

MARITZA EAST I Power Station

Maintenance Manual

Maintenance Manual Number:

KKS Code:

01 HAJ20 AA201

Equipment Description:

Valves KSB – Type Nori 160 RXS
DN 100

Supplier

Name:

KSB – Pumpy+Armatury, s.r.o.

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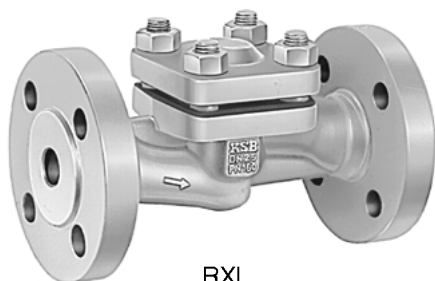
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28.04.2009

Non-return valves



RXL



RXS

flanged
or with butt -or socket-
weld ends

PN 63-160
DN 10-200

Application

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

Operating data

- Maximum allowable pressure 160 bar
- Maximum allowable temperature 550 °C
- Pressure-temperature ratings see next side

Materials

- Flanged variant

DN 10-25	P 250 GH ¹⁾	1.0460	up to 450 °C
	13 CrMo 4-5	1.7335	up to 550 °C
DN 32-200	GP 240 GH ²⁾	1.0619	up to 450 °C
	GS-17 CrMo 5-5	1.7357	up to 550 °C
- Variant with weld ends

DN 10-50	16 Mo 3	1.5415	up to 530 °C
	13 CrMo 4-5	1.7335	up to 550 °C
DN 65-200	GP 240 GH ²⁾	1.0619	up to 450 °C
	G-17 CrMo 5-5	1.7357	up to 550 °C

Design

- Straight-way pattern
- Check cone
- Closing spring
- Seats of wear-resistant and corrosion-proof Cr-steel or stellite
- Inside and outside confined bonnet gasket
- Studs and nuts olive-chromated
- Component-tested to TRD 110, TRB 801 Nr. 45 TÜ.A. 237-95

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

- Stellite seats (standard with 1.7335/1.7357)
- Free from oil and grease
- Connection branch made of 16 Mo 3 (RXS ≥ DN 65)
- Other flange or butt-weld end designs
- Acceptance tests to technical codes such as TRD/TRB/AD2000 or customer specification

Remarks

- NORI® 160 globe valves, type ZXL/ZXS with rotating stem according to type series booklet 7631.1
- NORI® 160 globe valves, type ZXL/ZXS with non-rotating stem according to type series booklet 7633.1
- 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 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	Material No.	Working pressures at temperatures in °C ¹)														
			120	200	250	300	350	400	425	450	475	500	510	520	530	540	550
63	P 250 GH ²) GP 240 GH ³)	1.0460 1.0619	63	50	45	40	36	32	28	22							
	13 CrMo 4-5 GS-17 CrMo 5-5	1.7335 1.7357	63	63	63	63	61	58	57	56	53	47	40	32	25	18	14
100	P 250 GH ²) GP 240 GH ³)	1.0460 1.0619	100	80	70	60	56	50	45	34							
	13 CrMo 4-5 GS-17 CrMo 55	1.7335 1.7357	100	100	100	100	95	91	89	87	82	74	62	49	38	28	21
160	C 22.8 GP 240 GH ³)	1.0460 1.0619	160	130	112	96	90	80	72	51							
	16 Mo 3	1.5415	160	160	160	139	125	118	115	112	110	87	70	57	45		
	13 CrMo 44 GS-17 CrMo 55	1.7335 1.7357	160	160	160	160	153	146	142	139	132	118	100	79	62	46	35

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

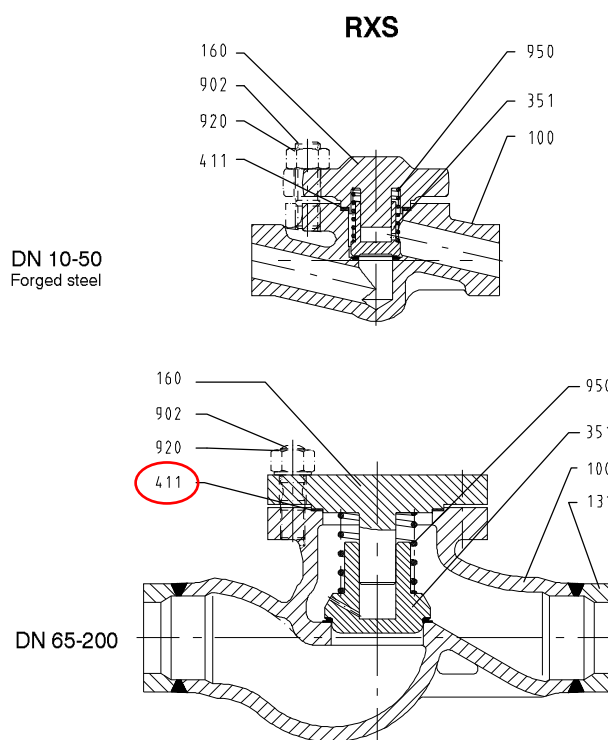
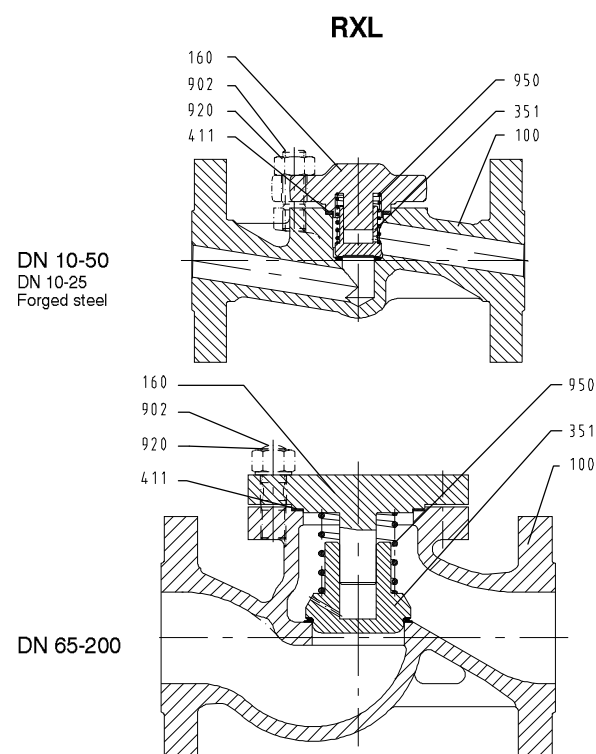
2) previously: C 22.8

3) previously: GS-C 25 N

Operating pressures to EN 1092/1 are also permissible

Installation

Non-return valves are installed in the line so that the medium enters the valve underneath the cone and flows out above it.



Materials

Part no.	Designation	Name of parts	Temperature °C	Remarks	Seats
100	Body	P 250 GH 1.0460	Up to 450	RXL ≤ DN 25	17 % Cr steel
		GP 240 GH (previously: GS-C 25 N) 1.0619		RXL ≥ DN 32, RXS ≥ DN 65	
		15 Mo 3 1.5415	Up to 530	RXS ≤ DN 50	Stellite
		13 CrMo 4-5 1.7335	Up to 550	RXL ≤ DN 25, RXS ≤ DN 50	
		G-17 CrMo 5-5 1.7357		RXL ≥ DN 32, RXS ≥ DN 65	
131	Connection branch	P 250 GH 1.0460	Up to 450	≥ DN 65	
		13 CrMo 4-5 1.7335	Up to 550		
160	Cover	P 250 GH 1.0460	Up to 450		
		13 CrMo 4-5 1.7335	Up to 550		
351 *)	Check cone	X 35 CrMo 17 1.4122	Up to 550	≤ DN 50	17 % Cr steel
		P 250 GH 1.0460	Up to 450	≥ DN 65	
		13 CrMo 4-5 1.7335	Up to 550		
411 *)	Gasket	CrNi-steel / graphite	Up to 550	Serrated	Stellite
902	Stud	21 CrMo V 5-7 1.7709		Olive chromated	
920	Hexagon nut	25 CrMo 4 1.7218			
950 *)	Spring	X 7 CrNiAl 17 7 1.4568			

*) Recommended spare parts