

INDUSTRIAL GASES

HD 0003 - 0072

High Pressure Filters for Industrial Applications



PRODUCT DESCRIPTION

HD high pressure housings are designed for the purification of compressed air and industrial gases group 1 and 2 in industrial applications.

The HD housing design is optimized to provide low differential pressures at high flow rates.

A wide range of housing sizes are available with several connection options to match application requirements.

The HD series offers 8 housing sizes capable of handling flows of 90 m³/h to 8640 m³/h and pressures up to PN 400.

MAIN FEATURES & BENEFITS

- Innovative filtration technology, high retention rate, low pressure loss
- Filter housing available in carbon steel, aluminium and stainless steel respectively designed for operating pressure up to 400 bar and operating temperatures from -10°C to +80°C
- For the purification of compressed air and gases according to Pressure Equipment 2014/68/EU
- Flow-optimized design for low differential pressure (saving of energy costs)

INDUSTRIES



- Chemical and pharmaceutical industry



- Gas industry



- Environmental technology



- Machine building industry and plant engineering / construction



- Green energy (H₂ / CO₂ / Biogas)

PRODUCT DESCRIPTION

The HD filter is designed and developed for the following applications:

- **Downstream applications:**
Final filtration for high-pressure for process industrial gases, including removal of oil vapours and hydrocarbons
- **Adsorption dryers:**
Pre-filter to protect adsorption dryers, dust filter downstream adsorption dryers
- **H₂ filtration:**
Complying with the H₂ high purity pressure requirements for bottle refilling, refueling station and other applications according to ISO 14687:2019 for fuel cells



PRODUCT SPECIFICATIONS

FEATURES	BENEFITS
Validated performance data according to ISO 12500-1 and ISO 12500-3	Reliable achievement of compressed air quality according to ISO 8573-1
Intelligent overall concept	Unique housing and element design assist in large range of flow rates, filtration grades, and efficiencies that meet requirements for compressed air purification and various technical gases.
Fine thread connection between filter head and filter bowl with radial sealing-up O-ring	Very rugged construction with excellent sealing characteristics
Flow optimized design	Low pressure losses, thereby saving of energy costs
Filter housings are made of anodised aluminium or electroless nickel plated carbon steel	Ensures long-term corrosion protection against environment influences

PRODUCT SPECIFICATIONS

TECHNICAL DATA	
Max. operating pressure:	PN 25 - PN 100: 25 bar/ 40 bar/ 64 bar/ 100 bar PN 100 - PN 400: 100 bar / 250 bar/ 400 bar
Test pressure:	PN 25 - PN 100: 36 bar/ 57.2 bar/ 92 bar/ 143 bar PN 100 - PN 400: 143 bar / 357.5 bar/ 572 bar
Max. operating temperature:	-10°C / +80°C

FILTER ELEMENTS (FOR DETAILED PERFORMANCE DATA SEE SEPARATE DATA SHEET)		
CF filter Coalescence filter / particle filter	Initial differential pressure: 0.15 bar Efficiency: 100% related to 25 µm	1
SB filter Particle filter	Initial differential pressure: 0.12 bar Efficiency: 100% related to 25 µm	1
AK filter Activated carbon filter	Initial differential pressure: 0.13 bar Residual oil content (total): 0.00mg/m ³	1 3
FF filter Coalescence filter / particle filter	Initial differential pressure: 0.11 bar Residual oil content (total): < 0.2 mg/m ³	1 2
MF filter Coalescence filter / particle filter	Initial differential pressure: 0.18 bar Residual oil content (total): < 0.03 mg/m ³	1 2
SMF filter Coalescence filter / particle filter	Initial differential pressure: 0.33 bar Residual oil content (total): < 0.01 mg/m ³	1 2
CFE filter Particle filter Fluid group 1	Initial differential pressure: 0.15 bar Efficiency: 100% related to 25 µm	1
SMFE filter Coalescence filter / particle filter Fluid group 1	Initial differential pressure: 0.33 bar Residual oil content (total): < 0.01 mg/m ³	1 2
1 related to nominal performance at 7 bar, dry condition 2 related to an inlet connection of 3 mg/m ³ 3 when upstream connected to an MF or SMF filter		

Due to special conductive design element type SMFE and CFE are applicable for the use in ATEX Zone 1 and 2, for example bio-methane and hydrogen applications.

PRODUCT SPECIFICATIONS

Aluminium Filter Housings

Type	Connection	Flow Rates, nominal pressure		
HD	G	PN 25	PN 40	PN 64
		m ³ /h*	m ³ /h*	m ³ /h*
0003	¼"	90	120	240
0006	3/8"	180	240	480
0012	½"	360	480	960
0018	¾"	540	720	1440
0027	1"	810	1080	2160
0036	1 ¼"	1080	1440	2880
0048	1 ½"	1440	1920	3840
0072	2"	2160	2880	5760

*m³/h at 1 bar abs. and 20°C

Carbon Steel Filter Housings

Type	Connection	Flow Rates, nominal pressure		
HD	G	PN 100	PN 250	PN 400
		m ³ /h*	m ³ /h*	m ³ /h*
0003	¼"	360	360	360
0006	3/8"	720	720	720
0012	½"	1440	1440	1440
0018	¾"	2160	2160	2160
0027	1"	3240	3240	3240
0036	1 ¼"	4320	4320	4320
0048	1 ½"	5760	5760	5760
0072	2"	8640	8640	8640

* m³/h at 1 bar abs. and 20°C

Stainless Steel Filter Housings

Type	Connection	Flow Rates, nominal pressure					
HD	G	PN 25	PN 40	PN 64	PN 100	PN 250	PN 400
		m ³ /h*	m ³ /h*	m ³ /h*	m ³ /h*	m ³ /h*	m ³ /h*
0003	¼"	90	120	240	360	360	360
0006	3/8"	180	240	480	720	720	720
0012	½"	360	480	960	1440	1440	1440
0018	¾"	540	720	1440	2160	2160	2160
0027	1"	810	1080	2160	3240	3240	3240
0036	1 ¼"	1080	1440	2880	4320	4320	4320
0048	1 ½"	1440	1920	3840	5760	5760	5760
0072	2"	2160	2880	5760	8640	8640	8640

*m³/h at 1 bar abs. and 20°C

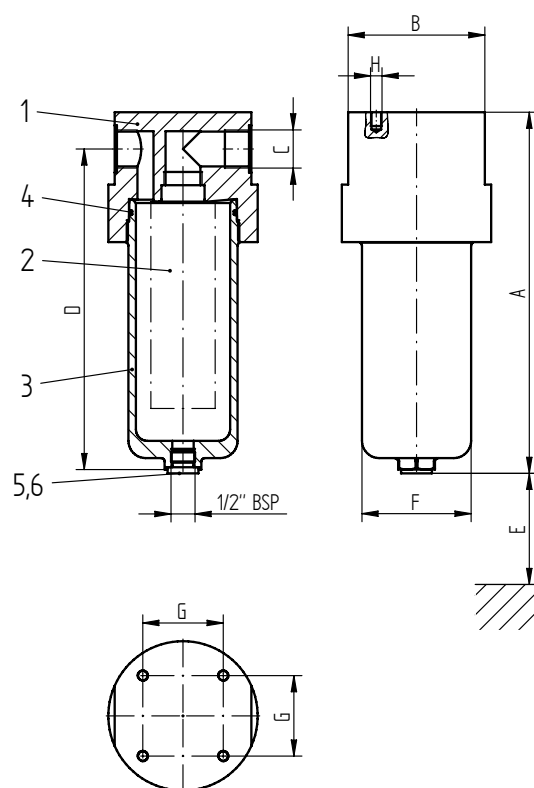
MATERIALS/DIMENSIONS

Aluminium Filter Housings

Pos.	Pcs.	Description
1	1	Filter head
2	1	Filter element
3	1	Filter bowl
4	1	Housing O-Ring
5	1	Screw plug
6	1	Sealing

Materials Filter housing	
Filter housing	Aluminium, anodized
Sealings	Perbunan, compound-free

Classification acc. to 2014 / 68 / EU for fluids of group 2	
HD 0003- 0036	Art. 4, par. 3
HD 0048 25- 64 bar HD 0072 25- 64 bar	Cat. I



	Volume	Weight	Dimensions								Element
HD	I	kg *	A mm	B mm	C	D mm	E mm	Ø mm	G mm	H	
0003	0.19	1.6	159	85	G ¼	141	130	60	50	4xM8	03/05
0006	0.19	1.7	161	85	G 3/8	142	130	60	50	4xM8	03/10
0012	0.40	2.1	221	105	G ½	204	190	72	50	4xM8	04/20
0018	0.40	2.2	227	105	G ¾	207	190	72	50	4xM8	05/20
0027	1.1	4.2	314	119	G 1	282	190	95	70	4xM10	05/25
0036	1.1	4.2	314	119	G 1 ¼	282	250	95	70	4xM10	07/25
0048	2.4	9.4	394	164	G 1 ½	359	250	120	80	4xM12	07/30
0072	2.4	11.5	404	186	G 2	364	340	120	110	4xM12	10/30

* without filter element

MATERIALS/DIMENSIONS

Pos.	Pcs.	Description
1	1	Filter head
2	1	Filter element
3	1	Filter bowl
4	1	Housing O-Ring
5	1	Screw plug
6	1	Sealing

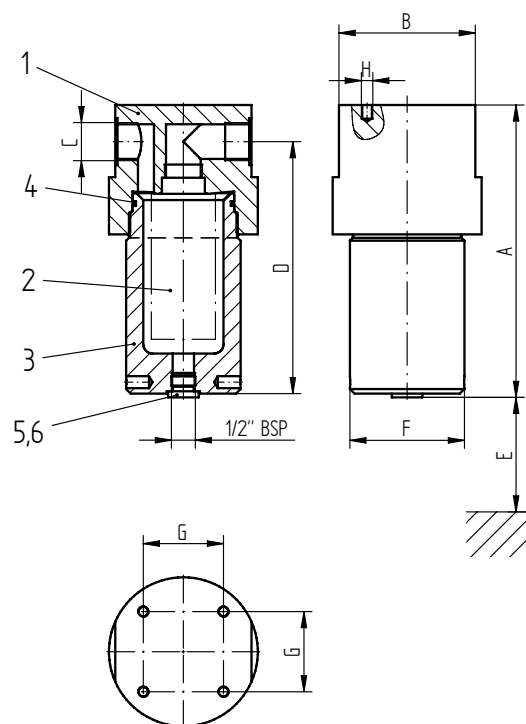
Materials Filter housing

Filter housing	Carbon Steel, electroless nickel
Sealings	Perbunan, compound-free

Classification acc. to 2014 / 68 / EU
for fluids of group 2

HD 0003- 0036	Art. 4, par. 3
HD 0048 100 bar	Cat. I
HD 0048 250- 400 bar HD 0072 100- 250 bar	Cat. II
HD 0072 400 bar	Cat. III

Carbon Steel Filter Housings



HD	Volume I	Weight kg *	Dimensions								Element
			A mm	B mm	C	D mm	E mm	Ø mm	G mm	H	
0003	0.20	5	170	85	G 1/4	150	130	70	50	4xM8	03/05
0006	0.20	5	170	85	G 3/8	150	130	70	50	4xM8	03/10
0012	0.42	9	210	105	G 1/2	190	190	85	50	4xM8	04/20
0018	0.49	9.5	235	105	G 3/4	215	190	85	50	4xM8	05/20
0027	0.66	14.5	250	119	G 1	220	190	100	70	4xM10	05/25
0036	0.90	16	305	119	G 1 1/4	270	250	100	70	4xM10	07/25
0048	1.72	27.5	330	150	G 1 1/2	295	250	130	80	4xM10	07/30
0072	3.02	60	420	186	G 2	380	340	130	110	4xM12	10/30

* without filter element

MATERIALS / DIMENSIONS

Pos.	Pcs.	Description
1	1	Filter head
2	1	Filter element
3	1	Filter bowl
4	1	Housing O-Ring
5	1	Screw plug
6	1	Sealing

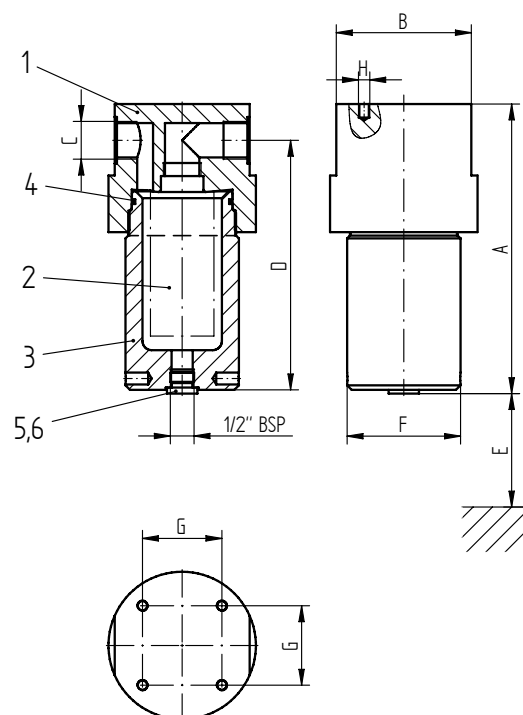
Materials Filter housing

Filter housing	Stainless steel PN25-PN64: 1.4301 PN100-PN400: 1.4571
Sealings	Perbunan, compound-free

Classification acc. to 2014 / 68 / EU
for fluids of group 2

HD 0003- 0036	Art. 4, par. 3
HD 0048 100 bar	Cat. I
HD 0048 250- 400 bar HD 0072 100- 250 bar	Cat. II
HD 0072 400 bar	Cat. III

Stainless Steel Filter Housings



HD	Volume l	Weight kg *	Dimensions								Element
			A mm	B mm	C	D mm	E mm	F Ø mm	G mm	H	
0003	0.20	5	170	85	G ¼	150	130	70	50	4xM8	03/05
0006	0.20	5	170	85	G 3/8	150	130	70	50	4xM8	03/10
0012	0.42	9	210	105	G ½	190	190	85	50	4xM8	04/20
0018	0.49	9.5	235	105	G ¾	215	190	85	50	4xM8	05/20
0027	0.66	14.5	250	119	G 1	220	190	100	70	4xM10	05/25
0036	0.90	16	305	119	G 1 ¼	270	250	100	70	4xM10	07/25
0048	1.72	27.5	330	150	G 1 ½	295	250	130	80	4xM10	07/30
0072	3.02	60	420	186	G 2	380	340	130	110	4xM12	10/30

* without filter element

For more information please contact your Donaldson Sales Representative and visit our website at www.donaldson.com.

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