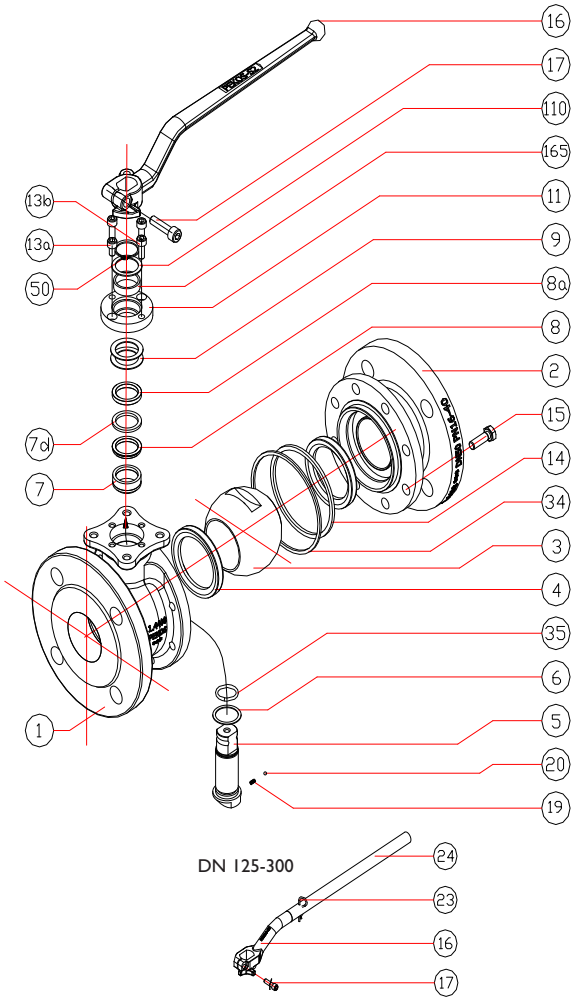
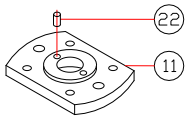
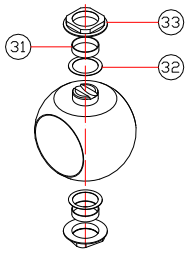
MANUAL
Ball valve AL 24-PZ / AL 25-PZ





Guided ball
PN 10-15 DN 250-300
PN 25-40 DN 150-300



* 2 up to DN 150, 3 from DN 200
** 2 up to DN 100, 4 from DN 125

• Start-up: 5% of ordered quantity
•• Soft parts kit
••• Metallic parts

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

Table 1

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 - DN 40-300
• 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 - DN 15-32
23	1	Handle pin - DN 125-300
24	1	Lengthening handle - DN 125-300
• 31	2	Bearing
• 32	2	Bearing disc
33	2	Support bearing
• 34	1	Body seal 2
• 35	1	Stem O-ring
50	1	Subjection ring
110	1	Subjection ring seal - DN 125-300
• 165	1	Stem bearing

Table 2 - Tightness value in Nm (bolt pos 15)

DN	Bolt	Material A2-70 and A4-70	
		Min.	Max.
15-40	M 8	19	21
50-65	M 10	38	42
80-100	M 12	66	74
125-200	M 16	162	183
250-300	M 20	317	357

1. SCOPE

This manual is intended as a guide to correct storage, installation and maintenance of ball valves AL 24-PZ/AL 25-PZ with floating and guided ball.

2. APPLICABILITY

This manual is applicable to AL 24-P/ZAL 25-PZ two way full bore ball valves according to DIN type.

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.

3.3 Environment conditions

a) Valves shall be stored in dry conditions. Other corrosive enviroment 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 instalation 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 neccessary 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.

MANUAL
Ball valve AL 24-PZ / AL 25-PZ

5. MAINTENANCE

It is recommended to inspect 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 24-PZ/AL 25-PZ ball valves require no lubrication and the *stem packing requires no adjustement*. Ball (3), seats (4), stem seal (6), stem packing (7 and 7 d), body seals (14 and 34), bearings (31), bearing discs (32), stem O-ring (35) and stem bearing (165) can be replaced using standards tools. Recommended spare parts are shown at the bottom of table 1 on 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 AL 24-PZ/AL 25-PZ DIN 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:

a) If the valve contains handle, loosen the handle bolt (17) and remove the handle (16).
b) Remove the subjection ring seal (110) and the subjection ring (50).
c) Loosen the cover bolts (13a and 13b) and remove the cover (11).
d) Remove the spring washers (9), gland packing (8 and 8a) and the stem packing ring (7 and 7d) and replace them.
e) Reassemble the pieces accordingly as it is indicated in point 6.

5.3 Body leakage

These DIN floating and guided ball valves are constructed in 2 pieces, body1 (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:

a) 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).
b) Substitute the body seals (14 and 34) .
c) 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:

a) 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.
b) Check the rest of components, and replace them if necessary.
c) Assemble the pieces accordingly as it is indicated in point 6.

6. REASSEMBLY

a) Prior to reassembly all components body cavity should be cleaned of any incrustation, dirt, rust etc, especially in the locations of seats and seals.
b) 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.
c) Put the stem seal (6) and the stem o-ring (35) onto the stem (5). Check the antistatic devices (pos. 19, 20).
d) Assembly the stem (5) into the valve as it is indicated by the arrow in the main figure.
e) 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.
f) 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).
g) If the ball is guided, insert the bearings (31) into the support bearings (33). Assemble bearing disks (32) and the support bearings (33) in the stumps of the ball (3).
h) Introduce carefully the ball (3) into the body 1 (1) aligning the ball groove with the stem.
i) Put the body seals (14 and 34) into their housing of the body 2 (2).
j) 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 and the values indicated in table 2 at page 1.
k) Put the subjection ring seal (110) and the subjection ring (50).
l) If the valve contains handle, put the handle (16) into its housing in the stem (5), and tighten the handle bolt (17).
m) Slowly cycle the valve until completing 1 cycle to ensure coupling between the seats (4) and the ball (3).
n) 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 EN 12266-1 before reinstallation.

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

AXEL LARSSON

Telephone +46 10 455 97 00 • sales@axel-larsson.se • www.axel-larsson.se

Head Office: Truckvägen 12, P.O. Box 805, SE-194 28 Upplands Väsby (Stockholm), Sweden.