

MARITZA EAST I Power Station

Maintenance Manual

Maintenance Manual Number:

KKS Code:

01 LCN10 AA006

Equipment Description:

Valves KSB – Type Nori 40 ZXS
DN 50

Supplier

Name:

KSB – Pumpy+Armatury, s.r.o.

Address:

Klicova 2300/6
149 00 Praha 4

Contact Person:

Mr. Josef Skrivanek

Phone:

+420 241 090 211

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Globe valves



with gland packing
with rotating stem

flanged
or with butt or socket-
weld ends

PN 25/40
DN 10-400

Application

- In industrial plants, building services industry, power stations and marine engineering.
- For water, steam, gas and other non-aggressive media.
- Other applications on request.

Operating data

- Maximum allowable pressure 40 bar
- Maximum allowable temperature 450 °C
- Pressure-temperature ratings see next side

Materials

- Flanged design
DN 10-40 forged steel P 250 GH ¹⁾ - 1.0460
DN 50-400 cast steel GP 240 GH ²⁾ - 1.0619
- Weld-end design
DN 10-50 forged steel P 250 GH ¹⁾ - 1.0460
DN 65-350 cast steel GP 240 GH ²⁾ - 1.0619
- For further details see table of materials

Design

- Straight-way pattern with vertical bonnet
- Shut-off cone
- Rotating stem
- Seats made of wear-resistant and corrosion-proof Cr-steel or CrNi-steel
- Back seat
- Stem sealed by gland
- Inside and outside confined bonnet gasket (DN 10-100)
- EC type tested (Module H), component mark TÜ.A./AR-290
- Exterior finish: blue RAL 5002

¹⁾ previously: C 22.8

²⁾ previously: GS-C 25 N

The valves meet the safety requirements of the Pressure Equipment Directive 97/23/EC (PED) of annex I for fluids of the groups 1 and 2.

Standard variants

- Throttle cone
- Position indicator
- Pressure relief cone
- Locking device
- Screw-down non-return valve
- Studs/hex. nuts in A4-70 (low temp.)
- PTFE-packing (max. 250 °C)
- Free from oil and grease (parts in contact with flow medium)
- Free from oil and grease for handling oxygen
- Other flange and butt-weld end designs
- Acceptance tests to technical codes such as TRD/TRB/AD2000 or customer specification

Remarks

- NORI® 40 globe valves with gland, with non-rotating stem, type ZXLF/ZXS according to type series booklet: 7622.1
- NORI® 40 non-return valves, type RXL/RXS according to type series booklet: 7673.1
- NORI® 40 globe valves with bellows, with two-piece stem, type ZXLBV/ZXLB, ZXSBBV/ZXSBB according to type series booklet: 7165.1
- Operating instructions: 0570.82

On all enquiries / orders please specify

- | | |
|-------------------------|-------------------------------|
| 1 Type | 6 Medium |
| 2 PN | 7 Operating temperature |
| 3 DN | 8 Pipe connection |
| 4 Working pressure | 9 Standard variants |
| 5 Differential pressure | 10 Type series booklet number |

The valves do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, group II, category 2 (zones 1+21) and category 3 (zones 2+22) according to ATEX 94/9/EC.



Pressure-Temperature ratings

Nom. pressure PN	Material	Working pressures at temperatures in °C 1)						
		-10 to +120	200	250	300	350	400	450
25	P 250 GH 1.0460 2)	25	22	20	17	16	13	8
40	GP 240 GH 1.0619+N 3)	40	35	32	28	24	21	13

1) The valves can be used down to -10 °C

2) previously: C 22.8

3) previously: GS-C 25 N

Operating pressures to EN 1092/1 are also permissible

Installation

Globe valves are installed in the line so that the medium enters the valve underneath the cone and flows out above it. They can also be installed in lines with alternating flow.

If differential pressures specified for DN 125 to 400 in the table are exceeded, a pressure relief cone is required. In this case, the valve must be installed so that the medium to be sealed off lies acts the cone.

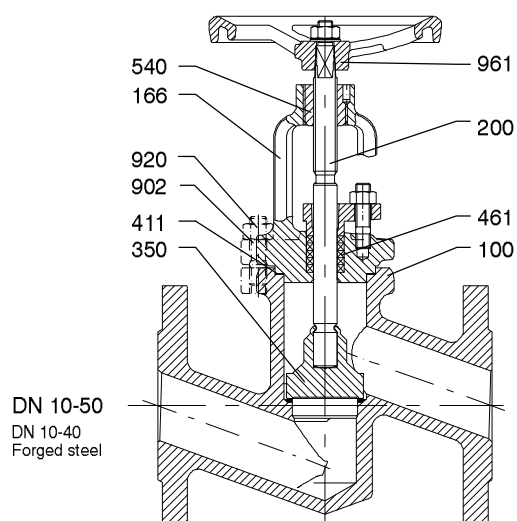
The pressure relief cone acts as a bypass and can only fulfill its function if a back pressure builds up after the valve has been opened, so that the max. differential pressures specified in the table are not exceeded.

Max permissible differential pressure for shut-off (shut-off cone)

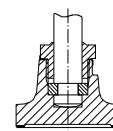
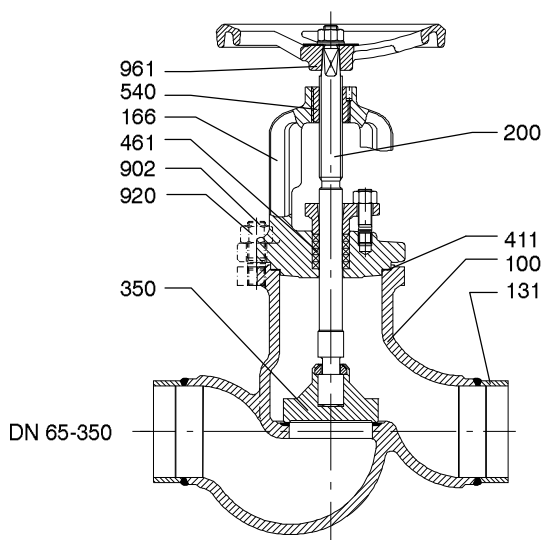
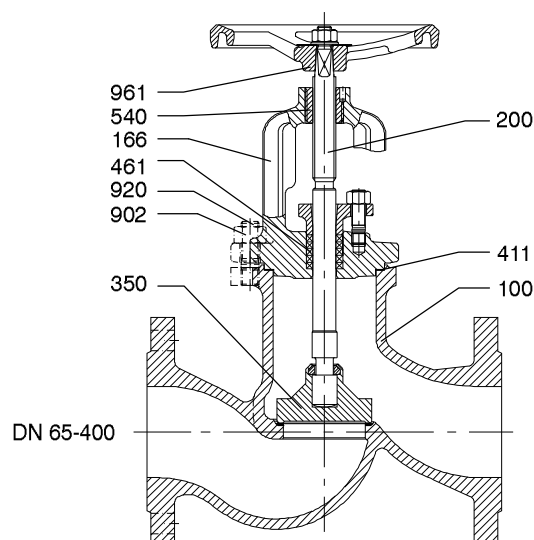
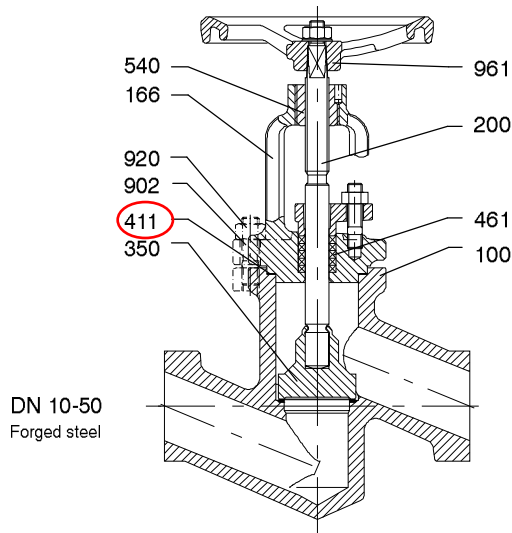
DN	125	150	200	250	300	350	400
Δp bar	33	21	14	9	6	4.5	3.5

For the optimum selection of valves with throttle cone, detailed information about the operating mode should be provided.

ZXL



ZXS



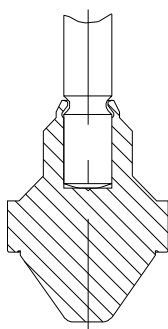
From DN 125 onwards
Screw-type cone stem
connection

Materials

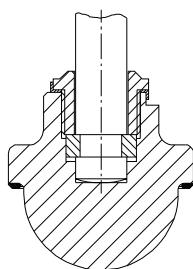
Part no.	Name of parts	Material	Remarks
100	Body	P 250 GH 1.0460	DN 10-40 Type ZXL DN 10-50 Type ZXS
		GP 240 GH 1.0619	DN 50-400 Type ZXL DN 65-350 Type ZXS
131	Connection branch	P 235 GH 1.0305	From DN 65 upwards
166	Yoke	P 250 GH 1.0460	
		GP 240 GH 1.0619	From DN 250 upwards
200*)	Stem	X 20 Cr 13 1.4021	
350*)	Cone	X 20 Cr 13 1.4021	
		P 250 GH 1.0460	From DN 125 upwards
411*)	Gasket	CrNi-steel/graphite	With hard facing (1.4370)
461*)	Packing	Graphite	
540*)	Bush	11 SMn30+C 1.0715	Nitrided
902	Stud	21 CrMoV 5-7 1.7709	
		C 35 E 1.1181	From DN 125 upwards
920	Hex. nut	25 CrMo 4 1.7218	
		C 35 E 1.1181	From DN 125 upwards
961	Handwheel	JL 1030 0.6020	

*) Recommended spare parts

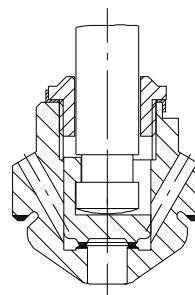
Variants



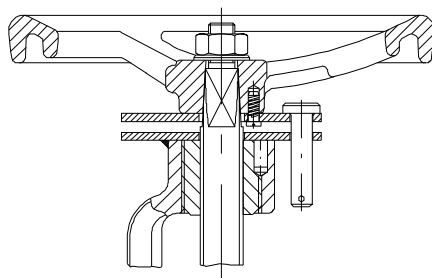
Throttle cone
DN 10-100



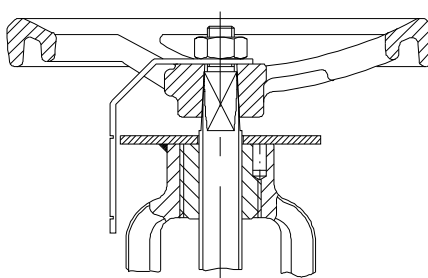
Throttle cone
DN 125-400



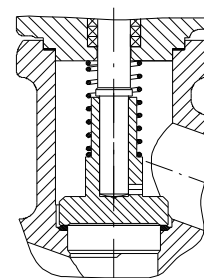
Pressure relief cone
from DN 125 onwards



Locking device



Position indicator



Screw-down non-return valve