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KTN
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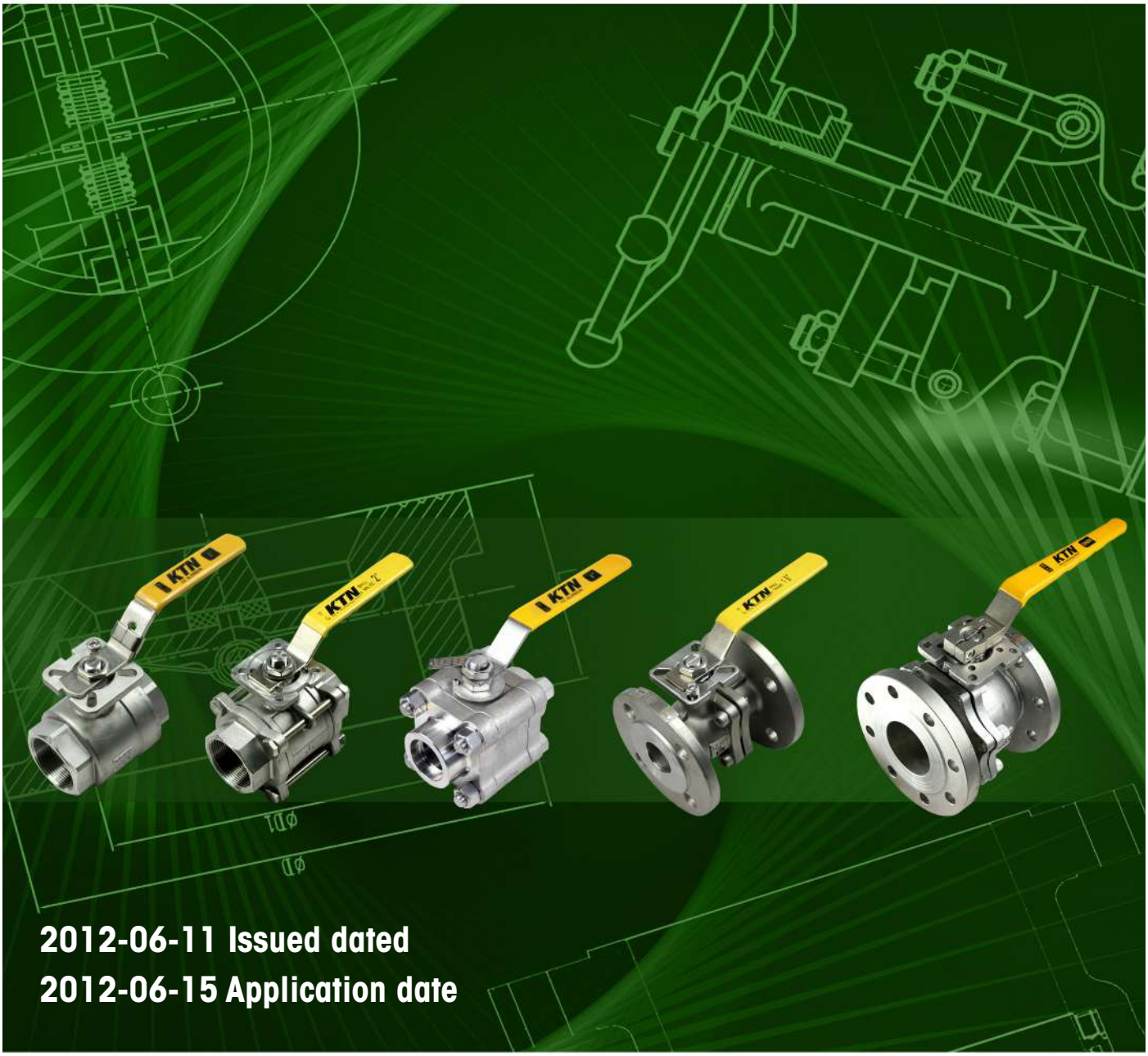
FLOATING MOUNTED BALL VALVE

Installation, operation and maintenance manual



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+34 916 921 732 ktn@ktnvalves.com www.ktnvalves.com

Installation,operation and maintenance manual for ball valve

1. SCOPE

This manual is mainly used for Split floating mounted ball valve with Casted or forged body, operated by manual, electric and pneumatic actuators.

2. TECHNICAL PARAMETER

2.1 MAIN TECHNICAL PARAMETER

SIZE	DN 15~200 mm	NPS 1/2”~8”
PRESSURE	1.0~42.0 MPa	Class 150~2500
Suitable medium	Water, oil, steam, natural gas, ect.	
Body material	WCB, LCB, CF8, CF8M, CF3, CF3M, 4A A105, LF2, F304, F316, F304L, F316L, F51	
Ball type	Floating mounted ball	
Ends	Flange, FNPT, MNPT, BW, SW	
Operation	Wrench, Gear, Motor, Pneumatic	

2.2 TESTING SPECIFICATION

PRESSURE		1.0~42.0 MPa	Class 150~2500
Testing pressure (MPa)	Shell	1.5xPN	
	Seat sealing	1.1xPN	
	Sealing	1.1xPN	
	Air	0.6Mpa	
Suitable working medium		Water, oil, steam, natural gas, ect.	

Note: PN is the pressure for body material under 38°C

3. INSTALLATION

3.1 TRANSPORTATION

1) Valves are packed by plywood cases.Firstly,please move all plywood cases and covers, dries.
2) Before lifting, please check our packing list carefully to ensure the ability of crane is suitable for all valves.
3) Please lift the valve by using lifting lug or the neck of valves.
4) Before installation, please check all specification and parameter to see valves, including type of valve, size, pressure , temperature and materials are suitable for the job condition.
5) During transportation, please don’t move the plastic covers for valves’ flanges, only during the stage of installation, plastic covers can be moved.

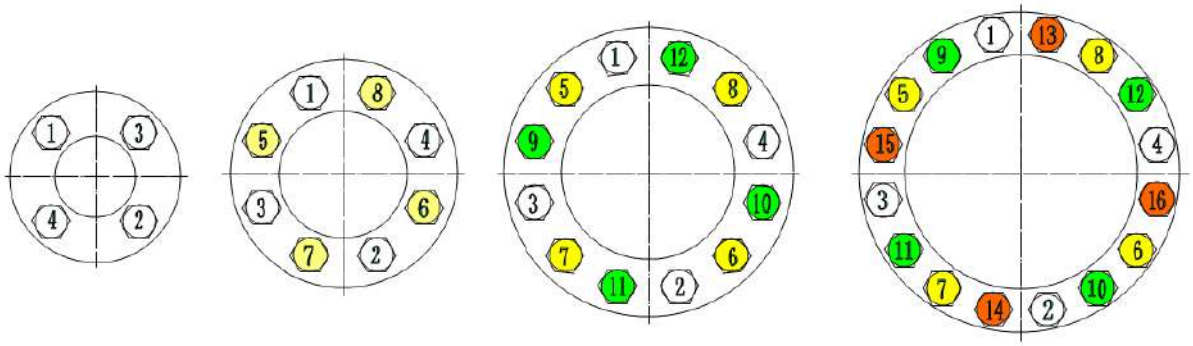
3.2 INSTALLATION

1) Please pay attention to the warning notes on the valves. Move the plastic covers for valves' flan ges and dries in valves.
2) All soft sealing ball valves are Bi-directional design and Bi-directional sealing, you can choose any ends of valves for upstream or downstream, the only rule is convenient for maintenance.
For the metal to metal sealing ball valves, please check whether there is any flow mark on the body of valves,if yes, please fix the valves according to this mark, otherwise, two of ends can be used for upstream or downstream.
3) During installation, valves should be kept full open position.

Note: If valves are kept fully or half close position, surface of ball should be covered by some grease to protect it from being damaged by some abrasive impurities.

3.3 CONNECTION TO COUNTER FLANGES OF PIPE LINE (FOR THE GLANGE ENDS BALL VALVES)

1) Firstly , counter flanges should be welded to the pipeline before valves' installation, move and clean the surface of counter flanges, welding tears and other impurities in the pipeline.
2) Lift or put the valves to the counter flanges and keep some space for the gaskets, then fix the bolts and nuts as below drawings show.



Note: For flange ends of ball valves, it is forbidden to instal counter flanges to valves, then weld it to the pipeline, because the surface of ball and soft sealing seats are easy to be damaged by welding.

3.4 WELDING ENDS BALL VALVES FOR THE PIPELINE

1) 1) Welding ends should be welded to the pipeline according to the welding procedure strictly.
2) During welding, valves should be protected by some covers or the welding procedure without wel ding splash.
3) If pre-heat or other treatments are needed before welding, operators should ensure temperature not to damage the sealing materials.
4) Before final welding to pipeline, operators should use about 25mm covers to protect the area between seat and ball, the area between seat and body and bonnet from be damaged by welding splash during welding operation.
5) During pipeline testing, operators should clean the whole pipeline, remove the welding splash

4. ASSEMBLY AND DISASSEMBLY

4.1 ASSEMBLY

1) For soft sealing floating ball valves, as there are only soft seats, embed and press seats into seat groove in the body. For the trunnion mounted ball valves, seats springs should be fixed in holes first, soft premier seats should be embedded into metal seat rings, then push the whole seats into the body.
2) Assemble Static device and fix all spare parts for the stem.
3) Put ball into valves' body , then fix stem into the groove of ball.
4) Fix left parts(Bonnet) to the valve's body, then tight bolts and nuts.
5) Put packing washer, packing, packing gland ordinally, then tight bolts.
6) For manual ball valves: Assemble location pieces and other small parts, then instal wrench. For gear operated ball valves, fix yoke to body, tight bolts and nuts.Put the pin into groove of stem, then put gear box on the yoke, fix gears.

4.2 DISASSEMBLY

1) For manual operated ball valve:put wrench off, then pin and location pieces ordinally. For gear operated ball valve: Loose bolts and nuts, get gear box, connection bushes, pin and yoke ordinally.
2) Loose bolts and nuts of packing gland, remove packing, packing washer ordinally. Get stem out,and lose static device and other small pieces.
3) Loose bolts and nuts of body, get the bonnet, gasket off ordinally.

5. HYDRAULIC TEST PROCEDURE

5.1 Pipeline testing before pipeline testing,it is forbidden to operate the valve, because there may be some abrasive impurities in the pipeline , which can damage surface of sealing parts easily.
5.2 During testing valves should be kept open position to protect valves from being damaged because of abrasive impurities in the pipeline.
5.3 After clean of pipeline and bore of valves, close valves about 10°, then clean pipeline again to ensure water can wash the impurities in the split of body and seats out.
5.4 Pressure testing should be done according to design standard.

6. OPERATION

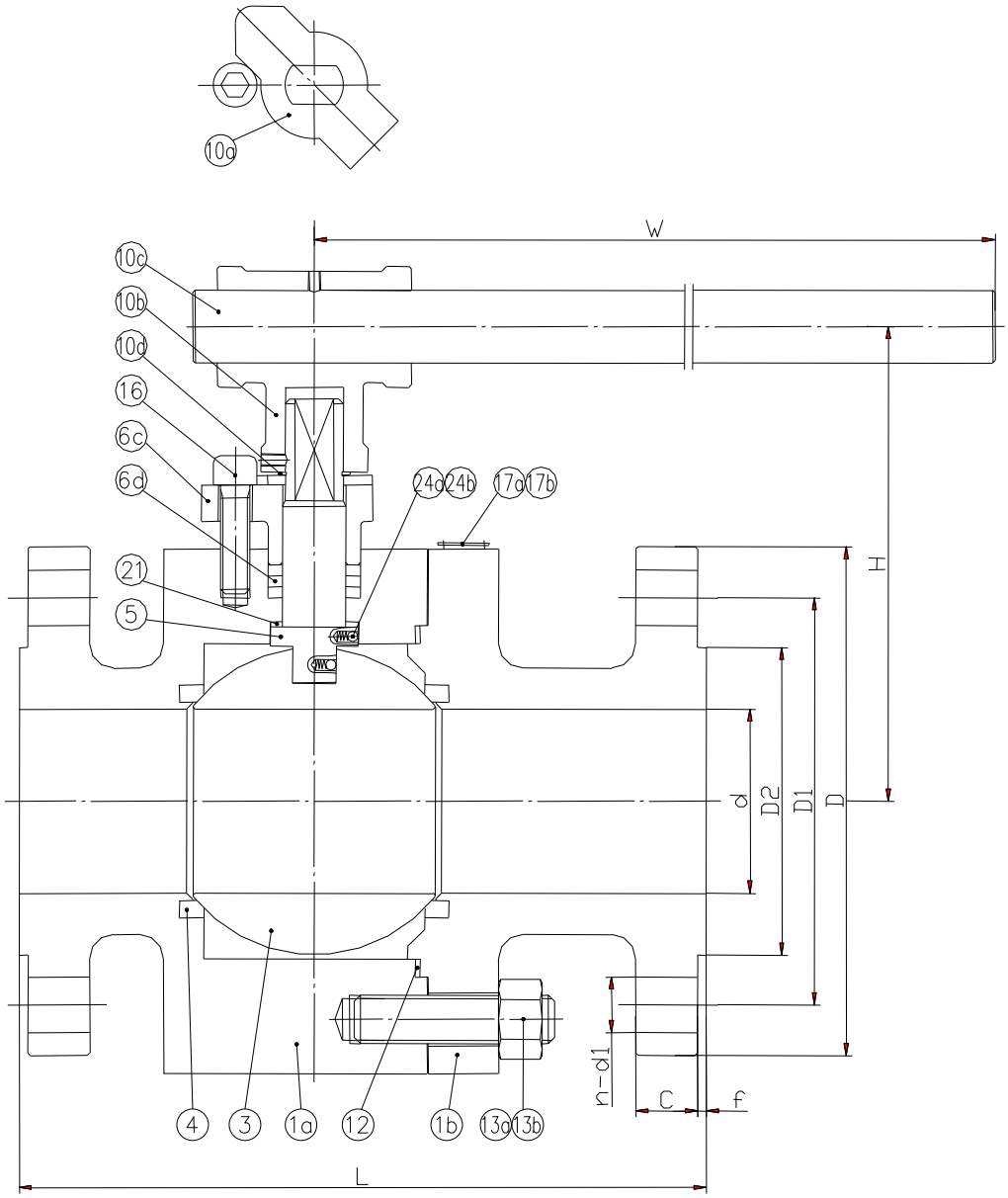
6.1 All ball valves have been set open/close position, therefor, it is forbidden to change these positions.
Open: Anticlockwise 90°
Close: Clockwise 90°
6.2 According to our design, this type of ball valve is used for opening/cutting medium, not controlling medium, so valves should be kept open/close position to avoid surface of ball and sealing parts being damaged because of being washed out by medium.
6.3 Valves should be operated one or two times per week to ensure valve is under good condition.

7. OPERATION

7.1 For long time storage, valves should be kept dry warehouses and greased by some anti-rust oil.Operators should operate valves periodically.
7.1 Correct operation is most part of maintenance.
7.1 Check connection parts and tight the loosen bolts and nuts.

8. DRAWINGS

Floating mounted ball valve



No.	Part name
1a	Body
1b	Bonnet
3	Ball
4	Seat
5	Stem
6c	Packing gland
6d	Packing
10a	Location pieces
10b	Wrench connector
10c	Wrench
10d	Location ring
13a	Bolts
13b	Nuts
16	Screw bolts
17a	Name plate
17b	Stample
21	Anti-push washer
24a	Anti-static deivece