JLX VALVE, S.L.

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BALL VALVES &
2 PIECES TRUNNION BALL VALVES

ASSEMBLY & MAINTENANCE PROCEDURES

CE

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REVIEW CONTROL

PROCEDURE REF.: TI-JLX-AMP-TBV-EN

REV.	DATE	CARRIED OUT BY	APPROVED BY	DESCRIPTION
0	07.07.2012			First issue
1	29.07.2013			General update
2	02.08.2016			General update
3	09.05.2017			Warning text

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1. RECEPTION OF MATERIAL

Receive all assembly parts according to product list, which shall be confirmed by inspector.

2. INSPECTION

Check the number of assembly parts and the cleanliness quality of the interior and exterior of the parts according to product list; identify the positive material of alloy steel castings and surface quality.
Inspect geometric dimension of sphere, surface roughness, ellipticity, surface scratch, pressure balance holes on the sphere.

3. CLEANING

Parts should be cleaned before assembly.

3.1.1 Burr and welding slag on parts surface shall be removed before cleaning.

3.1.2 Before finished products are assembled, parts must be removed debris, oil, etc.

3.1.3 Cleaning solution and anti-rust agent preparation:

a) Cleaning solution is prepared from clear water and washing powder;

b) Anti-rust agents for carbon steel parts are prepared from clear water and 1% sodium nitrite;

c) If required, products shall be degreased with CCl4.

3.1.4 Cleaning method:

a) Oily parts (except castings) shall be cleaned with washing powder. Sealing surface ground shall be cleaned using diesel first and washing powder second. After cleaned, carbon steel parts shall adopt clear water to remove cleaning solution and then be put into anti-rust agent to remove the stain.

b) The castings, which are not suitable for brushing, shall be washed using high-pressure water. After washed, carbon steel castings shall be put into anti-rust agent to remove the stain.

c) For castings suitable for brushing, clean them with washing powder and then use high pressure water to remove the washing powder. Use anti-rust agent to brush parts surface. If required, parts can be degreased with CCl4 after cleaning above.

d) It is necessary to prevent parts surface damage during cleaning, especially flange sealing surface and valve cover sealing surface. During and after cleaning, prevent bumping and scratching.

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4. GENERAL ASSEMBLY

4.1 Preparation before assembly:

a) Finished products shall be assembled at the specified location, which should be cleaned up.

b) Prepare necessary assembly tools. Parts to be assembled should be placed neatly. Parts of different materials and the same specification should be put into plastic box if possible and shall be identified according to needs, preventing wrong assembly.

c) Check whether foreign bodies and rust inside the valve have been cleaned up and whether there is bump or scratch on key parts (sealed parts). If the above-mentioned defects exist, they shall be excluded and then parts can be assembled.

d) Soft sealed ball valve: when assembling, the valve seat sealing surface must be strictly inspected. Use O-shaped gasket of appropriate size.

e) Hard sealed ball valve: select and use proper internal fittings and assembly parts; use spring of the same height; spring pitch shall be basically the same; spring verticality should be proper; seat sealing surface shall completely match sphere; if failed, they shall grind to each other. Abrasive cleaners are prepared from M5 abrasive powder and No. 3 ion oil or hydraulic oil.

4.2 Assembly requirements:

a) General assembly shall be in accordance with assembly drawing order. Clean up the valve cavity and paint anti-rust agent (except valves with degreasing requirements).

b) Wipe clean closing parts (ball, valve flap, sluice board, etc) and valve seat sealing surface with clean and soft fabric.

c) Transmission parts or parts with relative motion (except sealing surface) and flange (or valve cover) gasket shall be painted a thin layer of grease (except products that need degreasing). Any screw thread connected by screw stud shall be coated with a small amount of grease.

d) Flange bolts or ball valve shall be pre-tightened for many times according to the position of symmetry. One-end screwed stud shall be pre-tightened. The height above nut of bolts (or stud) in the same plane should not have significant differences by visual observation. The gap between the two flanges shall be basically the same.

e) Stuffing shall be put into stuffing box circle by circle. 45º cut of each circle shall be mutually intersected 120º. After stuffing is compacted, the depth of stuffing cover into stuffing box should not exceed

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1/3 of effective height of stuffing cover. If the contract stipulates stuffing installation requirements, the installation shall comply with the contract. Stuffing plate should be uniformly compacted to ensure uniform gap around stuffing plate hole and valve rod.

f) For valve that valve stem end has lines or that is installed direction arrow plate, attention should be paid to whether switch direction of the closing parts (sphere, plug body) is consistent with identity of indicator switch.

g) Spot welding shall be firm. For the spot welding of internal fittings in contact with medium, welding rod should be consistent with the main material.

h) Assembled finished products should be carried out open and close movement test. There should be no blocking in the opening and closing process. Switches of closing parts (sphere, valve flap, sluice board, etc) shall be available.

i) Some external components that are not installed before put in storage must be prepared completely and shall be handed over to storehouse keeper when put in storage.

j) When ball valve is installed base spring, the flexibility of the valve switch will be affected. According to the force, spring can be reduced symmetrically (in general, subject to the number in general assembly drawing). After spring is assembled, valve channel pore is not allowed to expose. After assembled, manually check the flexibility of valve opening and closing. Then install handle, turbine head, or pneumatic devices.

4.3 API 6D, PED products and the products required serial number by the contract belong to products with traceability requirements. Assembly should be strictly in accordance with the relevant provisions of product identification and traceability, inspection and test status.

5. CHECKING

Check the flexibility of ball valve opening and closing, and manually examine ball valve handle position, switch location baffle position; examine turbine - type ball valve and turbine head directional needle position. When shaking worm shaft, whether turbine rotation is continuous; check electric head type of switch ball valve, whether electric head rotation direction is consistent with valve opening and closing, and whether position is accurate; whether electric head model meets the drawing requirements, whether the fastener bolts are fastened, whether bolt head is neat.

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6. INSPECTION

According to technical conditions and contractual requirements, carry out hydraulic test, strength testing and sealing test.

After hydraulic test, remove water in valve; carry out anti-rust treatment, and then marked with the valve number, record: valve furnace number, number, material.

7. PAINTING

Clean up the surface debris and surface dust and moisture; give a first coat of primer. After dried, paint topcoat and then dry it.

The painting colour needs to meet the requirements of the technical conditions or contract.

8. OVERALL INSPECTION

Check overall valve appearance quality, paint quality, and set nameplate.

9. PACKAGE

According to technical conditions or contract requirements, follow packing list to pack. After confirmed by inspector, seal box; box surface marking shall be complete, firm and reliable. Check whether box is in line with the standards.

10. FINAL INSPECTION

Inspect whether packing quantity, internal and external packaging quality identification on wooden box surface, packing list and packaged objects are consistent; sign the list, and handle storage procedures.

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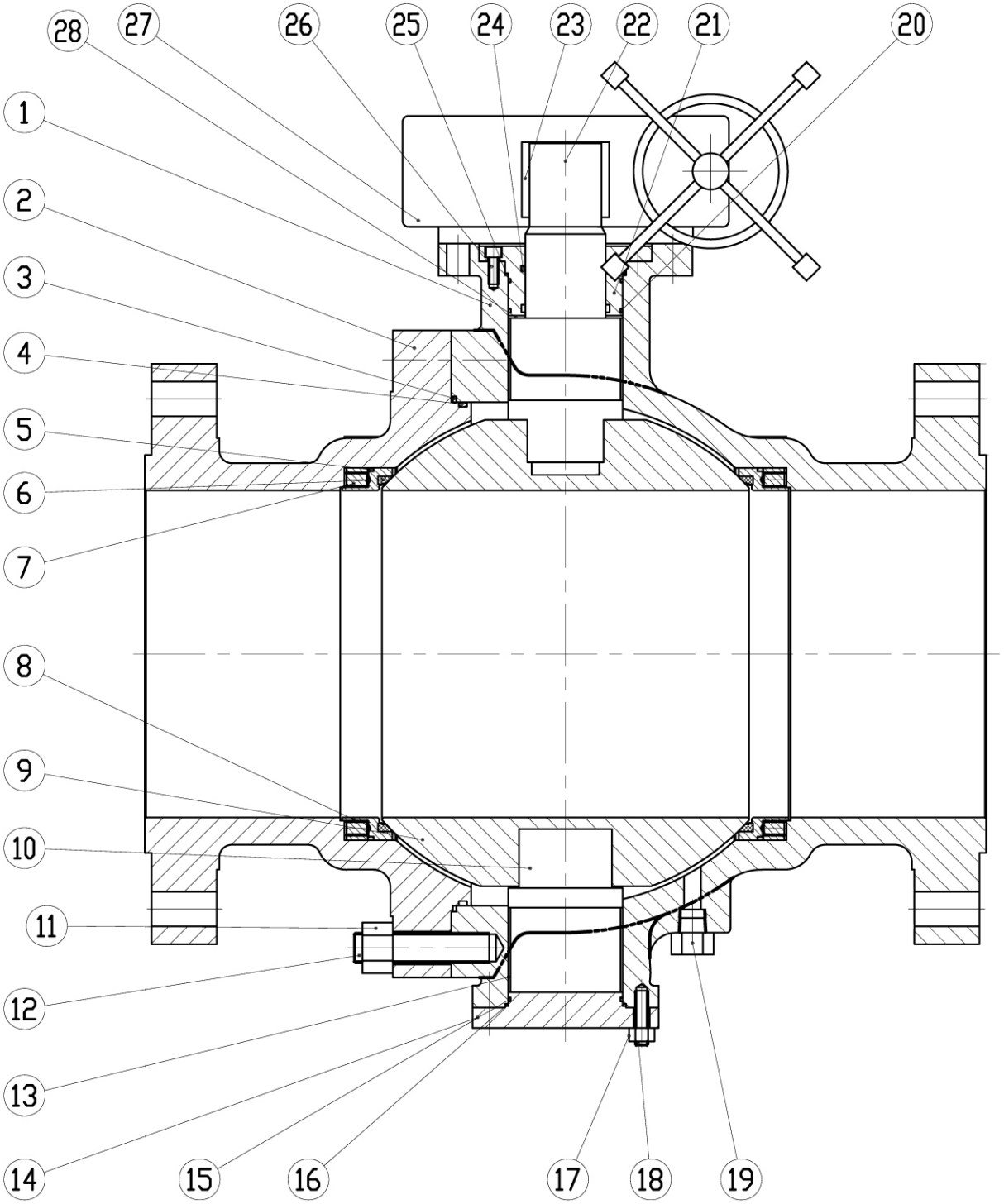
11. GENERAL DRAWINGS



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12. TROUBLESHOOTING: CAUSES AND SOLUTIONS

EXTERNAL LEAK. THE PRODUCT IS LEAKING AT THE STEM	**Most likely the gaskets & Packing has completely worn or is deteriorated.**		• **Replace the gasket & packing**
INTERNAL PRODUCT LEAK (CLOSED VALVE)	**Normal wear and tear of the seat seals**		**Replace the seat**
	Premature wearing of seals	**Seats worn or affected by the product.** **Excessive pressure on line.** **Work temperature too high (nuts and screws)** **Loss of sealability (vibrations)** **High manoeuvre periodicity (num. operations/tour).**	• **Change the seats for others made of a different material more suitable to the product.** • **Tighten loose parts** • **Clean frequently** • **Decrease valve operating / closing frequency**
THE VALVE IS JERKING	**The gaskets are jamming up**		• **Lubricate with soapy water or lubricant compatible with the gasket material and the product & seals**
	The actuator does not operate the valve efficiently		• **Check the supply pressure of the compressed air.** • **Replace with a larger sized actuator**
	Excessive pressure on line		• **Check the installation pressure and adjust whenever necessary**
THE VALVES DOES NOT OPEN/CLOSE	**Deformation of seats** **Incorrect operation of the actuator** **Worn actuator components** **Dirt in actuator or valve cavity**		• **Replace the seats with others of different quality, if prematurely deteriorated.** • **Replace from NC to NO** • **Check the actuator** • **Check the compressed air pressure**
WATER HAMMER	**The valve closes too fast**		• **Adjust the closing speed of the actuator (with a flow regulator)**

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 ATTENTION: This equipment doesn't require any specific maintenance. The end user must have a specific maintenance program adapted to the specific usage rate according to the service and environmental conditions.
It is not recommended to use the valve for an extended period of more than 2 years without a minimum annual maintenance and in the most severe cases a minimum of 6 months.

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