
Strainer

N/F

N/A

NC

Operating Manual

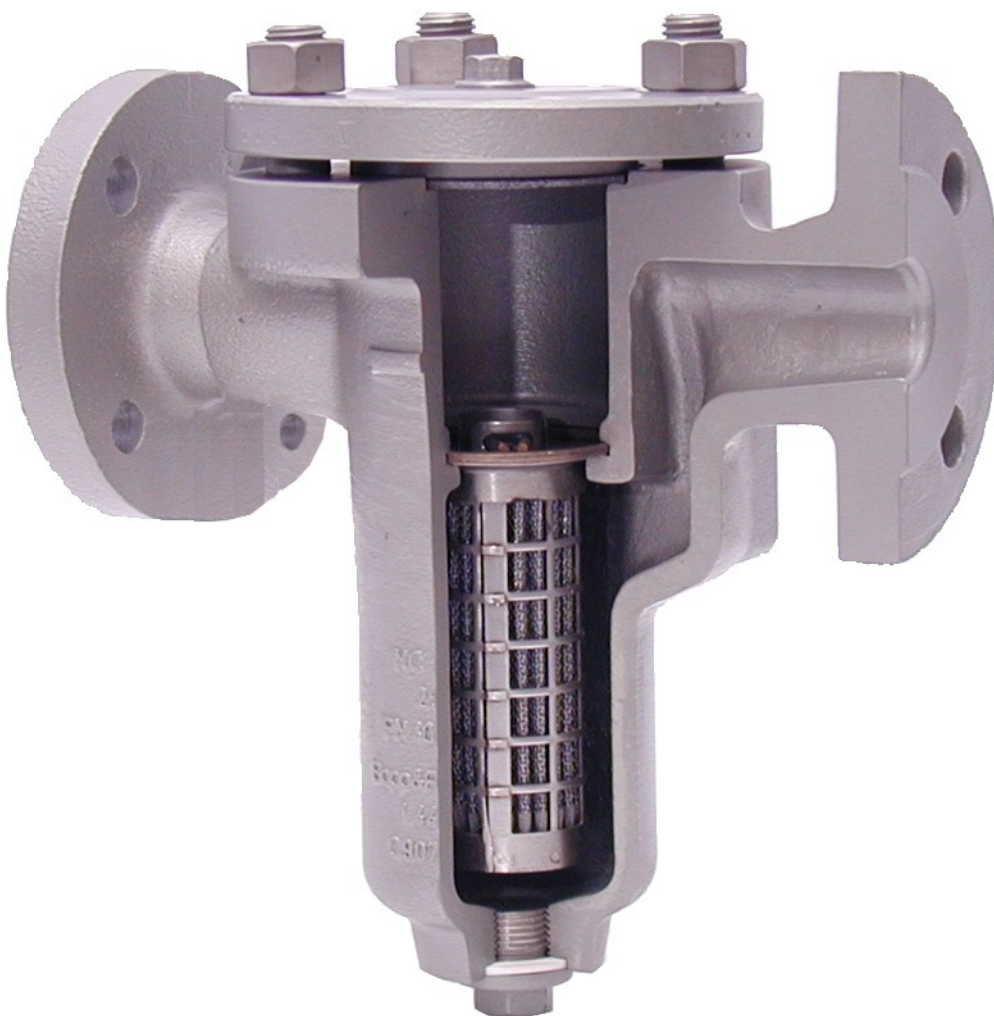


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1 Identification

1.1 Supplier/Manufacturer

Bopp & Reuther Messtechnik GmbH

1.2 Type of Product

Strainer, series N and NC

1.3 Name of Product

Strainer, series N and NC

1.4 Date of Release

30/10/03

Letzte Revision August 2008

1.5 Version No.

A-EN-03551-00Rev.C

2 Area of Application

The strainer is used to prevent measuring errors and damages caused by impurities contained in liquids.

3 System Design

Strainers are made of a cast (NC models) or a welded (N models) housing and a filter element with a metallic fabric liner. The liquid flows from the top down through the filter element in which the impurities are captured by the fine-meshed metallic fabric. The filter element can be removed for cleaning after opening the cover.

The NC strainer has conical internal surfaces and highly radiused edges. These design features guarantee that the strainer and the connected pipework are drained completely after opening the drain plug installed at the lowest position. There is absolutely no liquid left in the strainer after drainage. The strainer can be aerated or deaerated via a vent plug installed at the highest position.

The N/A and N/F models also have a drain plug at the bottom and a vent plug on the cover. The drained off liquid will probably contain product residue.

4. Technical Data

4.1 Operating Temperature

NC model	-10 to max. +300 °C (up to -200°C on request)
N model	-10 to max. +100 °C

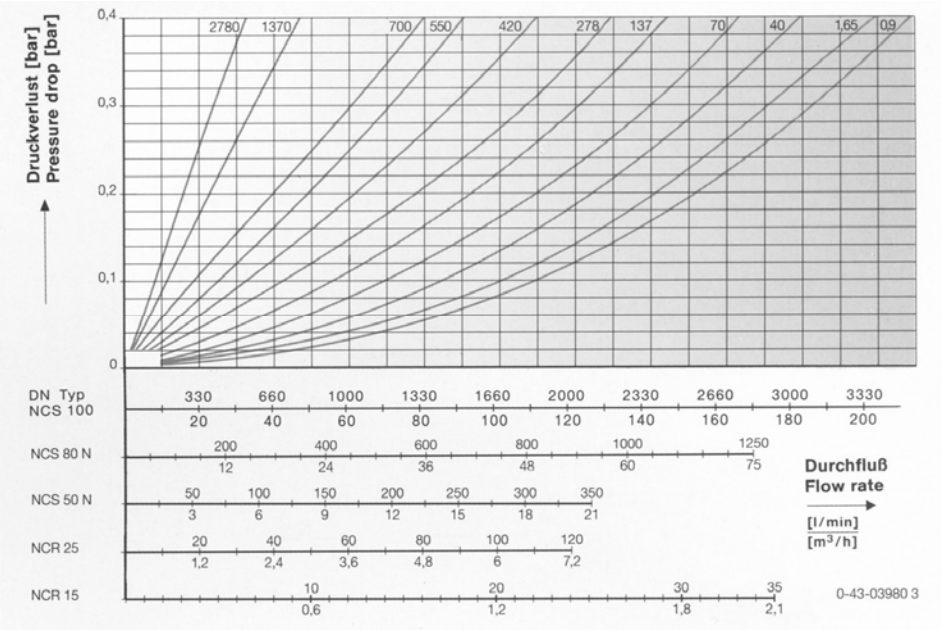
Please pay attention to the material yield point drop for temperatures above +100°C.

4.2 Nominal Pressure:

NC model	PN 40 (Class 150 RF and 300 RF)
N model	PN 16, 40, 100 (Class 150 RF, 300 RF and 600 RF)

4.3 Pressure Drop

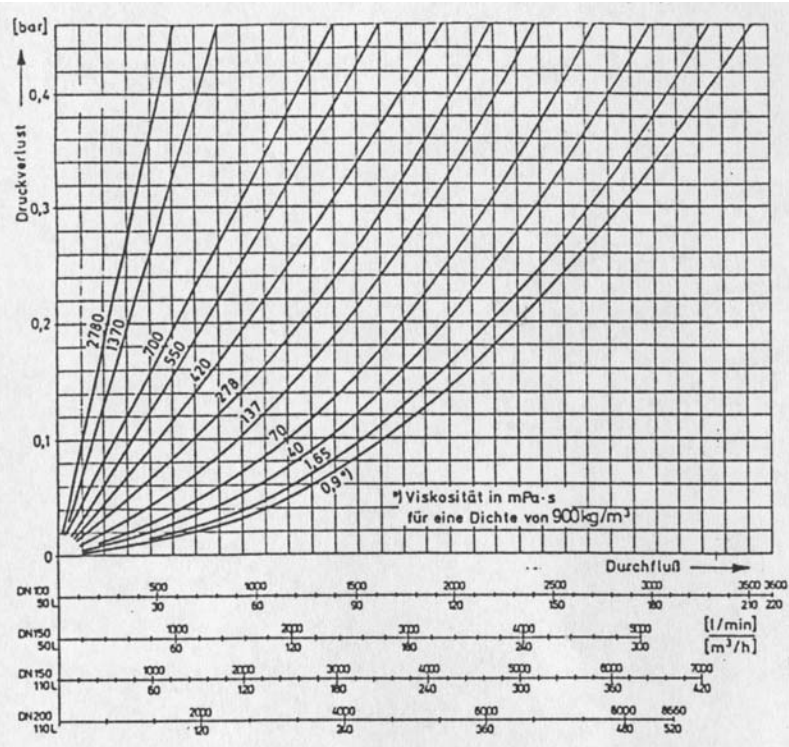
NC strainer



Strainer pressure drops depending on the flow rate and on the liquid viscosity with unsoiled filter elements.

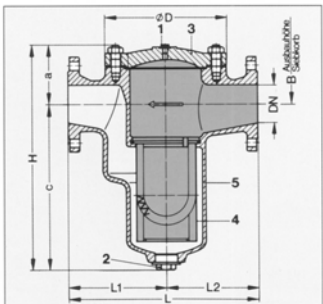
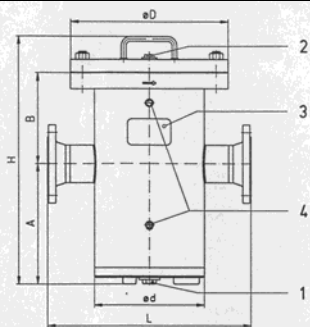
The highest permissible differential pressure with soiling is 3 bar.

N strainer



5. Constructive Design

5.1 Model/Dimensions

NC strainer	N strainer
1 Verschlußschraube Be- und Entlüftung 2 Verschlußschraube Entleerung 3 Gehäuse-Deckel Siebkorb Typ R (rund) bzw. Typ S (Sternförmig) 5 Gehäuse 1 vent plug 2 drain plug 3 cover 4 basket type R (round) resp. type S (starlike) 5 housing 	 1. Entleer-Schraube G 1 1/2 2. Entlüftungs-Schraube G 1 3. Herstellerschild 4. Anschluß für Differenzdruck-Anzeiger G 1/4 AusII : links der Durchflußrichtung AusII : rechts der Durchflußrichtung

NC strainer

					Dimensions for housing with DIN and ANSI flanges in mm							
DN	Type	PN	Qmax [l/min]	Capacity [litre]	L	H	D	a	c	L1	L2	B
15	NCR	40	35	0.5	210	236	132	70	166	105	105	180
25	NCR	40	120	0.6	220	246	132	70	176	110	110	180
50	NCS	40	350	3	300	363	190	101	262	154	146	260
80	NCS	40	1250	8.5	400	496	255	125	371	207	193	370
100	NCS	40	3330	23	470	721	320	150	571	240	230	600

N strainer material A and F

DN	PN	Qmax [m³/h]	Capacity [litre]	L	D	A	B	H	d	
100 4"	16 / Class 150	220	50	550	465	370	270	740	324	
	40 / Class 300			600				750		
	100 / Class 600			700	480	390		800	368	
150 6"	16 / Class 150	300		600	420	372		740	324	
	40 / Class 300			650				465		750
	100 / Class 600			750	480	390		800	368	
150 6"	16 / Class 150	420	110	700	530	485	395	1010	420	
	40 / Class 300			750	550	500		1025		
	100 / Class 600			800		520		1060		
200 8"	10	520		750	530	485		1010		
	16 / Class 150									550
	25									
	40 / Class 300									
	100 / Class 600			850		520				1060

5.2 Weights

DN	PN	Capacity [litre]	NC strainer [kg]	N/A strainer [kg]	N/F strainer [kg]
15	40	0.5	8	---	---
25	40	0.6	9,5	---	---
50	40	3	25	---	---
80	40	8.5	52	---	---
100	40	23	130	---	---
100 4"	16 / Class 150	50	---	130	130
	40 / Class 300	50	---	220	220
	100 / Class 600	50	---	390	390
150 6"	16 / Class 150	50	---	140	140
	40 / Class 300	50	---	230	230
	100 / Class 600	50	---	400	400
150 6"	16 / Class 150	110	---	230	230
	40 / Class 300	110	---	360	360
	100 / Class 600	110	---	630	630
200 8"	10	110	---	240	240
	16 / Class 150	110	---	250	250
	25	110	---	300	300
	40 / Class 300	110	---	380	380
	100 / Class 600	110	---	640	640

5.3 Materials

Model	NC/A2 Cast steel	NC/F Special cast steel	N/A Steel plate (welded)	N/F Special sheet steel (welded)
Housing	GS-C25N 1.0619.01	1.4405	P265GH (HII)	1.4571
Cover	P265GH (HII) (HII)	1.4408	P265GH (HII)	1.4571
Flange	GS-C25N 1.0619.01	1.4405	P265GH (HII) (welding flange)	1.4571
			C22.8 (connection flange DIN)	
			C21 (connection flange ANSI)	
Strainer	1.4571	1.4571	1.4571	1.4571
Nuts and bolts	CK 35 / C 35	A4-70	C35E	A4-70
Gaskets	Centellen C WS3844	Sigraflex (cover) Teflon with 25% glass fibre (deaeration) PTFE (draining)	Novapress Multi and Centellen C WS3844	PTFE

5.4 Filter Element Mesh Size

NC: Standard 0.25 mm

Optional 0.025/0.04/0.063/0.1/0.5/0.8/1.0/2.0

N: Standard 0.25 mm

Optional 0.1/0.5/0.8/1.0/2.0

(All sizes in mm)

6 Order Information

When ordering please state:

The product data, especially weight, temperature, pressure, viscosity, material, connection sizes, measuring range, desired accessories, required approvals, certificates and material certificates.

7 Standards and Directives

Explosion protection directive 94/9/EC:

The device complies with standards EN1127-1 and EN13463-1 in accordance with ATEX100a. The operator should always observe respective regulations when installing and connecting the device in explosive areas.

Pressure equipment directive 97/23/EC

The NC strainers are suitable for group 1 liquids
- Classification depends on the product's pressure stage and capacity acc. to Article 3, §3 (designed and produced according to excellent engineering techniques) or acc. to Category III, Module B and C1.

The N/A or N/F strainers are suitable for group 1 liquids

- Classification generally within Category IV, with individual acceptance acc. to Module G of the pressure equipment directive for N/A or N/F welded strainers.

8 Commissioning and Operation

The strainer should be connected to the process via the flanges. (Please observe the direction of flow!!).

The operator has to ensure that the strainer cannot be electrostatically charged. For this purpose, an earthing strap has to be fixed to a screw on the cover and connected to earth. This ensures that the strainer is included in the system's equipotential bonding.

9 Safety Information

The strainer should only be used for its intended area of application (see 2). Always observe the pressure and temperature limits stated on the type plate as well as all other technical data and safety information during device installation, commissioning and operation.

Always observe national and international regulations concerning the operation of devices and systems under pressure.

Prior to installation, the operator has to ensure that the pressure bearing parts have not been damaged during transportation.

The devices have to be installed, operated and serviced by qualified personnel. The operator has the responsibility to ensure that the personnel have received sufficient and appropriate training. In case of doubt, please contact the manufacturer.

Only measure liquids to which the materials of the pressure bearing elements are resistant.

Only use the original spare parts specified by the manufacturer when replacing components. In the case of non-compliance, warranty shall not apply.

Only release flanges or connections for deaeration or draining purposes when the devices are depressurised.

Carefully select gaskets or sealing elements according to the operating instruction specifications (see 5.3).

Type Plates

The used abbreviations have the following meaning:

Serial number:	Clear identification no.
Year:	Year of construction
PT:	Achieved test pressure, and test date
DN:	Nominal width
Capacity:	Strainer capacity in litres
TS:	Permissible operating temperature
PS:	Permissible operating pressure
Mesh size:	Mesh size of the inserted strainer

Type plate for N/A, N/F, and NC DN 80 to DN 100 strainers

⊕

⊕

⊕

⊕

0036

Bopp & Reuther
Messtechnik
D-67346 Speyer

Siebkorbfilter

Fabrik-Nr.

Baujahr

Typ

PS zul.Betr.- **bar**

PT aufgebr. Prüfdruck **bar**

DN

Inhalt **ℓ**

Maschenweite **mm**

TS zul.Betr.- **°C**

PT Prüf-Datum

1-43-69214-550/-

Type plate for NC DN 15 to DN 50 strainers

1-43-67336-550/c		⊕ Siebkorbfilter ⊕	
Fabrik Nr.		DN	
Baujahr		Inhalt	l
Typ		zul. Betr. -	bar
Maschenweite	mm	Überdruck	bar
		zul. Betr. -	°C
		Temp.	
		Bopp & Reuther Messtechnik 	

Additional plate NC DN 50 strainers

⊕	PT bar	1-40-70288-550/a	⊕
	CE 0036	Bopp & Reuther Messtechnik	
		D - 67346 Speyer	

10 Disposal and Decommissioning

Disposal or decommissioning should only be carried out by qualified personnel. Product residue has to be disposed of in accordance with legal regulations.

11 Maintenance

Depending on the degree of liquid soiling, the strainer has to be changed at regular intervals. In order to

achieve this, open the drain plug and drain off the liquid. Subsequently open the plugs at the cover and remove the strainer. Retighten the vent plug together with a new gasket. Insert the new strainer. Place a new gasket in the cover and retighten.

12 Repairs

This device has been designed, produced and tested with the utmost care. In the unlikely event that a fault should occur, please contact our service department.

13 Service Addresses

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