



CSE GROUP

Purity Flow Control Ball Valve

FOR: SEMI-CONDUCTOR, VACUUM,
PHARMACEUTICAL INDUSTRY



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1142

CSE APPLIED MATERIAL



PURITY BALL VALVE PROCESS

Forge



Casting



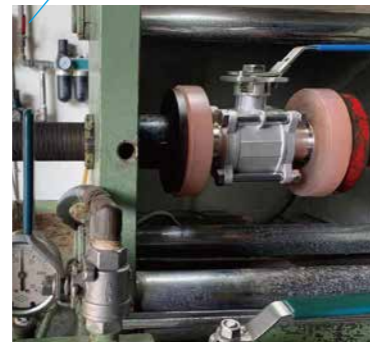
Spectroscope



CNC machine



Working pressure test



Roughness test



3D testing



Electro Polish



10,000 Class Room



Assemble



PURITY BALL VALVE CERTIFICATE

ISO9001



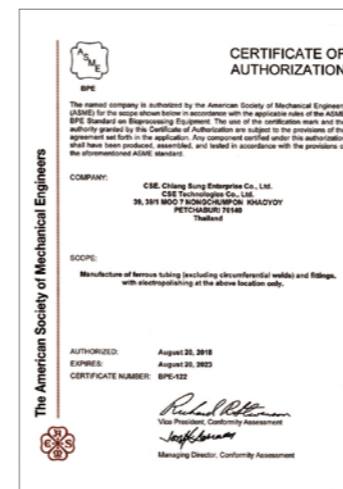
CE/PED/AD



3A



ASME BPE



3M PTFE



ATEX



Insurance

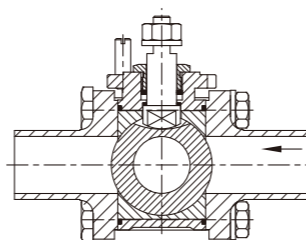




SPECIFICATION

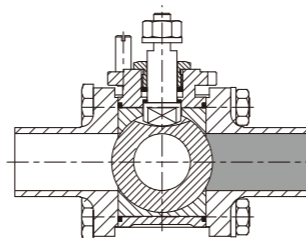
Full cavity Feature

- 1 Full cavity ball seat suit for high purity design and will not leave liquid.
- 2 Provide a variety of specifications. The size of the ends can be changed or the main body, and can also be added with pneumatic/locked handle/sole-noid valve, etc.
- 3 The material of the seal can be replaced.
- 4 Surface can be required.
- 5 The Simple structure allows for convenient switching, as well as easy cleaning maintenance, and helps to avoid residue on the valve body, incomplete cleaning causes bacterial growth, etc.
- 6 PTFE ball seat can be isolated by the medium to prevent corrosion of the sealing surface.



Half cavity

Half seat for ball valves are mainly used in petrochemical and some industrial structures.



Ball seat option

ITEM		TEMPERATURE RATING	FEATURE
PTFE	VIRGIN PTFE	-60 ° C ~ + 230 ° C	Stable under normal temperature and pressure, avoid humidity, heat and high temperature
+CARBON	23% CARBON	-200° C~230° C	Improve wear and deformation strength
PCTFE	Poly-Chloro-Tri-Fluoro-Ethene	-200° C~+120° C	High hardness, low temperature resistance, dimensional stability
+GLASS 15%	15%GLASS FIBER+ PTFE	-60° C~+230° C	Improve the wear characteristics of PTFE
HYBRID PTFE	Stainless steel + PTFE	-200° C~230° C	Can improve compressive strength, abrasion resistance, good thermal conductivity and low permeability
HYBIRD PTFE+ CARBON	23%Carbon/ 2% Graphite filled PTFE and Stainless Steel	-200° C~+230° C	High compressive strength, high temperature resistance, mostly used in chemical and petroleum industries

PURITY BALL VALVE APPLICATION

Applications

- Biotechnology
- Pharmaceutical industry
- Chemical industry
- Dairy
- Food Industry

Specification

- All valves shell tested to be suited for ANSI B16.34 and pressure tested for API 598
- All seat can be suited for the FDA request 21 CFR 177.1550

Surface & Roughness

Internal surface

- Pickled
- #400~#180
- Ra<=0.8um~0.4um
- Electro polish

Connection option

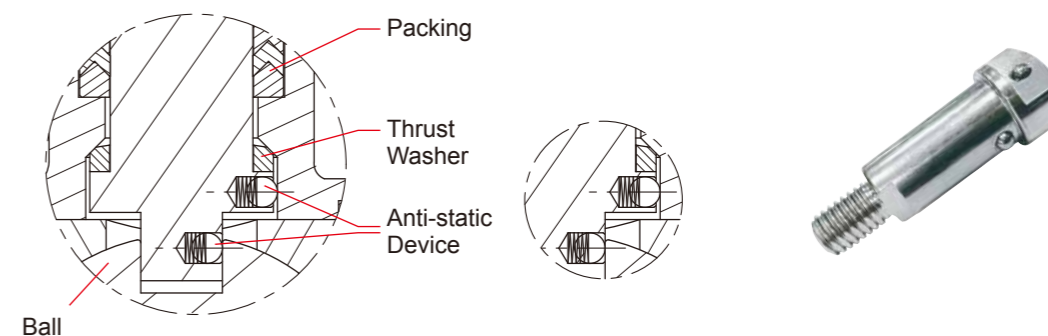
Standard

- ISO
- 3A
- DIN
- SMS
- IDF

Oil-free treatment grade:

- Level 1:** General industrial oil-free treatment level: The parts are degreased and washed. The finished products are assembled without oil.
- Level 2:** General industrial oil-free level: Ultrasonic cleaning of parts, oil-free assembly, and packaging of finished products.
- Level 3:** Electronic level AP Class cleanliness level: Parts are cleaned by ultrasonic waves. The finished product is oil-free. It is assembled and packaged in a Class 10,000 clean room, and then marked and inspected. (The local necessity of the tubing of fluid contact surface is needed to be machined and polished, and the polished surface has to be under oily qualified retention requirement 0.1mg/ft² (non-heating type)/ 0.3 mg/ft² (heating type) (NIPPON INSTRUMENTS CORP. OIL CONTENT METER), the flow piping is the casting rough surface and the black light lamp is irradiated to confirm that there is no fluorescent reaction)
- Level 4:** Electronic BA Class cleanliness level: The parts are cleaned by ultrasonic waves. The finished product is oil-free and needs to be assembled in a clean room Class 10,000. The first-stage finished product must be finished in a Class 1,000 clean room. After cleaning, the finished product is packaged, labeled, and inspected. (The fluid contact surface of the runner must be fully machined and polished to a surface roughness of Ra 0.4um or less, and the residual oil on the runner surface must be 0.05 mg/ ft² (non-heated)/ 0.2 mg /ft² (heated), 10pcs/ft³, Pitacal 0.3um (TEST CODE SEMI E66-0997)

Anti-Static Device

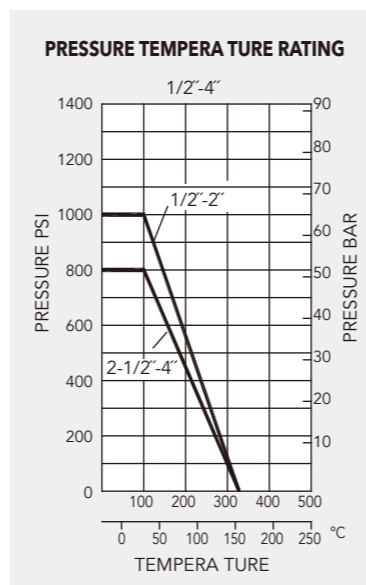




TESTING DATA

Ball valve Description

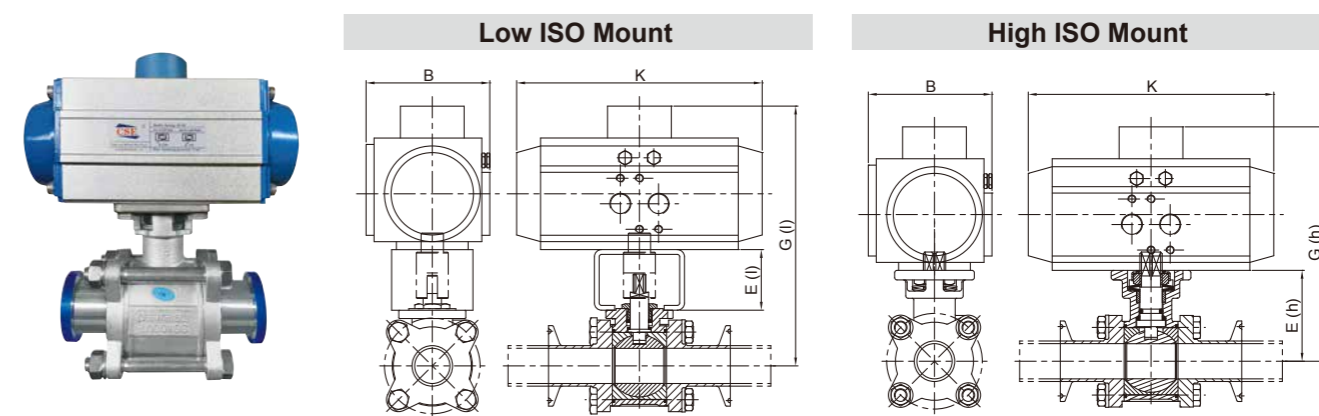
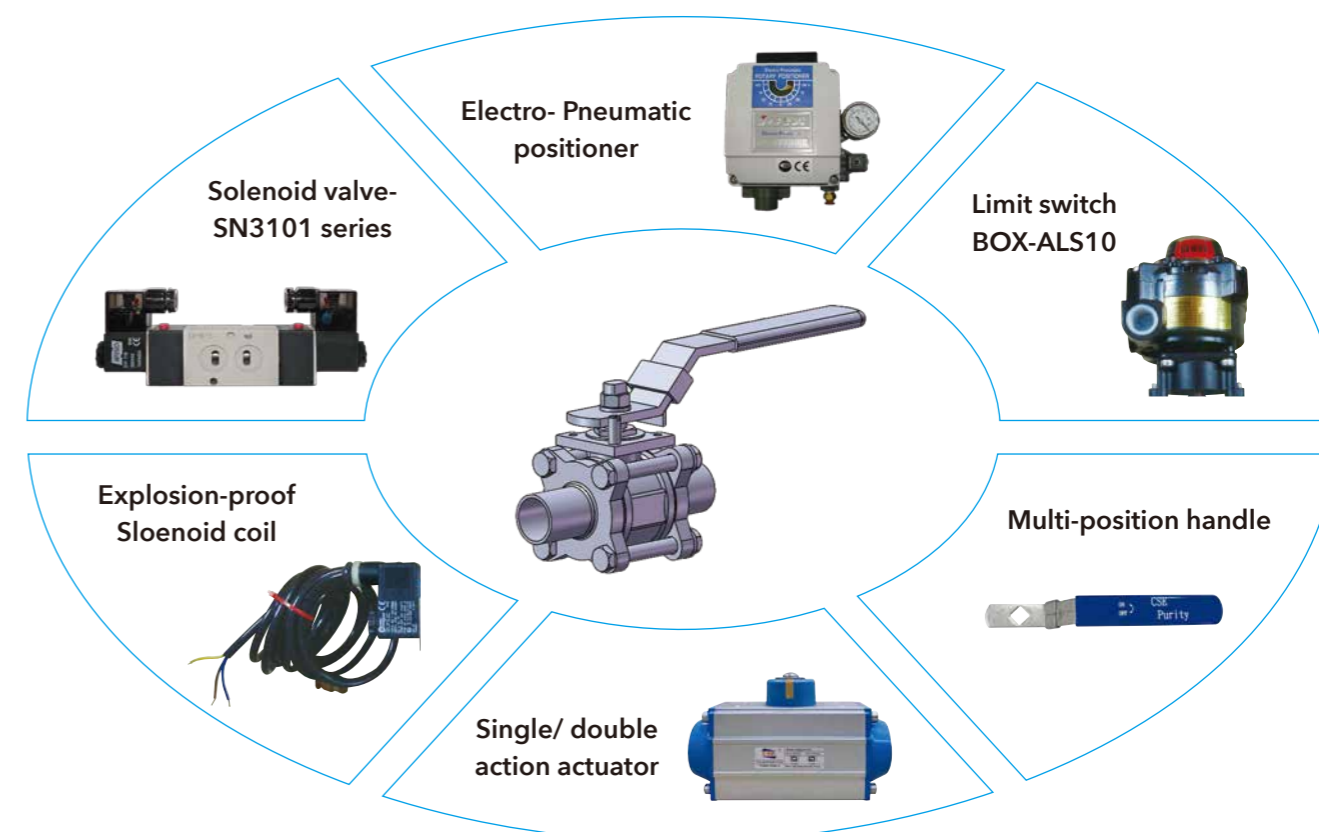
- The sanitary ball valves working pressure are all under 10 Bars. 800 or 1000 WOG identified outside of casting bodies are the pressure of bodies tested only.
- The working pressure and temperature of the ball valve are directly related to the temperature and refer to next table
*If you need high-pressure equipment, please replace the ball seat with high-pressure material
- Pay attention to the correct position of opening or closing to ensure normal flow rate.
- Try to use lock design valves and padlocks to ensure a safe position.
- When using a cylinder, the actuator must be tightened with an ISO5211 mounting plate.
- When cleaning the inner valve; be careful not to lose all washers and screws.
*Notice: avoid foreign material inside the tube because this causes the ball seat to wear and cause leakage.
- It cannot be used when the screw is loose or the bolt is insufficient.
*If there is dust or flammable gas in the operating environment, use anti-static devices to avoid danger.



Torque Figure for Bolt Tighten

Size	Bolt		Pressure Test		Handle +10%↓
	Body blot	Adapter blot	Air Pressure	Water Pressure	
1/2"~3/4"	10	10	6KG	22KG	12
1"	10	10			18
1.5"	20	13			25
2"	30	18			40
3"	40	21			50
4"	50	21			70

ACCESSORIES FOR PURITY BALL VALVE



V type Size	B	K	Torque in.lbs	Low / High mount ISO-5211	E(l)	G(l)	E(h)	G(h)	Double Act. type	Single Act. type
1/2" DN15	70.5	154	90	F03/F04	38	157.8	38.2	128.2	VT050D	VT050 S11
3/4" DN20	70.5	154	100	F03/F04	38	162.1	47.5	137.5	VT050D	VT050 S11
1" DN25	70.5	154	140	F04/F05	38	192.9	57	177	VT050D	VT075 S08
1.5" DN40	89.5	189	240	F05/F07	51.5	230.05	78.55	211.55	VT065D	VT085 S10
2" DN50	102.5	210	480	F05/F07	51.5	261.48	86.5	242.5	VT075D	VT110 S10
2.5" DN65	112.5	229	650	F07/F10	51.5	317.75	109.2	300.2	VT085D	VT125 S08
3" DN80	138.5	226	1150	F07/F10	51.5	343	116.2	324.2	VT110D	VT140 S10
4" DN100	138.5	226	1400	F10/F12	61	372.7	133.5	341.5	VT110D	VT140 S10

(h)=High (l)=Low



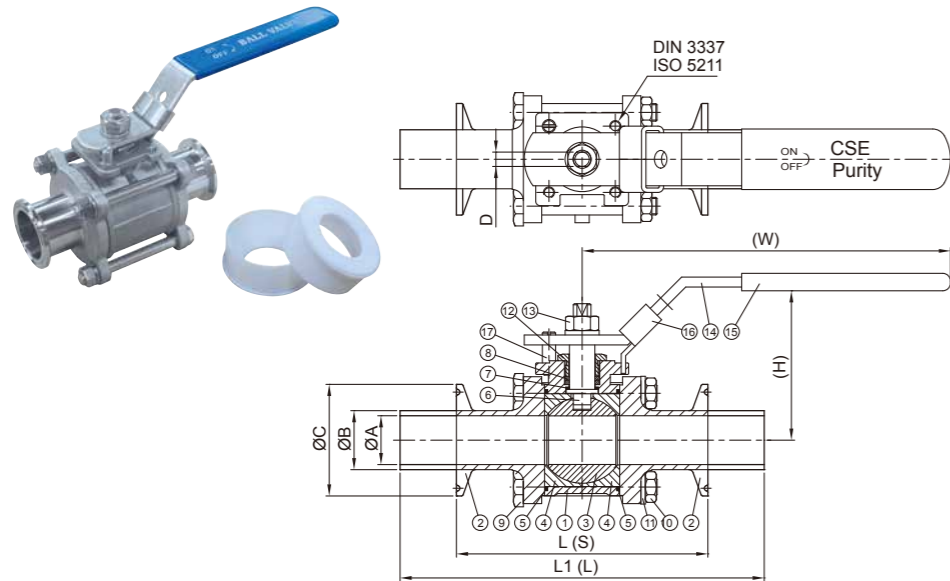


PURITY BALL VALVE FOR FOOD & BPE USE

3-way Ball Valve Low/ High mount (over 4" can be provided)

Application:

- A. Food, pharmaceutical, high-pressure steam, etc. automatic control fluid process
- B. Pneumatic type is available to be added to actuators.



PARTS LIST			
Item	Parts name	QTY	Material
1	Body	1	ASTM-A351-CF8M
2	Cap	2	ASTM-A351-CF8M
3	Ball	1	A351-CF8M
4	Seat	2	PTFE
5	Gasket	2	PTFE
6	Stem	1	AISI 316
7	Thrust washer	1	PTFE
8	Stem packing	1	PTFE
9	Bolt	4	AISI 304
10	HEX. Nut	4	AISI 304
11	Spring washer	5	AISI 304
12	Gland	1	AISI 304
13	Nut	1	AISI 304
14	Handle	1	AISI 304
15	Plastic cover	1	plastic
16	Lock device	1	AISI 304
17	Stop pin	1	AISI 304

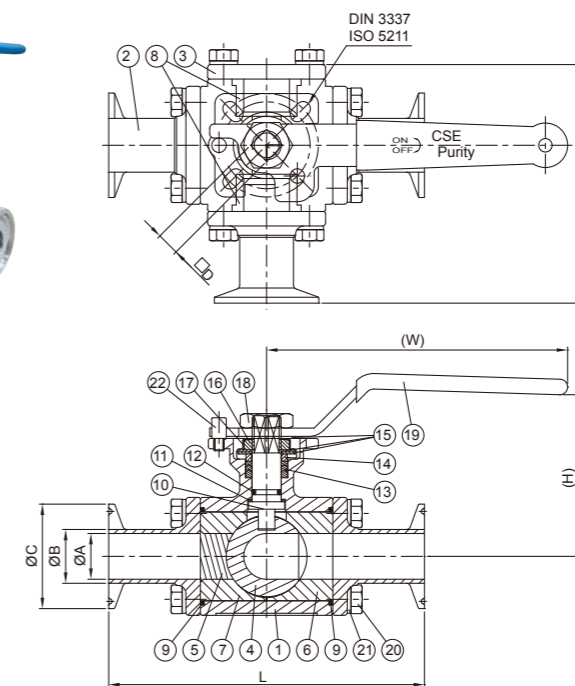
3A DIN ISO	ØA(h)(l)	ØB(h)(l)	ØC(h)(l)	D(h)	D(l)	E(h)	E(l)	F(h)(l)	G(h)(l)	W(h)	W(l)
1/2"	9.4	12.7	25								
DN10	10	13	34	5	9	58.3	60.58	89	135	130	130.72
DN8	10.3	13.5	34								
3/4"	15.75	19.05	25								
DN15	16	19	34	5	9	62.9	69.4	101	135	130	130.72
DN10	14	17.2	34								
DN20											
DN15	18.1	21.3	34	6.5	11	66.8	77.4	113.8	164.8	166.7	165.6
1.0"	22.1	25.4	50.5								
DN25	26	29	50.5	6.5	11	66.8	77.4	113.8	164.8	166.7	165.6
DN20	23.7	26.9	50.5								
DN32											
DN25	30.5	33.7	50.5	8.5	14	86.8	109.85	140	165	192.5	187.1
1.5"	34.8	38.1	50.5								
DN40	38	41	50.5	8.5	14	86.8	109.85	140	165	192.5	187.1
DN32	39.2	42.4	50.5								
2.0"	47.5	50.8	64								
DN50	50	53	64	8.5	14	94.5	117.32	157.3	190	192.5	187.1
DN40	45.1	48.3	64								
2.5"	60.2	63.5	77.5								
DN65	66	70	91	12	17	126.75	154.2	197	205	254	351
DN50	57.1	60.3	77.5								
3.0"	72.9	76.2	91								
DN80	81	85	106	12	17	135	161.4	229	264.5	254	351
DN65/80	85.7	88.9	106								
4.0"	97.4	101.6	119								
DN100	100	104	119	16	22	155.5	176.3	243.4	305.9	335	385
DN100	111.1	114.3	130								

(h)=High (l)=Low

PURITY BALL VALVE FOR FOOD & BPE USE

Application:

- A. Food, pharmaceutical, high-pressure steam, etc. automatic control fluid process
- B. Pneumatic type is available to be added to actuators.
- C. Options of T or L port for using multi-directional fluid control.



PARTS LIST			
Item	Parts name	QTY	Material
1	Body	1	ASTM-A351-CF8M
2	Cap	3	ASTM-A351-CF8M
3	Blank cap	1	ASTM-A351-CF8M
4	Ball	1	A351-CF8M
5	Ball seal (for big type 2)	1	PTFE
6	Ball seal (big type 1)	1	PTFE
7	Ball seal (big type 2)	1	PTFE
8	Ball seal (small)	2	PTFE
9	Gasket	2	PTFE
10	Stem	1	AISI 316
11	Stem ring	1	PTFE
12	O-Ring	1	Viton
13	V ring	1	PTFE
14	ST. ST. ring	1	AISI 304
15	Spring washer	3	AISI 304
16	Nut	1	AISI 304
17	Lock washer	1	AISI 304
18	Nut	1	AISI 304
19	Handle	1	AISI 304+plastic
20	Bolt	16	AISI 304
21	Washer	16	AISI 304
22	Stop pin	1	AISI 304

SIZE	ØA	ØB	ØC	□D	(H)	L	L1	(W)
1/2"	9.4	12.7	25	9	62.5	118	88.5	125
3/4"	15.75	19.05	25	9	68.5	127	95.5	125
1.0"	22.1	25.4	50.5	11	78.12	152.6	115.3	145.5
1.5"	34.8	38.1	50.5	14	103.9	175	136.5	182
2.0"	47.5	50.8	64	14	111.9	190	153	182
2.5"	60.2	63.5	77.5	17	105.5	228	165.5	370
3.0"	72.9	76.2	91	22	129	260.6	193	400
4.0"	97.4	101.6	119	22	134	290	247	400





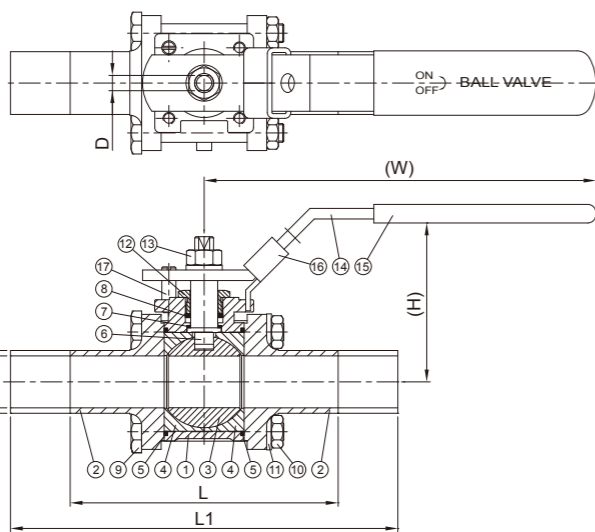
PURITY BALL VALVE FOR SEMI- CONDUCTOR AND CHEMOCAL

Application:

The three-piece two-way or three-way design can be used under high pressure. It is also easy to maintain, replace and clean. Ask sales associate for different standard connection ways: such as flange, extended welding type and industrial flange such as JIS, DIN, ANSI, etc.; the surface can also be available for E / P and different Ra requirements.



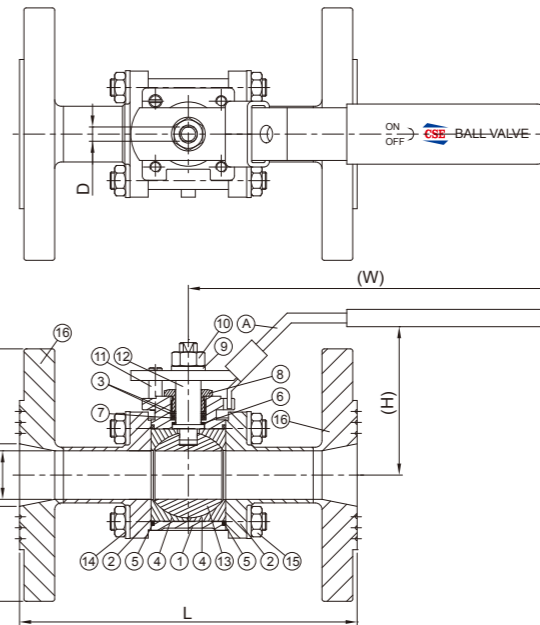
DIN	ØA	ØB	ØC	ISO	ØA	ØB	ØC	D	(H)	L	L1	(W)
DN10	10	13	34	DN8	10.3	13.5	34	5	58.3	89	135	130
DN15	16	19	34	DN10	14	17.2	34	5	62.9	101	135	130
DN20	20	23	34	DN15	18.1	21.3	34	6.5	66.8	113.8	164.8	166.7
DN25	26	29	50.5	DN20	23.7	26.9	50.5	6.5	66.8	113.8	164.8	166.7
DN32	32	35	50.5	DN25	30.5	33.7	50.5	8.5	86.8	140	165	192.5
DN40	38	41	50.5	DN32	39.2	42.4	50.5	8.5	86.8	140	165	192.5
DN50	50	53	64	DN40	45.1	48.3	64	8.5	94.5	157.3	190	192.5
DN65	66	70	91	DN50	57.1	60.3	77.5	12	126.75	197	205	254
DN80	81	85	106	DN65	72.9	76.2	91	12	135	229	264.5	254
				DN80	85.7	88.9	106					
DN100	100	104	119	DN100	111.1	114.3	130	16	155.5	243.4	305.9	335



PARTS LIST			
Item	Parts name	QTY	Material
1	Body	1	ASTM-A351-CF8M
2	Cap	2	ASTM-A351-CF8M
3	Ball	1	A351-CF8M
4	Seat	2	PTFE
5	Gasket	2	PTFE
6	Stem	1	AISI 316
7	Thrust washer	1	PTFE
8	Stem packing	1	PTFE
9	Bolt	4	AISI 304
10	HEX. Nut	4	AISI 304
11	Spring washer	5	AISI 304
12	Gland	1	AISI 304
13	Nut	1	AISI 304
14	Handle	1	AISI 304
15	Plastic cover	1	plastic
16	Lock device	1	AISI 304
17	Stop pin	1	AISI 304

SIZE	ØA (Sch.10)	ØA (Sch.40)	ØB	D	(H)	L	L1	(W)
15A	17.12	15.8	21.34	5	58.3	89	135	130
20A	22.45	20.93	26.67	5	62.9	101	135	130
25A	27.86	26.64	33.4	6.5	66.8	113.8	164.8	166.7
40A	42.72	40.89	48.26	8.5	86.8	140	165	192.5
50A	54.79	52.5	60.33	8.5	94.5	157.3	190	192.5
65A	66.93	62.71	73.03	12	126.75	197	205	254
80A	82.8	77.93	88.9	12	135	229	264.5	254
100A	108.2	102.26	114.3	16	155.5	243.4	305.9	335

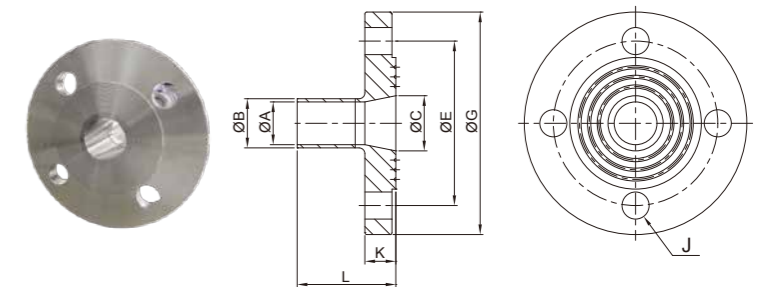
PURITY BALL VALVE FOR SEMI- CONDUCTOR AND CHEMOCAL



PARTS LIST			
Item	Parts name	QTY	Material
A	Handle	1	AISI 304
1	Body	1	CF3M AISI 316L
2	Cap	2	CF3M AISI 316L
3	Spring washers	2	AISI 304
4	Seat sealing ring	2	PTFE, FDA complinat
5	Flange sealing ring	2	PTFE, FDA complinat
6	Conical spindle seal	1	PTFE, FDA complinat
7	V-Ring spindle packing	1	PTFE, FDA complinat
8	Gland	1	AISI 304
9	Washer	1	AISI 304
10	Upper spindle nut	1	AISI 304
11	stop pin	1	AISI 304
12	Spindel (Stem)	1	AISI 316L
13	Ball	1	CF3M AISI 316L
14	Bolt	4	AISI 304
15	Nut	8	AISI 304
16	Flange	2	AISI 316L
-	Antistatic device	2	AISI 316

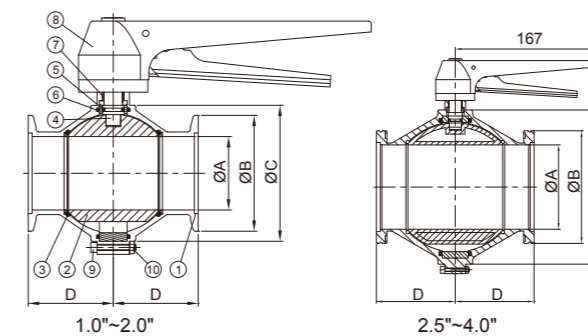
Option

other connection can be provided:
JIS 10K, KF, PN16, ANSI, other flanged type, etc...

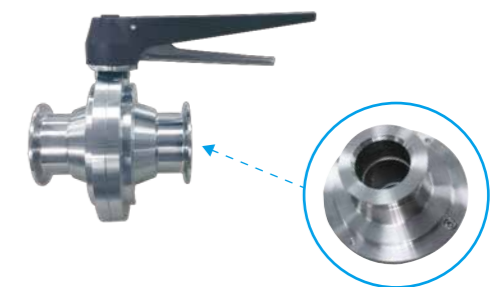


Application:

High purity industries, Semiconductors and pharmaceutical fields



SIZE	øA	øB	øC	D
KF25	22.1	40.01	100	45
KF40	34.8	54.86	105	55
KF50	47.5	74.93	105	55
ISO63	60.2	95	145	65
ISO80	72.9	110.01	159	79
ISO100	97.4	130	198	91



PARTS LIST			
Item	Parts name	QTY	Material
1	Body	2	ASTM-A351-CF8M
2	Ball	1	A351-CF8M
3	O-Ring	2	NBR
4	Stem	1	AISI 316
5	O-Ring	1	NBR
6	O-Ring	1	NBR
7	Sleeve	1	PEEK
8	Handle	1	AISI 304/plastic
9	Bolt	4	AISI 304
10	Nut	4	AISI 304

Half cavity and CIP designed for Purge clean

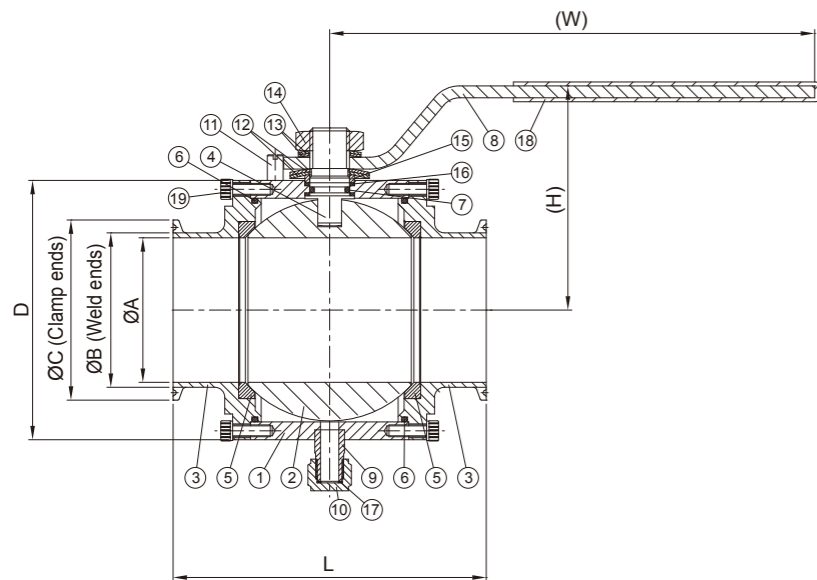
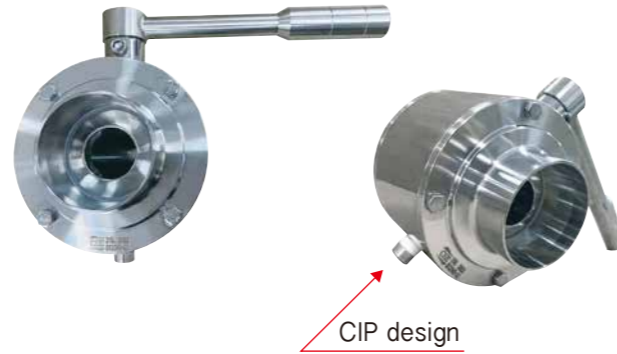
Application:

Personal-care Products industry, Pharmaceutical, Semiconductor, etc..

Description:

The design of the lower cleaning port can be CIP or steam cleaning (SIP) to help maintain the pure function

Application: Personal-care Products industry, Pharmaceutical, Semiconductor, etc.



PARTS LIST			
Item	Parts name	QTY	Material
1	Body	1	AISI 304
2	Ball	1	AISI 304
3	Cap	2	AISI 304
4	Stem	1	AISI 304
5	Seat	2	PTFE
6	O-Ring	2	NBR
7	O-Ring	1	NBR
8	Handle	1	AISI 304
9	Outfall	1	AISI 304
10	Outfall nut	1	AISI 304
11	Stop pin	1	AISI 304
12	Washer(big)	2	AISI 304
13	Washer(small)	2	AISI 304
14	Stem nut	1	AISI 304
15	Central ring	1	AISI 304
16	Ring	1	PTFE
17	Outlet washer	1	PTFE
18	Plastic cover	1	plastic
19	Bolt	16	AISI 304

SIZE	øA	øB (Weld ends)	øC (Clamp ends)	D	(H)	L	(W)
1.0"	22.1	25.4	50.5	58.7	60.3	95.3	166.7
1.5"	34.8	38.1	50.5	77.8	71.4	108	192.5
2.0"	47.5	50.8	64	93.7	79.4	119	192.5
2.5"	60.2	63.5	77.5	106.4	85.7	135	254
3.0"	72.9	76.2	91	125.4	95.3	165.1	254
4.0"	97.4	101.6	119	170	136.7	171	335

OEM DESIGN FOR PURITY BALL VALVE

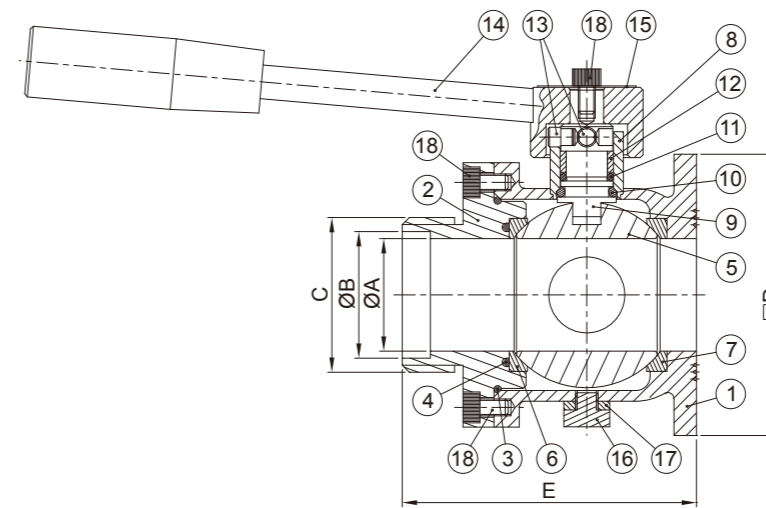
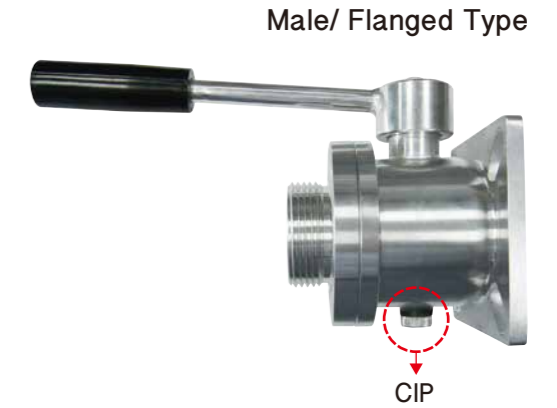
Clamp/ Weld/ Male/ Flange ends Tank Ball Valve

Application:

Wine, Personal-care Products industry, Chemical industries,...

Description:

Ball valve with a single-sided flange design can be connected to tanks to withstand high pressure and avoid vibration and leakage.



PARTS LIST			
Item	Parts name	QTY	Material
1	Body	1	AISI 304/316(L)
2	Cap	1	AISI 304/316(L)
3	O-Ring (Ø55.25xØ2.62)	1	EPDM
4	O-Ring (Ø45xØ3)	1	EPDM
5	Ball	1	SUS304/316(L)
6	Gasket (6.5t)	1	PTFE
7	Gasket (7.2t)	1	PTFE
8	Stem sleeve	1	AISI 304/316(L)
9	Stem	1	AISI 304/316(L)
10	O-Ring (Ø13xØ3.5)	1	EPDM
11	O-Ring (Ø13.6xØ2.7)	1	EPDM
12	Stem Ring	1	PTFE
13	Stop pin	2	AISI 304
14	Handle	1	AISI 304+Bakelite
15	Washer	1	AISI 304
16	Stop Leak Bolt	1	AISI 304/316(L)
17	Stop Leak Seal	1	EPDM
18	Screw M6x10L	5	AISI 304

SIZE	øA	øB	C	D	øE
DN43	45	40	65.6	39	100
DN53	55	50	70.5	41.5	100
DN73	76	69	77.8	55.2	120



OEM DESIGN FOR PURITY BALL VALVE

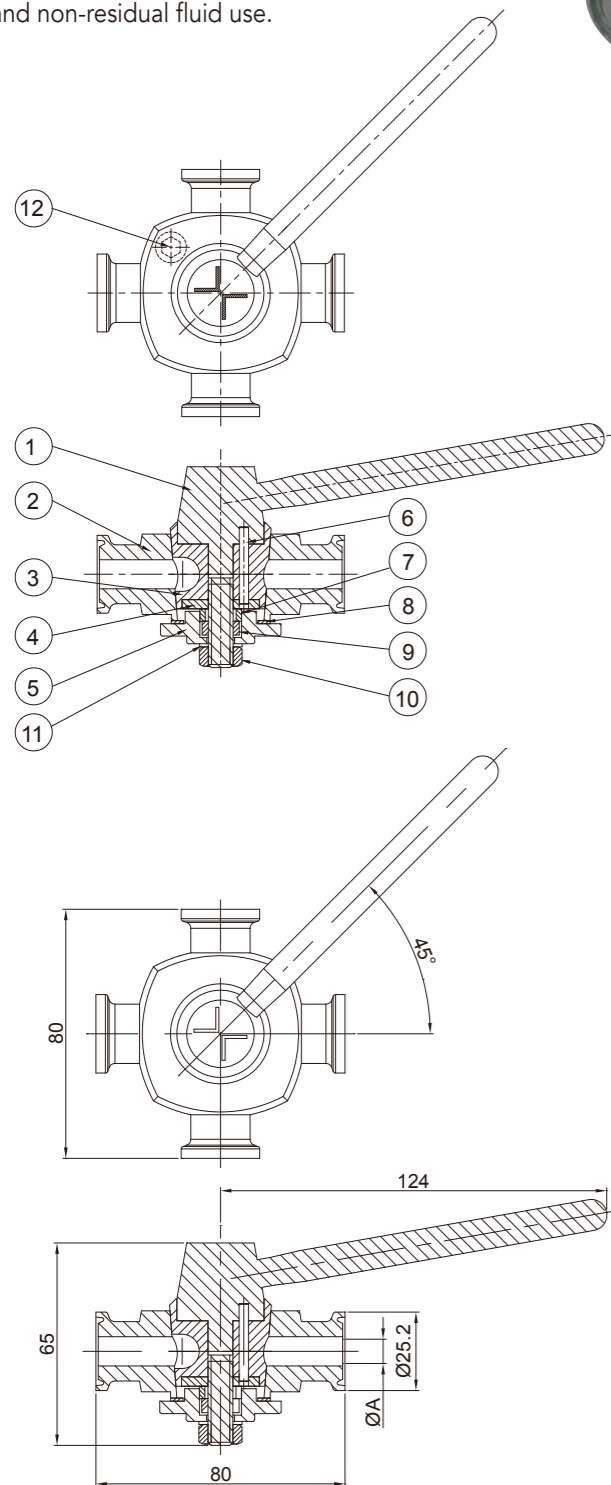
X port 4-way Ball Valve

Application:

Pharmaceutical, Food, etc.

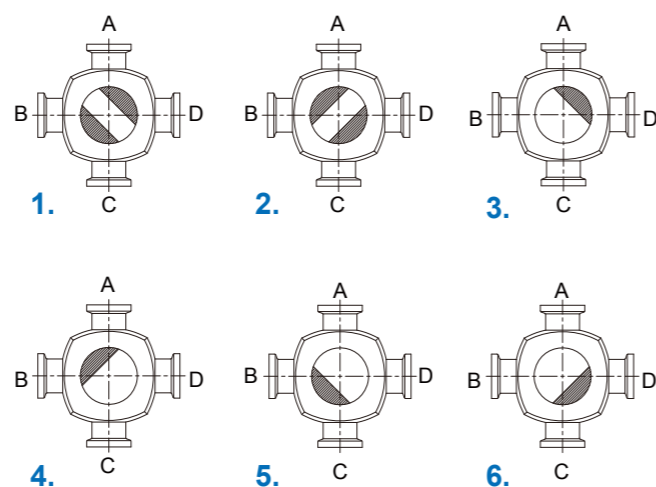
Description:

Multi-flow design, used for pharmaceutical and non-residual fluid use.



PARTS LIST			
Item	Parts name	Q'TY	Material
1	handle	1	316L
2	body	1	316L
3	Mandrel	1	PTFE
4	Mandrel retaining ring	1	316L
5	Locating ring	1	316L
6	Fixed pin	2	316L
7	Fixed piece	1	316L
8	Gasket	1	PTFE
9	Special nut	1	316L
10	Lock nut	1	304
11	Gasket	1	304
12	Screws	1	304

SIZE	øA
1/4"	4.6
ø6	6
3/8"	7.8
1/2"	9.4
3/4"	15.75



OEM DESIGN FOR PURITY BALL VALVE

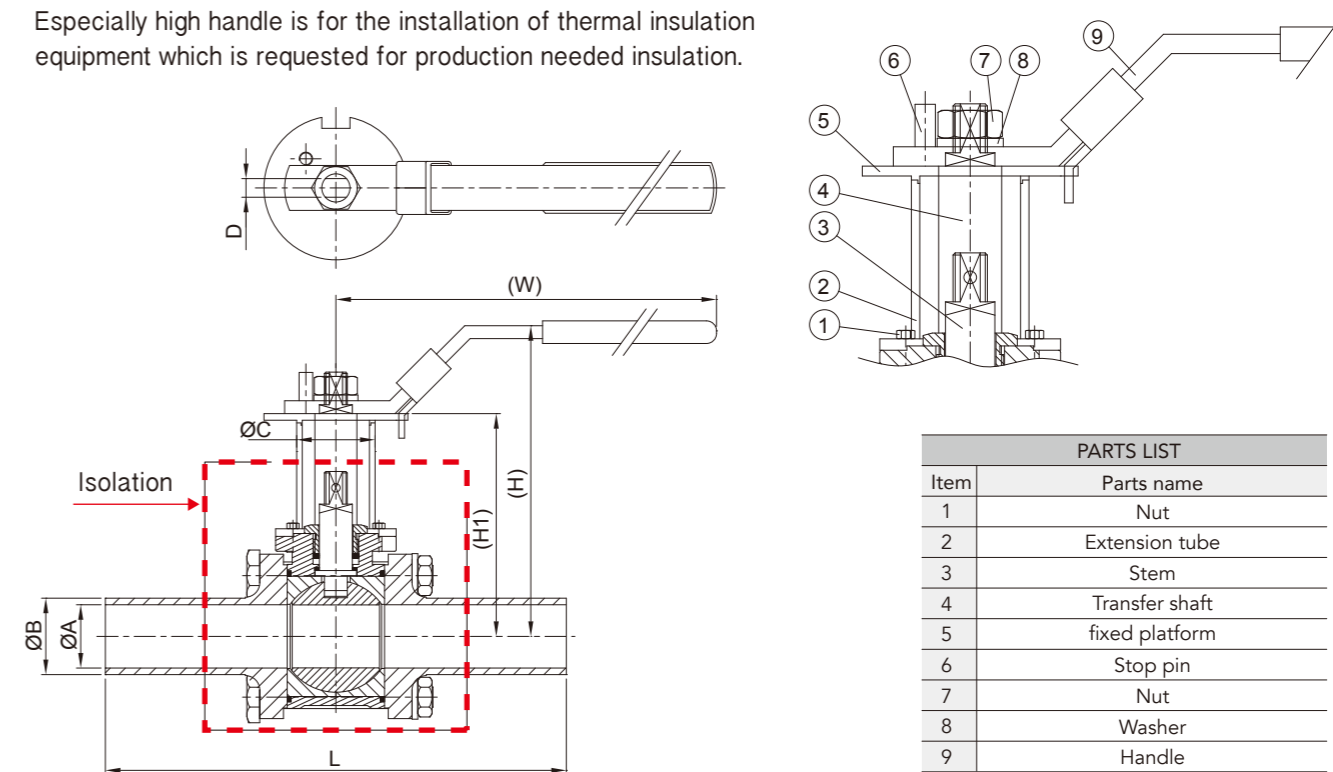
High handle type Ball Valve

Application:

Pharmaceutical, Food, etc.

Description:

Especially high handle is for the installation of thermal insulation equipment which is requested for production needed insulation.



PARTS LIST	
Item	Parts name
1	Nut
2	Extension tube
3	Stem
4	Transfer shaft
5	fixed platform
6	Stop pin
7	Nut
8	Washer
9	Handle

3A	øA	øB	øC	D	(H)	(H1)	L	(W)
1/2"	9.4	12.7	25.4	5	101	74	135	130
3/4"	15.75	19.05	25.4	5	104	77	135	130
1.0"	22.1	25.4	25.4	6.5	139	108	164.8	166.7
1.5"	34.8	38.1	38.1	8.5	156	119	165	192.5
2.0"	47.5	50.8	38.1	8.5	165	128	190	192.5
2.5"	60.2	63.5	38.1	12	211	167	205	254
3.0"	72.9	76.2	38.1	12	219	175	264.5	254
4.0"	97.4	101.6	50.8	16	236	189	305.9	335

A SIZE	øA (Sch.10)	øA (Sch.40)	øB	øC	D	(H)	(H1)	L	(W)
15A	17.12	15.8	21.34	25.4	5	104	77	135	130
20A	22.45	20.93	26.67	25.4	5	139	108	135	130
25A	27.86	26.64	33.4	38.1	6.5	139	108	164.8	166.7
40A	42.72	40.89	48.26	38.1	8.5	156	119	165	192.5
50A	54.79	52.5	60.33	38.1	8.5	165	128	190	192.5
65A	66.93	62.71	73.03	38.1	12	211	167	205	254
80A	82.8	77.93	88.9	50.8	12	219	175	264.5	254