

## Cartridge Gas Filter GH Serie up to DN300

### Main Features



Cartridge Gas Filters GH Serie According to 2014/68/EU Directive, EN 13445 standard.

Type GH Serie cellular gas filters are designed for retaining gas impurities, such as dust, rust and other solid particles, in gas-carrying lines at a defined location. They are mainly used in gas pressure regulating and measuring stations, power plant and upstream of equipment, the function of which would be impaired by contaminants. The filters are suitable for gases in accordance with DVGW Code of Practice G 260 / G 262 and neutral non-corrosive gases. (Other gases on request). According to 2014/68/EU directive.

- High filtration efficiency
- Large particle chamber
- High flow capability
- Outdoor version as standard
- Wide range of accessories
- Replaceable cartridge structure
- Eco-friendly cartridge
- Easy maintenance

### Technical Features

Maximum allowable pressure –PS	25 bar / 50 bar
Allowable temperature –TS <sup>(1)</sup>	-10 °C to +60 °C
Inlet gas temperature	-10 °C to +60 °C
Nominal size –DN	DN25   DN32   DN40   DN50   DN65   DN80 DN100   DN125   DN150   DN200   DN250   DN300 It is possible to produce filters with different inlet and outlet diameters to order.
Connections <sup>(2)</sup>	PN16, PN25, PN40 according to ISO 7005 Class 150 – 300 RF according to ASME B16.5 and
Filtration efficiency <sup>(3)</sup>	Standard 99.9% of particle size > 2 µm
Limit for soiled filter insert	Δpmax = 500 mbar
Explosion protection	Mechanical components of filter do not contain a potential ignition source, thus do not fall in limits of ATEX 95 (94/9/EG). (Used electronic accessories comply with ATEX-demands.)

<sup>(1)</sup> Low temperature version -40°C: available on request

<sup>(2)</sup> On request for other connection class

<sup>(3)</sup> On request cartridge 5µm and 10µm

### Metarials

Body <sup>(1)</sup>	ASTM A 106 Gr. B
Cartridge <sup>(2)</sup>	Polyester
Filter basket <sup>(3)</sup>	Steel perforated plate, galvanised

<sup>(1)</sup> on request A 216 WCB available

<sup>(2)</sup> On request paper

<sup>(3)</sup> On request stainless steel

## Gas Filter, GH Serie

### Standards and certificates

#### Applied directives:

Pressure Equipment Directive –PED

(EU) EU/2014/68



Compliance with the regulations of the applied directives is verified by the adherence to the following standards / regulations:

- Quality System Approval Certificate 2195 : PED : 2103302
- EU Desing Examination Certificate 2195 : PED-2103302 : T



- UkrSepro Tecnical Regulations for Pressure Equipment UA.TR.012C.0368



The relevant valid edition of the standards can be found in the declaration of conformity!

### Use

#### General Gases :

Natural gas, town gas, propane, butane, air, nitrogen or all non-corrosive gases

Suitable for use with previously filtered gaseous fluids, it is mainly used for medium and low pressure natural gas distribution networks.

#### Hydrogen Ready :

Suitability of natural gas-hydrogen mixtures or pure hydrogen.

When using the Z series, a manufacturer's declaration and notified body reports can be provided on request.

#### Biogas or Biomethane Version :

Suitable for biogases and recycling gases

– up to maximum 1% by volume H<sub>2</sub>S, dry

– up to maximum 1% by volume NH<sub>3</sub>,

dry No non-ferrous metals (except in very small quantities found in the plastic components)

Biogas version of GH Series are also designed for slightly aggressive, dry gases.

Gases according such as biogases, landfill gases, sewage gases, other recycled gases, process gases, and air. The chemical composition and aggressiveness of each biogas or recycled gas is different, not constant, and dependent on several factors.

The aggressiveness of the gas notably increases:

- as the hydrogen sulfide content H<sub>2</sub>S increases

- with the moisture content of the gas, condensation is not permitted inside the filter

In consultation with Gastech, users must decide whether the materials used for the GH Series are suitable for the intended types of recycling gas. These gases can vary in terms of both their composition and the respective concentration of the components.

As a result, it is not possible to make any warranties or definitive statements regarding service life. An assessment should be carried out to determine the suitability of the gas used.



For safety reasons, we strongly recommend

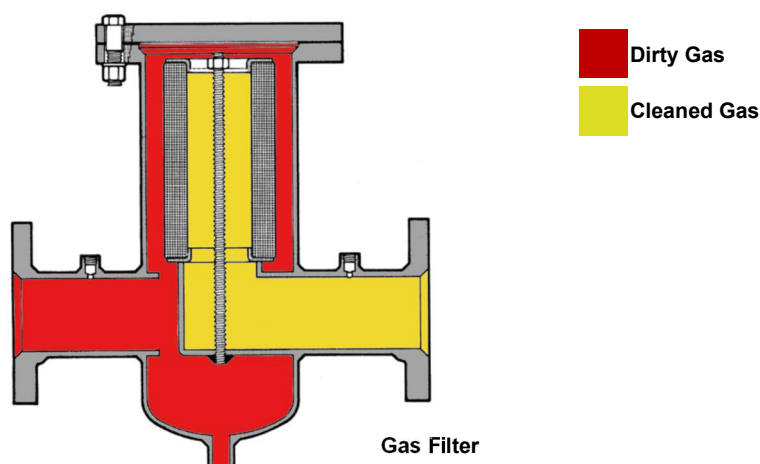
- a visual inspection of the GH Serie filter at intervals of 3 to 6 months
- Pressure loss and leakage tests

**Gas Filter, GH Serie**

**Desing,  
 Operational Diagram**

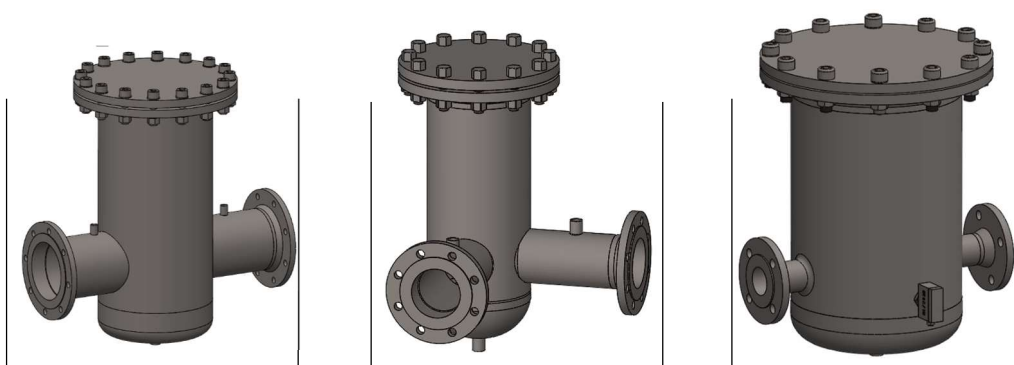
Main purpose; is to clean the gas by keeping the solid particles in the gas

Gas velocity entering into the chamber of filter body is reduced, big solid particles falls into the stock chamber, the gas advancing with small particles encounters the cartridge. in the cartridge, the gas filtration are starting again and the solid particle is kept .



Gas Filter  
 DN25 | 1" – DN300 | 12"

**Configurations**



GH Serie Standard Gas Filter

GH Serie Gas Filter Angle

GH Serie Gas Filter with

**Gas Filter, GH Serie**

**Accessories**

(to be ordered separately)



**Differential Pressure Gauge**

Article No	Type	DN Size
2.90.0622	Without Reed Contact	all size
2.90.0623	With Reed Contact	all size



**Differential Pressure Gauge with Manifold**

Article No	Type	DN Size
2.90.0624	Without Reed Contact	all size
2.90.0625	With Reed Contact	all size



**Level Sensor for liquid**

Article No	Type	DN Size
2.90.0626	IP 65	all size
2.90.0627	EX. II 1 GD Ex ia IIC T6	all size



**Sensing Line Kit for Z Serie**

Article No	Type	DN Size
2.80.1122	All Type	All size



Consisting of: 2pcs x 1mt dia.10mm steel pipe – 2pcs x pipe connection for 10 mm dia. 1/4"

**Gas Filter, GH Serie**


**Flow Calculations**

Can use the formula below to calculate the filter diameter

$$d = 18,8 \times \sqrt{\frac{Q}{P \times V}}$$

**Acronyms**

d	Filter diameter (mm)
Q	volumetric flow rate in (m <sup>3</sup> /h)
P	absolute inlet pressure in (bar)
V	Velocity (m/s)
18.8	Numerical constant

 the recommended gas velocity should be a maximum of 20 m/s

Select the diameter of the filter with higher than calculated value .  
After finding the DN of the filter, check that gas speed on the seat does not exceed 20 m/sec, using the following formula:

$$V = 345.92 \times \frac{Q}{DN^2} \times \frac{1 - 0.002 \times P}{1 + P}$$

V	Velocity (m/s)
345.92	Numerical constant
Q	Flow rate under standard conditions (Stm <sup>3</sup> /h)
DN	Filter nominal diameter (mm)
P	absolute pressure in (bar)

**Calculation of cartridge area of the filter**

$$A = \frac{Q}{P \times V \times 3600}$$

A	Filtering area (m <sup>2</sup> )
345.92	Numerical constant
Q	Flow rate under standard conditions (Stm <sup>3</sup> /h)
V	Velocity (m/s)
P	absolute pressure in (bar)

**Cartridge area**

Diemension	G 0.5	G 1	G 1.5	G 2	G 2.5	G 3	G 4	G 5	G 6
Surface m <sup>2</sup>	0.060	0.125	0.230	0.470	0.725	0.95	1.45	2.3	4.2

**Gas Filter, GH Serie**
**Capacity Tables (Stm3/h)**
**G 0.5 Cartridge – DN50 | 2"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	74	108	118	118	-	-	-	-
1	88	137	167	167	-	-	-	-
2	108	167	245	245	245	-	-	-
5	-	-	343	368	490	490	-	-
10	-	-	-	-	637	686	686	-
16	-	-	-	-	-	-	980	980

**G 1 Cartridge – DN65 | 2 1/2"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	147	216	333	400	-	-	-	-
1	176	274	392	450	-	-	-	-
2	216	333	490	686	-	-	-	-
5	314	490	686	980	1176	-	-	-
10	441	637	980	1274	1568	2156	-	-
16	539	784	1176	1470	1666	1960	2695	3724

**G 1.5 Cartridge – DN80 | 3"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	294	421	637	784	-	-	-	-
1	333	539	735	882	-	-	-	-
2	392	637	931	1078	1274	-	-	-
5	588	882	1274	1568	1862	196	-	-
10	833	1176	1764	2156	2450	2940	3675	-
16	980	1372	2156	2744	3136	3920	4410	5880

**G 2 Cartridge – DN100 | 4"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	588	882	1274	1274	-	-	-	-
1	686	1078	1470	1666	-	-	-	-
2	833	1274	1862	2156	2156	-	-	-
5	833	1274	2695	3136	3675	4655	-	-
10	1176	1764	2940	3430	4900	6125	8330	-
16	1372	2156	3136	3920	5390	6370	9800	11760

**G 2.5 Cartridge – DN125 | 5"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	882	1274	1960	1960	-	-	-	-
1	980	1568	2695	2695	-	-	-	-
2	1225	1960	2744	2940	3430	-	-	-
5	1470	2156	3920	4900	5390	5880	-	-
10	2156	3136	4900	5880	7350	8330	9800	-
16	2450	3920	5880	6860	7840	9800	11760	17640

**Gas Filter, GH Serie**
**Capacity Tables (Stm3/h)**
**G 3 Cartridge – DN150 | 6"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	1568	2450	2940	2940	-	-	-	-
1	1862	2940	3675	3675	-	-	-	-
2	2450	3920	4410	4655	5390	-	-	-
5	2940	4410	7350	8820	9800	10780	-	-
10	3430	5096	7840	9800	11760	14700	17640	-
16	3920	6370	8820	11760	12740	15680	21560	30380

**G 3.5 Cartridge – DN150 or DN200 | 6" or 8"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	1862	2744	3430	3430	-	-	-	-
1	2156	3430	3920	3920	-	-	-	-
2	2695	4165	5880	5880	5880	-	-	-
5	3920	5880	8820	9800	11270	11760	-	-
10	5390	7840	12740	14700	16660	19600	21560	-
16	6370	9800	14700	17640	21560	25480	30380	30380

**G 4 Cartridge – DN200 | 8"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	2205	3332	4900	4900	-	-	-	-
1	2450	3920	5390	6860	-	-	-	-
2	2940	4900	6860	8820	9800	-	-	-
5	4410	6860	9800	12250	14700	17150	-	-
10	6370	9800	14700	17640	19110	21560	29400	-
16	7840	11760	17640	21560	24500	30380	34300	49000

**G 5 Cartridge – DN250 | 10"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	3430	5390	7840	7840	-	-	-	-
1	3675	6860	10780	10780	-	-	-	-
2	6370	8330	12250	15680	15680	-	-	-
5	8330	12740	17150	20580	25480	31360	-	-
10	11760	17640	26460	31360	34300	39200	55860	-
16	13720	21560	31360	39200	44100	53900	63700	88200

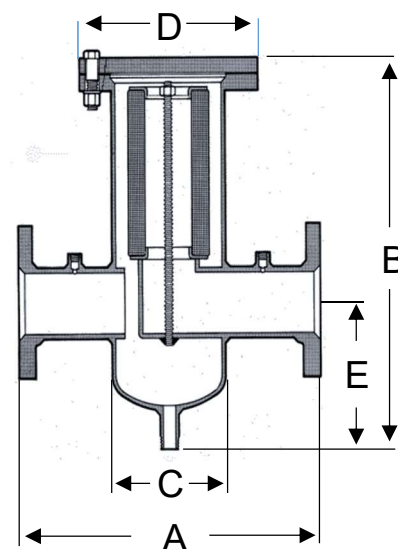
**G 6 Cartridge – DN300 | 12"**

Inlet Pressure (Bar)	$\Delta p$ Pressure loss in (mbar)							
	10	25	50	75	100	150	250	500
0,5	5880	8820	10780	11270	-	-	-	-
1	6860	9800	14700	14700	-	-	-	-
2	7840	12740	18620	22540	22540	-	-	-
5	13230	19600	24500	29400	34300	44100	-	-
10	18620	27440	41160	47040	49000	58800	83300	-
16	21560	34300	49000	60760	68600	83300	88200	127400

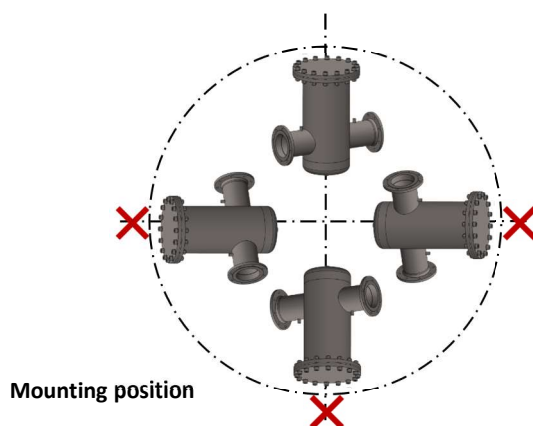
**Gas Filter, GH Serie**

**Dimensions and Weights**

Standard Filters



Diameter	A	B	C	D	E	Cartridge Surface	Cartridge Type	Internal Volume Lt	Wgt kg
DN25   1"	300	400	114,3	220	166	0,060	G 0.5	3,5	23
DN32   1 1/4"	300	400	114,3	220	166	0,060	G 0.5	3,5	23
DN40   1 1/2"	300	400	114,3	220	166	0,060	G 0.5	3,5	24
DN50   2"	300	400	114,3	220	166	0,060	G 0.5	3,5	25
DN65   2 1/2"	400	460	141,3	250	188	0,230	G 1	6	30
DN80   3"	450	540	168,3	285	220	0,230	G 1.5	12	40
DN100   4"	500	695	219,1	340	245	0,230	G 2	23	80
DN125   5"	600	795	273	405	280	0,725	G 2.5	40	93
DN150   6"	650	855	323,8	460	310	0,725	G 3	66	130
DN200   8"	800	1085	406,4	580	375	1,450	G 4	132	228
DN250   10"	900	1245	508	715	460	2,300	G 5	246	340
DN300   12"	1100	2135	610	812	800	4,200	G 6	390	510

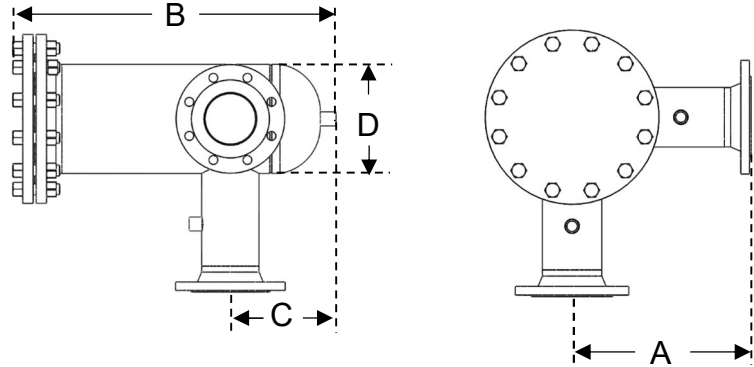




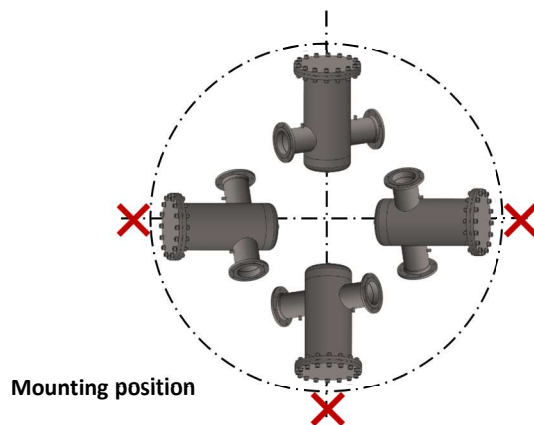
**Gas Filter, GH Serie**

**Dimensions and Weights**

**Angle Filters**



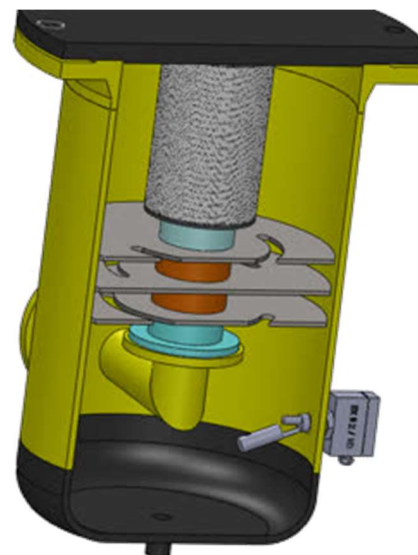
Diameter	A	B	C	D	Cartridge Surface	Cartridge Type	Internal Volume Lt	Wgt kg
DN25   1"	150	370	138	114,3	0,060	G 0.5	3,5	23
DN32   1 1/4"	150	370	138	114,3	0,060	G 0.5	3,5	23
DN40   1 1/2"	150	370	138	114,3	0,060	G 0.5	3,5	24
DN50   2"	150	370	138	114,3	0,060	G 0.5	3,5	25
DN65   2 1/2"	200	430	160	141,3	0,230	G 1	6	30
DN80   3"	230	510	180	168,3	0,230	G 1.5	12	40
DN100   4"	250	625	215	219,1	0,230	G 2	23	80
DN125   5"	300	730	255	273,0	0,725	G 2.5	40	93
DN150   6"	350	800	295	323,8	0,725	G 3	66	130
DN200   8"	400	1020	340	406,4	1,450	G 4	132	228
DN250   10"	450	1200	430	508,0	2,300	G 5	246	340
DN300   12"	600	1400	550	610,0	4,200	G 6	390	510



**Gas Filter, GH Serie**

**Gas Filter with Liquid Separator**




Main function is to separate liquids with gas. Fluid velocity entering into the chamber is reduced, liquid falls into the stock chamber, in the separating plates, the gas velocities are increased again and the liquid is kept by condensation. For a special liquid holder filter design; the gas pressure, the capacity, the volume of the liquid to be kept should be known. When the special exproof level switch is placed in the filter body and the liquid is stored in the filter, it can be transferred to the system. Cast iron filters are effective when the amount of liquid from the system is less than 30ml/day.



**Color of Products**






**Standard Colors**


The colors of the filter parts are painted as follows.

Part	RAL Code	Color
Body EN PN Flangeds	1021	
Body ANSI flanges Class 150 RF	3000	
Cover All Versions	9005	

**Optional Colors**

You can choose one or more of the following colors.

Part	RAL Code	Color
All Parts	1021	
All Parts	3000	
All Parts	9005	
All Parts	6011	
All Parts	5010	

 delivery times and price may vary in optional color options.

**Gas Filter, GH Serie**

**ORDERING DATA**

**GH / 25 / 16 / LR / DV / DPC / 2 / LSL**

<b>Type</b>		
GH		
<b>Diameter</b>		
DN25   1"	25	
DN32   1 1/4"	32	
DN40   1 1/2"	40	
DN50   2"	50	
DN65   2 1/2"	65	
DN80   3"	80	
DN100   4"	100	
DN125   5"	125	
DN150   6"	150	
DN200   8"	200	
DN250   10"	250	
DN300   12"	300	
<b>Flanged Desing</b>		
PN25	16	
PN40	25	
ANSI 300	150	
<b>Flow Direction</b>		
Inlet Right – Outlet Left	RL	
Inlet Left – Outlet Right	LR	
<b>Drain Valve</b>		
Without drain valve	-	
With drain valve	DV	
<b>Differential Pressure Gauge</b>		
Without Differential Pressure Gauge	-	
With Differential Pressure Gauge	DP	
With Differential Pressure Gauge+Reed Contact	DPC	
<b>Filter Particle Size</b>		
Filtration efficiency %99 2 µm	2	
Filtration efficiency %99 5 µm	5	
Filtration efficiency %99 10 µm	10	
<b>Liquid Sperator</b>		
Without Liquid Separator	-	
Without Liquid Separator	LS	
Level Sensor for Liquid Stock	LSL	

**Gas Filter, GH Serie**

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**NOTES**

For more information, contact your local sales representative or agency.



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