

# MDH series

Maximum working pressure up to 1 MPa (10 bar) - Flow rate up to 500 l/min



## Description

## Technical data

### Return filter

**Maximum working pressure up to 1 MPa (10 bar)**  
**Flow rate up to 500 l/min**

MDH, is a technically advanced filtration product line for efficient and compact, hydraulic reservoir management. Designed to ensure overall system cleanliness, the filters are either installed in a semi immersed or fully immersed position. This new design reduces the volume of the air coming into the tank space and dramatically reduces the velocity of the air through the filter which in turn allows the separation of the air from the fluid. This insures that the system is protected against the effects caused by air contamination such as incorrect system response, cavitation, foaming and fluid degradation. The filtration from inside to outside allows for a cleaner filter element replacement which insures that any contaminated fluid remains within the used filter element.

#### Available features:

- Female threaded connections up to 1 1/2" and flanged connections up to 1 1/2", for a maximum flow rate of 500 l/min
- Multiple connections, to connect several return lines or drains
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- Flat Seal to suit a variety of reservoir surfaces
- Oil dipstick, to easily check the level of the fluid into the reservoir (separate item)
- Anti-drain membrane, to reduce the volume of air coming to the tank
- Optimized flow path, to reduce the speed of the fluid through the filter
- Diffuser with optimized output, to promote the air separation and to reduce the risk of foaming and noise
- Optional filler plug, to fill cleaned fluid into the tank without an additional plug
- Visual, electrical and electronic clogging indicators and differential clogging indicators

#### Common applications:

Heavy duty industrial equipment  
 Large mobile machines with limited space for the tank

### Filter housing materials

- Head and cover: Aluminium
- Anti-drain membrane: Polyamide
- Diffuser: AISI 430
- Valve: Polyamide / Steel

### Bypass valve

- Opening pressure 175 kPa (1.75 bar)  $\pm 10\%$
- Opening pressure 300 kPa (3 bar)  $\pm 10\%$

### $\Delta p$ element type

- Microfibre filter elements - series DH: 10 bar
- Fluid flow through the filter element from IN to OUT

### Seals

- Standard NBR series A
- Optional FPM series V

### Temperature

From -25 °C to +110 °C

### Note

MDH filters are provided for vertical mounting

## Weights [kg] and volumes [dm<sup>3</sup>]

Filter series	Weights [kg]			Volumes [dm <sup>3</sup> ]		
	Length	2	4	Length	2	4
<b>MDH 250</b>		3.80	4.55		4.65	6.90

Filter series	Length	A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
<b>MDH 250</b>	<b>2</b>	134	120	244	255	303	480	326	370
	<b>4</b>	217	256	338	419	487	465	437	694

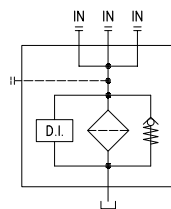
### Maximum flow rate for a complete return filter with a pressure drop $\Delta p = 0.5$ bar.

The reference fluid has a kinematic viscosity of 30 mm<sup>2</sup>/s (cSt) and a density of 0.86 kg/dm<sup>3</sup>.

For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

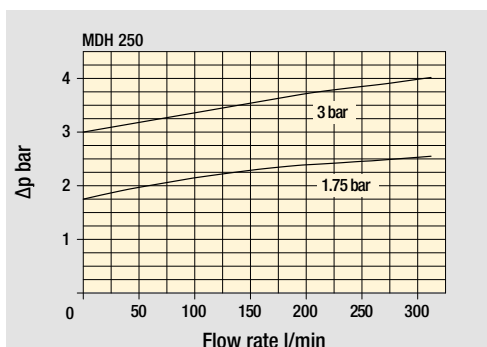
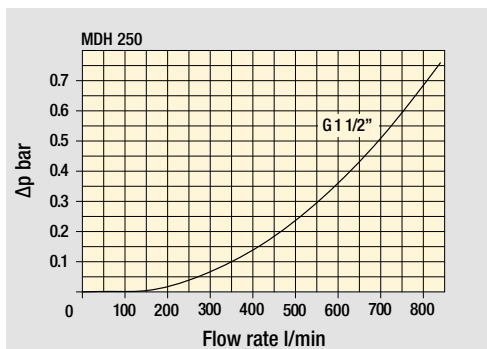
Filter series	Style B
<b>MDH 250</b>	•



Hydraulic symbols

Pressure drop

Filter housings  $\Delta p$  pressure drop



Bypass valve pressure drop

The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> in compliance with ISO 3968.  $\Delta p$  varies proportionally with density.

# MDH250

## Designation & Ordering code

### COMPLETE FILTER

<b>Series and size</b> <b>MDH250</b>	Configuration example: <b>MDH250</b>   <b>2</b>   <b>C</b>   <b>F</b>   <b>S</b>   <b>A</b>   <b>B</b>   <b>2</b>   <b>A10</b>   <b>P01</b>									
<b>Length</b> <b>2</b>   <b>4</b>										
<b>Bypass valve</b> <b>C</b> 1.75 bar <b>E</b> 3 bar										
<b>Diffuser</b> <b>F</b> With diffuser										
<b>Air breather</b> <b>S</b> Without air breather										
<b>Seals and treatments</b>	Filtration rating									
<b>A</b> NBR	<b>Axx</b>	<b>Mxx</b>	<b>Pxx</b>							
<b>V</b> FPM	•	•	•							
<b>W</b> NBR head anodized filter element compatible with fluids HFA-HFB-HFC	•	•	-							
<b>Z</b> FPM head anodized	•	•	-							
<b>Connections</b>										
	<b>Front</b>	<b>Left</b>	<b>Right</b>							
<b>A</b> G 1 1/2"	1 1/2" SAE 3000 psi/M + G 1 1/4"	1 1/4" SAE 3000 psi/M + G 1"								
<b>B</b> 1 1/2" NPT	1 1/2" SAE 3000 psi/UNC + 1 1/4" NPT	1 1/4" SAE 3000 psi/UNC + 1" NPT								
<b>C</b> SAE 24 - 1 7/8" - 12 UN	1 1/2" SAE 3000 psi/UNC + SAE 20 - 1 5/8" - 12 UN	1 1/4" SAE 3000 psi/UNC + SAE 16 - 1 5/16" - 12 UN								
<b>Connection indicator</b>										
<b>1</b> Without connection										
<b>2</b> With 2 plugged connections (pressure indicator + differential indicator)										
<b>Filtration rating (filter media)</b>										
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm									
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm									
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm									
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm									
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm									
All filter media except M60, P10 and P25 are compatible with fluids HFA, HFB and HFC										
										<b>Execution</b>
										<b>P01</b> MP Filtri standard
										<b>Pxx</b> Customized

### FILTER ELEMENT

<b>Element series and size</b> <b>DH250</b>	Configuration example: <b>DH250</b>   <b>2</b>   <b>A10</b>   <b>A</b>   <b>P01</b>				
<b>Element length</b> <b>2</b>   <b>4</b>					
<b>Filtration rating (filter media)</b>					
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm				
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm				
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm				
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm				
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm				
		<b>Seals</b>	<b>Execution</b>		
		<b>A</b> NBR	<b>P01</b> MP Filtri standard		
		<b>V</b> FPM	<b>Pxx</b> Customized		

### CLOGGING INDICATORS

See page 680-681

<b>BVA</b> Axial pressure gauge	<b>BEA</b> Electrical pressure indicator
<b>BVR</b> Radial pressure gauge	<b>BEM</b> Electrical pressure indicator
<b>BVP</b> Visual pressure indicator with automatic reset	<b>BLA</b> Electrical / visual pressure indicator
<b>BVQ</b> Visual pressure indicator with manual reset	<b>DES</b> Electrical differential indicator
	<b>DVS</b> Visual differential indicator

### PLUGS

See page 706

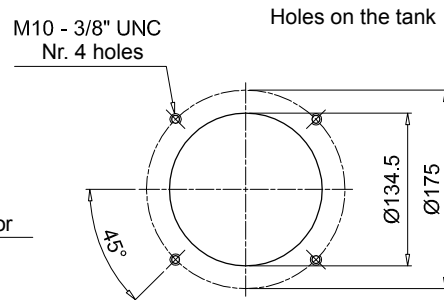
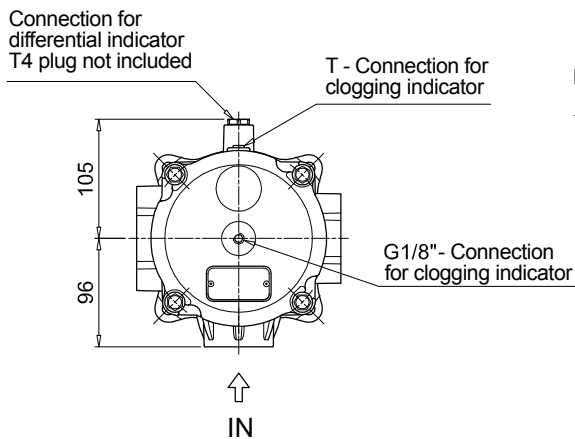
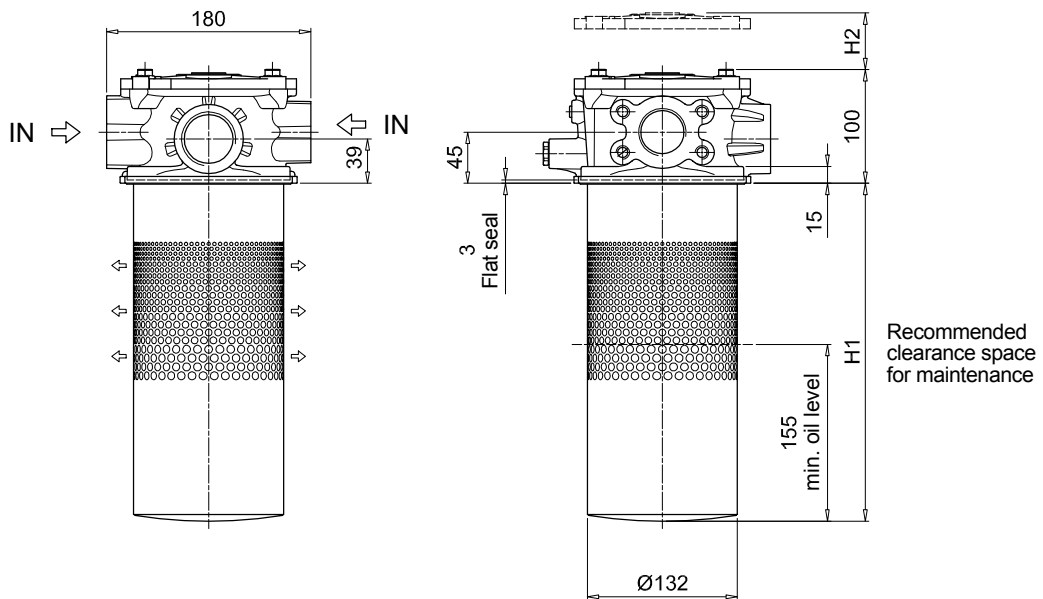
<b>T4</b> Differential indicator plug
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# MDH250

## Dimensions

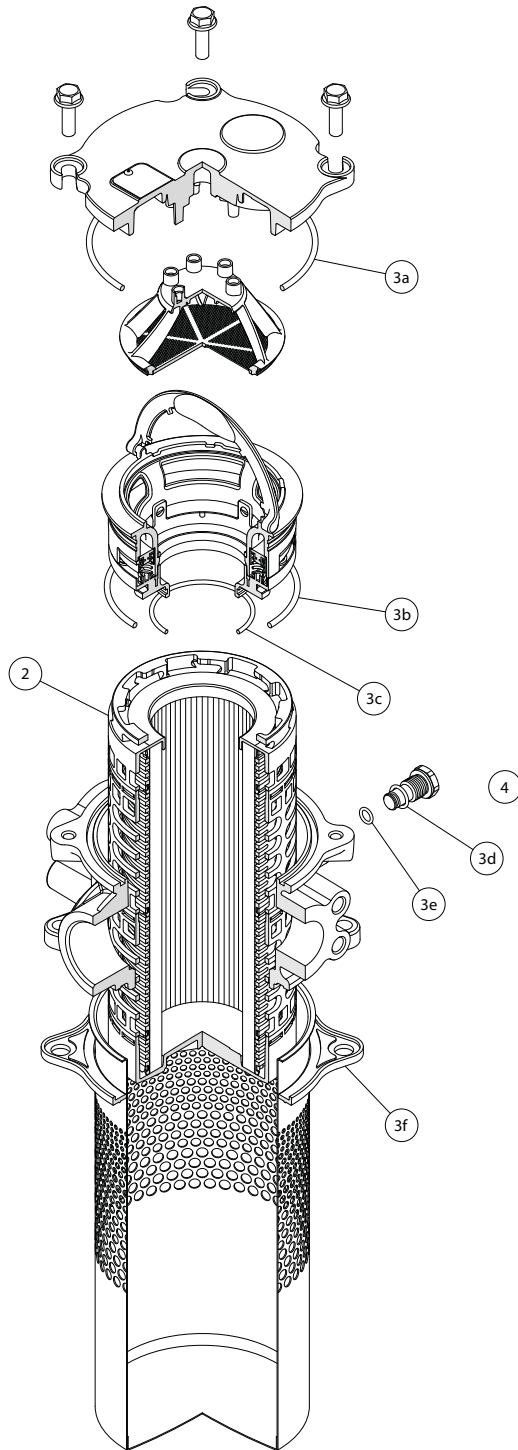
MDH250		
Filter length	H1 [mm]	H2 [mm]
2	300	380
4	485	565

Connections	T
A	G 1/8"
B-C	1/8" NPT



# MDH SPARE PARTS

Order number for spare parts



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3f)	Q.ty: 1 pc. 4
Filter series	Filter element	Seal Kit code number NBR	Indicator connection plug NBR
<b>MDH 250</b>	See order table	02050850	T4A

# Accessories

## POLYAMIDE EXTENSION TUBE

H1 - Total length immersed in the tank

Configuration example: **TE** **40** **A** **250**

Series	Size	Material	Length	H [mm]
<b>TE</b>			<b>200</b>	200
			<b>250</b>	250
			<b>300</b>	300
			<b>350</b>	350
			<b>400</b>	400
			<b>450</b>	450
			<b>500</b>	500

Size	Ø D [mm]	Material
<b>25</b>	25	<b>A</b> Polyamide
<b>32</b>	32	
<b>40</b>	40	

COMPATIBILITY TABLE															
		Tube length													
Filter series	Filter size			Filter length	TE25	TE32	TE40	200	250	300	350	400	450	500	
H1 [mm]															
MPF - MPFX	30			1	•	-	-	266	316	366	416	466	516	566	
MPF	100	104	110	1	-	•	-	275	325	375	425	475	525	575	
				2	-	-	-	322	372	422	472	522	572	622	
				3	-	-	•	400	450	500	550	600	650	700	
				4	-	-	-	502	552	602	652	702	752	802	
MPFX	100	104	110	1	-	-	•	277	327	377	427	477	527	577	
				2	-	-	•	322	372	422	472	522	572	622	
				3	-	-	-	400	450	500	550	600	650	700	
				4	-	-	-	502	552	602	652	702	752	802	
MPF MPFX	181	182	184	1	-	-	•	410	460	510	560	610	660	710	
				2	-	-	-	623	673	723	773	823	873	923	
MPT MPTX	025	027		1	•	-	-	278	328	378	428	478	528	578	
				2	-	-	-	342	392	442	492	542	592	642	
				3	-	-	-	380	430	480	530	580	630	680	
MPT	110	114	116	120	1	-	•	-	273	323	373	423	473	523	573
					2	-	-	-	320	370	420	470	520	570	620
					3	-	-	•	396	446	496	546	596	646	696
					4	-	-	-	498	548	598	648	698	748	798
MPTX	110	114	116	120	1	-	-	•	273	323	373	423	473	523	573
					2	-	-	-	318	368	418	468	518	568	618
					3	-	-	-	396	446	496	546	596	646	696
					4	-	-	-	498	548	598	648	698	748	798

## STEEL EXTENSION TUBE

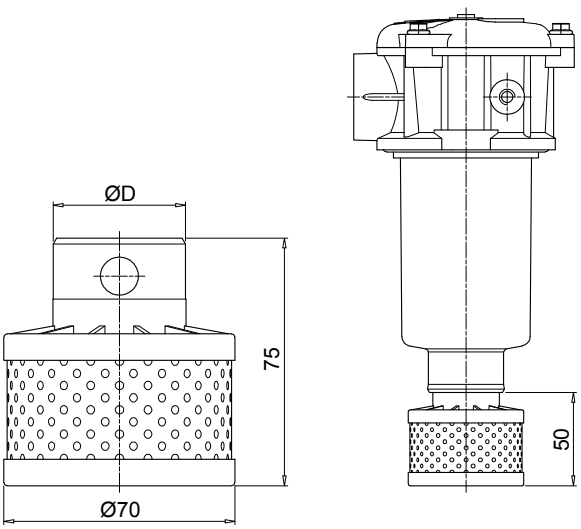
H1 - Total length immersed in the tank

Configuration example: **MPF191** **2** **A** **F1** **A10** **H** **B** **S60**

Length	H1 [mm]
<b>S30</b>	300
<b>S35</b>	350
<b>S40</b>	400
<b>S45</b>	450
<b>S50</b>	500
<b>S60</b>	600
<b>S70</b>	700
<b>S80</b>	800
<b>S90</b>	900

COMPATIBILITY TABLE							
		Ø D [mm]					
Filter series	Filter size			Filter length	52	65	
MPF	191	192	194	2	•	-	
				1	•	-	
	400	410	450	451	2	-	•
					3	-	-
	750			1	-	•	

## DIFFUSER WITH FAST LOCK CONNECTION

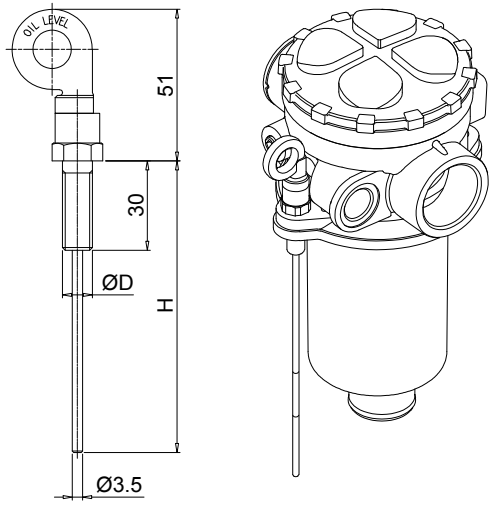


Configuration example: **DFS 32 A 075**

Series		<b>DFS</b>
Size	ø D [mm]	
<b>32</b>	32	
<b>40</b>	40	
Version		<b>A</b> Standard
Length		<b>075</b> Standard

COMPATIBILITY TABLE							
Filter series	Filter size			Filter Length	DFS32	DFS40	
MPF	100	104	110	1	•	-	
				2	-	-	
				3	-	•	
				4	-	-	
MPFX	100	104	110	1	-	•	
				2	-	•	
				3	-	-	
				4	-	-	
MPT	110	114	116	120	1	•	-
					2	-	-
					3	-	•
					4	-	-
MPTX	110	114	116	120	1	-	•
					2	-	•
					3	-	-
					4	-	-

## DIPSTICK



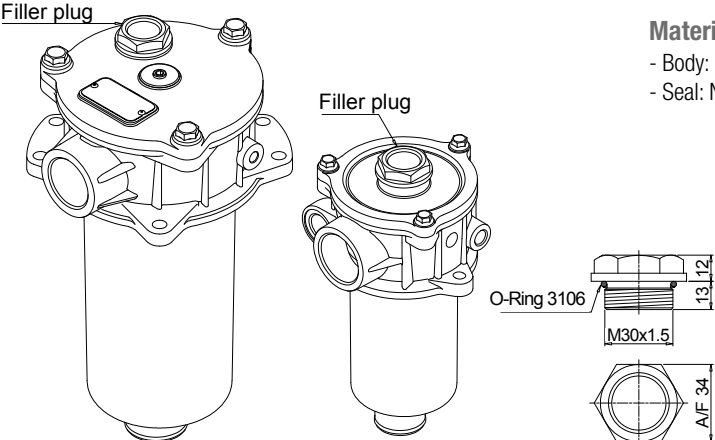
Configuration example: **DPT 20 M10 A P01**

Series		<b>DPT</b>
Length	H [mm]	
<b>15</b>	134	
<b>20</b>	184	
<b>25</b>	234	
<b>30</b>	284	
<b>35</b>	334	
Fastening		
<b>M8</b>	Fastening with screws ø D = M8	
<b>M10</b>	Fastening with screws ø D = M10	
Seals		
<b>A</b>	NBR	
<b>V</b>	FPM	
Execution		
<b>P01</b>	MP Filtri standard	
<b>Pxx</b>	Customized	

**Materials**  
 - Screw: phosphatized steel  
 - Stick: phosphatized steel  
 - Handle: Polyamide

**Technical data**  
 Working temperature: from -25 °C to +110 °C

## FILLER PLUG



Configuration example: **DPT 20 M10 A P01**

Series		<b>DPT</b>
Length	H [mm]	
<b>15</b>	134	
<b>20</b>	184	
<b>25</b>	234	
<b>30</b>	284	
<b>35</b>	334	
Fastening		
<b>M8</b>	Fastening with screws ø D = M8	
<b>M10</b>	Fastening with screws ø D = M10	
Seals		
<b>A</b>	NBR	
<b>V</b>	FPM	
Execution		
<b>P01</b>	MP Filtri standard	
<b>Pxx</b>	Customized	

**Materials**  
 - Body: Polyamide  
 - Seal: NBR

**Technical data**  
 Tightening torque: 15 N·m

O-Ring 3106 / M30x1.5 / 13 12 / A/F 34

For any further information, please, contact our commercial dept.