



用途 Application

三通球阀适用于Class150~Class300、PN16~PN40的各种管路上，用于介质流向的切换、分流、合流等，选用不同的材质，可分别适用于水、蒸汽、油品、天然气、煤气、硝酸、氧化性介质、尿素等多种介质。三通球阀的驱动方式为手动、蜗轮蜗杆传动、气动或电动，连接方式一般为法兰连接，根据用户要求，也可采用其他连接方式

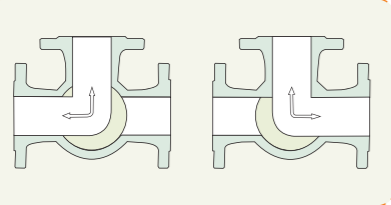
Three way ball valves are suitable for using on various kinds of pipelines of Class150~ Class300, PN16~ PN40for switching, dividing, and combining medium flow, of which the operation manners include manual, worm gear, pneumatic or electric actuators, connection manners are in general of flange s. As required by customers ,the other type of connection is available too.

结构与特点 Structure and features

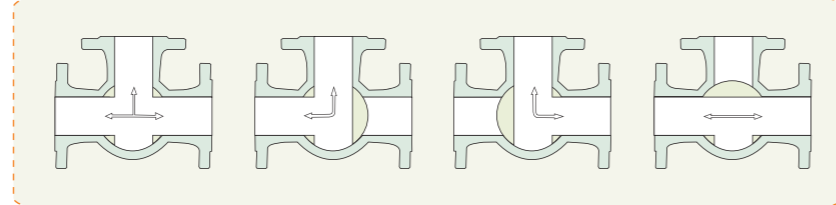
L型三通球阀（Q44型）用于管路中介质流向的切换，能使相互垂直的两个流道连通。T型三通球阀（Q45型）可用于介质的分流、合流及流向切换，T形球体通道可以使三个通道互相连通或使其中的两个通道连通，T型球阀可以实现其中的两种、三种或四种功能，但要实现的功能不同，阀门的设计有一定的差异，因此，对于T型三通球阀，用户在选用或订货时，需要对使用要求作详细的描述，以便祺隆公司正确设计与配置。对于普通的浮动球三通球阀，某些工况是不适合使用的，用户在选用时要特别注意。祺隆公司有许多独特结构设计的三通球阀可以满足用户的一些特别工况和特殊要求。对于普通的三通球阀，我公司一般采用两阀座结构设计。根据用户要求，祺隆公司也可设计制造四阀座三通球阀。

L type three way ball valve (type of Q44) is used for pipelines to switch the flow direction, being able to Switch on two flow lines perpendicular with each other. T type three way ball valve (type Q45).

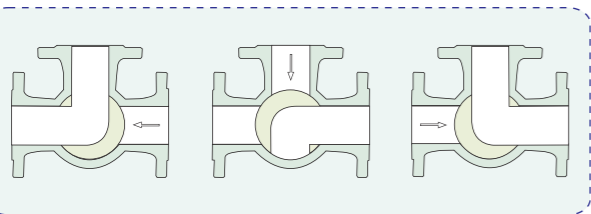
May be used to divide, combine or switch the flow direction. T type ball passage is able to switch on three flowlines or switch on two of the three flow lines. T type ball valve may realize two, three or four seats of the functions, however, the specific valve design must draw a distinction between them to realize different Application requirement so as for QILONG company to make correct design and fitting. Regarding the general Application requirement so as for QILONG company to make correct design and fitting. Regarding the general clear to the customers for making right selection. There are many kinds of three way ball valves with unique Designs made by QILONG company to meet customers' special working conditions and requirement. For the common three way ball valves, QILONG company adopts in general the design of two seats. As required by customers, QILONG company can also design and manufacture the three way ball valves with four seats.



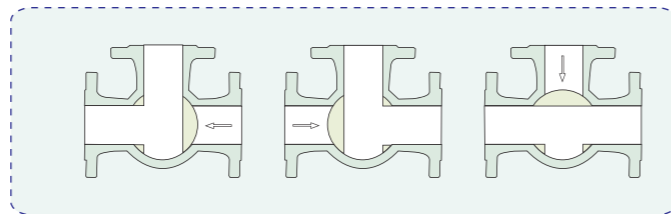
L型三通球阀的两种使用状态
Two usages of L type three way ball valve



T型三通球阀的四种使用状态
Four usages of T type three way ball valve



普通L型三通球阀浮动球阀不适用的几种工况
Several unsuited conditions of common L type three way floating ball valve

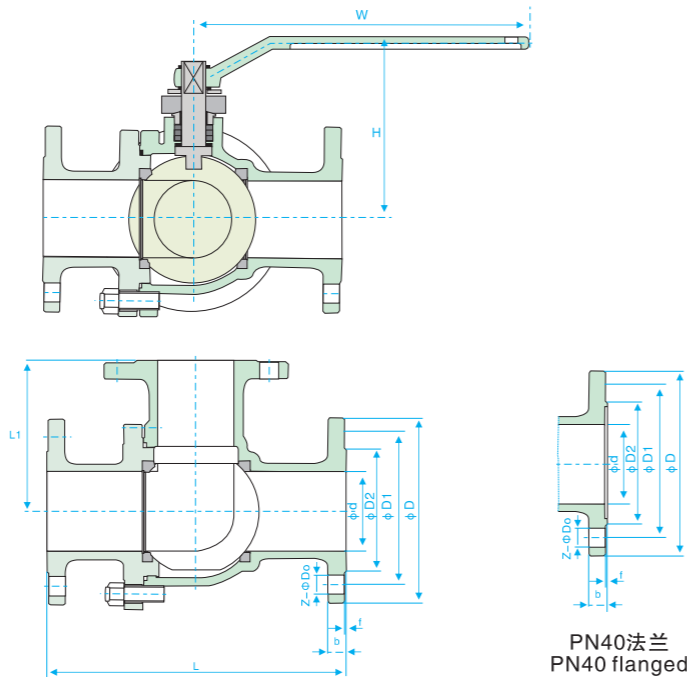


普通T型三通球阀浮动球阀不适用的几种工况
Several unsuited conditions of common T type three way floating ball valve

型号、材料及主要参数 Material and Main Valve Data

配管法兰 Pipe flange	公称压力 Pressure Rating	法兰 密封面 Flange face	常规产品型号 Type							
			Q44F-A1C	Q44F-A1P	Q44F-A1P8	Q44F-A1P3	Q44F-A1R	Q44F-A1R8	Q44F-A1R3	
L形三通球阀 L Type three way ball valve	ASME B16.5 GB/T9112-9124 HG/T 20615	Class150	凸面 RF	Q44F-A3	Q44F-AP	Q44F-AP8	Q44F-AP3	Q44F-A3R	Q44F-A3R8	Q44F-A3R3
				Class300	Q44F-16C	Q44F-16P	Q44F-16P8	Q44F-16P3	Q44F-16R	Q44F-16R8
	GB/T9112-9124 HG/T 20592 JB/T 74-90	PN16	凹凸面 MF	Q44F-25	Q44F-25P	Q44F-25P8	Q44F-25P3	Q44F-25R	Q44F-25R8	Q44F-25R3
		PN25		Q44F-40	Q44F-40P	Q44F-40P8	Q44F-40P3	Q44F-40R	Q44F-40R8	Q44F-40R3
T形三通球阀 T Type three way ball valve	ASME B16.5 GB/T9112-9124 HG/T 20615	Class150	凸面 RF	Q45F-A1C	Q45F-A1P	Q45F-A1P8	Q45F-A1P3	Q45F-A1R	Q45F-A1R8	Q45F-A1R3
				Class300	Q45F-A3	Q45F-A3P	Q45F-A3P8	Q45F-A3P3	Q45F-A3R	Q45F-A3R8
	GB/T9112-9124 HG/T 20592 JB/T 74-90	PN16	凹凸面 MF	Q45F-16C	Q45F-16P	Q45F-16P8	Q45F-16P3	Q45F-16R	Q45F-16R8	Q45F-16R3
		PN25		Q45F-25	Q45F-25P	Q45F-25P8	Q45F-25P3	Q45F-25R	Q45F-25R8	Q45F-25R3
主要零件材料 Main parts material	阀体Body	WCB A105	ZG1Cr18Ni9Ti 1Cr18Ni9Ti	CF8 304	CF3 304L	ZG1Cr18Ni12Mo2Ti 1Cr18Ni12Mo2Ti	CF8M 316	CF3M 316L		
	球体、阀杆 Ball, Stem	2Cr13	1Cr18Ni19Ti	0Cr18Ni9 (304)	00Cr19Ni10 (304L)	1Cr18Ni12Mo2Ti	0Cr17Ni12Mo2 (316)	00Cr17Ni14Mo2 (316L)		
适用工况 Applicable condition	适用介质 Applicable medium	水、蒸汽、油品、煤气、液化气、天然气等 Water, Steam Oils, Coal gas, Liquefied gas, gas		硝酸类腐蚀性介质 Nitric acid corrosion medium	强氧化性介质 Strong oxidizing medium	醋酸类腐蚀性介质 Acetic acid corrosive medium	尿素类腐蚀性介质 Urea corrosive medium			
	适用温度 Applicable temperature	≤180℃ (增强聚四氟乙烯)、≤300℃ (对位苯) ≤180℃ (RPTFE)、≤300℃ (PPL)								
	蜗轮蜗杆传动球阀 worm gear ball valve	在相应的手动型号的Q后插入“3”表示，示例：Q344F-16、Q345F-16C								
	气动球阀 pneumatic ball valve	在相应的手动型号的Q后插入“6”表示，示例：Q644F-16、Q645F-16C								
	电动球阀 electric ball valve	在相应的手动型号的Q后插入“9”表示，示例：Q944F-16、Q945F-16C								
注：本表为常规法兰连接三通球阀的型号编制、主要零件材料及适用工况，其他要求及其型号见球阀型号编制方法 Note: This table is about the model preparation, main parts material and applicable condition of flange ends metal to metal sealed ball valve.										

主要尺寸及重量 Main size and weight



公称压力 Pressure Rating	公称尺寸 Dimensions DN		尺寸Dimensions (mm)											重量 Weight (Kg)
			L	L1	d	D	D1	D2	b	f	Z-φdo	W	H	
PN16	15	1/2	120	65	14	89	60.5	35	11.5	1.6	4-15	140	85	4
	20	3/4	140	70	19	98	70	43	11.5	1.6	4-15	140	90	5
	25	1	150	75	25	108	79.5	51	11.5	1.6	4-15	150	99	7
	32	1 1/4	170	85	32	117	89	64	13	1.6	4-15	180	105	9
	40	1 1/2	180	90	38	127	98.5	73	14.5	1.6	4-15	200	126	10
	50	2	200	100	51	152	120.5	92	16	1.6	4-19	250	140	15
	65	2 1/2	220	110	64	178	139.5	105	17.5	1.6	4-19	300	165	22
	80	3	250	125	76	190	152.5	127	19.5	1.6	4-19	350	178	29
	100	4	280	140	102	229	190.5	157	24	1.6	8-19	500	230	46
	125	5	320	160	127	254	216	186	24	1.6	8-22	800	280	72
150	6	360	180	152	279	241.5	216	25.5	1.6	8-22	800	310	98	
PN25	15	1/2	130	65	14	95	66.5	35	14.5	1.6	4-15	140	85	4
	20	3/4	140	70	19	117	82.5	43	16	1.6	4-19	140	90	5
	25	1	150	75	25	124	89	51	17.5	1.6	4-19	150	99	7
	32	1 1/4	180	90	32	133	98.5	64	19.5	1.6	4-19	180	105	10
	40	1 1/2	200	100	38	156	114.5	73	21	1.6	4-22	200	126	13
	50	2	220	110	51	165	127	92	22.5	1.6	8-19	250	140	19
	65	2 1/2	250	125	64	190	149	105	25.5	1.6	8-22	300	165	29
	80	3	280	140	76	210	168.5	127	29	1.6	8-22	350	178	41
	100	4	320	160	102	254	200	157	32	1.6	8-22	500	230	67
	125	5	360	180	127	279	235	186	35	1.6	8-22	800	280	103
150	6	450	225	152	318	270	216	37	1.6	12-22	800	310	150	

注：1、本表法兰尺寸按ASME16.5标准。根据用户要求，法兰尺寸也可按GB/T 9112~9124、HG/T 20615、是3406设计制造。
2、本表为两阀座L型和T型三通球阀的数据。

note: 1、This table of flange size is as per standard GB/9112-9124,it also can be designed and produced as per customer's requirement or HG/T20592,JB/T74-90.

2、This table is the data of L type and T type three way ball valve

公称压力 Pressure Rating	公称尺寸 Dimensions DN	尺寸Dimensions (mm)											重量 Weight (Kg)	
		L	L1	d	D	D1	D2	D3	b	f	Z-φdo	W		H
PN16	15	130	65	14	95	65	45	-	16	2	4-14	140	85	4
	20	140	70	19	105	75	58	-	18	2	4-14	140	90	5
	25	150	75	25	115	85	68	-	18	2	4-14	150	99	6
	32	170	85	32	140	100	78	-	18	2	4-18	180	105	9
	40	180	90	38	150	110	88	-	18	3	4-18	200	126	10
	50	200	100	51	165	125	102	-	18	3	4-18	250	140	14
	65	220	110	64	185	145	122	-	18	3	8-18	300	165	20
	80	250	125	76	200	160	138	-	20	3	8-18	350	178	27
	100	280	140	102	220	180	158	-	20	3	8-18	500	230	42
	125	320	160	127	250	210	188	-	22	3	8-18	800	280	62
150	360	180	152	285	240	212	-	22	3	8-22	800	310	91	
PN25	15	130	65	14	95	65	45	-	16	2	4-14	140	85	4
	20	140	70	19	105	75	58	-	18	2	4-14	140	90	5
	25	150	75	25	115	85	68	-	18	2	4-14	150	99	6
	32	180	90	32	140	100	78	-	18	2	4-18	180	105	9
	40	200	100	38	150	110	88	-	18	3	4-18	200	126	11
	50	220	110	51	165	125	102	-	20	3	4-18	250	140	15
	65	250	125	64	185	145	122	-	22	3	8-18	300	165	23
	80	280	140	76	200	160	138	-	22	3	8-18	350	178	28
	100	320	160	102	235	190	162	-	24	3	8-22	500	230	54
	125	360	180	127	270	220	188	-	26	3	8-26	800	280	80
150	450	225	152	300	250	218	-	28	3	8-26	800	310	114	
PN40	15	130	65	14	95	65	45	40	16	2	4-14	140	85	4
	20	140	70	19	105	75	58	51	18	2	4-14	140	90	5
	25	150	75	25	115	85	68	58	18	2	4-14	150	99	6
	32	180	90	32	140	100	78	66	18	2	4-18	180	105	10
	40	200	100	38	150	110	88	76	18	3	4-18	200	126	13
	50	220	110	51	165	125	102	88	20	3	4-18	250	140	18
	65	250	125	64	185	145	122	110	22	3	8-18	300	165	24
	80	280	140	76	200	160	138	121	24	3	8-18	350	178	35
	100	320	160	102	235	190	162	150	24	3	8-22	500	230	58
	125	360	180	127	270	220	188	176	26	3	8-26	800	280	82
150	450	225	152	300	250	218	204	28	3	8-26	800	310	118	

注：1、本表法兰尺寸GB/T 9112~9124标准。根据用户要求，法兰尺寸也可按HG/T 20592及JB/T74-90标准设计制造。

2、本表为两阀座L型和T型三通球阀的数据。

note: 1、This table of flange size is as per standard GB/9112-9124,it also can be designed and produced as per customer's requirement or HG/T20592,JB/T74-90.

2、This table is the data of L type and T type three way ball valve

其它结构的三通球阀及特点 Other structure of three way ball valve and features

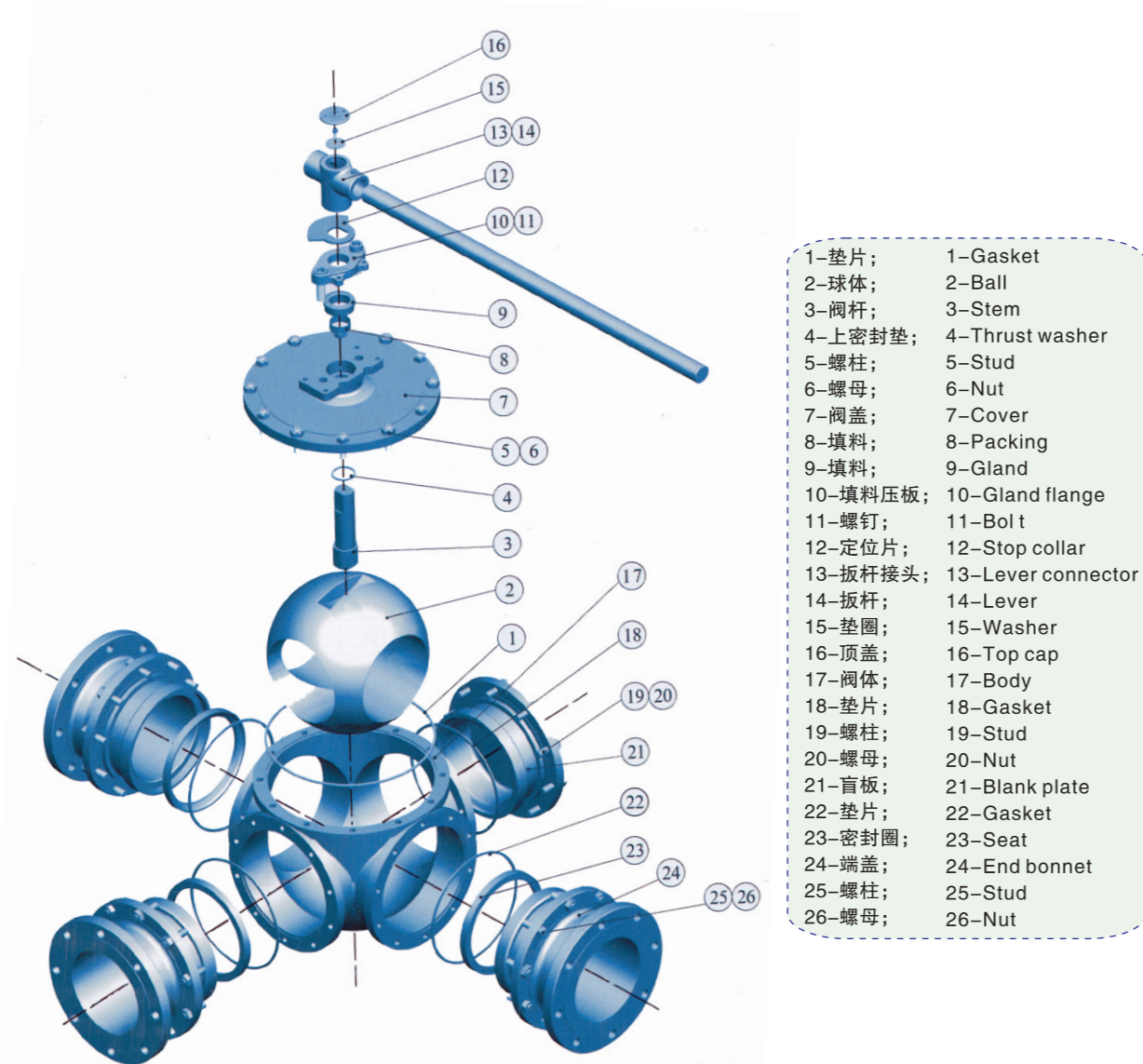
我公司除了生产常规两阀座L型和T型三通球阀外，还开发了多种结构的三通球阀，能够满足用户的多种需求。

Except for manufacture of general L type and T type three way ball valves, QILONG company has developed a couple of designs of three way ball valve, which is able to satisfy customers' different requirement.

四阀座L型和T型三通球阀 Three way Ball Valve with four seats

四阀座三通球阀采用顶装式球体，由于采用四阀座结构，具有更好的密封性能，但包括球体在内的阀门尺寸也相应的增大，结构也相对比较复杂。

Three way ball valve with four seats features the top entry ball design with four seats, which posses more reliable tightness functions. However, valve size gets bigger, including the ball, and the design sounds a bit complicated.

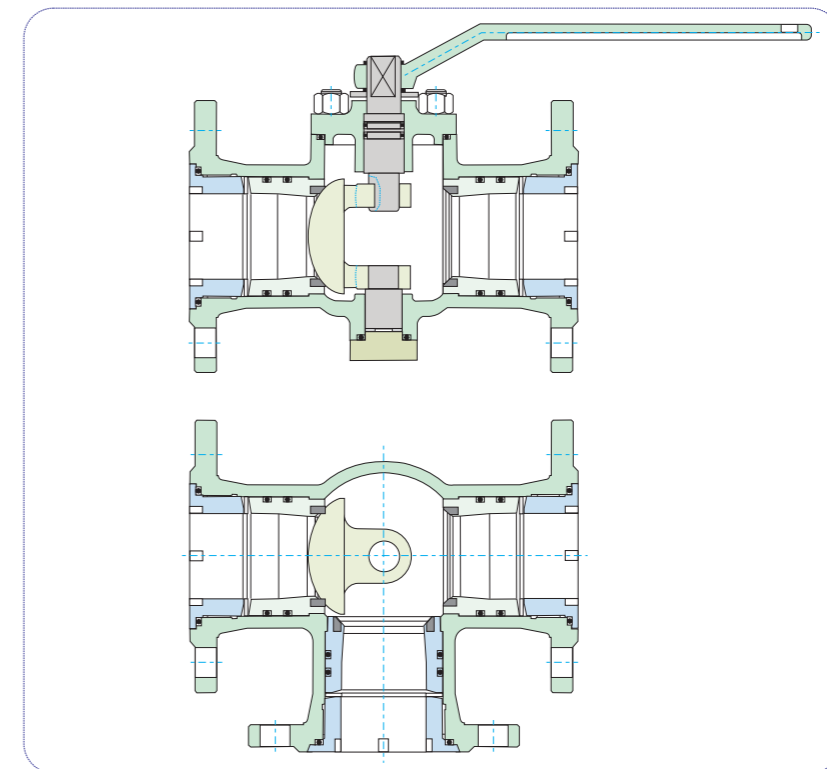


四阀座三通球阀的典型结构
Typical drawing of three way ball valve with four seats

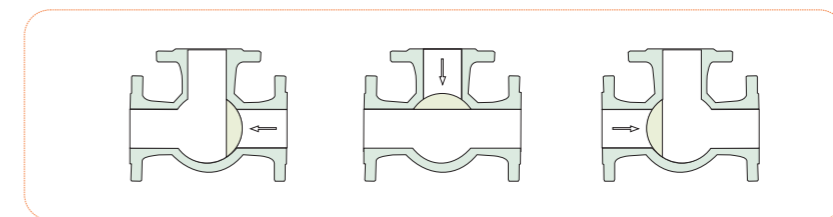
半球三通球阀 Three way ball valve with half-ball

半球三通球阀采用固定球结构，结构紧凑，中腔不会沉积介质及污物，根据用户使用要求的不同，可以设计成球前密封或球后密封。半球三通球阀可以采用软密封结构（密封圈材料可以是增强聚四氟乙烯、对位苯、尼龙、碳纤维等），也可采用金属硬密封结构。

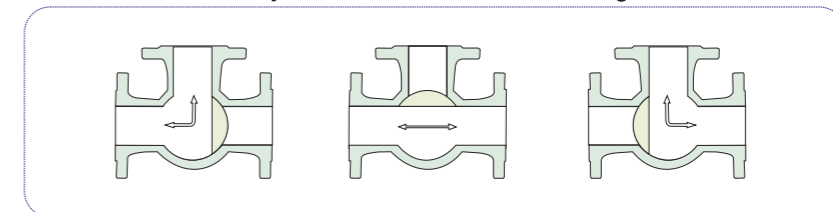
Half -ball seat three way ball valve is of the design of trunnion mounted ball valve, being impact in structure ,and unable to have medium deposition or dirtyin the body cavity. As per customers' different requirement , t he ball valve may be designed as the front ball tightness or behind ball tightnes s. Half-ball three way ball valve may adopt soft seats sealing structure (sealing material of PTFE, PPL, nylon and carbon fibre etc.), and metal to metal sealed structure as well .



半球三通球阀的典型结构
Typical structure of half-ball three way ball valve



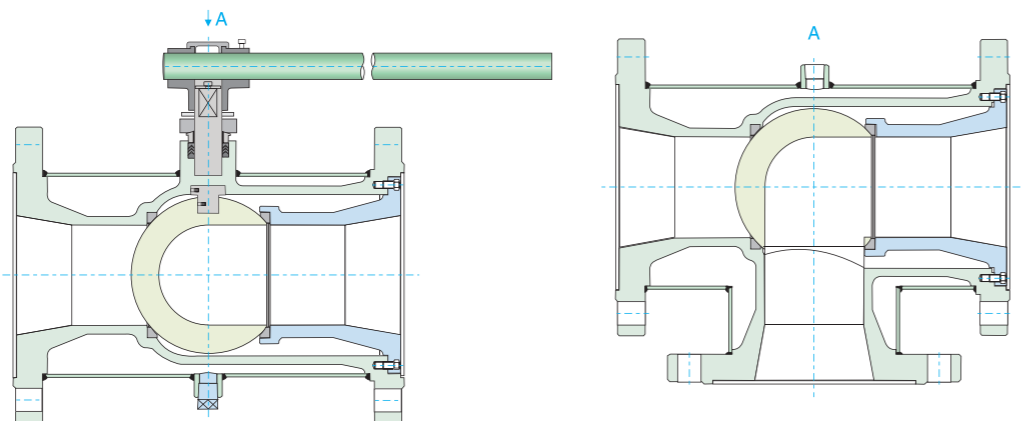
球前密封的半球三通球阀
Half-ball three way ball valve with front ball tightness structure



球后密封的半球三通球阀
Half-ball three way ball valve with behind ball tightness structure

保温夹套三通球阀 Jacket three way ball valve

保温夹套三通球阀采用整体式结构设计，结构紧凑，保温效果好，密封可靠。根据用户要求，可以采用L形三通，也可采用T形三通。
 Jacket three way ball valve employs the design of one piece body, being impact in structure and excellent in temperature protection effect. As per customers' requirement, the structure may be of L type three way and T type three way design.

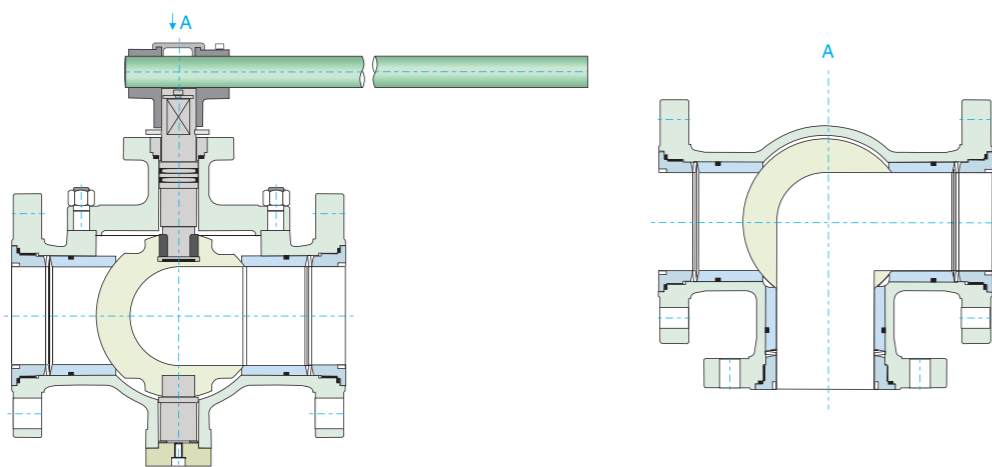


典型的保温夹套三通球阀 Jacketed Three way Ball Valve

金属硬密封三通球阀 Metal to metal sealed three way ball valve

金属硬密封三通球阀的球体及阀座采用喷焊镍基合金（硬度≥HRC60）、超音速涂碳化钨合金（最高硬度可达到HRC75）及特种硬化处理等先进工艺，具有密封可靠，使用寿命长等特点。特别适用于浆料、含固体颗粒的介质。常规产品的使用温度≤200℃，特殊订货，使用温度可达425℃（碳钢）或540℃（不锈钢、铬钼钢、铬钼钒钢）

The ball and seat of metal to metal sealed three way ball valve are employing advanced techniques of nickel base alloy spray welding (of which hardness being ≥HRC60), ultra-sonic stellite spray coating (max. hardness of HRC75), and specially hardening treatment etc., featuring reliable tightness and longer service life, being particularly used for the medium with ash dregs and solid particles. Application temperature of general products is ≤200℃. As specially ordering, application temperature may reach 425℃ (carbon Steel) or 540℃ (S.S., CrMo steel, CrMoV steel).



典型的金属硬密封固定三通球阀 metal to metal sealed trunnion mounted Three way Ball Valve



结构特点及用途 Structure features and application

对夹连接球阀具有结构紧凑、重量轻、安装方便、启闭轻松等特点。对夹球阀一般为手动，也可采用蜗轮传动、气动或电动。
 对夹连接球阀适用于CLASS150、PN10~PN25、JIS 10K的各种管路上，用于截断或接通管路中的介质，选用不同的材质，可分别适用于水、蒸汽、油品、硝酸、醋酸、氧化性介质、尿素等多种介质。

This design of wafer type ball valve is impact in structure, light in weight, convenient in assembly, and easy for open and close. Generally, operation manner of the valve is of manual and worm gear, and pneumatic or electric actuators as well. Wafer type ball valve is suitable for use on pipelines of Class 150, PN 25, JIS 10K to cut off or turn on the medium in pipelines.

型号、材料及主要参数 Material and Main Valve Data

配管法兰 Pipe flange	公称压力 Pressure Rating	常规产品型号 Type						
ASME B16.5	Class150	Q71F-A1C	Q71F-A1P	Q71F-A1P8	Q71F-A1P3	Q71F-A1R	Q71F-A1R8	Q71F-A1R3
GB/T9112-9124	PN10	Q71F-10C	Q71F-10P	Q71F-10P8	Q71F-10P3	Q71F-10R	Q71F-10R8	Q71F-10R3
HG/T 20615	PN16	Q71F-16C	Q71F-16P	Q71F-16P8	Q71F-16P3	Q71F-16R	Q71F-16R8	Q71F-16R3
JB/T 74-90	PN25	Q71F-25	Q71F-25P	Q71F-25P8	Q71F-25P3	Q71F-25R	Q71F-25R8	Q71F-25R3
JIS B2238	10k	Q71F-K1C	Q71F-K1P	Q71F-K1P8	Q71F-K1P3	Q71F-K1R	Q71F-K1R8	Q71F-K1R3
主要零件材料 Main parts material	阀体Body	WCB	ZG1Cr18Ni9Ti 1Cr18Ni9Ti	CF8	CF3 304L	ZG1Cr18Ni12Mo2Ti 1Cr18Ni12Mo2Ti	CF8M	CF3M
	球体、阀杆 Ball, Stem	2Cr13	1Cr18Ni19Ti	0Cr18Ni19	00Cr19Ni10 (304L)	1Cr18Ni12Mo2Ti	0Cr17Ni12Mo2 (316)	00Cr17Ni14Mo2 (316L)
	密封面 sealing surface	增强聚四氟乙烯、对位聚苯 RPTFE, PPL						
适用工况 Applicable condition	适用介质 Applicable medium	水、蒸汽、油品、煤气、液化气、天然气等 Water, Steam, Oil, Coal gas, Liquefied gas, gas	硝酸类腐蚀性介质 Nitric acid corrosion medium	强氧化性介质 Strong oxidizing medium	醋酸类腐蚀性介质 Acetic acid corrosive medium	尿素类腐蚀性介质 Urea corrosive medium		
	适用温度 Applicable temperature	≤180℃ (增强聚四氟乙烯)、≤300℃ (对位聚苯)						
涡轮蜗杆传动球阀 worm gear ball valve	在相应的蜗轮蜗杆型号的Q后去掉“3”表示，示例：Q371F-A1C							
气动球阀 pneumatic ball valve	在相应的蜗轮蜗杆型号的Q后“3”改为“6”表示，示例：Q671F-A1C							
电动球阀 electric ball valve	在相应的蜗轮蜗杆型号的Q后“3”改为“9”表示，示例：Q971F-A1C							

注：本表我常规法兰连接蜗轮蜗杆传动固定球阀的型号编制、主要零件材料及适用工况，其他要求及其型号编制见球阀型号编制方法。
 Note: This table is about the model preparation, main parts material and applicable condition of flange ends metal to metal worm gear valve.