

## **MARITZA EAST I Power Station**

### **Maintenance Manual**

**Maintenance Manual Number:**

**KKS Code:**

01 HAH20 AA251

**Equipment Description:**

Valves KSB – Type Nori 320 ZXSV  
DN 40

**Supplier**

**Name:**

KSB – Pumpy+Armatury, s.r.o.

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**Supplier Document Number:**

**Revision Date:**

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## Globe valves

with gland packing

with flanges

with butt or socket  
weld ends

**PN 250-320**  
**DN 10-50**

## Application

- In industrial plants, power stations, process engineering and marine engineering
- For water, steam, gas, oil and other non-aggressive media
- Other applications on request

## Operating data

- Maximum allowable pressure 320 bar
- Maximum allowable temperature 580 °C
- Pressure-temperature ratings see next side

## Materials

- |                |        |              |
|----------------|--------|--------------|
| • 16 Mo 3      | 1.5415 | up to 530 °C |
| • 13 CrMo 4-5  | 1.7335 | up to 550 °C |
| • 10 CrMo 9-10 | 1.7380 | up to 580 °C |

## Design

- Straight-way pattern with vertical bonnet
- Throttle cone
- Forged body and yoke
- Monobloc body, without cover
- Stem sealed by a gland, confined
- Non-rotating stem
- Position indicator
- Seats made of wear-resistant and corrosion-proof stellite
- Yoke suitable for mounting electric and pneumatic actuators (DIN ISO 5210/5211)
- EC type tested (Module H), component mark TÜ.A. 301

## Standard-variants

- Valve combination
- Locking device
- Gland with scraper ring
- Attachments for electric actuators
- Electric and pneumatic actuators
- Flange welded on (type ZXLV)
- Other butt-weld end designs
- onAcceptance tests to technical codes such as TRD/TRB/AD2000 or customer specificati

## Remarks

- NORI® 500 globe valves, type ZXSV with monobloc body, without cover, up to PN 500 see type series booklet: 7641.1
- NORI®-A globe valves, type ZXSV with monobloc body, without cover, up to PN 500 see type series booklet: 7655.1
- NORI®-A non-return valves, typ RXLR/RXSR see type series booklet: 7693.1
- Operating instructions: 0570.82

## On all enquiries / orders please specify

- |                            |                               |
|----------------------------|-------------------------------|
| 1 Type                     | 7 Material                    |
| 2 PN                       | 8 Medium                      |
| 3 DN                       | 9 Flow rate *)                |
| 4 Working pressure         | 10 Pipe connection            |
| 5 Differential pressure *) | 11 Standard variants          |
| 6 Operating temperature    | 12 Type series booklet number |

When ordering spares indicate original factory number and year of manufacture.

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.

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

with but-weld ends, type ZXSV

Nom. pressure	Material	Material No.	Working pressures at temperatures in °C 1)															
			to 250	300	350	400	425	450	475	500	510	520	530	540	550	560	570	580
PN 320	16 Mo 3	1.5415	320	320	318	298	293	288	283	179	136	107	86					
	13 CrMo 4-5	1.7335	320	320	320	320	320	320	315	274	229	181	148	119	93			
	10 CrMo 9-10	1.7380	320	320	320	320	320	320	320	286	250	217	188	162	138	119	102	88

with flanges, type ZXLV

Nom. pressure	Material	Material No.	Working pressures at temperatures in °C 1)												
			to 250	300	350	400	425	450	475	500	510	520	530	540	550
PN 250	16 Mo 3	1.5415	250	217	195	185	179	174	172	101	78	61	49		
	13 CrMo 4-5	1.7335		250	238	227	223	217	206	184	154	124	97	73	54
	10 CrMo 9-10	1.7380										124	108	95	81
PN 320	16 Mo 3	1.5415	320	278	250	236	230	222	220	129	99	78	63		
	13 CrMo 4-5	1.7335		320	304	292	285	278	264	237	200	158	124	93	69
	10 CrMo 9-10	1.7380										158	139	121	104

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

Operating pressures to EN 1092/1 are also permissible

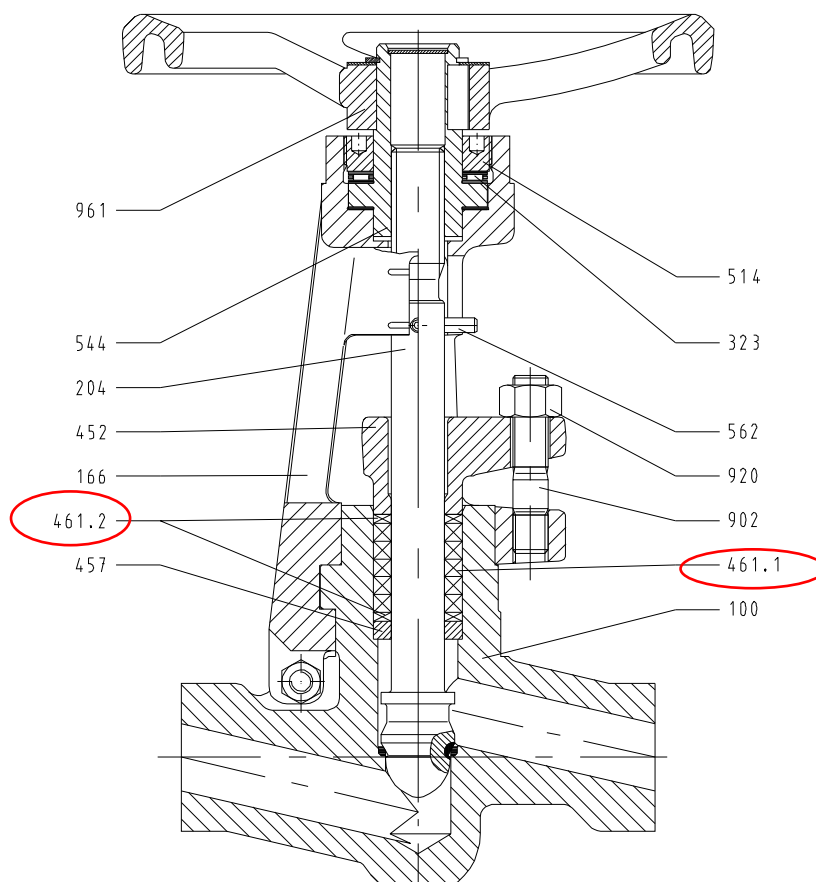
## Installation

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.

**When installed as a throttle valve, it is recommended to have the pressure above the cone.**

## Remark:

In the case of machined butt-weld ends, the dimensions are governed by the dimensions obtained.

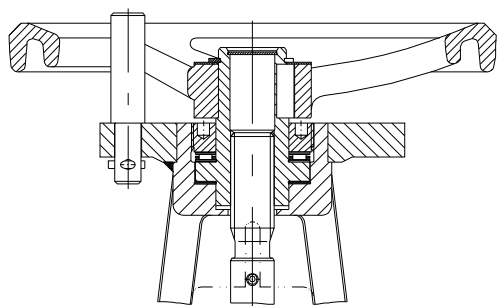


## Materials

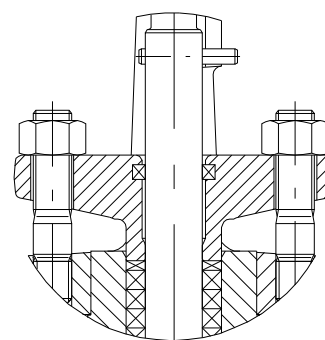
Part no.	Name of part	Temperature °C	Material	Remarks
100	Body	up to 530	16 Mo 3	1.5415
		up to 550	13 CrMo 4-5	1.7335
		up to 580	10 CrMo 9 10	1.7380
166	Yoke		13 CrMo 4-5	1.7335
204 *)	Throttle cone stem		X 35 CrMo 17-1	1.4122
323	Thrust ball bearing		St	
452	Gland		13 CrMo 4-5	1.7335
457 *)	Bottom ring		G-X70 CrMo 292	1.4136
461.1 *)	Packing	up to 580	Graphite	
461.2 *)				Confined
514	Threaded ring		C45N	1.0503
544 *)	Threaded bush		C45N	1.0503
562 *)	Locating pin		St	
902	Stud		21 CrMo V 5-7	1.7709
920	Hex. nut		25 CrMo 4	1.7218
961	Handwheel		GTS-35-10	0.8135

\*) Recommended spare parts

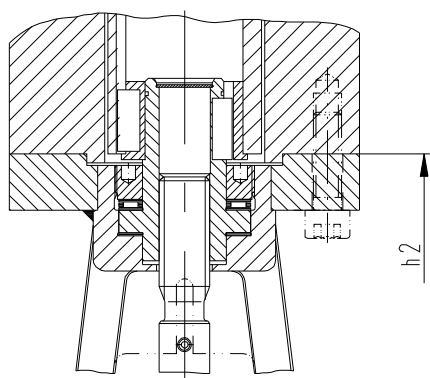
## Variants



Locking device



Gland with scraper ring



Installation of electric actuators