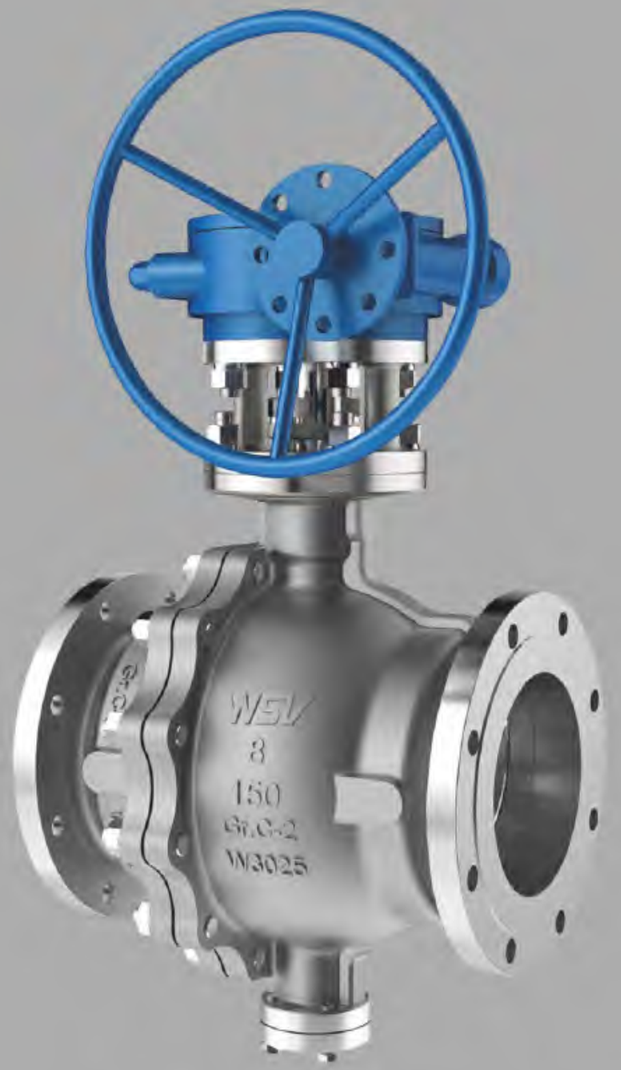
WSV®



BALL VALVES

WEIDOULI VALVES CO., LTD.

SPECIALIZED IN VALVES

WEIDOULI VALVES CO., LTD.

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WSV2018Q-01

WEIDOULI

The name trust for Special Alloy Valves

Brief Introduction

The history of Weidouli dates back to 1989, the initial company named Lixin established in that year with prospective view to begin with exotic material valves manufacturing. With an increase of its production capacity and satisfaction of domestic and oversea clients' requirements, Weidouli furnished with a new modern factory filled with advance and large CNC machine facilities, fabrication, inspection and test facilities, total factory occupied area to be 43500m².

Advanced manufacturing processes enable us to produce a wide range of valves from bars and forgings, castings. Valves can be designed, manufactured, assembled and tested in accordance with ANSI/API/ASME norms, DIN/ ISO/BS specifications, NORSOK requirements, JIS standards and tailor-made with sizes varying form 2" up to 100". Moreover, sizeable stock allows Weidouli to offer a broad selection of exotic materials, which diversify with Titanium, Nickel alloy, Zirconium, Super Duplex, Alloy 20 etc, whilst keeping production time to a minimum.

Weidouli has worked diligently in past decades to secure our advantageous industry position and become a highly respected and valuable enterprise to the area of anti-corrosive valves application and come to being an culture: Cooperate Sincerely, Create Win-win.

Weidouli will continue to play a good role and make its unceasing efforts in the valve markets with our goals in mind: Global Quality, Total Reliability.

CEO, Chengrui Xia


TS


EAC


ATEX


API 607/6FA


ISO 15848-1

ISO9001

ISO 14001

OHSAS 18001

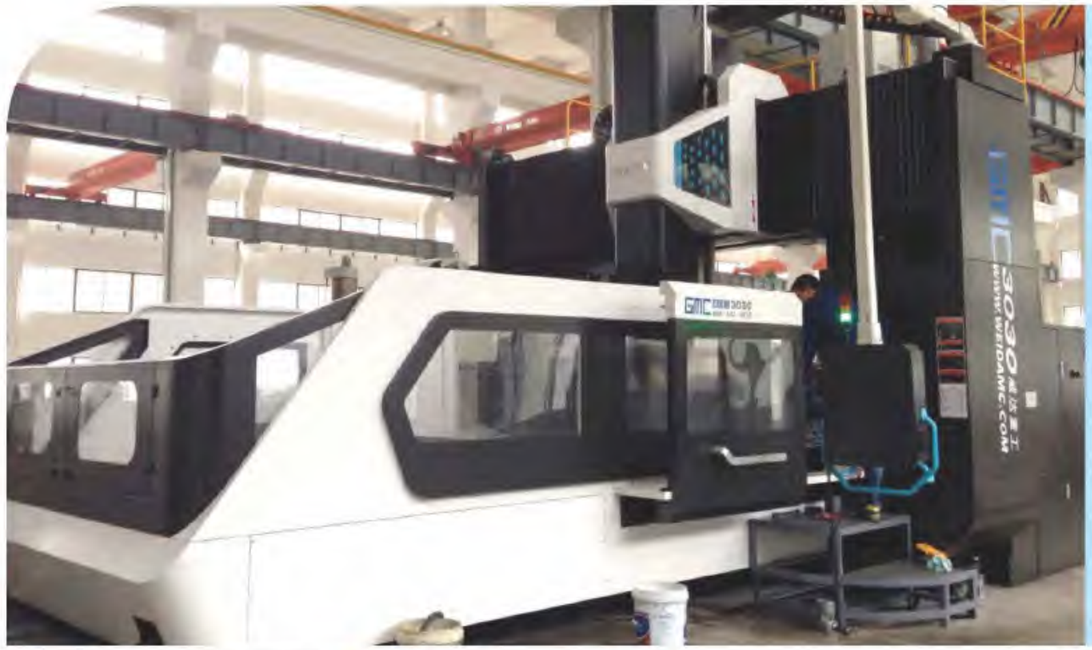

CE 1155

Global Quality. Total Reliability.

Weidouli have ISO 9001/ISO 14001/OHSAS 18001/API 607/API 6FA/CE/EAC/ATEX/ISO 15848-1/ TS etc. qualifications to guarantee the realizable quality. Weidouli system includes the selection of raw material from approved vendors, and rigorous oversight of our manufacturing process that is vital to quality control. Our extensive quality control system carefully monitors our manufacturing processes to assure a product that performs to the highest industry standards. Quality assurance procedures include 100% hydrostatic and pneumatic testing of all valves in full conformance to applicable API standards and industry codes.

CONTENTS

WEIDOULI SPECIALITY



Customer Relationship Management (CRM) & Production MES System

All daily business actions are controlled via CRM system to ensure transaction traceability and durability. The use of series number allows Weidouli the ability to not only ensure the quality of components used but to monitor and trace the fabrication process as well.

CNC Machine

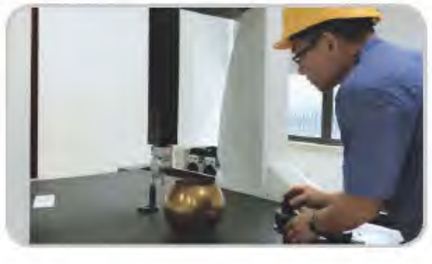
Weidouli valves manufacturing plant comprises a well and equipped huge CNC machine shop with full design fabrication, inspection and test facilities.

Dynamic Inventory

By strategicly prolonged cooperation with our sub suppliers, Weidouli is advantageous in price and flexible in delivery with a large scale of stocks for casting, semi-finished parts and finished valves to meet with your urgent need.

Extensive in-house testing and laboratory facilities are available including

- Tensile/Bend/Hardness Test/Impact Test
- Dye Penetrant
- Positive Material Identification
- Direct Alloy Analysis
- Ultrasonic thickness test
- Metallographic examination
- Chemical Analysis



Coordinate Measuring Machine(CMM):

CMM is a device that measures the geometry of physical objects by sensing discrete points on the surface of the object with a probe. Weidouli qualified products are well machined and controlled typically with micrometer precision.

Extensive in-house testing and laboratory facilities are available including:

Cleaning room

Weidouli establishes a Class 100000 Cleanroom facility for cleaning, assembly, testing and packing of Weidouli valves to be used in high purity applications. By performing these procedures in a cleanroom, Weidouli delivers valves which can be placed directly into high purity systems without the need for any component cleaning in the filed, such as semiconductor, chemical, pharmaceutical and other industries which have standards for high purity,

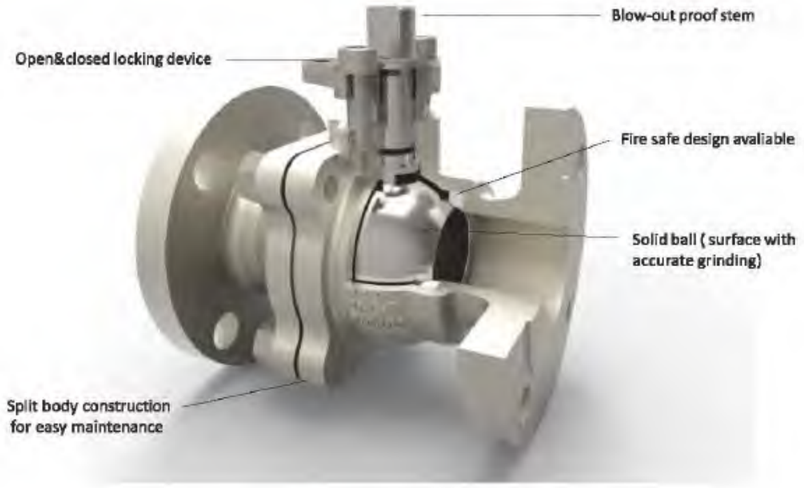
Dechlorination Equipment

To avoid the iron or other metal pollution on finished valves and free of corrosion, all the testing water and cleaning water are treated and stored through a dechlorination equipment owned by Weidouli.

Special Treatment Laboratory

Vacuum hardness treatment especially for Titanium and Zirconium Treatment : Titanium stem/seat/sphere surface hardening treatment, so that a protective film formed on the surface, to improve the corrosion resistance, but also greatly relief stress and improve the surface hardness, not easy to scratch.
Titanium surface with primary hardness HV≤ 235 can approach to HV800 after this treatment.

FLOATING BALL VALVES GENERAL HIGHLIGHTS



Applicable Seat Materials

- ☐ PTFE
- ☐ RPTFE(15% Glass Filled)
- ☐ RPTFE(25% Carbon Filled)
- ☐ PEEK
- ☐ Nylon
- ☐ Devlon
- ☐ PPL
- ☐ Other materials can be supplied upon request

Specifications

- ☐ Floating ball design
- ☐ Side-entry
- ☐ Split Body construction(2-PC or 3-PC)
- ☐ Full bore & Reduce bore
- ☐ Blow-out proof stem
- ☐ Locking device

- ☐ Soft seats
- ☐ Anti-static device
- ☐ Fire safe design/Non-fire safe design
- ☐ ISO mounting pad
- ☐ Self cavity pressure relief
- ☐ Ends: Flanged, Wafer, NPT, BW, SW
- ☐ Operation: Lever, Gear, Electric, Pneumatic actuator, Bare shaft.

ASME Flanged ball valve as citing	
Design	ASME B16.34
Testing	API 598, API 6D
Face to face	ASME B16.10
Flange ends dimension	ASME B16.5
Pressure temperature rating	ASME B16.34
Visual inspection of casting	MSS-SP-55

Size/Pressure produce range		Operator
Pressure	Flange(Floating)	
150LB	1/2" up to 10"	1/2"~5" Lever Op. 6"~10" Gear OP.
300LB	1/2" up to 10"	1/2"~5" Lever Op. 6"~10" Gear Op.
600LB	1/2" up to 6"	1/2"~3" Lever Op. 4"~6" Gear Op.
900LB	1/2" up to 3"	1/2"~1-1/2" Lever Op. 2"~3" Gear Op.
1500LB	1/2" up to 2"	1/2"~1-1/2" Lever Op. 2" Gear Op.

Notes:
*Other unspecified standards and sizes are upon request.
*Other ends criterion: Threaded NPT—ASME B1.20.1; Socket weld—ASME B16.11; Butt weld—ASME B16.25; BSPP/BSPT—BS21.

FLOATING BALL VALVES DESIGN FEATURES

* Three seals design(When valve size above 1-1/2")

First seal(Gasket),second seal(O ring), third seal(Packing).
This three seals design can effectively prevent the low-pressure leakage of valve stem and packing box. (FIG.1)

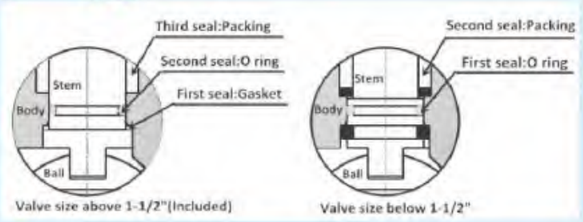


FIG.1

* Blow-Out Proof Stem

The stem is made separately from the ball with integral T-type shoulder to be blow-out proof. It also functions as the backseat for assure stem sealing safety at all pressures. (FIG.2)

FIG.2

* Anti-Static Device

When open and close the valve, the friction between the ball and the non-metal seat will be produced static charges. An anti-static device(spring loaded ball) is designed between the ball, stem and body, form an electrostatic channel and achieve the purpose of removing static electricity. Effectively prevent the burning of flammable media due to static electricity. (FIG.3)

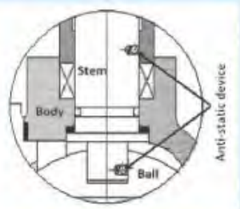


FIG.3

* Fire Safe (Option)

Floating ball valves' fire safe confirm to API 607 and API 6FA standards.
When non-metal material seats are broken or destroyed by fire, ball valve changes to metal to metal auxiliary seal structure, which will prevent effectively internal leakage or external leakage. (FIG. 4)

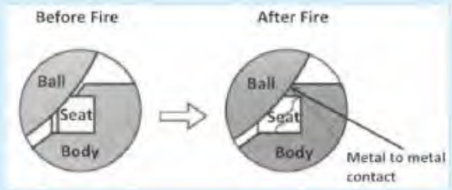


FIG.4

* Locking device

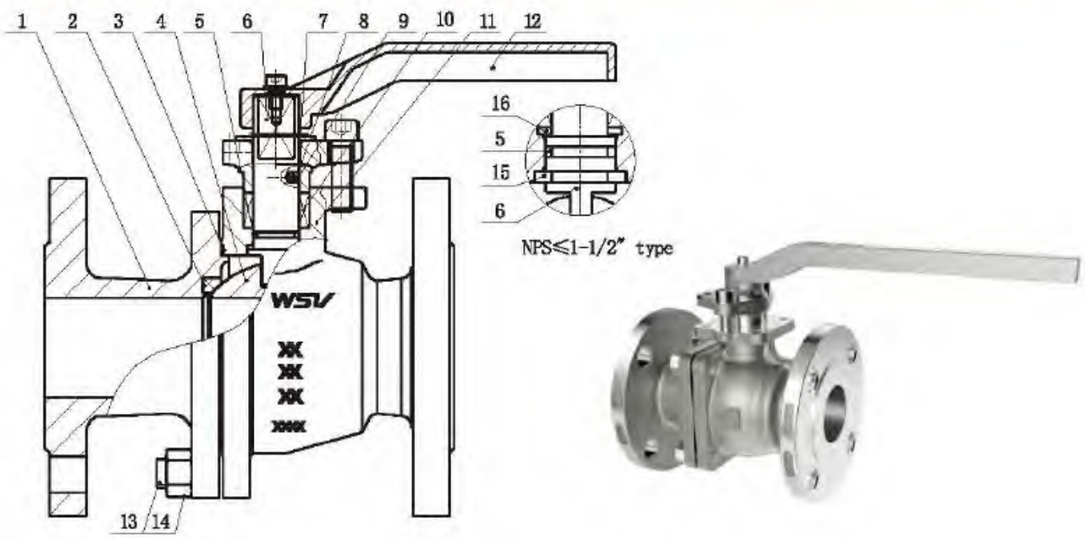
Lever operated ball valves with locking device. Facility for mounting a locking device for prevention of accidental valve operation in provided. (FIG.5)
Gear operated ball valves with the locking device is available upon request.

FIG.5

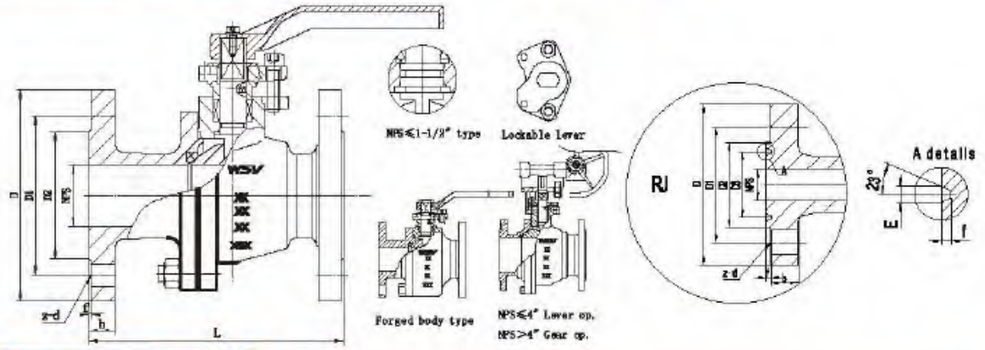
FLOATING BALL VALVES FLANGE ENDS

Construction

No.	Main Parts	Example 1: Monel 400	Example 2 :Titanium Gr.2
1	Bonnet	A494 M35-1	B367 Gr.C-2
2	Seat	PTFE/RPTFE	PTFE/RPTFE
3	Gasket	PTFE/Monel+Graphite	PTFE/Titanium+Graphite
4	Ball	A494 M35-1	B381 Gr.F-2
5	O ring	Viton	Viton
6	Stem	B564 N04400	B381 Gr.F-2
7	Gland flange	A351 CF8	A351 CF8
8	Gland bushing	B564 N04400	B381 Gr.F-2
9	Spring(Anti-static)	Inconel X750	Inconel X750
10	Packing	PTFE/Graphite	PTFE/Graphite
11	Body	A494 M35-1	B367 Gr.C-2
12	Lever	SS304	SS304
13	Stud	A193 B8	A193 B8
14	Hex nut	A194 8	A194 8
15	Split ring	B865 N05500	B381 Gr.F-2
16	Packing washer	B865 N05500	B381 Gr.F-2



FLOATING BALL VALVES FLANGE ENDS



✻ Dimensions (mm)

Size		150LB							300LB						
(inch)	(mm)	L	D	D1	D2	b	f	z-d	L	D	D1	D2	b	f	z-d
1/2"	15	108	89	60.5	35	12	1.6	4-15	140	95	66.5	35	15	1.6	4-15
3/4"	20	117	98	70	43	12	1.6	4-15	152	117	82.5	43	16	1.6	4-19
1"	25	127	108	79.5	51	12	1.6	4-15	165	124	89	51	18	1.6	4-19
1-1/4"	32	140	117	89	64	13	1.6	4-15	178	133	98.5	64	19	1.6	4-19
1-1/2"	40	165	127	98.5	73	15	1.6	4-15	190	156	114.5	73	21	1.6	4-22
2"	50	178	152	120.5	92	16	1.6	4-19	216	165	127	92	22	1.6	8-19
2-1/2"	65	190	178	139.5	105	18	1.6	4-19	241	190	149	105	25	1.6	8-22
3"	80	203	190	152.5	127	19	1.6	4-19	283	210	168	127	29	1.6	8-22
4"	100	229	229	190.5	157	24	1.6	8-19	305	254	200	157	32	1.6	8-22
5"	125	356	254	216	186	24	1.6	8-22	381	279	235	186	35	1.6	8-22
6"	150	394	279	241.5	216	26	1.6	8-22	403	318	270	216	37	1.6	12-22

Size		600LB						
(inch)	(mm)	L	D	D1	D2	b	f	z-d
1/2"	15	165	95	66.5	35	22	6.4	4-15
3/4"	20	190	118	82.5	43	23	6.4	4-19
1"	25	216	124	89	51	25	6.4	4-19
1-1/4"	32	229	133	98.5	63	28	6.4	4-19
1-1/2"	40	241	156	114.5	73	30	6.4	4-22
2"	50	292	165	127	92	33	6.4	8-19
2-1/2"	65	330	190	149	105	36	6.4	8-22
3"	80	356	210	168	127	39	6.4	8-22
4"	100	432	273	216	157	45	6.4	8-25
5"	125	508	330	266.5	186	52	6.4	8-29
6"	150	559	356	292	216	55	6.4	12-29

Size		900LB										
		L		D	D1	D2		D3	b	f		E	z-d
(inch)	(mm)	RF	RJ			RF	RJ	RJ		RF	RJ	RJ	
1/2"	15	216	216	120	82.6	34.9	60.5	39.67	22.3	7	6.35	8.74	4-22
3/4"	20	229	229	130	88.9	42.9	65.5	44.45	25.4	7	6.35	8.74	4-22
1"	25	254	254	150	101.6	50.8	71.5	50.8	28.6	7	6.35	8.74	4-26
1-1/4"	32	279	279	160	111.1	63.5	81	60.33	28.6	7	6.35	8.74	4-26
1-1/2"	40	305	305	180	123.8	73	92	68.27	31.8	7	6.35	8.74	4-30
2"	50	368	371	215	165.1	92.1	124	95.25	38.1	7	7.92	11.91	8-26

Notes:
*Reduce bore is available upon request.
*Other sizes & pressures are available upon request.
*Weldouli reserves the right to change this information without notice .

FLOATING BALL VALVES NPT/BW/SW ENDS

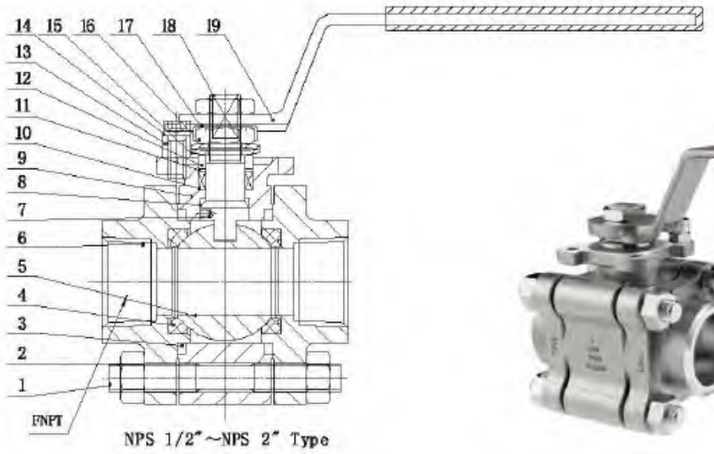
3-PC Ball Valves

ASME ball valve as citing		
Design		ASME B16.34
Testing		API598
Face to face dimension		As MFR STD
Ends	NPT	ASME B1.20.1
	Socket weld	ASME B16.11
	Butt weld	ASME B16.25
Pressure temperature rating		ASME B16.34
Visual inspection of casting		MSS-SP-55
Pressure equipment CE-PED		Directive 97/23/ec&2014/68/EU
Note: Other designs are available upon request. BS EN17292,DIN JIS ,GB etc.		

Size/Pressure produce range	
Pressure	NPT/SW/BW
150LB	1/2" up to 4"
300LB	1/2" up to 4"
600LB	1/2" up to 4"
900LB	1/2" up to 4"
1500LB	1/2" up to 4"
2500LB	1/2" up to 4"

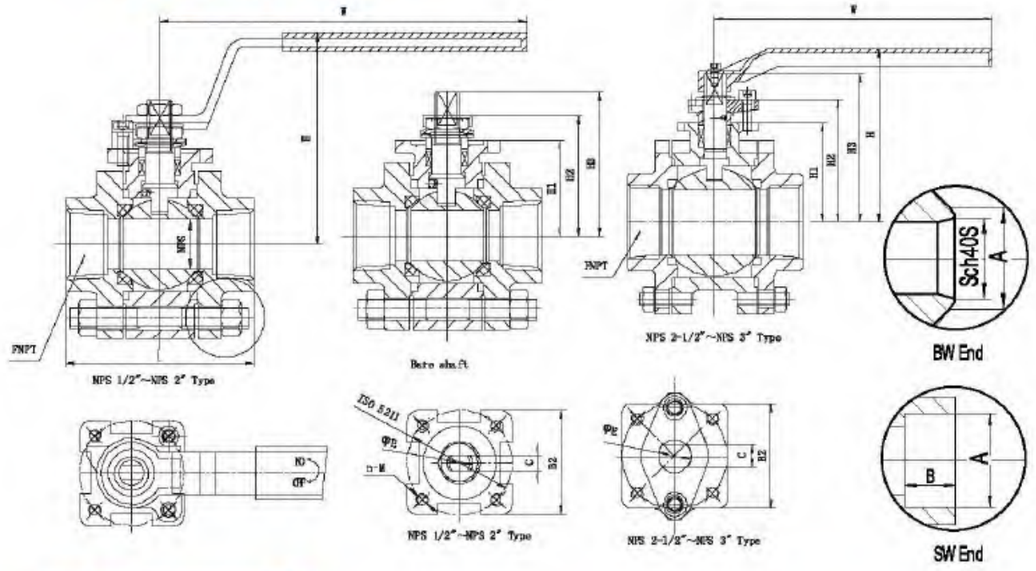
Construction

No.	Main Parts	Example :904L	No.	Main Parts	Example :904L
1	Bolt	A193 B8	11	Packing washer	A182 F904L
2	Hex nut	A194 8	12	Gland bushing	A182 F904L
3	Gasket	PTFE/904L+Graphite	13	Locating nut	A194 8
4	Seat	PTFE/RPTFE	14	Screw	A193 B8
5	Ball	904L	15	Belleville spring	17-7PH
6	Bonnet	904L	16	Hex nut	A194 8
7	Spring(Anti-static)	Inconel X750	17	Retaining ring	SS304
8	Anti-friction washer	PTFE	18	Stem	A192 F904L
9	Body	904L	19	Lever	SS304+Rubbar
10	Packing	Graphite			



FLOATING BALL VALVES NPT/BW/SW ENDS

3-PC Ball Valves



✻ Dimensions (mm)

Size		150LB/300LB/600LB/800LB (NPT/BW/SW)														
		L	NPT	A		B	W	H	H1	H2	H3	ΦE	C	ISO	n-M	B2
(inch)	(mm)			BW	SW	SW										
1/2"	15	75	1/2	21.3	21.8	10	136	85	37	45	55	10	6	F04	4-M5	42
3/4"	20	85	3/4	26.9	27.2	13	136	90	40	48	59	10	6	F04	4-M5	50
1"	25	90	1	33.7	33.9	13	176	95	46	57	66	12	7	F05	4-M6	50
1-1/4"	32	112	1-1/4	42.4	42.7	13	176	105	54	66	76	14	9	F05	4-M6	65
1-1/2"	40	125	1-1/2	48.3	48.8	13	221	118	61	75	88	16	10	F07	4-M8	65
2"	50	145	2	60.3	61.2	16	221	128	71	86	100	18	11	F07	4-M8	65
2-1/2"	65	170	2-1/2	66	76.5	16	270	170	96	119	115	22	15	F07	4-M8	70
3"	80	200	3	77.4	90.5	16	290	187	108	134	161	24	16	F10	4-M10	100
4"	100	220	4	114.3	115.2	19	390	219	128	160	191	28	18	F10	4-M10	100

Notes:
* Other sizes & pressures are available upon request.
* Weidouli reserves the right to change this information without notice.

TRUNNION MOUNTED BALL VALVES GENERAL HIGHLIGHTS

Applicable Seat Materials

- PTFE
- RPTFE(15% Glass Filled)
- RPTFE(25% Carbon Filled)
- PEEK
- Nylon
- Devlon
- PPL
- Other materials can be supplied upon request

Specifications

- Trunnion mounted ball design
- Side-entry
- Split Body construction(2-PC or 3-PC)
- Full bore & Reduce bore
- Blow-out proof stem
- Locking device
- Anti-static device
- Soft seats
- Fire safe design/Non-fire safe design
- ISO mounting pad
- Self cavity pressure relief
- Ends: Flanged, Wafer, NPT, BW, SW
- Operation: Lever, Gear, Electric, Pneumatic actuator, Bare shaft.

ASME Flanged ball valve as citing	
Design	ASME B16.34, API 6D
Testing	API 598, API 6D
Face to face	ASME B16.10
Flange ends dimension	ASME B16.5
Pressure temperature rating	ASME B16.34
Visual inspection of casting	MSS-SP-55

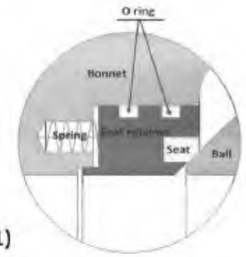
Size/Pressure produce range		Operator
Pressure	Flange(Trunnion)	
150LB	4" up to 48"	4"~5" Lever Op. 6"~48" Gear Op.
300LB	4" up to 48"	4"~5" Lever Op. 6"~48" Gear Op.
600LB	3" up to 40"	3"~40" Gear Op.
900LB	3" up to 32"	3"~32" Gear Op.
1500LB	2" up to 32"	2"~32" Gear Op.
2500LB	2" up to 24"	2"~24" Gear Op.

Notes:
* Other designs are available upon request. BS EN17292, DIN, JIS, GB etc .
* Other ends criterion: Threaded NPT—ASME B1.20.1; Socket weld — ASME B16.11; Butt weld —ASME B16.25; BSPP/BSPT—BS21.

TRUNNION MOUNTED BALL VALVES DESIGN FEATURES

✻ Seat Design

The standard seat design is primary soft seal, and secondary metal to metal seal. Seat insert is designed as pressure-in type which is easy for maintenance.(FIG.1)



(FIG.1)

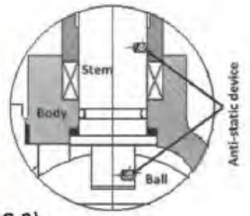
✻ Blow-Out Proof Stem

The stem is made separately from the ball with integral T-type shoulder to be blow-out proof. It also functions as the backseat for assure stem sealing safety at all pressures. (FIG.2)

(FIG.2)

✻ Anti-Static Device

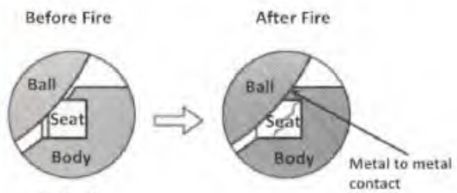
When open and close the valve, the friction between the ball and the non-metal seat will be produced static charges. To avoid static sparkle, an anti-static device(spring loaded ball) is designed between the ball, stem and body, form an electrostatic channel and achieve the purpose of removing static electricity. Effectively prevent the burning of flammable media due to static electricity. (FIG.3)



(FIG.3)

✻ Fire Safe (Option)

Trunnion ball valves' fire safe confirm to API 607 and API 6FA Standards.
When non-metal material seats are broken or destroyed by fire, ball valve changes to metal to metal auxiliary seal structure, which will prevent effectively internal leakage or external leakage. (FIG.4)



(FIG.4)

✻ Locking device

Lever operated ball valves with locking device. Facility for mounting a locking device for prevention of accidental valve operation in provided. (FIG.5)
Gear operated ball valves with the locking device is available upon request.

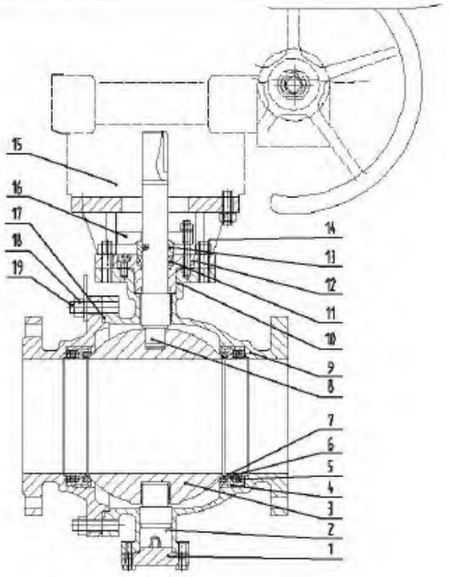
(FIG.5)

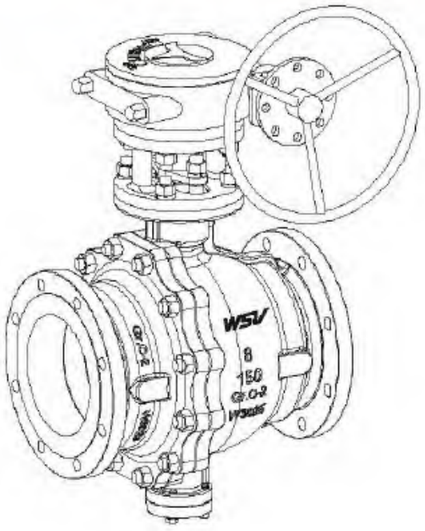
Notes:
*Emergency sealant injection system are available upon request.

TRUNNION MOUNTED BALL VALVES

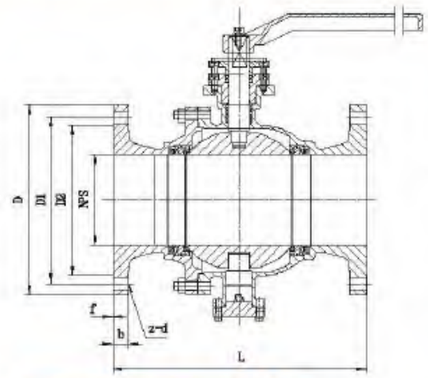
Construction

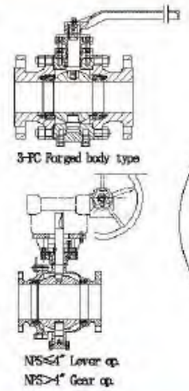
No.	Main Parts	Example 1 : Monel 400	Example 2: Super duplex 2507
1	Bottom cover	A494 M35-1	A182 F53
2	Lower stem	B865 N05500	A182 F53
3	Ball	A494 M35-1	A890 5A
4	O ring	Viton	Viton
5	Spring	Inconel X750	Inconel X750
6	Seat retainer	B564 N04400	A182 F53
7	Seat	PTFE/RPTFE	PTFE/RPTFE
8	Upper stem	B865 N05500	A182 F53
9	Bonnet	A494 M35-1	A890 5A
10	Body	A494 M35-1	A890 5A
11	Packing	PTFE/Graphite	PTFE/Graphite
12	Packing box	B564 N04400	A182 F53
13	Gland bushing	B564 N04400	A182 F53
14	Bracket	SS304	SS304
15	Gearbox	WCB+Painting	WCB+Painting
16	Gland flange	SS304	SS304
17	Gasket	PTFE/Monel+Graphite	PTFE/F53+Graphite
18	Hex nut	A193 8	A193 8
19	Stud	A194 B8	A194 B8

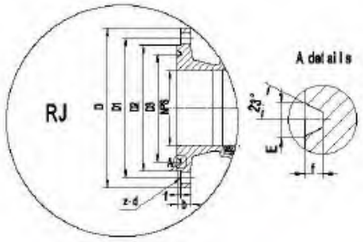




TRUNNION MOUNTED BALL VALVES







Dimensions (mm)

Size		150LB							300LB						
(inch)	(mm)	L	D	D1	D2	b	f	z-d	L	D	D1	D2	b	f	z-d
4"	100	305	229	190.5	157	24	1.6	8-19	305	254	200	157	32	1.6	8-22
6"	150	394	279	241.5	216	26	1.6	8-22	403	318	270	216	37	1.6	8-22
8"	200	457	343	298.5	270	29	1.6	8-22	502	381	330	270	41	1.6	12-25
10"	250	533	406	362	324	31	1.6	12-25	568	444	387.5	324	48	1.6	16-29
12"	300	610	483	432	381	32	1.6	12-25	648	521	451	381	51	1.6	16-32
14"	350	686	533	476	413	35	1.6	12-29	762	584	514.5	413	54	1.6	20-32
16"	400	762	597	540	470	37	1.6	16-29	838	648	571.5	470	57	1.6	20-35
18"	450	864	635	578	533	40	1.6	16-32	914	711	628.5	533	60	1.6	24-35
20"	500	914	698	635	584	43	1.6	20-32	991	775	686	584	64	1.6	24-35

Size		600LB						
(inch)	(mm)	L	D	D1	D2	b	f	z-d
4"	100	432	273	216	157	45	6.4	8-25
6"	150	559	356	292	216	55	6.4	12-29
8"	200	660	419	349	270	63	6.4	12-32
10"	250	787	508	432	324	71	6.4	16-35
12"	300	838	559	489	381	74	6.4	20-35
14"	350	889	603	527	413	77	6.4	20-38
16"	400	991	686	603	470	84	6.4	20-41
18"	450	1092	743	654	533	90	6.4	20-44
20"	500	1194	813	724	584	635	6.4	24-44

Size		900LB											
		L		D	D1	D2		D3	b	f		E	z-d
(inch)	(mm)	RF	RJ			RF	RJ	RJ		RF	RJ	RJ	
4"	100	457	460	290	235	157	181	149.23	51.5	7	11.91	7.92	8-33
6"	150	610	613	380	317.5	216	241	211.12	62.6	7	11.91	7.92	12-33
8"	200	737	740	470	393.7	270	308	269.88	70.5	7	11.91	7.92	12-39
10"	250	838	841	545	469.9	324	362	323.85	76.9	7	11.91	7.92	16-39
12"	300	965	968	610	533.4	381	419	381	86.4	7	11.91	7.92	20-39

Notes:
*Reduce bore is available upon request.
*Other sizes & pressures are available upon request.
*Weidouli reserves the right to change this information without notice .

METAL SEATED BALL VALVES GENERAL HIGHLIGHTS

※ Specifications

- ☐ Metal seated
- ☐ Floating or Trunnion mounted ball design
- ☐ Side-entry
- ☐ Split Body construction(2-PC or 3-PC)
- ☐ Full bore & Reduce bore
- ☐ Blow-out proof stem
- ☐ Locking device
- ☐ Anti-static device
- ☐ Fire safe design/Non-fire safe design
- ☐ ISO mounting pad
- ☐ Self cavity pressure relief
- ☐ Ends: Flanged, Wafer, NPT, BW, SW
- ☐ Operation: Lever, Gear, Electric, Pneumatic actuator, Bare shaft.

ASME Flanged ball valve as citing	
Design	ASME B16.34, API 6D
Testing	API598, API 6D
Face to face dimension	ASME B16.10
Flange ends	ASMEB16.5
Pressure temperature rating	ASME B16.34
Visual inspection of casting	MSS-SP-55

Size/Pressureproduce range			Operator
Pressure	Flange (Floating)	Flange (Trunnion)	
150LB	1/2" upto 10"	4" upto 24"	1/2"~5" LeveOp. 6"~24" Gear Op.
300LB	1/2" up to10"	4" upto 24"	1/2"~5" Lever Op. 6"~24" Gear Op.
600LB	1/2" up to 6"	4" up to 24"	1/2"~3" Lever Op. 4"~24" Gear Op.
900LB	1/2" up to 3"	4" up to 24"	1/2"~1-1/2" Lever Op 2"~24" Gear Op.
1500LB	1/2" up to 2"	4" up to 24"	1/2"~1-1/2" Lever Op. 2"~24" Gear Op.
2500LB	/	4" up to 16"	4"~16" Gear Op.

Notes:
* Other designs are available upon request. BS EN17292, DIN, JIS, GB etc.
* Other ends criterion: Threaded NPT—ASME B1.20.1; Socket weld — ASME B16.11; Butt weld —ASME B16.25; BSPP/BSPT—BS21.

METAL SEATED BALL VALVES DESIGN FEATURES

※ 1. Seal material design

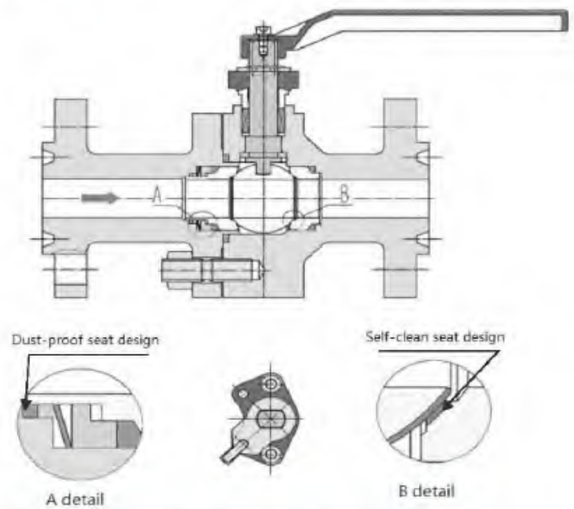
Seal material is high purity flexible graphite which has merit of high temperature resistance, good strength, small friction coefficient, small open/close torque, reliable sealing performance, long service etc.

※ 2. To protect valves at high temperature

Under high temperature working condition, it is easy to cause thermal expansion for ball and seat which will lead to the valve can not open. The metal seated ball valve adopt flexible graphite sealing structure which will absorb the thermal expansion come from components. Thus can guarantee the ball valve open and close flexibly under high temperature condition.

※ 3. Self-clean seat design

Metal seated ball valve is usually applied to crystalline particle working condition. Some particle easily crystallize and stick in the surface, causing the valve cannot open and close. So we improve the seat which design with self-clean seat design as Detail B. With this design, the seat can automatically remove the crystalline particle from the surface to make sure the valve can open and close easily also maintain good sealing performance.



※ 4. Dust proof seat design (For specific working condition)

When the valve is applied in powder working condition, the powder will easily go into seat inter space which will lead to seat spring lose elasticity and then the valve will cannot open and close. In view of such condition, we put seal-dust in front and back of seat spring to make sure the valve can open and close easily also maintain good sealing performance.

METAL SEATED BALL VALVES DESIGN FEATURES

※ 5. Anti-static device design

It will form a static channel for close contact of body, seat, ball etc. metal parts. So there is no need to be fitted with anti-static device for metal seated ball valve .

※ 6. V type lockable packing gland

To prevent the packing pressure point shift and uneven, resulting in leakage of packing seal. It should be locked no approval operate occasion .

※ 7. Blow-out proof stem

Flip- over type stem which is more safe and reliable can prevent the stem blow out effectively.

※ 8. Belleville spring design

When the sealing surface is abrasive wear during operating, this type spring can ensure the sealing ring have enough preload to maintain good sealing performance .

※ 9. Zero leakage of Middle flange design

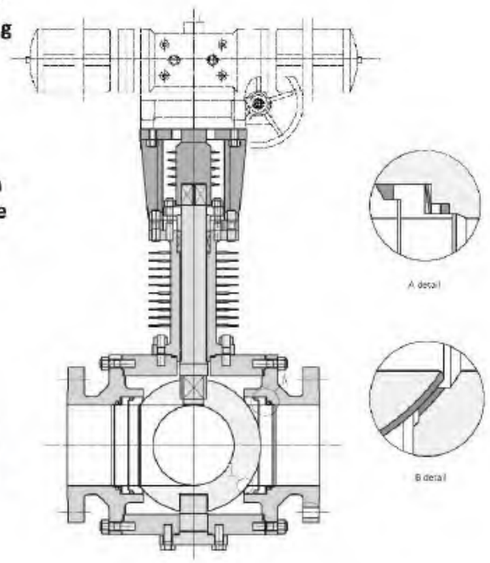
The body and bonnet are fitted with metal+graphite spiral wound gasket which is put into the groove of body. The gasket keep lasting flexible and the sealing performance is reliable.

※ 10. Fire safe design

The sealing surface is metal to metal structure; Packing of stem and seat is flexible graphite material; Gasket is flexible graphite material. Thus, with this design, the valve has reliable sealing performance even in fire.

※ 11. Stem extension design

In view of the high temperature working condition, we design metal seated ball valve with stem extension, the purpose is to protect the packing box way from the long-term effect of high temperature medium, to achieve a good cooling effect.



※ 12. Special processing on trim parts

12.1 The ball and seat rough casting should be solution or annealing treatment to stress relief which ensure the material recrystallization and mechanical properties. And also can reduce the deformation caused by uneven machining stress

12.2 We adopt advanced hard treatment technology for ball and seat: Metal seated ball valve's ball and seat totally adopt metal to metal sealing. Depending on working condition, we adopt advanced HOVF, Plasma surfacing etc. treatment to process ball and seat.

12.3 Ball surface coating instruction :

Coating material	Tungsten carbide	Chromium carbide	Ni60	Inconel 625	STL No.6	STL No.20
Hardness	HRC68-72	HRC55-68	HRC55-60	HRC38-40	HRC38-43	HRC50-56
Applicable temperature	≤450℃	≤880℃	≤450℃	≤660℃	≤680℃	≤ 680℃
Coating thickness	0.15-1mm					
Bonding strength of coating	70MPa					

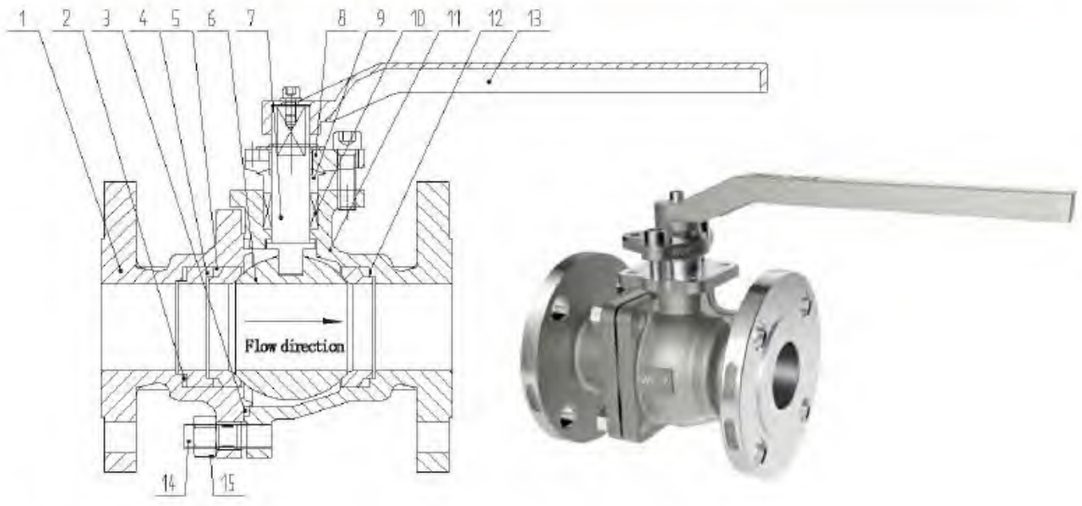
※ 13. Reliable sealing performance

We use the high precision CNC Machine to grind the ball which match the ball and seat in different place. In this way, the ball and seat completely match and get high circular and finish degree for ball and seat surface.
The sealing performance can totally meet the requirement.

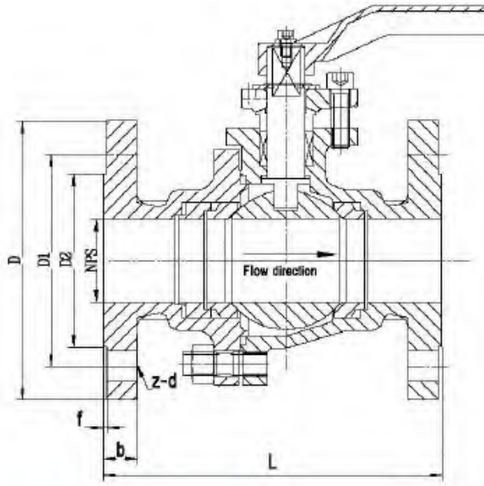
METAL SEATED BALL VALVES

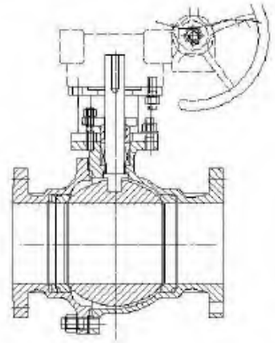
Construction

No.	Main Parts	Example 1 : 904L	Example 2 :SS304
1	Bonnet	904L	A351 CF8
2	Belleville spring	Inconel X750	Inconel X750
3	Gasket	904L+Graphite	Graphite
4	Adjusting washer	904L	A182 F304
5	Seat	904L	A182 F304+Stellite coating
6	Ball	904L	A182 F304+Stellite coating
7	Stem	904L	A182 F304
8	Gland flange	A351 CF8	A351 CF8
9	Gland bushing	904L	A182 F304
10	Packing	Graphite	Graphite
11	Body	904L	A351 CF8
12	Sealing ring	Graphite	Graphite
13	Lever	SS304	WCB+Zinc plating
14	Stud	A193 B8	A193 B8
15	Hex nut	A194 8	A194 8

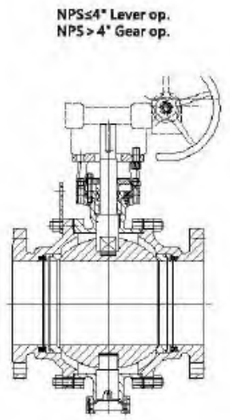


METAL SEATED BALL VALVES





Floating type



Trunnion type

Dimensions (mm)

Size		150LB							300LB						
(Inch)	(mm)	L	D	D1	D2	b	f	z-d	L	D	D1	D2	b	f	z-d
1/2"	15	108	89	60.5	35	12	1.6	4-15	140	95	66.5	35	15	1.6	4-15
3/4"	20	117	98	70	43	12	1.6	4-15	152	117	82.5	43	16	1.6	4-19
1"	25	127	108	79.5	51	12	1.6	4-15	165	124	89	51	18	1.6	4-19
1-1/4"	32	140	117	89	64	13	1.6	4-15	178	133	98.5	64	19	1.6	4-19
1-1/2"	40	165	127	98.5	73	15	1.6	4-15	190	156	114.5	73	21	1.6	4-22
2"	50	178	152	120.5	92	16	1.6	4-19	216	165	127	92	22	1.6	8-19
2-1/2"	65	190	178	139.5	105	18	1.6	4-19	241	190	149	105	25	1.6	8-22
3"	80	203	190	152.5	127	19	1.6	4-19	283	210	168	127	29	1.6	8-22
4"	100	229	229	190.5	157	24	1.6	8-19	305	254	200	157	32	1.6	8-22
5"	125	356	254	216	186	24	1.6	8-22	381	279	235	186	35	1.6	8-22
6"	150	394	279	241.5	216	26	1.6	8-22	403	318	270	216	37	1.6	12-22

Notes:
*Reduce bore is available upon request.
*Other sizes & pressures are available upon request .
*Weidouli reserves the right to change this information without notice.

BALL VALVES HOW TO ORDER

VALVE CODE Q=BALL VALVE

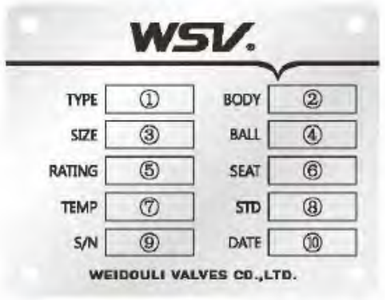
1 Operation code	2 End con. code	3 Structure code	4 Seat code	5 Pressure	6 Size
3=Gear	1=FNPT ends	1=Floating(Straight)	F=PTFE/RPTFE	150LB~2500LB	1/2"~40"
6=Pneumatic actuator	2=MNPT ends	4=Floating(3-Way L pattern)	N=Nylon	PN10~PN420	DN15~ DN1200
7=Hydraulic actuator	4=Flanged ends	5=Floating(3-Way T pattern)	PEEK=PEEK		
9=Electric actuator	6=Weld ends	7=Trunnion(Straight)	P=PPL		
	7=Wafer ends		W=Integral		
			Y=Overlay hard alloy		
			H=Overlay 13Cr		

EXAMPLE:Floating ball valve,2-Way,Lever operator,Flanged RF ends,Seat:PTFE,150LB,3"

Q41F-150LB-3"						
Valve code	Operation	Ends con.	Structure	Seat	Pressure	Size
Q	Lever Op	Flange	Floating(Straight)	PTFE	150LB	3"

Notes:The figure number system outlined below is designed to cover the most common configurations.
If special features are required that are not listed below, please advise the detailed description for accurate processing

BALL VALVES VALVE MARKINGS

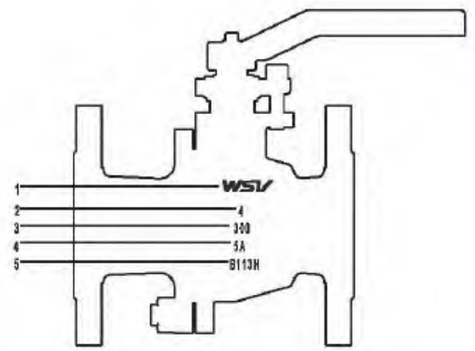


Valve ID Tag

No.		
①	Type	Identifies valves type
②	Body Material	Identifies body metal material composition
③	Size	Identifies bore size
④	Ball Material	Identifies ball material composition
⑤	Rating	Identifies pressure
⑥	Seat	Identifies seat material composition
⑦	Temp.	Identifies the suitable operating tem perature
⑧	Standard	Identifies design standard
⑨	Serial Number	Identifies certified manufacturer's serial number
⑩	Date	Identifies valve manufacturing date

Valve Markings

No.	Valve ID Components
1	Brand
2	Size
3	Rating
4	Material Code
5	Heat Number



Notes:Weidouli reserves the right to modify our products for improvement without prior notice.

BALL VALVES MATERIAL LIST

Material	ASTM		
	Casting	Forging	Bars
Titanium & Titanium Alloy			
Titanium Gr.2	B367 Gr.C-2	B381 Gr.F-2	B348 Gr.2
Titanium Gr.3	B367 Gr.C-3	B381 Gr.F-3	B348 Gr.3
Titanium Gr.5	B367 Gr.C-5	B381 Gr.F-5	B348 Gr.5
Titanium Gr.6	B367 Gr.C-6	B381 Gr.F-6	B348 Gr.6
Titanium Gr.12	B367 Gr.C-12	B381 Gr.F-12	B348 Gr.12
Titanium Gr.7	B367 Pd7B	B381 Gr.F-7	B348 Gr.7
Nickel			
Nickel 200	A494 CZ100	B160 N02200	B160 N02200
Nickel 201		B160 N02201	B160 N02201
Nickel Base Alloy			
Monel 400	A494 M35-1	B564 N04400	B164 N04400
Monel K500		B865 N05500	B865 N05500
Inconel 600	A494 CY40	B564 N06600	B166 N06600
Inconel 625	A494 CW6MC	B564 N06625	B446 N06625
Incoloy 800	A351 CT15C	B564 N08800	B408 N08800
Incoloy 825	A494 CU5MCuC	B564 N08825	B425 N08825
Hastelloy B	A494 N12MV	B335 N10001	B335 N10001
Hastelloy B-2	A494 N7M	B462 N10665	B335 N10665
Hastelloy C276	A494 CW12MW	B574 N10276	B574 N10276
Hastelloy C-22	A494 CX2MW	B574 N06022	B574 N06022
Hastelloy C-4	A494 CW2M	B574 N06455	B574 N06455
Hastelloy G		B462 N06007	B581 N06007
Zirconium			
Zirconium 702	B752 702C	B493 R60702	B550 R60702
Zirconium 705	B752 705C	B493 R60705	B550 R60705
Super Austenitic Stainless Steel			
904L	904L	A182 F904L	B649 N08904
254SMO	A351 CK3MCuN	A182 F44	A276 S31254
AL-6XN	A351 CN3MN	B462 N08367	B688 N08367
ALLOY 20	A351 CN7M	B462 N08020	B473 N08020
Duplex & Super Duplex			
Duplex S31803	A890 4A	A182 F51	A276 S31803
Super Duplex S32750	A890 5A	A182 F53	A276 S32750
Super Duplex S32760	A890 6A	A182 F55	A276 S32760
Ali-Bronze			
Ni-Al-Br	B148 C95800/C95500		

Notes:
*The above materials are applicable to valve body. Contact Weidouli for the valve component material. Trademarks appeared on the book: SandvikAB for SAF 2205/SAF 2507; SPECIALS METALS for Inconel, Monel, Incoloy; Haynes for Hastelloy; Allegheny Ludium for AL-6XN; Avesta for 254SMO.
*Other materials are available upon request, such as stainless steel, etc.

PRODUCT FIELD

Petroleum Industry

The petroleum industry, also known as the oil industry or the oil patch, includes the global processes of exploration, extraction, refining, transporting (often by oil tankers and pipelines), and marketing of petroleum products. Weidouli designed Duplex, Ali Bronze, Titanium valves are ideal products for the downstream and upstream pipe requirements.

Coal Chemistry

Coal Chemistry includes coal coking, gasification, liquefaction, coal refinery etc.
Weidouli designed valves are mostly used for coal coking, gasification.

Organic Chemistry

An organic compound is virtually any chemical compound that contains carbon, although a consensus definition remains elusive and likely arbitrary. Weidouli has abundant performance on such applications, such as acetic acid, PTA, Alkylation, Cyclohexanone, BDO, sec-Butyl Acetate.

Inorganic Chemistry

Inorganic chemistry deals with the synthesis and behavior of inorganic and organometallic compounds. This field covers all chemical compounds except the myriad organic compounds (carbon based compounds, usually containing C-H bonds), which are the subjects of organic chemistry.

New Energy

Due to worldly fast-growth, energy consumption is increasing, energy supply and demand gap is increasing as well. Therefore, development of new energy becomes the main subjects for all around the world. New energy, is based on the new technology, the system development and utilization of renewable energy, such as nuclear energy, solar energy, ocean energy and so on.

Environmental Water Treatment

Water treatment is any process that makes water more acceptable for a specific end-use.
The end use may be drinking, industrial water supply, irrigation, river flow maintenance, water recreation or many other uses, including being safely returned to the environment.
Water treatment removes contaminants and undesirable components, or reduces their concentration so that the water becomes fit for its desired end-use.

WEIDOULI PERFORMANCES

Weidouli valves for critical applications in chemical and petrochemical process (PTA process, Acetic acid, sulfuric and nitric acid, and chlorine services , Caustic Soda etc.), Onshore/Offshore (Desalination processing, oil/water separation, Fire Fighting, Cooling system) , FPSO/FSO, Oil&Gas, Water treatment, Refinery, Pulp & Paper, Mining, Power generation etc.