

Neles™ capping valve

Series PZ

Installation, maintenance and
operating instructions

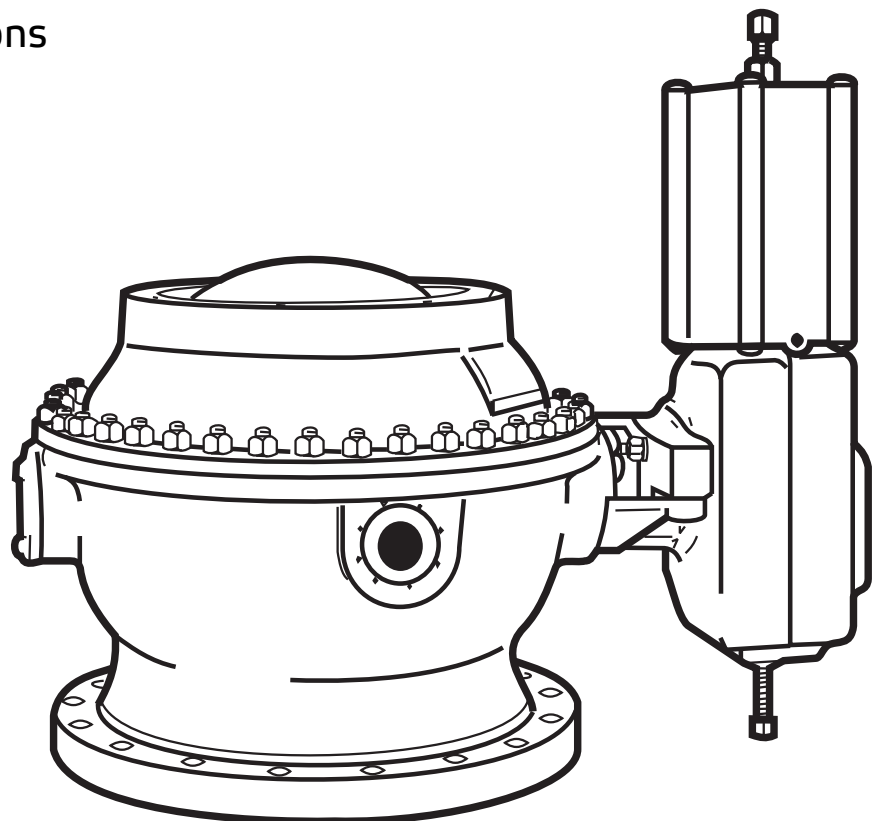


Table of Contents

GENERAL	3	INSTALLING THE ACTUATOR	9
Scope of the manual	3	Adjusting open and closed positions	9
Valve construction	3	TOOLS	11
Valve markings	3	ORDERING SPARE PARTS	11
Specifications	3	EXPLODED VIEW AND PARTS LIST	12
Valve performance	4	REAR TILTING DEVICE	13
Valve approval	5	SAFETY INTERLOCKING (JAMMER, REAR TILTING DEVICE)	14
Recycling and disposal	5	DIMENSIONS	15
Safety precautions	5	TYPE CODE	16
Welding notes	5		
TRANSPORTATION, RECEPTION AND STORAGE	5		
INSTALLATION AND COMMISSIONING	6		
General	6		
Mounting the valve on the digester	6		
The actuator	6		
Commissioning	6		
MAINTENANCE	6		
General	6		
Changing the gland packing	7		
Bearings (5, 22)	7		
Body joint	7		
Ball and seating	7		
Dismantling the valve	7		
Valve assembly	8		

READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.

If you require additional assistance, please contact the manufacturer or manufacturer's representative.

SAVE THESE INSTRUCTIONS!

Addresses and phone numbers are printed on the back cover.

Subject to change without notice.

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1 GENERAL

1.1 Scope of the manual

This manual provides the essential information needed by users of PZ capping valves. If you require further information on actuators and instrumentation, see the separate installation, maintenance and operation instructions for the various models.

1.2 Valve construction

Neles™ PZ is a capping valve designed for use in batch digesters. The valve is fitted to the digester from the lower body flange.

The upper body half has a metal seat into which the ball is pressed by a mechanical tilting device when the digester is not pressurized. The tilting device is pre-tightened during installation, and no adjustments are required during operation. The pressure of the digester further tightens the seal provided by the tilting device.

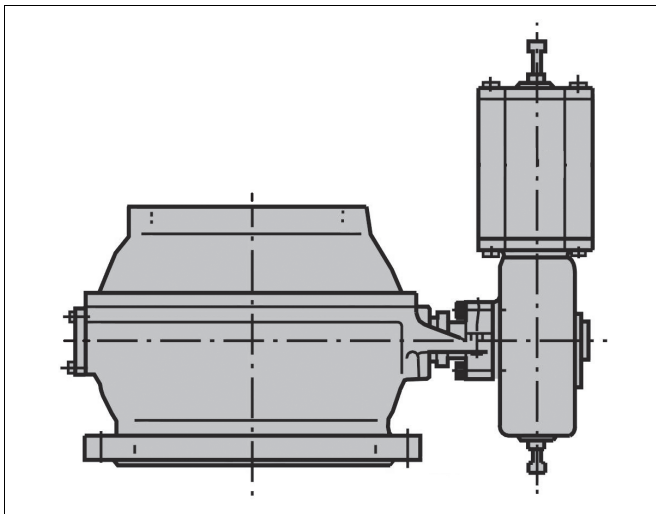


Fig. 1 PZ and B1C

The mounting holes for the chip feeding chute are in the top flange plane of the valve.

The ball and stem are integrally cast. The hard-chromed ball surface ensures low friction and high corrosion resistance. The full-bore ball and the flow port's liner insert allow smooth passage of the chips.

Optionally there are electrical or mechanical interlocking devices available.

The electrical interlocking device consists of pressure transmitters (2 pcs.), relays, solenoid valves and limit switches.

See the application report no: 2611/01/02en * 12/2011, Safety interlocking system, "ACC".

The mechanical interlocking device B1CP is based on a spring-return cylinder which operates a lever inside the actuator. This lever locks the valve in the closed position.

These devices prevent the valve from opening while the digester is pressurized.

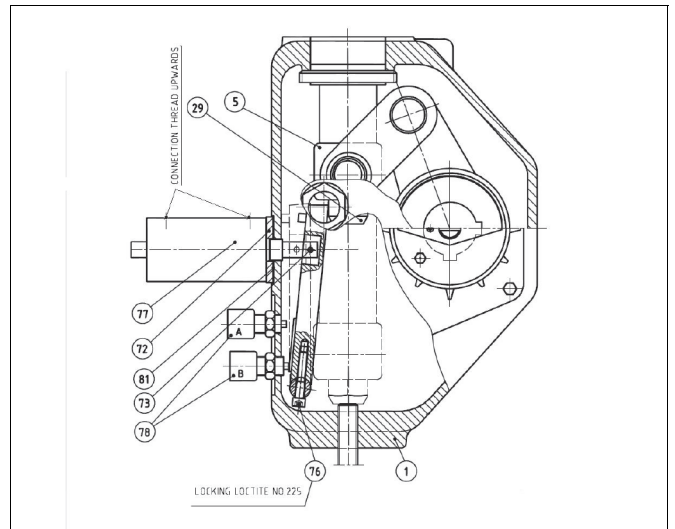


Fig. 2 B1CP
Actuator equipped with automatic latching device for closed position.
Design is made mainly for actuator locking device of capping valve.
No free motion.

1.3 Valve markings

The valve has an identification plate (Fig. 3). The upper body half is marked with the pressure rating, nominal size, batch number, body material and manufacturer's code.

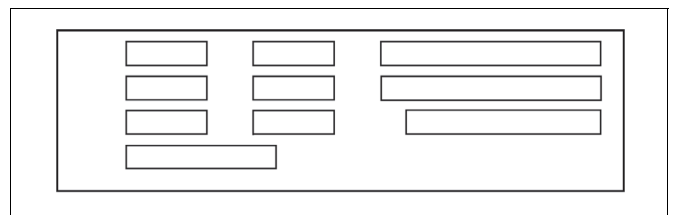


Fig. 3 Identification plate

Identification plate markings are:

1. Body material
2. Ball material
3. Stem material
4. Seat material
5. Maximum operating temperature
6. Minimum operating temperature
7. Maximum shut-off pressure differential/temperature
8. Type designation
9. Valve manufacturing parts list no.
10. Pressure class

1.4 Specifications

Product type:	Full-bore ball valve Ball and stem integrally cast Split-body design Metal-seated Custom-fit lower flange
Body pressure class:	PN 16 and ANSI 150
Size range:	DN 500, 600 and 750 NPS 20", 24" and 30"

Max. temperature:	+200 °C / 390 °F
Flanges:	To order
Standard materials:	
Body halves:	ASTMA 351 gr. CF8M
Ball:	ASTM A 351 gr. CF8M + hard-chrome
Bearings:	Hard-chromed PTFE + UNS S21800
Seat:	AISI 316 + cobalt based alloy

1.5 Valve performance

Actuators are factory set for proper opening times.

Operation time

During start-up or other exceptional circumstances, capping valves must meet extreme conditions where pressure, impurities and high operational velocities can cause material damages (ball / seat ring). Therefore PZ capping valves have a recommended minimum operation time for 90° rotation as listed:

Valve size	Adjusted operating time with 6 bar supply pressure, B1C actuator
PZ 500 (20")	20 seconds
PZ 600 (24")	24 seconds
PZ 750 (30")	30 seconds

Adjusted operating times are factory preset values, obtained with restrictor valves installed in actuator air supply lines between solenoid valve and actuator cylinder.

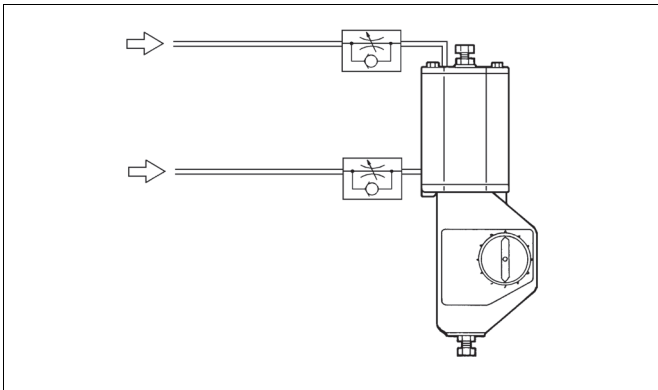


Fig. 4 Speed control

Vacuum during cooking

In modern cooking processes there can be sequences where digester vessel operates below atmospheric pressure ie. in vacuum conditions.

In such cases it is recommended not to exceed 30 kPa (0.3 bar) vacuum with PZ capping valve.

If higher values are expected, please contact the manufacturer. See also Section 1.5.5.

Valve tightness

All PZ capping valves are factory tested to fulfill ISO 5208 rate D leakage test.

Corresponding leakage values, tested with water 1.1 x nominal pressure.

DN	NPS	ml/min, water
500	20	3.0
600	24	3.6
750	30	4.5

Additional arrangements

During normal sequences of cooking the PZ-series locked scraping metal seat keeps the hard chrome plated ball surface clean ensuring long lasting tightness and smooth operation. However, in practice, it is difficult to totally prevent chips, sawdust, dirt or any other contaminants from adhering to the ball surface, particularly during the cooking sequence (temp about 175 °C / 347 °F), causing possible ball surface damages.

Valmet realizes that some mills may require a water wash/spray to the ball surface and others may require a water bed. Information on these additional services may be found in bulletin 2611/01/05 or contact your nearest Valmet business office: www.neles.com/contact/

Rear tilting device

The support (38) can be replaced with a rear tilting device which locks the ball against the seat during cooking. The device must be unlocked when operating. See Sections 9 and 10.

Operation:

1. The valve is open during filling. The pressure on top the piston keeps the lock open (the supply pressure is lead to part 74).
2. The valve is closed for cooking. The pressure underneath the piston push up the rear stem (the supply pressure is lead to part 72).
3. During cooking the lock pushes the ball against the seat. This prevents impacts of the vacuum to the ball and improves the tightness in the beginning of cooking.
4. Before opening of the valve the pressure should be lead on top the piston to open the lock. If the locking is on when opening the valve, the seating surfaces of the ball and seat will be damaged.

Supply air pressure range to the locking cylinder is 4 ... 6 bar.

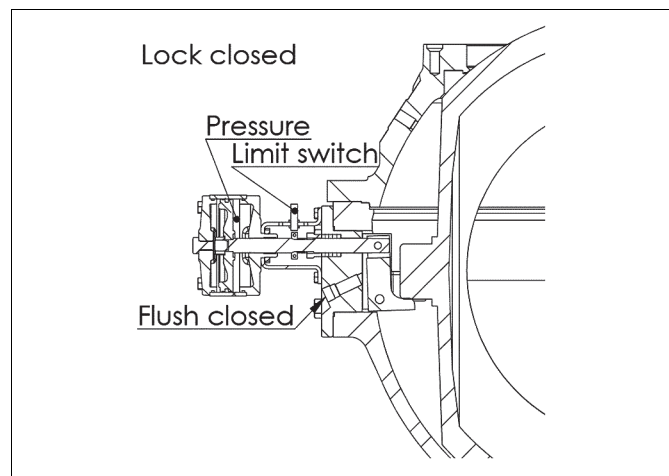


Fig. 5 Rear tilting device closed

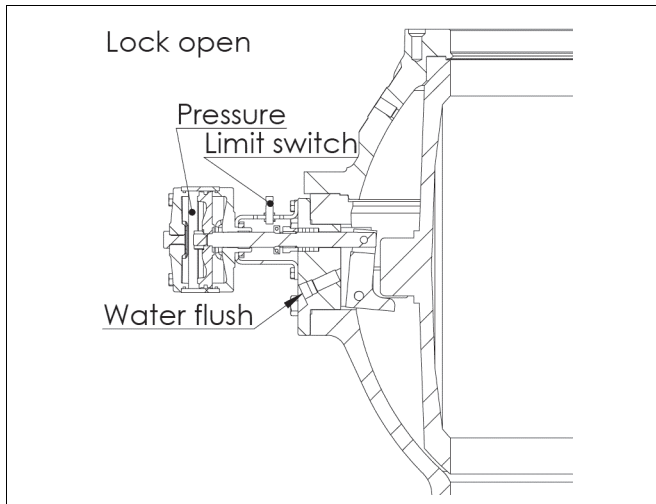


Fig. 6 Rear tilting device open

1.6 Valve approval

The design of the valve meets the standards and criteria set by ANSI and ASME.

DIN 50049 3.1B material certificates are available for body halves, ball and bonnet. A tightness test certificate is also supplied.

1.7 Recycling and disposal

Most valve parts can be recycled if sorted according to material. Most parts have material marking. A material list is supplied with the valve. In addition, separate recycling and disposal instructions are available from the manufacturer. A valve can also be returned to the manufacturer for recycling and disposal against a fee.

1.8 Safety precautions

CAUTION:

Do not exceed the permitted values!

Exceeding the permitted values marked on the valve may cause damage and result in uncontrolled pressure release. Damage to equipment or personal injury may result.

CAUTION:

Do not remove or dismantle a pressurized valve!

Removing or dismantling a pressurized valve leads to uncontrolled pressure release. Always release pressure and remove the media from the valve before removing or dismantling it.

Protect yourself and the environment from poisonous or otherwise harmful substances.

Otherwise, personal injury or damage to equipment may result.

CAUTION:

Beware of the cutting movement of the ball!

Keep hands, other body parts, tools and other objects away from the open flow port. When the valve is in operation, the ball functions like a cutter. Shut off the actuator pressure supply and detach the supply pipes for the duration of maintenance.

Otherwise, personal injury or damage to equipment may result.

CAUTION:

Do not open the valve during cooking!

Valve control must be arranged to ensure that the valve cannot be opened during cooking. Otherwise, personal injury or damage to equipment may result.

CAUTION:

Beware of hot valve!

The valve body may be very hot during use. Protect yourself against burns.

CAUTION:

When handling the valve or the valve package, bear in mind its weight!

Never lift the valve or valve package by the actuator, positioner, limit switch or their piping.

Always fasten the lifting ropes to the lifting eye bolts, see Fig. 8. Weights are detailed in the table on page 15.

Dropping the valve may result in personal injury or damage to equipment.

1.9 Welding notes

WARNING:

Welding and/or grinding stainless steel and other alloys containing chromium metal may cause the release of hexavalent chromium. Hexavalent chromium(VI) or Cr(VI), is known to cause cancer. Be sure to use all appropriate personal protective equipment (PPE) when welding metals containing chromium.

NOTE:

A qualified welder must do the installation welding. The welder and welding procedure should be qualified in accordance with the ASME Boiler and Pressure Vessel Code Section IX or other applicable regulation.

CAUTION:

To prevent damage to the seat and seals, do not allow the temperature of the seat and body seal area to exceed 94 °C (200 °F). It is recommended that thermal chucks be used to check the temperature in these areas during welding.

CAUTION:

Ensure that any weld splatter does not fall onto the valve closing members eg. ball or seats. This may damage critical seating surfaces and cause leaks.

2 TRANSPORTATION, RECEPTION AND STORAGE

Check the valve and accompanying devices for any damage that may have occurred during transport. Store the valve carefully prior to installation, preferably indoors in a dry place. Do not take the valve to the installation site or remove the flow port protectors until it is installed. The valve is delivered in the open position mounted on transportation supports.

3 INSTALLATION AND COMMISSIONING

3.1 General

Remove the flow port protectors and check that the valve is clean inside and not damaged. Do not remove the transportation supports and flow port protection tape until shortly prior to mounting the valve on the digester.

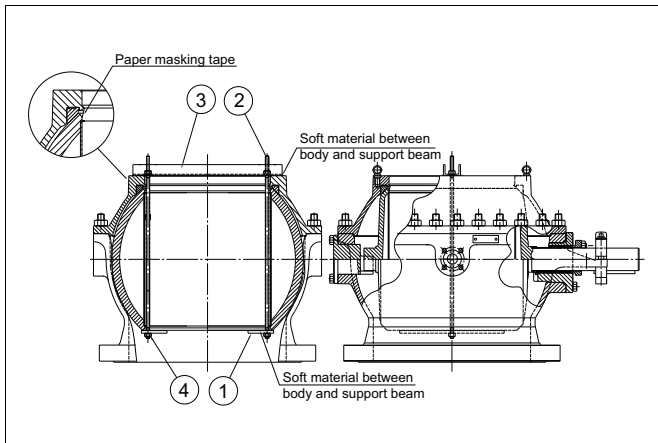


Fig. 7 Transport supports and protection tape

3.2 Mounting the valve on the digester

CAUTION:

When handling the valve or the valve package, bear in mind its weight!

Lift the valve by the lifting eye bolts, see Fig. 8.

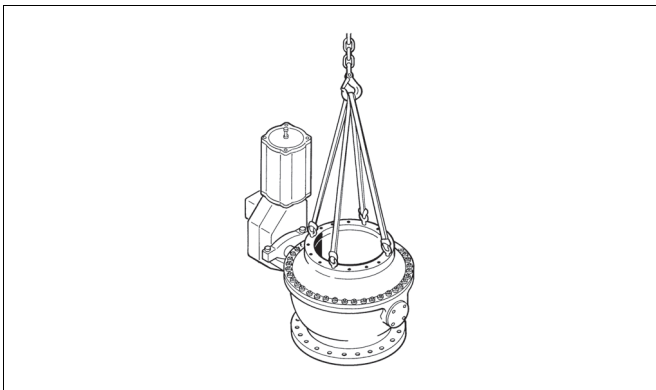


Fig. 8 Lifting the valve

The valve is delivered with the ball in the open position. After any test-runs, make sure that the valve remains in the open position to protect the ball surface.

To check whether an installed valve is in the open position, ensure that

- the arrow on the actuator pointer cover,
- the groove at the end of the ball stem,
- the stem key slot,

are all parallel to the ball flow port.

We recommend that the chip chute be provided with a manhole approximately 300-500 mm above the valve.

3.3 The actuator

NOTE:

When installing the actuator, make sure that the valve/actuator package functions properly. Detailed information on actuator installation is given in the separate actuator instructions.

The valve should be installed in a position enabling the actuator to be removed without detaching the valve from the digester.

The recommended installation position is with the cylinder upright.

The actuator must not touch the digester structure; vibration may damage it or interfere with its operation.

3.4 Commissioning

Make sure there is no foreign matter in the chip chute. If the valve leaks check adjusting of the tilting device as described in Section 4.7.2 Assembly. If the valve still leaks something has been damaged in shipment or installation and the factory should be contacted.

After long storage, the gland packing (28) may leak. Tighten it before the valve is brought into use.

4 MAINTENANCE

4.1 General

Observe the safety precautions mentioned in Section 1.8 before maintenance!

CAUTION:

When handling the valve or the valve package as a whole, bear in mind the weight of the valve or the entire package.

Although Neles™ valves are designed to work under severe conditions, proper preventative maintenance can significantly help to prevent unplanned downtime and in real terms reduce the total cost of ownership. Valmet recommends inspecting the valves at least every five (5) years.

The inspection and maintenance interval depends on the actual application and process condition.

The inspection and maintenance intervals can be specified together with your local Valmet experts. During this periodic inspection the parts detailed in the Spare Part Set should be replaced.

Time in storage should be included in the inspection interval.

Maintenance can be performed as presented below. For maintenance assistance, please contact your local Valmet office. The part numbers in the text refer to the exploded view and to the parts list in Section 8, unless otherwise stated.

NOTE:

When sending goods to the manufacturer for repair, do not disassemble them. Clean the valve carefully and flush the valve internals. For safety reasons, inform the manufacturer of the type of medium used in the valve (include material safety datasheets (MSDS)).

NOTE:

In order to ensure safe and effective operation, always use original spare parts to make sure that the valve functions as intended.

NOTE:

For safety reasons, replace pressure retaining bolting if the threads are damaged, have been heated, stretched or corroded.

4.2 Changing the gland packing

CAUTION:

Ensure that the valve is not pressurized while the gland packing is changed!

If a leak in the gland packing cannot be eliminated by tightening it, the packing must be replaced. The actuator can be removed to facilitate this work.

- Remove caps (53).
- Loosen a little the tilting device nuts (18).
- Remove nuts (17) and gland (6).
- Remove ring (34) and old gland packings (28). The lowest ring (34) need not be removed. Use a suitable pointed instrument for removing the gland packings. Do not damage the seating surface.
- Clean the packing counterbore.
- Push the new packing rings (28) one by one into the counterbore with the gland (6). Position the cut ends of the rings at a 90° angle to each other and at a 45° angle to the flow port.
- Push the outer ring (34) and gland (6) into place and tighten the nuts (17) lightly.
- Fasten tight the tilting device nuts (18) and then the nuts (17) and install the cap (53). See Section 4.7.2.
- Always check the seal of the gland packings after installation.

4.3 Bearings (5, 22)

The ball stem bearing is located in the bonnet (8) under the gland packing rings (28). The bearing is maintenance free. It is recommended to be dismantled only when the whole valve is dismantled.

The purpose of the bearing at the rear end of the ball, i.e. the support (38), is to keep the ball at the valve center line during operation, allowing a free up-and-down movement. Normally, the support does not need to be inspected or replaced.

4.4 Body joint

If the body joint leaks, tighten nuts (16) as shown in Table 1.

If the leak continues after the tightening, the valve must be dismantled. Inspect the seating surface and ensure that the body joint plane is level. Then replace the body gasket (26). See Section 4.7.2.

4.5 Ball and seating

If the valve leaks, the probable cause is chips between the ball and the seat. Before adjusting lifting springs (20), wash and pool the ball surface with a water jet when valve partly open. Operate the valve 2-3 times and retest.

NOTE:

Lifting springs are factory preset and excessive tightening might damage the ball surface. See Section 4.7.2, Table 2.

If washing does not help, the valve must be dismantled and cleaned.

If the ball surface is damaged for some reason and causes leakage, the ball can be turned 180° provided that the ball seat is not damaged. A damaged ball seat will destroy the ball surface in a short time. The valve must be dismantled for inspection before turning the ball.

4.6 Dismantling the valve

CAUTION:

Do not dismantle or remove the valve when it is pressurized!

It is best to dismantle the valve for servicing when it is detached from the digester. The lower body half can alternatively be left mounted on the digester. Use the loops delivered with the valve for lifting.

Dismantle the valve on a clean, level cardboard or wooden underlay.

- Lower the valve onto the underlay if you have removed the whole valve from the digester.
- Turn the ball to the closed position.
- Detach the actuator using the extractor, see Chapter 6.
- Dismantle the upper body half (1).
- Fasten the lifting strap through the ball and keep it adequately tightened.
- Remove caps (53) and the tilting device nuts (18), disc springs (20) and screws (13).
- Detach the actuator console (7).
- Remove the bonnet with gland packings (28) and bearings (5, 22).
- Remove the support (38) with extractor screws.
- Lift the ball out of the body; take care not to damage the seating surfaces or the stem.
- Clean all dismantled parts carefully and replace worn or damaged parts as necessary.

The ball

After lifting the ball from the body, place it on a clean, soft surface for cleaning. Take special care to clean the ball seating surfaces and the gland packing area. Grind any minor scratches on the ball and packing with 28/20 µm grinding paste and finish with 7/5 µm paste. Scratches and burrs in the stem can be ground with fine abrasive cloth of grade 400. If there are deeper scratches in the ball or it is misshapen, send it to the manufacturer for repair.

Ball seat

The seat (4) is locked in its groove. If the seat is in order and there is no reason to suspect the condition of the seal (25), the seat need not be dismantled for servicing.

Remove the seat as follows:

- First grind down the locking points with a grinder, see Fig. 9.

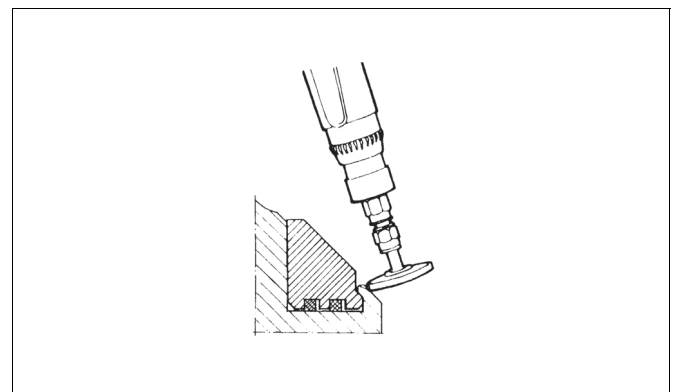


Fig. 9 Grinding the seat locking

- Open the locking points with a sharp chisel to facilitate removal, see Fig. 10.

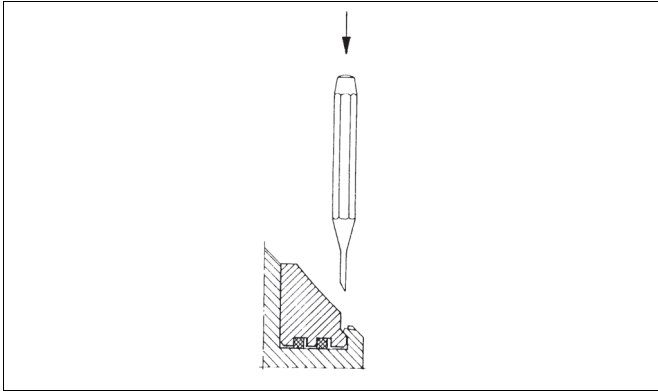


Fig. 10 Opening the seat locking

- Make sure that the seat slides freely in the groove.
- Turn the body half upside down and knock it lightly near the seating edge to make the seat drop out of the groove on the underlay.

The body

Clean the body halves carefully and check all seating surfaces. The body gasket (26) must be replaced each time the valve is dismantled.

4.7 Valve assembly

Ball seat

To replace the back seal (25) of the seat (4), proceed as follows:

- Cut the ends of the seal band to give a tight seal against the edges of the groove where the two ends overlap, see Fig. 11.

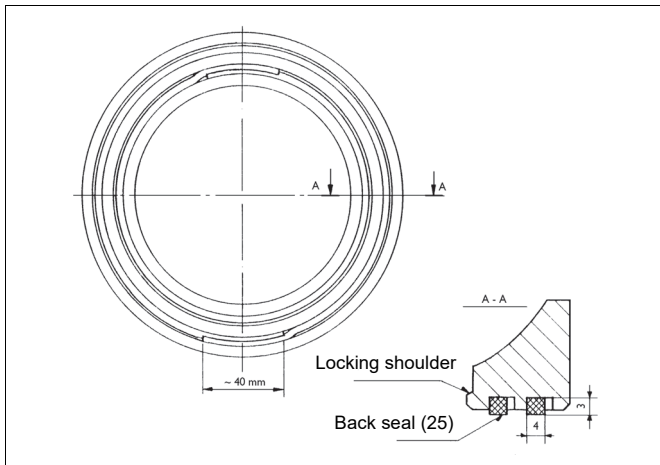


Fig. 11 Mounting the back seal

- Place the seat into the upper body half and lock it at the four points at 90° intervals, see Fig. 12.
- Do not lock the seat too tight; it must be allowed to slide in the groove.

Assembly

- Place e.g. corrugated cardboard in the body to protect the ball during the lifting. Fasten the lifting straps through the flow port.

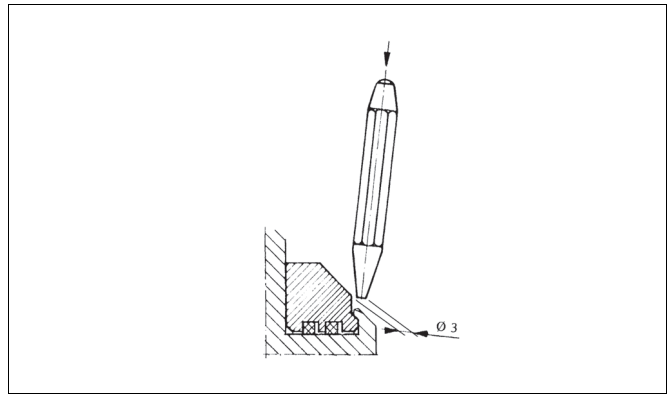


Fig. 12 Locking the seat

- Lift the ball into the lower body half with the stem first through the bonnet opening. Center the ball in the flow port. Leave the ball suspended by the lifting straps.
- Mount the support (38) and the new spiral gasket (39).
- Push the bearing (5) over the stem to match the locking notches with the locking ring stops at the butt of the ball stem.
- Slip the bearing (22) along the stem. The bearing lock notch must match with the locking groove on the bonnet (8).
- Mount the bonnet (8) and the new bonnet gasket (9).
- Push the ring (34) and the new gland packings (28) one by one into the packing groove with the gland. Position the cut ends of the rings at a 90° angle to each other and at a 45° angle to the flow port.
- Set the outer ring (34) and the gland (6) into place and tighten the nuts (17) lightly.
- Set the body gasket (26) in place. The gasket must be replaced each time the valve is dismantled.
- Install the tilting device. Replace the bearings (24) and ring (41) of the console (7). Slide the ring (41) onto the stem.
- Turn the screws (13) into the valve lugs, lock them with lock nut (13a). Tighten the disc spring packs (20) with nuts (18).
- Loosen the ball from the lifting straps and remove the straps.
- Make sure that the ball is in the center of the flow port by measuring the distances from the ball surface to the groove of the body joint plane.
- Lift the upper body half into place in the original position. See that a gap of about 5 mm (0.2") is left in the body joint when the body half is resting on the ball.
- Tighten the body joint nuts (16) as shown in Table 1.

Table 1 Body joint nuts, tightening torques

Valve	Nut thread UN	Torque Nm (lbf ft)
PZ 500 (20")	1 1/8 - 8 UN	560 (420)
PZ 600 (24")	1 1/8 - 8 UN	560 (420)
PZ 750 (30")	1 1/2-8 UN	1400 (1050)

- Mount the actuator, see Chapter 5.
- Measure the distance "B", See Fig. 13.

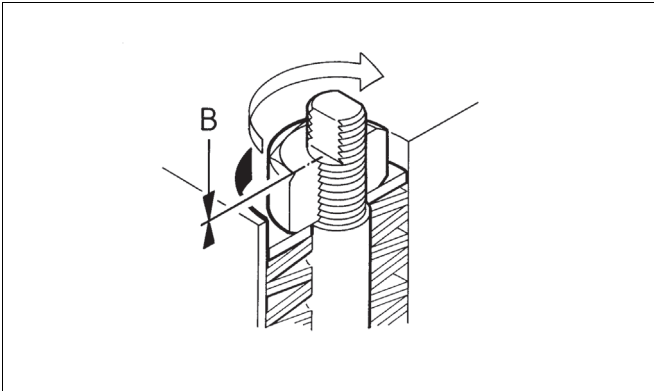


Fig. 13 Measuring "B"

- Feed compressed air into the actuator via the pressure regulator, see Fig. 14.

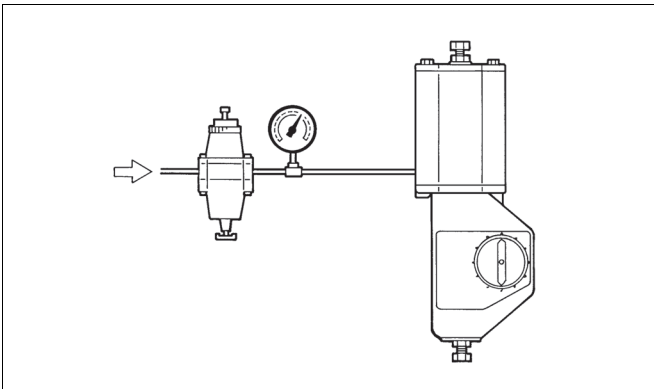


Fig. 14 Air supply for adjusting the tilting device

- If the actuator cannot turn the ball with the pressure indicated in Table 2, depressurize the actuator and loosen both tilting device nuts (18) by 90°. When necessary, continue loosening the nuts 90° at a time until the valve turns at the pressure indicated in the table, see Fig. 15. Measure the distance "A", see Fig. 16

Table 2 Feed pressure for adjusting the tilting device.

Valve-actuator	Feed pressure, bar (psi)
PZ 500 - BCP32	< 1.3 (< 19)
PZ 600 - BCP32	< 1.8 (< 26)
PZ 750 - BCP40	< 2.0 (< 29)

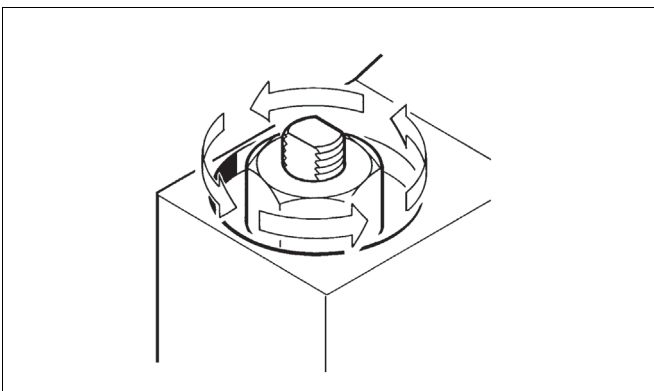


Fig. 15 Loosening of the nuts

- The measure "C" is the correct thickness of the washer. If necessary, thin the washer. See Fig. 17. Tighten the screws, keeping them in horizontally balance.

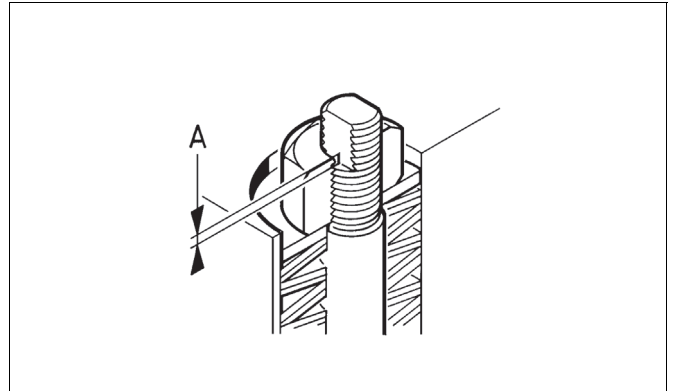


Fig. 16 Measuring "A"

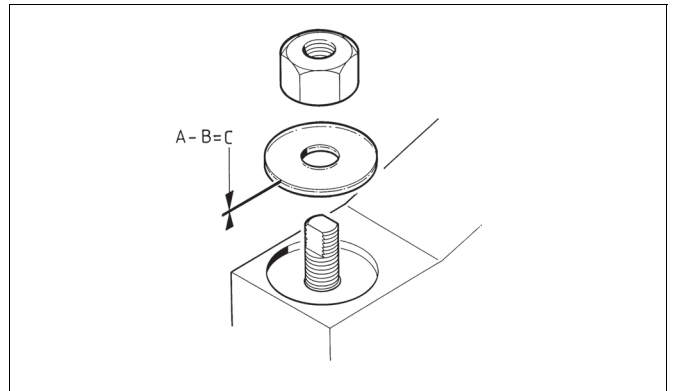


Fig. 17 The thickness of the washer

- Tighten the nuts (18).
- Fill the cavities with Mobilplex 47 or equivalent grease. Mount the caps (53).
- Fasten tight the gland packing nuts (17). Always check the tightness of the gland packings after installation of the valve.

5 INSTALLING THE ACTUATOR

Make use of the separate actuator instructions.

- Make sure that the stem end is clean and free from burrs.
- Select the stem key slot that indicates that the valve is in the extreme position when the valve is closed.
- Turn the studs into the actuator before sliding the actuator onto the stem.
- Slide the actuator into position carefully.
- Adjust the open and closed position limits.

5.1 Adjusting open and closed positions

The open and closed position limits of the valve are adjusted with the stop screws on the actuator, see Fig. 18.

Adjusting the closed position:

Using a soft pencil, draw two lines on the top surface of the ball, the first at G1 and the second at G2 distance from the edge of the ball flow port, see Fig. 19 and Table 3.

- Adjust the closed position stop screw so that the end of the G1 line is just visible directly under the edge of the body flow port when the valve is closed, see Fig. 20.
- Adjust the limit switch's close position, limit switch is activated when the end of the G2 line is just visible directly under the edge of the body flow port, see Fig. 21.

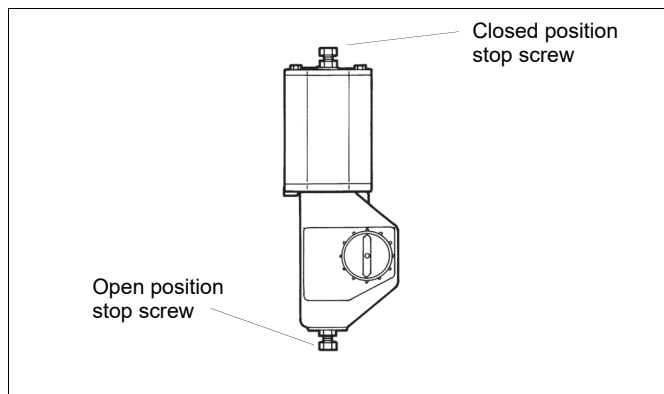


Fig. 18 Actuator stop screws

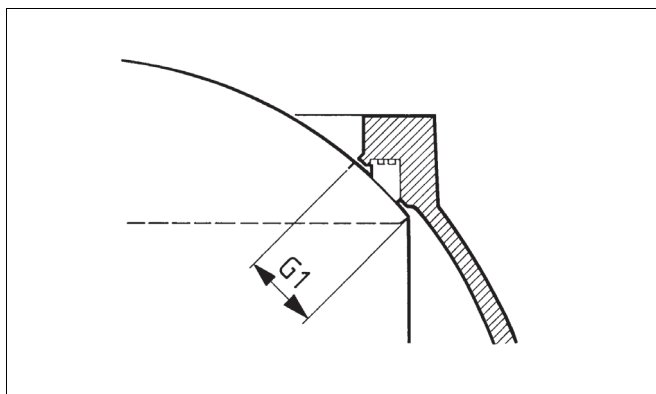


Fig. 20 G1 measure

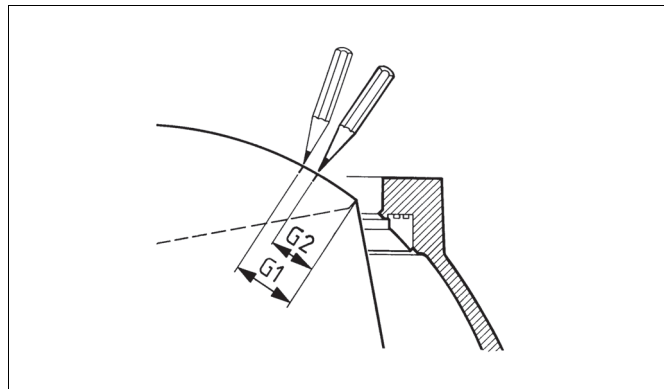


Fig. 19 Drawing the marking lines

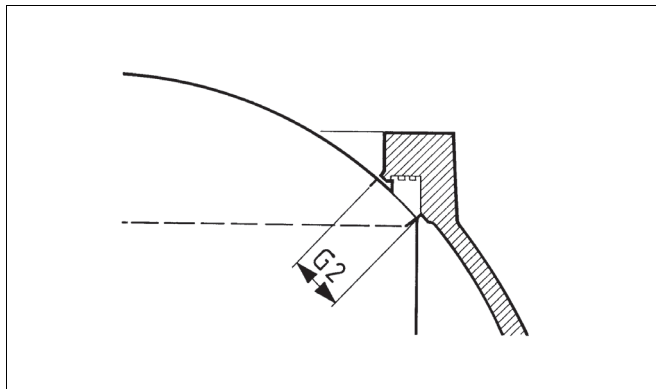


Fig. 21 G2 measure

Table 3 G-dimensions

Valve	G1, mm	G2, mm
PZ 500 (20")	52 (2.1")	30 (1.2")
PZ 600 (24")	62 (2.5")	35 (1.4")
PZ 750 (30")	69 (2.8")	35 (1.4")

Adjusting the open position:

- Open the valve and adjust the open position stop screw so that the ball and the body flow ports are parallel.
- After the adjustment, lock the retaining screws and seal them e.g. with Loctite 225.

6 TOOLS

In addition to standard tools, you might need the following special tools, which can be ordered from the manufacturer:

- Detaching the actuator from the valve
- extractor

Table 4 Extractors

Valve-actuator	Extractor
PZ 500 - BCP32	8546-5
PZ 600 - BCP32	8546-5
PZ 750 - BCP40	8546-6

7 ORDERING SPARE PARTS

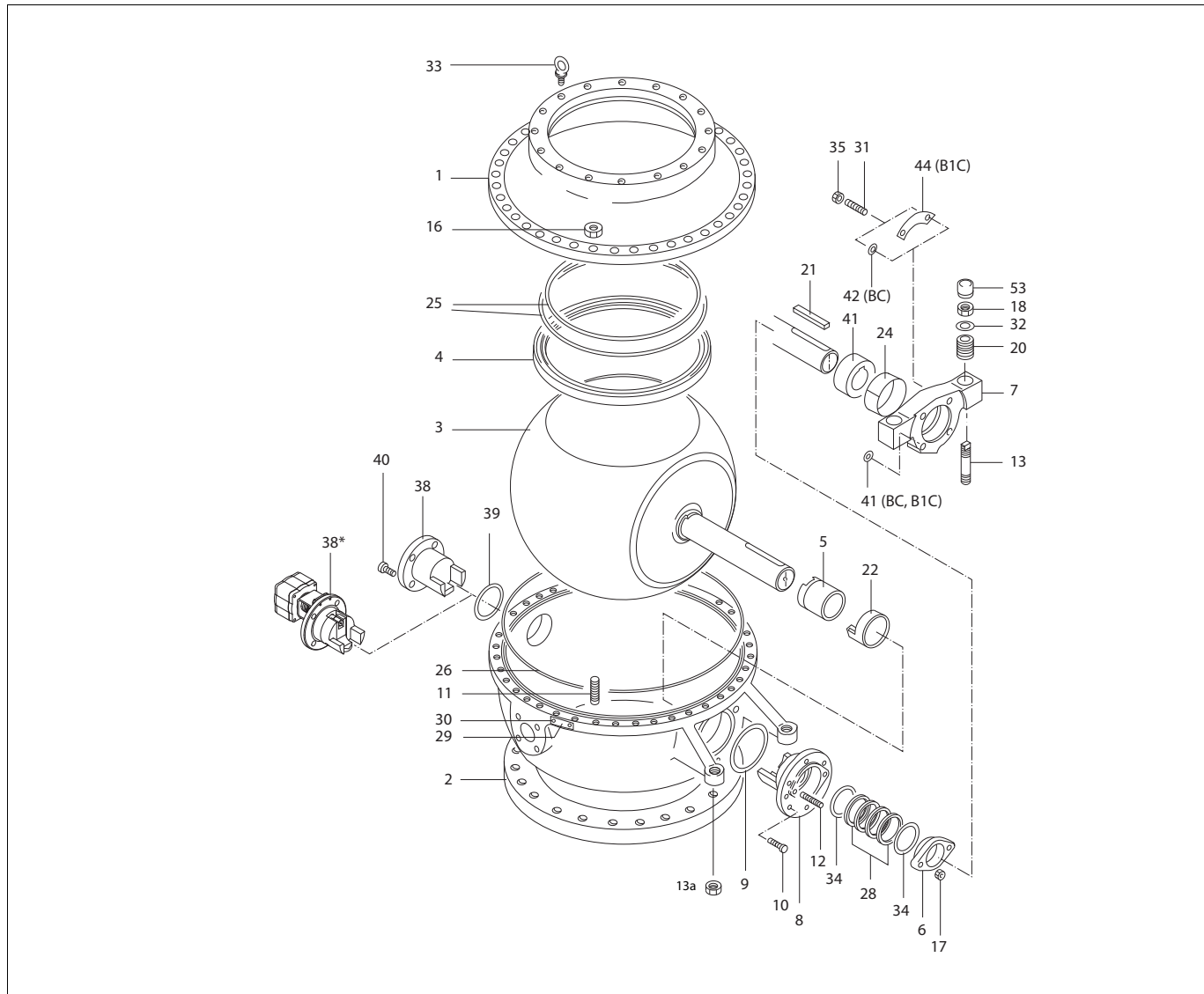
NOTE:

Use original spare parts to ensure that the valve functions as intended.

When ordering spare parts, always give the following information:

- valve type designation (from the identification plate or valve documents)
- parts list number (or number of this manual), part number, name of the part and number of pieces required.

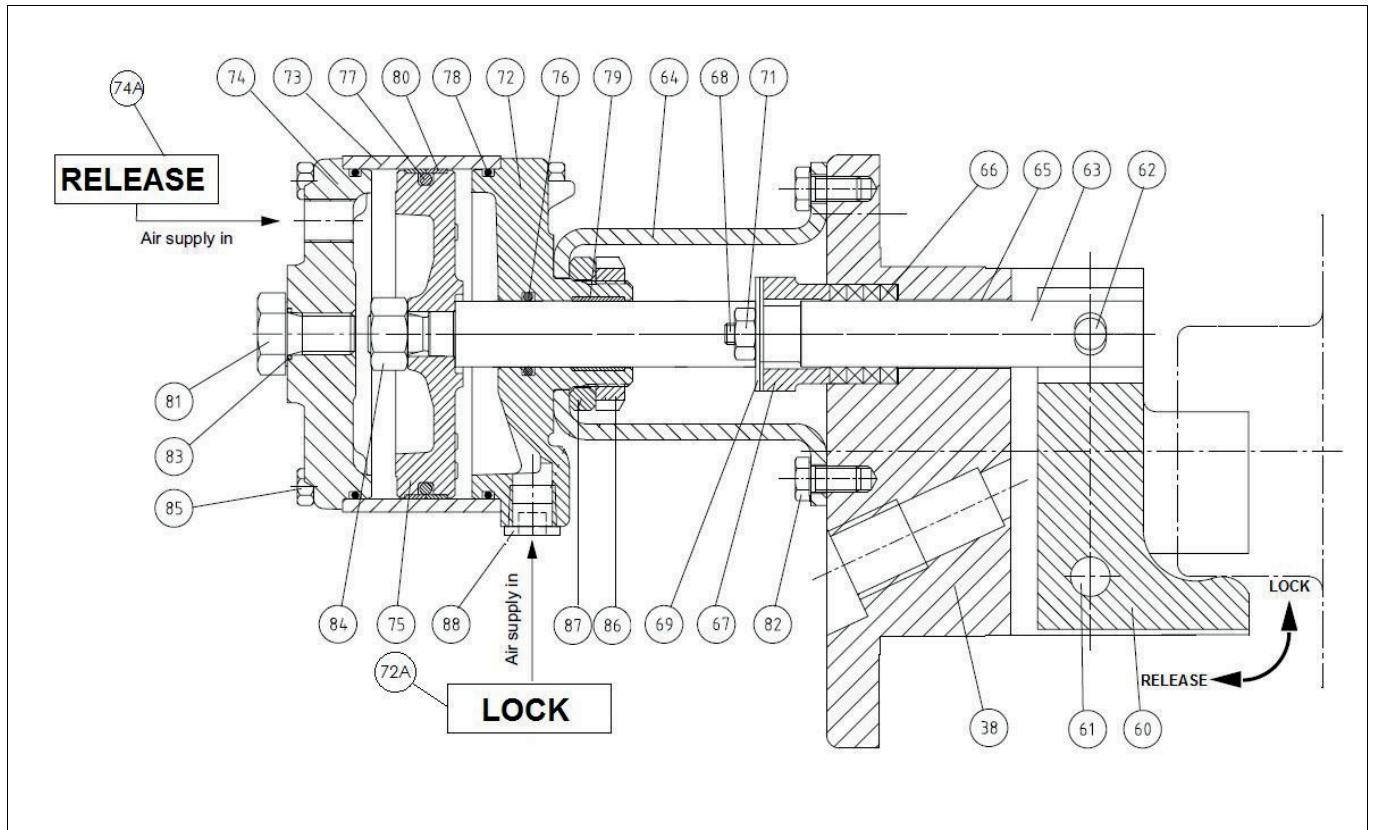
8 EXPLODED VIEW AND PARTS LIST



Item	Qty	Description	Recommended spare part
1	1	Body, upper part	
2	1	Body, lower part	
3	1	Ball	
4	1	Ball seat	
5	1	Bearing bushing	
6	1	Gland	
7	1	Console	
8	1	Bonnet	
9	1	Spiral gasket	x
10		Screw	
11		Stud	
12	2	Stud	
13	2	Stud	
13a	2	Lock nut	
16		Nut	
17	2	Nut	
18	2	Nut	
20		Disc spring	
21	1	Key	

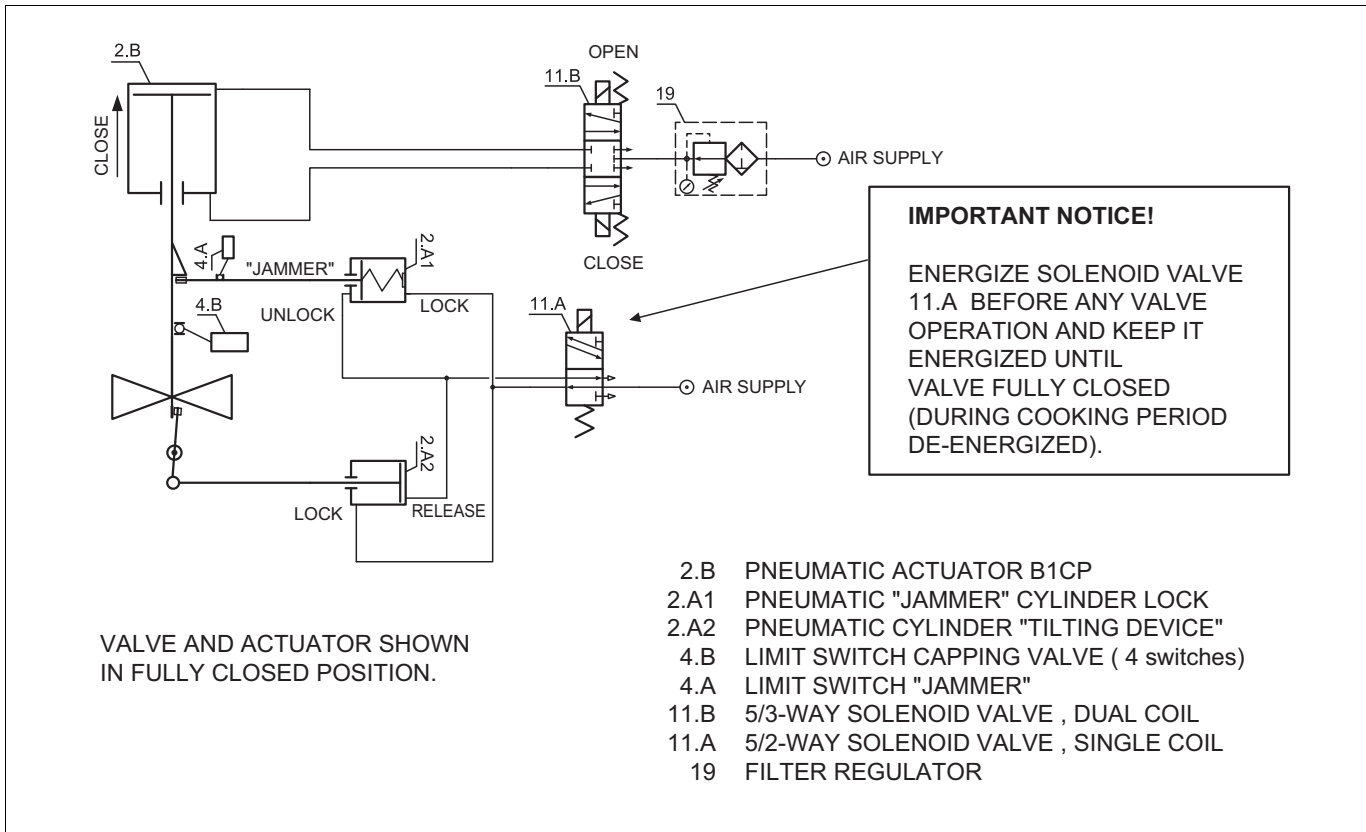
Item	Qty	Description	Recommended spare part
22	1	Bearing bushing	
24	1	Bearing strip	x
25	2	Sealing cord	x
26	1	Seal strip	x
28		Packing ring	x
29	1	Identification plate	
31	4	Stud	
32	2	Adjusting plate kit	
33	4	Lifting eye bolt	
34	2	Support ring	
35		Nut	
38	1	Support	
38*	1	Rear tilting device	
39	1	Spiral gasket	x
40	6	Screw	
41	1	Bearing ring	
42	2	Washer	
44	1	Retainer plate	
53	2	Protection cover	

9 REAR TILTING DEVICE

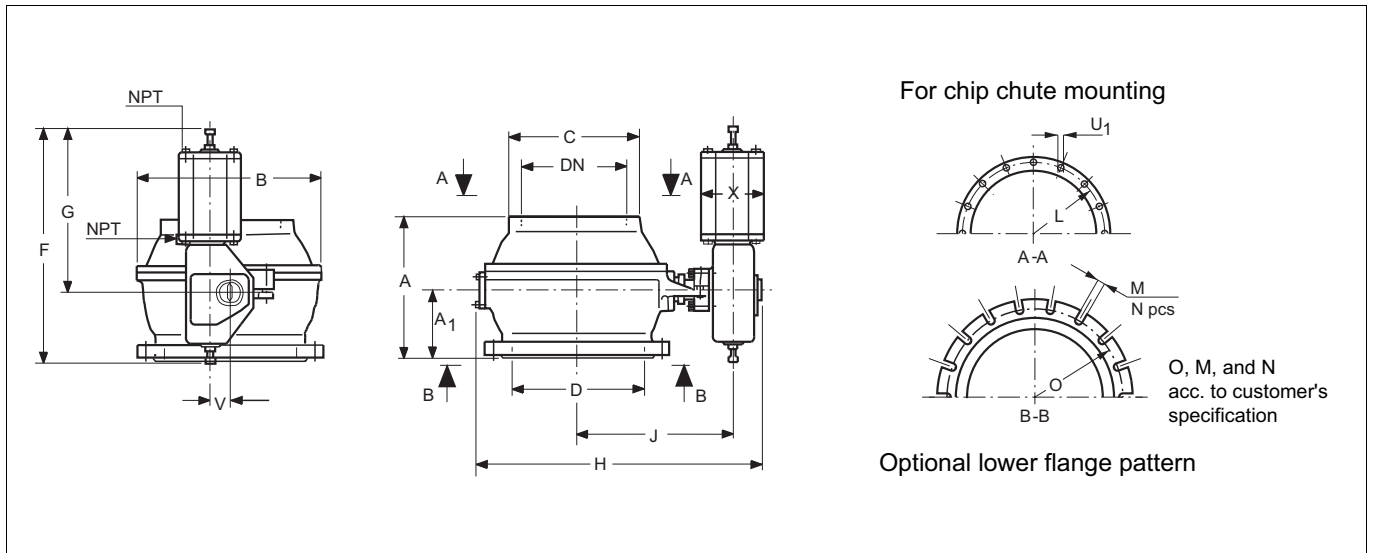


Item	Qty	Description	Recommended spare part
038	1	Support	
060	1	Support bar	
061	1	Cylindrical pin	
062	1	Cylindrical pin	
063	1	Piston rod	
064	1	Bracket	
065	1	Bearing strip	
066	1	V-ring set	x
067	1	Casting gland	
068	2	Stud	
069	2	Retainer plate	
070	2	Disc spring set	
071	2	Hexagon nut	
072	1	Cylinder base	
072A	1	Sticker "LOCK"	
073	1	Cylinder pipe	
074	1	Cylinder end	
074A	1	Sticker "RELEASE"	
075	2	Piston	
076	1	O-ring	x
077	1	O-ring	x
078	2	O-ring	x
079	1	Bearing strip	x
080	2	Piston ring	x
081	1	Hexagon screw	
082	4	Hexagon screw	
083	1	O-ring	
084	1	Hexagon nut	
085	8	Hexagon screw	
086	1	Lock nut	
087	1	Filling ring	
088	2	Protection plug	

10 SAFETY INTERLOCKING (JAMMER, REAR TILTING DEVICE)



11 DIMENSIONS



Valve			Main dimensions in mm											Pneumatic actuator type	Weight kg **)	
Type	DN	Lower flange*	A	A1	B	C	L	U1		F	G	X	V			J
								UNC	Depth							
PZ 500 AK	500	490 ≤ D ≤ 520 640 ≤ D ≤ 680	730 630	400 300	920	625	590	3/4	38	1330	910	395	153	840	B1C 32	1250
PZ 600 AK	600	580 ≤ D ≤ 590 720 ≤ D ≤ 740	870 770	480 380	1070	740	700	7/8	42	1330	910	395	153	970	B1C 32	1750
PZ 750 AK	750	730 ≤ D ≤ 740 880 ≤ D ≤ 890	1080 930	600 450	1330	910	860	1	42	1660	1150	505	194	1200	B1C 40	2600

Valve			Main dimensions in inch											Pneumatic actuator type	Weight lbs **)	
Type	Size	Lower flange*	A	A1	B	C	L	U1		F	G	X	V			J
								UNC	Depth							
PZ 500 AK	20	19.29 ≤ D ≤ 20.47 25.19 ≤ D ≤ 26.77	28.74 24.80	15.75 11.81	36.22	24.61	23.23	3/4	1.50	52.36	35.83	15.55	6.02	33.07	B1C 32	2750
PZ 600 AK	24	22.83 ≤ D ≤ 23.23 28.34 ≤ D ≤ 29.13	34.25 30.31	18.90 14.96	42.13	29.13	27.56	7/8	1.65	52.36	35.83	15.55	6.02	38.19	B1C 32	3850
PZ 750 AK	30	28.74 ≤ D ≤ 29.13 34.64 ≤ D ≤ 35.04	42.52 36.61	23.62 17.72	52.36	35.83	33.86	1	1.65	65.35	45.28	19.88	7.64	47.24	B1C 40	5720

*) The lower flange is made to correspond to the digester flange. The valve height A varies with the lower flange diameter.

**) Weights are only approximative due different lower flange sizes.

12 TYPE CODE

Neles™ capping valve, series PZ

1.	2.	3.	4.	5.	6.	7.	8.
PZ	K	S	600 / 800		A	R	V

Size marking, either in inches or in millimeters, defines also the upper end connection threads; unified threads when size expressed in inches and metric threads when size expressed in millimeters.

1.	Product series/Construction/Pressure rating
PZ	Ball valve, lower body half with flange to be specified in order. Upper body half with 16 pcs tapped holes with metric threads or unified threads starting from center line. Body pressure rating PN16 / ANSI class 150.

2.	Connections / Special construction
K	2 pcs PN16 / DN 80 connections in lower body half.
C	2 pcs ANSI class 150 / NPS 3" connections in lower body half.
N	Lower body half without connections.
Y	Special connections, special location e.g. in upper body half or special quantity or some other speciality.

3.	End-to-end length		
	DN 500 / 20"	DN 600 / 24"	DN 750 / 30"
L	730 mm / 28.74"	870 mm / 34.25"	1080 mm / 42.52"
S	630 mm / 24.80"	770 mm / 30.31"	930 mm / 36.61"
Y	Special	Special	Special

4.	Size	
	DN/mm	NPS/inch
	500	20
	600	24
	700	30

5.	Nominal size of lower body half (mm or in)
	Specified in the order. Nominal size of lower body half is given in the same units as the valve size, see 4. sign separated by slash.

6.	BODY	BALL	BALL SEAT	BEARINGS
A	CF8M	CF8M + hard chrome	316 SS + cobalt based hard facing	Coated hard chrome + UNS S21800
C	CG8M	CG8M + CA-chrome	317 SS + cobalt based hard facing	Cobalt based alloy

7.	Ball seat type
R	Scraping, locked, seat seals in grooves.

8.	Options*
-	Standard, without sign
V	Water flushing for ball
L	Rear tilting device
Y	Special

Safety equipment versions are specified in Application Bulletins 2611/01/02 (ACC) and 2611/01/03 (Jammer inside the actuator).

Subject to change without prior notice.

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