



Strainer

## **NORI 40 FSL/FSS**

### **Type Series Booklet**



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Type Series Booklet NORI 40 FSL/FSS

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## Check Valves and Strainers

### Strainers to DIN/EN

# NORI 40 FSL/FSS



#### Main applications

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

#### Fluids handled

- Water
- Steam
- Thermal oil
- 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 15 - 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

**Table 2:** Overview of available materials

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

#### Design details

##### Design

- Y-pattern strainer
- Stainless steel screen
- Additional supporting cage for size DN 125 and above
- Screen accurately guided in cover and body
- Fully confined bonnet gasket
- Drain plug
- Materials free from non-ferrous metals
- High-temperature resistant paint (grey aluminium)

##### Variants

- Fine screen
- Coarse screen, mesh size 2 mm (DN 15-100)
- Magnetic inserts (300 °C max.)
- Studs and nuts made of A4-70 (low-temperature steel)
- Other flange designs
- Certification to customer specification

##### Product benefits

- Reliable sealing. Bonnet gasket fully confined to prevent creep.
- Long service life due to screen made of stainless steel.
- Time and cost saving replacement of screen without removing the body insulation by using the studs as centering aids.
- Standard drain plug for easy inspection and drainage of strainer, particularly of strainers with a large nominal size.

**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 European 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.

**Related documents**
**Table 3:** 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 RXL/RXS type series booklet (lift check valves)	7673.1
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

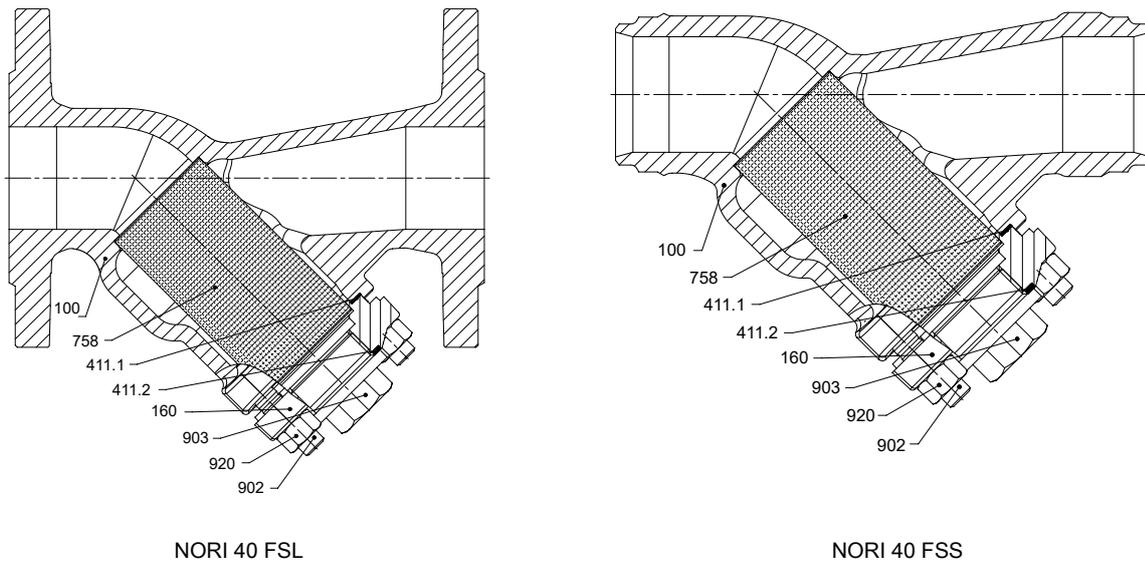
**Pressure/temperature ratings**
**Table 4:** Permissible operating pressure [bar] (to EN 1092-1) <sup>1)</sup>

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

<sup>1</sup> Operating pressures to DIN 2401 are also permissible.

<sup>2</sup> RT: room temperature (-10 °C to +50 °C)

**Materials**



NORI 40 FSL

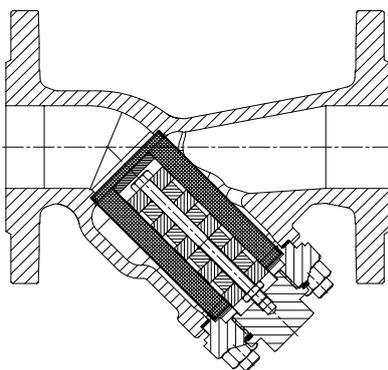
NORI 40 FSS

**Fig. 1:** Sectional drawings

**Table 5:** Parts list

Part No.	Description	Material	Material number	Note
100	Body	GP 240 GH+N	1.0619+N	-
160	Cover	GP 240 GH	1.0619	-
411.1 <sup>3)</sup>	Joint ring	CrNi steel/graphite	-	-
758 <sup>3)</sup>	Screen	Stainless steel	-	-
191 <sup>3)</sup>	Screen cage	Stainless steel	-	≥ DN 125
902	Stud	21 CrMoV 5-7	1.7709	Corrosion-protected
903 <sup>3)</sup>	Drain plug	A4	-	-
411.2 <sup>3)</sup>	Joint ring	A4	-	-
920	Hexagon nut	25 CrMo 4	1.7218	Corrosion-protected

**Variants**



Magnetic insert

<sup>3</sup> Recommended spare parts

Dimensions and weights

Dimensions and weights of NORI 40 FSL

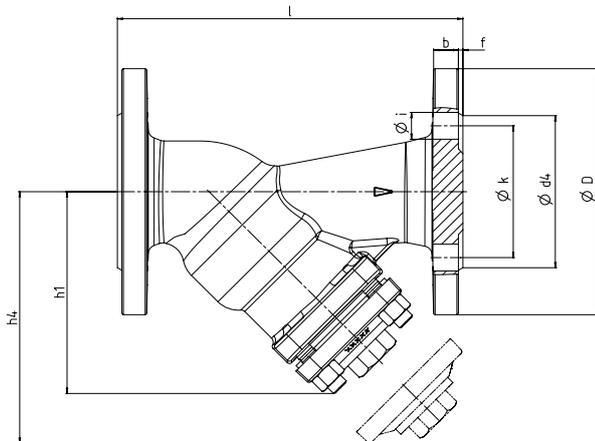


Fig. 2: NORI 40 FSL

Table 6: Dimensions and weights

PN	DN	l	Ø D	Ø k	No. of bolt holes z	Ø i	Ø d <sub>4</sub> × f	b	h1	h4 <sup>4)</sup>	[kg]
		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	
25/40	15	130	95	65	4	14	45 × 2	16	88	121	3,0
	20	150	105	75	4	14	58 × 2	18	87	121	3,5
	25	160	115	85	4	14	68 × 2	18	100	145	4,4
	32	180	140	100	4	18	78 × 2	18	101	146	5,8
	40	200	150	110	4	18	88 × 2	18	134	200	8,4
	50	230	165	125	4	18	102 × 2	20	135	201	11,2
	65	290	185	145	8	18	122 × 2	22	191	287	19,4
	80	310	200	160	8	18	138 × 2	24	195	292	21,6
	100	350	235	190	8	22	162 × 2	24	224	335	32,4
	125	400	270	220	8	26	188 × 2	26	268	415	48,2
25	150	480	300	250	8	26	218 × 2	28	309	485	70,0
	200	600	360	310	12	26	278 × 2	30	380	587	120,6
	250	730	425	370	12	30	335 × 2	32	445	718	184,9
	300	850	485	430	16	30	395 × 2	34	511	829	269,0

Table 7: Dimensions

PN	DN	Standard screen				Fine screen			
		Kv	Zeta value	Mesh width	Wire diameter	Kv	Zeta value	Mesh width	Wire diameter
		[m <sup>3</sup> /h]		[mm]	[mm]			[m <sup>3</sup> /h]	[mm]
25/40	15	6,6	1,8	1,25	0,63	5,4	2,7	0,28	0,22
	20	12,0	1,7	1,25	0,63	10,3	2,4	0,28	0,22
	25	18,7	1,8	1,25	0,63	15,0	2,7	0,28	0,22
	32	28,7	2,0	1,25	0,63	20,0	4,1	0,28	0,22
	40	43,1	2,2	1,25	0,63	33,4	3,6	0,28	0,22
	50	75,2	1,7	1,25	0,63	57,3	3,0	0,28	0,22
	65	121,4	1,9	1,25	0,63	82,3	4,1	0,28	0,22
	80	186,6	1,8	1,25	0,63	145,4	3,0	0,28	0,22
	100	291,0	1,9	1,25	0,63	213,4	3,4	0,28	0,22
	125	371,4	2,8	2,0	1,0	311,1	4,0	0,28	0,22
25	150	545,8	2,7	2,0	1,0	475,2	3,5	0,28	0,22
	200	834,8	3,6	2,0	1,0	590,3	7,2	0,28	0,22
	250	1304,4	3,6	2,0	1,0	903,7	7,5	0,28	0,22

4 Clearance for removal

PN	DN	Standard screen				Fine screen			
		Kv	Zeta value	Mesh width	Wire dia- meter	Kv	Zeta value	Mesh width	Wire dia- meter
		[m <sup>3</sup> /h]		[mm]	[mm]			[m <sup>3</sup> /h]	[mm]
25	300	1878,3	3,6	2,0	1,0	1301,3	7,5	0,28	0,22

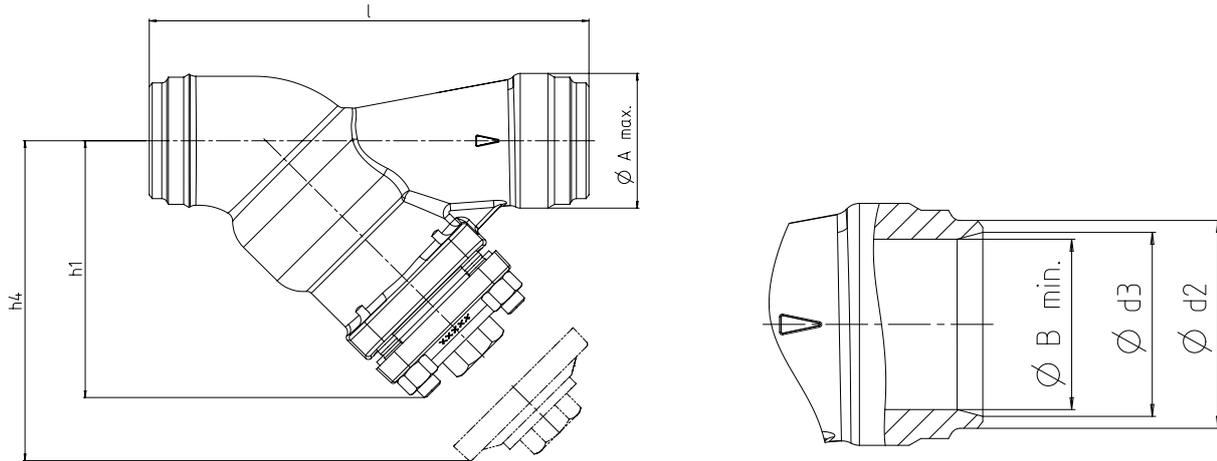
### Mating dimensions as per standard

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

Face-to-face lengths: 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 FSS**


NORI 40 FSS

Butt weld end

**Table 8:** Dimensions and weights

PN	DN	I	Butt weld ends, unma- chined		Butt weld ends to DIN EN 12627			h1	h4 <sup>5)</sup>	[kg]
			Ø A <sub>max.</sub>	Ø B <sub>min.</sub>	Ø d <sub>2</sub>	Ø d <sub>3</sub>	Associated pipe dimensions			
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
25/40	15	130	31,0	15,0	22,0	17,0	21,3 × 2,0	88	121	1,6
	20	150	38,0	20,0	28,0	22,0	26,9 × 2,3	87	121	1,8
	25	160	44,0	25,0	34,0	28,5	33,7 × 2,6	100	145	2,2
	32	180	51,0	32,0	43,0	37,0	42,4 × 2,6	101	146	2,5
	40	200	61,0	40,0	49,0	43,0	48,3 × 2,6	134	200	4,7
	50	230	71,0	50,0	61,0	54,0	60,3 × 3,2	135	201	5,6
	65	290	88,0	65,0	77,0	69,0	76,1 × 3,6	191	287	12,2
	80	310	104,0	80,0	90,0	82,0	88,9 × 4,0	195	292	13,6
	100	350	131,0	100,0	115,0	104,0	114,3 × 5,0	224	335	21,8
	125	400	155,0	125,0	142,0	130,5	139,7 × 4,5	268	415	33,4
25	150	480	184,0	150,0	170,0	156,5	168,3 × 5,6	309	485	50,4
	200	600	249,0	200,0	222,0	204,5	219,1 × 7,1	380	587	94,5
	250	730	305,0	250,0	276,0	256,5	273,0 × 8,0	445	718	148,9
	300	850	356,0	300,0	325,0	306,5	323,9 × 8,8	511	829	221,6

**Table 9:** Dimensions

PN	DN	Standard screen				Fine screen			
		Kv	Zeta value	Mesh width	Wire dia- meter	Kv	Zeta value	Mesh width	Wire dia- meter
		[m <sup>3</sup> /h]		[mm]	[mm]	[m <sup>3</sup> /h]		[mm]	[mm]
25/40	15	6,6	1,8	1,25	0,63	5,4	2,7	0,28	0,22
	20	12,0	1,7	1,25	0,63	10,3	2,4	0,28	0,22
	25	18,7	1,8	1,25	0,63	15,0	2,7	0,28	0,22
	32	28,7	2,0	1,25	0,63	20,0	4,1	0,28	0,22
	40	43,1	2,2	1,25	0,63	33,4	3,6	0,28	0,22
	50	75,2	1,7	1,25	0,63	57,3	3,0	0,28	0,22
	65	121,4	1,9	1,25	0,63	82,3	4,1	0,28	0,22
	80	186,6	1,8	1,25	0,63	145,4	3,0	0,28	0,22
	100	291,0	1,9	1,25	0,63	213,4	3,4	0,28	0,22
	125	371,4	2,8	2,0	1,0	311,1	4,0	0,28	0,22

7127.1/21-EN

5 Clearance for removal

PN	DN	Standard screen				Fine screen			
		Kv	Zeta value	Mesh width	Wire dia- meter	Kv	Zeta value	Mesh width	Wire dia- meter
		[m <sup>3</sup> /h]		[mm]	[mm]			[m <sup>3</sup> /h]	[mm]
25/40	150	545,8	2,7	2,0	1,0	475,2	3,5	0,28	0,22
25	200	834,8	3,6	2,0	1,0	590,3	7,2	0,28	0,22
	250	1304,4	3,6	2,0	1,0	903,7	7,5	0,28	0,22
	300	1878,3	3,6	2,0	1,0	1301,3	7,5	0,28	0,22

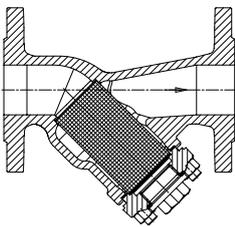
**Mating dimensions as per standard**

Face-to-face lengths: EN 12982/1  
Butt weld ends: DIN EN 12627 Fig. 4

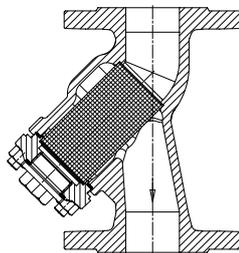
**Installation instructions**

The flow direction must correspond to the flow direction arrow indicated on the valve body.

In both horizontal and vertical pipes, installing the strainer with the screen hanging downwards is recommended to facilitate cleaning.



Horizontal installation



Vertical installation





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