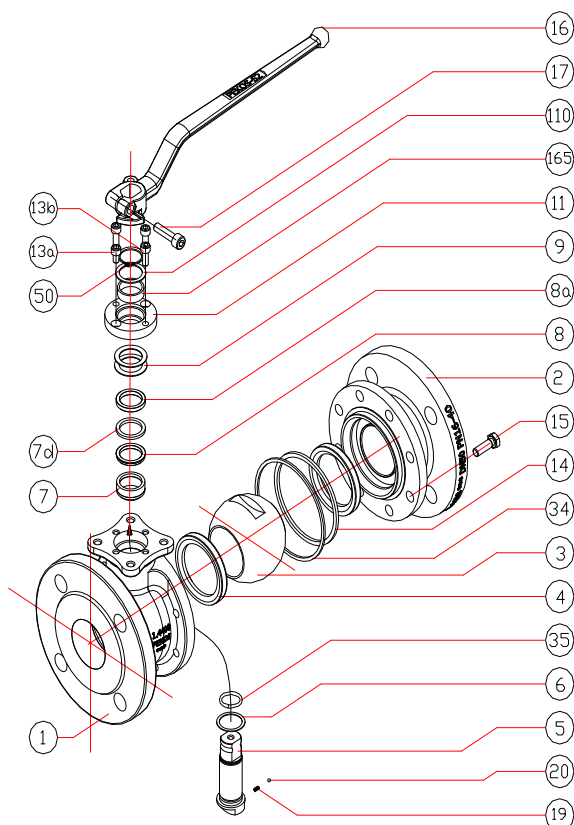


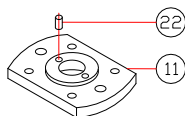
MANUAL

Ball valve AL 27-PZ

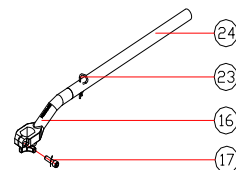
ANSI Class 150-600



From NPS 1/2" up to NPS 1 1/4"



From NPS 6" up to NPS 8"



- * 2 up to NPS 6", 3 from NPS 8"
- ** 2 up to NPS 4", 4 from NPS 6"
- Start-up: 5% of ordered quantity
- Soft parts kit
- Metallic parts

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

See point 5 (Maintenance)

Table I

Pos	No	Part
1	1	Body 1
2	1	Body 2
•• 3	1	Ball
• 4	2	Seat
•• 5	1	Stem
• 6	1	Stem seal
• 7	*	Stem packing
• 7d	1	Stem packing d
8	1	Gland packing
8a	1	Gland packing a
9	*	Spring washer
11	1	Cover
13a	**	Cover bolt 1
13b	2	Cover bolt 2 - NPS 1 1/2" - 8"
• 14	1	Body seal 1
15	-	Body bolt
16	1	Handle
17	1	Handle bolt
•• 19	1	Spring
•• 20	1	Antistatic ball
22	2	Stop pin - NPS 1/2" - 1 1/4"
23	1	Handle pin - NPS 6" - 8"
24	1	Lengthening handle - NPS 6" - 8"
• 34	1	Body seal 2
• 35	1	Stem O-ring
50	1	Subjection ring
110	1	Subjection ring seal - NPS 6" - 8"
• 165	1	Stem bearing

1. SCOPE

This manual is intended as a guide to correct storage, installation and maintenance of AL 27-PZ ball valves.

2. APPLICABILITY

This manual is applicable to AL 27-PZ floating ball valves as per norm ANSI two pieces with full bore and 2 ways. Nominal sizes and pressures covered by this manual: Class 150 NPS 1/2" - 8", Class 300 NPS 1/2" - 4", Class 600 NPS 1/2" - 2".

3. STORAGE

3.1 Supplying conditions

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

3.2 Maintenance during the storage

- a) Stainless steel and carbon steel valves should be stored separately, to protect the stainless steel against corrosion.
- b) Valves must remain in open position with plastic end covers fitted.
- c) If possible it would be advisable to leave the ball valves in their own packing cases.
- d) Valves to be stored for a long time shall be checked by the quality control personnel every 6 months.
- e) Degreased valves shall only be unpacked before installation.

3.3 Environment conditions

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

4. INSTALLATION

- a) 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.
- b) 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.
- c) If possible, valve shall be mounted in such way to allow periodic inspections.
- d) Valves are bidirectional, so fluid can run in both directions.
- e) Valves can be mounted in any position but it is advisable to mount the valves with the stem in vertical position.
- f) It is necessary to obtain correct alignment and parallelism to avoid any kind of stress.
- g) Once the installation is completed, valve must be operated for at least one opening and closing action to ensure perfect operation.
- h) After cleaning, protective filters could be removed.
- i) Protective filters should remain installed on dirty applications.

Table 2

NPS	Bolt
1/2" - 1 1/2"	M 8
2" - 2 1/2"	M 10
3" - 4"	M 12
6" - 8"	M 16

MANUAL

Ball valve AL 27-PZ

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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

If correctly used AL 27-PZ ball valves require no lubrication and the *packing does not need maintenance*. Seats (4), stem packing (7 and 7d), body seals (14 and 34), ball (3) and stem (5) can be replaced easily using common tools. As replacement pieces is advisable to follow the instructions below table in page 1. Prior to carrying out work on valves the pipeline must be completely evacuated, 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 stem packing system in the stem (5) of AL 27-PZ ANSI ball valves has been designed for long life. The spring washers (9) compensate any looseness inside the packing. In case of leakage, the stem seals shall be replaced as it is shown:

- If the valve contains handle, loosen the handle bolt (17) and remove the handle (16).
- Loosen the cover bolts (13a and 13b) and remove the cover (11).
- Remove the spring washers (9), gland packing (8 and 8a) and the stem packing (7 and 7d) and replace them.
- Reassemble the pieces accordingly as it is indicated in point 6.

5.3 Body leakage

These ANSI floating ball valves are constructed in 2 pieces, body 1 (1) and body 2 (2). Body bolts should be checked (table 2, page 1) for tightness. If leakage occurs and if necessary, body seals (14 and 34) should be replaced as it is shown:

- Make alignment marks on the body (1) and body 2 (2) prior to dismantling, to ensure a correct alignment when reassembling. Remove body bolts (15) and disassemble body 2 (2).
- Substitute the body seals (14 and 34).
- Reassemble the pieces accordingly as it is indicated in point 6.

5.4 Seat leakage

If leakage occurs, seats (4) must be replaced as it is shown:

- Maintain the valve in the closed position; loosen and remove body bolts (15) and remove body 2 (2) from body 1 (1) to check the ball (3) and the seats (4). To remove the ball (3), if necessary, bang it with a soft tool gently.
- Check the rest of components, and replace them if necessary.
- Assemble the pieces accordingly as it is indicated in point 6.

6. REASSEMBLY

- Prior to reassembly all components body cavity should be cleaned of any incrustation, dirt, rust etc, especially in the locations of seats and seals.
- Put the seats (4) into their housings of the body 1 (1) and the body 2 (2). Check if they are well settled, and if necessary bang it with a soft tool gently.
- Put the stem seal (6) and the stem o-ring (35) onto the stem (5). Check the antistatic devices (pos. 19, 20).
- Assemble the stem (5) into the valve as it is indicated by the arrow in the main figure.
- Assemble the following components into the body 1 (1) introducing them through the stem (5) in this order: stem packing (7), gland packing (8), stem packing d (7d), gland packing a (8a) and spring washers (9), putting the stem (5) in closed position.
- Assemble the stem bearing (165) in the cover (11), and put both of them in the body introducing through the stem (5). Match them to the body 1 (1) by means of the cover bolts (13a and 13b). Put the subjection ring seal (110) and the subjection ring (50).
- Introduce carefully the ball (3) into the body 1 (1) aligning the ball groove with the stem.
- Put the body seals (14 and 34) into their housing of the body 2 (2).
- Maintaining the valve in its closed position and ensuring that alignment marks are matched, joint the body 1 (1) and the body 2 (2). Assemble the body bolts (15) evenly tighten in diagonal using a torque wrench. For torque values, please contact us.
- If the valve contains handle, put the handle (16) into its housing in the stem (5), and tighten the handle bolt (17).
- Slowly cycle the valve until completing 1 cycle to ensure coupling between the seats (4) and the ball (3).
- Carefully cycle the valve twice in order to check the correct working. Stem should rotate smoothly offering some resistance. Tests should be carried out according to API598 before reinstallation.

The end user is responsible to check the compatibility of the service media/fluid with the valve materials.