CECSV
中电赛维

ZHEJIANG ZHONGDIAN SAIWEI FLUID CONTROL CO., LTD.

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Providing intelligent fluid control solutions for severe service applications!

CECSV
中电赛维

Ball Valve Series

CECSV

中电赛维

Providing intelligent fluid control solutions for severe service applications!

Creative and contemporary **Design concepts**

Continuously optimized **Technical solutions**

Comprehensive process in **After-sales service**

Innovative design that keeps up with the times

Exquisite technology for in-depth research

Introduction of the Company

Zhejiang Zhongdian Saiwei Fluid Control Co., Ltd. was established in 2019 based on the industrial background of China Electronics (a state-owned enterprise), Wenzhou's traditional manufacturing industry, and a team with over 20 years of design and manufacturing experience. It is a technology-based automated fluid equipment enterprise and an intelligent fluid equipment manufacturer integrating research and development, design, manufacturing, sales, and service. The applied trademarks include "中电赛维" and "CECSV". The company is managed according to the ISO9001 international management system and has established an advanced enterprise management system and a comprehensive quality assurance system.

Zhongdian Saiwei adopts CAD, CAE, CAM, FEA, and finite element research and development design, manufacturing, and management. The products can be used in extremely harsh working conditions: high temperature (up to 816 ℃), high pressure (up to 42.0MPa), low temperature (up to −196 ℃), high particles (such as coal chemical and petrochemical catalysts and PTO processes, mining industry, coal powder injection, ash unloading, etc.). The company pursues strict quality management. In addition to manufacturing and inspection in accordance with standards such as ANSI/ASME, API, ISO, GB/JB, JIS, DIN, BS, etc., it also needs to pass more strictly enterprise standards for inspection of Zhongdian Saiwei, and the company provides enterprise standard inspection and certificates for goods delivevy from the factory.

The company produces a series of intelligent fluid control assembly products, including metal seal ball valves, trunnion mounted ball valves, and cryogenic ball valves. The body is made of carbon steel, stainless steel, dual-phase, nickel alloy, titanium materials, and other special steel materials. The valves can be equipped with pneumatic, electric, hydraulic, pneumatic-hydraulic, electro-hydraulic, and applied for intelligent control. The products are applied in industries such as petroleum, chemical industry, coal chemical industry, photovoltaic industry (polycrystalline silicon, organic silicon), metallurgy, power, mining, etc.

"Providing intelligent fluid control solutions for severe service conditions"is the mission of Zhongdian Saiwei, with high technological content in its products. We will design and manufacture better products to be well-adpated with customers, and make a good job in after-sales service and technical assistance. Welcome to visit our company for guidance and business negotiations, and establish a good partnership with us.

Production equipment

Better tools make for good work. With advanced modern processing equipment and unique technological processes, CECSV valves have been fully presented. The high-quality products developed through independent technology fully reflect CECSV's unremitting pursuit of international brand strategy.

Excellent equipment represents strong production support capabilities, ensuring that every product meets international standards with excellent quality.

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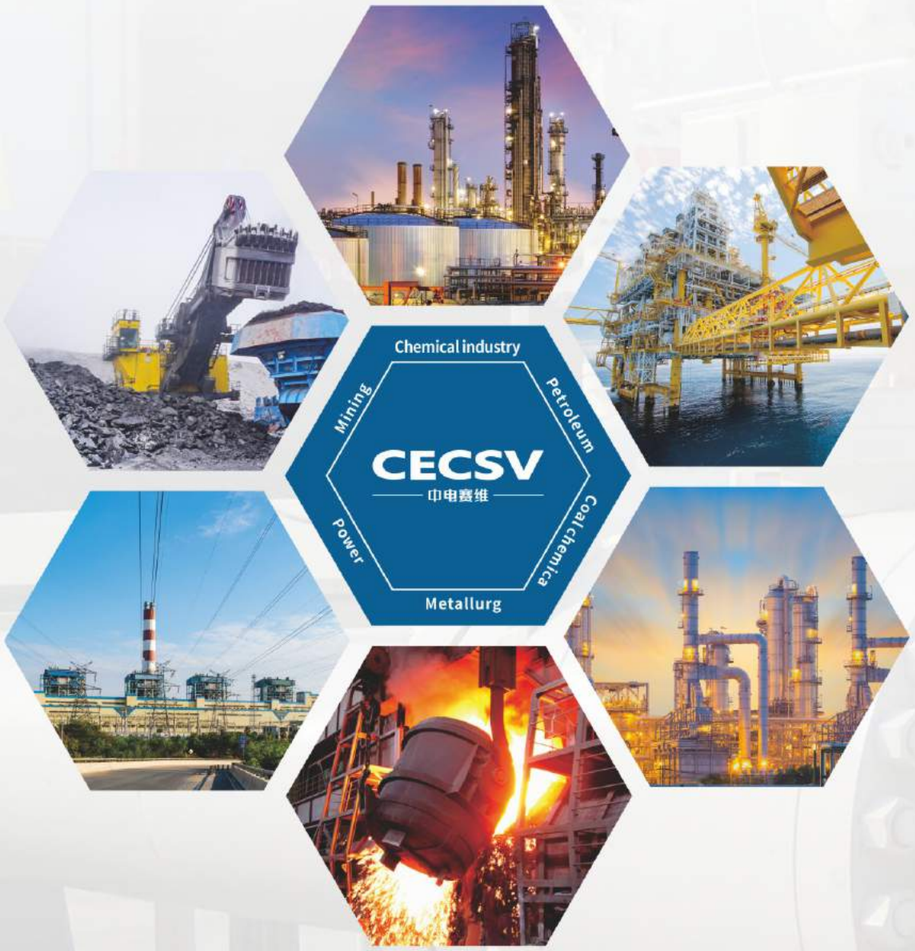
Production workshop

Excellent quality comes from the exquisite manufacturing technology and strict quality control. The ultimate pursuit and strong sense of responsibility of CECSV for quality has prompted it to serve users with a more strictly quality control management system.

Application area

The company's products are widely applied in industries such as petroleum, chemical industry, coal chemical industry, photovoltaic industry (polycrystalline silicon, organic silicon), metallurgy, power, mining, etc., and the company has received unanimous praise from the clients.

Efficient **Convenient** **Safe** **Environmentally friendly**



Product advantages

CECSV 中电赛维

Corporate culture

Corporate vision

Becoming the world's most reliable valve supplier.

Under the guidance of the quality policy of "Striving for excellence and pursuing perfection", while continuously improving ourselves, CECSV will work together with people from all walks of life to create brilliance with a sincere service attitude and a high sense of responsibility.

Corporate mission

Continuously innovate and keep up with the times

Providing intelligent fluid control solutions for harsh working conditions is the mission of CECSV.

CECSV
中电赛维

Core values

Quality: Shaping good character, doing everything well, and achieving good products

Efficiency: Ensure the right direction , faster speed, and supreme quality

Responsibility: Only by profession can one make achievements in career; Only by dedication can one fully enjoy success.

Cooperation: Mutual understanding through respect, mutual support through trust, reaching consensus through communication, achieving win–win through mutual benefit, and achieving mutual success through mutual assistance

Product contents

ZHEJIANG ZHONGDIAN SAIWEI
FLUID CONTROL CO., LTD.

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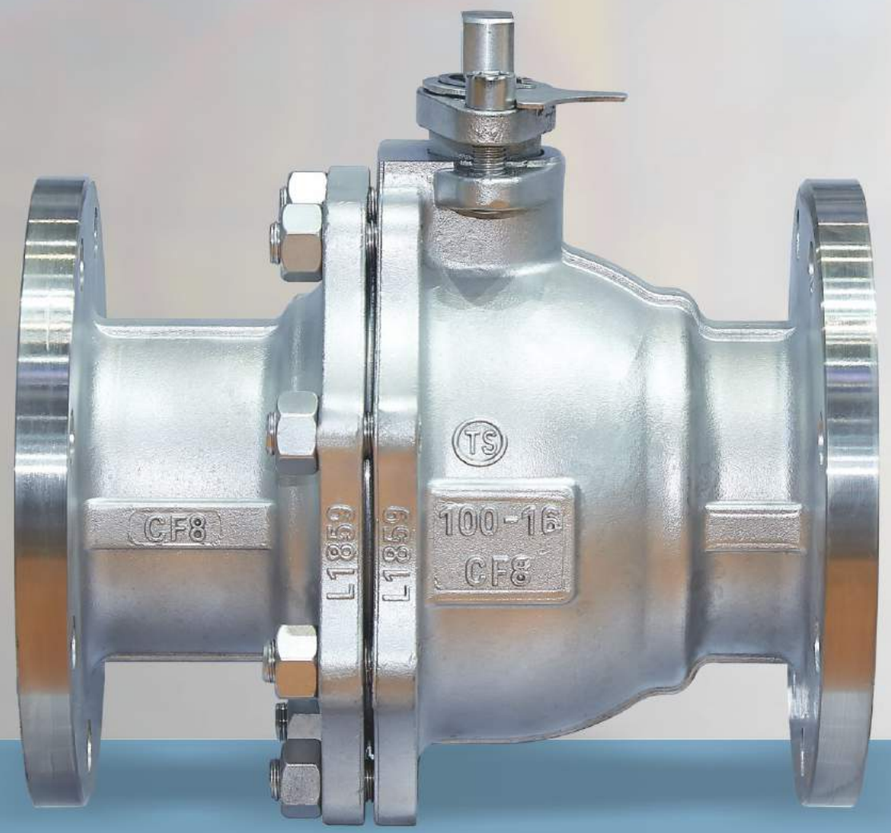
Floating ball valve



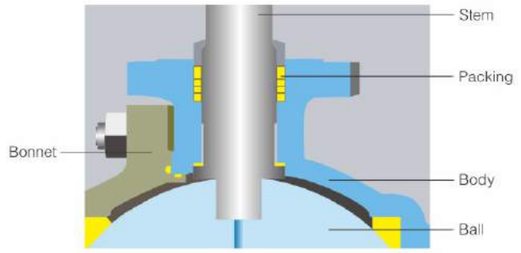
Floating ball valve

Product Introduction

Floating soft-seal ball valve mainly consists of body, seat, ball, stem, drive, etc; It has the advantages of low fluid resistance, compact structure, fast opening and closing, reliable sealing, convenient maintenance, and long service life; It is suitable for industries such as natural gas, oil products, chemicals, metallurgy, urban construction, environmental protection, pharmaceuticals, food, etc. to cut off or connect media in pipelines.

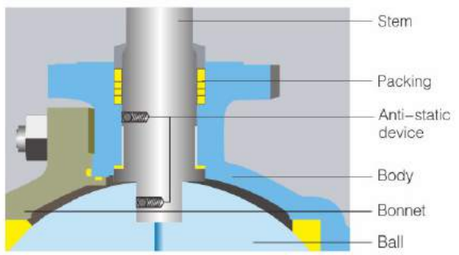
Anti-blow Out Stem

Stem is designed with collar, which will prevent stem from being blow out, when medium passes through the valve or the valve is disassembled to repair.



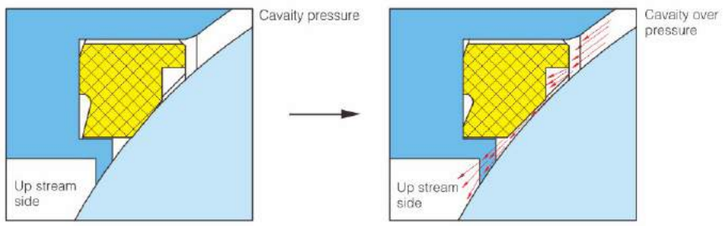
Anti-static Device

The anti-static device is the standard design for CECSV' s floating ball valves. The stem is equipped with a spring grounding plug to maintain continuous contact between the ball stem and the body, forming a conductive circuit that can transfer charges and avoid the accumulation of static electricity caused by friction during valve opening and closing. This accumulation of static electricity is extremely dangerous for certain working conditions.



Over Pressure Self Relieving Seat Design

Under close position, when the cavaity pressure increased abnormally, the cavity medium will elastic squeeze-out through the up stream side seat ring, and it will prevent cavity pressure over exceeding.



Floating ball valve

Fire Safe Design

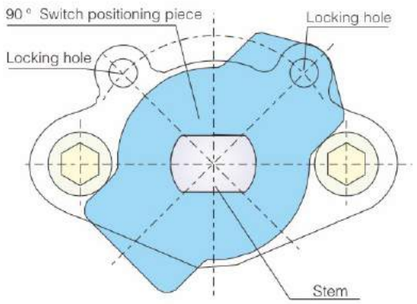
The seat, stem and body joint of ball valve are with fire safe design. When non-metal materials such as O-rings, soft seats etc. And decomposed or deteriorated by fire, ball valve changes to metal to metal auxiliary seal structure, which will prevent/comtrol effectively internal leakage or external leakage.

Preventing Misoperation

A 90° switch positioning piece with a locking hole is installed, which can be locked as needed to prevent misoperation. The position where the handle is installed at the head of the stem adopts a flat design. When the valve is opened, the handle is parallel to the pipeline, and when the valve is closed, the handle is perpendicular to the pipeline, ensuring that the opening and closing indications of the valve will not be incorrect.

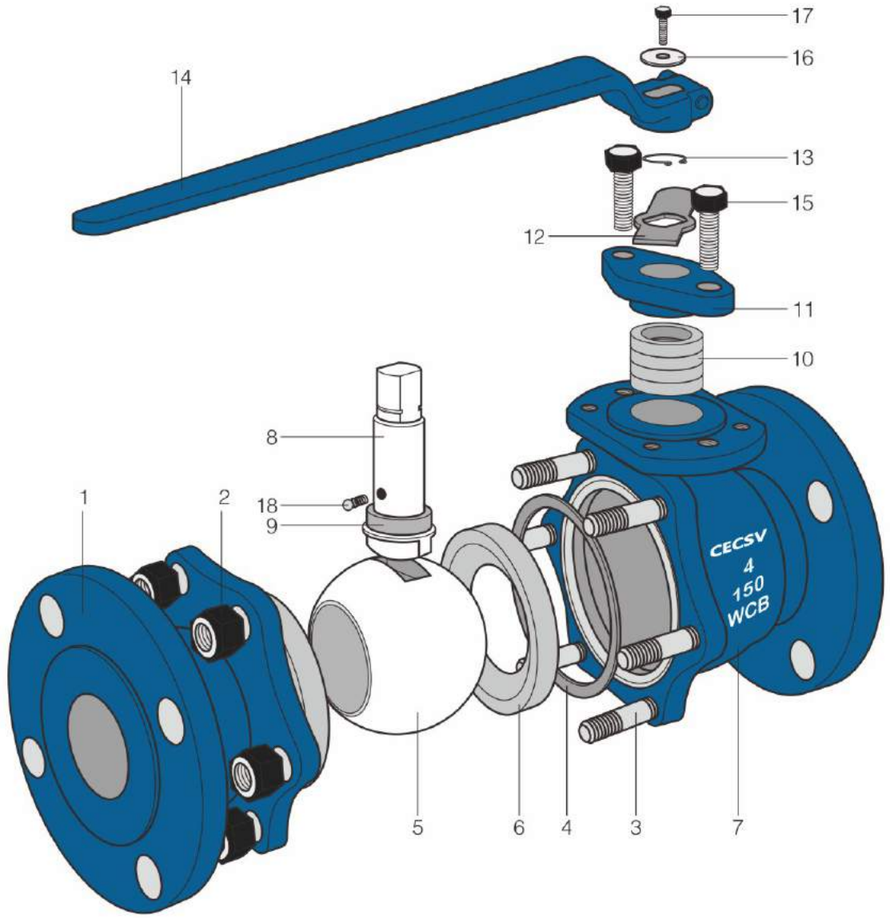
Setting up the Installation Platform for the Drive

Floating ball valves are equipped with support platforms for installing drive. Through the support of the drive, it is convenient to install worm gear transmission devices, pneumatic devices, or electric devices.



The structure design to prevent misoperation

GB Floating ball valve



Design and Inspection Standards

Design standards	GB/T 12237
Temperature and pressure	GB/T 12224
FtF Length	JB/T 1686, GB/T 12221
Flange connection	HG/T 20592
Pressure test	GB/T 13927, GB/T26480, JB/T9092

GB Floating ball valve

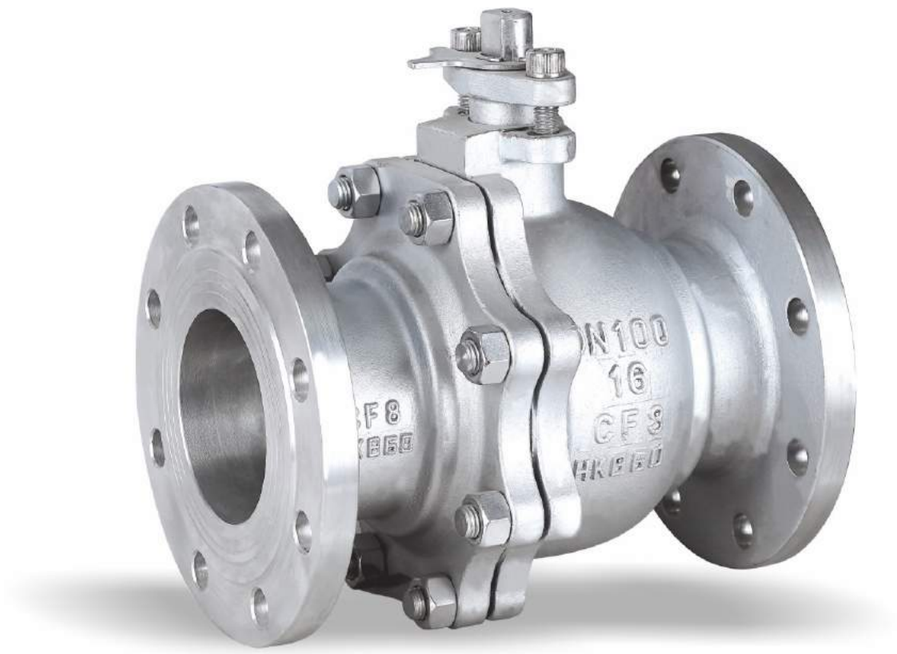
Common Non-metallic Valve Seat Materials

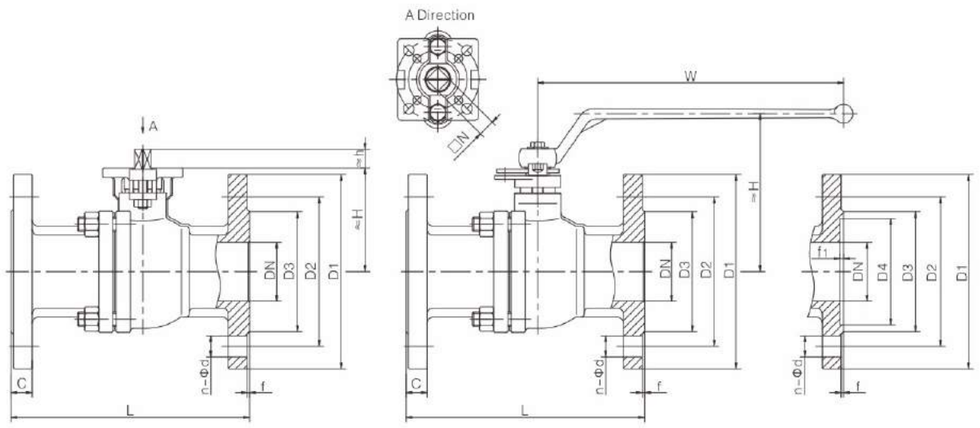
Materials	Applications	Applicable temperature/°C
PTFE	Various corrosive media including aqua regia	-110~150
RTPFE	Same as PTFE	Milky white fiberglass：-100~150 Black carbon fiber：-100~180
PCTFE	Cold flow resistance, low water vapor permeability, low water absorption, and aging resistance. Acid, alkali, and organic solvent resistance (excluding halides)	-200~130
NYLON 12	Exhibits excellent resistance to non-polar solvents such as hydrocarbons and various oils	-50~120
DEVLON	Price comparison between DEVLON and PTFE, PEEK：PTFE<DEVLON<PEEK	-100~150
PEEK	Polyether ether ketone has chemical resistance and is insoluble in commonly used solvents, as well as in acids and alkalis other than concentrated sulfuric acid. Acetone, ammonia acid, hydracide, propan-2-ol, sodium hydroxide	-78~240
PPL	Para polyphenyl is resistant to chemical corrosion and solvent resistance, and can withstand strong acids and alkalis such as sulfuric acid and hydrofluoric acid. So far, there is no solvent in the world that can dissolve polystyrene	-100~300

Material of Main Parts

Parts name	Conventional working conditions	Corrosion working conditions	
Bonnet	WCB	Cf8	CF3M
Nut	8	A2-70	A2-70
Studs	8.8	A2-70	A2-70
Wound gasket	Flexible graphite+304	Flexible graphite+304	Flexible graphite+316L
Ball	25#+ENP	F304	F316L
Seat	PTFE/RPTFE/PPL	PTFE/RPTFE/PPL	PTFE/RPTFE/PPL
Body	WCB	CF8	CF3M
Stem	1Cr13	F304	F316L
Lock washer	PTFE	PTFE	PTFE
Packing box	Flexible graphite,PTFE	Flexible graphite,PTFE	Flexible graphite,PTFE
Packing gland	WCB	CF8	CF3M
Block	Carbon steel	Carbon steel	Carbon steel
Retaining ring	Carbon steel	Stainless steel	Stainless steel
Lever	WCB	WCB	WCB
Bolts	8.8	A2-70	A2-70
Gasket	Carbon steel	Stainless steel	Stainless steel
Bolts	Carbon steel	Stainless steel	Stainless steel
Anti-static device	Stainless steel	Stainless steel	Stainless steel

GB Floating ball valve





GB Floating ball valve

Overall Dimensions and Flange connection

PN16 Unit: mm

DN	D1	D2	D3	C	f	n-φd	L	≈H	W	≈h	□N	ISO 5211
15	95	65	45	14	2	4–14	130	50	180	9	9	F03/F05
20	105	75	58	16	2	4–14	130	54	180	9	9	F03/F05
25	115	85	68	16	2	4–14	140	60	220	11	11	F04/F05
32	140	100	78	18	2	4–18	165	71	220	11	11	F04/F05
40	150	110	88	18	2	4–18	165	78	295	14	14	F05/F07
50	165	125	102	19	2	4–18	203	89	295	14	14	F05/F07
65	185	145	122	20	2	8–18	222	114	346	17	17	F07/F10
80	200	160	138	20	2	8–18	241	122	406	17	17	F07/F10
100	220	180	158	22	2	8–18	305	135	406	17	17	F07/F10
125	250	210	188	22	2	8–18	356	164	/	24	22	F10/F12
150	285	240	212	24	2	8–22	394	204	/	30	27	F12/F14

Overall Dimensions and Flange connection

PN25 Unit: mm

DN	D1	D2	D3	C	f	n-φd	L	≈H	W	≈h	□N	ISO 5211
15	95	65	45	14	2	4–14	130	50	180	9	9	F03/F05
20	105	75	58	16	2	4–14	140	54	180	9	9	F03/F05
25	115	85	68	16	2	4–14	150	60	220	14	14	F05/F07
32	140	100	78	18	2	4–18	165	71	220	14	14	F05/F07
40	150	110	88	18	2	4–18	180	78	295	14	14	F05/F07
50	165	125	102	20	2	4–18	200	89	295	14	14	F05/F07
65	185	145	122	22	2	8–18	220	114	346	17	17	F07/F10
80	200	160	138	24	2	8–18	250	122	406	17	17	F07/F10
100	235	190	162	26	2	8–22	320	135	406	17	17	F07/F10
125	270	220	188	28	2	8–26	360	164	/	24	22	F10/F12
150	300	250	218	30	2	8–26	400	204	/	30	27	F12/F14

Overall Dimensions and Flange connection

PN40 Unit: mm

DN	D1	D2	D3	D4	C	f	f1	n-φd	L	≈H	W	≈h	□N	ISO 5211
15	95	65	45	40	16	2	4	4–14	130	50	180	9	9	F03/F05
20	105	75	58	51	16	2	4	4–14	140	54	180	9	9	F05/F07
25	115	85	68	58	18	2	4	4–14	150	60	220	14	14	F05/F07
32	140	100	78	66	18	2	4	4–18	165	71	220	14	14	F05/F07
40	150	110	88	76	18	2	4	4–18	165	78	295	14	14	F05/F07
50	165	125	102	88	20	2	4	4–18	178	89	295	14	14	F05/F07
65	185	145	122	110	22	2	4	8–18	190	114	346	17	17	F07/F10
80	200	160	138	121	24	2	4	8–18	203	122	406	17	17	F07/F10
100	235	190	162	150	24	2	4.5	8–22	229	135	406	24	22	F10/F12
125	270	220	188	176	26	2	4.5	8–26	356	164	/	30	27	F12/F14
150	230	250	218	204	28	2	4.5	8–26	394	204	/	30	27	F12/F14

API Floating ball valve

API Floating ball valve

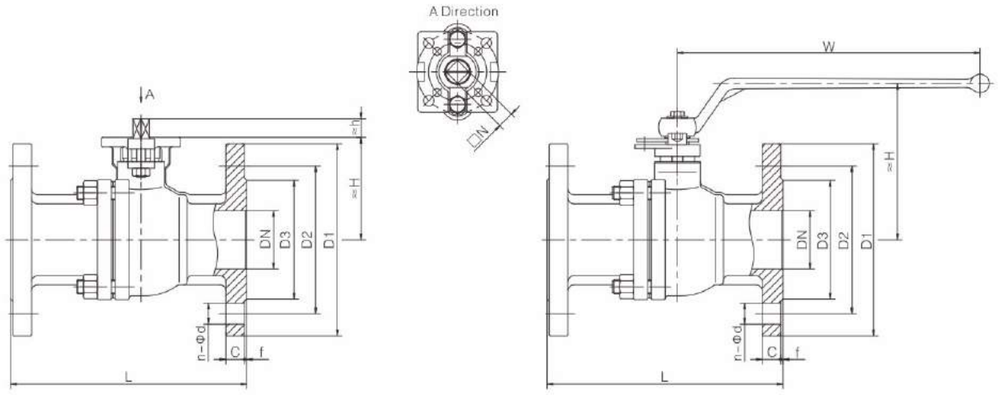
Design and Inspection Standards

Design standards	API 6D, API 608, ISO 17292
Temperature and pressure	ASME B16.34
FtF Length	ASME B16.10, API 6D
Flange connection	ASME B16.5, HG/T 20615
Pressure test	API 598, API 6D

Material of Main Parts

Parts name	Conventional working conditions	Corrosion working conditions	
Bonnet	A216 WCB	A351 CF8	A351 CF3M
Nut	A194 2H	A194 8	A194 8M
Studs	A193 B7	A193 B8	A193 B8M
Wound gasket	Flexible graphite+304	Flexible graphite+304	Flexible graphite+316L
Ball	A105+ENP	A182 F304	A182 F316L
Seat	PTFE/RPTFE/PPL	PTFE/RPTFE/PPL	PTFE/RPTFE/PPL
Body	A216 WCB	A351 CF8	A351 CF3M
Stem	A182 F6a	A182 F304	A182 F316L
Lock washer	PTFE	PTFE	PTFE
Packing box	Flexible graphite,PTFE	Flexible graphite,PTFE	Flexible graphite,PTFE
Packing gland	A216 WCB	A351 CF8	A351 CF3M
Block	Carbon steel	Carbon steel	Carbon steel
Retaining ring	Carbon steel	Stainless steel	Stainless steel
Lever	A216 WCB	A216 WCB	A216 WCB
Screws	A193 B7	A193 B8	A193 B8M
Gasket	Carbon steel	Stainless steel	Stainless steel
Bolts	Carbon steel	Stainless steel	Stainless steel
Anti-static device	Stainless steel	Stainless steel	Stainless steel

API Floating ball valve



Overall Dimensions and Flange connection

Class 150 Unit: mm

NPS mm	NPS in	D1	D2	D3	C	f	n-ϕd	L	≈H	W	≈h	□N	ISO 5211
15	1/2"	89	60.5	35.1	9.7	1.5	4–16	108	50	180	9	9	F03/F05
20	3/4"	99	69.8	42.9	11.2	1.5	4–16	117	54	180	9	9	F03/F05
25	1"	108	79.1	50.8	12.7	1.5	4–16	127	60	220	11	11	F04/F05
32	1–1/4"	127	88.9	63.5	14.2	1.5	4–16	140	71	220	11	11	F04/F05
40	1–1/2"	152	98.6	73	15.9	1.5	4–16	165	78	295	14	14	F05/F07
50	2"	178	120.6	91.9	17.5	1.5	4–19	178	89	295	14	14	F05/F07
65	2–1/2"	190	139.7	104.6	20.6	1.5	4–19	190	114	346	17	17	F07/F10
80	3"	216	152.4	127	22.4	1.5	8–19	203	122	406	17	17	F07/F10
100	4"	229	177.8	157.2	22.4	1.5	8–19	229	135	406	17	17	F07/F10
125	5"	254	190.5	185.7	22.4	1.5	8–22	356	164	/	24	22	F10/F12
150	6"	279	241.3	215.9	23.9	1.5	8–22	394	204	/	30	27	F12/F14

Overall Dimensions and Flange connection

Class 300 Unit: mm

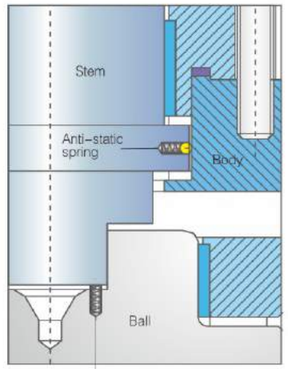
NPS mm	NPS in	D1	D2	D3	C	f	n-ϕd	L	≈H	W	≈h	□N	ISO 5211
15	1/2"	95	66.5	35.1	12.7	1.5	4–16	140	50	180	9	9	F03/F05
20	3/4"	117	82.6	42.9	14.2	1.5	4–19	152	54	180	9	9	F05/F07
25	1"	124	88.9	50.8	15.7	1.5	4–19	165	60	220	14	14	F05/F07
32	1–1/4"	133	98.6	63.5	17.5	1.5	4–19	178	71	220	14	14	F05/F07
40	1–1/2"	155	114.3	73	19	1.5	4–22	190	78	295	14	14	F05/F07
50	2"	165	127	91.9	20.6	1.5	8–19	216	89	295	14	14	F05/F07
65	2–1/2"	190	149.4	104.6	23.9	1.5	8–22	241	114	346	17	17	F07/F10
80	3"	210	168.1	127	26.9	1.5	8–22	282	122	406	17	17	F07/F10
100	4"	254	200.2	157.2	30.2	1.5	8–22	305	135	406	24	22	F10/F12
125	5"	279	235	185.7	33.3	1.5	8–22	381	164	/	30	27	F12/F14
150	6"	318	269.7	215.9	35.1	1.5	12–22	403	204	/	30	27	F12/F14

Trunnion mounted ball valve

Trunnion mounted ball valve

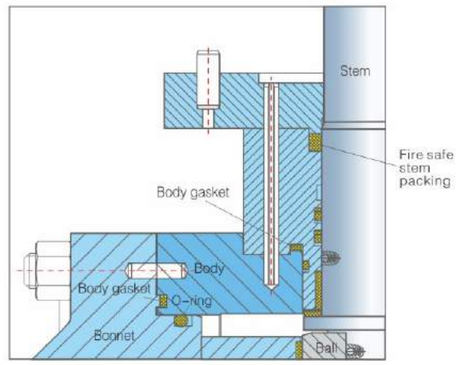
Product Introduction

Trunnion mounted ball valve is a new generation one with high-performance, suitable for long-distance pipelines and general industrial pipelines. Its strength, safety, and resistance to harsh environments have been specially considered in design, and it is suitable for various corrosive and non corrosive media. Compared with floating ball valves, during operation, all the force generated by the fluid pressure in front of the valve on the ball is transmitted to the bearing, which does not cause the ball to move towards the seat. Therefore, the seat will not bear excessive pressure. Therefore, the trunnion mounted ball valves have small torque, small seat deformation, stable sealing performance, and long service life, and are suitable for high-pressure and large-diameter situations.



Anti-blow out Stem Design

The stem is designed separated from ball, and designed as T slot shape at the bottom side, and gland flange will prevent the stem blow out in case of any abnormal cavity pressure increase.



Anti-static Design

The trunnion mounted ball valve uses an anti-static device to form an electrostatic channel between the ball, stem, and body, which can transfer the static electricity generated by friction during the opening and closing process of the ball and seat through the body, thereby preventing potential fire or explosion hazards caused by static sparks.

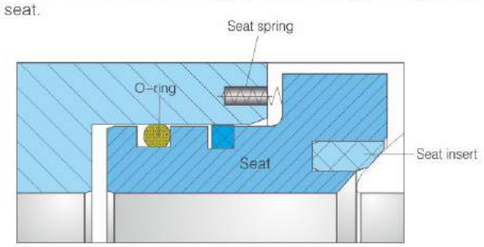
Fireproof Structure Design

Prevent external leakage

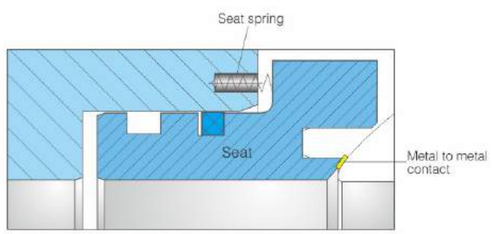
Under normal circumstances, the design of a double O-ring seal with graphite stem packing can prevent leakage at the stem; The O-ring with graphite body gasket also ensures the sealing of the body and valve cover connection parts. When a fire occurs, the O-ring fails due to melting, and the gland gasket, body gasket, and stem packing will work as the function of preventing fluid external leakage.

Prevent internal Leakage

When a fire occurs, non-metallic materials such as O-rings, soft-seal seats, and seat retaining rings are melted and invalid. The metal seat ring lip is pushed and contacts the ball under the preload force of the spring, blocking pipeline fluid and minimizing internal leakage in the valve channel. In addition, the flexible graphite seat ring packing is squeezed into the seat sealing groove to block fluid leakage between the body and seat.



Before Fire

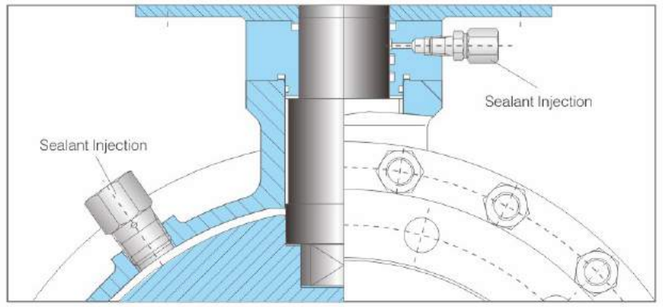


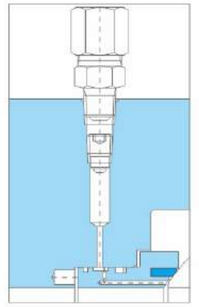
After Fire

Trunnion mounted ball valve

Emergency Sealant Injection Device

Trunnion mounted ball valves with a diameter of 6 inches (DN150) and above are equipped with emergency sealant injection devices on the stem and seat ring. When the soft sealing material of the seat or stem is accidentally damaged or decomposed, sealing grease can be injected through the sealant injection device to prevent medium leakage through the seat or stem. The emergency sealant injection device valve is internally designed with a check valve to prevent reverse flow of medium and sealing grease.

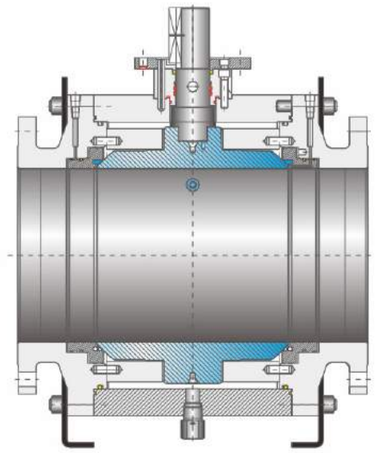


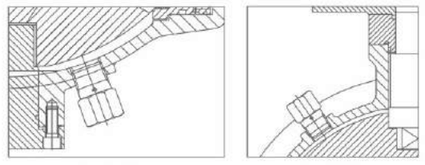


Double Block & Bleed (DBB)

When trunnion mounted ball valve are in closed position, two seats can overcome the full differential pressure, so as to achieve double block function.

When the ball is fully open or closed position, even the valve is under medium pressure from both side, the body cavity and the pressure is blocked, and the remaining medium service in the cavity can bleed out through the drain hole or vent hole.

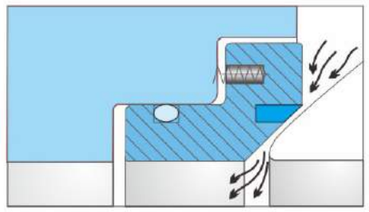


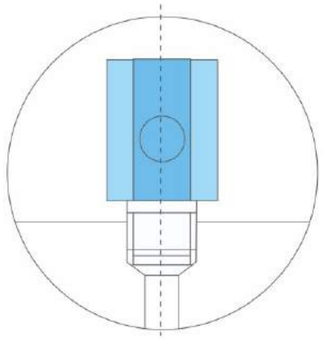


Trunnion mounted ball valve

Cavity Pressure Relief

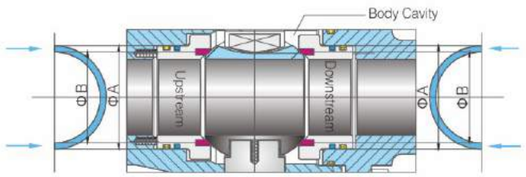
When the pressure in cavity is increasing abnormally, the single piston effective seat can release the overloaded pressure automatically, while for the double piston effective seat designed ball valves, the overloaded pressure will be released through the automatic pressure relief device installed on the body.

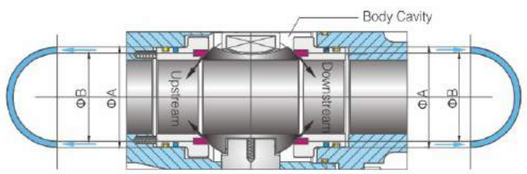




Self-Relieving Seats (Single Piston Effect)

The pressure from the upstream and downstream will push the seats to the ball in function. Under fully open or closed position, when the internal force created by the body cavity pressure is greater than the energized spring force plus the force created by the pressure from upstream or downstream side, the seats are pushed away from the ball. Then the overloaded pressure in the body cavity is released automatically.





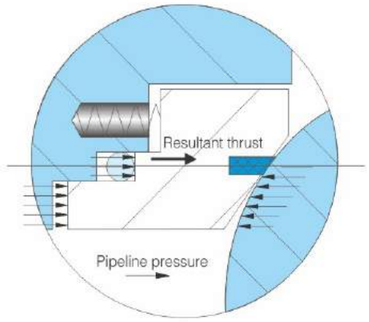
When the medium in the upstream or downstream of the valve, since ΦA> ΦB, the differential pressure makes the medium push the seats to the ball, to achieve a reliable seal.

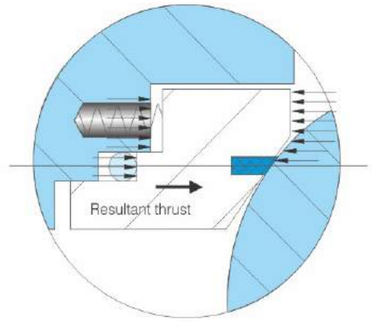
When the pressure in the cavity is too high, because ΦA> ΦB, the pressure differential makes the cavity medium push the seats away from the ball, and automatically relieve the overload pressure in the cavity.

Trunnion mounted ball valve

Double Piston Effect

Double piston effective seat also known as bi-directional sealing seat, the feature is regardless of the differential medium pressure from upstream or downstream of the ball valve, the valve each seat or the valve cavity can independently withstand rated pressure, and keep both two seats at sealed status, to ensure no leakage continuously. Double piston effective seat does not have the function of automatic pressure relief function, so it requires to install automatic pressure relief device on the body. When the cavity pressure is increasing abnormally, the overloaded pressure can be released through the automatic pressure relief device to ensure the safety operation. The ball valve with double piston effective seat have bi-directional sealing function.



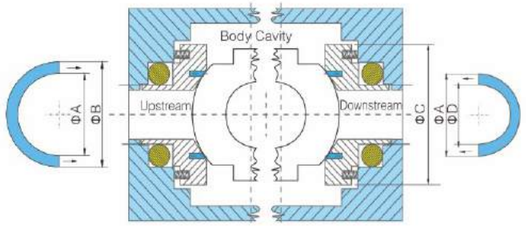


Double Piston Effect Seats(DIB-1)

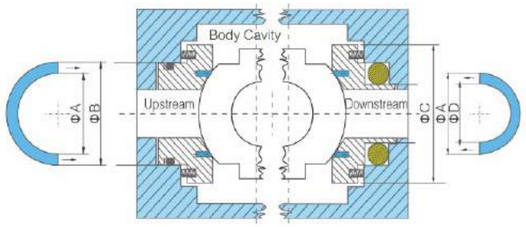
DIB-1 Valve design: Both seats are double piston effective seats (DPE seat). Each seat can independently withstand the medium pressure from upstream or downstream. The seat of DIB-1 ball valve does not have the automatic pressure relief function. So the DIB-1 ball valve requires to install automatic pressure relief device on the body, when the cavity pressure is higher than 1.25 to 1.33 times valve NPS, overloaded pressure can be released through the automatic pressure relief device to ensure the safety operation.

One Self-Relieving Seat and One Double Piston Effect Seat(DIB-2)

DIB-2 Valve design: one seat is double piston effective Seat, the other seat has self-relieving function. The self-relieving function seat only can withstand the medium pressure from the upstream to realize sealing function. Double piston effective seat can withstand the medium pressure from both direction. When the cavity pressure is increasing abnormally, the double piston effective seat will be pushed toward to ball by the medium pressure. The self-relieving function seat will be pushed away from the ball to realize the pressure self-relief function.



DIB-1

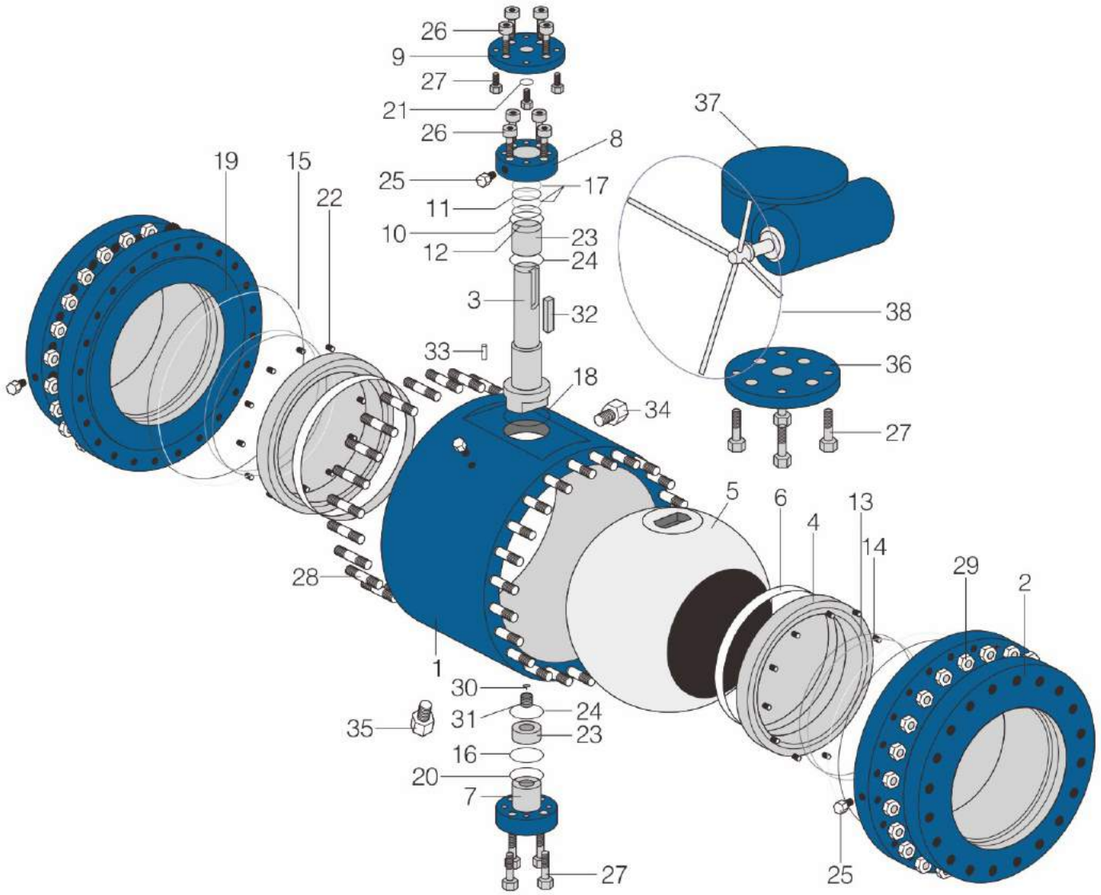


DIB-2

Low-emission Packing Design

To be adapted to severe using conditions and improve the overall sealing performance of the valve, the ball valve can be equipped with low-emission packing. The packing is composed of parallel layers and conical sealing layers, and is a processed flexible graphite ring group. It has features such as high temperature resistance, low stress release, low creep, and low friction coefficient.

API Trunnion mounted ball valve



Design and Inspection Standards

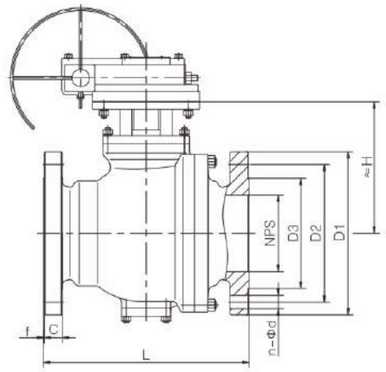
Design standards	API 6D, API 608, ISO 17292
Temperature and pressure	ASME B16.34
FtF Length	ASME B16.10, API 6D
Flange connection	ASME B16.5, HG/T 20615
Pressure test	API 598, API 6D

API Trunnion mounted ball valve

Material of Main Parts

Parts name	Conventional working conditions	Corrosion working conditions	
Body	A216 WCB	A351 CF8	A351 CF3M
Spring	Inconel X-750	Inconel X-750	Inconel X-750
Seat pressure ring	A182 F304	A182 F304	A182 F316L
Seat seal	Flexible graphite	Flexible graphite	Flexible graphite
Seat	A182 F304+Ni55	A182 F304+Ni55	A182 F316L+Ni55
Studs	A193 B7	A193 B8	A193 B8M
Nut	A194 2H	A194 8	A194 8M
Wound gasket	Stainless steel+Flexible graphite	Stainless steel+Flexible graphite	Stainless steel+Flexible graphite
Trunnion shaft	A105	F304+Harden	F316L+Harden
Bearing	Stainless steel+Nitridation	Stainless steel+Cr	Stainless steel+Cr
Ball	A182 F316+Ni60	A182 F316+Ni60	A182 F316L+Ni60
Wound gasket	Stainless steel+Flexible graphite	Stainless steel+Flexible graphite	Stainless steel+Flexible graphite
Studs	A193 B7	A193 B8	A193 B8M
Nut	A194 2H	A194 8	A194 8M
Bonnet	A216 WCB	A351 CF8	A351 CF3M
Stem	17-4PH	XM-19	XM-19
Bearing	Stainless steel+Nitridation	Stainless steel+Nitridation	Stainless steel+Nitridation
Stem gasket	Stainless steel	Stainless steel	Stainless steel
Bearing	Stainless steel+Nitridation	Stainless steel+Cr	Stainless steel+Cr
Packing box	A105	F304+Harden	F316L+Harden
Wound gasket	Stainless steel+Flexible graphite	Stainless steel+Flexible graphite	Stainless steel+Flexible graphite
Hexagon socket screw	A193 B7	A193 B8	A193 B8M
Packing	Flexible graphite	Flexible graphite	Flexible graphite
Packing pressure ring	304	A182 F304	A182 F316L
Packing gland	A105	A182 F304	A182 F316L
Support	Carbon steel	Carbon steel	Carbon steel
A-type flat key	Carbon steel	Stainless steel	Stainless steel
Studs	A193 B7	A193 B8	A193 B8M
Nut	A194 2H	A194 8	A194 8M
Spring gasket	Stainless steel	Stainless steel	Stainless steel
Studs	A193 B7	A193 B8	A193 B8
Nut	A194 2H	A194 8	A194 8
Pin	Carbon steel	Stainless steel	Stainless steel
Pin	Carbon steel	Stainless steel	Stainless steel
Worm gear	Assembly	Assembly	Assembly
Studs	A193 B7	A193 B8	A193 B8
Nut	A194 2H	A194 8	A194 8
Spring gasket	65Mn	Stainless steel	Stainless steel
Pin	Carbon steel	Stainless steel	Stainless steel

API Trunnion mounted cast steel ball valve



Overall Dimensions and Flange connection

Class 150 Unit: mm

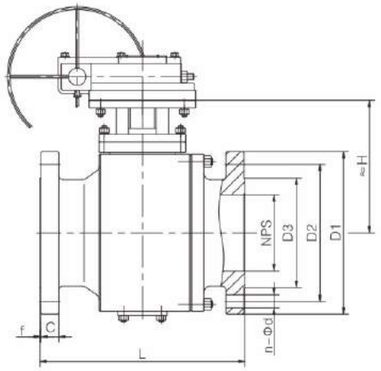
NPS mm	NPS in	D1	D2	D3	C	f	N-Φd	L	≈H
80	3"	190	152.4	127	23.9	1.5	8–19	203	195
100	4"	229	190.5	157.2	26.9	1.5	8–19	229	220
150	6"	279	241.3	215.9	28.4	1.5	8–22	394	260
200	8"	343	298.4	269.7	30.2	1.5	8–22	457	330
250	10"	406	362	323.8	33.3	1.5	12–25	533	365
300	12"	483	431.8	381	35.1	1.5	12–25	610	435
350	14"	533	476.2	412.8	38.1	1.5	14–29	686	460
400	16"	597	539.8	469.9	41.1	1.5	14–29	762	540
450	18"	635	577.8	533.4	23.9	1.5	16–32	864	570
500	20"	693	635	584.2	26.9	1.5	20–32	914	610

Overall Dimensions and Flange connection

Class 300 Unit: mm

NPS mm	NPS in	D1	D2	D3	C	f	N-Φd	L	≈H
80	3"	210	168.1	127	26.9	1.5	8–22	282	195
100	4"	254	200.2	157.2	30.2	1.5	8–22	305	220
150	6"	215.9	269.7	318	35.1	1.5	12–22	403	260
200	8"	269.7	330.2	381	39.6	1.5	12–25	502	330
250	10"	323.8	387.4	444	46	1.5	16–29	568	365
300	12"	381	450.8	521	49.3	1.5	16–32	648	435
350	14"	412.8	514.4	584	52.3	1.5	20–32	762	460
400	16"	469.9	571.5	648	55.6	1.5	20–35	838	540
450	18"	533.4	628.6	711	58.7	1.5	24–35	914	570
500	20"	584.2	685.8	775	62	1.5	24–35	991	610

API Trunnion mounted forged steel ball valve



Overall Dimensions and Flange connection

Class 150 Unit: mm

NPS mm	NPS in	D1	D2	D3	C	f	N-Φd	L	≈H
80	3"	190	152.4	127	23.9	1.5	8–19	203	210
100	4"	229	190.5	157.2	26.9	1.5	8–19	229	225
150	6"	279	241.3	215.9	28.4	1.5	8–22	394	320
200	8"	343	298.4	269.7	30.2	1.5	8–22	457	380
250	10"	406	362	323.8	33.3	1.5	12–25	533	390
300	12"	483	431.8	381	35.1	1.5	12–25	610	435
350	14"	533	476.2	412.8	38.1	1.5	14–29	686	460
400	16"	597	539.8	469.9	41.1	1.5	14–29	762	540
450	18"	635	577.8	533.4	23.9	1.5	16–32	864	570
500	20"	693	635	584.2	26.9	1.5	20–32	914	610

Overall Dimensions and Flange connection

Class 300 Unit: mm

NPS mm	NPS in	D1	D2	D3	C	f	N-Φd	L	≈H
80	3"	210	168.1	127	26.9	1.5	8–22	282	210
100	4"	254	200.2	157.2	30.2	1.5	8–22	305	225
150	6"	215.9	269.7	318	35.1	1.5	12–22	403	320
200	8"	269.7	330.2	381	39.6	1.5	12–25	502	380
250	10"	323.8	387.4	444	46	1.5	16–29	568	390
300	12"	381	450.8	521	49.3	1.5	16–32	648	435
350	14"	412.8	514.4	584	52.3	1.5	20–32	762	460
400	16"	469.9	571.5	648	55.6	1.5	20–35	838	540
450	18"	533.4	628.6	711	58.7	1.5	24–35	914	570
500	20"	584.2	685.8	775	62	1.5	24–35	991	610

Cryogenic ball valve

Cryogenic ball valve

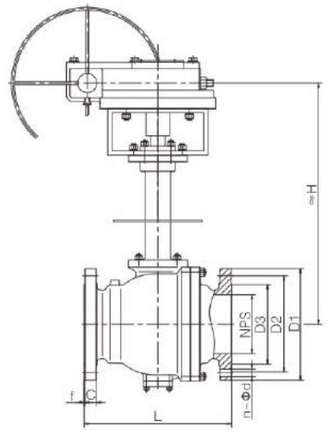
Design and Inspection Standards

Design standards	ASME B16.34/BS6364
Fire test	API 607/API6FA
FtF Length	ASME B16.10, API 6D
Flange connection	ASME B16.5, ASME B16.25,HG/T 20615
Pressure test	BS 6346

Material of Main Parts

Parts	Forgings	Casting	Forgings	Casting
Body	ASTM A182 F316	ASTM A351 CF8M	ASTM A182 F304	ASTM A351 CF8
Bonnet	ASTM A182 F316	ASTM A351 CF8M	ASTM A182 F304	ASTM A351 CF8
Ball	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316	ASTMA182 F316
Stem	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316
Steat	PCTFE	PCTFE	PCTFE	PCTFE
Flange components	316SS	316SS	316SS	316SS
Pin	316SS	316SS	316SS	316SS
Key	17-4PH	17-4PH	17-4PH	17-4PH
Bearing	316S.S.+PTFE	316S.S.+PTFE	316S.S.+PTFE	316S.S.+PTFE
Antistatic spring	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Anti-static sphere	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Sealing ring	Components	Components	Components	Components
Studs	ASTM A320 B8M	ASTM A320 B8M	ASTM A320 B8	ASTM A320 B8
Nut	ASTM A194 8M	ASTM A194 8M	ASTM A194 8	ASTM A194 8
Packing	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite
Thrust pad	PTFE	PTFE	PTFE	PTFE
Wound gasket	S.S.+Flexible graphite	S.S.+Flexible graphite	S.S.+Flexible graphite	S.S.+Flexible graphite
Gear box	LCB	LCB	LCB	LCB
Retaining ring	316SS	316SS	316SS	316SS
Pressure plate	316SS	316SS	316SS	316SS
Pressure ring	316SS	316SS	316SS	316SS

Cryogenic cast steel ball valve



Overall Dimensions and Flange connection

Class 150 Unit: mm

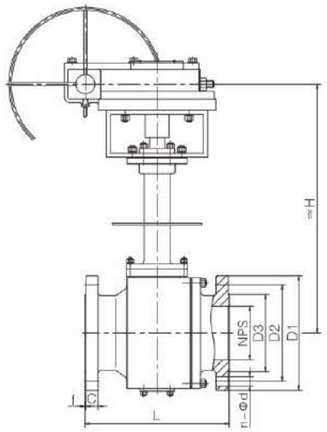
NPS mm	NPS in	D1	D2	D3	C	f	N-Φd	L	≈H
80	3"	190	152.4	127	23.9	1.5	8–19	203	591
100	4"	229	190.5	157.2	26.9	1.5	8–19	229	669
150	6"	279	241.3	215.9	28.4	1.5	8–22	394	847
200	8"	343	298.4	269.7	30.2	1.5	8–22	457	948
250	10"	406	362	323.8	33.3	1.5	12–25	533	1034
300	12"	483	431.8	381	35.1	1.5	12–25	610	1068
350	14"	533	476.2	412.8	38.1	1.5	14–29	686	1154
400	16"	597	539.8	469.9	41.1	1.5	14–29	762	1186
450	18"	635	577.8	533.4	23.9	1.5	16–32	864	1810
500	20"	693	635	584.2	26.9	1.5	20–32	914	2020

Overall Dimensions and Flange connection

Class 300 Unit: mm

NPS mm	NPS in	D1	D2	D3	C	f	N-Φd	L	≈H
80	3"	210	168.1	127	26.9	1.5	8–22	282	591
100	4"	254	200.2	157.2	30.2	1.5	8–22	305	669
150	6"	215.9	269.7	318	35.1	1.5	12–22	403	847
200	8"	269.7	330.2	381	39.6	1.5	12–25	502	948
250	10"	323.8	387.4	444	46	1.5	16–29	568	1034
300	12"	381	450.8	521	49.3	1.5	16–32	648	1068
350	14"	412.8	514.4	584	52.3	1.5	20–32	762	1154
400	16"	469.9	571.5	648	55.6	1.5	20–35	838	1186
450	18"	533.4	628.6	711	58.7	1.5	24–35	914	1810
500	20"	584.2	685.8	775	62	1.5	24–35	991	2020

Cryogenic forged steel ball valve



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150	6"	279	241.3	215.9	28.4	1.5	8–22	394	847
200	8"	343	298.4	269.7	30.2	1.5	8–22	457	948
250	10"	406	362	323.8	33.3	1.5	12–25	533	1034
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350	14"	533	476.2	412.8	38.1	1.5	14–29	686	1154
400	16"	597	539.8	469.9	41.1	1.5	14–29	762	1186
450	18"	635	577.8	533.4	23.9	1.5	16–32	864	1810
500	20"	693	635	584.2	26.9	1.5	20–32	914	2020

Overall Dimensions and Flange connection

Class 300 Unit: mm

NPS mm	NPS in	D1	D2	D3	C	f	N-Φd	L	≈H
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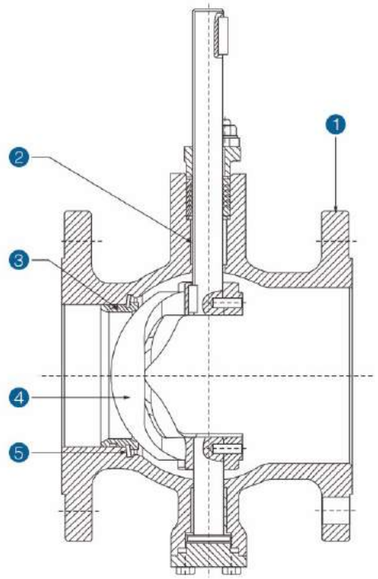
150	6"	215.9	269.7	318	35.1	1.5	12–22	403	847
200	8"	269.7	330.2	381	39.6	1.5	12–25	502	948
250	10"	323.8	387.4	444	46	1.5	16–29	568	1034
300	12"	381	450.8	521	49.3	1.5	16–32	648	1068
350	14"	412.8	514.4	584	52.3	1.5	20–32	762	1154
400	16"	469.9	571.5	648	55.6	1.5	20–35	838	1186
450	18"	533.4	628.6	711	58.7	1.5	24–35	914	1810
500	20"	584.2	685.8	775	62	1.5	24–35	991	2020

Segment ball valve

Segment ball valve

Segment ball valve is a high-performance control valve with excellent regulation performance and strong versatility. This series of control valves includes two types: VD wafer type and VF flange type, which are mainly used as control valves and can also be used as on-off valves. This series of valves has equal percentage flow characteristics, a wide control range, and a particularly stable control process. The valve core with a V-type notch which has strong shear force, especially suitable for situations with viscous media, fibers or particles. This product is widely used in automatic control systems in industrial sectors such as pulp and paper, biochemistry, chemical fiber, chemical industry, environmental protection, mining, etc.

Design Features



1 Body

The body adopts an integral structure to avoid external leakage caused by flange connection. Even if the valve is affected by pipeline bending stress, the seat performance will not change, ensuring the reliability of the valve.

2 Self-lubricating Bearing

The front and rear stems are fixed away from the flow channel medium using self-lubricating bearings, and the bearing area is large, which can greatly reduce the load borne by the stem and reduce the operating torque of the valve, thereby extending the service life of the stem.

3 Seat

The metal hard sealing seat is very sturdy and wear-resistant. Its sealing surface is not directly exposed in the flow channel, making the service life of the seat longer. Equipped with a spring preload seat, the valve still has good sealing performance under low pressure difference. It can avoid the impact of pipeline pressure changes on the sealing effect. Soft-seal material seats can also be used, a seat that is embedded with PTFE inside the stainless steel seat.

4 Valve Core

Designed with a V-type notch with a special shape, the valve has approximately equal percentage flow characteristics. At the same time, there will be significant shear force and wiping performance between the valve core and sealing seat during movement, making it particularly suitable for applications with viscous media, fibers, and solid particles. At the same time, small flow valve cores and noise reduction valve cores can be provided.

5 Hexagonal Spring

The contact between the seat and the ball is secured and flexible by preload with a hexagonal spring, resulting in less friction, and ensuring valve sealing performance while controlling valve torque at a lower level. At the same time, the seat has adaptive ability according to the changes in medium pressure and temperature.

Smooth Operation

Due to its dual bearings, spring loaded packing, and low friction, the V-type regulating ball valve requires very low torque, runs smoothly, and can choose small-sized on-off valves. Therefore, this valve not only has low overall cost but also good control performance.

Segment ball valve

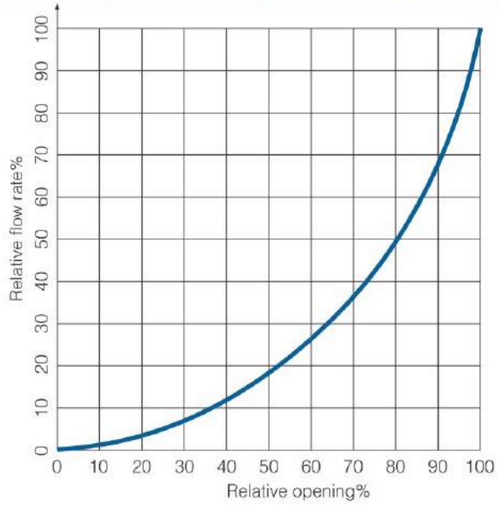
Technical Parameters

Nominal diameter	Wafer	25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250
	Flange	25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600
Nominal pressure		PN1.0, 1.6, 2.5, 4.0, 6.3(MPa); ASME150, 300
Temperature range℃		−29~120 (Normal temperature); −29~200 (Medium temperature); −40~425 (High temperature)
FtF Length		According to our company's standards
Flange type		According to ISA S75.04 and IEC/DIN 534−3−2 standards
Pressure test		The hydraulic test pressure of the body is 1.5 times the maximum working pressure, the sealing test pressure is 1.1 times the maximum working pressure, and the test medium is water.
Leakage rate		The metal sealing seat medium tested in the direction of the arrow meets Class F of ISO5208 sealing class, equivalent to ANSI/FC170.2IV x 1/100 standard

Maximum Allowable Leakage Rate

DN	Metal seat	Soft seat
25	1.5mL/mim	0.15mL/mim
32	1.9mL/mim	0.19mL/mim
40	2.4mL/mim	0.24mL/mim
50	3.0mL/mim	0.30mL/mim
65	3.9mL/mim	0.39mL/mim
80	4.8mL/mim	0.48mL/mim
100	6.0mL/mim	0.60mL/mim
125	7.5mL/mim	0.75mL/mim
150	9.0mL/mim	0.90mL/mim
200	12.0mL/mim	1.20mL/mim
250	15.0mL/mim	1.50mL/mim
300	18.0mL/mim	1.80mL/mim
350	21.0mL/mim	2.10mL/mim
400	24.0mL/mim	2.40mL/mim
450	27.0mL/mim	2.70mL/mim
500	30.0mL/mim	3.00mL/mim
600	36.0mL/mim	3.60mL/mim
700	42.0mL/mim	4.20mL/mim

The Inherent Flow Characteristics

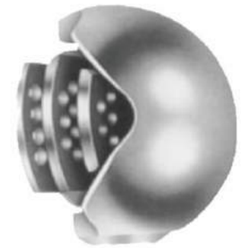


Valve Rated Cvs

Caliber	Rated Cv	Caliber	Rated Cv
DN25	27	DN200	1860
DN32	47	DN250	2900
DN40	70	DN300	4320
DN50	135	DN350	6640
DN65	210	DN400	8000
DN80	390	DN450	10000
DN100	560	DN500	12200
DN125	790	DN600	17270
DN150	1130		

Segment ball valve

Valve Core Structure



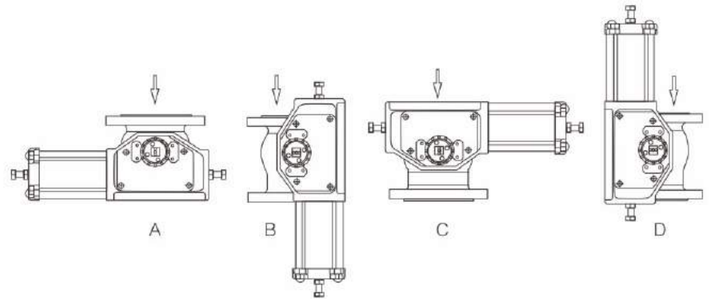
Low Flow Valve Core

For valves with a nominal diameter of 25mm, various small CV values are provided to accurately control small flow rates. It is very suitable for controlling some additives and coatings in the paper industry.

Noise Reduction Valve Core

In the application of control valves, there is a maximum limit for control valve noise in some situations. In practical applications, when using conventional valves in some special sections, it is easy to exceed the noise limit, especially in gas and steam section applications. Water and other liquids will cause cavitation in high−pressure environments, damage the pipeline system, and greatly affect the service life and accuracy of valves. The use of this core can effectively solve the problem.

Schematic Diagram of Actuator installation Orientation



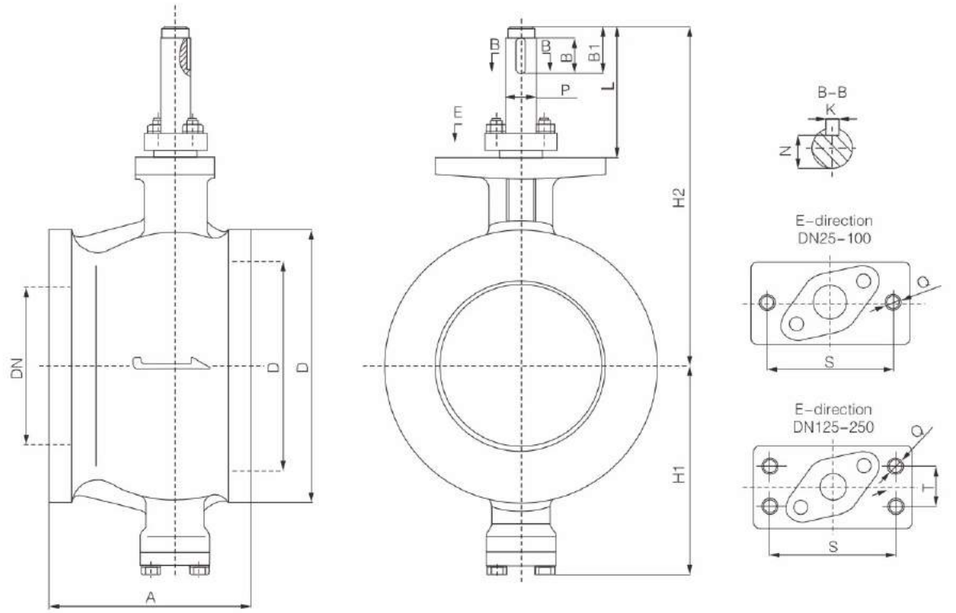
The pneumatic segment ball valve is equipped with Z−series on−off valves according to the standard factory orientation as shown in Figure A. If there are installation space limitations, the on−off valve can choose another three orientations.

Applications

Pulp and fiber control in the paper industry
Pulp control in the biochemical industry
Sludge control in the environmental protection industry
Fluid control with dust and hard particles
Various flow control and pressure control

Wafer segment ball valve

Wafer segment ball valve



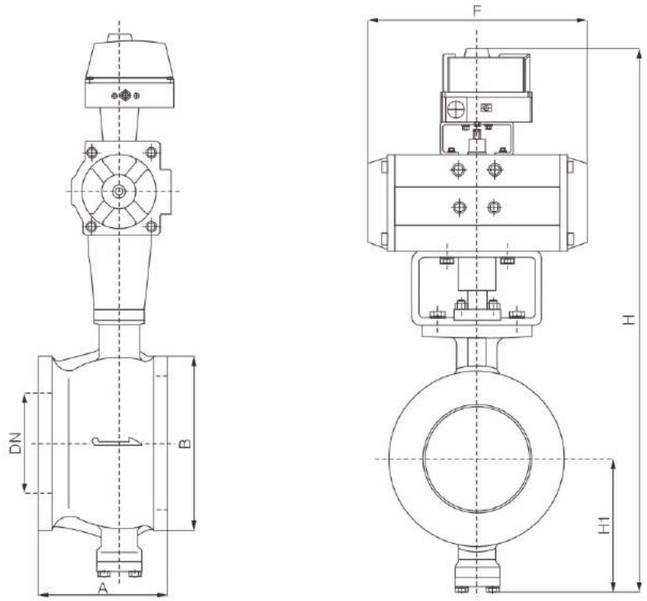
Overall Dimensions and Flange connection

PN16 Unit: mm

DN (mm)	Overall dimensions(mm)					Connection dimensions(mm)								
	A	H1	H2	D	B	L	P	B1	B	K	N	S	Q	T
25	60	87	165	38	68	80	16	30	25	5	13	80	M10	/
32	60	87	168	42	78	80	16	30	25	5	13	80	M10	/
40	60	92	170	50	85	80	16	30	25	5	13	80	M10	/
50	75	97	174	60	100	80	16	30	25	5	13	80	M10	/
65	90	112	191	75	120	80	16	30	25	5	13	80	M10	/
80	100	125	205	94	130	80	20	30	25	6	16.5	90	M12	/
100	115	135	215	110	158	80	20	30	25	6	16.5	90	M12	/
125	129	150	230	135	184	95	25	40	35	8	21	110	M12	40
150	160	165	263	165	216	95	25	40	35	8	21	110	M12	40
200	200	195	305	210	268	95	30	45	40	10	25	110	M12	40
250	240	237	358	260	322	110	35	55	50	10	30	130	M12	45

Note: The connection dimensions in the above figure are the standard connection dimensions for our company's V-series on-off valves.

Wafer segment ball valve



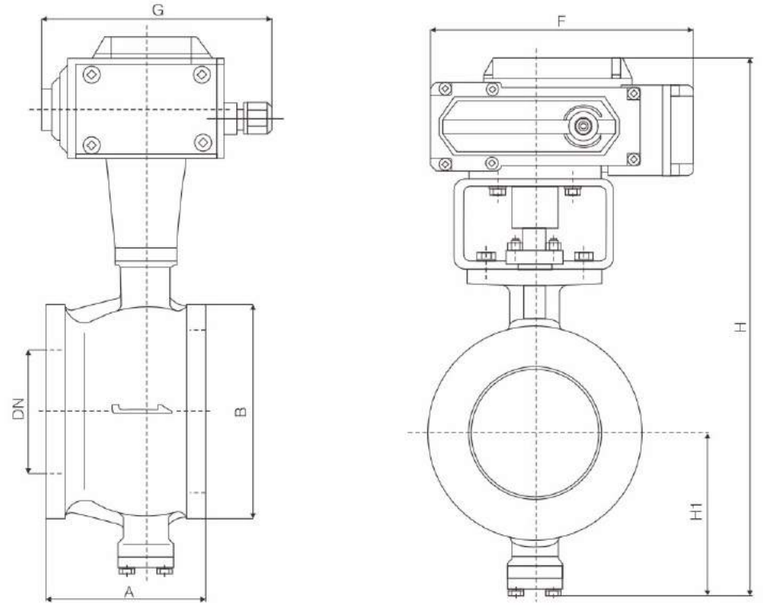
Overall Dimensions

PN16 Unit: mm

DN \ Code	A	B	H1	H	F
25	60	68	87	515	178
32	60	78	87	515	178
40	60	85	92	525	178
50	75	100	97	550	214
65	90	120	112	585	246
80	100	130	125	600	246
100	115	158	135	625	295
125	129	184	150	650	340
150	160	216	165	750	398
200	200	268	195	850	478
250	240	322	237	970	562

Note: The above valve sizes are for pressure PN16 equipped with compact double acting VS actuators..

Wafer segment ball valve



Overall Dimensions

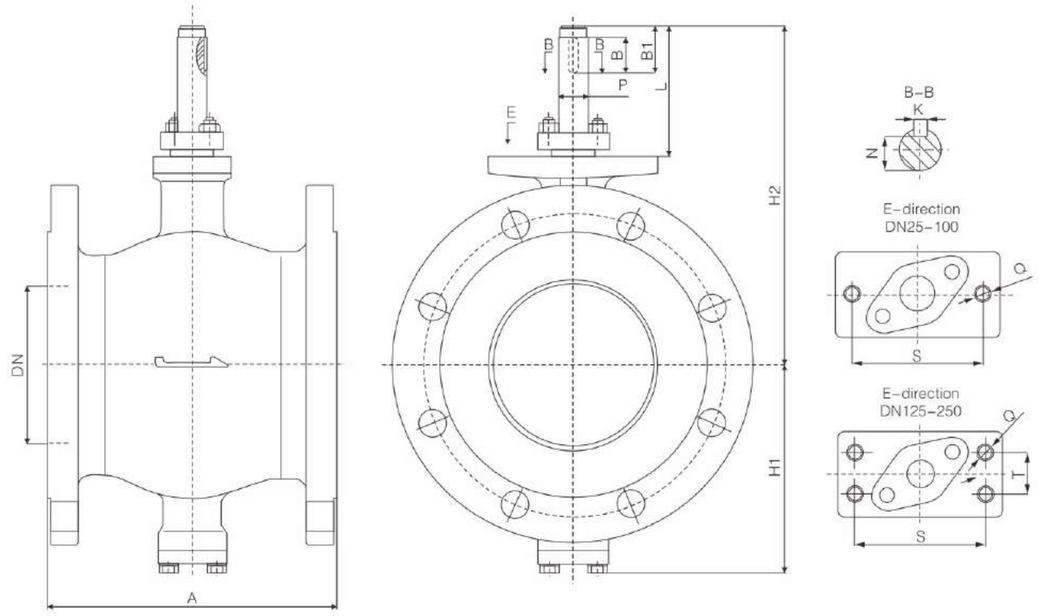
PN16 Unit: mm

DN \ Code	A	B	H1	H	F	G
25	60	68	87	390	157	140
32	60	78	87	432	207	147
40	60	85	92	440	207	147
50	75	100	97	450	207	147
65	90	120	112	495	256	182
80	100	130	125	500	256	182
100	115	158	135	588	256	182
125	129	184	150	632	256	182
150	160	216	165	704	256	182
200	200	268	195	814	380	240
250	240	322	237	920	380	240

Note: The above valve sizes are for electric actuators under pressure PN16.

Flange segment ball valve

Flange segment ball valve

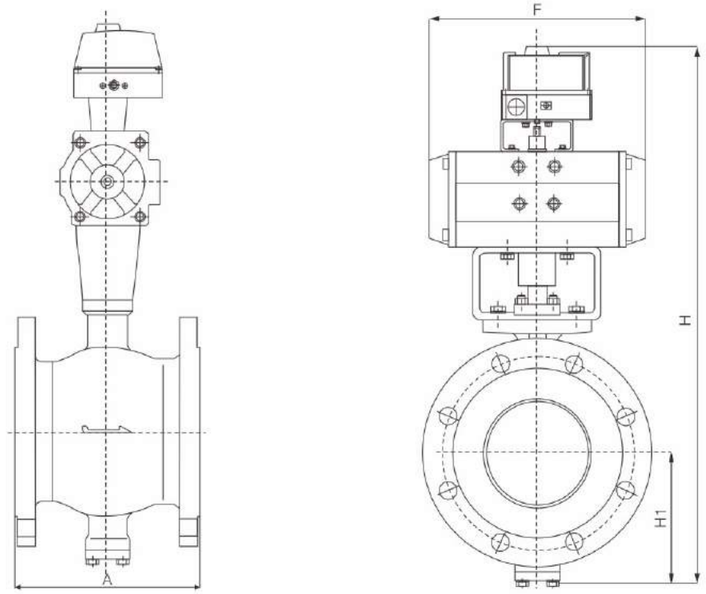


Overall Dimensions and Flange connection

PN16 Unit: mm

DN (mm)	Overall dimensions(mm)			Connection dimensions(mm)								
	A	H1	H2	L	ΦP	B1	B	K	N	S	Q	T
25	102	87	190	80	16	30	25	5	13	80	M10	/
32	105	87	193	80	16	30	25	5	13	80	M10	/
40	114	92	195	80	16	30	25	5	13	80	M10	/
50	124	97	198	80	16	30	25	5	13	80	M10	/
65	145	112	218	80	16	30	25	5	13	80	M10	/
80	165	125	240	80	20	30	25	6	16.5	90	M12	/
100	194	135	250	80	20	30	25	6	16.5	90	M12	/
125	213	150	270	95	25	40	35	8	21	110	M12	40
150	229	165	308	95	25	40	35	8	21	110	M12	40
200	243	195	328	95	30	45	40	10	25	110	M12	40
250	297	237	380	110	35	55	50	10	30	130	M12	45
300	338	281	415	146	40	55	50	12	35	130	M12	45
350	400	338	509	180	50	68	60	16	44	134	M16	64
400	400	390	595	214	60	88	80	18	53	175	M20	70
450	520	422	642	214	70	88	80	20	62.5	190	M20	90
500	600	510	720	230	80	88	80	22	71	215	M20	96
600	680	550	845	285	85	115	100	22	75	230	M30	90

Flange segment ball valve



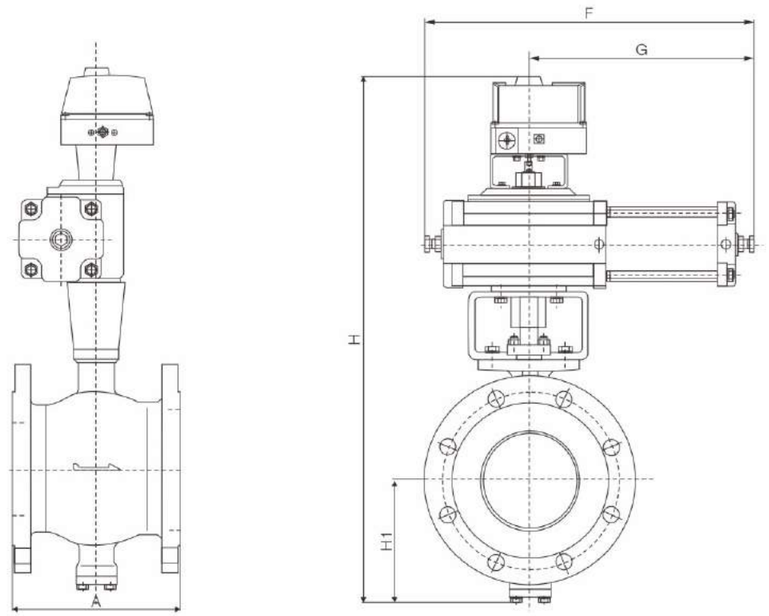
Overall Dimensions

PN16 Unit: mm

DN \ Code	A	H1	H	F
25	102	87	515	178
32	105	87	515	178
40	114	92	525	178
50	124	97	550	214
65	145	112	585	246
80	165	125	600	246
100	194	135	625	295
125	213	150	650	340
150	229	165	750	398
200	243	195	850	478
250	297	237	970	562
300	338	287	1025	640
350	400	338	1150	700

Note: The above valve sizes are for pressure PN16 equipped with compact double acting VS actuators.

Flange segment ball valve



Overall Dimensions

DN Code	A	H1	H	G	F
25	102	87	525	235	345
32	105	87	525	235	345
40	114	92	525	235	345
50	124	97	565	300	422
65	145	112	585	300	422
80	165	125	600	315	440
100	194	135	625	328	474
125	213	150	650	328	474
150	229	165	720	328	474
200	243	195	810	356	530
250	297	237	900	396	570
300	338	287	1025	500	700
350	400	338	1150	500	700
400	400	390	1350	750	1050
450	520	422	1450	750	1050
500	600	510	1550	750	1050
600	680	550	1695	750	1050

Note: The above valve sizes are for double acting ZSQ actuators under pressure PN16.

PN16 Unit: mm

DN Code	A	H1	H	G	F
25	102	87	555	480	635
32	105	87	555	480	635
40	114	92	555	480	635
50	124	97	605	480	635
65	145	112	625	550	720
80	165	125	640	620	770
100	194	135	645	660	810
125	213	150	700	660	810
150	229	165	770	640	830
200	243	195	870	680	870
250	297	237	980	875	1170
300	338	287	1125	970	1260
350	400	338	1250	1200	1600
400	400	390	1450	1215	1615
450	520	422	1550	1270	1660
500	600	510	1650	1285	1680
600	680	550	1795	1285	1680

Note: The above valve sizes are for single acting ZDQ actuators under pressure PN16.

Project Cases

Our products are applied in industries such as petroleum, chemical, coal chemical, photovoltaic (polycrystalline silicon,organic silicon), metallurgy, power,mining,etc.The product quality and after-sales service of the company have gained unanimous praise from the clients.