

Suction and return in line Spin-On filters

HF 620 / HF 625 series



THE IMPORTANCE OF AN EFFICIENT FILTRATION

The main cause of anomalies in hydraulic systems has to be attributed to the presence of contaminants in the fluid. The nature of the contaminant may be: gaseous, namely air mixed with the fluid; fluid, it depends on water penetrating the fluid; solid, therefore particles of various origins and dimensions.

Customers who operate equipments are always focused on obtaining the best possible performance, lower energy consumptions and greater respect for the environment.

These characteristics can be attained by using top quality components in the hydraulic system, which are more sensitive to the presence of contaminants in the fluid.

Starting from these requirements, we understand how important and fundamental it is to prevent the presence of air and water from mixing in the fluid tank by using dedicated solutions.

It is also crucial to limit the presence of solid particles in the hydraulic circuit through a suitable filtering system, which is indispensable to maintain the project requirements of the system over time and to keep running costs low.

The correct choice of a filter and its optimum position in the hydraulic system requires the same care and experience needed to choose all the other components.

The use of filters with larger filtering surfaces reduces, at equal flow rates, the superficial contaminant load and therefore the filter's life is extended proportionally.

To maintain the maximum efficiency of the system, the filters must have a clogging indicator showing the differential pressure on the filtering cartridge and to immediately point out when the cartridge needs replacing in order to prevent the by-pass valve from opening.

The following factors should be analysed when choosing the ideal filter:

- The filtration degree required to protect the most sensitive component from contamination
- The points of the circuit in which the filters have to be installed
- The working pressure of the system
- The maximum flow rate and the type of fluid to be filtered
- The duty cycle
- The retention efficiency of the filtering cartridge
- The contaminant accumulation capacity of the filtering cartridge
- The working ambient temperature

Each filter used generates a pressure drop that increases continuously as time goes by. This pressure drop represents an efficiency index of the filter itself.

When the hydraulic system is about to be assembled, all the components must be perfectly clean and the fluid has to be added through a device complete with a filter.

During the test phase, it is advisable to run some work cycles at low pressure in order to create the best possible conditions for all the components.

TECHNICAL CHARACTERISTICS

HF 620 filter series are directly connected to the suction line or return line of hydraulic circuit.

HF 625 filter series can be used in applications with 363 psi (25 bar) working pressure.

Both series safeguard the hydraulic circuit from contaminating particles.

- Flow up to 50 US gpm (190 l/min) on the suction line and 92 US gpm (350 l/min) on the return line
- 363 psi (25 bar) maximum working pressure
- Quick replacement of the filtering element

MATERIALS

Head	Aluminum
Bowl	Steel
Seals	Buna - Viton
End cap	Zinc plated steel
Inner tube	Zinc plated steel
	Stainless steel
Filter media	Cellulose
	Micro-fibre glass

FLUID COMPATIBILITY

Conforming to ISO 2943 (Norm ISO 6743/4)

Oli mineral (1)	HH - HL - HM - HR - HV - HG
Water emulsion (1)	HFAE - HFAS
Syntetic fluid (2)	HS - HFDR - HFDU - HFDS
(1) With Buna seals	
(2) With Viton seals	

FLOW

Max. flow (Suction)	50 US gpm (190 l/min)
Max. flow (Return)	92 US gpm (350 l/min)

PRESSURE

HF 620

Working pressure	174 psi (12 bar)
Testing pressure	232 psi (16 bar)
Burst pressure	305 psi (21 bar)
Element collapse pressure rating (conforming to ISO 2941)	72.5 psi (5 bar)(only cellulose element) 145 psi (10 bar)

HF 625

Working pressure	363 psi (25 bar)
Testing pressure	435 psi (30 bar)
Burst pressure	653 psi (45 bar)
Element collapse pressure rating (conforming to ISO 2941)	72.5 psi (5 bar)(only cellulose element) 145 psi (10 bar)

BY-PASS VALVE

By-pass setting	2.9 psi (0,2 bar) (Suction)
By-pass setting	25 psi (1,7 bar) (Return)

OPERATING TEMPERATURE

With Buna seals	-22 ÷ 195 °F (-30 ÷ 90 °C)
With Viton seals	-4 ÷ 230 °F (-20 ÷ 110 °C)

DEGREE OF FILTRATION

Absolute Filtration

Code	Material	Degree of filtration
FG010	Micro-fibre glass	10 µm
FG025	Micro-fibre glass	25 µm

Nominal Filtration

Code	Material	Degree of filtration
SP010	Cellulose	10 µm
SP025	Cellulose	25 µm
MS060	Steel	60 µm
MS090	Steel	90 µm

INDICATORS (3)

Rear manometer
Visual indicator
Electrical indicator
Visual differential indicator
Visual electrical differential indicator

(3) Characteristics and dimensions at page 20 and 21

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SIZING – PRESSURE DROP

The total pressure drop of the filter is calculated by summing the pressure drop value in the housing to the one in the filtering element.

Total $\Delta p = \Delta p$ in housing + Δp in element

In filters of HF 620 series in normal working conditions, the total Δp must not be more than 1.4 psi (0,1 bar) on suction line and 5.8 (0,4 bar) on return line.

In filters of HF 625 series in normal working conditions, the total Δp must not be more than 5.8 psi (0,4 bar).

To establish the values of pressure drop involved, the following pages provide some diagrams with curves referred to the use of mineral oils SAE 10 with kinematic viscosity of 120 SSU (30 cSt) and density of 7.29 lb/gal (0,856 kg/dm³).

Calculation example

Filter HF620-30.155-AS-FG010-B17-GG-B-XB-DA-G

Flow rate= 29 US gpm (110 l/min)

Kinematic viscosity: 120 SSU (30 cSt)

Oil density : 7.29 lb/gal (0,856 kg/dm³)

Filtering degree: 10 μ m

Data obtained from the diagrams:

Δp in housing = 1.45 psi (0,10 bar) (page 5)

Δp in element = 3.77 psi (0,26 bar) (page 8)

Total $\Delta p = 1.45 + 3.77 = 5.22$ psi (0,36 bar) (Δp is lower than maximum value admitted – therefore sizing is correct).

If oil with different kinematic viscosity and different density is used, the values obtained from the diagrams will be re-calculated considering the following indications:

1) The pressure drop of the housing is proportional with the oil density, therefore for oil with density different to 7.29 lb/gal (0,856 kg/dm³) the value of the Δp in the head-bowl will be:

$$\Delta p \text{ in housing} = \frac{\Delta p \text{ of diagram (psi)} \cdot \text{Oil density (lb/gal)}}{7.29 \text{ (lb/gal)}} \quad [\text{psi}]$$

Or

$$\Delta p \text{ in housing} = \frac{\Delta p \text{ of diagram (bar)} \cdot \text{Oil density (kg/dm}^3\text{)}}{0,856 \text{ (kg/dm}^3\text{)}} \quad [\text{bar}]$$

2) The pressure drop of the element is proportional with the oil density and kinematic viscosity, therefore for oil with density different to 7.29 lb/gal (0,856 kg/dm³) and kinematic viscosity different to 120 SSU (30 cSt) the value of Δp in the element will be:

$$\Delta p \text{ in element} = \Delta p \text{ of diagram (psi)} \cdot \frac{\text{Oil density (lb/gal)}}{7.29 \text{ (lb/gal)}} \cdot \frac{\text{Oil viscosity (SSU)}}{120 \text{ (SSU)}} \quad [\text{psi}]$$

Or

$$\Delta p \text{ in element} = \Delta p \text{ of diagram (bar)} \cdot \frac{\text{Oil density (kg/dm}^3\text{)}}{0,856 \text{ (kg/dm}^3\text{)}} \cdot \frac{\text{Oil viscosity (cSt)}}{30 \text{ (cSt)}} \quad [\text{bar}]$$

Now you sum the values of the pressure drop of the housing to the value of the pressure drop of the filtering element, always making sure the total Δp does not exceed the pressure indicated above.

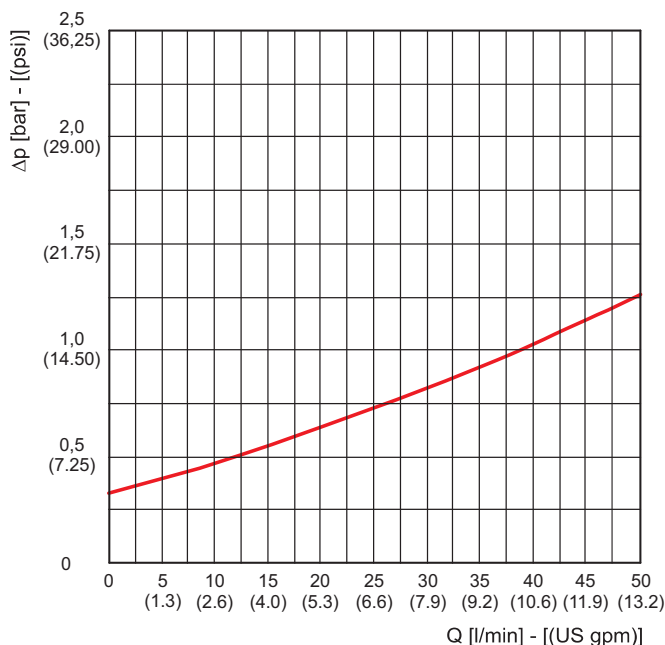
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PRESSURE DROP CURVES THROUGH THE BY-PASS VALVES B02

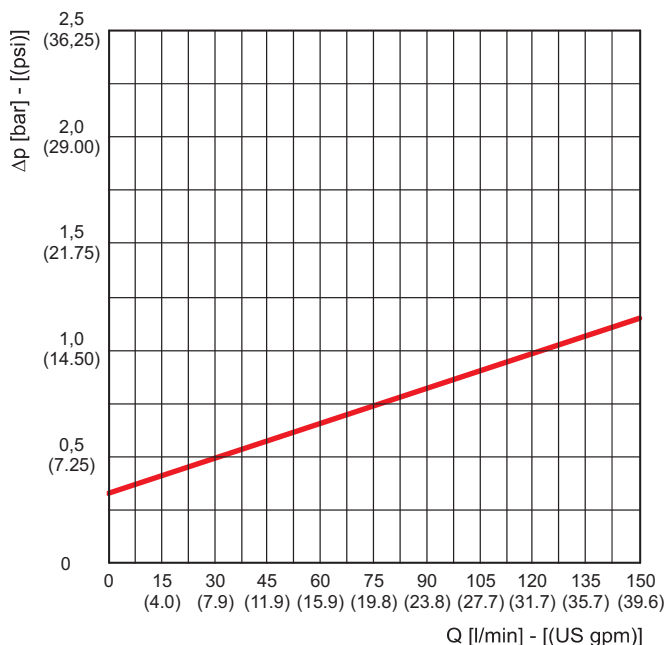
The pressure drop values are directly proportional with the specific weight of the fluid and do not affect the establishment of the total pressure drop of the complete filter.

The curves are obtained in the following conditions:
 Mineral oil type SAE 10
 Kinematic viscosity 120 SSU (30 cSt)
 Density 7.29 lb/gal (0,856 kg/dm³).

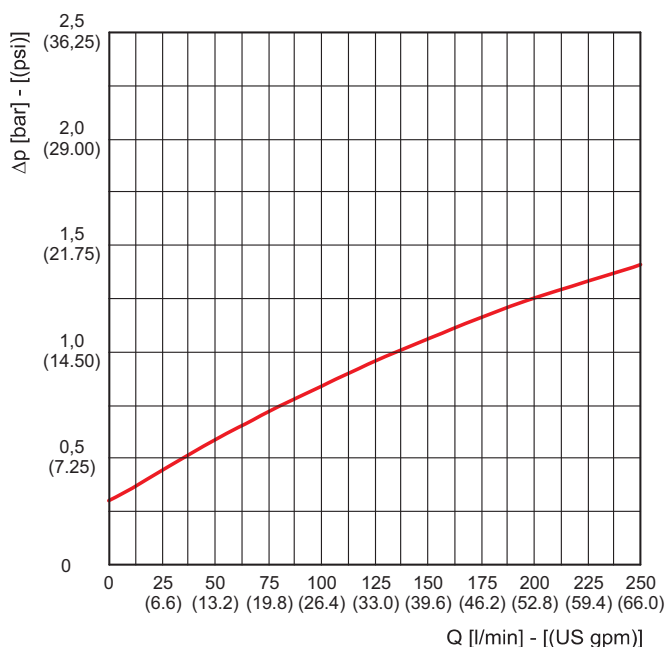
HF 620-20 / HF 625-20



HF 620-30 / HF 625-30



HF 620-40 / HF 620-50



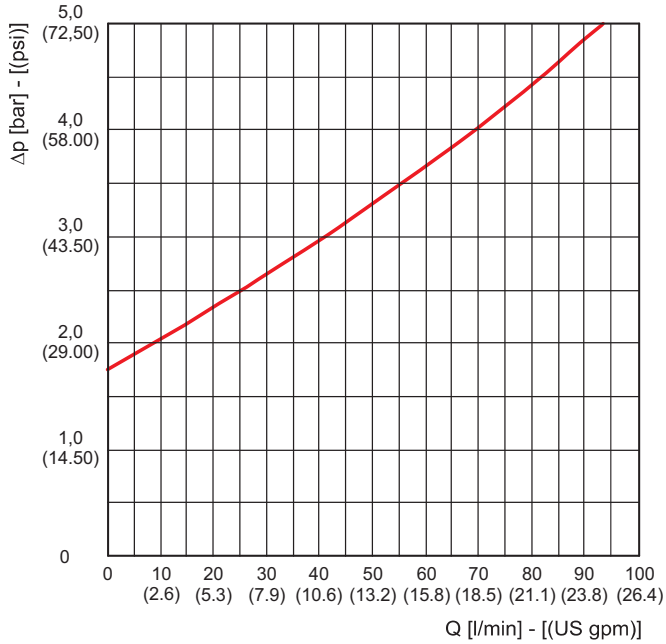
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PRESSURE DROP CURVES THROUGH THE BY-PASS VALVES B17

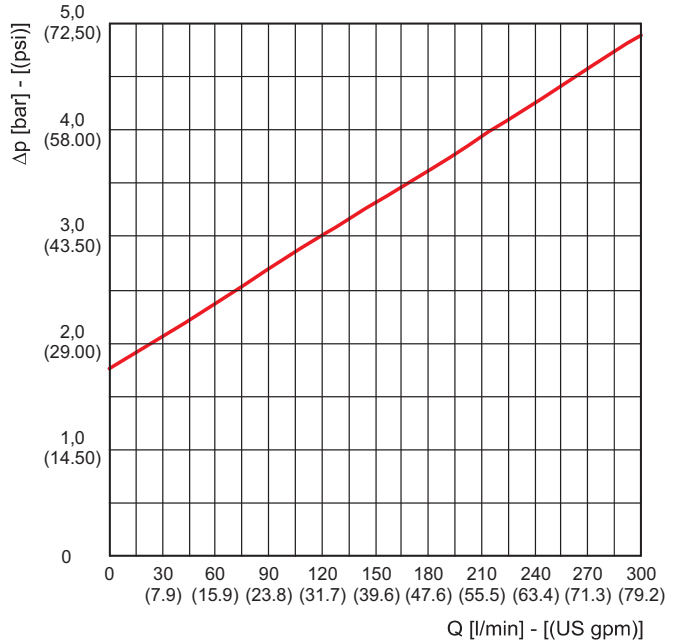
The pressure drop values are directly proportional with the specific weight of the fluid and do not affect the establishment of the total pressure drop of the complete filter.

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).

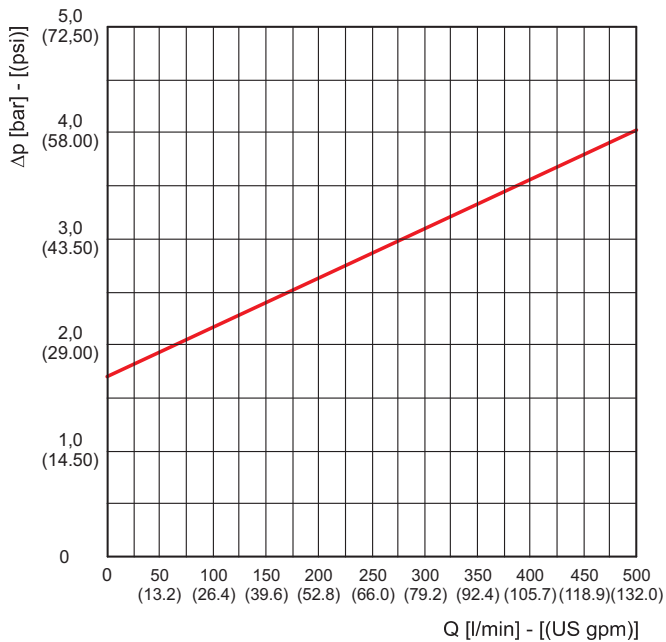
HF 620-20 / HF 625-20



HF 620-30 / HF 625-30



HF 620-40 / HF 625-50



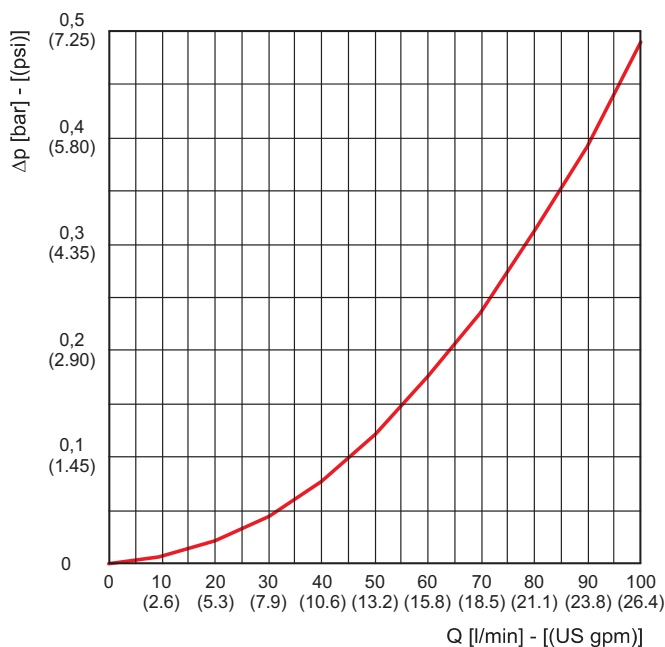
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PRESSURE DROP CURVES THROUGH THE HOUSING

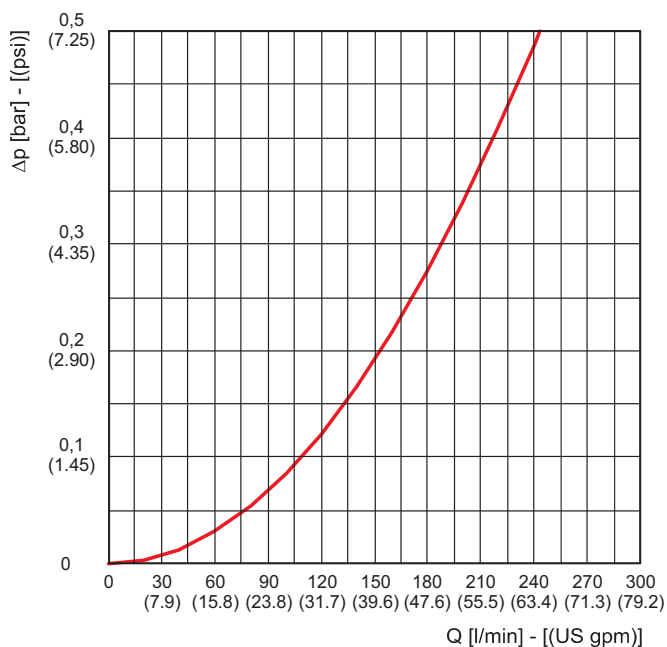
The curves are obtained in the following conditions:
 Mineral oil type SAE 10
 Kinematic viscosity 120 SSU (30 cSt)
 Density 7.29 lb/gal (0,856 kg/dm³).

Series 20 G 3/4
 Series 30 G 1 1/4
 Series 40 / 50 G 1 1/2

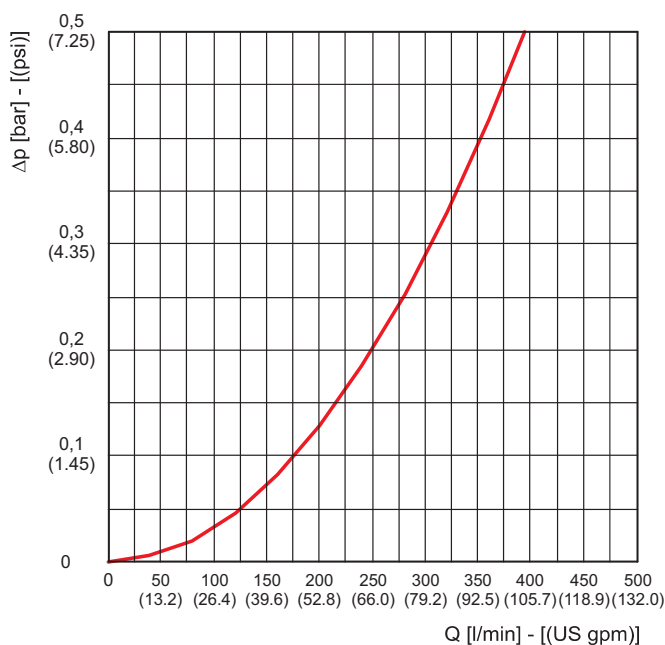
HF 620-20 / HF 625-20



HF 620-30 / HF 625-30



HF 620-40 / HF 620-50



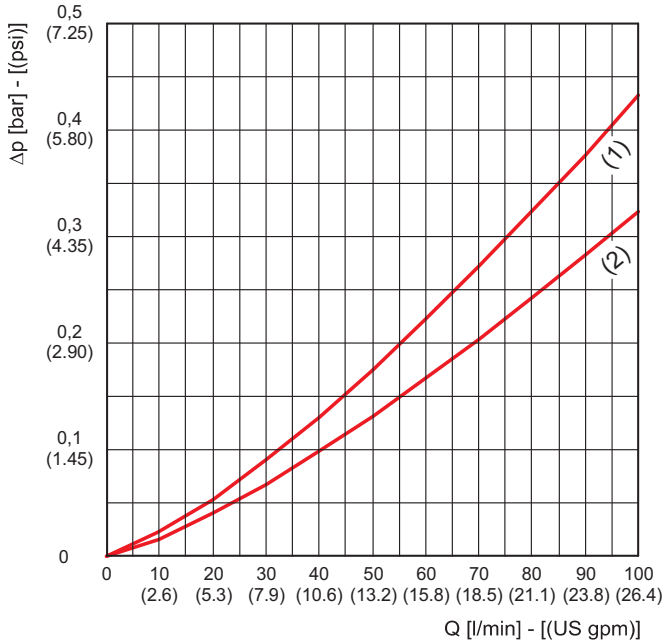
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PRESSURE DROP CURVES THROUGH THE ELEMENT HE K45/46-20

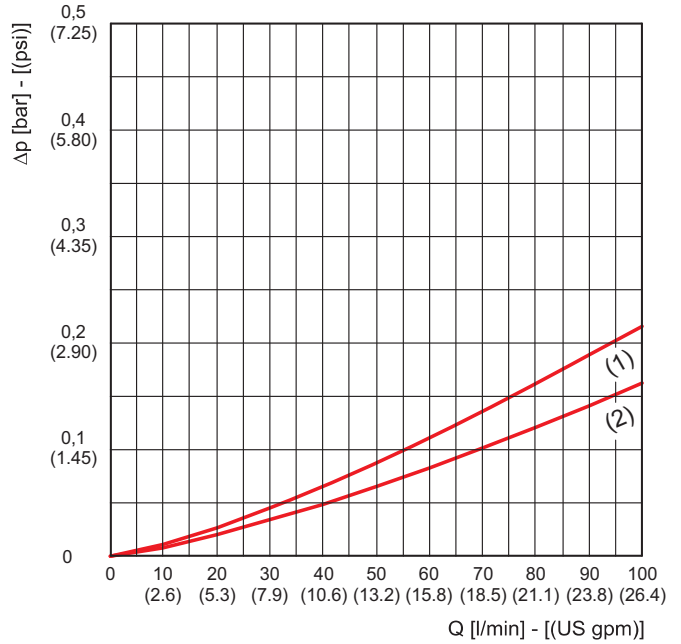
The curves are obtained in the following conditions:
 Mineral oil type SAE 10
 Kinematic viscosity 120 SSU (30 cSt)
 Density 7.29 lb/gal (0,856 kg/dm³).

- (1) HE K45-20.135 / HE K46-20.135
- (2) HE K45-20.180 / HE K46-20.180

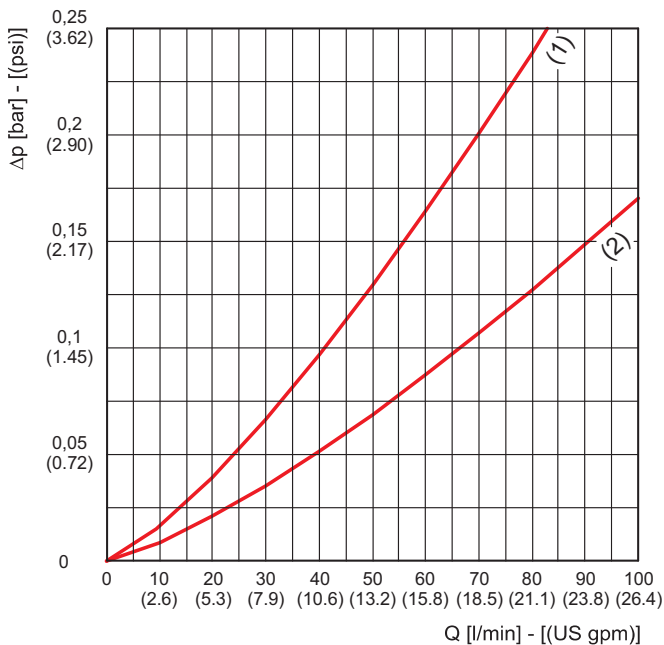
FG010



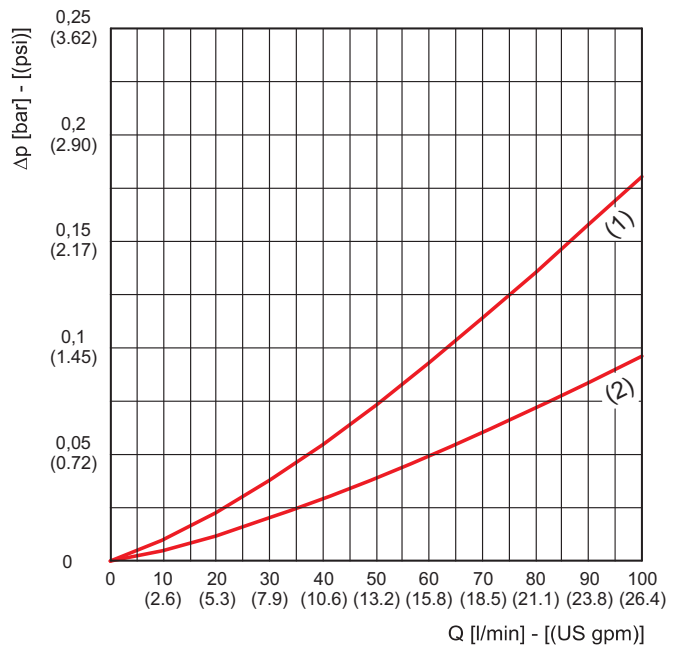
FG025



SP010



SP025



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PRESSURE DROP CURVES THROUGH THE ELEMENT HE K45/46-20

The curves are obtained in the following conditions:

Mineral oil type SAE 10

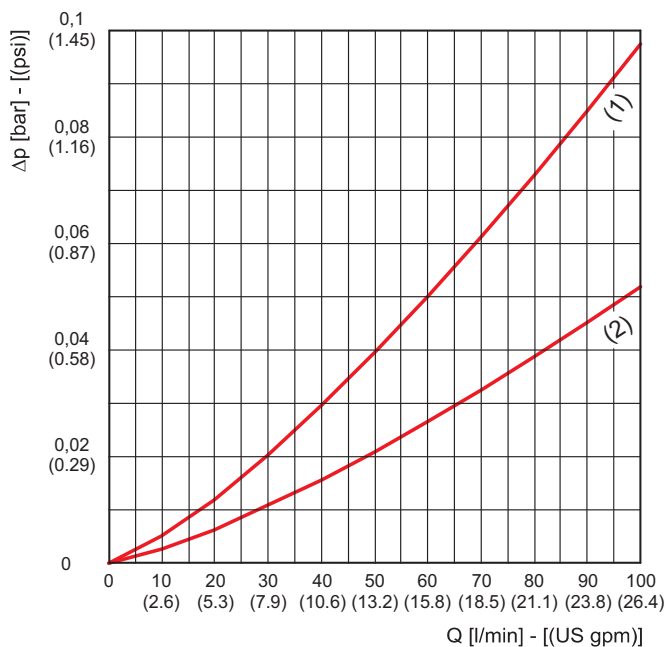
Kinematic viscosity 120 SSU (30 cSt)

Density 7.29 lb/gal (0,856 kg/dm³).

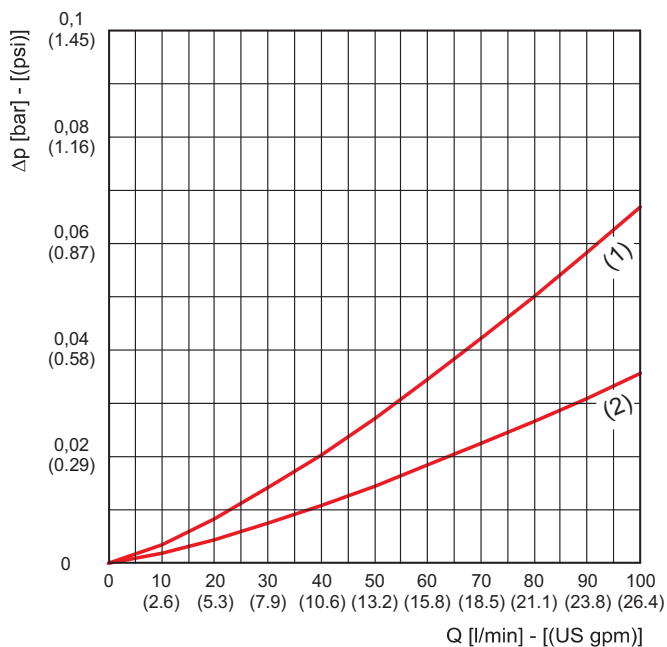
(1) HE K45-20.135 / HE K46-20.135

(2) HE K45-20.180 / HE K46-20.180

MS060



MS090



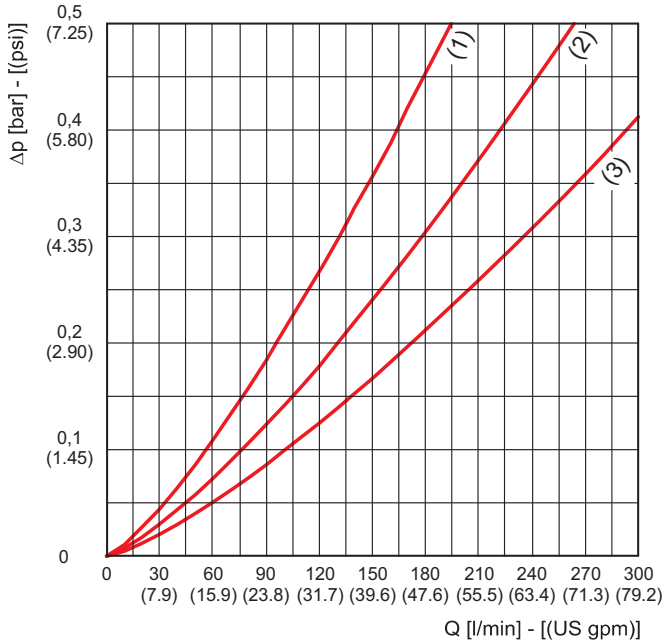
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PRESSURE DROP CURVES THROUGH THE ELEMENT HE K45/46-30

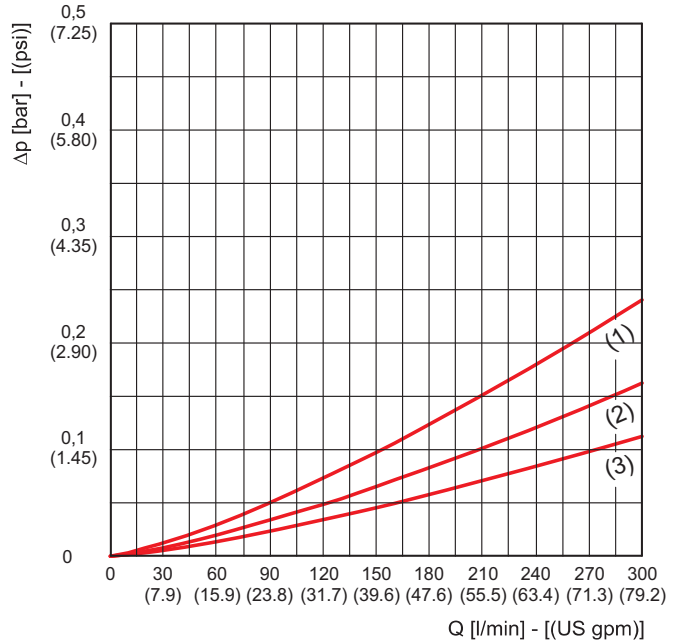
The curves are obtained in the following conditions:
 Mineral oil type SAE 10
 Kinematic viscosity 120 SSU (30 cSt)
 Density 7.29 lb/gal (0,856 kg/dm³).

- (1) HE K45-30.155 / HE K46-30.155
- (2) HE K45-30.210 / HE K46-30.210
- (3) HE K45-30.305 / HE K46-30.305

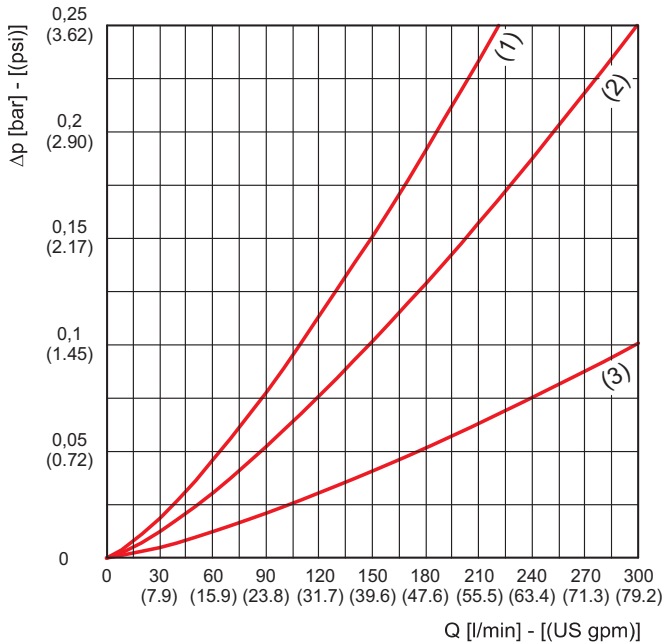
FG010



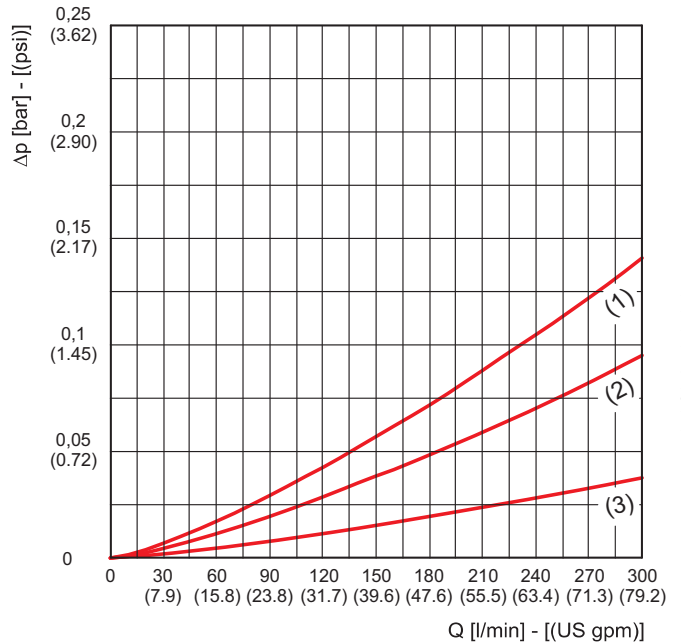
FG025



SP010



SP025



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PRESSURE DROP CURVES THROUGH THE ELEMENT HE K45/46-30

The curves are obtained in the following conditions:

Mineral oil type SAE 10

Kinematic viscosity 120 SSU (30 cSt)

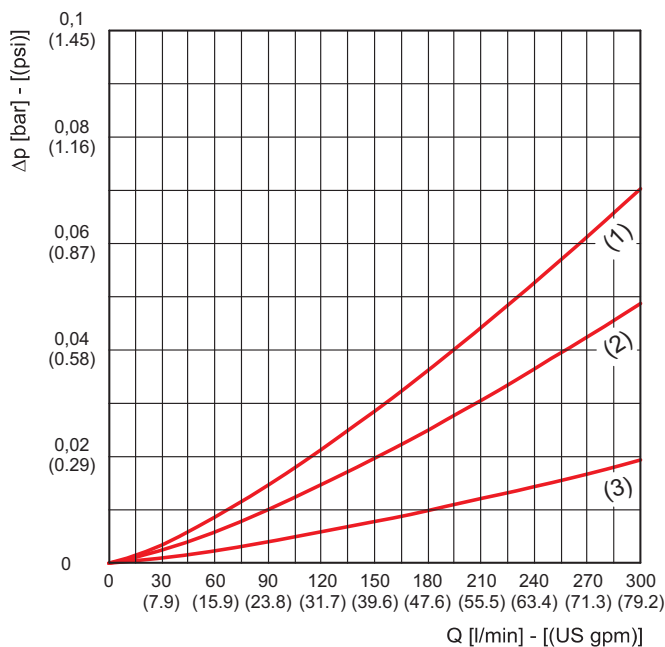
Density 7.29 lb/gal (0,856 kg/dm³).

(1) HE K45-30.155 / HE K46-30.155

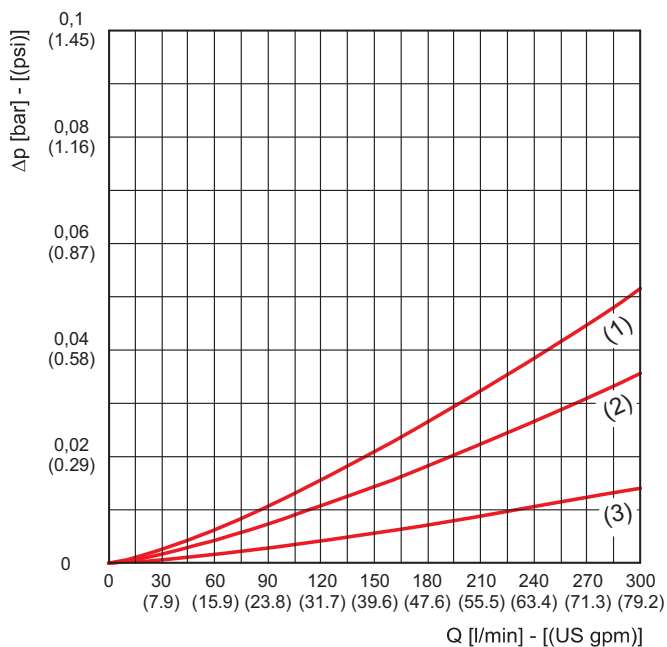
(2) HE K45-30.210 / HE K46-30.210

(3) HE K45-30.305 / HE K46-30.305

MS060



MS090



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SUCTION FILTERS FLOWS

Filter type	Inlet ports			Degree of filtration			
				FG010	FG025	SP010	SP025
	GAS (BSPP)	NPT	SAE J514b	Flow			
				$\Delta p = 1.45 \text{ psi (0,1 bar)}$ (values referred to standard filtering surfaces)			
				US gpm (l/min)			
HF 620-20.135 HF 625-20.135	G 3/4	3/4 NPT	1 1/16-12 UNF-2B	5.3 (25)	9.2 (35)	7.9 (30)	9.2 (35)
HF 620-20.180 HF 625-20.180	G 3/4	3/4 NPT	1 1/16-12 UNF-2B	5.3 (25)	9.2 (35)	9.2 (35)	10.6 (40)
HF 620-30.155 HF 625-30.155	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	14.5 (55)	21.1 (80)	19.8 (75)	23.8 (90)
HF 620-30.210 HF 625-30.210	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	15.8 (60)	23.8 (90)	21.1 (80)	26.4 (100)
HF 620-30.305 HF 625-30.305	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	18.5 (70)	25.1 (95)	26.4 (100)	27.7 (105)
HF 620-40.155 HF 620-50.155	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	18.5 (70)	31.7 (120)	26.4 (100)	37.0 (140)
HF 620-40.210 HF 620-50.210	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	23.8 (90)	34.3 (130)	34.3 (130)	39.6 (150)
HF 620-40.305 HF 620-50.305	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	26.4 (100)	37.0 (140)	39.6 (150)	42.3 (160)

Filter type	Inlet ports			Degree of filtration	
				MS060	MS090
	GAS (BSPP)	NPT	SAE J514b	Flow	
				$\Delta p = 1.45 \text{ psi (0,1 bar)}$ (values referred to standard filtering surfaces)	
				US gpm (l/min)	
HF 620-20.135 HF 625-20.135	G 3/4	3/4 NPT	1 1/16-12 UNF-2B	10.6 (40)	11.9 (45)
HF 620-20.180 HF 625-20.180	G 3/4	3/4 NPT	1 1/16-12 UNF-2B	10.6 (40)	11.9 (45)
HF 620-30.155 HF 625-30.155	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	26.4 (100)	27.7 (105)
HF 620-30.210 HF 625-30.210	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	27.7 (105)	29.0 (110)
HF 620-30.305 HF 625-30.305	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	29.0 (110)	30.4 (115)
HF 620-40.155 HF 620-50.155	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	42.3 (160)	44.9 (170)
HF 620-40.210 HF 620-50.210	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	44.9 (170)	47.5 (180)
HF 620-40.305 HF 620-50.305	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	47.5 (180)	50.2 (190)

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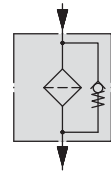
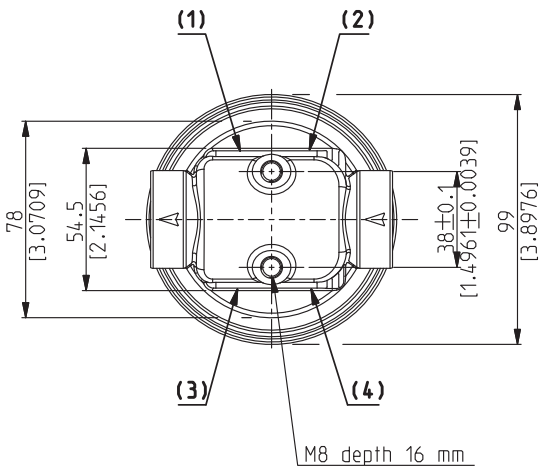
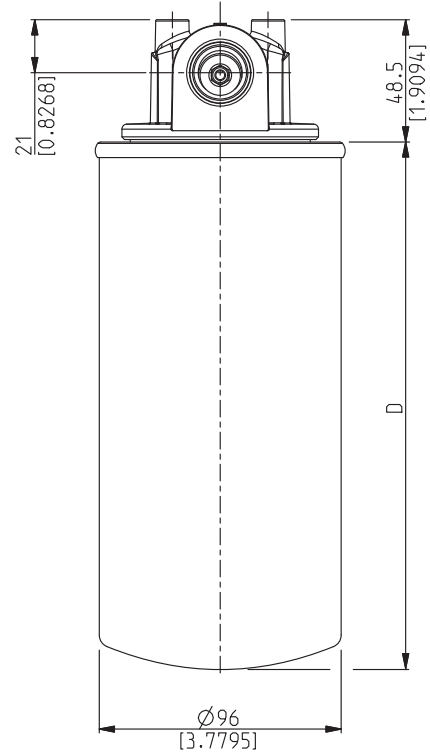
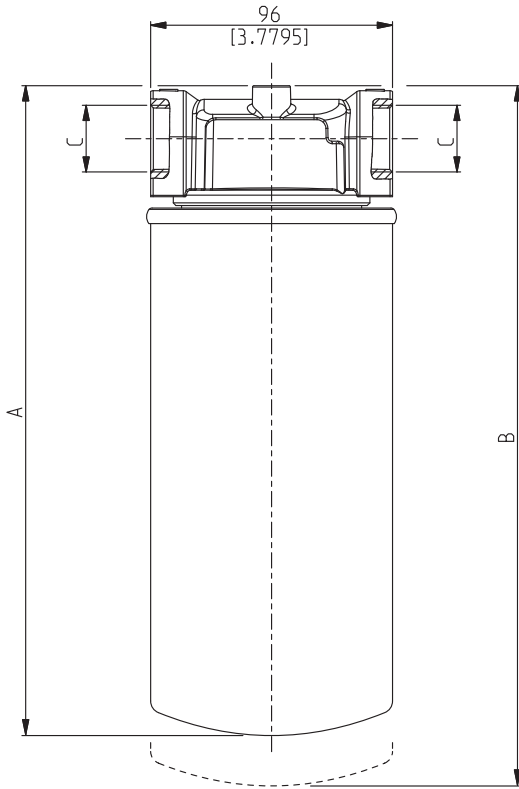
RETURN FILTERS FLOWS

Filter type	Inlet ports			Degree of filtration			
				FG010	FG025	SP010	SP025
	GAS (BSPP)	NPT	SAE J514b	Flow Δp= 5.8 psi(0,4 bar) (values referred to standard filtering surfaces) US gpm (l/min)			
HF 620-20.135 HF 625-20.135	G 3/4	3/4 NPT	1 1/16-12 UNF-2B	17.2 (65)	19.8 (75)	17.2 (65)	19.8 (75)
HF 620-20.180 HF 625-20.180	G 3/4	3/4 NPT	1 1/16-12 UNF-2B	17.2 (65)	19.8 (75)	19.8 (75)	21.1 (80)
HF 620-30.155 HF 625-30.155	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	33.0 (125)	47.5 (180)	43.6 (165)	51.5 (195)
HF 620-30.210 HF 625-30.210	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	38.3 (145)	50.2 (190)	47.5 (180)	52.8 (200)
HF 620-30.305 HF 625-30.305	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	42.3 (160)	52.8 (200)	52.8 (200)	55.5 (210)
HF 620-40.155 HF 620-50.155	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	44.9 (170)	71.3 (270)	60.8 (230)	79.2 (300)
HF 620-40.210 HF 620-50.210	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	50.2 (190)	76.6 (290)	71.3 (270)	81.9 (310)
HF 620-40.305 HF 620-50.305	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	60.8 (230)	81.9 (310)	81.9 (310)	89.8 (340)

Filter type	Inlet ports			Degree of filtration	
				MS060	MS090
	GAS (BSPP)	NPT	SAE J514b	Flow Δp= 5.8 psi (0,4 bar) (values referred to standard filtering surfaces) US gpm (l/min)	
HF 620-20.135 HF 625-20.135	G 3/4	3/4 NPT	1 1/16-12 UNF-2B	21.1 (80)	22.4 (85)
HF 620-20.180 HF 625-20.180	G 3/4	3/4 NPT	1 1/16-12 UNF-2B	21.1 (80)	22.4 (85)
HF 620-30.155 HF 625-30.155	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	54.1 (205)	56.8 (215)
HF 620-30.210 HF 625-30.210	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	55.5 (210)	58.1 (220)
HF 620-30.305 HF 625-30.305	G 1 1/4	1 1/4 NPT	1 5/8-12 UNF-2B	56.8 (215)	59.4 (225)
HF 620-40.155 HF 620-50.155	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	84.5 (320)	87.1 (330)
HF 620-40.210 HF 620-50.210	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	87.1 (330)	89.8 (340)
HF 620-40.305 HF 620-50.305	G 1 1/2	1 1/2 NPT	1 7/8-12 UNF-2B	89.8 (340)	92.5 (350)

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HF 620-20 DIMENSIONS



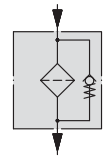
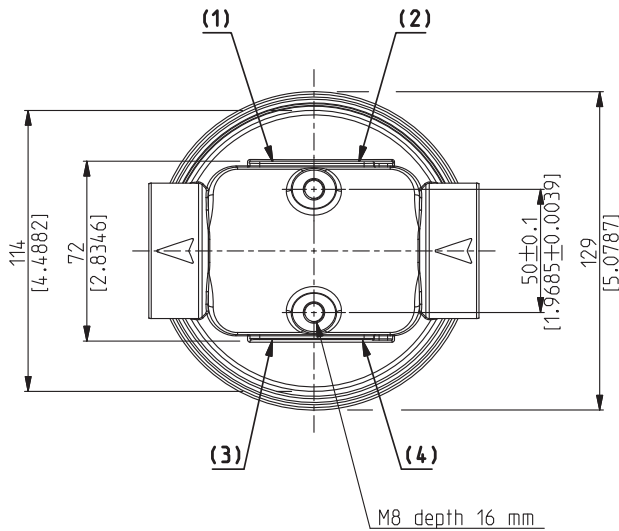
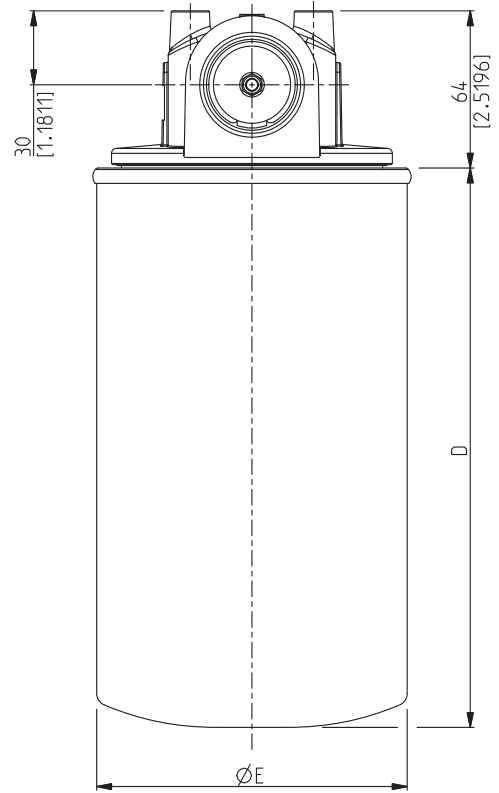
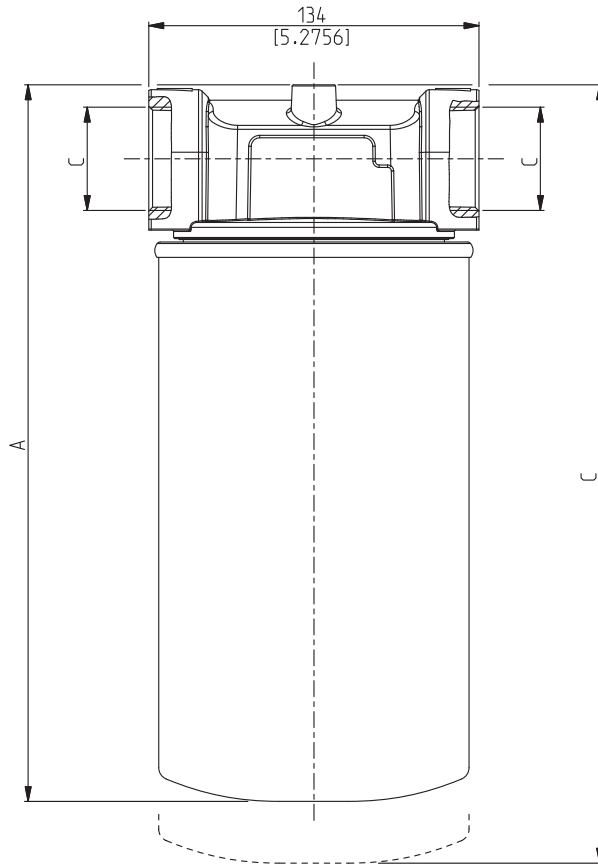
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Filter type	Weight	A	B	C	D	(1)(3)(GAS-BSPP) Suction indicators	(2)(4)(GAS-BSPP) Return indicators
	kg(lbs)	mm(in)	mm(in)	(GAS-BSPP)	mm(in)		
HF 620-20.135	1,05 (2.31)	195 (7.6771)	215 (8.4645)	G 3/4	147 (5.7873)	G 1/8	G 1/8
HF 620-20.180	1,28 (2.82)	257 (10.1180)	277 (10.9054)		209 (8.2283)		

NPT, metric and SAE UN-UNF threads are available (consult our technical department).

HF 620-30 DIMENSIONS



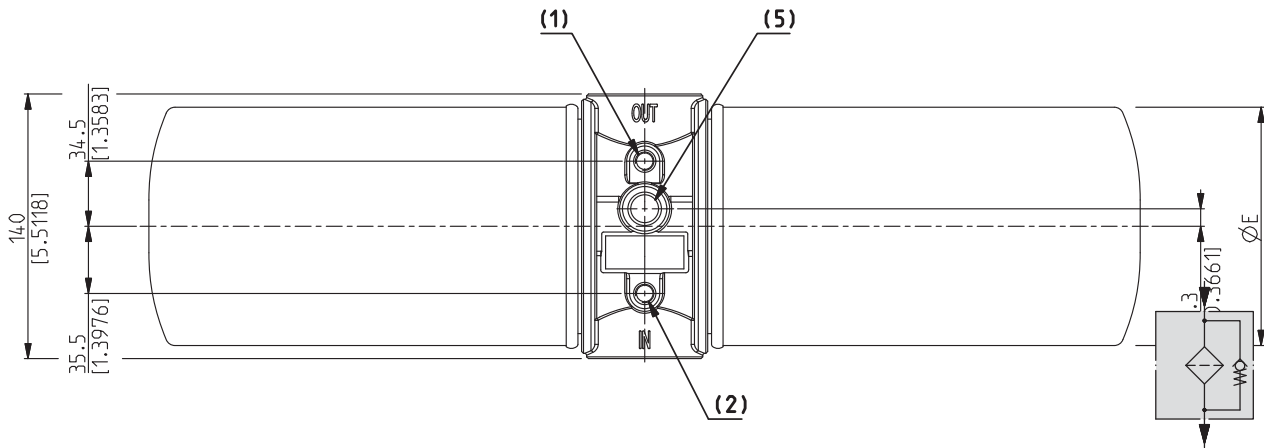
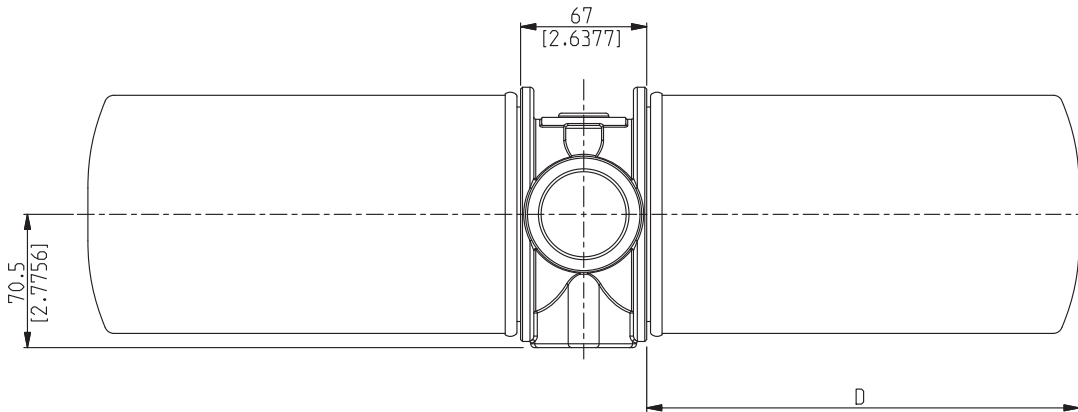
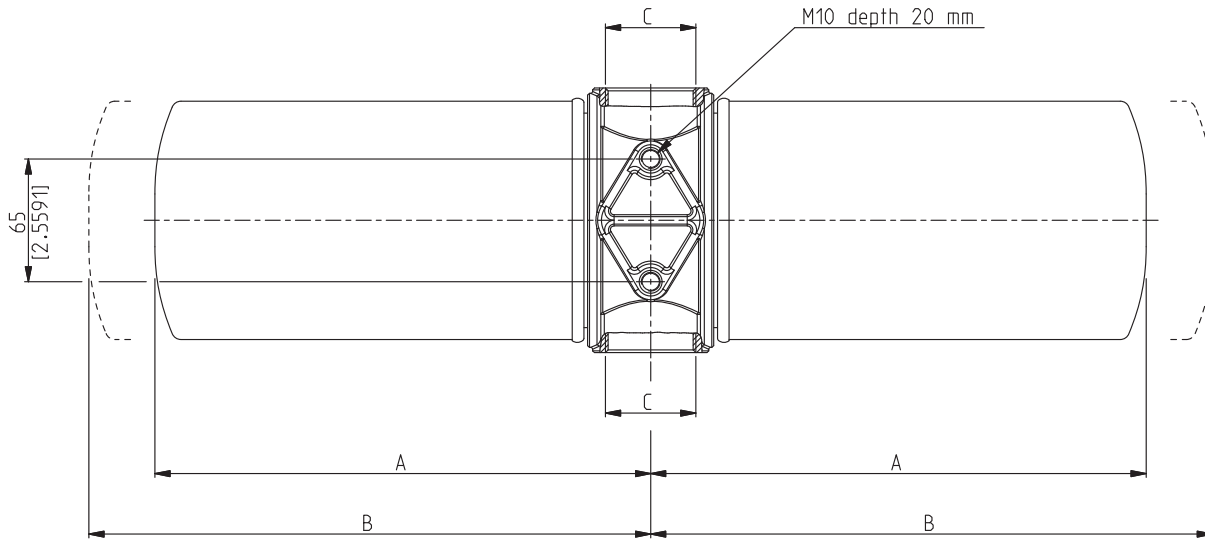
01/03.2011

ICAT_008_002_HF620

Filter type	Weight kg(lbs)	A mm(in)	B mm(in)	C (GAS-BSP) mm(in)	D mm(in)	E mm(in)	(1)(3)(GAS-BSP)	(2)(4)(GAS-BSP)
							Suction indicators	Return indicators
HF 620-30.155	1,87 (4.12)	243 (9.5669)	268 (10.5511)		179 (7.0472)	126 (4.9606)		
HF 620-30.210	2,17 (4.78)	291 (11.4566)	316 (12.4409)	G 1 1/4	227 (8.9369)		G 1/8	G 1/8
HF 620-30.305	3,15 (6.94)	373 (14.6850)	398 (15.6692)		309 (12.1653)	138 (5.4330)		

NPT, metric and SAE UN-UNF threads are available (consult our technical department).

HF 620-40 DIMENSIONS



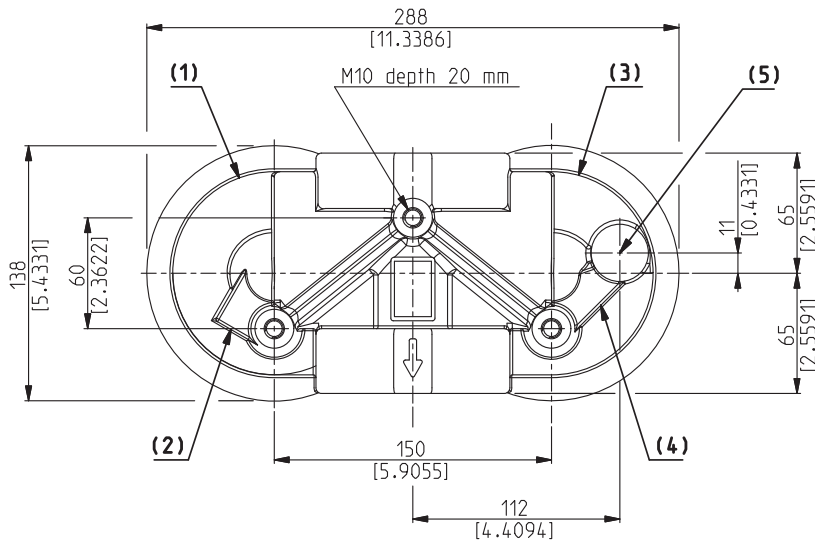
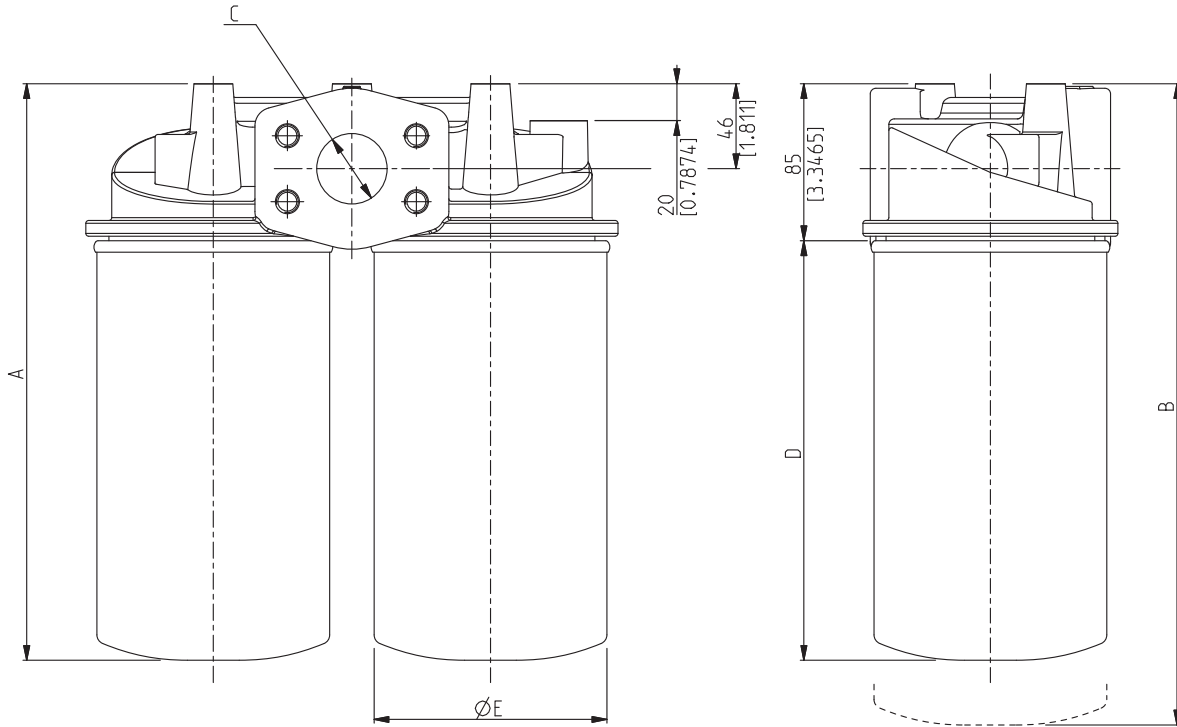
ICAT_008_004_HF620

01/03.2011

Filter type	Weight	A	B	C	D	E	(1)(GAS-BSPP)	(2)(GAS-BSPP)	(5)(GAS-BSPP)
							Suction indicators	Return indicators	Differential indicators
	kg(lbs)	mm(in)	mm(in)	(GAS-BSPP)	mm(in)	mm(in)			
HF 620-40.155	3,31 (7.29)	214 (8.4251)	249 (9.8031)		181 (7.1259)	126 (4.9606)			
HF 620-40.210	3,89 (8.57)	262 (10.3149)	297 (11.6928)	G 1 1/2	229 (9.0157)		G 1/8	G 1/8	G 1/2
HF 620-40.305	5,85 (12.89)	344 (13.5432)	379 (14.9212)		311 (12.2440)	138 (5.4330)			

NPT, metric and SAE UN-UNF threads are available (consult our technical department).

HF 620-50 DIMENSIONS



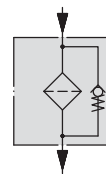
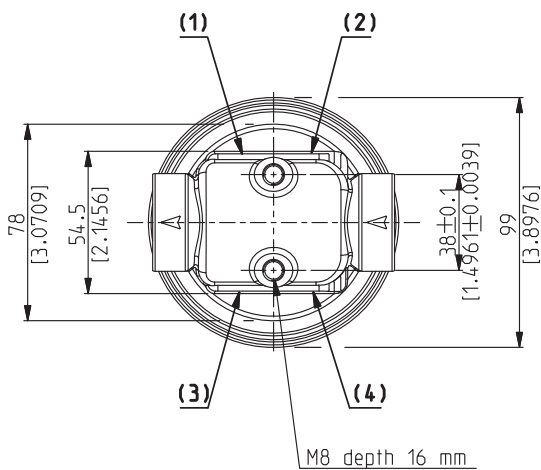
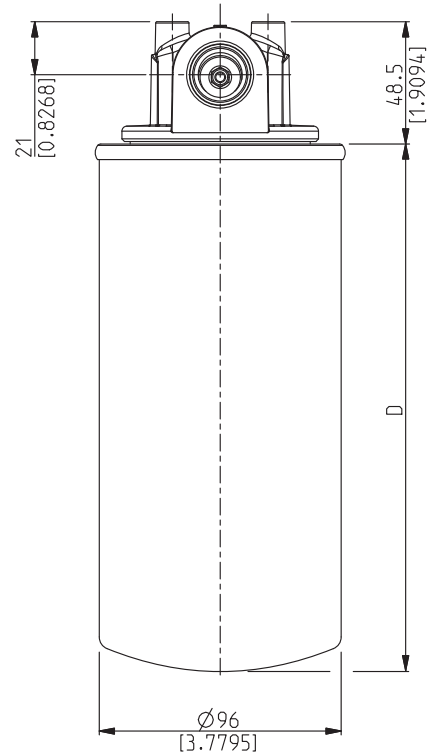
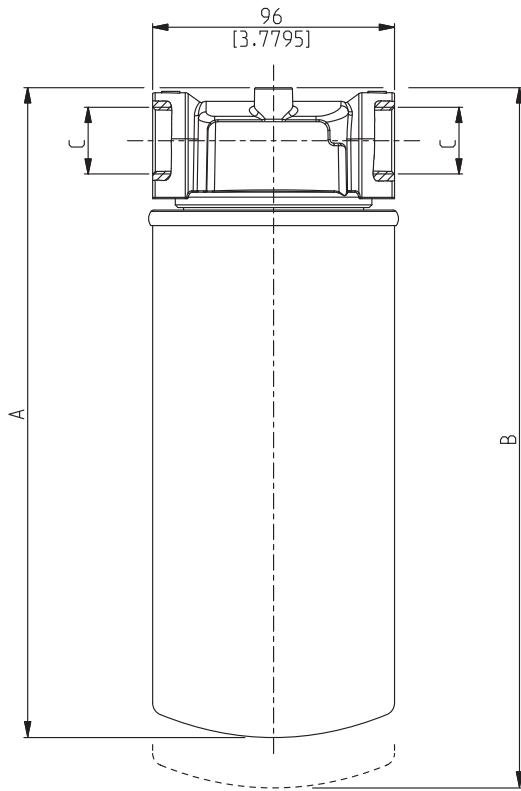
01/03.2011

ICAT_008_005_HF620

Filter type	Weight	A	B	C	D	E	(1)(GAS-BSPP)	(2)(GAS-BSPP)	(5)(GAS-BSPP)
							Suction indicators	Return indicators	Differential indicators
	kg(lbs)	mm(in)	mm(in)	(GAS-BSPP)	mm(in)	mm(in)			
HF 620-50.155	5,25 (11.57)	264 (10.3936)	299 (11.7716)		179 (7.0472)	126 (4.9606)			
HF 620-50.210	5,84 (12.87)	312 (12.2834)	347 (13.6613)	G 1 1/2	227 (8.9369)		G 1/8	G 1/8	G 1/2
HF 620-50.305	7,79 (17.17)	394 (15.5117)	429 (16.8897)		309 (12.1653)	138 (5.4330)			

NPT, metric, SAE UN-UNF and SAE3000 threads are available (consult our technical department).

HF 625-20 DIMENSIONS



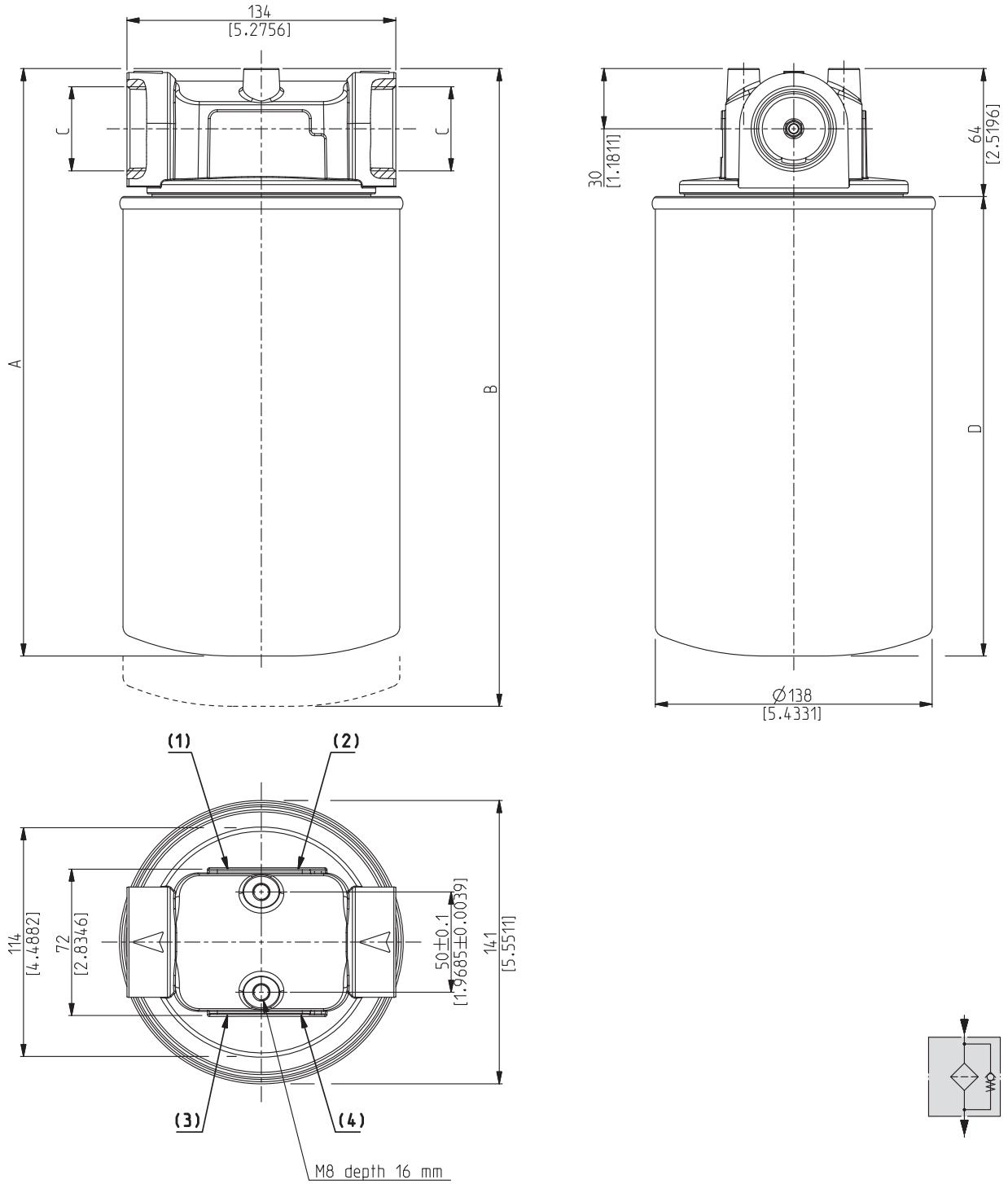
ICAT_008_001_HF620

01/03.2011

Filter type	Weight	A	B	C	D
	kg(lbs)	mm(in)	mm(in)	(GAS-BSPP)	mm(in)
HF 625-20.135	1,24 (2.73)	195 (7.6771)	215 (8.4645)	G 3/4	147 (5.7873)
HF 625-20.180	1,44 (3.17)	257 (10.1180)	277 (10.9054)		209 (8.2283)

NPT, metric and SAE UN-UNF threads are available (consult our technical department).

HF 625-30 DIMENSIONS



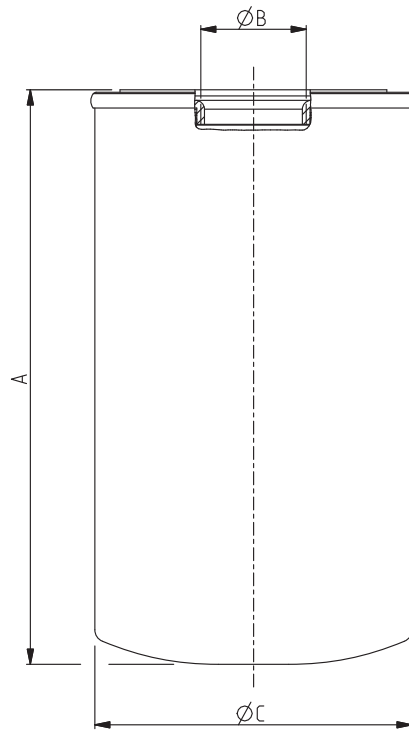
01/03.2011

ICAT_008_003_HF620

Filter type	Weight	A	B	C	D
	kg(lbs)	mm(in)	mm(in)	(GAS-BSPP)	mm(in)
HF 625-30.155	1,95 (4.29)	238 (9.3700)	262 (10.3149)	G 1 1/4	174 (6.8503)
HF 625-30.210	2,25 (4.96)	293 (11.5354)	317 (12.4802)		229 (9.0157)
HF 625-30.305	3,23 (7.12)	373 (14.6850)	398 (15.6692)		309 (12.1653)

NPT, metric and SAE UN-UNF threads are available (consult our technical department).

ELEMENTS DIMENSIONS FOR HF 620

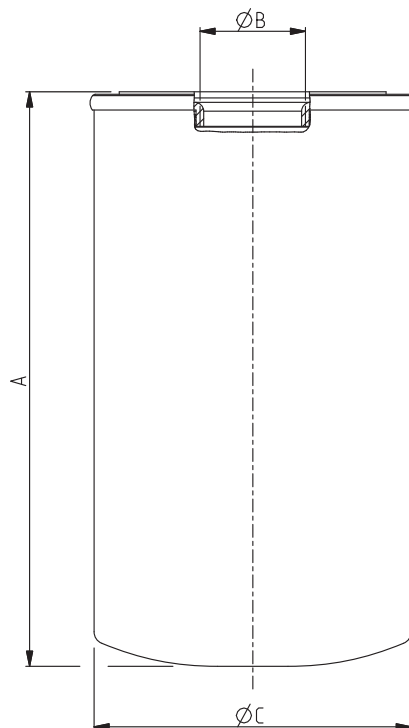


ICAT_008_006_HF620

Element type	A	Ø B	Ø C	Filtering surface		
				FG	MS	SP
	mm(in)	(GAS-BSSP)	mm(in)	cm ² (in ²)	cm ² (in ²)	cm ² (in ²)
HE K45-20.135	148	G 3/4	96	1700	785	2440
	(5.8267)			(263.5005)	(121.6752)	(378.2008)
HE K45-20.180	210	G 3/4	96	2125	1275	3960
	(8.2676)			(329.3757)	(197.6254)	(613.8012)
HE K45-30.155	180	G 1 1/4	126	4410	1650	4970
	(7.0865)			(683.5514)	(255.7505)	(770.3515)
HE K45-30.210	228	G 1 1/4	126	5980	2190	6730
	(8.9763)			(926.9019)	(339.4507)	(1043.1520)
HE K45-30.305	310	G 1 1/4	138	7900	4450	13580
	(12.2046)			(1224.5020)	(689.7514)	(2104.9040)

01/03.2011

ELEMENTS DIMENSIONS FOR HF 625



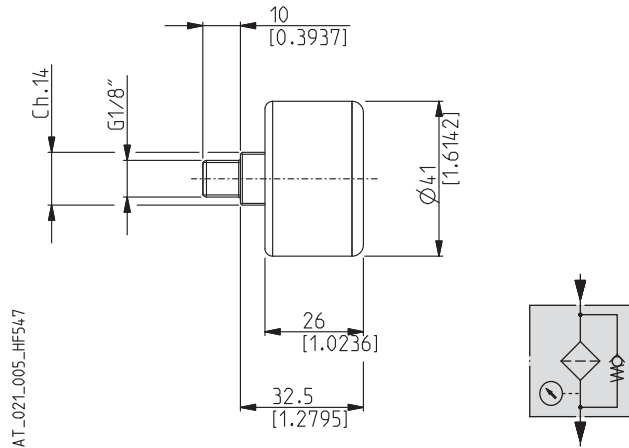
ICAT_008_006_HF620

Element type	A	Ø B	Ø C	Filtering surface		
				FG	MS	SP
	mm(in)	(GAS-BSSP)	mm(in)	cm ² (in ²)	cm ² (in ²)	cm ² (in ²)
HE K46-20.135	148 (5.8267)	G 3/4	96 (3.7795)	1700 (263.5005)	785 (121.6752)	2440 (378.2008)
HE K46-20.180	210 (8.2676)			2125 (329.3757)	1275 (197.6254)	3960 (613.8012)
HE K46-30.155	175 (6.8897)	G 1 1/4	138 (5.4330)	3580 (554.9011)	2035 (315.4256)	4480 (694.4014)
HE K46-30.210	230 (9.0550)			6250 (968.7519)	3200 (496.0010)	6120 (948.6019)
HE K46-30.305	310 (12.2046)			7900 (1224.5020)	4450 (689.7514)	13580 (2104.9040)

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INDICATORS FOR SUCTION LINE

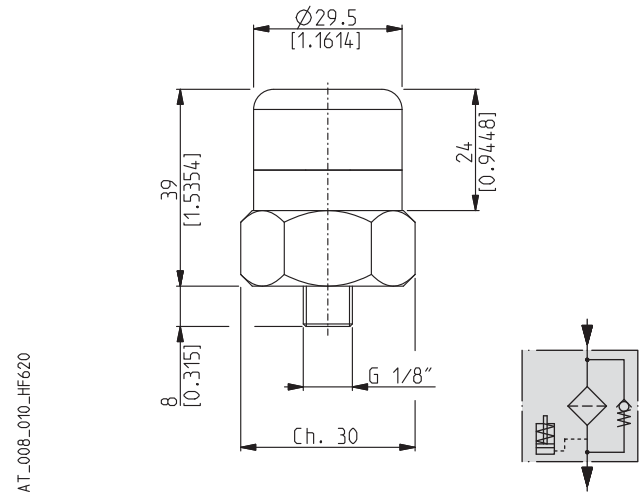
REAR MANOMETER

 Code: **M**


ICAT_021_005_HF547

Scale	-14.5 + 0 psi (-1 + 0 bar)
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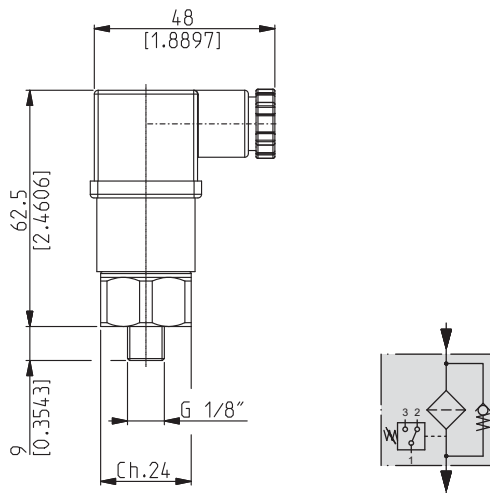
VISUAL INDICATOR

 Code: **V**


ICAT_008_010_HF620

Pressure setting	-2.2 psi (-0,15 bar)
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ELECTRICAL INDICATOR

 Code: **E**


ICAT_007_006_HF554

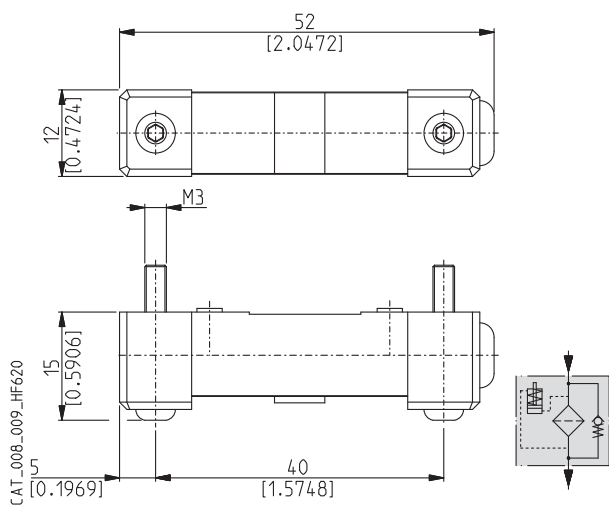
Pressure setting	-2.2 psi (-0,15 bar)
Max. working voltage	220 VCA
	30 VCC
Max. working current	0,5 A (resistivity)
	0,2 A (inductive)
Protection class	IP65
Contacts	N.O. and N.C.

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INDICATORS FOR RETURN LINE

DIFFERENTIAL VISUAL INDICATOR

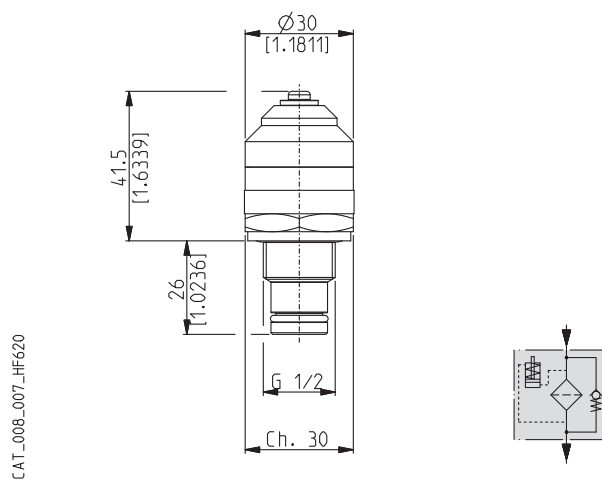
Code: **D** (only for 20 and 30 series)



Pressure setting 21.8 psi (1,5 bar)

DIFFERENTIAL VISUAL INDICATOR

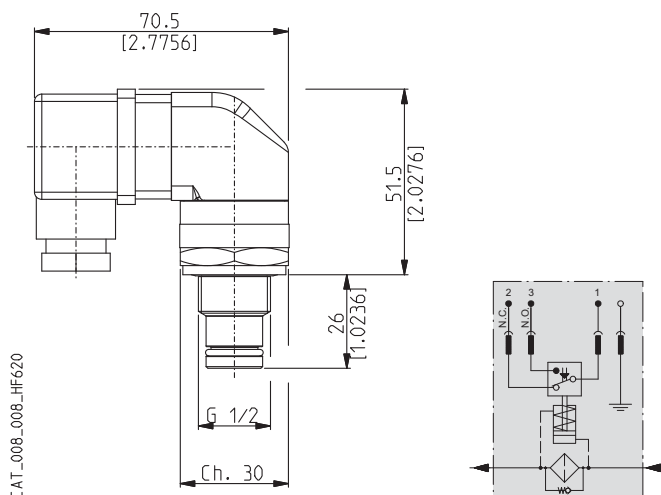
Code: **H** (only for 40 and 50 series)



Pressure setting 21.8 psi (1,5 bar)

DIFFERENTIAL ELECTRICAL-VISUAL INDICATOR

Code: **L** (only for 40 and 50 series)



Pressure setting 21.8 psi (1,5 bar)

Max. working voltage 220 VCA
30 VCC

Max. working current 0,5 A (resistivity)
0,2 A (inductive)

Protection class IP65

Contacts N.O. and N.C.

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ICAT_008_008_HF620

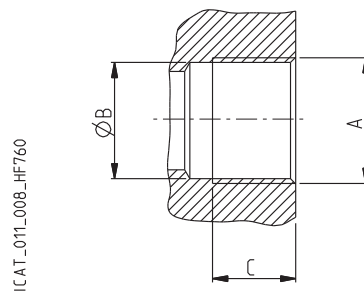
IN / OUT PORTS


Filter type	Nominal size	PORTS TYPE		
		Gas BSPP	NPT	SAE ODT
HF 620-20 HF 625-20	3/4"	GE	NE	OD
HF 620-30 HF 625-30	1" 1/4	GG	NG	OG
HF 620-40 HF 620-50	1" 1/2	GH	NH	OH

GAS THREAD

BSPP

Cylindrical GAS thread (55°) in accordance with UNI - ISO 228



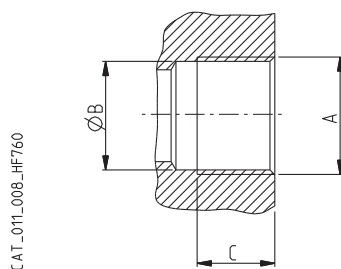
CODE	Nominal size	A	Ø B		C	 Nm (lbf in)
			mm (in)	mm (in)		
GE	3/4"	G 3/4	24,5 (0.9645)	20 (0.7873)	30 ^{+2,5} (266 ÷ 288)	
GG	1" 1/4	G 1 1/4	39 (1.5354)	24 (0.9448)	60 ⁺⁵ (531 ÷ 575)	
GH	1" 1/2	G 1 1/2	45 (1.7716)	26 (1.0236)	70 ⁺⁵ (620 ÷ 664)	

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IN / OUT PORTS

NPT THREAD
NPT

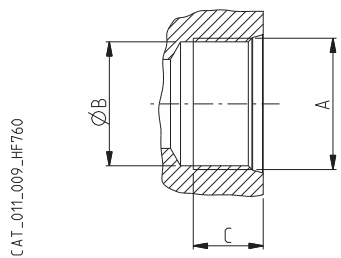
NPT thread (60°) in accordance with ANSI - ASME B1-20



CODE	Nominal size	A	Ø B	C	Nm (lbf in)
			mm (in)	mm (in)	
NE	3/4"	3/4 NPT	23,5 (0.9251)	14 (0.5511)	25 ⁺¹ (221 ÷ 230)
NG	1" 1/4	1 1/4 NPT	38,5 (1.5157)	18 (0.7086)	50 ^{+2,5} (442 ÷ 464)
NH	1" 1/2	1 1/2 NPT	44 (1.7322)	18,5 (0.7283)	70 ⁺⁵ (620 ÷ 664)

SAE J514 THREAD
ODT

American thread UNC-UNF 60° in accordance with ANSI B 1.1



CODE	Nominal size	A	Ø B	C	Nm (lbf in)
			mm (in)	mm (in)	
OD	3/4"	1 1/16" - 12 UNF - 2B	24,7 (0.9724)	20 (0.7873)	40 ^{+2,5} (354 ÷ 376)
OG	1" 1/4	1 5/8" - 12 UNF - 2B	39,1 (1.5393)	20 (0.7873)	70 ⁺⁵ (620 ÷ 664)
OH	1" 1/2	1 7/8" - 12 UNF - 2B	45,3 (1.7834)	20 (0.7873)	100 ⁺⁵ (885 ÷ 929)

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ASSEMBLY AND REPLACING ELEMENT INSTRUCTIONS

MOUNTING

Once you have checked the integrity of the filter inside its package, proceed as follow:

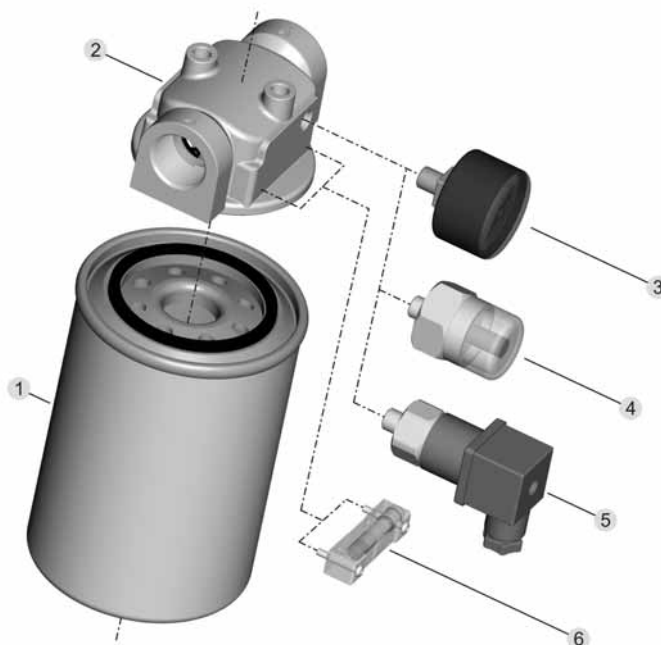
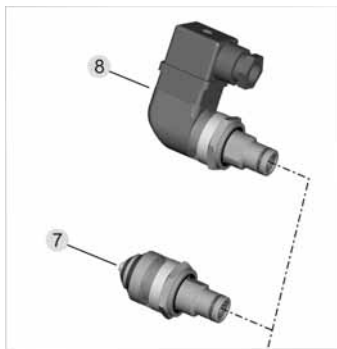
- A Take off the protection cap from the in/out ports.
- B Secure the filter in the head through the holes of the upper side (pos.2) tightening them as follows:
 HF 620-20/30 and HF 625-20/30 = 44 lbf in (5 Nm)
 HF 620-40 and HF 620-50 = 62 lbf in (7 Nm)
- C Connect circuit's pipes to inlet and outlet ports using the tightening torque indicated on pages 22 and 23.
- D If the filter has a clogging indicator (pos.3 - 4 - 5 - 6 - 7 - 8), take the protection cap off and screw the indicator in the dedicated seat, then tighten to a tightening torque of 266 lbf in (30 Nm). If the indicator is electric, complete the required connections.
- E Start the circuit for a few minutes.
- F Make sure there are no leaks.

REPLACING ELEMENT

Once the working hour limit indicated in the maintenance instructions of the system is reached or when the clogging indicators point out the limit pressure drop created inside the filter, the element must be replaced. Pay attention to the drainage of hydraulic oil, therefore prepare suitable containers to collect it.

Proceed as follows:

- A Stop the system in "machine stopped" status.
- B Secure any shut-off valves on the hydraulic circuit.
- C Remove the clogged element by hands-crewing it from the filter head (pos.2) or if needed by using a strap wrench. It is advisable not to recover the oil in the element since it is full of clogging particles.
- D Lubricate the new element's seal (pos.1).
- E Screw the new element until reaching the ledge with the filter head (pos.2).
- F After reaching the ledge, hand-screw the element for 3/4 more (for series 20) or 1/2 more (for series 30, 40 and 50).
- G Re-open the eventual valves closed before.
- H Start the machine for a few minutes.
- I Make sure there are no leaks.



Pos.	Description
1	Filtering element
2	Filter's head
3	Rear Manometer
4	Visual indicator
5	Electrical indicator
6	Differential visual indicator (series 20 and 30)
7	Differential visual indicator (series 40 and 50)
8	Differential electrical-visual indicator (series 40 and 50)

When ordering spare parts, always specify the reference number, the filter code and quantity.

Example: Spare parts pos. 4 - HHE13051 - Q.ty 1

01/03.2011

HOW TO ORDER A COMPLETE FILTER HF 620

1
2
3
4
5
6
7
8
9

HF 620 - 20.135 - AS - FG010 - B17 - GE - B - XA - FP - D

1	Filter type	CODE
	See table from pag. 12 to pag. 15	HF 620..

2	Filtering surface	CODE
	Standard	AS

3	Degree of filtration	CODE
	10 [µm] Micro-fibre glass	FG010
	25 [µm] Micro-fibre glass	FG025
	60 [µm] Steel wire mesh	MS060
	90 [µm] Steel wire mesh	MS090
	10 [µm] Cellulose	SP010
	25 [µm] Cellulose	SP025

4	By-pass setting valve	CODE
	With By-pass setting valve 2.9 [psi] (0,2 [bar])	B02
	With By-pass setting valve 25 [psi] (1,7 [bar])	B17
	Without (Suction)	B0A
	Without (Return)	B0R

5	Inlet port	CODE
	GAS threads (BSPP)	
	G 3/4	GE
	G 1 1/4	GG
	G 1 1/2	GH
	NPT threads	
	3/4	NE
	1 1/4	NG
	1 1/2	NH
	SAE threads ODT	
	3/4	OD
	1 1/4	OG
	1 1/2	OH

6	Seals	CODE
	Buna	B
	Viton	V

7	Indicators arranged	CODE
	Without	XN
	Right on the head (1)(2)	XA
	Left on the head (3)(4)	XB
	Only for HF 620-40 (5)	XC
	Only for HF 620-50 (5)	XD

8	Indicator's ports dimensions	CODE
	GAS Threads (BSPP)	
	G 1/8	GA
	G 1/8 with plug	DA
	G 1/2 (only for HF 620-40 and HF 620-50)	GD
	Holes in the wall for differential indicator (only for HF 620-20 and HF 620-30)	FP

11	Indicators	CODE
	Without	G
	Manometer - rear connection	M
	Visual indicator	V
	Electrical indicator	E
	Differential visual indicator (only for HF 620-20 and HF 620-30)	D
	Differential visual indicator (only for HF 620-40 and HF 620-50)	H
	Differential electrical-visual indicator (only for HF 620-40 and HF 620-50)	L

Standard
 On request

01/03.2011

HOW TO ORDER A COMPLETE FILTER HF 625

1

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HF 625 - 20.135 - AS - FG010 - B17 - GE - B - XA - FP - D

1	Filter type	CODE
	See table from pag. 16 to pag. 17	HF 625..

2	Filtering surface	CODE
	Standard	AS

3	Degree of filtration	CODE
	10 [µm] Micro-fibre glass	FG010
	25 [µm] Micro-fibre glass	FG025
	60 [µm] Steel wire mesh	MS060
	90 [µm] Steel wire mesh	MS090
	10 [µm] Cellulose	SP010
	25 [µm] Cellulose	SP025

4	By-pass setting valve	CODE
	With By-pass setting valve 25 [psi] (1,7 [bar])	B17
	Without	B00

5	Inlet port	CODE
	GAS threads (BSPP)	
	G 3/4	GE
	G 1 1/4	GG
	G 1 1/2	GH
	NPT threads	
	3/4	NE
	1 1/4	NG
	1 1/2	NH
	SAE threads ODT	
	3/4	OD
	1 1/4	OG
	1 1/2	OH

6	Seals	CODE
	Buna	B
	Viton	V

7	Indicators arranged	CODE
	Without	XN
	Right on the head (1)(2)	XA
	Left on the head (3)(4)	XB

8	Indicator's ports dimensions	CODE
	GAS Threads (BSPP)	
	Holes in the wall for differential indicator	FP

11	Indicators	CODE
	Without	G
	Differential visual indicator	D

Standard
 On request

01/03.2011

HOW TO ORDER A REPLACEMENT ELEMENT

	1		2		3		4	
HE K45	-	20.135	-	AS	-	FG010	-	B

1	Element type	CODE
	See table pag. 18	HE K45..
	See table pag. 19	HE K46..

2	Filtering surface	CODICE
	Standard	AS

3	Degree of filtration	CODE
	10 [µm] Micro-fibre glass	FG010
	25 [µm] Micro-fibre glass	FG025
	60 [µm] Steel wire mesh	MS060
	90 [µm] Steel wire mesh	MS090
	10 [µm] Cellulose	SP010
	25 [µm] Cellulose	SP025

4	Seals	CODE
	Buna	B
	Viton	V

Standard
 On request

Building & construction

Agriculture

Truck Market

Material Handling

Industrial



Full range of filters
for all hydraulic circuits

Suction filters

HF 410
HF 412
HF 431
HF 434
HF 437

Tank mounted return line filters

HF 502
HF 508
HF 547
HF 554
HF 570
HF 575
HF 578

In line filters Spin-On

HF 620
HF 625
HF 650

In line medium and high pressure filters

HF 690
HF 705
HF 710
HF 725
HF 735
HF 745
HF 760
HF 761

Accessories

Filler breathers
Air filters
Level and temperature gauges
Pressure gauges
Pressure/vacuum gauges
Clogging indicators



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