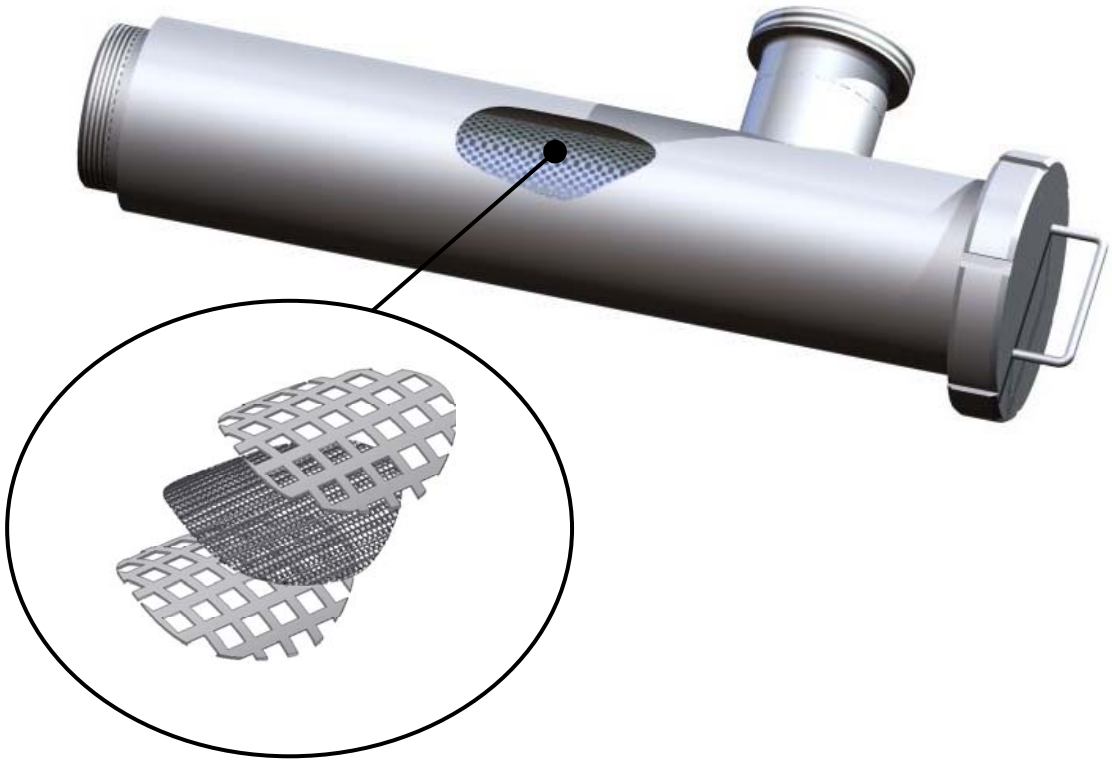
Operating Instructions

Angular filter with
strainer "type sandwich"
M&S Article No. 60100



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2 Symbols used

Danger warnings
Danger warnings are denoted by the danger symbol which appears on the left and are framed.

Information
Descriptions to which particular attention must be paid are denoted by this symbol which appears on the left and are also framed.

3 Sectional drawings

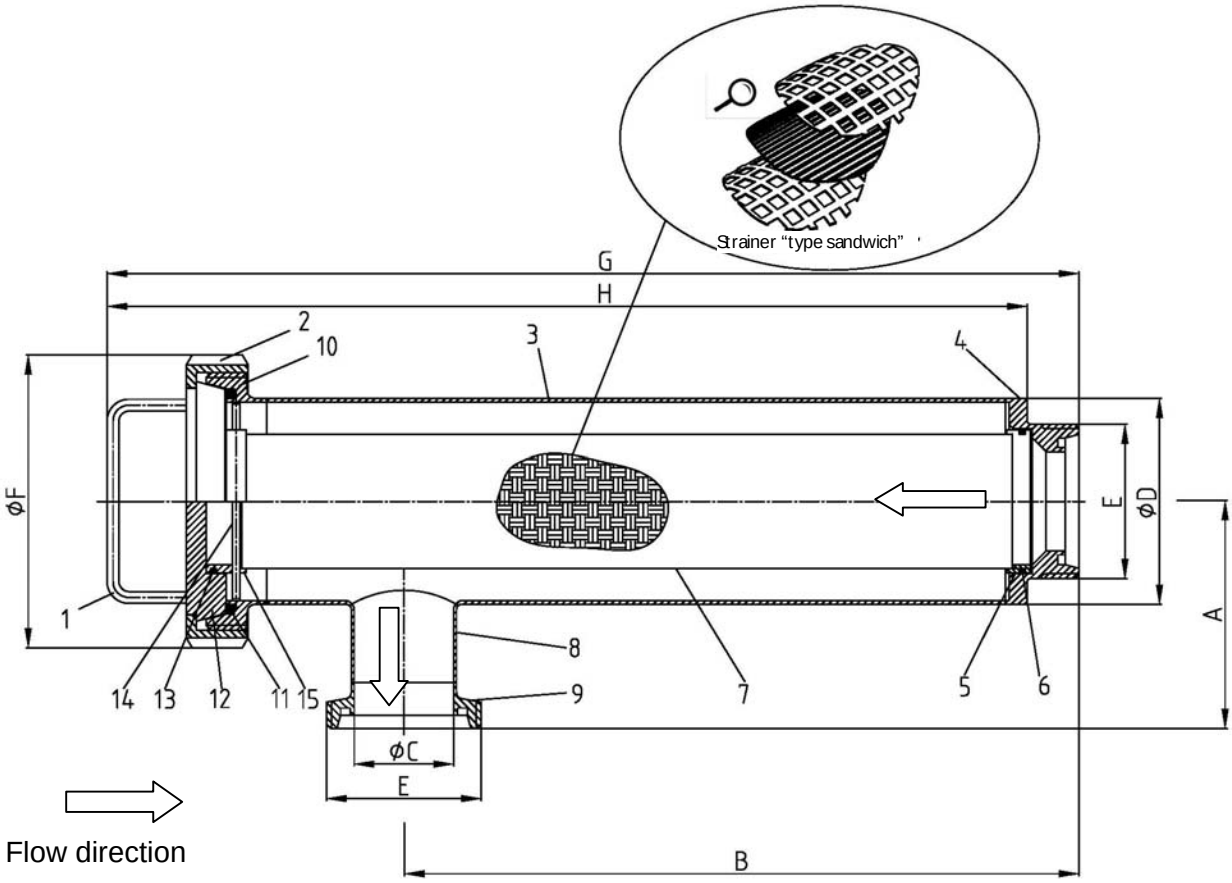

Fig. 1 Sectional view of the angular filter type GG Sandwich (dimensions see chapter 10.1)

Tab. 1 Parts list of angular filter with strainer type GG Sandwich

Item	Designation	Item	Designation
1	Bracket	9	Outlet stub
2	Grooved nut F	10	Threaded stub
3	Housing pipe	11	Gasket G
4	Inlet stub	12	Lid
5	Supporting ring	13	O-ring
6	O-ring	14	Pull rod
7	Strainer	15	Supporting ring
8	Pipe section		

4 Use and operating principle

The angular filter acts as filter in process engineering systems. By default, a perforated plate with square perforations (width of hole W = 10 mm, spacing T = 12 mm) is used as support element. Between two layers of this perforated plate, a wire gauze is inserted. The strainer thus consists of three layers ("sandwich design", its grade of filtration is determined by the selection of the gauze. The angular filters can in general be equipped with different perforated plates and/or gauzes. By default, four different gauzes are offered (mesh width w [mm] x wire diameter d [mm]):

- 0.1 x 0.063
- 0.25 x 0.16
- 0.4 x 0.22
- 0.5 x 0.25.

The medium to be filtered flows axially through the inlet stub into the interior of the strainer, flows through the filter and leaves the strainer via the outlet stub. Opposite flow direction or back-washing is in general possible due to the double-sided support of the wire gauze.

5 Transport

5.1 Checking the delivery contents

- When you receive the angular filter, check the delivery against the order to make sure they correspond.
- Check that the delivery is complete, and check its condition.

If there are visible signs of transit damage and/or packing units are missing notify the forwarding agent immediately in the consignment note. Recourse must be taken against the forwarding agent immediately in writing, and M&S Armaturen GmbH must be informed of this action.

Complaints regarding transit damage that is not immediately evident must be made to the forwarding agent within 6 days.

The recipient must carry the costs for claims made after this period.

5.2 Transport

- The packing units must only be transported using suitable lifting equipment and slinging gear.
- Pay attention to the graphic symbols on the packaging.
- Transport the angular filter, in particular single strainers, carefully to prevent damage from sudden impacts; exercise due care when loading/unloading.

6 Safety advice

- Before starting the maintenance work, the pipeline system containing the angular filter must be de-energised pneumatically and be free from fluids!
- For safe maintenance of the angular filter refer to the installation instructions (chap. 7).

7 Assembly

- Observe the relevant national guidelines and regulations.

The angular filter must be connected to the supply/drain pipelines via the inlet stub (4) and outlet stub (9). To do so, screw the pipe ends with the liner DIN 11851 and the corresponding gaskets DIN 11851-G (M&S Art.-No. 111) by means of a grooved nut DIN 11851-F (M&S Art.-No. 110) to the threaded stubs (4, 9). Other connection options (e.g. welded stub) are available upon request.

8 Repairs/Maintenance

- The maintenance intervals differ from case to case, the operator should define them by himself basing sporadic checks.
- The gaskets are replaced according to the installation instructions (chap. 7) or cleaning instructions (chap. 9).

- M&S Armaturen GmbH cannot accept liability for claims made as a result of non-observance of these operating instructions or constructional changes to the angular filter.
- Any other use or use outside the defined scope is considered to be improper use. M&S Armaturen GmbH will not accept liability for losses incurred as a result of improper use.

9 Cleaning

- Before starting the cleaning work, the pipeline system containing the angular filter must be de-energised pneumatically and be free from fluids!
- For safe maintenance of the angular filter also observe the installation instructions (chap. 7).

- Loosen grooved nut DIN 11851-F (2) using a sickle spanner
- Pull off the lid (12)
- Use the pull rod (14) to pull the strainer (7) out of the housing pipe (3)
- Clean the strainer (7) completely
- Insert gasket G (11) into the threaded stub (10)
- Insert the O-rings (6, 13) if necessary
- Center the strainer and insert it into the housing pipe (3) until the supporting ring (5) is guided at its lower end by the inlet stub (4)
- Press the strainer (7) to a tight fit, whereby the pull rod (14) centres the strainer (7) at the upper end
- Put on the lid (12) and tighten the grooved nut (2) by means of a sickle spanner
- Apply pressure to the system and check the screwed union for tightness

10 Technical Data

10.1 Dimensions

Tab. 2 Dimensions of angular filter with strainer type GG Sandwich

DN	A [mm]	B [mm]	C [mm]	D [mm]	E [DIN 405-1]	F [mm]	G [mm]	H [mm]
25	90	327	26	70	Rd.thread 52x1/6	112	458	435
32	90	327	32	70	Rd.thread 58x1/6	112	458	435
40	115	340	38	104	Rd.thread 65x1/6	148	492	460
50	115	340	50	104	Rd.thread 78x1/6	148	486	460
65	115	325	66	104	Rd.thread 95x1/6	148	487	460
80	160	560	81	129	Rd.thread 110x1/6	178	815	792
100	160	560	100	154	Rd.thread 130x1/6	210	800	775

10.2 Information on the open screen area of the strainer in [%]

Tab. 3 Open screen area of the strainer in [%]

DN	Screen area [m²]	Mesh width w [mm] x wire diameter d [mm]			
		0.1x0.063*	0.25x0.16*	0.4x0.22*	0.5x0.25*
25	0.047	**26**	**25**	**29**	**30**
32	0.047				
40	0.087				
50	0.087				
65	0.087				
80	0.191				
100	0.230				

(*) M&S standard

11 Materials and surfaces

in contact with product:	1.4301/1.4307	AISI 304/304L
	1.4404	AISI 316L (optional)
not in contact with product:	1.4301/1.4307	AISI 304/304L

Gaskets: NBR, EPDM or FKM (depending on order or design)

Inner surface: $R_a \leq 1.6\mu m$

Outer surface: matt or polished