

MANUAL

Ball valve AL 26-PZ

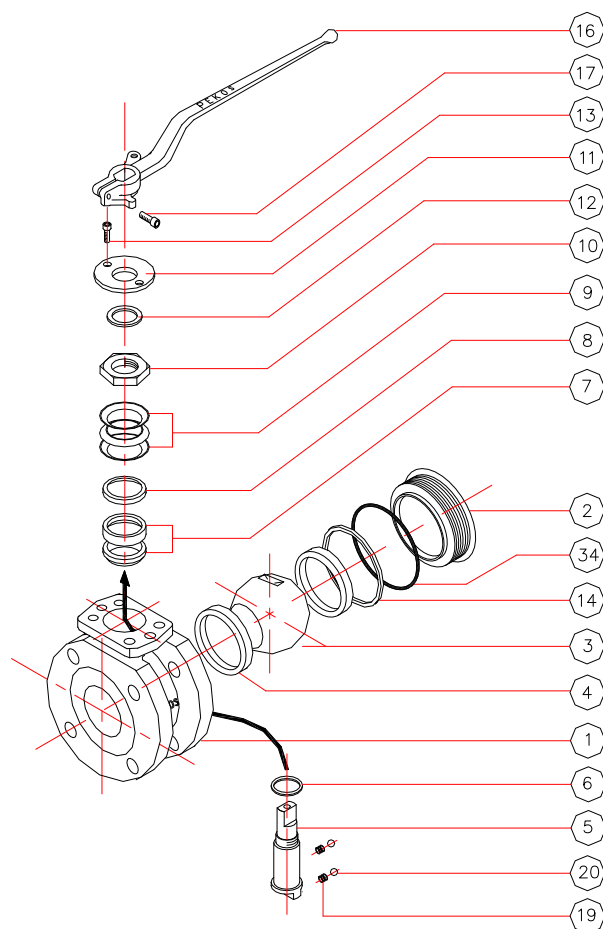
Pos	Qty	Part
1	1	Body
2	1	End cap
3 **	1	Ball
4 *	3	Seat
5 **	1	Stem
6 *	1	Stem seal
7 *	1	Stem packing
8 *	1	Gland packing
9 *	3	Spring washer
10 **	1	Stem nut
11	1	Cover
12	1	Cover ring
13	-	Cover bolt
14 *	1	Body seal 1
16	1	Handle
17	1	Handle bolt
19 **	2	Spring
20 **	2	Ball
34 *	1	Body seal 2

* Start-up: 5% of ordered quantity

** Metallic parts

Suggested material to be checked at least every 5 year service.

See point 5 (Maintenance)



1. SCOPE

This manual is intended as a guide to assist customers or end-users in the correct storage, installation and maintenance of Pekos ball valves.

2. APPLICABILITY

This manual is applicable to wafer type Pekos ball valves as per norm DIN in the following sizes and pressures: PN16-PN40 DNI5-DNI100.

3. STORAGE

3.1 Supplying conditions

Cast iron and carbon steel ball valves are supplied with a phosphating treatment to protect them against corrosion. These conditions are standard, but they can be changed on demand.

3.2 Maintenance during the storage

- Stainless steel valves will be stored separately from the carbon steel and cast iron valves in order to avoid corrosion in the stainless steel ones.
- Valves must remain in open position with plastic end covers fitted.
- If possible it would be advisable to leave the ball valves in their own packing cases.
- Valves to be stored for a long time shall be checked by the quality control personnel every 6 months.
- Degreased valves shall only be unpacked before installation.

3.3 Environment conditions

- Valves shall be stored in dry conditions. Other corrosive environment conditions must be also avoided.
- Valves must be protected against ambient dust.

4. INSTALLATION

- Verify that valves have not been damaged during transit. Inspect inside of the valves and the pipeline of the installation to be able to verify there are no strange particles.
- It is advisable to use protective filters during the installation and check-in period while the possibility of dirt or even oxidation of the pipes exists. They have to be used until pipes are absolutely free of particles in suspension.
- If possible, valve shall be mounted in such way to allow periodic inspections.
- Valves are bidirectional, so fluid can run in both directions.
- Valves can be mounted in any position but it is advisable to mount the valves with the stem in vertical position.
- It is necessary to obtain correct alignment and parallelism to avoid any kind of stress.
- Once the installation is completed, valve must be operated for at least one opening and closing action to ensure perfect operation.
- After cleaning, protective filters could be removed.
- Protective filters should remain installed on dirty applications.

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5. MAINTENANCE

Pekos recommends inspecting the valves at least every five (5) years. These inspection intervals could be affected by the process service (fluid, temperature, service, and cycles), and environmental condition.

5.1 Valves revision

Wafer type Pekos ball valves do not require lubrication and the packing does not need maintenance.

Seats (4), stem packing (7), body seal 1 (14), ball (3), body seal 2 (34) and stem (5) can be replaced easily using common tools.

As replacement pieces the ones indicated in the table 1 in page 1 are recommended.

Prior to carrying out work on valves the pipeline must be completely empty, including the ball valve body cavity by half opening valve to allow any pressure build up to escape.

Care must be taken to avoid contact with dangerous or toxic chemical products. The valves must be thoroughly cleaned, in particular the body cavity, before handling and dismantling.

5.2 Stem leakage

The packing system of the stem (5) of Pekos DIN wafer type ball valves is designed for a long life. The spring washers (9) compensate any looseness inside the packing. **The leakage cannot be avoided by tightening the stem nut (10) because it is fully tightened.** If leakage happens, stem seals should be replaced as explained below:

- a) If the valve contains handle, loosen the handle bolt (17) and remove the handle (16).
- b) Loosen the cover bolts (13) and remove the cover (11) from the stem (5) with the cover ring (12)
- c) Loosen the stem nut (10) using a tubular key.
- d) Remove the spring washers (9), the gland packing (8) and the packing ring (7), and replace them.
- e) Reassemble the pieces accordingly as it is indicated in point 6.

5.3 Body leakage

Wafer type Pekos ball valves are built in just one body (1) and an end cap (2) that is threaded into the body 1 (1). In case of leakage the correct tightening of the end cap (2) should be checked and, if necessary, replace the body seal 1 (14) and the body seal 2 (34), proceeding as explained next:

- a) Loosen and remove the end cap (2) using the correct fork key. If required, it could be supplied by PEKOS.
- b) Replace the body seal 1 (14) and the body seal 2 (34) that are placed in the body (1).
- c) Reassemble the pieces accordingly as it is indicated in point 6.

5.4 Seat leakage

In case of seat (4) leakage, replacing them is required as indicated next:

- a) Being the valve in closed position, separate the end plug (2) from the body (1) (watch 5.3 section) in order to inspect the ball (3) and the seats (4) (watch 5.3 section). Remove the ball (3). If required, to remove it, hit it gently with a soft material tool.
- b) Check the damage caused by erosion or other defects in all the components, replacing them if necessary
- c) Reassemble the pieces accordingly as it is indicated in point 6.

6. ASSEMBLY

- a) Make sure that the pieces are perfectly clean, especially in the locations of seats & seals.
- b) Put the seats (4) in the housing of the body (1) and the end cap (2). Make sure that they are properly settled and, if it is necessary, hit them with a tool made of a soft material.
- c) Put the stem seal (6) in the stem (5). Check the correct operation of the antistatic mechanisms (pos.19 and 20).
- d) Assemble the stem (5) in the valve from the interior of it as it is showed by the arrow in the main figure.
- e) Assemble the next pieces in the stem (5): stem packing (7), gland packing (8), spring washers (9) and stem nut (10), **fully tighten the stem nut (10)** placing the stem (5) in closed position.
- f) Carefully introduce the ball (3) in the body (1) matching the alignment marks of the ball and the stem.
- g) Place the body seal 1 (14) in its housing in the body (1).
- h) Place the body seal 2 (34) in its housing in the end cap (2).
- i) With the valve in closed position and taking care of its perfect positioning, introduce the end cap (2) in the body (1) and using the face spanner, **do fully tighten.**
- j) Assemble the cover ring (12) in the cover (11) and place both in the stem (5), place the cover bolts (13) and tighten them.
- k) If the valve contains handle, place the handle (16) in its housing in the stem (5), tighten the handle bolt (17).
- l) Slowly cycle the valve until completing 1 cycle to ensure coupling between the seats (4) and the ball (3).
- m) Carefully cycle the valve twice in order to check the correct working. Stem (5) should rotate smoothly offering resistance as indicated by the manufacturers torque figures. Tests should be carried out according to EN 12266-1, at the pressure rating that corresponds to the valve, before reinstallation.