



M&S Armaturen GmbH

PARTNER NOT JUST SUPPLIER.

Operating Instructions

-Translation of the original-

Angular filter MM/WW

M&S Article No. 60100/60106

Strainer -standard version-



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2 Safety notes

2.1 Marking of safety instructions in operating instructions



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.

2.2 Proper use

The M&S angular filters are only intended for use as described. Any use beyond that is considered to be improper use. M&S is not liable for any resulting damage, the risk is solely with the operator. Requirement for perfect safe operation of the angular filter are proper transport and storage as well as professional set-up and assembly. Proper use also includes adherence to the requirements for operation, maintenance and repair. Unauthorised changes and modifications that impair the safety of the screen are not permitted. Only use original spare parts and accessories approved by the manufacturer.

2.3 Personnel

Operating and maintenance personnel must be qualified for the respective tasks. They must have had special instructions about any occurring hazards and must know and observe the safety advices mentioned in the operating instructions.

2.4 General instructions

The used is obliged to operate the valve in perfect condition only. Apart from the operating instructions, the following apply

- pertinent regulations on the prevention of accidents
- generally accepted safety-related rules
- internal work and safety regulations



3 Use and operating principle

The angular filter serves as filter in process plants. By default, a perforated plate with round holes (hole width $W = \text{Ø}1.5\text{mm}$, pitch $T = 2.5\text{ mm}$) is used. The grade of filtration can be increased by placing another layer of wire mesh onto the screen area. In principle, the angular filters can be equipped with different perforated plates or wire meshes. In the variant with wire mesh, four different dimensions are standard (mesh width w [mm] x wire diameter d [mm]):

- 0.10 x 0.063
- 0.25 x 0.16
- 0.40 x 0.22
- 0.50 x 0.25

The medium to be filtered flows axially through the inlet liner into the interior of the strainer, flows through the filter and leaves the strainer through the outlet liner. Opposite flow direction or backflush are available upon request.

4 Transport and storage



When you receive the angular filter, check the information on order and delivery papers 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. You (the recipient) should take recourse 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 bear the costs for claims made after this period.

4.1 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 carefully to prevent damage from sudden impacts; exercise due care when loading/unloading.



5 Sectional drawings

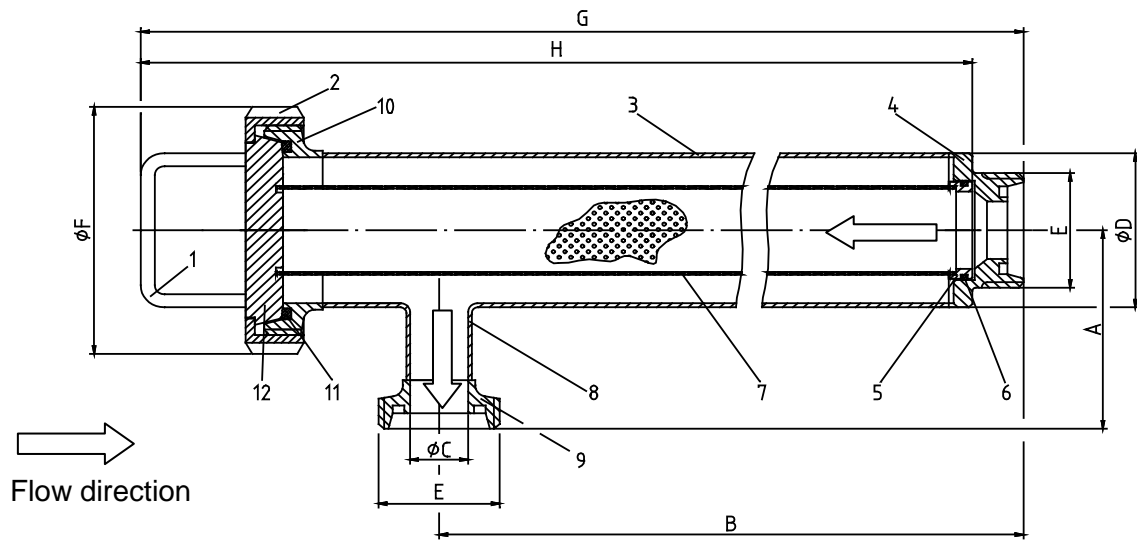


Figure 1 Sectional view of angular filter MM standard version (dimensions see chapter 10.1)

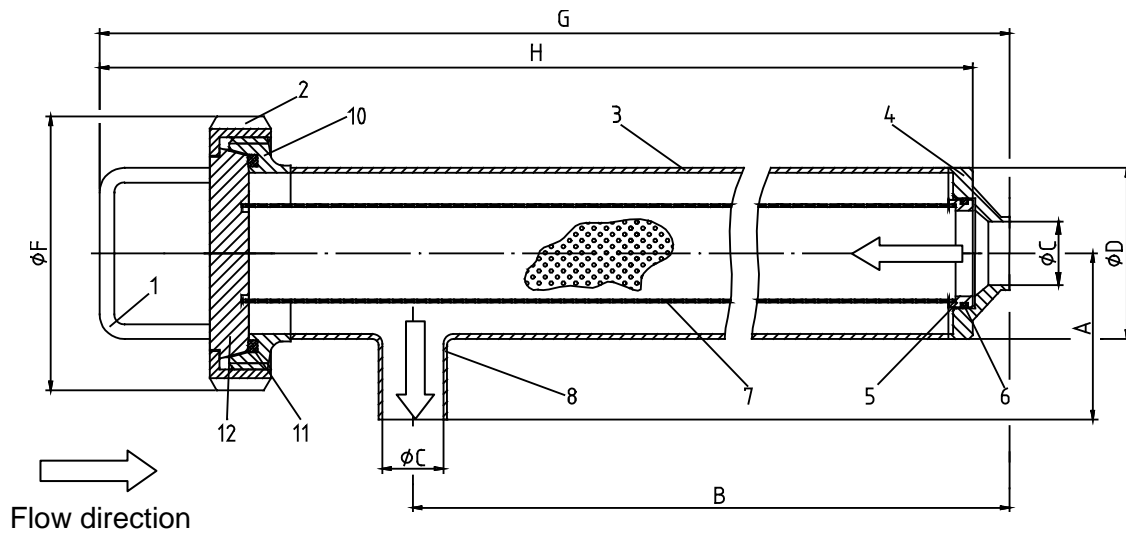


Figure 2 Sectional view of angular filter WW standard version (dimensions see chapter 10.1)

Table 1 Bill of material angular filter MM/WW standard version

Item	Designation	Item	Designation
1	Bracket	7	Strainer
2	Grooved nut F	8	Pipe piece
3	Housing pipe	9	Outlet liner
4	Inlet liner	10	Threaded liner
5	Support ring	11	Gasket G
6	O-ring	12	Liner blank



6 Installation / disassembly / assembly

6.1 Installation



- Observe the relevant national guidelines and regulations.
- Do welding work without strainer.

Connect the angular filter variant male thread/male thread (MM) via the inlet (4) and outlet liners (9) to the inflow or outflow pipelines. To do so, use suitable gaskets DIN 11851-G (M&S Art.-No. 111) and screw the pipe ends with a cone liner DIN 11851 (M&S Art.-No. 114) using a matching grooved nut DIN 11851-F (M&S Art.-No. 110) to the threaded liners (4, 9).

In the weld/weld (WW) variant, weld the angular filter via the inlet (4) and outlet liners (8) to the inflow or outflow pipelines.

6.2 Disassembly



- Angular filters may only be disassembled by specialist personnel who have received the necessary technical training, and are equipped with the experience and knowledge to carry out the tasks involved.

- Loosen the grooved nut DIN 11851-F (2) using a hook spanner
- Take the bracket (1) to pull the strainer (7) out of the housing pipe (3)
- Clean strainer (7) and housing pipe (3) completely
- Insert gasket G (11) into the threaded liner (10)
- If necessary, replace the O-rings (6)

6.3 Assembly

Assemble the angular filter in reverse order to disassembly (see 6.2). Apply pressure to the system and check the screw connections for tightness.



7 Repairs/Maintenance



In order to ensure highest operational safety of the angular filters, replace all wear parts on a regular basis.

The maintenance intervals differ from case to case, the operator should define them by himself basing on sporadic checks.



M&S Armaturen GmbH cannot accept liability for claims made as a result of nonobservance 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.

8 Cleaning



Observe the safety data sheets by the cleaning agent manufacturers! Only use cleaning agents that do not attack stainless steel, elastomer nor plastic.

- Clean individual parts thoroughly

9 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 specification and/or design)

Interior surface: depending on specification

Exterior surface: depending on specification



10 Technical Data

10.1 Dimensions angular filter MM standard version

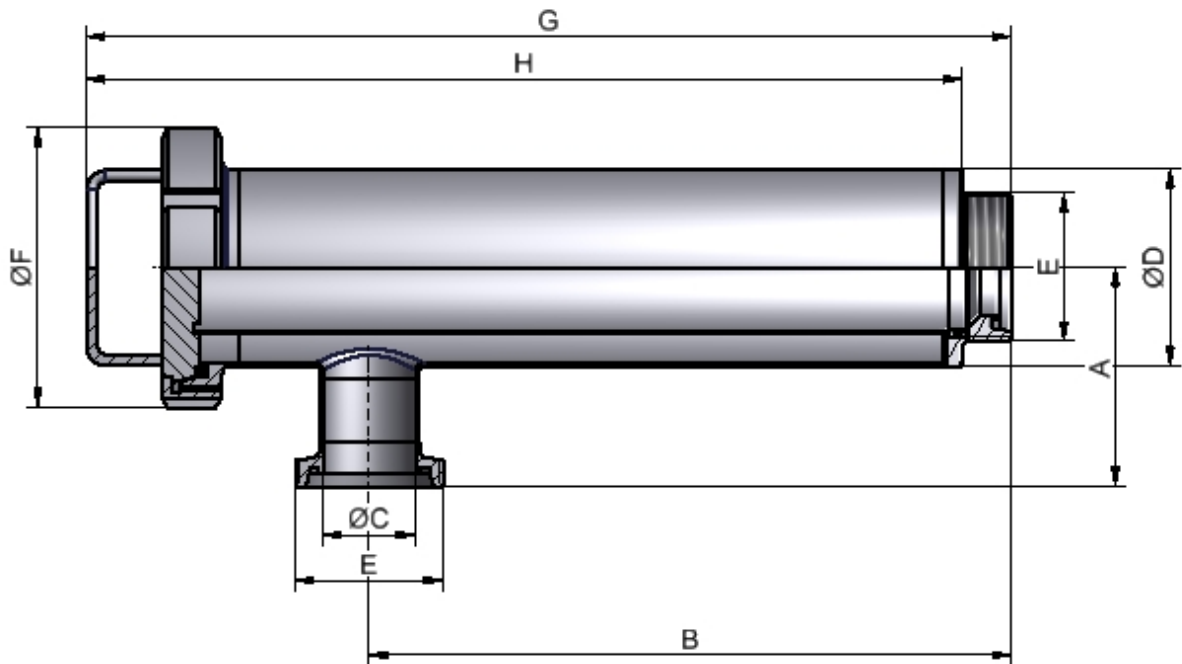


Figure 3 Angular filter MM standard version

Table 2 Dimensions angular filter MM standard version

DN	A [mm]	B [mm]	C [mm]	D [mm]	E [DIN 405-1]	F [mm]	G [mm]	H [mm]
25	90	327	26	70	Rd52x1/6	112	458	435
32	90	327	32	70	Rd58x1/6	112	458	435
40	115	340	38	104	Rd65x1/6	148	492	460
50	115	340	50	104	Rd78x1/6	148	486	460
65	115	325	66	104	Rd95x1/6	148	487	460
80	160	560	81	129	Rd110x1/4	178	815	792
100	160	560	100	154	Rd130x1/4	210	800	775
125	208	560	125	204	Rd160x1/4	210	856	810
150	300	795	150	254	Rd190x1/4	260	1106	1061



10.2 Dimensions angular filter WW standard version

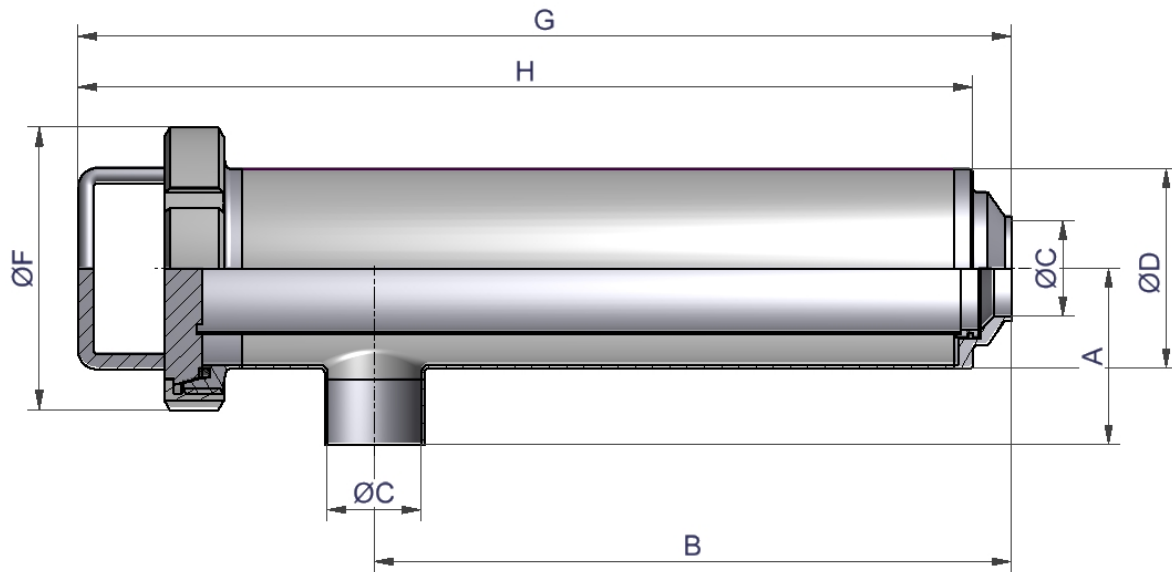


Figure 4 Angular filter WW standard version

Table 3 Dimensions angular filter WW standard version

DN	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	G [mm]	H [mm]
25	68	320	26	70	112	451	428
32	68	320	32	70	112	451	428
40	93	333	38	104	148	485	453
50	92	333	50	104	148	479	453
65	90	317	66	104	148	479	452
80	135	552	81	129	178	807	784
100	130	550	100	154	210	790	765
125	162	548	125	204	210	842	816
150	250	782	150	254	260	1091	1061
1"	75	319	22.9	70	112	451	428
1.5"	98	332	35.1	104	148	485	453
2"	101	332	47.8	104	148	479	453
2.5"	102	316	60.2	104	148	479	452
3"	118	553	72.8	129	178	807	784
4"	127	551	97.6	154	210	790	765



Angular filter MM/WW standard version

10.3 Information on the free screen area of the strainer in [%]

Table 4 Free screen area of the strainer in [%], variant without wire mesh

DN	Screen area [m ²]	Hole width W [mm] / pitch T [mm]					
		1.0 / 2.0	1.5 / 2.5*	2.0 / 3.5	3.0 / 5.0	4.0 / 6.0	5.0 / 8.0
25	0.047	23	32	30	33	40	35
32	0.047						
40	0.087						
50	0.087						
65	0.087						
80	0.191						
100	0.23						
125	0.31						
150	0.48						

Table 5 Free screen area of the strainer in [%], variant with wire mesh

DN	Screen area [m ²]	Mesh width w [mm] x wire diameter d [mm]			
		0.1x0.063*	0.25x0.16*	0.4x0.22*	0.5x0.25*
25	0.047	12	12	13	14
32	0.047				
40	0.087				
50	0.087				
65	0.087				
80	0.191				
100	0.23				
125	0.31				
150	0.48				

(*) M&S standard





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Armaturen, Rohre, Sonderteile aus Edelstahl
fittings, pipes, special parts made of stainless steel

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