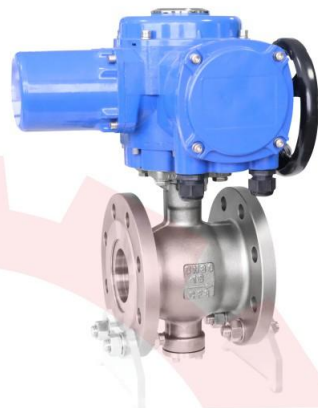


# BALL VALVE SERIES

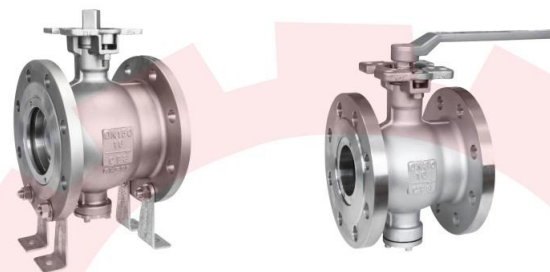
## 球阀系列

### V型球阀制造实力

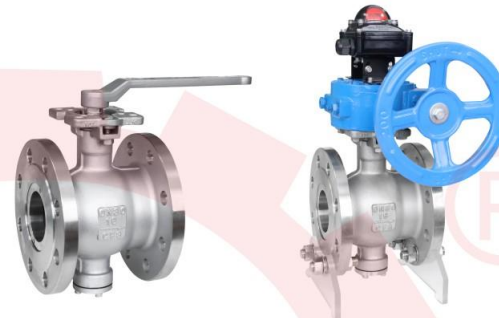
最大加工口径DN600mm  
阀体及零部件全部采用数控精加工  
通用V型球阀部件可互换  
检测试压合格率99.9%  
所有出厂材质达标及材质检验报告



电动V型法兰球阀  
Electric V-type flange ball valve



高平台V型法兰球阀  
High platform V-shaped flange ball valve



蜗轮V型法兰球阀  
Worm gear V-shaped flange ball valve



蜗轮固定式法兰球阀  
Worm gear fixed flange ball valve



伸缩偏心半球阀  
Telescopic eccentric hemisphere valve



偏心半球阀  
Eccentric hemisphere valve



气动V型法兰球阀  
Pneumatic V-type flange ball valve



V型法兰球阀  
V-type flange ball valve

阀杆:  
阀杆采用精磨削加工,  
与执行器配合精度高,  
使阀门回差小

填料:  
填料选用V型, 密封性好

轴承:  
轴承采用自润滑轴承  
载力高, 摩擦系数小,  
减少了操作扭矩

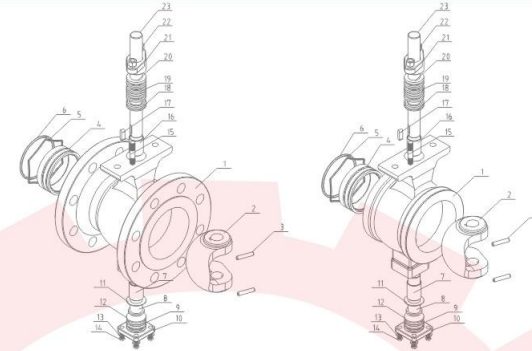
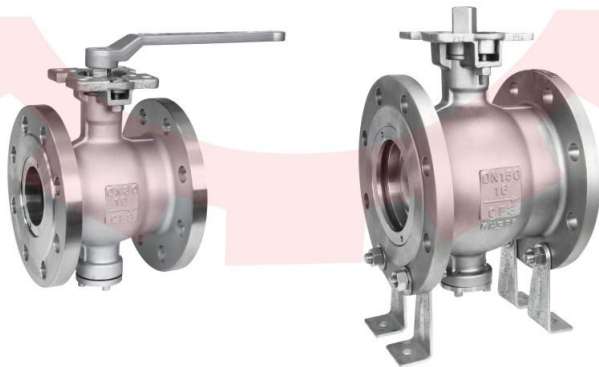
阀体:  
阀体采用整体式结构刚性  
好, 减少了外漏的可能性

弹簧:  
弹簧采用特殊的六角弹簧,  
在提供预紧力的同时, 减  
少了球和阀座之间的摩擦  
力, 使阀门操作扭矩变小

球:  
V型开口的球, 球面进行镀铬,  
离子氮化或超音速喷涂, 提高  
表面硬度, 使球口具有坚硬锋  
利的刀口对介质具有剪切功能

阀座:  
特殊的无阀盖式设计, 使阀  
座与阀体之间无死角, 介质  
不易积存, 固体颗粒介质不  
会产生卡死现象

V型球阀是球阀的一种, 它的关闭件是半球体上开有V字型开口, V型开口具有锋利的刀口, 在球体回转过程中, 关闭件之间有擦拭作用, 对介质具有强有力的切断力, 球体的V型开口与阀座流道形成一个扇形区域, 在回转过程中可改变流道截面积, 形成对介质的精确调节, 它是一种角回转的调节阀, 其密封性能与普通球阀相同, 使它同时具备调节和开关两种功能, 与气动或电动执行器配套, 广泛使用于工业过程自控系统中。



零件清单 Parts List

序号 number	名称 name	数量(件) quantity(piece)	材料Material		
1	阀体valve body	1	WCB	CF8	CF8M
2	阀芯spool	1	CF8表面镀铬 CF8 surface hard chrome plating	CF8表面镀铬 CF8 surface hard chrome plating	CF8表面镀铬 CF8 surface hard chrome plating
3	圆柱销cylindrical pin	2	304	304	316
4	阀座valve seat	1	304堆焊硬质合金 304 surfacing carbide	304堆焊硬质合金 304 surfacing carbide	304堆焊硬质合金 304 surfacing carbide
5	弹簧spring	1	316	316	316
6	O型圈O-ring	1	氟橡胶 fluororubber	氟橡胶 fluororubber	氟橡胶 fluororubber
7	自润滑轴承Self-lubricating bearings	-	304+PTFE	304+PTFE	316+PTFE
8	下阀杆lower stem	1	20Cr13	304	316
9	O型圈O-ring	1	氟橡胶 fluororubber	氟橡胶 fluororubber	氟橡胶 fluororubber
10	后压盖rear gland	1	WCB	CF8	CF8M
11	环垫ring pad	1	PTFE	PTFE	PTFE
12	调节垫片Adjusting spacer	1	PTFE	PTFE	PTFE
13	平垫片flat gasket	4	Q235	304	304
14	螺栓bolt	4	25	304	304
15	双头螺栓Stud	2	25	304	304
16	自润滑轴承Self-lubricating bearings	1	304+PTFE	304+PTFE	316+PTFE
17	平键Flat key	1	20Cr13	304	316
18	下填料underfill	1	PTFE	PTFE	PTFE
19	中填料medium filler	1组	PTFE	PTFE	PTFE
20	上填料top filler	1	PTFE	PTFE	PTFE
21	填料压盖packing gland	1	WCB	CF8	CF8M
22	螺母nut	2	35	304	304
23	上阀杆upper stem	1	20Cr13	304	316

产品类型

DN25-DN250 (1"-10") 对夹式、法兰式结构  
DN300-DN500 (12"-20") 法兰式结构  
压力等级:  
DIN PN10, PN16, PN25, PN40, PN63  
ANSI 150, ANSI 300, ANSI 600

设计标准

1. 法兰标准:GB/T9113.1-2010, JB/T 79.1-1994, HG 20592-2009, ASME B16.5EN 1092-1:2001
2. 压力-温度额定值:GB/T 12224-2007 ASME B16.34-2003 ISO 7005-1
3. 结构长度标准:  
对夹式:企业标准  
法兰式:ISA S75.04-1995, IEC/DIN 534-3-2
4. 适应温度范围:  
-29°C-150°C常温型  
-29°C-250°C中温型  
-29°C-450°C高温型
5. 密封与强度试验标准:  
强度及密封试验标准:GB/T 4213-2007  
硬密封等级:用户无特殊要求时按下表标准, 用户要求时可按GB/T4213-2007 V级标准执行。  
强度试验压力是按公称压力的1.5倍, 填料及法兰处密封试验是按公称压力的1.1倍压力进行, 阀座密封是按最大使用压差来进行试验, 当最大使用压差不明确时按1.0MPa(水压) 试验, 当最大压差小于0.6MPa时按0.6MPa压力进行试验, 介质是带有缓蚀剂的水进行试验。

阀座最大允许泄露量

软密封阀座: 0.6MPa压缩空气, 无泄漏  
硬密封阀座: 1. 按客户要求制作  
2. 在无特殊要求情况下按GB/T 4312V级密封, 具体泄露量如下表

规格 Specification	硬密封最大允许泄露量 Hard seal maximum allowable leakage
DN25 (1")	0.15ml/min
DN32 (1 1/4")	0.18ml/min
DN40 (1 1/2")	0.24ml/min
DN50 (2")	0.30ml/min
DN65 (2 1/2")	0.39ml/min
DN80 (3")	0.48ml/min
DN100 (4")	0.60ml/min
DN125 (5")	0.75ml/min
DN150 (6")	0.90ml/min
DN200 (8")	1.20ml/min
DN250 (10")	1.50ml/min
DN300 (12")	1.80ml/min
DN350 (14")	2.10ml/min
DN400 (16")	2.40ml/min
DN450 (18")	2.60ml/min
DN500 (20")	3.00ml/min

product type

DN25-DN250 (1"-10") wafer type, flange type structure  
DN300-DN500 (12"-20") flange structure  
Pressure Level:  
DIN PN10, PN16, PN25, PN40, Pn63  
ANSI 150,ANSI 300, ANSI 600

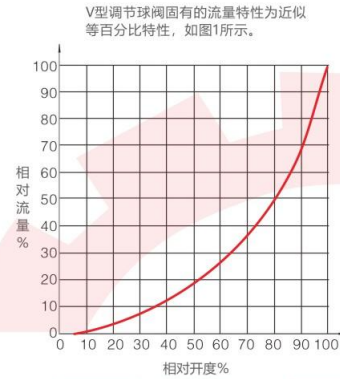
design standards

1. Flange standard: GB/T9113.1-2010, JB/T 79.1-1994, HG 20592-2009, ASME B16.5EN 1092-1:2001
2. Pressure-temperature rating: GB/T 12224-2007 ASME B16.34-2003 ISO 7005-1
3. Structure length standard:  
Wafer Type: Enterprise Standard  
Flange: ISA S75.04-1995, IEC/DIN 534-3-2
4. Suitable temperature range:  
-29°C-150°C normal temperature type  
-29°C-250°C medium temperature type  
-29°C-450°C high temperature type
5. Sealing and strength test standards:  
-29°C-150°C Normal temperature type -29°C-250°C Medium temperature type -29°C-450°C High temperature type 5,  
Sealing and strength test standards:  
Strength and sealing test standard: GB/T 4213-2007  
Hard sealing grade: If the user has no special requirements, please follow the standards in the table below.  
The strength test pressure is 1.5 times the nominal pressure. The sealing test at the packing and flange is carried out according to 1.1 times the nominal pressure. The valve seat seal is tested according to the maximum operating pressure difference. When the maximum operating pressure difference is not clear, press 1.0MPa (water pressure) test, when the maximum pressure difference is less than 0.6MPa, the test is carried out at 0.6MPa pressure, and the medium is water with corrosion and scale inhibitor.

Maximum allowable leakage of valve seat

Soft sealing valve seat: 0.6MPa compressed air, no leakage  
Hard sealing valve seat: 1. Made according to customer requirements  
2. If there are no special requirements, it should be sealed according to GB/T 4312V level. The specific leakage is as follows:

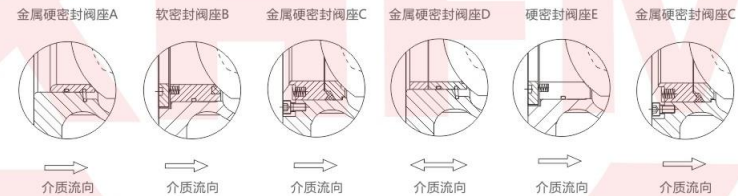
流量特性



标准产品Cv值表

规格 Specification	Cv值 CV value
DN25 (1")	36
DN32 (1 1/4")	56
DN40 (1 1/2")	94
DN50 (2")	152
DN65 (2 1/2")	262
DN80 (3")	358
DN100 (4")	540
DN125 (5")	906
DN150 (6")	1424
DN200 (8")	2176
DN250 (10")	3532
DN300 (12")	5732
DN350 (14")	8245
DN400 (16")	10651
DN450 (18")	12878
DN500 (20")	16343

各种阀座结构示意图



各种阀座结构应用

金属硬密封阀座A, E Metal hard seal valve seat A, E		金属硬密封阀座A, E Metal hard seal valve seat A, E	
阀座 valve seat	304/316+司太立合金 304/316+ Stellite alloy	阀座 valve seat	304/316+司太立合金 304/316+ Stellite alloy
弹簧 spring	17-7PH/316	弹簧 spring	17-7PH/316
O形圈 O-ring	氟橡胶/PTFE Fluorine rubber/PTFE	O形圈 O-ring	高温氟橡胶 High temperature fluororubber
填料 filler	氟橡胶/聚四氟乙烯 Fluorine rubber/PTFE	填料 filler	石墨 graphite
球表面硬化处理 ball surface hardening	镀硬铬/氮化/喷涂WC/喷涂STL Hard chrome plating/nitriding/spraying WC/spraying STL	球表面硬化处理 ball surface hardening	镀硬铬/氮化/喷涂WC/喷涂STL Hard chrome plating/nitriding/spraying WC/spraying STL
适应的温度范围 Suitable temperature range	-29°C-150°C	适应的温度范围 Suitable temperature range	-29°C-150°C
适应的介质类型 Suitable media type	水/油/气/固体颗粒/悬浮 water/oil/vapor/solid particles/suspension	适应的介质类型 Suitable media type	水/油/气/固体颗粒/悬浮 water/oil/vapor/solid particles/suspension

软密封阀座B Soft Seat Seat B	
阀座 valve seat	304+PTFE/316+PTFE
弹簧 spring	17-7PH或Inconel
O形圈 O-ring	氟橡胶 fluororubber
填料 filler	PTFE
球表面硬化处理 ball surface hardening	镀硬铬/氮化 Hard chrome plating/nitriding
适应的温度范围 Suitable temperature range	-29°C-150°C
适应的介质类型 Suitable media type	水/油/汽/气 water/oil/steam/gas

硬密封阀座C Hard Seat Seat C	
阀座 valve seat	304/316+司太立合金 304/316+ Stellite alloy
弹簧 spring	17-7PH/316/Inconel
O形圈 O-ring	石墨 graphite
球表面硬化处理 ball surface hardening	氮化/喷涂WC/喷涂STL Nitriding/Spraying WC/Spraying STL
填料 filler	石墨 graphite
适应的温度范围 Suitable temperature range	-29°C-350°C
适应的介质类型 Suitable media type	汽/固体颗粒 Vapor/Solid Particles

双向金属硬密封阀座D Two-way metal hard seal valve seat D	
阀座 valve seat	304/316+司太立合金 304/316+ Stellite alloy
弹簧 spring	17-7PH/316
O形圈 O-ring	氟橡胶 fluororubber
填料 filler	PTFE
球表面硬化处理 ball surface hardening	镀硬铬/氮化/喷涂WC/喷涂STL Hard chrome plating/nitriding/spraying WC/spraying STL
适应的温度范围 Suitable temperature range	-29°C-150°C
适应的介质类型 Suitable media type	水/油/汽/固体颗粒/悬浮 water/oil/vapor/solid particles/suspension

各种压力等级下所承载的最大压力和相应的扭矩值表

Table of maximum pressures and corresponding torque values carried under various pressure levels

公称通径 NPS	公称压力(PN16) 承载压力1.0下扭矩 硬密封	公称压力(PN16) 承载压力1.0下扭矩 软密封	公称压力(PN25) 承载压力2.0下扭矩 硬、软密封	公称压力(PN40) 承载压力3.0下扭矩 硬、软密封	公称压力(PN63) 承载压力5.0下扭矩 硬、软密封
	Nominal pressure (PN16) Torque under load pressure 1.0 hard seal	Nominal pressure (PN16) Torque under load pressure 1.0 soft seal	Nominal pressure (PN25) Torque at Bearing Pressure 2.0 Hard and soft seal	Nominal pressure (PN40) Torque at Bearing Pressure 3.0 Hard and soft seal	Nominal pressure (PN63) Torque at Bearing Pressure 5.0 Hard and soft seal
DN25	20	20	30	70	150
DN32	25	25	36	90	230
DN40	30	30	40	140	270
DN50	35	35	42	150	520
DN65	50	50	62	300	640
DN80	60	80	95	300	640
DN100	80	120	140	420	900
DN125	110	180	220	600	1600
DN150	170	300	360	950	1600
DN200	240	500	590	1500	2700
DN250	430	900	1100	2300	4700
DN300	600	1400	1500	3500	7000
DN350	1200	2000	2500	6200	9300
DN400	1800	3200	4000	7200	13000
DN450	3000	4500	5600	11000	17300
DN500	4600	6500	8200	12500	22000

各种压力等级下所承载的最大压力和相应的扭矩值表

Table of maximum pressures and corresponding torque values carried under various pressure levels

公称通径 NPS	公称压力(150Lb) 承载压力1.0下扭矩 硬密封	公称压力(150Lb) 承载压力1.0下扭矩 软密封	公称压力(150Lb) 承载压力2.0下扭矩 硬、软密封	公称压力(300Lb) 承载压力3.5下扭矩 硬、软密封	公称压力(600Lb) 承载压力7.0下扭矩 硬、软密封
	Nominal pressure (150Lb) Torque under load pressure 1.0 hard seal	Nominal pressure (150Lb) Torque under load pressure 1.0 soft seal	Nominal pressure (150Lb) Torque at Bearing Pressure 2.0 Hard and soft seal	Nominal pressure (300Lb) Torque at Bearing Pressure 3.5 Hard and soft seal	Nominal pressure (600Lb) Torque at Bearing Pressure 7.0 Hard and soft seal
1	20	20	30	85	210
1 1/4	25	25	36	105	320
1 1/2	30	30	40	180	380
2	35	35	42	190	730
2 1/2	50	50	62	380	930
3	60	80	95	380	1000
4	80	120	140	530	1000
5	110	180	220	720	2200
6	170	300	360	1180	2500
8	240	500	590	1750	3800
10	430	900	1100	2800	6500
12	600	1400	1500	4000	10000
14	1200	2000	2500	7800	13100
16	1800	3200	4000	9000	18000
18	3000	4500	5600	13700	24000
20	4600	6500	8200	15500	31000

以上表中所列承载压力是保证阀门在所能承载的最大温度范围内可靠值,使用过程中介质的温度不同,承载的压力也有所不同,相应表中阀门扭矩只作为配执行器时的参考值,具体配备执行器还应考虑实际使用压差实际使用温度,阀座及球面的硬化工艺及密封等级要求的不同有所不同,密封等级要求更高时或温度较高时阀门承载的压力和扭矩有所不同,具体请在选型时进行实际计算。

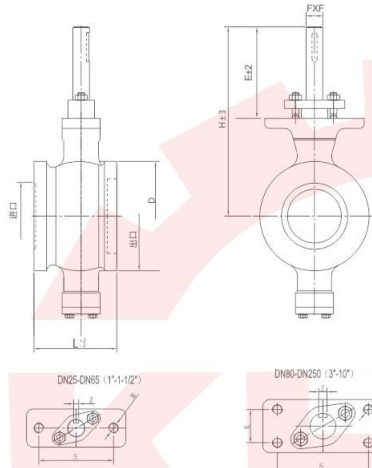
The bearing pressure listed in the above table is a reliable value to ensure that the valve can bear the maximum temperature range. During the use process, the temperature of the medium is different, and the bearing pressure is also different. The valve torque in the corresponding table is only used as a reference when matching an actuator. The actual use temperature of the actual pressure difference should also be considered when the actuator is equipped. The hardening process of the valve seat and the spherical surface and the requirements for the sealing level are different. When the sealing level is higher or the temperature is higher, the pressure and the pressure carried by the valve are different. The torque is different, please make the actual calculation when selecting the model.

PN16V型球阀执行器配置表

PN16V type ball valve actuator configuration table

V型球阀执行器配置表 V-type ball valve actuator configuration table												
DN	气动执行器 Pneumatic actuators				配GT精小型执行器 Equipped with GT fine and small actuator			电动 electric	蜗轮 worm gear	气动用气管 Pneumatic matching air pipe	气源压力 (Mpa) Air source pressure (Mpa)	
	ZS	手动 manual	ZDS	手动 manual	DA	SR	手动 manual					
25	ZS36-63	26:1	ZDS45-100	38:1	63	26:1	75	28:1	05	1	φ6x1(G1/4)	0.5-0.7
32	ZS36-63	26:1	ZDS45-100	38:1	63	26:1	75	28:1	05	1		
40	ZS36-80	28:1	ZDS45-100	38:1	83	28:1	92	38:1	10	1		
50	ZS45-80	28:1	ZDS45-100	38:1	92	28:1	105	38:1	10	1		
65	ZS45-80	28:1	ZDS55-125	38:1	92	28:1	105	38:1	20	2		
80	ZS45-100	38:1	ZDS55-125	38:1	105	38:1	125	38:1	20	2		
100	ZS45-100	38:1	ZDS55-125	54:1	105	38:1	125	54:1	40	2		
125	ZS55-100	54:1	ZDS55-125	54:1	125	54:1	140	54:1	40	3		
150	ZS55-125	54:1	ZDS63-160	80:1	140	54:1	160	80:1	40	3		
200	ZS63-160	54:1	ZDS63-200	80:1	160	54:1	210	80:1	60	4		
250	ZS80-200	80:1	ZDS80-250	78:1	190	80:1	210	78:1	100	5		
300	ZS80-250	80:1	ZDS100-300	78:1	240	80:1	270	78:1	150	5		
350	ZS100-300	78:1	ZDS125-300	98:1	270	78:1	300	98:1	200	5		
400	ZS100-300	78:1	ZDS125-350	98:1	300	78:1	350	98:1	6	6		
450	ZS125-350	320:1	ZDS125-400	320:1	350	320:1	400	320:1	6	6		
500	ZS125-350	320:1	ZDS125-400	320:1	350	320:1	400	320:1	6	6		

对夹式V型球阀阀体外形尺寸表



附件选择

调节型V型球阀:

- 1、气动调节型:阀体+支架+气动执行器+电气阀门定位器+空气过滤器
- 2、电动调节型:阀体+支架+调节型电动执行器

开关型V型球阀:

- 1、气动开关型:阀体+支架+气动执行器+电磁阀+限位开关+空气过滤器
- 2、电动调节型:阀体+支架+开关型电动执行器

Accessory selection

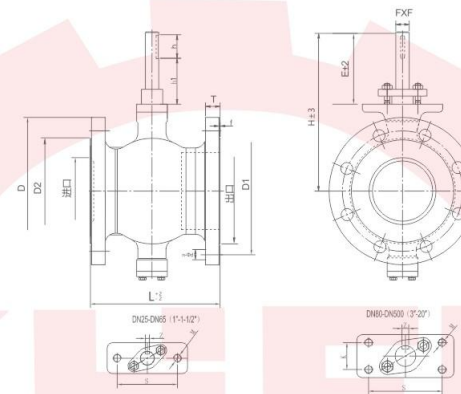
Regulating V-type ball valve:

1. Pneumatic adjustment type: valve body+bracket+pneumatic actuator+electrical valve positioner+air filter
2. Electric adjustment type: valve body+bracket+adjustable electric actuator

On-off V-type ball valve:

1. Pneumatic switch type: valve body+bracket+pneumatic actuator+solenoid valve +limit switch+air filter
2. Electric adjustment type: valve body+bracket+switch type electric actuator

法兰式V型球阀外形尺寸表



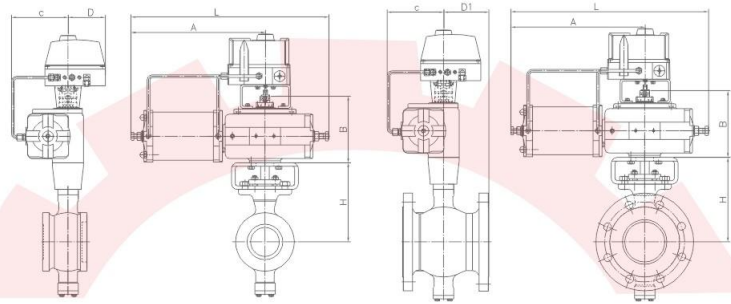
PN16/150Lb

DN	L	进口	出口	D	FXF	E	H	支架尺寸
15	62	15	25	48	11X11	14	82	F05
20	62	15	25	48	11X11	14	82	F05
25	62	20	38	67	11X11	14	82	F05
32	62	25	45	82	11X11	14	86	F05
40	62	32	49	90	11X11	14	88	F05
50	75	40	64	100	14X14	17	106	F05XF07
65	90	50	85	125	14X14	17	114	F05XF07
80	100	65	100	133	17X17	20	134	F07XF10
100	115	76	110	154	17X17	20	140	F07XF10
125	130	98	140	180	17X17	20	155	F07XF10
150	160	120	170	215	27X27	30	195	F12XF14
200	200	150	215	265	27X27	30	232	F14XF16

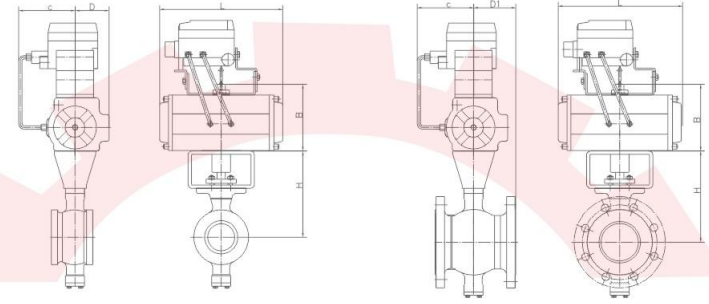
PN16/150Lb

DN	L	进口	出口	D	D1	D2	f	T	n-Φd	FXF	E	H	支架尺寸
15	102	15	45	95	65	45	2	16	4-Φ14	11X11	14	82	F05
20	102	15	58	105	75	58	2	18	4-Φ14	11X11	14	82	F05
25	102	20	68	115	85	68	2	18	4-Φ14	11X11	14	82	F05
32	114	25	78	140	100	78	2	18	4-Φ18	11X11	14	86	F05
40	114	32	88	150	110	88	2	18	4-Φ18	11X11	14	88	F05
50	124	40	102	165	125	102	2	20	4-Φ18	14X14	17	106	F05XF07
65	145	50	122	185	145	122	2	20	8-Φ18	14X14	17	114	F05XF07
80	165	65	138	200	160	138	2	20	8-Φ18	17X17	20	131	F07XF10
100	194	76	158	220	180	158	2	20	8-Φ18	17X17	20	140	F07XF10
125	212	98	188	250	210	188	2	22	8-Φ18	17X17	20	155	F07XF10
150	229	120	212	285	240	212	2	22	8-Φ22	27X27	30	195	F12XF14
200	243	150	268	340	295	268	2	24	12-Φ22	27X27	30	232	F14XF16

PN16/150Lb阀体加气动双作用执行器外形尺寸



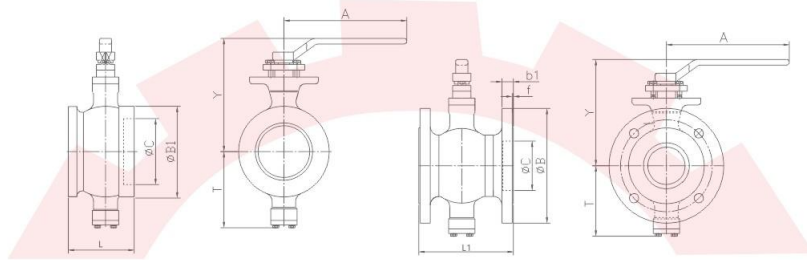
PN16/150Lb阀体加精小型双作用执行器外形尺寸



DN	A	L	B	H	C	D	D1
25	270	390	140	133	105	85	85
32	270	390	140	138	105	85	85
40	275	395	140	140	115	85	85
50	275	395	140	150	115	85	85
65	296	440	150	165	125	85	85
80	300	445	150	178	135	85	90
100	300	445	150	190	135	85	102
125	343	507	155	205	155	85	97
150	343	507	155	235	170	85	129
200	418	617	190	265	200	85	123
250	502	742	224	317	260	92	149
300	520	760	224	362	280		148
350	605	900	277	437	330		179
400	620	900	277	492	330		180
450	770	1200	330	570	400		230
500	770	1200	330	640	400		280

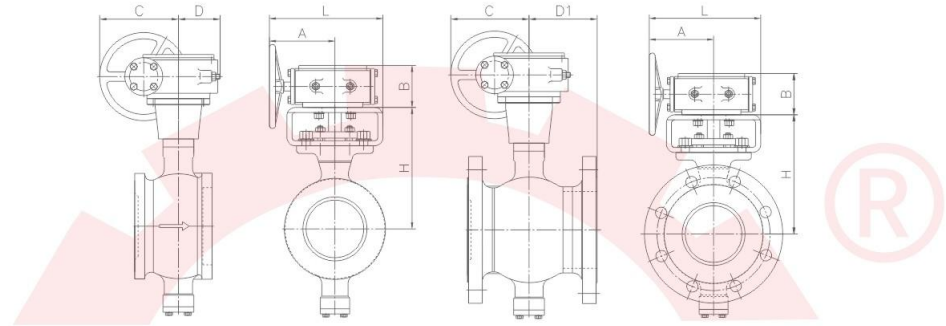
DN	L	B	H	C	D	D1
25	168	108	163	120	36	85
32	168	108	168	120	36	85
40	204	129	170	130	46	85
50	262	137	180	130	50	85
65	262	137	195	130	50	85
80	268	153	210	145	56	90
100	268	153	220	145	56	102
125	300	175	235	160	68	97
150	390	192	270	160	75	129
200	460	217	300	175	87	123
250	525	260	375	195	103	149
300	600	319	420	220		148
350	720	356	500	250		179
400	740	378	550	260		180
450	740	378	650	260		230
500	860	432	720	260		280

PN16对夹式、法兰式阀体加手柄外形尺寸



DN	L	L1	B1	B	C	b1	f	T	Y	A
25	62	102	68	115	38	16	2	81	73	150
32	62	114	76	140	45	18	2	86	78	180
40	62	114	84	150	50	18	2	90	80	215
50	75	124	100	165	62	20	2	93	90	230
65	90	145	118	185	77	20	2	108	105	270
80	100	165	132	200	90	20	2	123	118	290
100	115	194	158	220	115	22	2	138	130	330
125	130	212	184	250	134	22	2	148	145	330

PN16/150Lb阀体加蜗轮头外形尺寸



DN	A	L	B	H	C	D	D1
25	145	200	70	133	170	60	60
32	145	200	70	138	170	60	60
40	145	200	70	140	170	60	60
50	145	200	70	150	170	60	64
65	145	200	70	165	170	60	75
80	145	200	70	178	170	60	90
100	145	200	70	190	170	60	100
125	170	235	74	205	190	75	97
150	170	235	74	235	190	75	120
200	190	265	90	265	220	83	125
250	215	325	100	317	270	106	150
300	215	325	100	362	270		150
350	260	370	125	437	300		180
400	260	370	125	492	300		180
450	260	370	125	570	300		230
500	270	415	130	640	340		280