OPERATING MANUAL

CSE Ranges of Ball Valves

1 ball valve installation

1.1 Preparation before installation

1. The pipeline before and after the ball valve is ready. The front and rear pipes should be coaxial. The pipe should be able to withstand the weight of the ball valve, otherwise the pipe must be equipped with appropriate support
2. Purge the front and rear pipelines to remove oil, welding slag and all other impurities from the pipeline.
3. Check the sign of the ball valve and find out that the ball valve is intact. The valve is fully open and closed several times to confirm that it is working properly.
4. Remove the protective parts attached to the two ends of the ball valve
5. Check the valve hole to remove any dirt that may be present, and then clean the valve hole. Even small particles of foreign matter between the seat and the ball may damage the seat sealing surface

1.2 Installation

1. Install the valve on the pipeline. Any end of the valve can be mounted on the upstream end. Valves driven by the handle can be mounted anywhere on the pipe. However, ball valves with gearboxes or pneumatic drives should be mounted upright, ie on level pipes, with the drive above the pipe
2. Between the valve “flow port clampk” and the pipeline “clamp”, according to the pipeline design requirements, “the bushing and the mounting fixture are installed between the clamps”.
3. "The clamp should be locked to the position".
4. Connect the pneumatic line (when using a pneumatic drive)

1.3 Post-installation inspection

1. Operate the drive to open and close the ball valve several times. It should be flexible and free of stagnation, and it is confirmed that it is working normally.
2. Check the sealing performance of the “clamp” joint surface according to the pipeline design requirements.

OPERATING MANUAL

CSE Ranges of Ball Valves

2 ball valve repair

2.1 General

1. It must be ascertained that the upper and lower pipes of the ball valve have been relieved of pressure before they can be disassembled and disassembled.
2. Care must be taken during the disassembly and reassembly to prevent damage to the sealing surfaces of the parts, especially non-metallic parts.
3. "The fixture should be locked to the positioning" during assembly.
4. The cleaning agent should be compatible with the rubber parts, plastic parts, metal parts and working medium (such as gas) in the ball valve. When the working medium is gas, the metal parts can be cleaned with gasoline (GB484-89). Non-metallic parts are cleaned with pure water or alcohol
5. The individual parts that have been broken down can be cleaned by dipping. There are still undecomposed non-metallic parts or metal parts that can be clean and clean with a cloth impregnated with a cleaning agent (to prevent the fibers from falling off and sticking to the parts). When cleaning, all the adhesion to the wall must be removed. Grease, dirt, buildup, dust, etc.
6. Non-metallic parts should be taken out of the cleaning agent immediately after cleaning. Do not soak for a long time.
7. After cleaning, it needs to be assembled after the wall cleaning agent is volatilized (can be wiped with silk cloth without dipping cleaning agent), but it should not be left for a long time, otherwise it will rust and be polluted by dust.
8. New parts need to be cleaned before assembly.
9. Lubricate with grease. Grease should be compatible with ball valve metal materials, rubber parts, plastic parts and working medium. When the working medium is gas, for example, special 221 grease can be used. Apply a thin layer of grease to the surface of the seal mounting groove, apply a thin layer of grease to the rubber seal, and apply a thin layer of grease to the sealing surface and friction surface of the valve stem.
10. Metal debris, fibers, grease (except for the use), dust, other impurities, foreign matter, etc. should not be allowed to be contaminated, adhered or stuck on the surface of the part or enter the cavity.

OPERATING MANUAL

CSE Ranges of Ball Valves

3 Ball valve assembly manual

3.1 preparation before assembly

1. Make sure all parts are not missing before assembly
2. Does the size match the size of the drawing?
3. All parts and accessories are not allowed to have any metal chips, fibers, grease (except for the use of dust) or other impurities, foreign matter, etc., contaminate, adhere or stay on the surface of the parts.
4. All metal products in the ball valve need to undergo ultrasonic cleaning process, and remove the other pollutants such as grease and metal debris on the surface before assembly.

3.2 The removal of the ball valve

1. Put the ball valve in a half open state and rinse off any residual material on the valve body.
2. Close the ball valve. Remove the “clamp and bushing on the collet” and lift the valve from the line.
3. Remove handle nut, handle, actuator set, stop-lock-cap, stem nut, Belleville washer, gland, bush, etc...
4. Remove the body bolt or stud nut to separate the bonnet from the valve body and then remove the body gasket
5. Confirm that the ball is in the closed state. In this way, the ball can be easily removed from the valve body and then the ball pad is removed.
6. Remove the stem from the valve body and remove the stem seal ring and V-stem packing from the valve body.

3.3 the assembly of the ball valve

1. The reverse of the disassembly process is the order of the assembly steps.
2. Clean and inspect all parts It is highly recommended to replace all soft parts (seat and seal).
3. According to the torque value specified in Table A, lock the body bolt clockwise.
4. According to the torque value specified in Table B, lock the stem nut.
5. Slowly and slowly move back and forth several times until it turns 1/4 turn (90°).
6. After the test, reinstall the pipeline.

OPERATING MANUAL

CSE Ranges of Ball Valves

3.4 Operation

1. Rinse the valve and pipe thoroughly before operation.
2. Ball valve operation mode Manually or automatically turn the shaft center 1/4 (90 °) clockwise and close; Manually or automatically rotate the shaft center 1/4 (90 °) and then open.
3. When the handle and / or the axial plane or groove and the pipe are in line, the valve is open.
4. According to the length of the operation cycle time, the torque of the ball valve operation in the system, the line pressure and the type of the valve seat will also be different. The value of the table C. is the PTFE ball seat, with clear water as the medium. For example.

3.5 Maintenance

Ball valves can be serviced under normal operating conditions and according to pressure/temperature and corrosion data sheets

1. Relock the gland nut

1.1 If there is a leak at the gland packing, the stem (gland) nut must be relocked.

1.2 It must be noted that the stem nut lock should not be too tight. Generally, the stem nut can be stopped by rotating 30°~60°.

3.6 Warning:

1. The ball valve may have a pressurized liquid remaining in the depression in the closed state.
2. Release the pressure of the pipeline before maintenance to turn the ball to the open state.
3. The normal maximum operating pressure and the maximum and minimum operating temperature range are marked on the brand name.
1. Seat and Seal operating temperatures in PTFE or RTFE range from 50°C to 180°C. For other Seat and Seal operating temperatures, please contact the manufacturer.

OPERATING MANUAL

CSE Ranges of Ball Valves

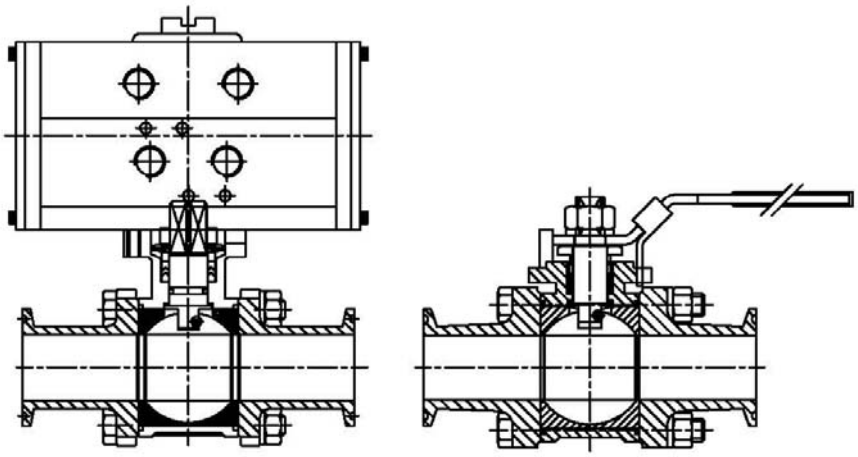
4. The marked pressure level (PN) refers to the maximum working pressure in a low temperature environment (Example: PN40 means the maximum working pressure is 40 bar in the range of -39 ° C ~ 40 ° C)

Table A: Torque Figure for Bolt Tighten

Material		Alloy Steel(B7)		Stainless Steel	
Bolt Size	Unit	N-M	KG-CM	N-M	KG-CM
5/16-18UNC/M8		28	276	9	90
3/8-16UNC		48	483	14	140
7/16-14UNC/M10		76	760	23	225
1/2-13UNC/M12		115	1152	34	335
9/16-12UNC/M14		168	1681	49	490
5/8-11UNC/M16		232	2315	67	670
3/4-10UNC/M20		412	4124	120	1195
7/8-9UNC/M22		665	6647	192	1915
1-8UNC/M24		996	9964	286	2855
1,1/8-8UNC/M28		1463	14630	420	4195

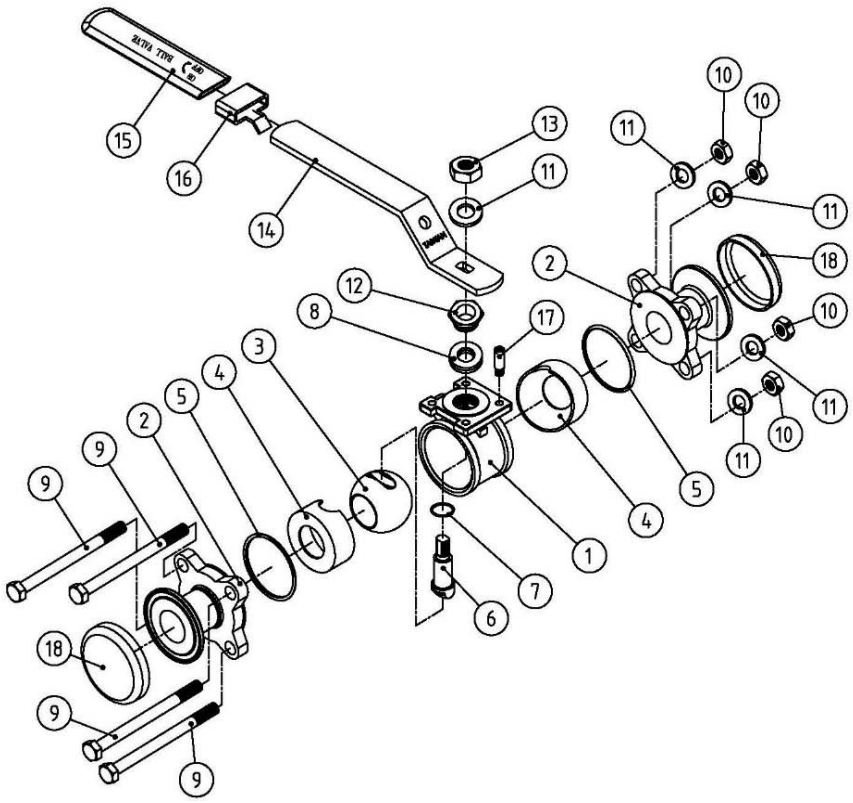
Table B: Torque Figure for Stem Nut Tighten

Valve Size	N-M	KG-CM
1/2"	8~9	80~92
3/4"	8~9	80~92
1"	10~12	103~115
1-1/4"	10~12	103~115
1-1/2"	16~18	161~184
2"	16~18	161~184
2-1/2"	21~23	207~230
3"	21~23	207~230
4"	29~31	288~311

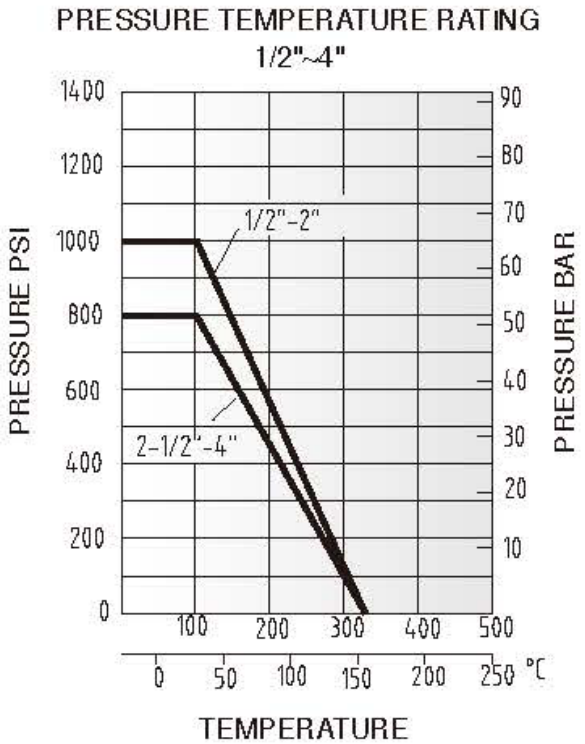


OPERATING MANUAL

CSE Ranges of Ball Valves



Parts list			
Item	Parts name	Q'TY	Material
1	Body	1	ASTM-A351-CF8M (fine casting)
2	Cap	2	ASTM-A351-CF8M (fine casting)
3	ST.ST ball	1	A351-CF8M
4	Seat	2	PTFE
5	Gasket	2	PTFE
6	Stem	1	ANSI-316L
7	Thrust washer	1	PTFE
8	Stem packing	1	PTFE
9	Bolt	4	ANSI-304
10	HEX. nut	4	ANSI-304
11	Spring washer	5	ANSI-304
12	Gland	1	ANSI-304
13	Nut	1	ANSI-304
14	Handle	1	ANSI-304
15	Plastic cover	1	plastic
16	Lock device	1	ANSI-304
17	Stop pin	1	ANSI-304
18	Cover cap	2	plastic



OPERATING MANUAL

CSE Ranges of Ball Valves

Ball valve description

1. The ball valve is designed using under 1000psi work pressure. So, please check your piece pressure must be under 1000W.O.G. to avoid damager.
2. Notice the valve on correct position on or off.
3. Try to use lock design valve and pad-lock for safe position.
4. Use in cylinder, you must tight up the actuator with ISO5211 mount plate.
5. Need often check the valve on correct on-off position.
6. Need maintain valve surface on clean to avoid damage by strong acid.
7. Check handle of valve no loose.
8. When you clean inner valve; notice not lose all of gasket and screw.
9. Can not be used when the screw loose or shortage screw bolt.
10. Be sure checking gasket (depends on your operate situation) or change gasket on schedule to avoid leaking.

NOTICE:

A. PRECAUTION BEFORE USING:

1. Please always stock ball valve on dry and safe area.
2. Don’t damage the Ball Valve’s surface / screw.

B. ASSEMBLY ON THE PIPE LINE:

a. Weld end

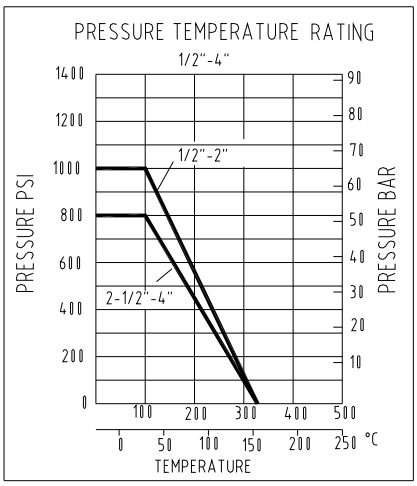
1. Please disassembly all of weld flange for weld jobs to avoid damage the PTFE gasket.
2. When you try re-assembly please clean all of inner surface.
3. Please tight up all of screw bolt.
4. Please try made few times on-off turn.

b. Clamp end & Screw end

1. Please re-check the correct size clamp(ferrule) or thread on valve.
2. Please re-check correct clamp(ferrule)/thread on connect piece.
3. Need tight up valve with connect piece or clamp-ring.

OPERATING MANUAL

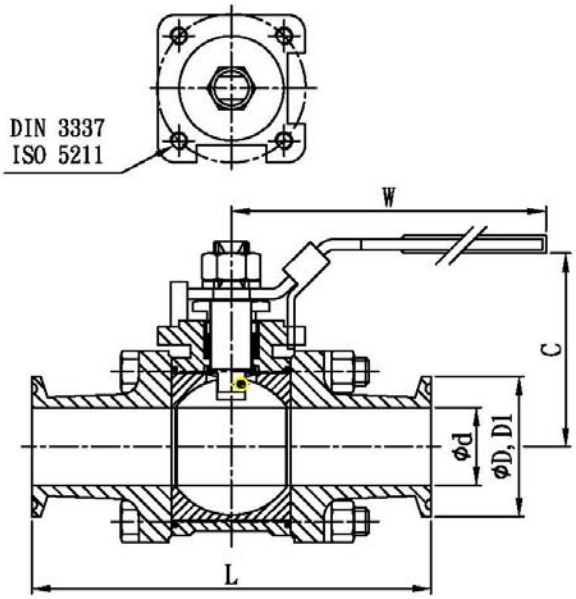
CSE Ranges of Ball Valves



Special note of CSE Ball valve:

* Mounting flange for long neck ISO5211.
* Locking device can be required.
* Blow-Out proof stem.
* 100% air tested under water at 100psi, open and closed positions.
* Hydrostatic test pressure 1/4"~2" 1,500psi, 2 1/2"~4" 1,200psi.

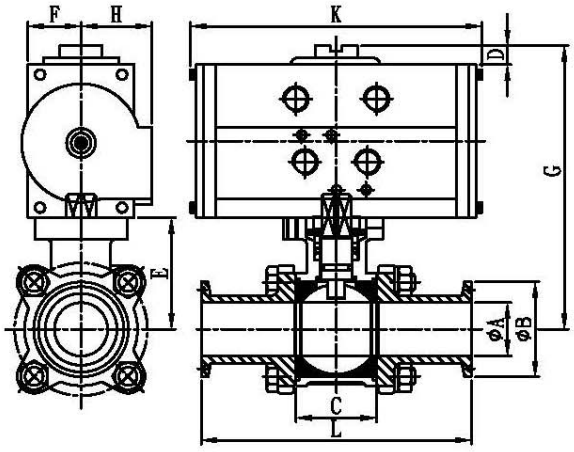
Standard End: Weld & Clamp-End
:Other SMS. DIN. RJT. IDF



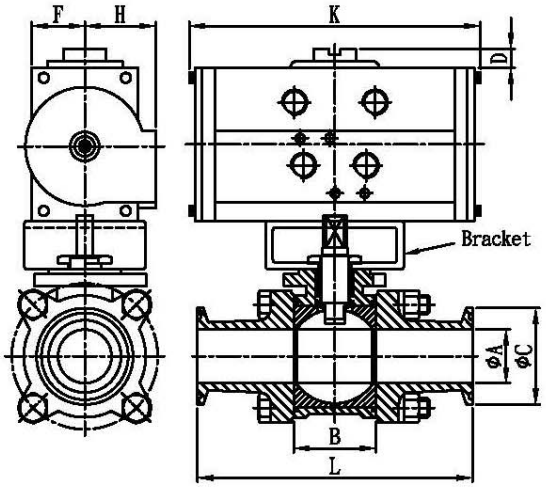
SIZE	1/2"	3/4"	1.0"	1.5"	2.0"	2.5"	3.0"	4.0"
	DN15	DN20	DN25	DN40	DN50	DN65	DN80	DN100
ISO-5211	F03	F03	F04	F05	F05	F07	F07	F10
C	55	60	69	84	92	126.8	136	158.8
L	89	101	114	140	156	197	229	242.7
W	132	131.5	165	194.3	194.3	252	252	332
ϕd	9.4	15.75	22.1	34.8	47.5	60.2	72.9	97.4
ϕD	25	25	50.4	50.4	63.9	77.4	90.9	118.9
ϕD1	12.7	19.05	25.4	38.1	50.8	63.5	76.2	101.6
R	5	5	6.5	8.5	8.5	12	12	16
L1	32.75	36.5	40	43.5	45.75	56	64.5	60.6

OPERATING MANUAL

CSE Ranges of Ball Valves



HIGH MOUNT PLATE DESIGN



LOW MOUNT PLATE DESIGN

SIZE	1/2"	3/4"	1"	1.5"	2.0"	2.5"	3.0"	4.0"
	C-125	C-125	C-250	C-450	C-1000	C-1000	C-2250	C-2250
ISO-5211	F03/F04	F03/F04	F04/F05	F05/F07	F05/F07	F07/F10	F07/F10	F10/F12
φA	9.4	15.75	22.1	34.8	48.5	60.2	72.9	97.4
φB	25	25	50.4	50.4	63.9	77.4	90.9	118.9
C	37	37	42	50	50	72	72	95
D	20	20	20	20	20	20	20	30
E	37	47	57.2	78.2	86.2	109.2	117.7	141.2
F	28.5	28.5	33.6	43.5	54.5	54.5	65	65
G	121	131	156.2	196.2	227.2	250.2	278.7	302.2
H	33.7	33.7	47.8	51.5	64.5	64.5	75.5	75.5
K	120	120	144.3	149.2	183	183	259.6	259.6
L	89	101	114	140	156	197	229	241