

Lift Check Valve

NORI 40 RXL/RXS

Type Series Booklet



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Type Series Booklet NORI 40 RXL/RXS

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Check Valves and Strainers

Lift Check Valves to DIN/EN

NORI 40 RXL/RXS



Main applications

- Process engineering
- Chemical industry
- Petrochemical industry
- Fossil-fuelled power stations
- Boiler feed applications
- Boiler recirculation
- Heat recovery systems
- Descaling units
- Snow-making systems
- Paper industry / pulp industry
- Sugar industry
- Shipbuilding
- Mining

Fluids handled

- Water
- Steam
- Other non-aggressive fluids such as gas or oil on request.

Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 25/40
Nominal size	DN 10 - 300
Max. permissible pressure [bar]	40
Min. permissible temperature [°C]	≥ -10
Max. permissible temperature [°C]	≤ +450

Selection as per pressure/temperature ratings (⇒ Page 5)

Valve body materials

Model with flanged ends (DN 10 - 40) and model with butt weld ends (DN 10 - 50)

Table 2: Overview of available materials

Material	Material number	Temperature limit
P 250 GH	1.0460	≤ 450 °C

Model with flanged ends (DN 50 - 300) and model with butt weld ends (DN 65 - 300)

Table 3: Overview of available materials

Material	Material number	Temperature limit
GP 240 GH+N	1.0619+N	≤ 450 °C

Design details

Design

- Straight-way pattern
- Spring-loaded check disc
- Outside confined cover gasket
- Seat/disc interface made of wear-resistant and corrosion-resistant chrome (Cr) steel or chrome nickel (CrNi) steel
- EC type tested (Module B), component mark TÜ.A.-290
- Exterior coating: blue, RAL 5002
- TA-Luft-compliant design to VDI 2440

Variants

- Serrated bonnet/cover gasket (PTFE-lined or graphite lined)
- Studs and nuts made of A4-70 (low-temperature steel)
- Oil and grease free (wetted parts)
- Oil and grease free for oxygen
- Other flange designs
- Other butt weld end versions
- Other socket weld end versions
- Inspections to technical codes such as TRD/TRB/AD2000 – German Steam Boiler / Pressure Vessel Regulations – or to customer specification

Product benefits

- Reliable sealing. Bonnet gasket fully confined to prevent creep.
- Hard-faced valve seat made of wear-resistant and corrosion-proof materials for long service life and high functional reliability.
- Easy to repair due to corrosion-protected bolts/screws and nuts
- Versatile. Closing spring enables use in vertical or horizontal pipes.

Product information

Product information as per Regulation No. 1907/2006 (REACH)

For information as per European chemicals regulation (EC) No. 1907/2006 (REACH) see <https://www.ksb.com/en-global/company/corporate-responsibility/reach>.

Product information as per Directive 2014/34/EU (ATEX)

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 (zone 2+22) to ATEX 2014/34/EU.

Product information as per Pressure Equipment Directive 2014/68/EU (PED)

The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Groups 1 and 2.

Product information as per UK Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016

The valves do not have a potential internal source of ignition and can be used in accordance with the UK's Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016 in potentially explosive atmospheres, Group II, category 2 (zones 1+21) and category 3 (zone 2+22).

Product information as per UK Pressure Equipment (Safety) Regulations 2016

The valves satisfy the safety requirements of the UK Pressure Equipment (Safety) Regulations 2016 (PER) for fluids in Groups 1 and 2.

Related documents

Table 4: Information/documents

Document	Reference number
NORI 40 ZXL/ZXS type series booklet (globe valves with gland packing and rotating stem)	7621.1
NORI 40 ZXL/ZXS type series booklet (globe valves with gland packing and non-rotating stem)	7622.1
NORI 40 FSL/FSS type series booklet (strainers)	7127.1
NORI 40 ZXL/ZXS type series booklet (bellows-type globe valves with two-piece stem)	7165.1
NORI 40 ZXL/ZXS type series booklet (bellows-type globe valves with two-piece stem)	7168.1
NORI 40 ZYL/ZYS type series booklet (Y-pattern bellows-type globe valves)	7160.1
Operating manual	0570.82

Purchase order specifications

Please specify the following information in all enquiries or purchase orders:

1. Type
2. Nominal pressure
3. Nominal size
4. Operating pressure
5. Differential pressure
6. Operating temperature
7. Fluid handled
8. Pipe connection
9. Variants
10. Reference number

Pressure/temperature ratings

Table 5: Permissible operating pressure [bar] (to EN 1092-1)¹⁾

PN	Material	[°C]								
		RT ²⁾	100	150	200	250	300	350	400	450
25	P 250 GH	25,0	23,2	22,0	20,8	19,0	17,2	16,0	14,8	8,2
40	GP 240 GH+N	40,0	37,1	35,2	33,3	30,4	27,6	25,7	23,8	13,1

¹⁾ Operating pressures to DIN 2401 are also permissible.

²⁾ RT: room temperature (-10 °C to +50 °C)

Materials

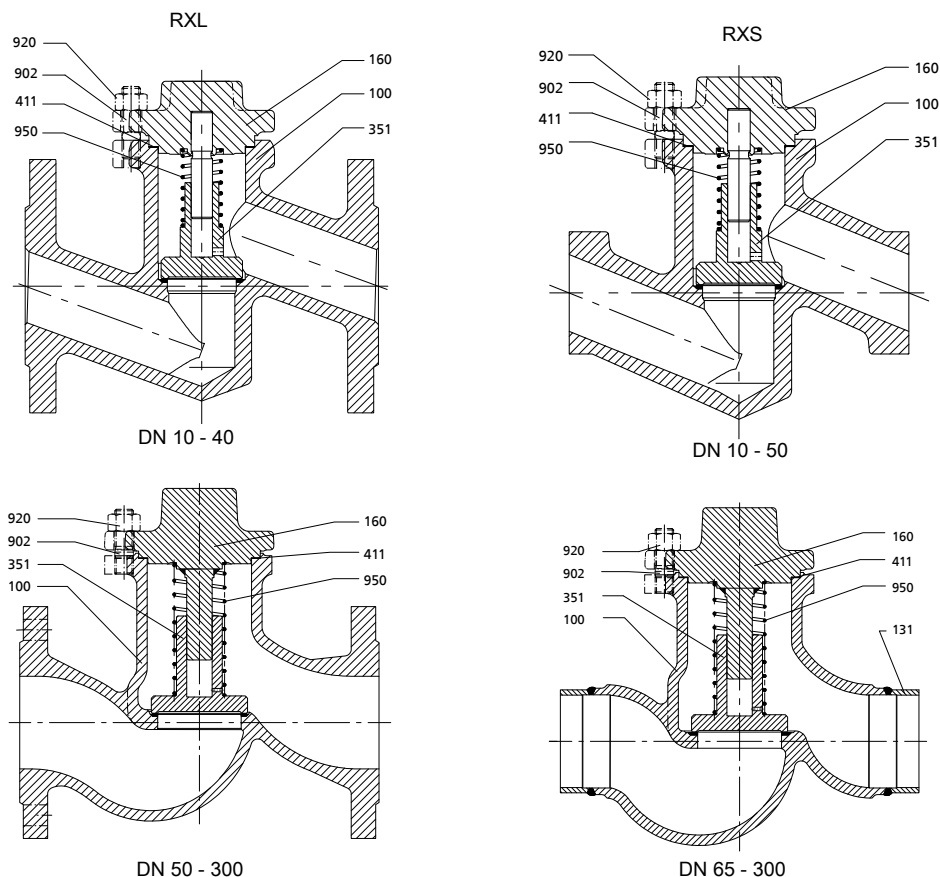


Fig. 1: Sectional drawings

Table 6: Parts list

Part No.	Description	DN	Material	Material number	Note
100	Body	10-40 type RXL 10-50 type RXS	P 250 GH	1.0460	Hard-faced with stainless steel (1.4370)
		50-300 type RXL 65-300 type RXS	GP 240 GH+N	1.0619+N	
131	Connection branch	65 - 300 type RXS	P 235 GH	1.0305	-
160	Cover	10-250	P 250 GH	1.0460	-
		300	P 265 GH	1.0425	-
351 ³⁾	Check disc	10-50	X 6 CrNiMoTi 17-12-2	1.4571	-
		65-100	X 20 Cr 13	1.4021	-
		125-300	P 250 GH	1.0460	Hard-faced (1.4115)
411 ³⁾	Joint ring	10-300	CrNi steel/ graphite	-	-
902	Stud	10-300	21 CrMoV 5-7	1.7709	Corrosion-protected
920	Hexagon nut	10-300	25CrMo4	1.7218	
950 ³⁾	Spring	10-50	X 5 CrNiMo 17-12-2	1.4401	-
		65-100	X 12 CrNi 177	1.4310	
		125-300	Spring steel B	1.0600	

³⁾ Recommended spare parts

Dimensions and weights

Dimensions and weights of NORI 40 RXL

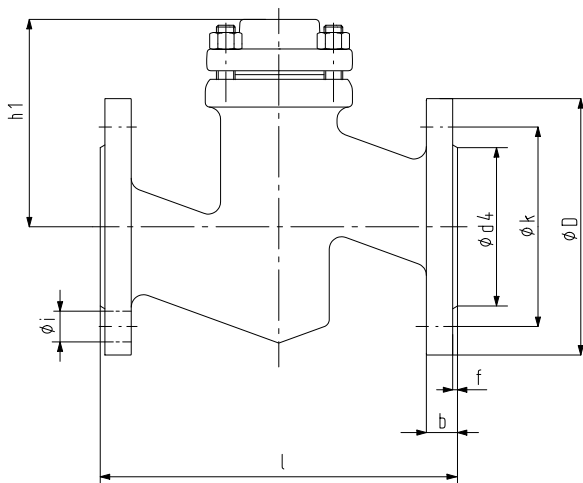


Fig. 2: NORI 40 RXL

Table 7: Dimensions and weights

PN	DN	l [mm]	Ø D [mm]	Ø k [mm]	Number of bolt holes z	Ø i [mm]	Ø d ₄ × f [mm]	b [mm]	h1 [mm]	[kg]
25/40	10	130	90	60	4	14	40 × 2	16	85	2,6
	15	130	95	65	4	14	45 × 2	16	85	3,2
	20	150	105	75	4	14	58 × 2	18	105	4,0
	25	160	115	85	4	14	68 × 2	18	105	4,7
	32	180	140	100	4	18	78 × 2	18	115	7,9
	40	200	150	110	4	18	88 × 2	18	120	9,3
	50	230	165	125	4	18	102 × 3	20	135	12,1
	65	290	185	145	8	18	122 × 3	22	173	17,0
	80	310	200	160	8	18	138 × 3	24	202	27,0
	100	350	235	190	8	22	162 × 3	24	234	33,0
	125	400	270	220	8	26	188 × 3	26	200	48,0
	150	480	300	250	8	26	218 × 3	28	220	65,0
25	200	600	360	310	12	26	278 × 3	30	270	120,0
	250	730	425	370	12	30	335 × 3	32	310	205,0
	300	850	485	430	16	30	395 × 4	34	340	310,0
40	200	600	375	320	12	30	285 × 3	34	270	160,0
	250	730	450	385	12	33	345 × 3	38	310	240,0
	300	850	515	450	16	33	410 × 4	42	340	350,0

Mating dimensions as per standard

Face-to-face length: EN 558-1/1, ISO 5752/1
 Flanges: Mating dimensions to
 DIN EN 1092-1, ISO 7005
 Flange facing: Type B

Other flange designs

- E.g. groove (type D), tongue (type C), recess (type F), spigot (type E) to EN 1092-1 at both ends
- Other flange designs on request

Dimensions and weights of NORI 40 RXS

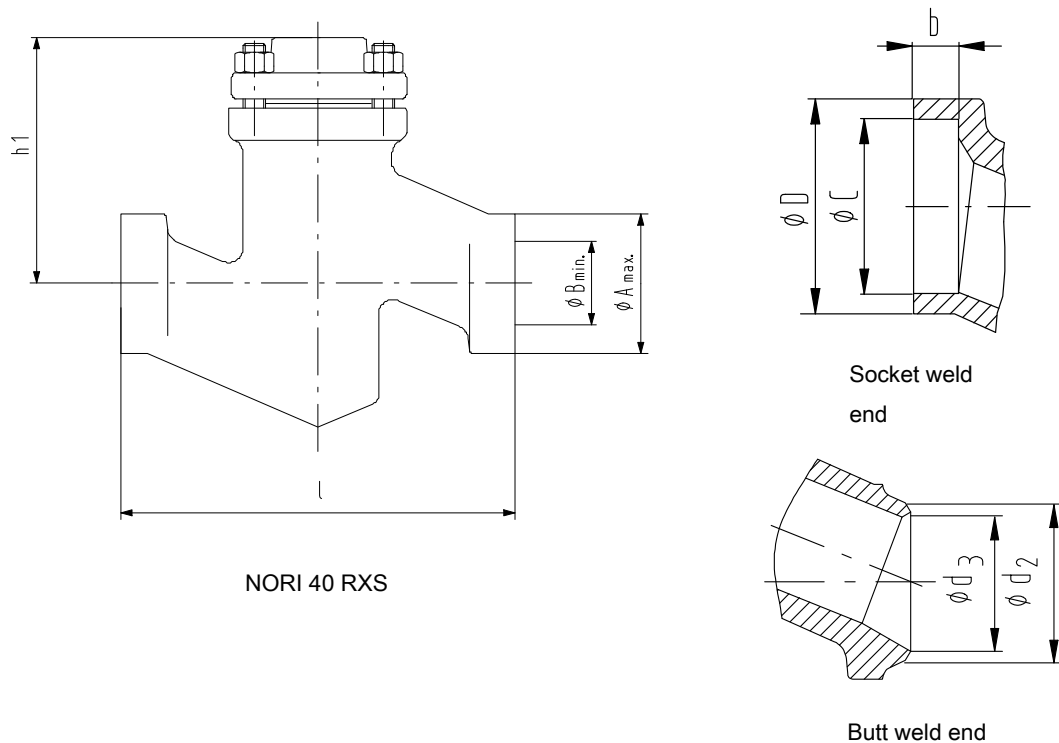


Table 8: Dimensions and weights

PN	DN	I	Butt weld ends, unmachined		Butt weld ends to DIN EN 12627			Socket weld ends to DIN EN 12760			h ₁	[kg]
			ø A _{max.}	ø B _{min.}	ø d ₂	ø d ₃	Associated pipe dimensions	ø D _{-0,5}	ø C _{+0,2}	b _{min.}		
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
25/40	10	130	44	10	18	13	17,2 × 2,0	25	17,6	10	105	2,0
	15	130	44	15	22	17	21,3 × 2,0	30,5	21,7	10	105	2,0
	20	130	44	20	28	22	26,9 × 2,3	36,5	27,1	13	105	2,0
	25	130	44	24	34	28,5	33,7 × 2,6	44,5	33,8	13	105	2,0
	32	160	60	33	43	37	42,4 × 2,6	53,5	42,5	13	120	5,5
	40	180	60	38	49	43	48,3 × 2,6	60,5	48,7	13	120	5,5
	50	210	73	48	61	54	60,3 × 3,2	73,5	61,1	16	135	7,5
	65	290	76,1	64,9	76,1	69	76,1 × 3,6	-	-	-	173	13,0
	80	310	88,9	79,9	88,9	81	88,9 × 4,0	-	-	-	202	20,0
	100	350	114,3	100,1	114,3	104	114,3 × 5,0	-	-	-	234	40,0
	125	400	139,7	125,5	139,7	130,5	139,7 × 4,5	-	-	-	200	60,0
	150	480	168,3	148,3	168,3	156,5	168,3 × 5,6	-	-	-	220	80,0
	200	600	219,1	199,1	219,1	204,5	219,1 × 7,1	-	-	-	270	130,0
	250	730	273	251	273	256,5	273,0 × 8,0	-	-	-	310	200,0
	300	950	345	305	323,9	306,5	323,9 × 8,8	-	-	-	340	285,0

Mating dimensions as per standard

Face-to-face length: EN 12982/64
Butt weld ends: DIN EN 12627 Figure 2
Socket weld ends: DIN EN 12760

Different designs of butt weld ends, socket weld ends and welding groove types are possible, but only within the dimensions A_{max.} and B_{min.}.

Butt weld ends to DIN 3239/1 or socket weld ends to ASME B16.11 and DIN 3239/2 are possible.

Installation instructions

Lift check valves must be installed in the line so as to ensure that the fluid enters the valve beneath the valve disc and flows out above the valve disc.

Table 9: Minimum opening pressure [bar]

DN	[bar]
10-50	0,15
65-300	0,07



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