~4； ASME/ANSI B16.5

4、结构长度Face to face and end to end connection：GB/T12224； GB/T15188.1； ASME/ANSI B16.10

五、性能规范 Performance Specifications

试验压力 Testing pressure　　单位Unit：MPa

公称压力PN Nominal pressure	常温最大工作压力 Maximum working pressure at room temperature	壳体试验压力 Shell test pressure	气密封试验压力 Gas pressure sealing test	高压密封试验压力 High-pressure sealing test pressure:
1.6	1.6	2.4	0.6	1.76
2.5	2.5	3.8	0.6	2.75
4.0	4.0	6.0	0.6	4.4
6.4	6.4	9.6	0.6	7.1
10.0	10.0	15.0	0.6	11.0
16.0	16.0	24.0	0.6	17.6
20.0	20.0	30.0	0.6	22.0
25.0	25.0	37.5	0.6	27.5
Class150	2.0	3.0	0.6	2.2
Class300	5.0	7.5	0.6	5.5
Class600	10.0	15.0	0.6	11.0
Class900	15.0	22.5	0.6	16.5
Class1500	25.0	37.5	0.6	27.5

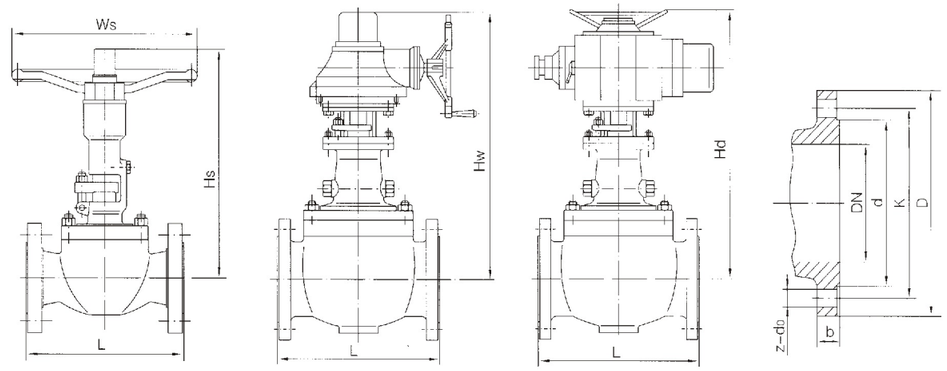
使用范围 Using range

壳体材料 Material of shell	阀座材料 Material of shell	适用温度 The application of temperature	适用介质 The application of media
碳钢C型 Carbon steel C type	PTFE+不锈钢 +stainless steel	≤150℃	水、蒸汽、油品等 The application of media
	不锈钢 stainless steel	≤425℃	
铬镍钛钢P型 Ti-Cr-Ni steel P-type	PTFE+不锈钢 +stainless steel	≤150℃	硝酸类 Nitric acid
	不锈钢 stainless steel	≤200℃	
铬镍钼钛钢R型 Ti-Cr-Ni-Mo steel R-type	PTFE+不锈钢 +stainless steel	≤150℃	醋酸类 Acetic acid
	不锈钢 stainless steel	≤200℃	
铬钼钒钢I型 Cr-Mo-V steel I-type	硬质合金 Carbide	≤550℃	蒸汽、冶炼、能源等 water、steam、oil etc

六、主要零件材料 Materials for the main parts

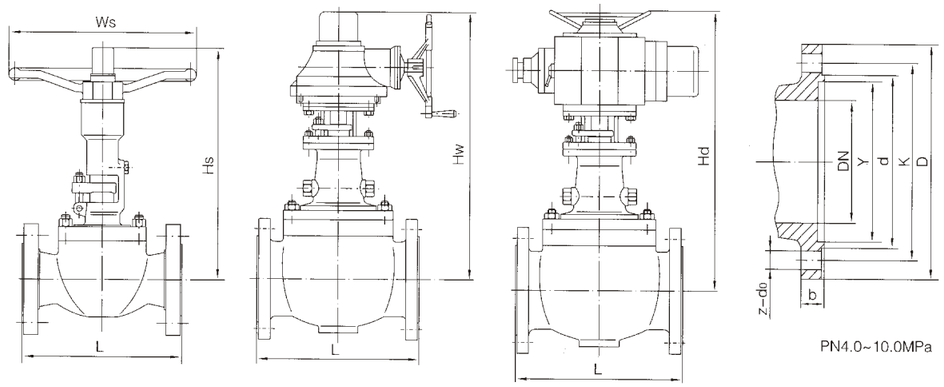
阀体、阀盖、填料箱 Body and bonnet	GB	WCB		ZG1Cr18Ni9Ti		ZG0Cr18Ni12Mo2Ti		ZG15Cr1Mo1V
	ASTM	WCB		CF8		CF8M		WC9
球体 Ball	GB	WCB+硬质合金 Special treatment on surface		ZG1Cr18Ni9Ti+硬质合金 Special treatment on surface		ZG0Cr18Ni12Mo2Ti+硬质合金 Special treatment on surface		ZG25Cr2Mo1V+硬质合金 Special treatment on surface
	ASTM	420		CF8+HF		CF8M+HF		WC9+HF
阀杆、固定轴 Stem,fixed shaft	GB	2Cr13		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti		25Cr2Mo1V
	ASTM	420		304		316		F22a
阀座 Seat	GB	PTFE	1Cr18Ni9Ti	PTFE	1Cr18Ni9Ti	PTFE	0Cr18Ni12Mo2Ti	D517
	ASTM	PTFE	304	PTFE	304	PTFE	316	HF
填料 Packing	GB	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
	ASTM	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	PTFE	柔性石墨 Flexible graphite	柔性石墨 Flexible graphite
螺栓 Bolt	GB	35		0Cr18Ni9		0Cr18Ni9		15Cr1Mo1V
	ASTM	A193 B7		A320-B8		A320-B8		A193 B16
螺母 Nut	GB	45		1Cr13		1Cr13		20CrMo
	ASTM	A194 2H		A194-8		A194-8		A194-4

轨道球阀
Orbit ball valve
{工匠精神 品质永恒}
工恒阀门(上海)有限公司



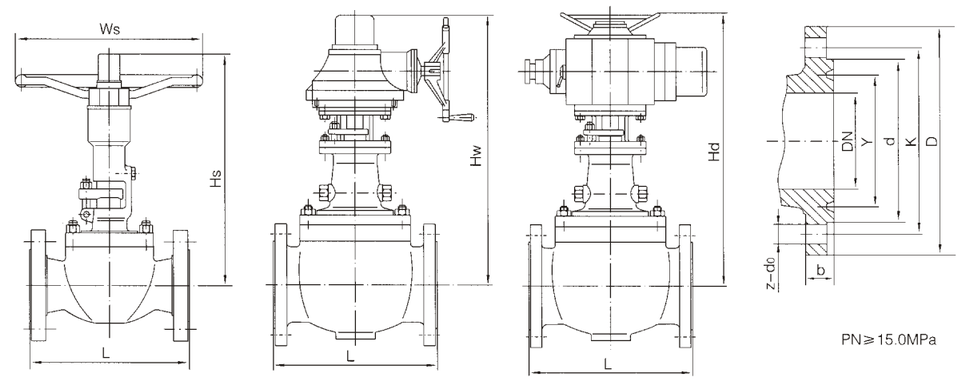
主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension									
		L	D	K	d	b	z-d0	Ws	Hs	Hw	Hd
1.6 MPa	40	165	150	110	85	16	4-Φ18	200	320	-	-
	50	203	165	125	100	16	4-Φ18	250	400	-	-
	65	222	185	145	120	18	4-Φ18	300	460	-	-
	80	241	200	160	135	20	8-Φ18	300	540	-	-
	100	305	220	180	155	20	8-Φ18	300	600	-	750
	125	356	250	210	185	22	8-Φ18	350	645	-	810
	150	394	285	240	210	24	8-Φ23	400	690	-	860
	200	457	340	295	265	26	12-Φ23	500	750	960	920
	250	533	405	355	320	30	12-Φ25	500	820	1040	990
	300	610	460	410	375	30	12-Φ25	600	820	1100	1050
	350	686	520	470	435	34	16-Φ25	600	990	1150	1100
	400	762	580	525	485	36	16-Φ30	-	-	1380	1320
	450	864	640	585	545	40	20-Φ30	-	-	1450	1380
	500	914	715	650	608	44	20-Φ34	-	-	1580	1525
	600	1067	840	770	718	48	20-Φ41	-	-	1910	1850
2.5 MPa	40	190	150	110	85	18	4-Φ18	200	320	-	-
	50	216	165	125	100	20	4-Φ18	250	400	-	-
	65	241	185	145	120	22	8-Φ18	300	460	-	-
	80	283	200	160	135	22	8-Φ18	300	540	-	-
	100	305	230	190	160	24	8-Φ23	300	600	-	750
	125	381	270	220	188	28	8-Φ25	350	645	-	810
	150	403	300	250	218	30	8-Φ25	400	690	-	860
	200	502	360	310	278	34	12-Φ25	500	750	960	920
	250	568	425	370	332	36	12-Φ30	500	820	1040	990
	300	648	485	430	390	40	16-Φ30	600	920	1100	1050
	350	762	555	490	448	44	16-Φ34	600	990	1150	1100
	400	838	620	550	505	48	16-Φ34	-	-	1380	1320



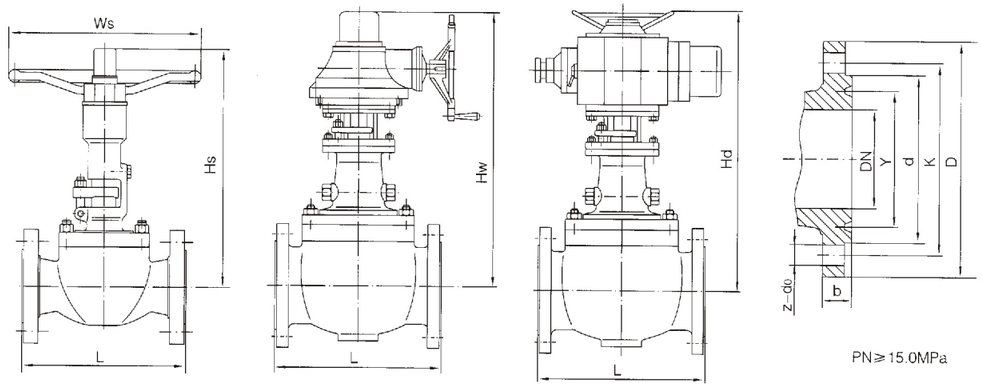
主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	b	z-d0	Ws	Hs	Hw	Hd
2.5 MPa	450	914	670	600	555	-	50	20-Φ34	-	-	1450	1380
	500	991	730	660	610	-	52	20-Φ41	-	-	1580	1525
	600	1143	845	770	718	-	56	20-Φ41	-	-	1910	1850
4.0 MPa	40	190	150	110	85	76	18	4-Φ18	250	320	-	-
	50	216	165	125	100	88	20	4-Φ18	300	400	-	-
	65	241	185	145	120	110	22	8-Φ18	400	460	-	-
	80	283	200	160	135	121	22	8-Φ18	400	540	-	-
	100	305	235	190	160	150	24	8-Φ23	500	600	-	760
	125	381	270	220	188	176	28	8-Φ25	500	650	-	810
	150	403	300	250	218	204	30	8-Φ25	600	690	910	860
	200	502	375	320	282	260	38	12-Φ30	600	750	970	920
	250	568	450	385	345	313	42	12-Φ34	700	810	1040	990
	300	648	515	450	408	364	46	16-Φ34	-	-	1160	1090
	350	762	580	510	465	422	52	16-Φ34	-	-	1210	1120
	400	838	660	585	535	474	58	16-Φ41	-	-	1410	1320
	450	914	685	610	560	524	60	20-Φ41	-	-	1490	1380
	500	991	755	670	612	576	62	20-Φ48	-	-	1650	1540
	600	1143	890	795	730	678	62	20-Φ54	-	-	1940	1880
6.4 MPa	40	241	170	125	95	76	24	4-Φ23	250	320	-	-
	50	292	180	135	105	88	26	4-Φ23	300	400	-	-
	65	330	205	160	130	110	28	8-Φ23	400	460	-	-
	80	356	215	170	140	121	30	8-Φ23	400	540	-	-
	100	406	250	200	168	150	32	8-Φ25	500	600	-	760
	125	400	295	240	202	176	36	8-Φ30	500	650	-	810
	150	495	345	280	240	204	38	8-Φ34	600	690	910	860
	200	597	405	345	300	260	44	12-Φ34	600	750	970	920
	250	673	470	400	352	313	48	12-Φ41	700	810	1040	1010



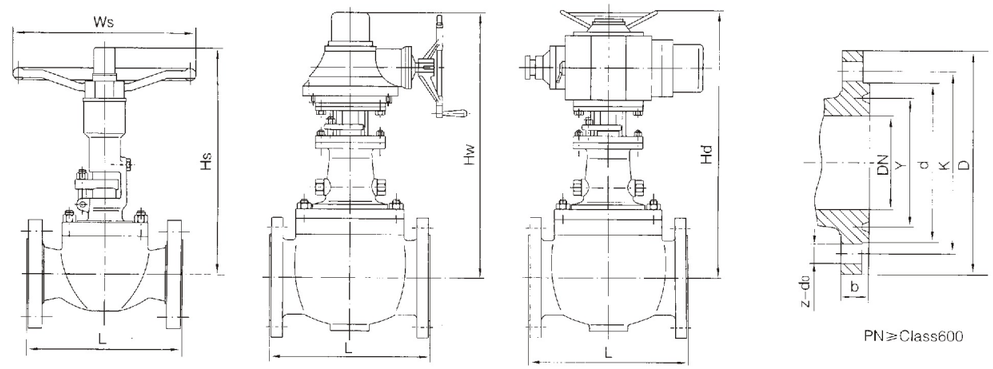
主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	b	z-d0	Ws	Hs	Hw	Hd
6.4 MPa	300	762	530	460	412	364	54	16-Φ41	-	-	1160	1090
	350	826	600	525	475	422	60	16-Φ41	-	-	1210	1120
	400	902	670	585	525	474	66	16-Φ48	-	-	1410	1320
	500	1054	800	705	640	576	70	20-Φ54	-	-	1490	1540
10.0 MPa	40	241	170	125	95	76	26	4-Φ23	300	340	-	-
	50	292	195	145	112	88	28	4-Φ25	300	430	-	610
	65	330	220	170	138	110	32	8-Φ25	400	490	-	670
	80	356	230	180	148	121	34	8-Φ25	400	570	-	730
	100	432	265	210	172	150	38	8-Φ30	500	630	-	790
	125	508	315	250	210	176	42	8-Φ34	600	680	-	840
	150	559	355	290	250	204	46	12-Φ34	700	720	970	900
	200	660	430	360	312	260	54	12-Φ41	-	-	1030	970
	250	787	505	430	382	313	60	12-Φ41	-	-	1095	1050
	300	838	585	500	442	364	70	16-Φ48	-	-	1220	1150
	350	889	655	560	498	422	76	16-Φ54	-	-	1280	1180
	400	991	715	620	558	474	80	16-Φ54	-	-	1490	1390
环连接面 16.0 MPa	40	305	175	125	92	75	32	4-Φ27	300	340	-	-
	50	368	215	165	132	95	36	8-Φ25	300	430	-	610
	65	419	245	190	152	110	44	8-Φ30	400	490	-	670
	80	381	260	205	168	130	46	8-Φ30	400	570	-	730
	100	457	300	240	200	160	48	8-Φ34	500	630	-	810
	125	559	355	285	238	190	60	8-Φ41	-	-	-	850
	150	610	390	318	270	205	66	12-Φ41	-	-	970	920
	200	737	480	400	345	275	78	12-Φ48	-	-	1050	990
	250	838	580	485	425	330	88	12-Φ54	-	-	1095	1080
	300	965	665	570	510	380	100	16-Φ54	-	-	1240	1180



主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	b	z-d0	Ws	Hs	Hw	Hd
20.0 MPa	40	305	170	124	90	75	34	4-Φ27	300	350	-	-
	50	368	210	160	128	95	40	8-Φ25	400	450	-	630
	65	419	260	203	165	110	48	8-Φ30	400	510	-	690
	80	470	290	230	190	160	54	8-Φ34	500	590	-	750
	100	546	360	292	245	190	66	8-Φ41	500	650	-	830
	125	673	385	318	270	205	76	12-Φ41	-	-	-	870
	150	705	440	350	305	240	82	12-Φ48	-	-	1010	950
	200	832	535	440	380	305	92	12-Φ54	-	-	1080	1020
	250	991	670	572	508	380	110	16-Φ58	-	-	1140	1140
Class 150	2"	178	152	120.5	92	-	19	4-Φ19	250	400	-	-
	2 1/2"	190	178	139.5	105	-	22.5	4-Φ19	300	460	-	-
	3"	203	190	152.5	127	-	24	4-Φ19	300	540	-	-
	4"	229	229	190.5	157	-	24	8-Φ19	300	600	-	750
	5"	356	254	216	186	-	24	8-Φ22	350	645	-	810
	6"	394	279	241.5	216	-	26	8-Φ22	400	690	-	860
	8"	457	343	298.5	270	-	29	8-Φ22	500	750	960	920
	10"	533	406	362	324	-	31	12-Φ25	500	820	1040	990
	12"	610	483	432	381	-	32	12-Φ25	600	920	1100	1050
	14"	686	533	476	413	-	35	12-Φ29	600	990	1150	1100
	16"	762	597	540	470	-	37	16-Φ29	-	-	1380	1320
	18"	864	635	578	533	-	40	16-Φ32	-	-	1450	1380
	20"	914	699	635	584	-	43	20-Φ32	-	-	1580	1525
	24"	1067	813	749.5	692	-	48	20-Φ35	-	-	1910	1850



主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	b	z-d0	Ws	Hs	Hw	Hd
Class 300	1 1/2"	190	156	114.5	73	-	21	4-Φ22	250	320	-	-
	2"	216	165	127	92	-	23	8-Φ19	300	400	-	-
	2 1/2"	241	190	149	105	-	26	8-Φ22	400	460	-	-
	3"	283	210	168.5	127	-	29	8-Φ22	400	540	-	-
	4"	305	254	200	157	-	32	8-Φ22	500	600	-	760
	5"	356	279	235	186	-	35	8-Φ22	500	650	-	810
	6"	403	318	270	216	-	37	12-Φ22	600	690	910	860
	8"	502	381	330	270	-	42	12-Φ25	600	750	970	920
	10"	568	445	387.5	324	-	48	16-Φ29	700	810	1040	990
	12"	648	521	451	381	-	51	16-Φ32	-	-	1160	1090
	14"	762	584	514.5	413	-	54	20-Φ32	-	-	1210	1120
	16"	838	648	571.5	470	-	58	20-Φ35	-	-	1410	1320
	18"	914	711	628.5	533	-	61	24-Φ35	-	-	1490	1380
	20"	991	775	686	584	-	64	24-Φ35	-	-	1650	1540
Class 600	1 1/2"	241	156	114.5	90	68.2	23	4-Φ22	300	340	-	-
	2"	292	165	127	108	82.5	26	8-Φ19	300	430	-	610
	2 1/2"	330	190	149	127	101.6	29	8-Φ22	400	490	-	670
	3"	356	210	168	146	123.8	32	8-Φ22	400	570	-	730
	4"	432	273	216	175	149.2	38	8-Φ25	500	630	-	790
	5"	508	330	266.5	210	180.9	45	8-Φ29	600	680	-	840
	6"	559	356	292	241	211.1	48	12-Φ29	700	720	970	900
	8"	660	419	349	302	269.8	56	12-Φ32	-	-	1030	970
	10"	787	508	432	356	323.8	64	16-Φ35	-	-	1095	1050
	12"	838	559	489	413	381.0	67	20-Φ35	-	-	1220	1150
	14"	889	603	527	457	419.1	70	20-Φ38	-	-	1280	1180
	16"	991	686	603	508	469.9	77	20-Φ41	-	-	1490	1390

一、结构特点及用途 Structure and usage

1、密封自动补偿：金属阀座尾端设有弹簧保证密封面有足够的预紧力，阀门使用过程中密封面磨损时，在弹簧作用下阀门继续保证良好密封。

2、工作稳定：球体设置上下轴支撑，受压后不会产生相对位置移动。

3、球体与密封圈之间有剪切作用，特适用含纤维、微小固体颗粒、浆等介质。

4、全开时流通能力大，压力损失小，且介质不会沉积在阀体中腔内。

5、在球体表面及球体通道、阀座内径和阀体通道进行超音速喷涂处理，密封性能和使用寿命均达到国际先进水平。

6、广泛适用于煤气尘灰、烟气尘灰、煤粉、污水、废渣、泥浆等。

(1)Sealed automatic compensation: The end of the metal valve seat has spring to make sure there are preload of surface, when the seal surface is wear during the using process of valve, the valve will keep good sealing performance because of the operation of spring.

(2)Performance stability: there are top axis and bottom axis support the ball, so there will no remove of valve after bearing the pressure.

(3)There are shearing between ball and sealing ring, the media can be containing fibers, small particles of solid, slurry and other media.

(4)Large flow capacity, small pressure loss will be and the media will not precipitate in the chamber.

(5)Supersonic spray processing will carry on the surface of the ball and the inside diameter of valve and the body channel. Sealing performance and service life are up to international advanced level.

二、执行标准 The implementation of standards

1、设计和制造Design and manufacture：GB/T12237；

2、检验和试验Inspection and test：JB/T9092；

3、法兰连接Flange connection：GB/T9115.1；

4、结构长度Face to face and end to end connection：JD-2002，GB/T12221。

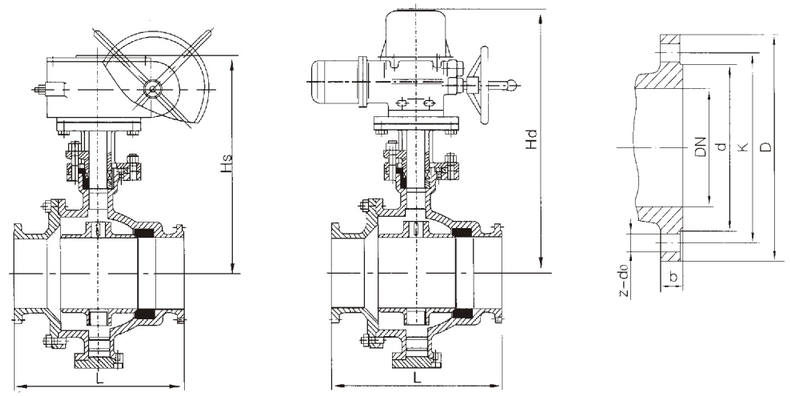
三、性能规范 Performance Specifications：

试验压力 Testing pressure　　单位Unit：MPa

公称压力PN Nominal pressure	壳体试验压力 Shell test pressure	气密封试验压力 Pressure sealing test	适用温度 The application of temperature	适用介质 The application of media
0.25	0.38	0.28	≤150℃	煤气灰、污水
0.6	0.9	0.66		

四、主要零件材料 Materials for the main parts

阀体、阀盖 Body and bonnet	球体、阀杆 Ball,Stem	阀座 Seat	密封圈 Ring	填料 Packing	螺栓 Bolt	螺母 Nut
WCB	2Cr13	0Cr18Ni9	PTFE PPL	PTFE	35	45

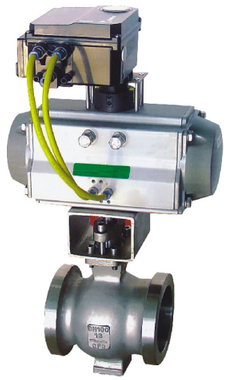


蜗轮传动 Turbo drive　　电动 Electric drive

FQ347AF-2.5、6　FQ647AF-2.5、6　FQ947AF-2.5、6

主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺　寸 (mm) Dimension								
		L	D	K	d	b	z-do	Hw	Hd	H1
0.25 MPa	200	500	320	280	254	22	8-Φ18	620	680	255
	250	600	375	335	309	24	12-Φ18	805	860	315
	300	700	440	395	363	24	12-Φ22	905	960	360
	350	800	490	445	413	24	12-Φ22	1010	1100	400
	400	900	540	495	463	24	16-Φ22	1120	1220	470
	450	1000	595	550	518	24	16-Φ22	1250	1350	530
	500	1000	645	600	568	26	20-Φ22	1380	1500	590
	600	1067	755	705	667	30	20-Φ26	1580	1700	780
	700	1200	860	810	772	26	24-Φ26	1710	1850	830
0.6 MPa	200	500	320	280	254	22	8-Φ18	620	680	255
	250	600	375	335	309	24	12-Φ18	805	860	315
	300	700	440	395	363	24	12-Φ22	905	960	360
	350	800	490	445	413	24	12-Φ22	1010	1100	400
	400	900	540	495	463	24	16-Φ22	1120	1220	470
	450	1000	595	550	518	24	16-Φ22	1250	1350	560
	500	1000	645	600	568	26	20-Φ22	1380	1500	590
	600	1067	755	705	667	30	20-Φ26	1580	1700	780
	700	1200	860	810	772	26	24-Φ26	1710	1850	830





V型球阀是一种球芯带有V形缺口的旋转式切断阀，它与阀门定位器配套使用可实现比例调节。广泛应用于石油、化工、造纸、冶金、水处理等工业部门，对管道内介质进行调节或切断，它流量系数大，阀座带有增能环，可调节密封力，确保密封。

V ball valve is rotary shut-off valve which the core ball has a V-shaped gap. The V ball valve is used with valve positioner to achieve regulation of the ratio. It is widely used in petroleum, chemical, paper making, metallurgy, water treatment and other industrial sectors and regulate or cut off the media of the pipeline. The flow coefficient is large and The valve seat has power-increasing ring, to regulate the sealing edge and make sue the

一、产品特点 Features of product

A、采用弹簧加载的可动阀座结构，防止了球芯与阀座发生卡阻或脱离等问题。密封可靠，使用寿命长。
B、V型切口的球芯与金属阀座之间有剪切作用，特别适用于含纤维、微小回体颗粒、浆料等介质。
C、全开时流通能力大，压力损失小，且介质不沉积在阀体中腔。
D、本阀具有精确调节并可靠定位功能，流量特性为近似等百分比，可调范围大，最大可调比为：100:1。

A、The seat is reliable by adding spring, it can prevent card blocked or out of the ball disc and valve seat. The sealing is reliable and it has long service life.
B、The ball disc and metal valve seat of V-notch has shearing impact with each other. It will applicable to media such as fibers, smiling solids, slurry etc.
C、Large flow capacity, small pressure loss will be and the media will not precipitate in the chamber.
D、The valve has function as precise adjustment and reliable adjustment, flow Characteristic is similar to equal percentage. The Adjustable range is large and the

二、主要设计参数 Main design parameters

公称压力：PN1.6～6.4MPa
使用温度：常温-28～180℃
中温：-28～250℃
高温：-40～550℃
阀体材料：WCB CF8 CF8M CF3M
阀杆：2Cr13 304 316
回转角度：90°
阀座：PTFE 0Cr17Ni4Cu4Nb
阀芯材料：CF8 CF8M CF3M
基本误差：≤1.5%
回差：≤1.5%
死区：≤0.5%

Nominal pressure：PN1.6~6.4Mpa
Working temperature: Normal temperature: -28℃~180℃;
Middle temperature: -28℃~250℃;
High temperature: -40℃~550℃;
Body material: WCB CF8 CF8M CF3M
Stem: 2Cr13 304 316
Slewing angle:90℃
Seat: PTFE 0Cr17Ni4Cu4Nb
Trim material: CF8 CF8M CF3M
Basic error: ≤1.5%
Backlash: ≤1.5%
Dead zone: ≤0.5%

三、执行标准 Implementation of standards

1、设计和制造Design and manufacture：GB/T 12237　　API 608
2、检验和试验Inspection and test：GB/T 13927　　API 598
3、法兰连接Flange connection：GB/T9112-9114　　ASME/ANSI B16.5
4、结构长度Face to face and end to end connection：GB/T 12221　厂标或客户要求

四、公称通DN、额定流量系数Kv、允许压差△P见表
Nominal diameter（DN）,Rated flow coefficient（Kv）,Allow pressure（△P）

DN（mm）	25	32	40	50	65	80	100	150	200	250	300	350	400
Kv	22	36	58	82	145	200	355	798	1418	2209	3185	4309	5664
△P(MPa)	14	8	10	9	20	14	8	6	3.5	1.6	2.5	2	1.5

五、性能规范 Performance Specifications

试验压力 Testing pressure　　单位Unit：MPa

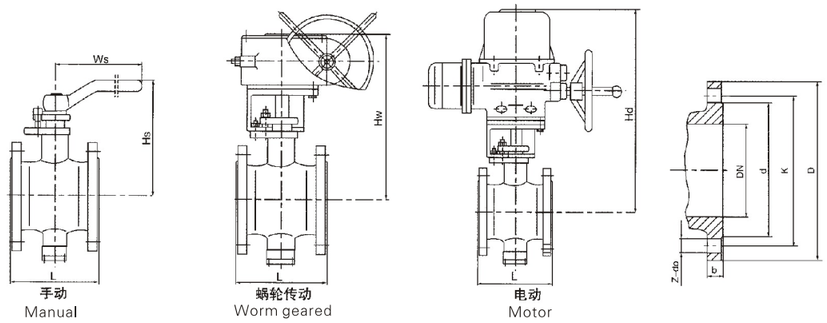
公称压力PN Nominal pressure	常温最大工作压力 Maximum working pressure at room temperature	壳体试验压力 Shell test pressure	气密封试验压力 Gas pressure sealing test	高压密封试验压力 High-pressure sealing test pressure:
1.6	1.6	2.4	0.6	1.76
2.5	2.5	3.8	0.6	2.75
4.0	4.0	6.0	0.6	4.4
6.4	6.4	9.6	0.6	7.1
Class150	2.0	3.0	0.6	2.2
Class300	5.0	7.5	0.6	5.5

使用范围 Using range

壳体材料 Material of shell	阀座材料 Material of shell	适用温度 The application of temperature	适用介质 The application of media
碳钢C型 Carbon steel C type	PTFE+不锈钢 stainless steel	≤150℃	水、蒸汽、油品等 The application of media
	不锈钢 stainless steel	≤200℃	
铬镍钛钢P型 Ti-Cr-Ni steel P-type	PTFE+不锈钢 stainless steel	≤150℃	硝酸类 Nitric acid
	不锈钢 stainless steel	≤200℃	
铬镍钼钛钢R型 Ti-Cr-Ni-Mo steel R-type	PTFE+不锈钢 stainless steel	≤150℃	醋酸类 Acetic acid
	不锈钢 stainless steel	≤200℃	
铬钼钒钢I型 Cr-Mo-V steel I-type	本体+硬质合金 Body + Carbide	≤550℃	蒸汽、冶炼、能源等 water、steam、oil etc

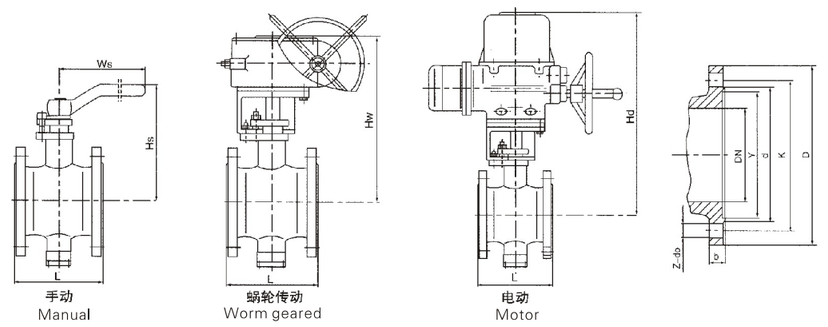
六、主要零件材料 Materials for the main parts

阀体、阀盖 Body and bonnet	GB	WCB		ZG1Cr18Ni9Ti		ZG0Cr18Ni12Mo2Ti		ZG15Cr1Mo1V
	ASTM	WCB		CF8		CF8M		WC9
球体 Ball	GB	ZG1Cr13		ZG1Cr18Ni9Ti/表面特殊处理 Special treatment on the surface		ZG0Cr18Ni12Mo2Ti/表面特殊处理 Special treatment on the surface		ZG15Cr1Mo1V/表面特殊处理 Special treatment on the surface
	ASTM	CA15		CF8+HF		CF8M+HF		WC9+HF
阀杆 Stem	GB	2Cr13		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti		25Cr2Mo1V
	ASTM	420		304		316		F22a
阀座 Seat	GB	PTFE	2Cr13	PTFE	1Cr18Ni9Ti	PTFE	0Cr18Ni12Mo2Ti	D517
	ASTM	PTFE	420	PTFE	304	PTFE	316	HF
填料 Packing	GB	PTFE	柔性石墨 Flexible Graphite	PTFE	柔性石墨 Flexible Graphite	PTFE	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite
	ASTM	PTFE	柔性石墨 Flexible Graphite	PTFE	柔性石墨 Flexible Graphite	PTFE	柔性石墨 Flexible Graphite	柔性石墨 Flexible Graphite
螺栓 Bolt	GB	35		0Cr18Ni9		0Cr18Ni9		15Cr1Mo1V
	ASTM	A193 B7		A320-B8		A320-B8		A193 B16
螺母 Nut	GB	45		0Cr18Ni9		0Cr18Ni9		20CrMo
	ASTM	A194 2H		A194-8		A194-8		A194-4



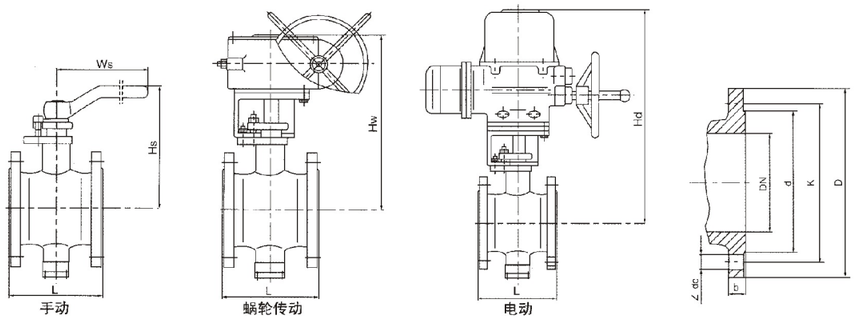
主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension									
		L	D	K	d	b	z-do	Ws	Hs	Hw	Hd
1.6MPa	25	102	115	85	65	14	4-Φ14	230	140	260	310
	32	102	140	100	78	16	4-Φ18	230	145	275	330
	40	114	150	110	85	16	4-Φ18	230	150	300	360
	50	178	165	125	100	16	4-Φ18	230	164	335	390
	65	190	185	145	120	18	4-Φ18	250	180	355	405
	80	203	200	160	135	20	8-Φ18	300	200	375	440
	100	229	220	180	155	20	8-Φ18	320	235	410	470
	125	254	250	210	185	22	8-Φ18	400	260	485	550
	150	267	285	240	210	24	8-Φ23	500	280	530	595
	200	292	340	295	265	26	12-Φ23	800	320	580	650
	250	330	405	355	320	30	12-Φ25	1000	355	650	730
	300	356	460	410	375	30	12-Φ25	1200	400	710	790
	350	430	520	470	435	34	16-Φ25	-	-	760	840
	400	530	580	525	485	36	16-Φ30	-	-	870	960
	450	580	640	585	545	40	20-Φ30	-	-	910	1080
	500	660	715	650	608	44	20-Φ34	-	-	935	1125
	600	680	840	770	718	48	20-Φ41	-	-	995	1255
	700	900	910	840	788	50	24-Φ41	-	-	1080	1385
	800	1000	1025	950	898	52	24-Φ41	-	-	1175	1490
	00	1100	1125	1050	998	54	28-Φ41	-	-	1280	1565
	1000	1200	1255	1170	1110	56	28-Φ48	-	-	260	310
	1200	1300	1485	1390	1325	58	32-Φ54	-	-	275	330
	1400	1500	1685	1590	1525	60	36-Φ54	-	-	300	360
2.5MPa	25	102	115	85	65	16	4-Φ14	230	140	335	390
	32	102	140	100	78	18	4-Φ18	230	145	355	405
	40	114	150	110	85	18	4-Φ18	230	150	375	440
	50	124	165	125	100	20	4-Φ18	230	164	410	470
	65	145	185	145	120	22	8-Φ18	250	180	485	550
	80	165	200	160	135	22	8-Φ18	300	200	530	595
	100	194	230	190	160	24	8-Φ23	320	235	580	650
	125	210	270	220	188	28	8-Φ25	400	260	650	730
	150	229	300	250	218	30	8-Φ25	500	280	710	790
	200	243	360	310	278	34	12-Φ25	800	320	730	540
	250	297	425	370	332	36	12-Φ30	1000	355	870	960
	300	338	485	430	390	40	16-Φ30	1200	400	990	1080
	350	400	555	490	448	44	16-Φ34	-	-	935	1125
	400	400	620	550	505	48	16-Φ34	-	-	995	1255
	450	502	670	600	555	50	20-Φ34	-	-	1080	1385
	500	533	730	660	610	52	20-Φ41	-	-	1175	1490
	600	686	845	770	718	56	20-Φ41	-	-	1280	1565
	700	762	960	875	815	30	24-Φ48	-	-	-	-
	800	864	1085	990	930	64	24-Φ48	-	-	-	-
	900	914	1185	1090	1025	66	28-Φ54	-	-	-	-
	1000	-	1320	1210	1140	68	28-Φ58	-	-	-	-
	1200	-	1520	1420	1350	72	32-Φ58	-	-	-	-
	1400	-	1755	1640	1560	78	36-Φ65	-	-	-	-



主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension										
		L	D	K	d	Y	b	z-do	Ws	Hs	Hw	Hd
4.0MPa	25	102	115	85	65	58	16	4-Φ14	250	150	275	325
	32	102	140	100	75	66	18	4-Φ18	300	165	290	345
	40	114	150	110	85	76	18	4-Φ18	320	170	315	375
	50	124	165	125	100	88	20	4-Φ18	400	180	350	405
	65	145	185	145	120	110	22	8-Φ18	500	200	370	420
	80	165	200	160	135	121	22	8-Φ18	800	220	390	455
	100	194	235	190	160	150	24	8-Φ23	1000	260	435	495
	125	210	270	220	188	176	28	8-Φ25	1200	290	510	575
	150	229	300	250	218	204	30	8-Φ25	-	310	555	620
	200	245	375	320	282	260	38	12-Φ30	-	350	605	675
	250	297	450	385	345	313	42	12-Φ34	-	390	675	755
	300	338	515	450	408	364	46	16-Φ34	-	-	735	815
	350	400	580	510	465	422	52	16-Φ34	-	-	785	870
	400	400	660	585	535	474	58	16-Φ41	400	-	275	325
	450	502	685	610	560	524	60	20-Φ41	500	-	290	345
	500	533	755	670	612	576	62	20-Φ48	650	-	315	375
6.4MPa	25	102	135	100	78	58	22	4-Φ18	800	150	350	405
	32	102	150	110	82	66	24	4-Φ23	1000	165	370	420
	40	114	165	125	95	76	24	4-Φ23	1200	170	390	455
	50	124	180	135	105	88	26	4-Φ23	1400	180	435	495
	65	145	205	160	130	110	28	8-Φ23	-	200	510	575
	80	165	215	170	140	121	30	8-Φ23	-	220	555	620
	100	194	250	200	168	150	32	8-Φ25	-	260	605	675
	125	210	295	240	202	176	36	8-Φ30	-	290	675	760
	150	229	345	280	240	204	38	8-Φ34	-	310	-	-
	200	245	405	345	300	260	44	12-Φ34	-	350	-	-
	250	297	470	400	352	313	48	12-Φ41	-	-	-	-
	300	338	530	460	412	364	54	16-Φ41	-	-	-	-
	350	400	600	525	475	422	60	16-Φ41	-	-	-	-
	400	400	670	585	525	474	66	16-Φ48	-	-	-	-



主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	尺 寸 (mm) Dimension									
		L	D	K	d	b	z-do	Ws	Hs	Hw	Hd
Class150	2"	124	152	120.5	92	19	4-Φ19	230	164	260	310
	2 1/2"	145	178	139.5	105	22.5	4-Φ19	250	180	275	330
	3"	165	190	152.5	127	24	4-Φ19	300	200	300	360
	4"	194	229	190.5	157	24	8-Φ19	320	235	335	390
	5"	210	254	216	186	24	8-Φ22	400	260	355	405
	6"	229	279	241.5	216	26	8-Φ22	500	280	375	440
	8"	243	343	298.5	270	29	8-Φ22	800	320	410	470
	10"	297	406	362	324	31	12-Φ25	1000	355	485	550
	12"	338	483	432	381	32	12-Φ25	1200	400	530	595
	14"	400	533	476	413	35	12-Φ29	-	-	580	650
	16"	400	597	540	470	37	16-Φ29	-	-	650	730
	18"	430	635	578	533	40	16-Φ32	-	-	710	790
	20"	533	699	65	584	43	20-Φ32	-	-	760	840
	24"	660	813	749.5	692	48	20-Φ35	-	-	870	960
	28"	840	927	864	800	71	28-Φ35	-	-	910	1080
	32"	864	1060	978	914	81	28-Φ41	-	-	935	1125
	36"	914	1168	1086	1022	90	32-Φ41	-	-	995	1255
	40"	-	1289	1200	1124	90	36-Φ41	-	-	1080	1385
	48"	-	1511	1422	1359	108	44-Φ41	-	-	1175	1490
	56"	-	1746	1651	1575	124	48-Φ48	-	-	1280	1565
Class300	2"	124	165	127	92	23	8-Φ19	250	180	275	325
	2 1/2"	145	190	149	105	26	8-Φ22	300	200	290	345
	3"	165	210	168.5	127	29	8-Φ22	320	220	315	375
	4"	194	254	200	157	32	8-Φ22	400	260	350	405
	5"	210	279	235	186	35	8-Φ22	500	290	370	420
	6"	229	318	270	216	37	12-Φ22	800	310	390	455
	8"	245	381	330	270	42	12-Φ25	1000	350	435	495
	10"	297	445	387.5	324	48	16-Φ29	1200	390	510	575
	12"	338	521	451	381	51	16-Φ32	-	-	555	620
	14"	400	584	514.5	413	54	20-Φ32	-	-	605	675
	16"	400	648	571.5	470	58	20-Φ35	-	-	675	755
	18"	502	711	628.5	533	61	24-Φ35	-	-	735	815
	20"	533	775	686	584	64	24-Φ35	-	-	785	870

一、主要特点 Main features

1、阀门设计为双斜面式，具有自动调整阀座与阀体、球体之间的密封性，使用工况下均具有良好的密封性。
2、阀杆与阀盖接触部的密封，采用填料片平面与阀杆、阀盖的凸肩平面间压实密封，减轻了开启力矩。
3、阀门为整体顶装式，不需要将阀门从管道上拆下，只要卸下阀盖即可进行维修或更换零件，使维修更方便。

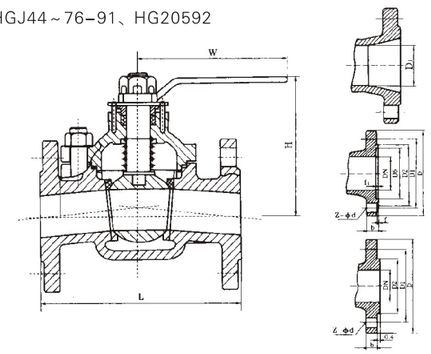
(1)The valve is designed for dual-slope type, the sealing performance among the valve seat and body and ball is good in the using process.
(2) The seal of contact point between stem and cover, the opening torque is small.
(3)The valve is top entry style, it is only need to unload valve cover to repair and replace the spare parts, so the repair is convenient.

二、主要设计参数 Main design parameters

公称通径Nominal diameter：PN15～300mm、1/2～2"
公称压力Nominal pressure：PN1.6～10.0MPa、CLASS155～600Lb
使用温度Working temperature： -28～180℃、-28～300℃、-28～425℃
连接形式Connection form：
法兰连接Flange connection：JB/T79、GB/T9113、ANSIB16.5、HGJ44～76-91、HG20592
对焊连接Welded connection：ANSI B16.25 GB/T12224

三、主要零件材质表 Materials for the main parts

阀体 Body	球体 Ball	阀座 Seat	阀杆 Stem
WCB	2Cr13(H.Cr)	PTFE 柔性石墨 Flexible graphite 碳纤维 Carbon Fiber 金属堆合金钢 Metal alloy	2Cr13
ZC1Cr18Ni9Ti	1Cr18Ni9Ti		1Cr18Ni9Ti
ZG1Cr18Ni12Mo2Ti	1Cr18Ni12Mo2Ti		1Cr18Ni12Mo2Ti
ZG00Cr17Ni14Mo2	00Cr17Ni14Mo2		00Cr17Ni14Mo2



四、主要连接尺寸 Main connection size

公称压力 PN(MPa) Nominal pressure	公称通径 DN mm Nominal diameter	L mm	D	D1	D2	b	f	z-do	W mm	W(mm) Q41
1.6	15	130	95	65	45	14	2	4-14	100	62
	20	140	105	75	55	14		4-14	120	68
	25	150	115	85	65	14		4-14	160	75
	32	165	135	100	78	16		4-18	180	85
	40	180	145	110	85	16		4-18	200	95
	50	200	160	125	100	16	3	4-18	250	110
	65	220	180	145	120	18		4-18	300	130
	80	250	195	160	135	20		4-18	400	155
	100	280	215	180	155	20		8-18	500	180
	125	320	245	210	185	22		8-18	600	250
	150	360	280	240	210	24		8-23	800	275
	200	400	335	295	265	26		12-23	1000	345
2.5	15	130	95	65	45	16	2	4-14	100	62
	20	140	105	75	55	16		4-14	120	68
	25	150	115	85	65	16		4-14	160	75
	32	165	135	100	78	18		4-18	180	85
	40	180	145	110	85	18	3	4-18	200	95
	50	200	160	125	100	20		4-18	250	110
	65	220	180	145	120	22		8-18	300	130
	80	250	195	160	135	22		8-18	400	155
	100	280	230	190	160	24		8-23	500	180
	125	320	270	220	188	28		8-25	600	250
	150	360	300	250	218	30		8-25	800	275
	200	400	360	310	278	34		12-25	1000	345



一、概述：

直埋式球阀克服了传统球阀不能适应深埋管线的缺点，特别应用于石油、天然气管道，是目前国家＂西气东输＂的首选产品。

二、特点：

1．长埋杆的作用：输送管线深埋地下，而阀门启闭开关是在地面．由此可见，该作用使阀门明显的具有操作与安装方便，无须修筑阀井等优点，节省安装成本与安装工期，特别避免发生意外事故，保障人生安全，又克服了局限性管线安装设计．

2．阀门密封结构：采用双重弹性软密封，该结构的主密封与球芯有紧密封作用，而副密封是防止主密封的底部泄露，又能使增大后的磨损误差得到补偿．如此才能提高使用寿命．

3．阀体的设计：它具有自我脱接，自我密封，自我紧密连接传动的作用，并设三重密封结构，克服了传统式球阀，阀杆泄露的弊病．

4．阀体中法兰连接结构：是一种内外圆的配合密封，并设有外注胶槽密封，使阀体中法兰起到柔性＂焊接式＂作用．克服了阀门法兰易泄露的一大难题．

5．阀体采用了复合层结构：改进了传统球阀的单层阀体，隔层内压注入耐腐蚀材料，大大提高了阀门受地质及外界影响的抗腐蚀性能．

6．阀门内体结构：采用浮球支承式，即综合浮动与固定球结构的二大优点，实现了球芯磨损系数小，启闭轻，密封寿命长的特点．

7．护罩的作用：它具有保护启闭开关不受腐蚀物及避免聚集脏物而影响开关寿命和操作的不便，又能在安装时随地下面高度要求来调节，启平地面，避免意外事故发生．

8．结合现有管线安装要求：本阀门与管线的连接方式用焊接和法兰两种形式．阀门的传统方式也可根据用户要求，采用手动，蜗轮等各种方式，其应用广泛．

9. 可根据管道的施工及设计的要求,调整阀体的长短和阀杆的高度

10.阀门设有防静电结构，避免意外事故发生，安全可靠。

1、Overview

Burial–type ball valve overcomes the shortcoming of the traditional valves that they cannot buried in the deep pipeline, it is used for oil and natural gas pipelines and this is the first choice for project of "Transmit natural gas from western areas to east China".

2、Features

(1)The role of long–buried pole: Pipelines buried deep under the ground, but the switch is on the ground, so the operation and repair is very convenient. The well for the valve is unnecessary. It saves installation costs and installation project. Accident is avoid and people will get security.

(3)Sealing structure of valve: Double elastic soft seal, the main seal and ball sealed very well and vice–seal can prevent the sealing of bottom part of main sealing.

(4)The design of valve body: Self–detachment, self–sealing, tight junctions of self–drive and triple seal structure will overcome the shortcoming of stem leakage.

(5) Body adopted the composite layer: It has changed the traditional single–layer structure of the ball valve, corrosion–resistant materials are injected in the compartment, so the valve will be more durable.

(6)Structure of the inside body: float–type support which means it includes the advantage of floating and fixed ball valve, wear coefficient of ball trim is small, long life sealed.

(7)The role of guard: it protects the switch and regulates height of the valve according to the installation.

(8) There are two connection forms between valve and pipeline: flange and welding. We can design the driven method according to the customers' demands.

(9)We can regulate the length of valve body and the width of stem according to pipeline's design and construction requirements.

三、执行标准 Implementation of standards:

设计和制造Design and manufacture：API 6D、ASME B16.34、BS5351、API608、MSS SP–72

结构长度尺寸Face to face and end to end connection：ASME B16.10、API6D、EN 558

法兰连接尺寸Flange size：GB9113、HG20596、SH3406、ASME B16.5、ASME B16.47

对焊端尺寸Butt welding end dimensions：ASME B16.25

压力–温度基准Pressure and temperature standards：ASME B16.34

检查和试验Inspection and test：API 598、API 6D

四、主要零件材质 Materials for the main parts

零件名称 Name of spare parts	材　料 Material			
阀体Body	LCB/WCB	ZG1Cr5Mo	18-8CrNi	18-12CrNiMo
球盖Cover of the ball	LCB/WCB	ZG1Cr5Mo	18-8CrNi	18-12CrNiMo
阀杆Stem	2Cr13	38CrMoA1	1Cr18Ni9Ti	1Cr18NiMo2aTi
球体 Ball	WCB+HCr	1Cr5Mo	18-8CrNi	18-12CrNiMo
阀座Seat	PTFE/13Cr/CrNi SS+STELLITE			
螺柱Stud	B7/35CrMoA		1Cr17Ni2	
螺母 Nut	2H/45		2Cr13	
填料 Packing	PTFE/增强柔性石墨 Enhanced Flexible Graphite			