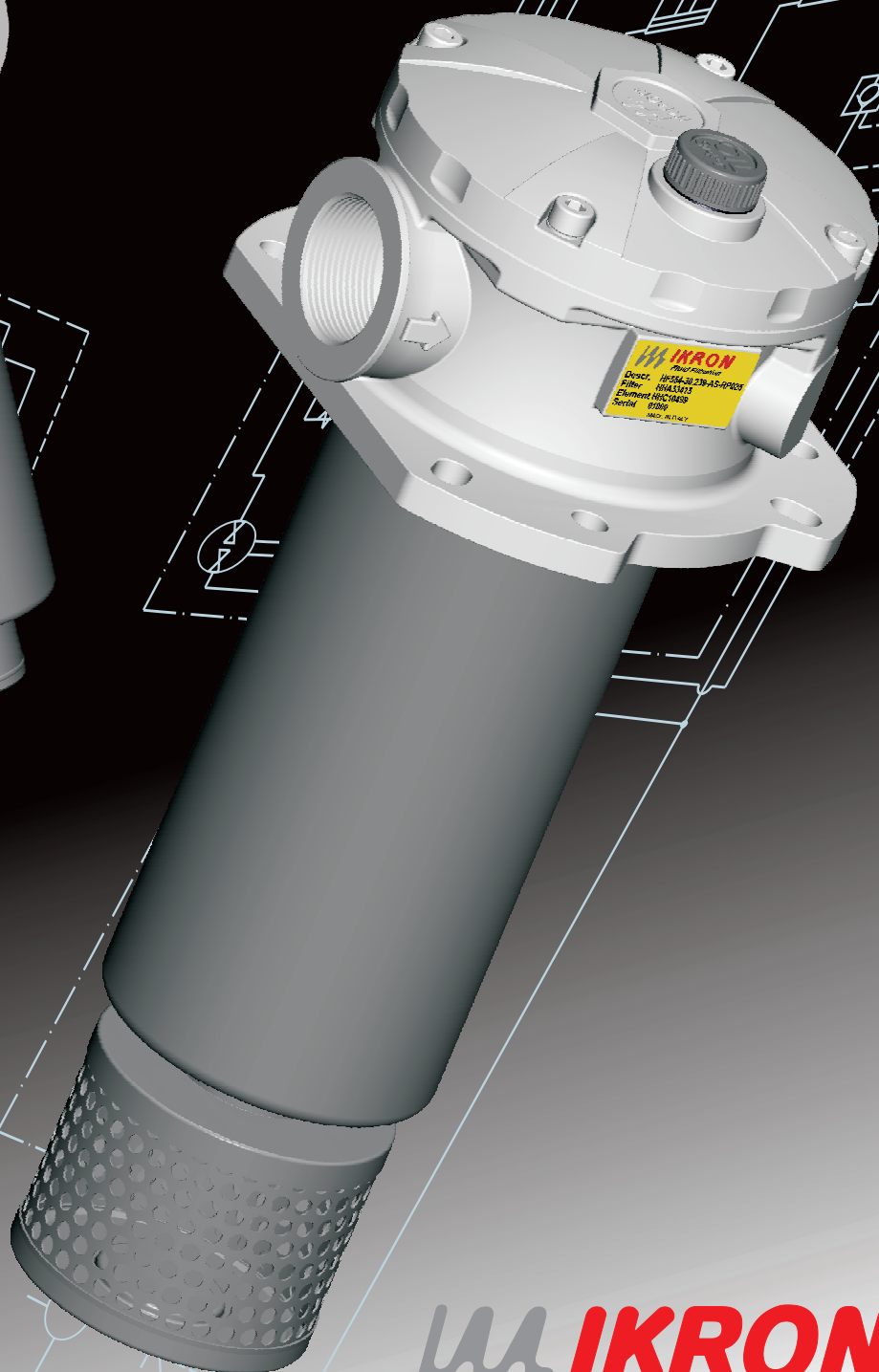


# Tank mounted return line filters

## HF 554 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 for generating and regulating the fluid power, which are also 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

The tank mounted filters HF 554 series are specifically designed to be directly connected on the return line of hydraulic circuit to safeguard it from contaminating particles.

- Working pressure 116 psi (8 bar)
- Extension on the oil way out of the pipe union
- Fluid-decelerating diffuser
- Level dipstick

| MATERIALS    |                                     |
|--------------|-------------------------------------|
| Cover        | Aluminum                            |
|              | Reinforced nylon                    |
| Housing      | Anodized aluminum(series 10 and 20) |
|              | Aluminum (series 30 and 40)         |
| Bowl (1)     | Reinforced nylon                    |
|              | Steel                               |
| Seals        | Buna - Viton                        |
| End cap      | Zinc plated steel                   |
| Inner tube   | Zinc plated steel                   |
|              | Steel                               |
|              | Stainless steel                     |
| Filter media | Cellulose                           |
|              | Reinforced cellulose                |
|              | Micro-fibre glass                   |

(1) The filters of dimensions 10.060, 10.129, 20.077, 20.122, 20.201, 20.280 and 30.195 are supplied with a nylon-reinforced bowl. Varnished steel bowl is available on request.

The filters of dimensions 30.239, 40.122, 40.194, 40.195, 40.239, 40.390 and 40.512 are only supplied with a varnished steel bowl.

| FLUID COMPATIBILITY                      |                             |
|--|-----------------------------|
| Conforming to ISO 2943 (Norm ISO 6743/4) |                             |
| Oli mineral (2)                          | HH - HL - HM - HR - HV - HG |
| Water emulsion (2)                       | HFAE - HFAS                 |
| Water glycol (2)(4)                      | HFC                         |
| Syntetic fluid (3)                       | HS - HFDR - HFDU - HFDS     |
| (2) With Buna seals                      |                             |
| (3) With Viton seals                     |                             |
| (4) Body anodization required            |                             |

| FLOW      |                        |
|-----------|------------------------|
| Flow max. | 166 US gpm (630 l/min) |

| PRESSURE  |                  |
|---|------------------|
| Working pressure  | 116 psi (8 bar)  |
| Testing pressure  | 174 psi (12 bar) |
| Burst pressure  | 232 psi (16 bar) |
| Element collapse pressure rating (conforming to ISO 2941) | 145 psi (10 bar) |

| BY-PASS VALVE   |                  |
|-----------------|------------------|
| By-pass setting | 25 psi (1,7 bar) |

| 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 |
| FG003                | Micro-fibre glass | 3 µm                 |
| FG006                | Micro-fibre glass | 6 µm                 |
| FG010                | Micro-fibre glass | 10 µm                |
| FG025                | Micro-fibre glass | 25 µm                |

| Nominal Filtration |                      |                      |
|--------------------|----------------------|----------------------|
| Code               | Material             | Degree of filtration |
| SP010              | Cellulose            | 10 µm                |
| RP010              | Reinforced cellulose | 10 µm                |
| SP025              | Cellulose            | 25 µm                |
| RP025              | Reinforced cellulose | 25 µm                |
| MI025              | Stainless steel      | 25 µm                |
| MI060              | Stainless steel      | 60 µm                |
| MS090              | Steel                | 90 µm                |
| MI125              | Stainless steel      | 125 µm               |

| INDICATORS (5)       |  |
|----------------------|--|
| Rear manometer       |  |
| Radial manometer     |  |
| Visual indicator     |  |
| Electrical indicator |  |

(5) Characteristics and dimensions at page 25

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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.

$$\text{Total } \Delta p = \Delta p \text{ in housing} + \Delta p \text{ in element}$$

In filters of HF 554 series in normal working conditions, the total  $\Delta p$  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/dm<sup>3</sup>).

### Calculation example

Filter HF 554-20.122-AS-FG003-B17-GF-B-S-Z-XN-G-YN-O-K

Flow rate= 13 US gpm (50 l/min)

Kinematic viscosity: 120 SSU (30 cSt)

Oil density : 7.29 lb/gal (0,856 kg/dm<sup>3</sup>)

Filtering degree: 3  $\mu\text{m}$

Data obtained from the diagrams:

$\Delta p$  in housing = 1.01 psi (0,07 bar) (page 4)

$\Delta p$  in element = 4.64 psi (0,32 bar) (page 9)

Total  $\Delta p = 1.01 + 4.64 = 5.65$  psi (0,39 bar) ( $\Delta p$  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/dm<sup>3</sup>) the value of the  $\Delta p$  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/dm<sup>3</sup>) and kinematic viscosity different to 120 SSU (30 cSt) the value of  $\Delta p$  in the element will be:

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

Or

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

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  $\Delta p$  does not exceed the pressure limit of 5.8 psi (0,4 bar).

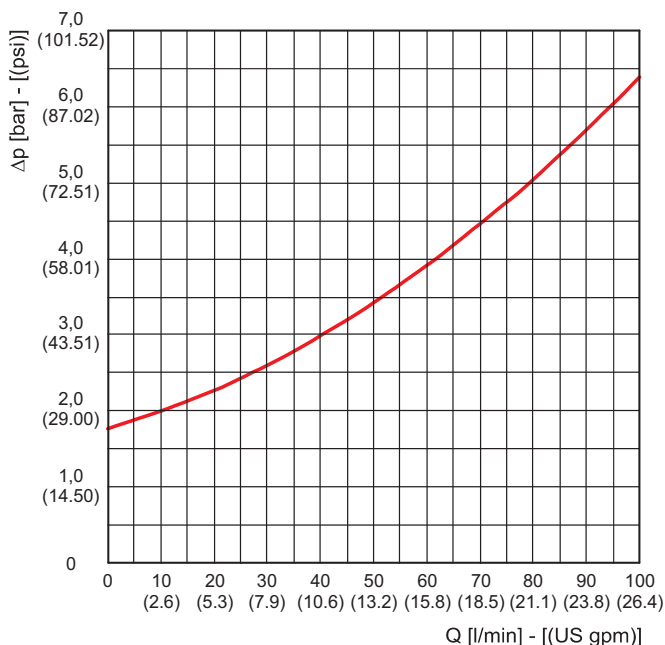
01/12.2010

## PRESSURE DROP CURVES THROUGH THE BY-PASS VALVES

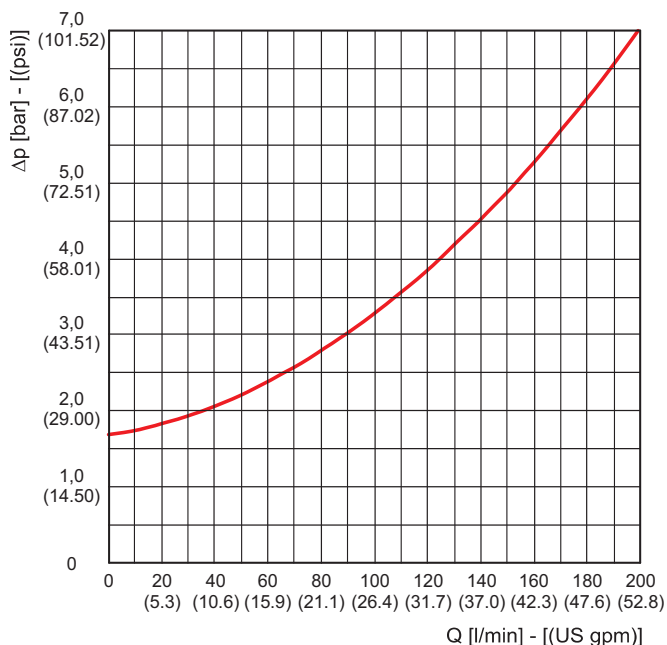
The pressure drop values are directly proportional with the specific weight of the fluid and do not affect the establishment of the total pressure drop of the complete filter.

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/dm<sup>3</sup>).

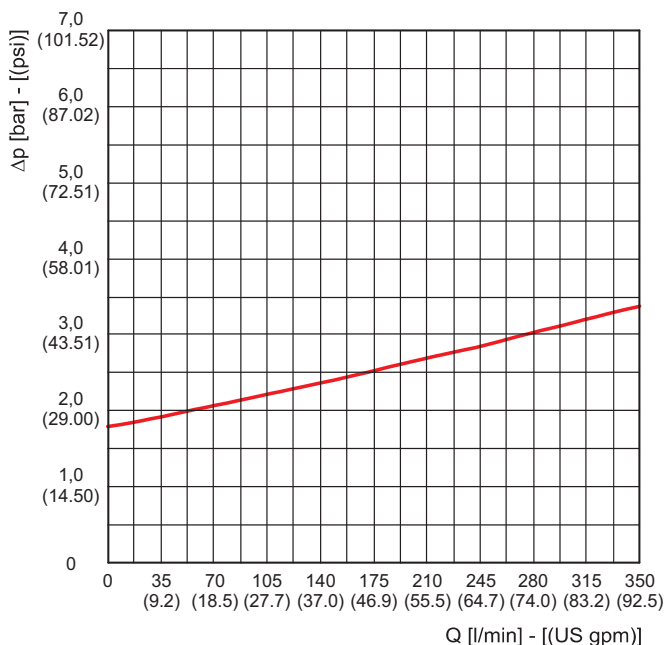
**HF 554-10**



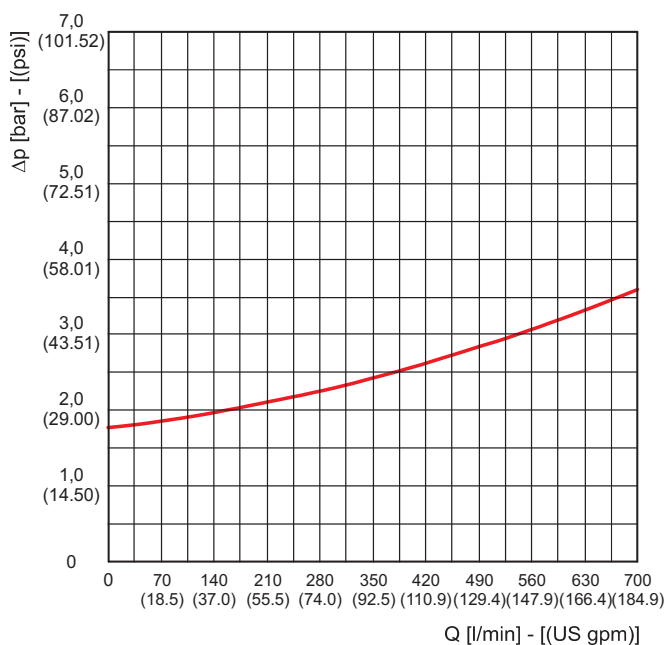
**HF 554-20**



**HF 554-30**



**HF 554-40**



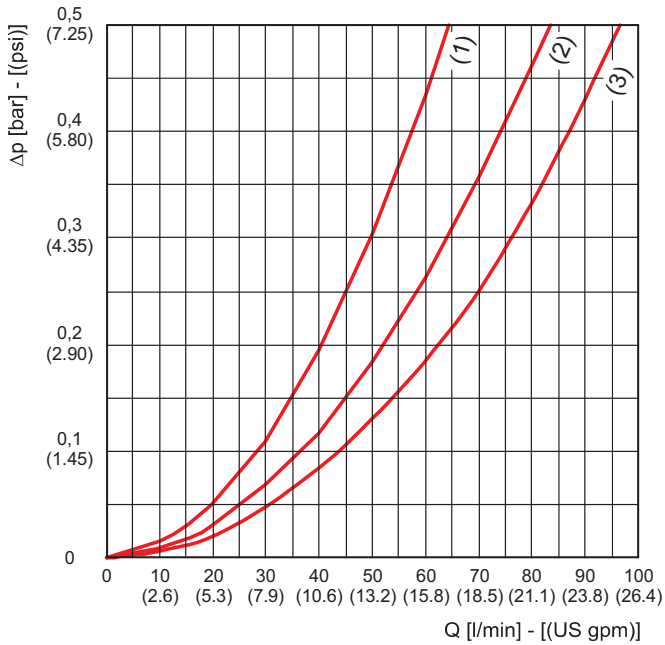
01/12.2010

## PRESSURE DROP CURVES THROUGH THE HOUSING

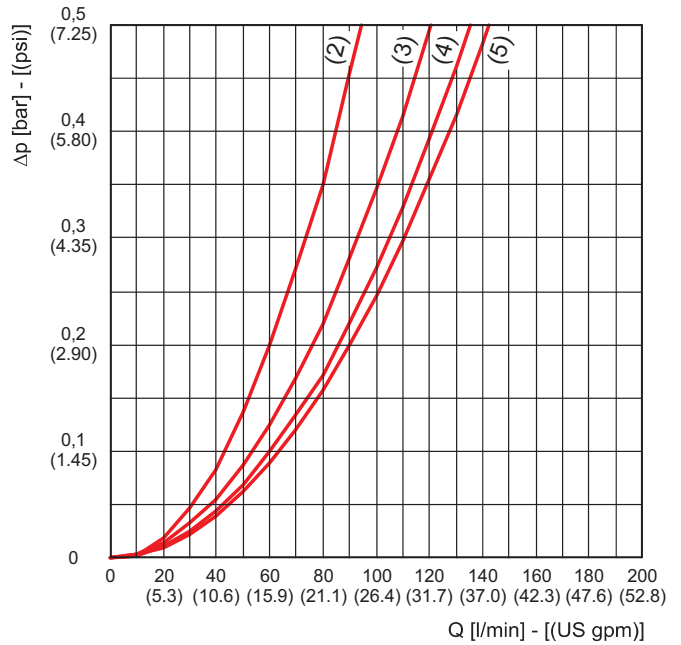
The curves are obtained in the following conditions:  
 Mineral oil type SAE 10  
 Kinematic viscosity 120 SSU (30 cSt)  
 Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

- (1) G 3/8
- (2) G 1/2
- (3) G 3/4
- (4) G 1
- (5) G 1 1/4

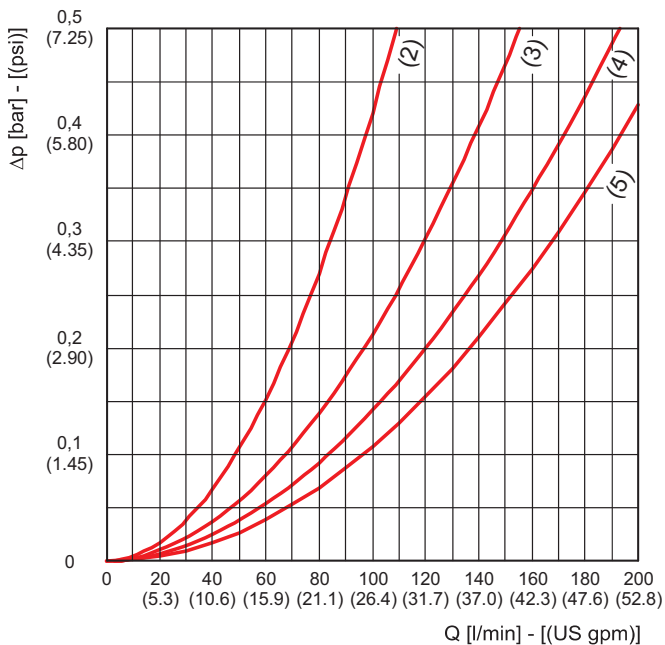
**HF 554-10.060 / 10.129**



**HF 554-20.077 / 20.122**



**HF 554-20.201 / 20.280**



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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/dm<sup>3</sup>).

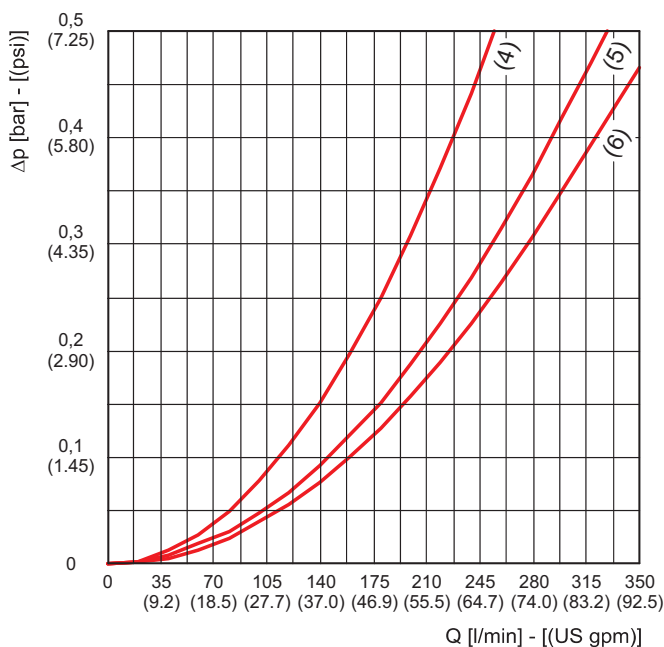
(4) G 1

(5) G 1 1/4

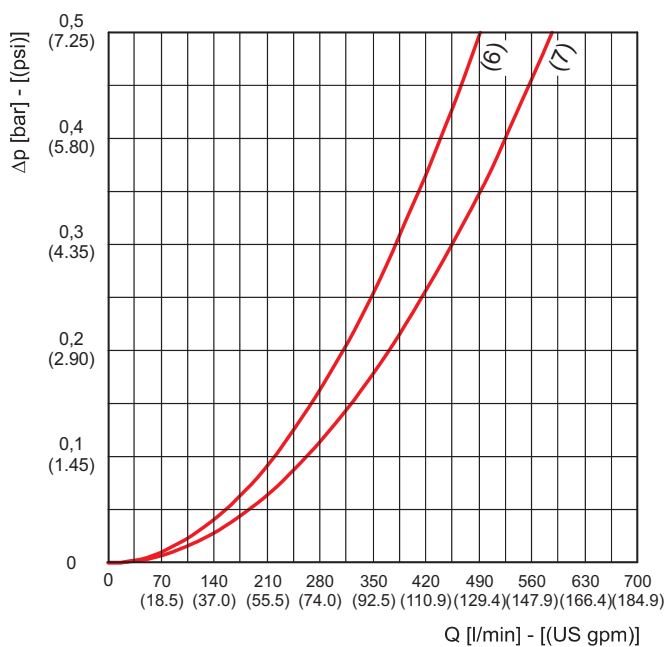
(6) G 1 1/2

(7) G 2

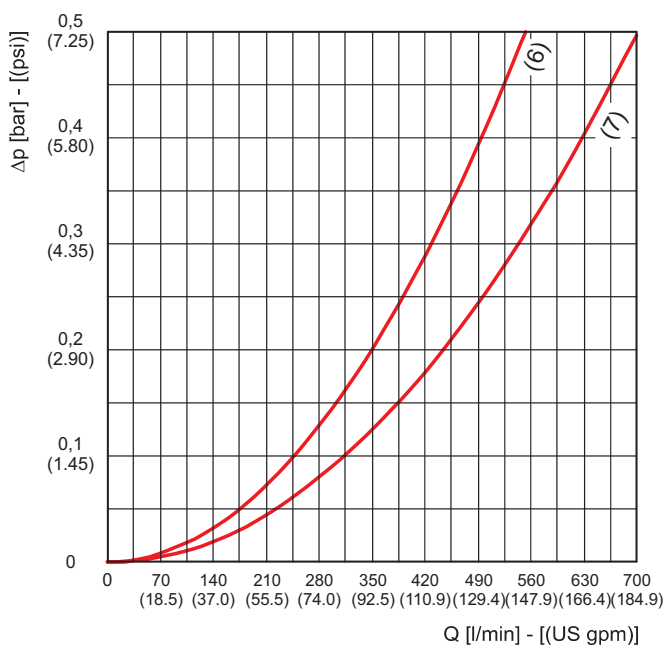
**HF 554-30.195 / 30.239**



**HF 554-40.122 / 40.194**



**HF 554-40.195 / 40.239 / 40.390 / 40.512**



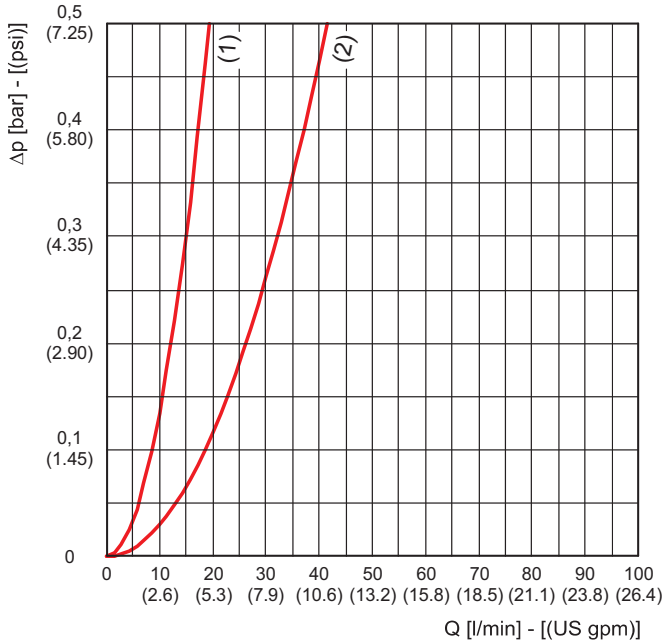
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**PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-10**

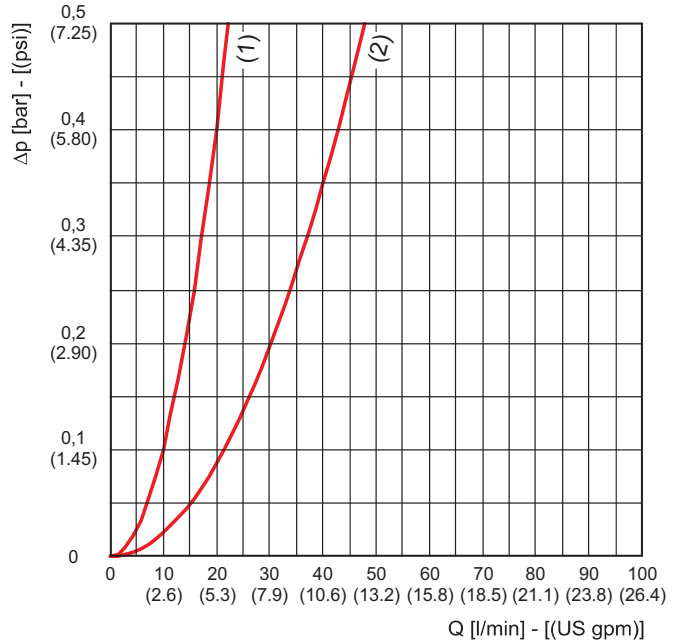
The curves are obtained in the following conditions:  
 Mineral oil type SAE 10  
 Kinematic viscosity 120 SSU (30 cSt)  
 Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

- (1) HE K02-10.060
- (2) HE K02-10.129

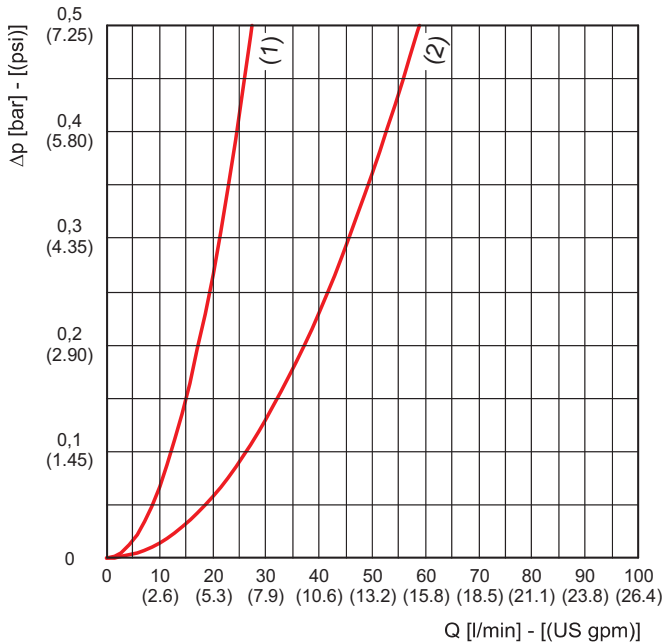
**FG003**



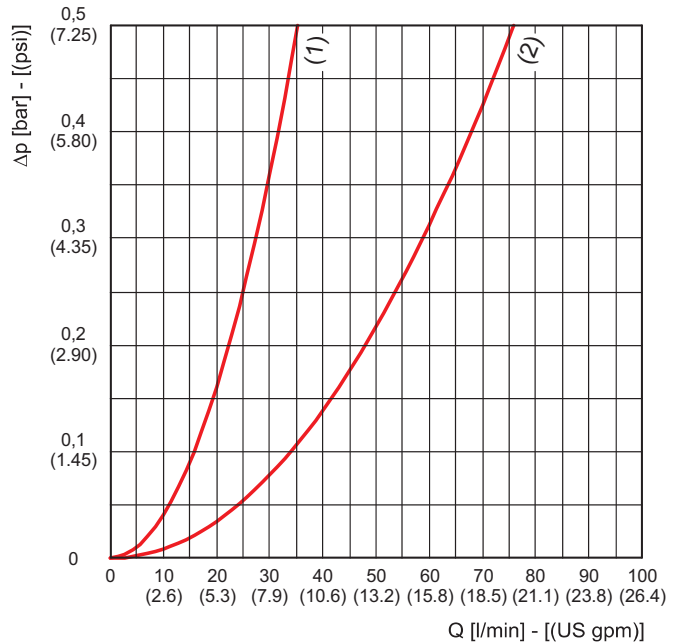
**FG006**



**FG010**



**FG025**



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## PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-10

The curves are obtained in the following conditions:

Mineral oil type SAE 10

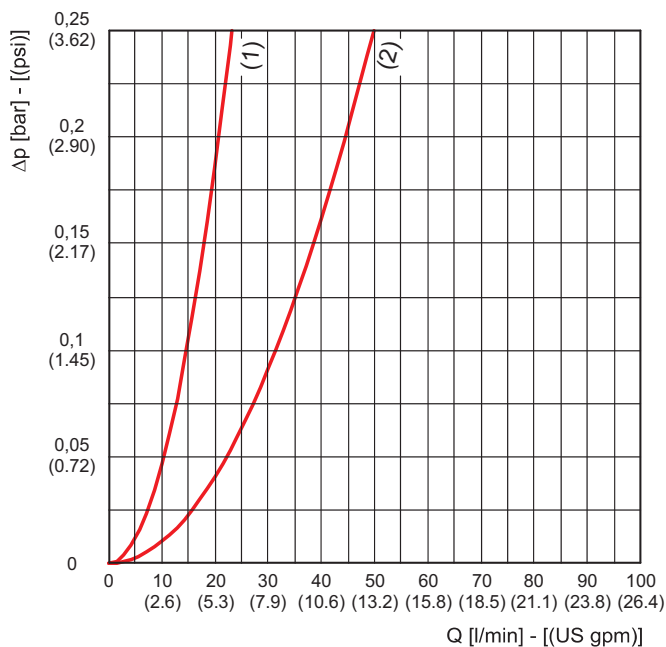
Kinematic viscosity 120 SSU (30 cSt)

Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

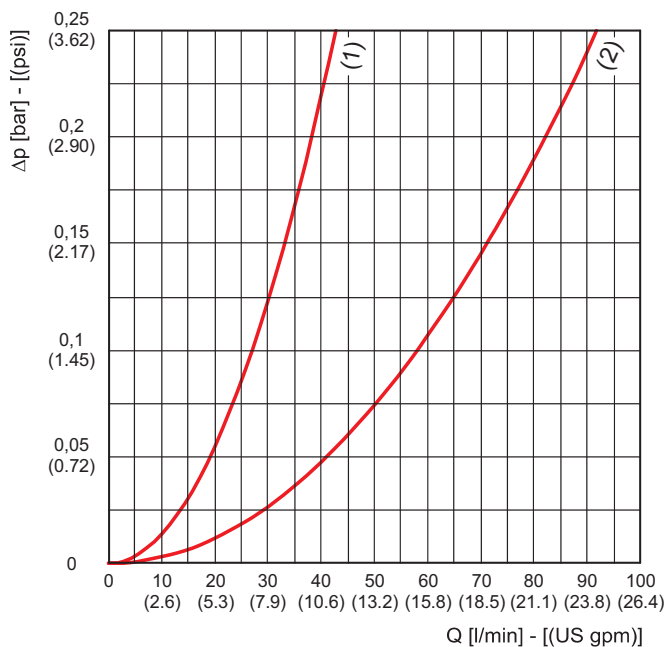
(1) HE K02-10.060

(2) HE K02-10.129

**RP010 / SP010**



**RP025 / SP025**



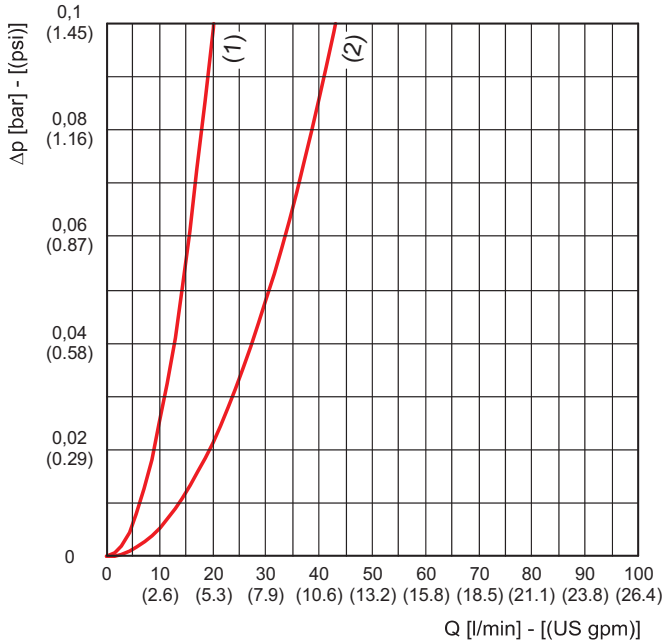
01/12.2010

**PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-10**

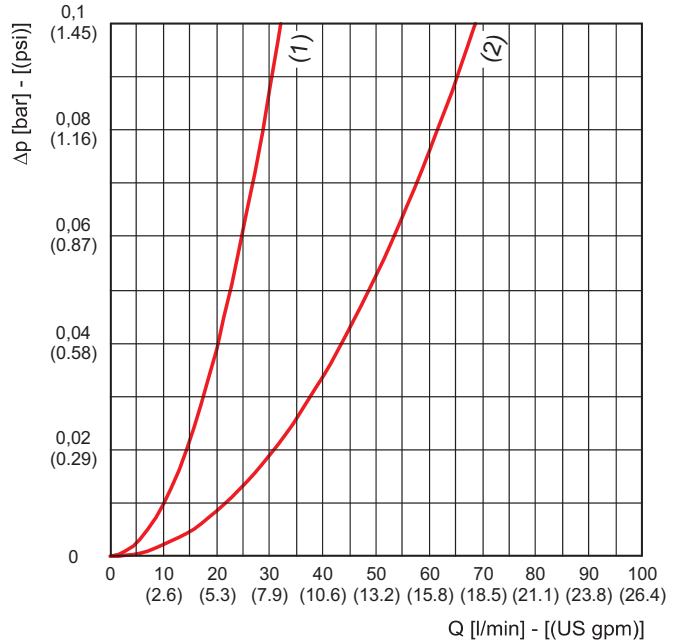
The curves are obtained in the following conditions:  
 Mineral oil type SAE 10  
 Kinematic viscosity 120 SSU (30 cSt)  
 Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

- (1) HE K02-10.060
- (2) HE K02-10.129

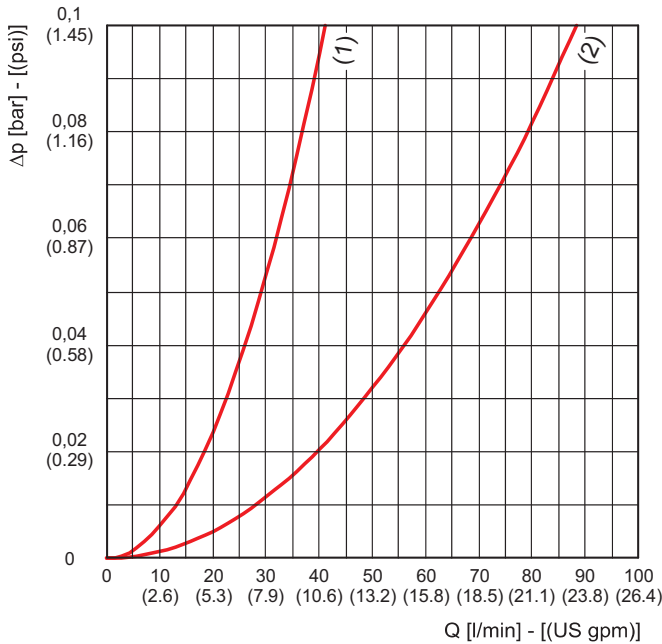
**MI025**



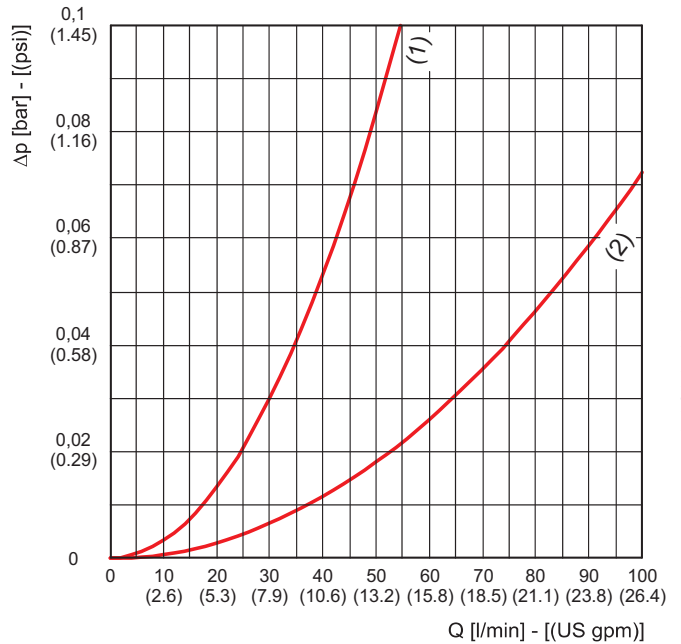
**MI060**



**MS090**



**MI125**



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## PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-20

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/dm<sup>3</sup>).

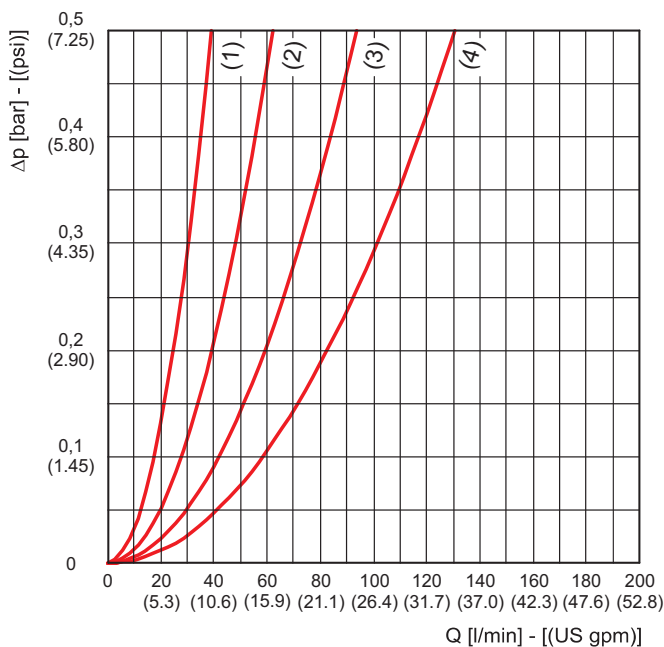
(1) HE K02-20.077

(2) HE K02-20.122

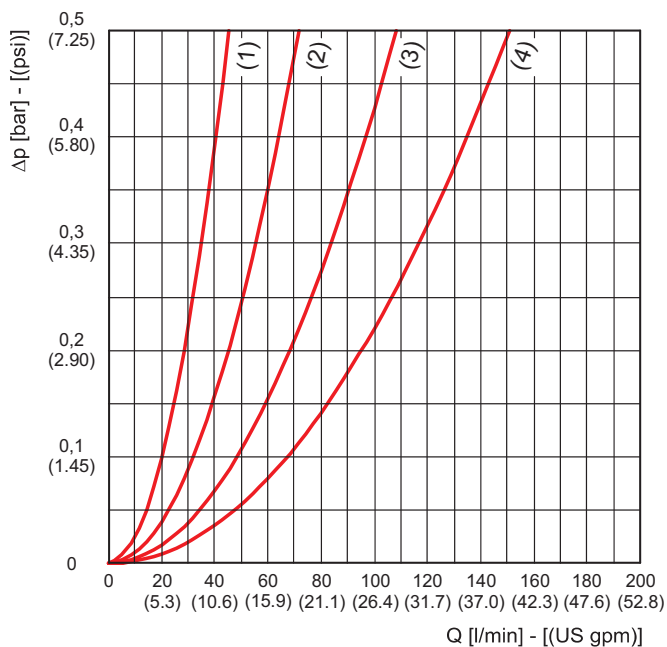
(3) HE K02-20.201

(4) HE K02-20.280

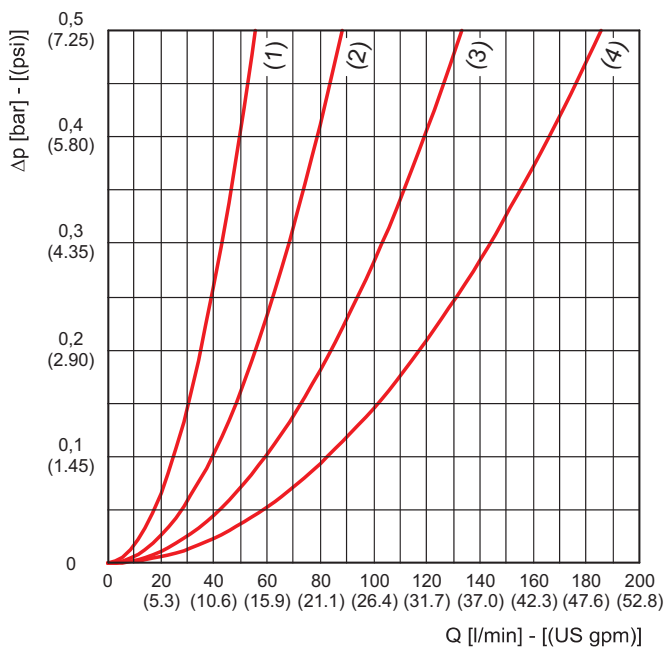
**FG003**



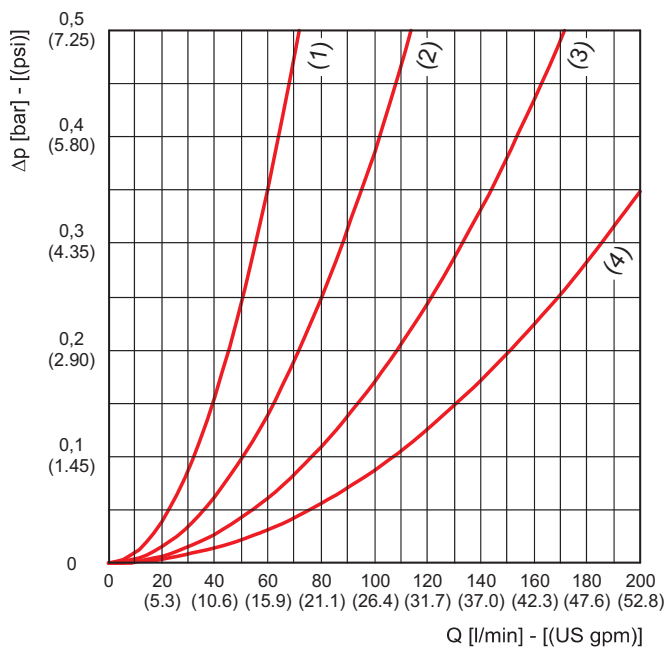
**FG006**



**FG010**



**FG025**



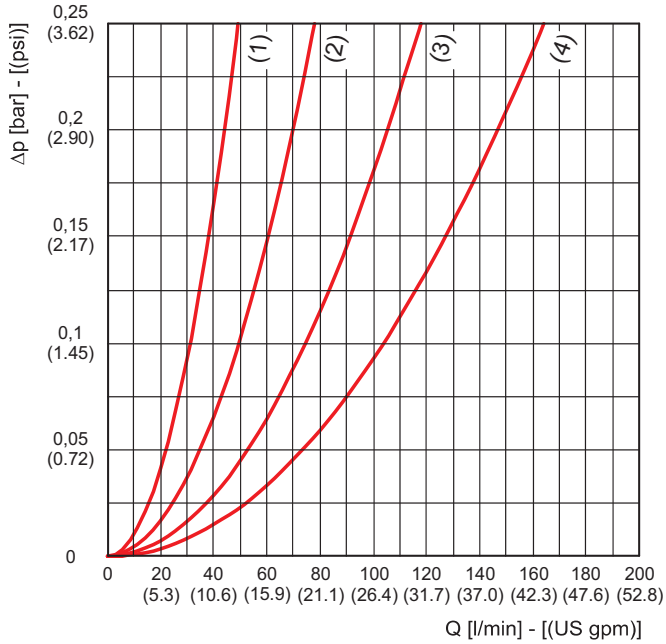
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**PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-20**

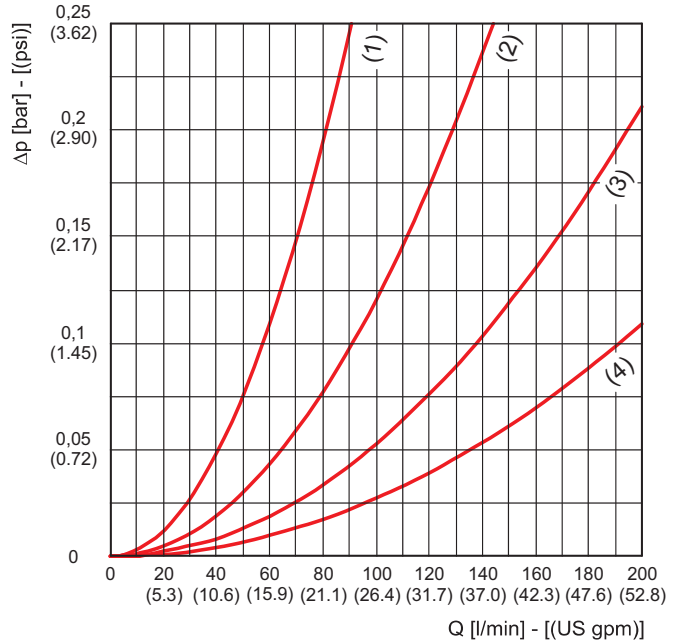
The curves are obtained in the following conditions:  
 Mineral oil type SAE 10  
 Kinematic viscosity 120 SSU (30 cSt)  
 Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

- (1) HE K02-20.077
- (2) HE K02-20.122
- (3) HE K02-20.201
- (4) HE K02-20.280

**RP010 / SP010**



**RP025 / SP025**



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## PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-20

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/dm<sup>3</sup>).

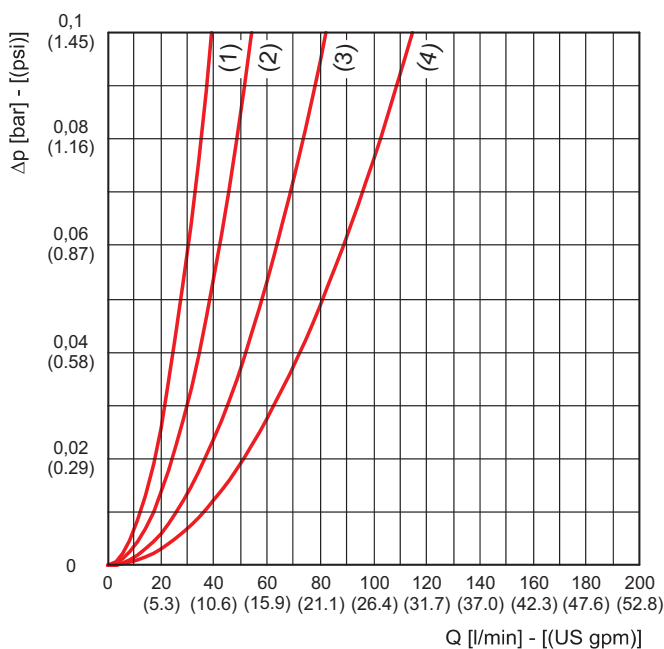
(1) HE K02-20.077

(2) HE K02-20.122

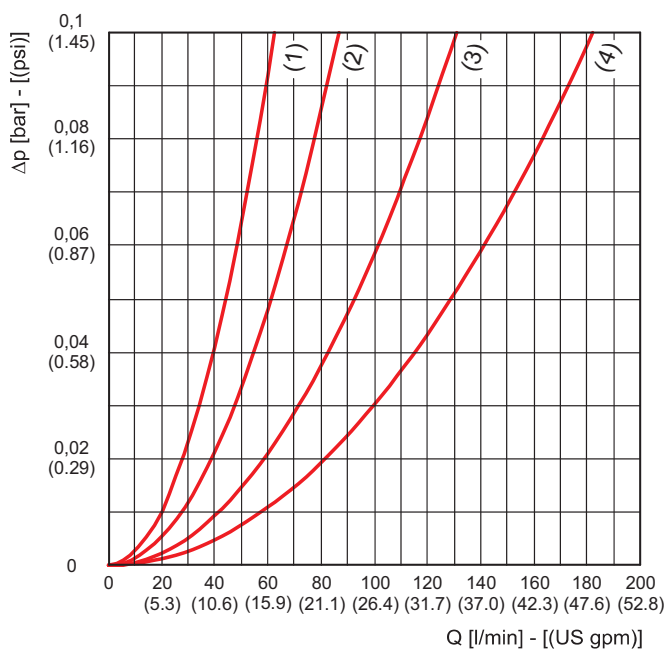
(3) HE K02-20.201

(4) HE K02-20.280

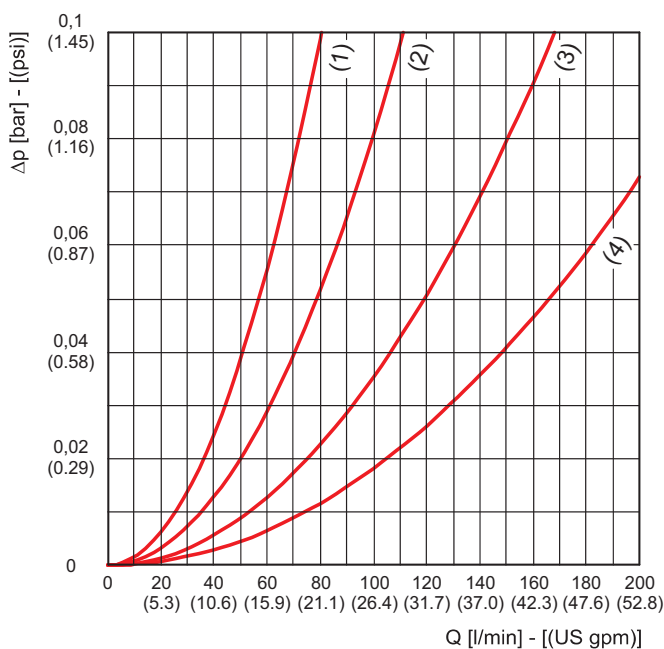
**MI025**



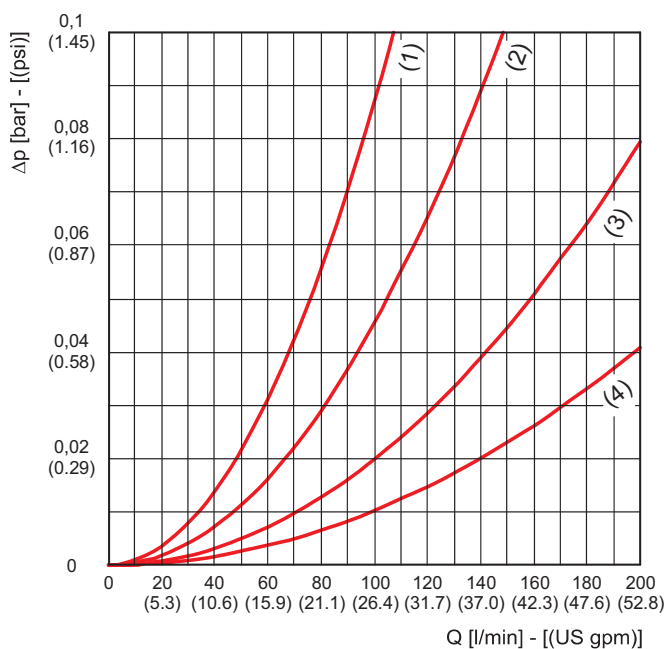
**MI060**



**MS090**



**MI125**



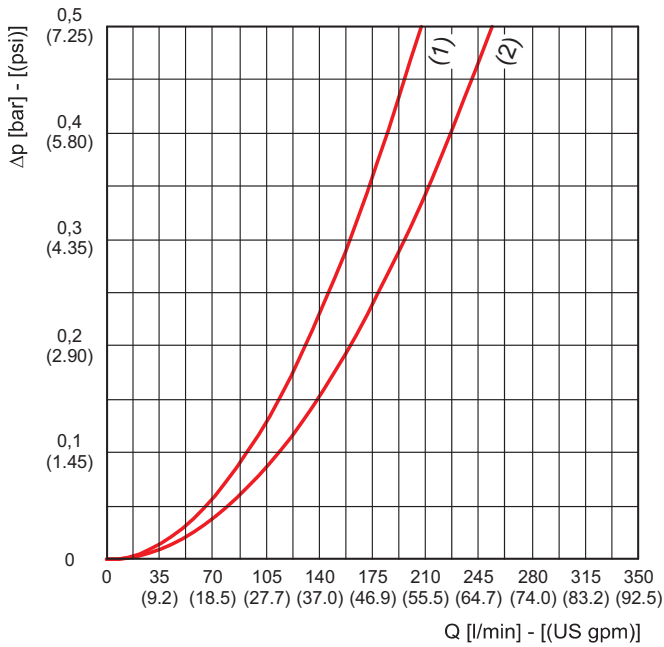
01/12.2010

**PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-30**

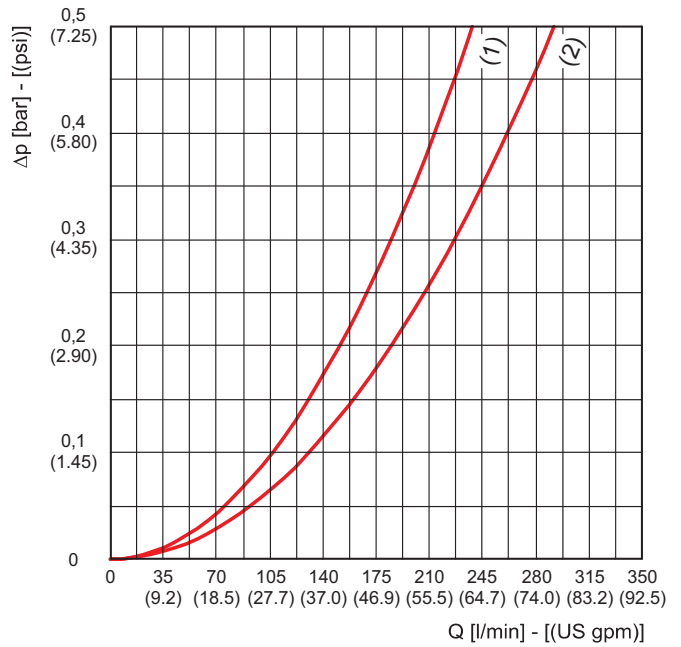
The curves are obtained in the following conditions:  
 Mineral oil type SAE 10  
 Kinematic viscosity 120 SSU (30 cSt)  
 Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

- (1) HE K02-30.195
- (2) HE K02-30.239

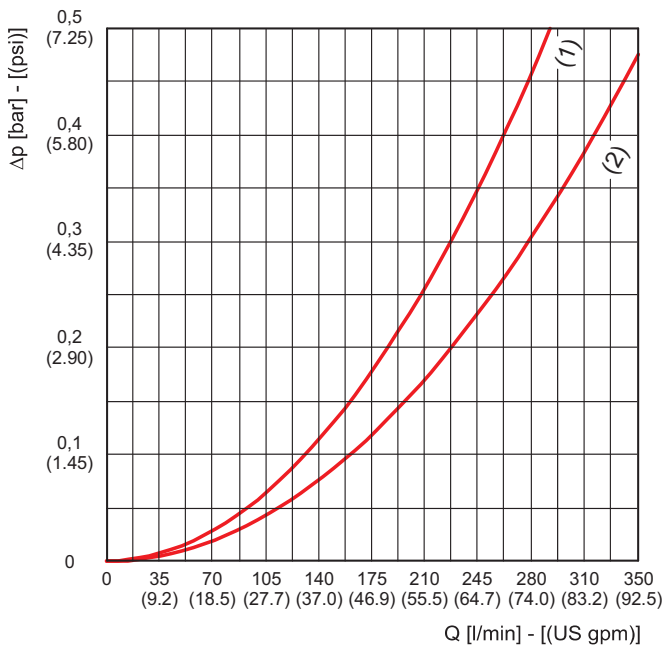
**FG003**



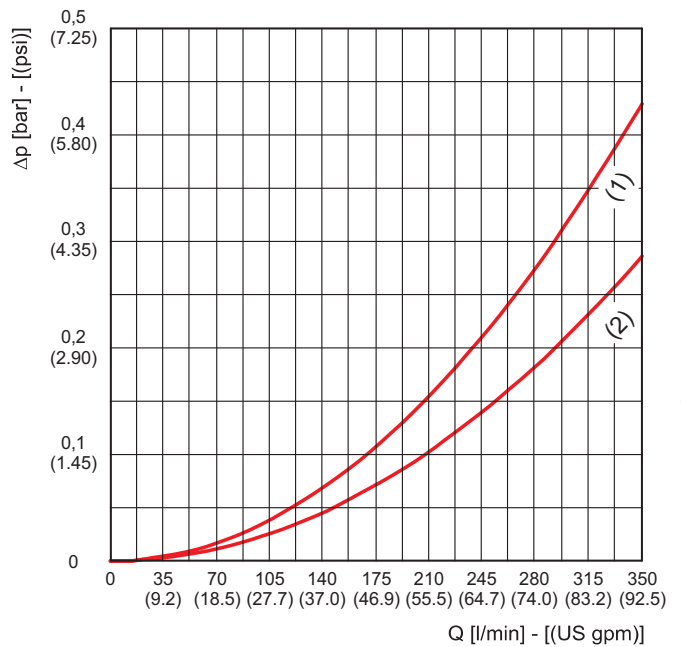
**FG006**



**FG010**



**FG025**



01/12.2010

## PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-30

The curves are obtained in the following conditions:

Mineral oil type SAE 10

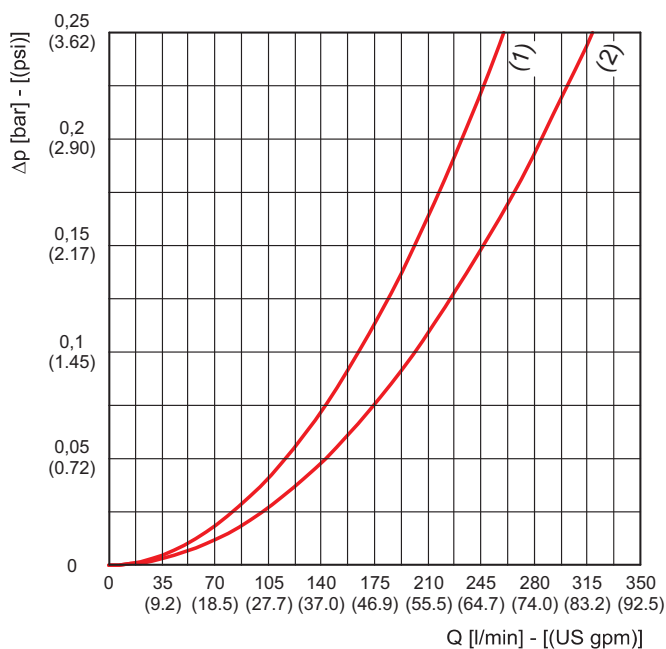
Kinematic viscosity 120 SSU (30 cSt)

Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

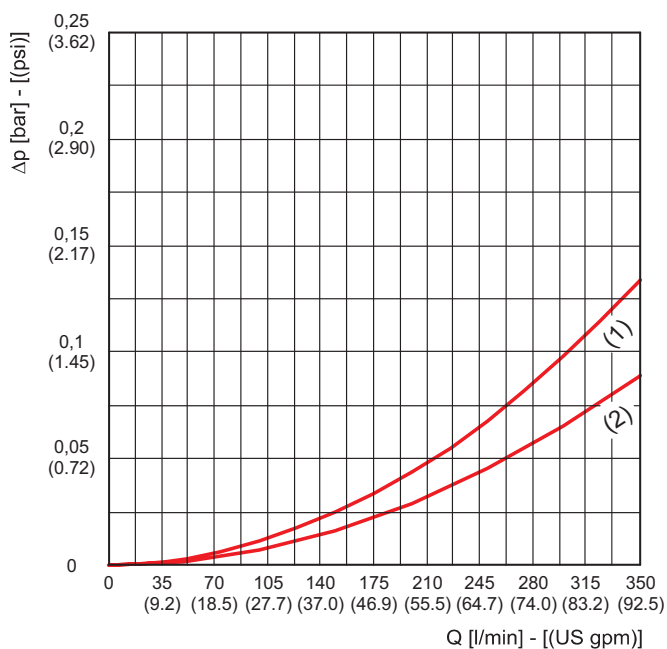
(1) HE K02-30.195

(2) HE K02-30.239

**RP010**



**RP025**



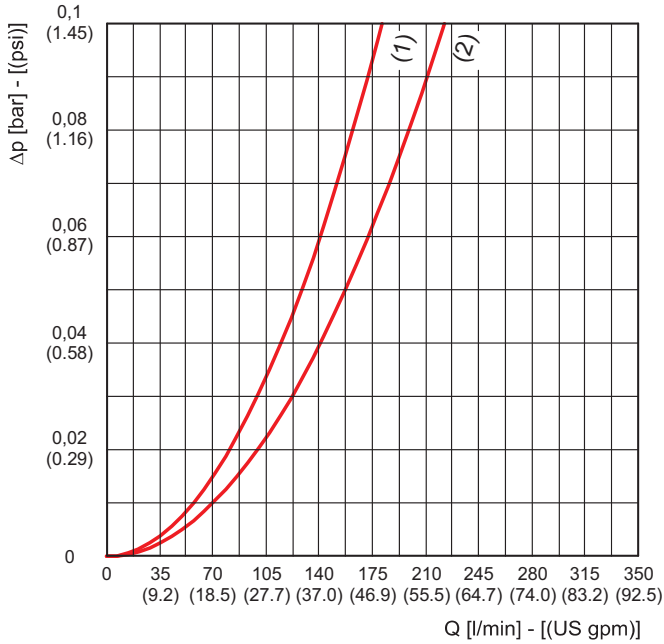
01/12.2010

## PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-30

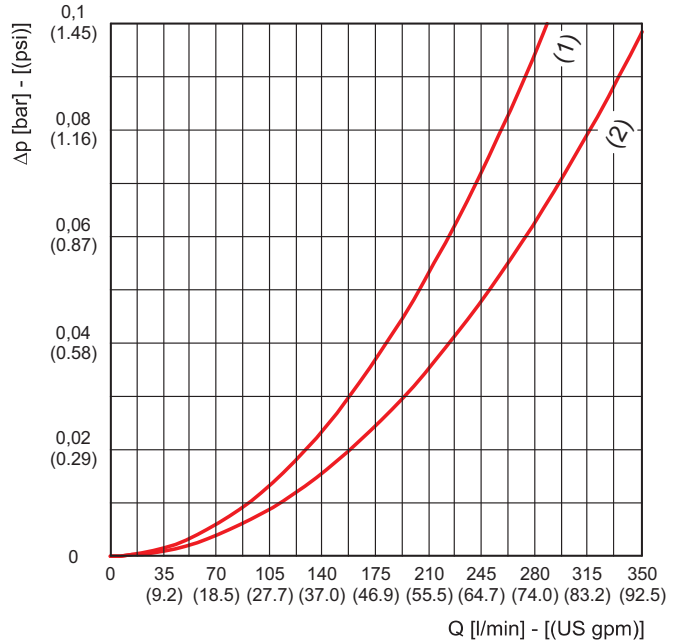
The curves are obtained in the following conditions:  
 Mineral oil type SAE 10  
 Kinematic viscosity 120 SSU (30 cSt)  
 Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

- (1) HE K02-30.195
- (2) HE K02-30.239

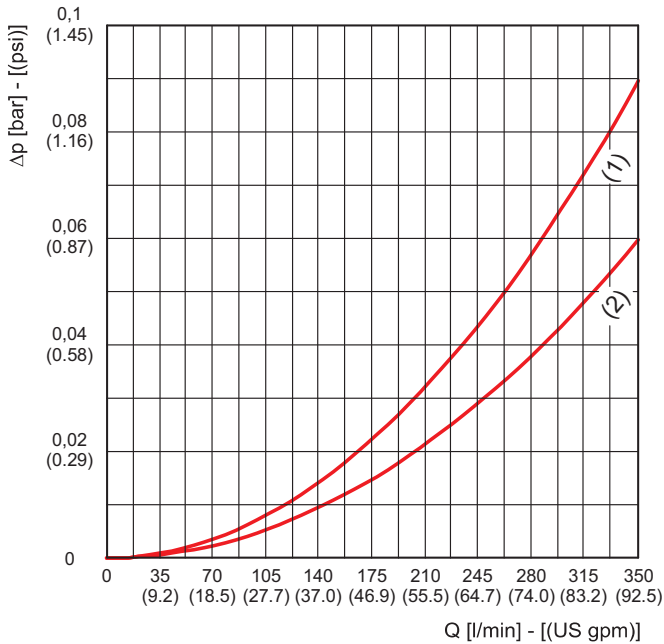
**MI025**



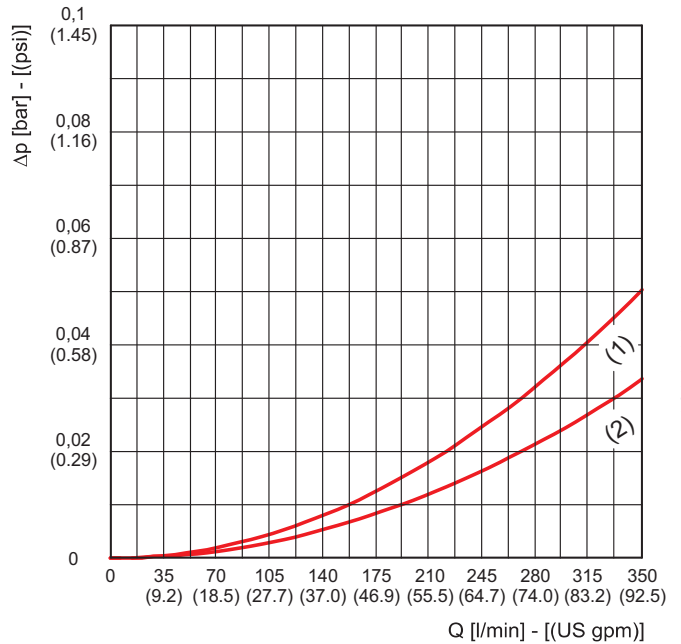
**MI060**



**MS090**



**MI125**



01/12.2010



## PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-40

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/dm<sup>3</sup>).

(1) HE K02-40.122

(2) HE K02-40.194

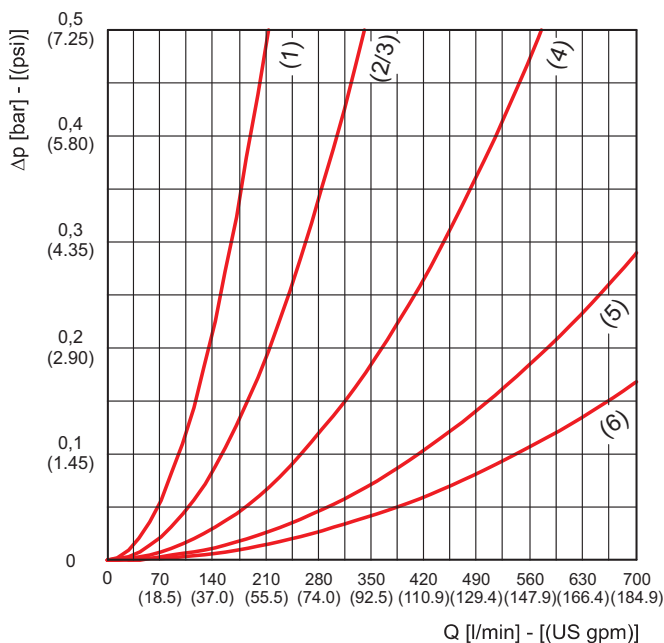
(3) HE K02-40.195

(4) HE K02-40.239

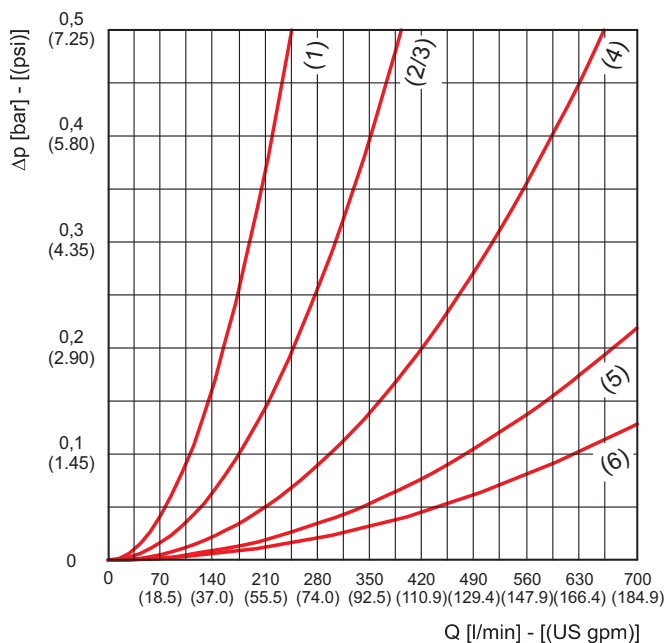
(5) HE K02-40.390

(6) HE K02-40.512

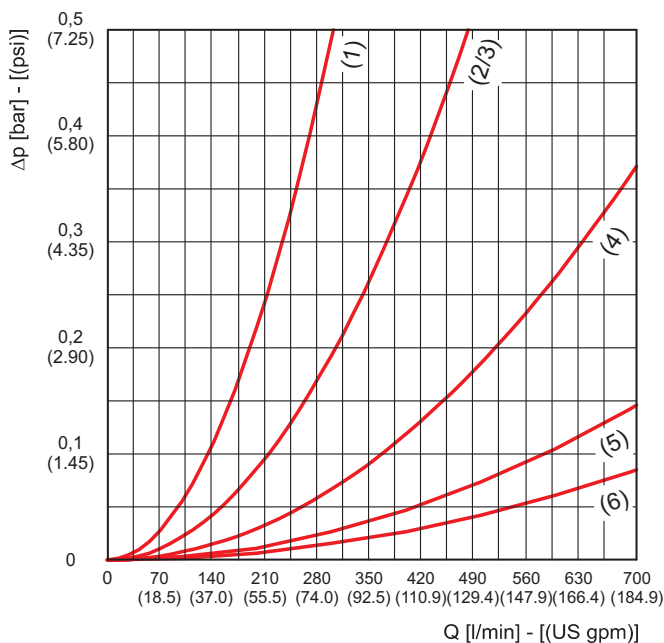
**FG003**



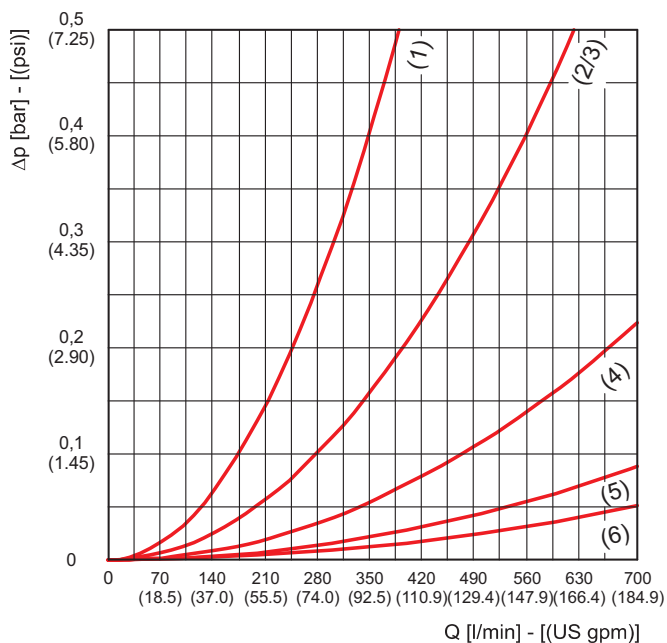
**FG006**



**FG010**



**FG025**



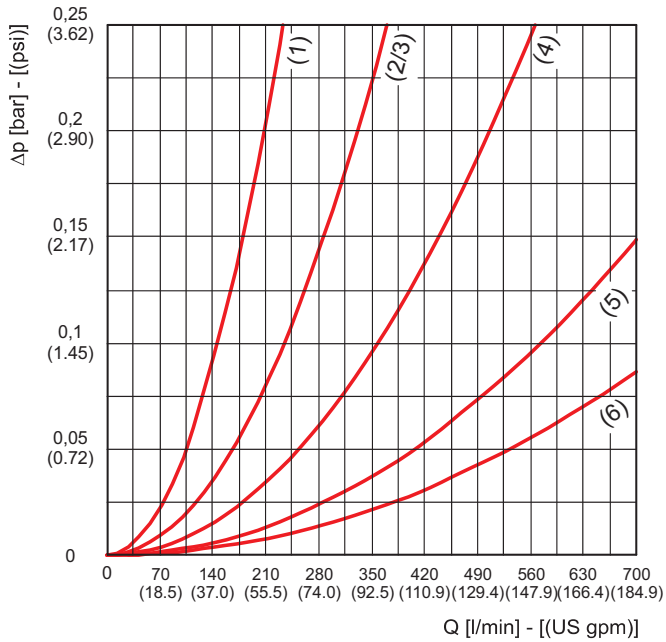
01/12.2010

**PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-40**

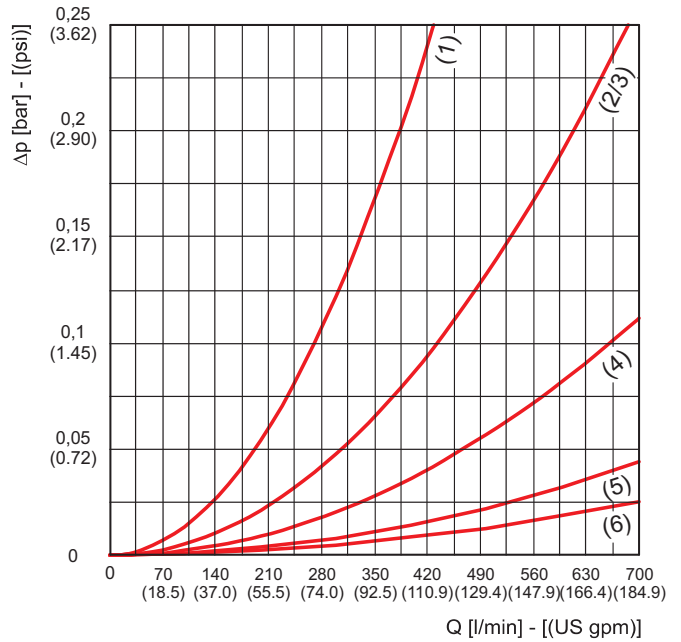
The curves are obtained in the following conditions:  
 Mineral oil type SAE 10  
 Kinematic viscosity 120 SSU (30 cSt)  
 Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

- |                   |                   |
|-------------------|-------------------|
| (1) HE K02-40.122 | (4) HE K02-40.239 |
| (2) HE K02-40.194 | (5) HE K02-40.390 |
| (3) HE K02-40.195 | (6) HE K02-40.512 |

**RP010**



**RP025**



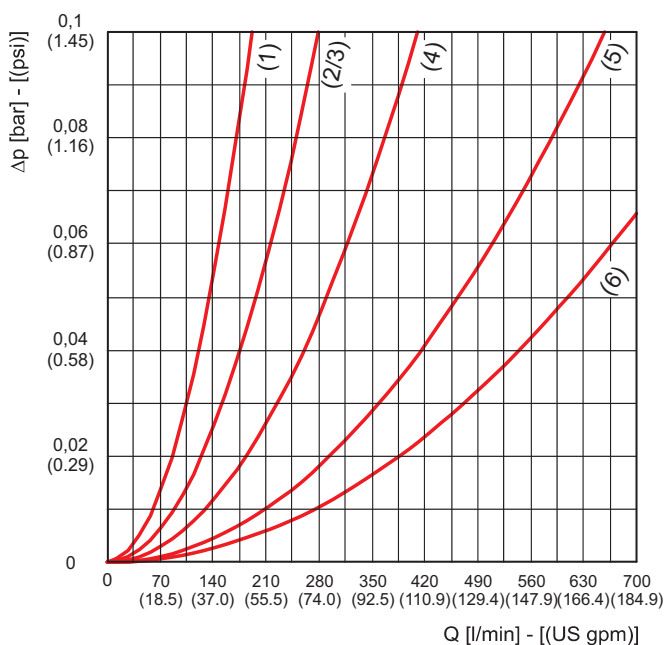
01/12.2010

## PRESSURE DROP CURVES THROUGH THE ELEMENT HE K02-40

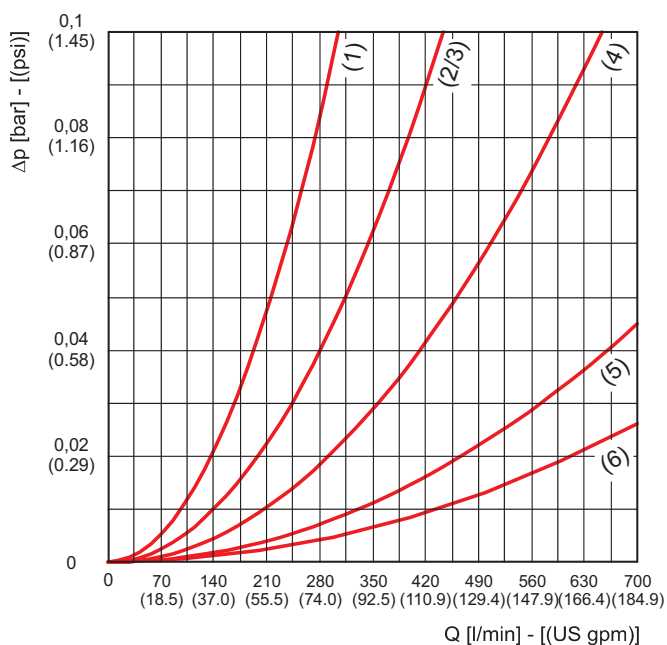
The curves are obtained in the following conditions:  
 Mineral oil type SAE 10  
 Kinematic viscosity 120 SSU (30 cSt)  
 Density 7.29 lb/gal (0,856 kg/dm<sup>3</sup>).

- |                   |                   |
|-------------------|-------------------|
| (1) HE K02-40.122 | (4) HE K02-40.239 |
| (2) HE K02-40.194 | (5) HE K02-40.390 |
| (3) HE K02-40.195 | (6) HE K02-40.512 |

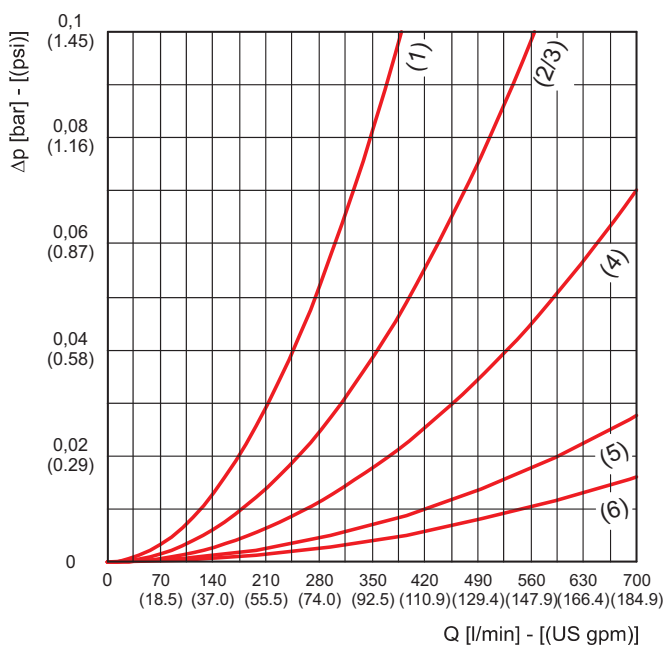
**MI025**



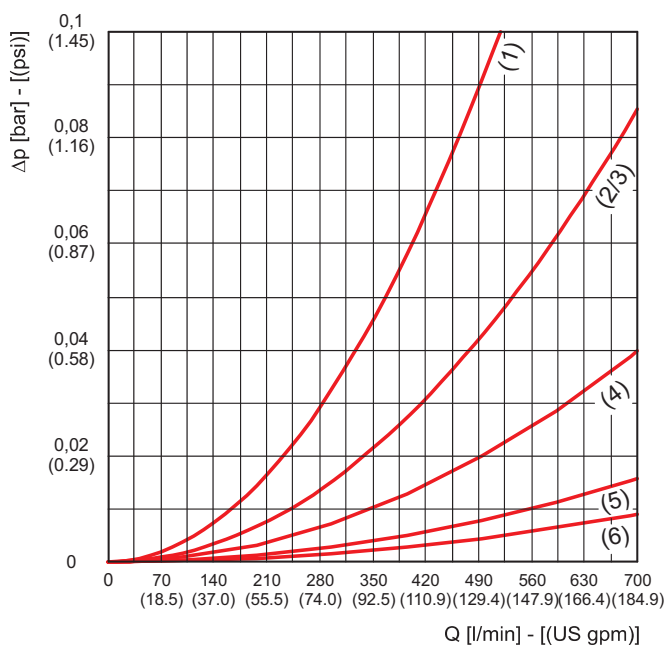
**MI060**



**MS090**



**MI125**



01/12.2010

**FLOWS**

| Filter type   | Inlet port |           |                  | Degree of filtration   |             |             |             |             |             |
|---------------|------------|-----------|------------------|--|-------------|-------------|-------------|-------------|-------------|
|               |            |           |                  | FG003  | FG006       | FG010       | FG025       | RP/SP010    | RP/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 554-10.060 | G 3/8      | 3/8 NPT   | 9/16-18 UNF-2B   | 4.0 (15)   | 4.0 (15)    | 6.6 (25)    | 6.6 (25)    | 6.6 (25)    | 9.2 (35)    |
|               | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 4.0 (15)   | 4.0 (15)    | 6.6 (25)    | 6.6 (25)    | 6.6 (25)    | 11.9 (45)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 4.0 (15)   | 4.0 (15)    | 6.6 (25)    | 7.9 (30)    | 6.6 (25)    | 11.9 (45)   |
| HF 554-10.129 | G 3/8      | 3/8 NPT   | 9/16-18 UNF-2B   | 7.9 (30)   | 9.2 (35)    | 9.2 (35)    | 11.9 (45)   | 11.9 (45)   | 13.2 (50)   |
|               | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 9.2 (35)   | 9.2 (35)    | 11.9 (45)   | 13.2 (50)   | 11.9 (45)   | 15.9 (60)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 9.2 (35)   | 9.2 (35)    | 11.9 (45)   | 14.5 (55)   | 13.2 (50)   | 18.5 (70)   |
| HF 554-20.077 | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 9.2 (35)   | 9.2 (35)    | 11.9 (45)   | 13.2 (50)   | 13.2 (50)   | 17.2 (65)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 9.2 (35)   | 9.2 (35)    | 11.9 (45)   | 14.5 (55)   | 14.5 (55)   | 19.8 (75)   |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 9.2 (35)   | 9.2 (35)    | 11.9 (45)   | 14.5 (55)   | 14.5 (55)   | 22.5 (85)   |
| HF 554-20.122 | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 9.2 (35)   | 9.2 (35)    | 11.9 (45)   | 14.5 (55)   | 14.5 (55)   | 22.5 (85)   |
|               | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 11.9 (45)  | 13.2 (50)   | 14.5 (55)   | 17.2 (65)   | 17.2 (65)   | 19.8 (75)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 11.9 (45)  | 14.5 (55)   | 17.2 (65)   | 19.8 (75)   | 19.8 (75)   | 25.1 (95)   |
| HF 554-20.201 | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 13.2 (50)  | 14.5 (55)   | 17.2 (65)   | 19.8 (75)   | 19.8 (75)   | 26.4 (100)  |
|               | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 13.2 (50)  | 14.5 (55)   | 17.2 (65)   | 21.1 (80)   | 19.8 (75)   | 27.7 (105)  |
|               | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 17.2 (65)  | 17.2 (65)   | 19.8 (75)   | 22.5 (85)   | 21.1 (80)   | 23.8 (90)   |
| HF 554-20.280 | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 18.5 (70)  | 19.8 (75)   | 23.8 (90)   | 27.7 (105)  | 26.4 (100)  | 33.0 (125)  |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 19.8 (75)  | 22.5 (85)   | 25.1 (95)   | 30.4 (115)  | 30.4 (115)  | 38.3 (145)  |
|               | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 19.8 (75)  | 22.5 (85)   | 26.4 (100)  | 31.7 (120)  | 30.4 (115)  | 42.3 (160)  |
| HF 554-30.195 | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 19.8 (75)  | 19.8 (75)   | 22.5 (85)   | 22.5 (85)   | 22.5 (85)   | 25.1 (95)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 22.5 (85)  | 25.1 (95)   | 27.7 (105)  | 30.4 (115)  | 30.4 (115)  | 34.3 (130)  |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 25.1 (95)  | 27.7 (105)  | 31.7 (120)  | 35.7 (135)  | 35.7 (135)  | 40.9 (155)  |
| HF 554-30.239 | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 26.4 (100)   | 29.1 (110)  | 33.0 (125)  | 38.3 (145)  | 38.3 (145)  | 46.2 (175)  |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 39.6 (150)   | 40.9 (155)  | 44.9 (170)  | 50.2 (190)  | 50.2 (190)  | 55.5 (210)  |
|               | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 40.9 (155)   | 44.9 (170)  | 50.2 (190)  | 58.1 (220)  | 58.1 (220)  | 71.3 (270)  |
| HF 554-40.122 | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 42.3 (160)   | 46.2 (175)  | 55.5 (210)  | 60.8 (230)  | 60.8 (230)  | 74.0 (280)  |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 42.3 (160)   | 44.9 (170)  | 50.2 (190)  | 52.8 (200)  | 52.8 (200)  | 58.1 (220)  |
|               | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 47.5 (180)   | 50.2 (190)  | 55.5 (210)  | 63.4 (240)  | 60.8 (230)  | 71.3 (270)  |
| HF 554-40.194 | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 50.2 (190)   | 52.8 (200)  | 60.8 (230)  | 66.0 (250)  | 66.0 (250)  | 76.6 (290)  |
|               | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 46.2 (175)   | 51.5 (195)  | 60.8 (230)  | 72.6 (275)  | 64.7 (245)  | 89.8 (340)  |
|               | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 47.5 (180)   | 54.1 (205)  | 63.4 (240)  | 76.6 (290)  | 68.7 (260)  | 100.4 (380) |
| HF 554-40.195 | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 66.0 (250)   | 72.6 (275)  | 81.9 (310)  | 91.1 (345)  | 84.5 (320)  | 103.0 (390) |
|               | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 70.0 (265)   | 76.6 (290)  | 88.5 (335)  | 100.4 (380) | 92.5 (350)  | 118.9 (450) |
|               | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 68.7 (260)   | 76.6 (290)  | 87.2 (330)  | 97.7 (370)  | 89.8 (340)  | 113.6 (430) |
| HF 554-40.239 | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 72.6 (275)   | 81.9 (310)  | 95.1 (360)  | 111.0 (420) | 100.4 (380) | 134.7 (510) |
|               | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 95.1 (360)   | 100.4 (380) | 108.3 (410) | 116.2 (440) | 108.3 (410) | 124.2 (470) |
|               | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 105.7 (400)  | 114.9 (435) | 125.5 (475) | 138.7 (525) | 126.8 (480) | 150.6 (570) |
| HF 554-40.390 | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 113.6 (430)  | 116.2 (440) | 121.5 (460) | 124.2 (470) | 121.5 (460) | 126.8 (480) |
|               | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 132.1 (500)  | 140.0 (530) | 146.6 (555) | 153.2 (580) | 147.9 (560) | 159.8 (605) |
|               | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 118.9 (450)  | 121.5 (460) | 124.2 (470) | 126.8 (480) | 124.2 (470) | 129.4 (490) |
| HF 554-40.512 | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 145.3 (550)  | 147.9 (560) | 153.2 (580) | 158.5 (600) | 153.2 (580) | 163.8 (620) |

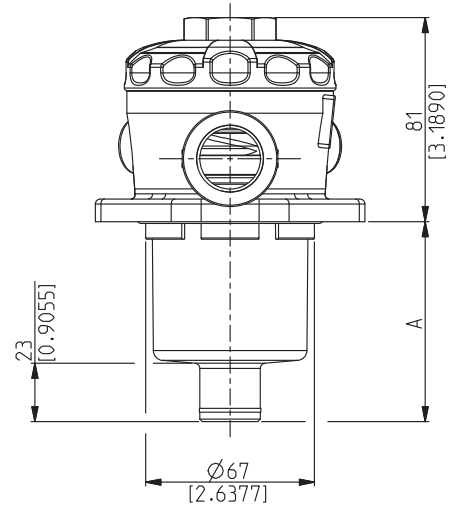
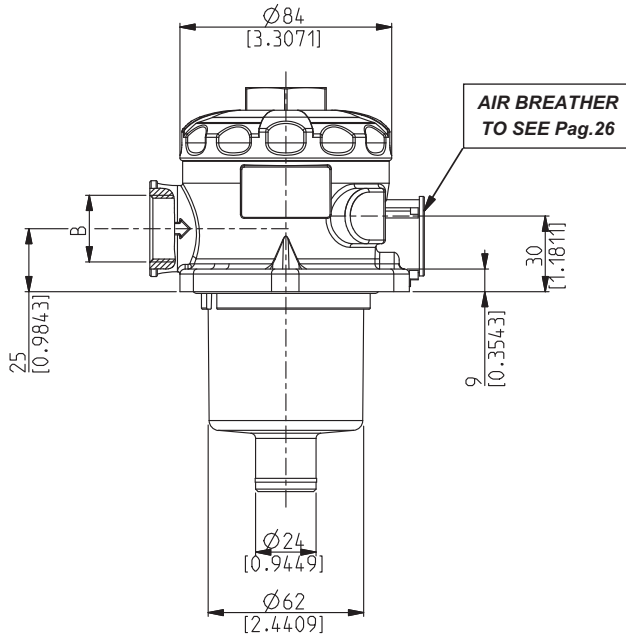
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## FLOWS

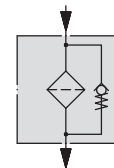
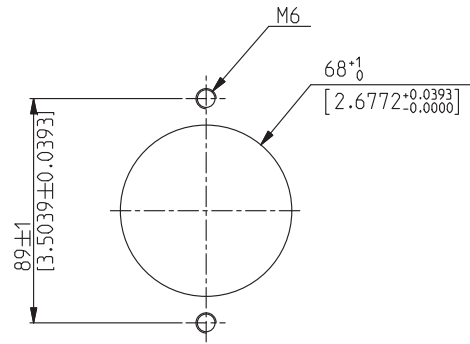
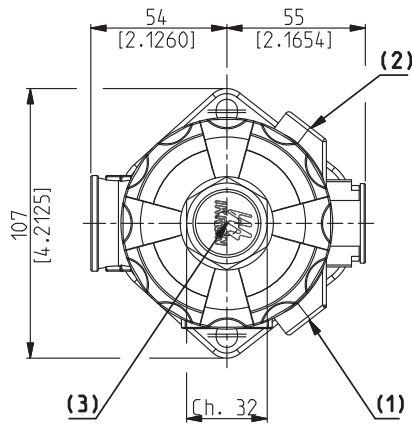
| Filter type   | Inlet port |           |                  | Degree of filtration   |             |             |             |
|---------------|------------|-----------|------------------|--|-------------|-------------|-------------|
|               |            |           |                  | MI025  | MI060       | MS090       | MI125       |
|               | GAS (BSPP) | NPT       | SAE J514b        | Flow<br>Δp= 5.8 psi (0,4 bar) (values referred to standard filtering surfaces) |             |             |             |
|               |            |           |                  | US gpm (l/min)   |             |             |             |
| HF 554-10.060 | G 3/8      | 3/8 NPT   | 9/16-18 UNF-2B   | 9.2 (35)   | 11.9 (45)   | 11.9 (45)   | 14.5 (55)   |
|               | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 9.2 (35)   | 11.9 (45)   | 14.5 (55)   | 15.9 (60)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 9.2 (35)   | 13.2 (50)   | 15.9 (60)   | 17.2 (65)   |
| HF 554-10.129 | G 3/8      | 3/8 NPT   | 9/16-18 UNF-2B   | 11.9 (45)  | 14.5 (55)   | 14.5 (55)   | 14.5 (55)   |
|               | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 14.5 (55)  | 17.2 (65)   | 17.2 (65)   | 18.5 (70)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 17.2 (65)  | 19.8 (75)   | 21.1 (80)   | 22.5 (85)   |
| HF 554-20.077 | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 14.5 (55)  | 18.5 (70)   | 19.8 (75)   | 21.1 (80)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 17.2 (65)  | 22.5 (85)   | 23.8 (90)   | 25.1 (95)   |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 17.2 (65)  | 22.5 (85)   | 25.1 (95)   | 27.7 (105)  |
| HF 554-20.122 | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 17.2 (65)  | 23.8 (90)   | 26.4 (100)  | 29.1 (110)  |
|               | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 17.2 (65)  | 19.8 (75)   | 21.1 (80)   | 22.5 (85)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 19.8 (75)  | 23.8 (90)   | 25.1 (95)   | 26.4 (100)  |
| HF 554-20.201 | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 22.5 (85)  | 26.4 (100)  | 27.7 (105)  | 30.4 (115)  |
|               | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 22.5 (85)  | 27.7 (105)  | 29.1 (110)  | 31.7 (120)  |
|               | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 22.5 (85)  | 25.1 (95)   | 25.1 (95)   | 25.1 (95)   |
| HF 554-20.280 | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 27.7 (105)   | 33.0 (125)  | 33.0 (125)  | 35.7 (135)  |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 30.4 (115)   | 38.3 (145)  | 40.9 (155)  | 42.3 (160)  |
|               | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 33.0 (125)   | 40.9 (155)  | 43.6 (165)  | 46.2 (175)  |
| HF 554-30.195 | G 1/2      | 1/2 NPT   | 3/4-16 UNF-2B    | 23.8 (90)  | 25.1 (95)   | 25.1 (95)   | 25.1 (95)   |
|               | G 3/4      | 3/4 NPT   | 1 1/16-12 UNF-2B | 30.4 (115)   | 33.0 (125)  | 34.3 (130)  | 35.7 (135)  |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 35.7 (135)   | 40.9 (155)  | 42.3 (160)  | 43.6 (165)  |
| HF 554-30.239 | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 38.3 (145)   | 44.9 (170)  | 47.6 (180)  | 48.9 (185)  |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 50.2 (190)   | 55.5 (210)  | 58.1 (220)  | 60.8 (230)  |
|               | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 60.8 (230)   | 68.7 (260)  | 71.3 (270)  | 74.0 (280)  |
| HF 554-40.122 | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 63.4 (240)   | 74.0 (280)  | 76.6 (290)  | 81.9 (310)  |
|               | G 1        | 1 NPT     | 1 5/16-12 UNF-2B | 55.5 (210)   | 56.8 (215)  | 58.1 (220)  | 60.8 (230)  |
|               | G 1 1/4    | 1 1/4 NPT | 1 5/8-12 UNF-2B  | 66.0 (250)   | 71.3 (270)  | 74.0 (280)  | 76.6 (290)  |
| HF 554-40.194 | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 68.7 (260)   | 76.6 (290)  | 79.3 (300)  | 81.9 (310)  |
|               | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 76.6 (290)   | 95.1 (360)  | 101.7 (385) | 108.3 (410) |
|               | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 81.9 (310)   | 105.7 (400) | 116.2 (440) | 124.2 (470) |
| HF 554-40.195 | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 91.1 (345)   | 104.3 (395) | 108.3 (410) | 111.0 (420) |
|               | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 101.7 (385)  | 118.9 (450) | 126.8 (480) | 132.1 (500) |
|               | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 97.7 (370)   | 114.9 (435) | 121.5 (460) | 124.2 (470) |
| HF 554-40.239 | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 111.0 (420)  | 137.4 (520) | 145.3 (550) | 153.2 (580) |
|               | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 112.3 (425)  | 122.8 (465) | 125.5 (475) | 128.1 (485) |
|               | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 132.1 (500)  | 150.6 (570) | 155.9 (590) | 161.1 (610) |
| HF 554-40.390 | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 122.8 (465)  | 126.8 (480) | 129.4 (490) | 130.8 (495) |
|               | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 150.6 (570)  | 159.8 (605) | 162.5 (615) | 163.8 (620) |
|               | G 1 1/2    | 1 1/2 NPT | 1 7/8-12 UNF-2B  | 126.8 (480)  | 128.1 (485) | 129.4 (490) | 130.8 (495) |
| HF 554-40.512 | G 2        | 2 NPT     | 2 1/2-12 UNF-2B  | 155.9 (590)  | 162.5 (615) | 163.8 (620) | 166.4 (630) |

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**HF 554-10 DIMENSIONS**



**RESERVOIR MOUNTING  
HOLE DIMENSIONS**



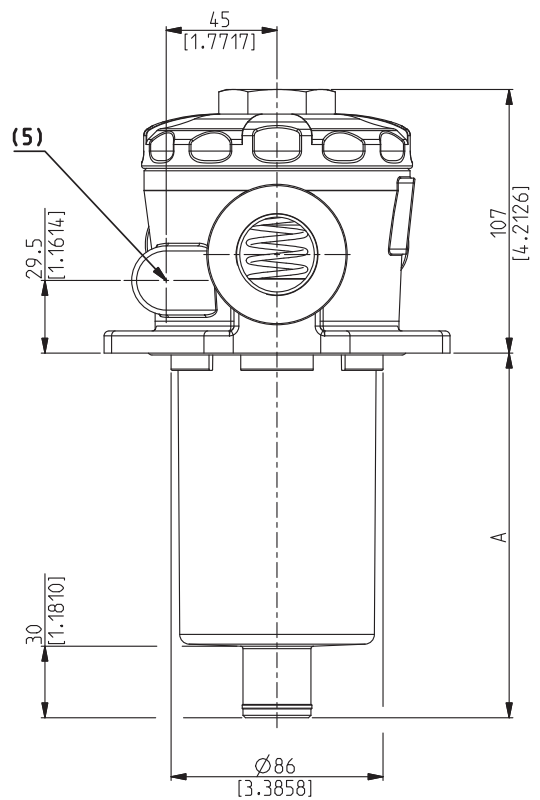
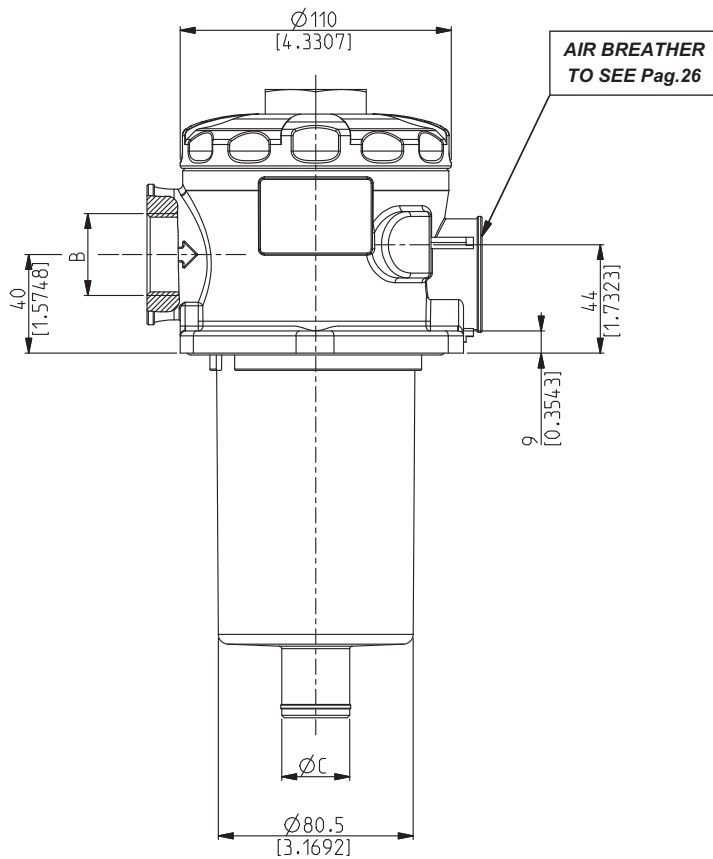
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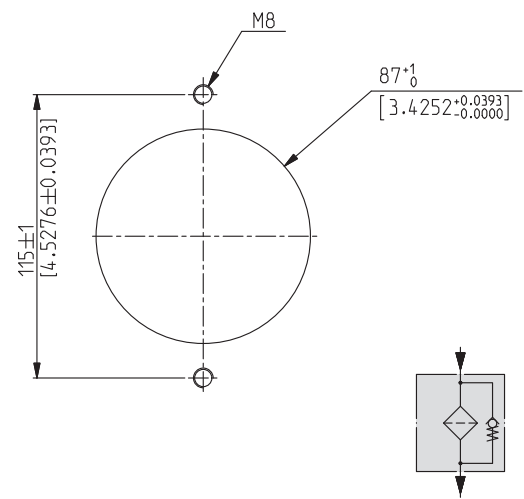
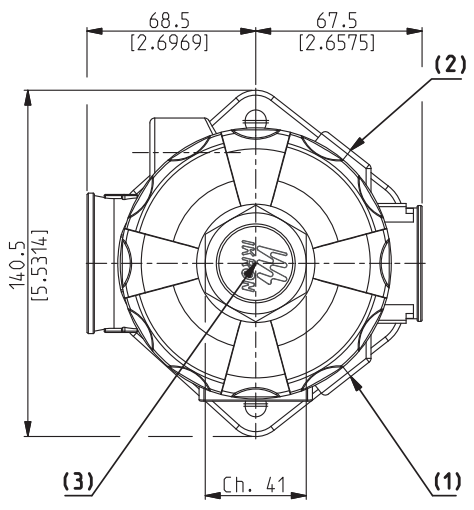
| Filter type          | Weight<br>kg(lbs) | A<br>mm(in)     | B (GAS-BSPP) |               | (3)(GAS-BSPP)<br>Secondary inlet | (1)(2)(3)(GAS-BSPP)<br>Indicators |
|----------------------|-------------------|-----------------|--------------|---------------|----------------------------------|-----------------------------------|
|                      |                   |                 | Standard     | On request    |                                  |                                   |
| <b>HF 554-10.060</b> | 0,55<br>(1.21)    | 79<br>(3.1102)  | G 1/2        | G 3/8 - G 3/4 | G 3/8                            | G 1/8                             |
| <b>HF 554-10.129</b> | 0,66<br>(1.45)    | 148<br>(5.8267) | G 3/4        | G 3/8 - G 1/2 |                                  |                                   |

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

**HF 554-20 DIMENSIONS**



**RESERVOIR MOUNTING HOLE DIMENSIONS**

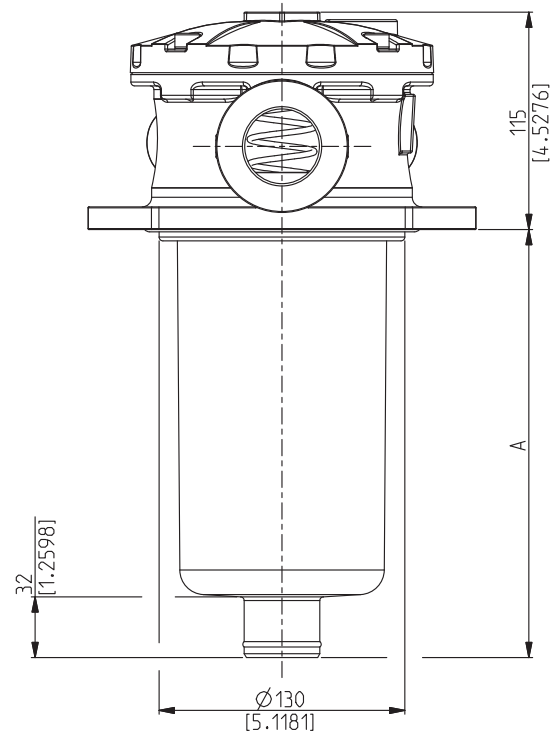
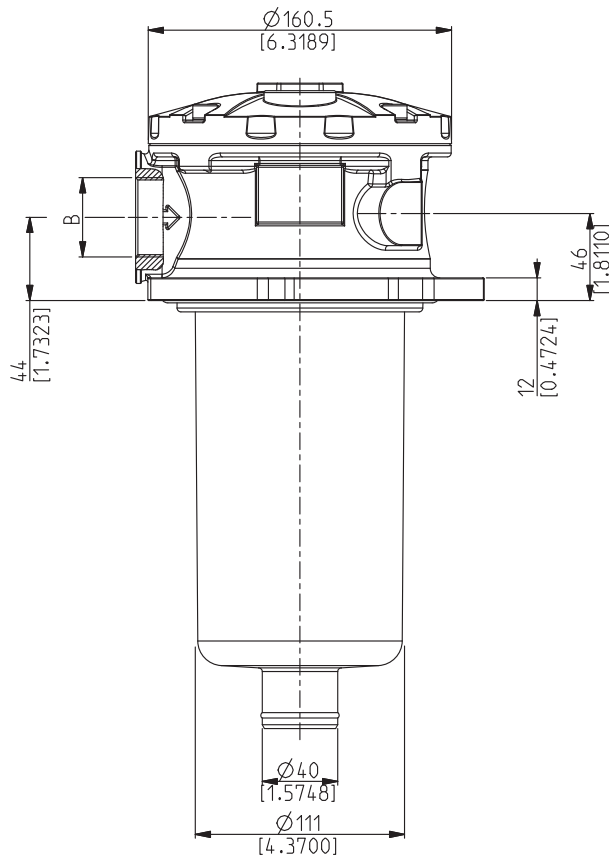


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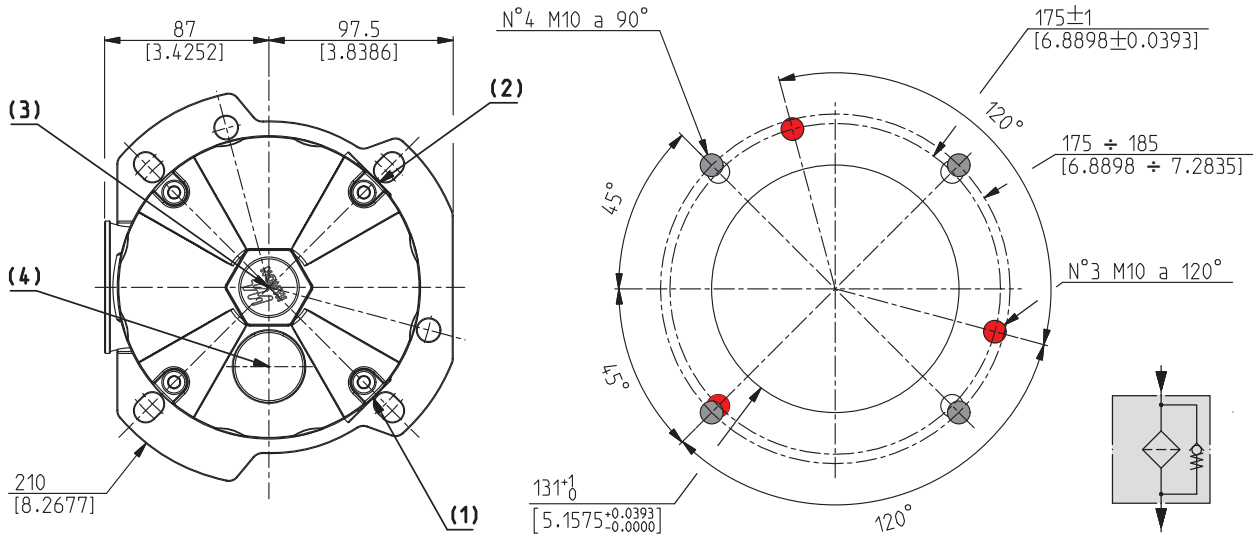
| Filter type          | Weight         | A                | B (GAS-BSPP) |                         | ØC               | (3)(5)(GAS-BSPP)<br>Secondary inlet | (1)(2)(3)(GAS-BSPP)<br>Indicators |
|----------------------|----------------|------------------|--------------|-------------------------|------------------|-------------------------------------|-----------------------------------|
|                      |                |                  | Standard     | On request              |                  |                                     |                                   |
| <b>HF 554-20.077</b> | 1.21<br>(2.67) | 103<br>(4.0551)  | G 3/4        | G 1/2 - G 1 - G 1 1/4   | 27.5<br>(1.0826) |                                     |                                   |
| <b>HF 554-20.122</b> | 1.30<br>(2.86) | 148<br>(5.8267)  | G 1          | G 1/2 - G 3/4 - G 1 1/4 |                  | G 3/8<br>G 1/2                      | G 1/8                             |
| <b>HF 554-20.201</b> | 1.45<br>(3.20) | 229<br>(9.0157)  | G 1 1/4      | G 1/2 - G 3/4 - G 1     | 40<br>(1.5747)   |                                     |                                   |
| <b>HF 554-20.280</b> | 1.67<br>(3.68) | 312<br>(12.2834) |              |                         |                  |                                     |                                   |

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

**HF 554-30 DIMENSIONS**



**RESERVOIR MOUNTING  
HOLE DIMENSIONS**



ICAT\_007\_003\_HF554

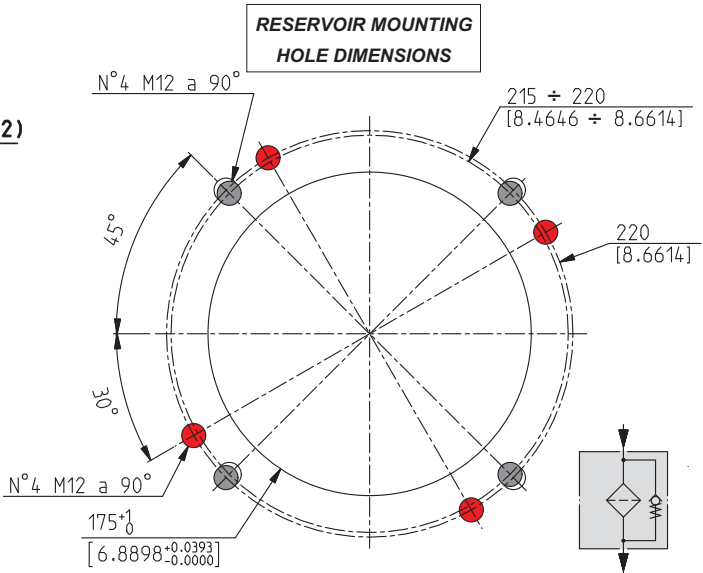
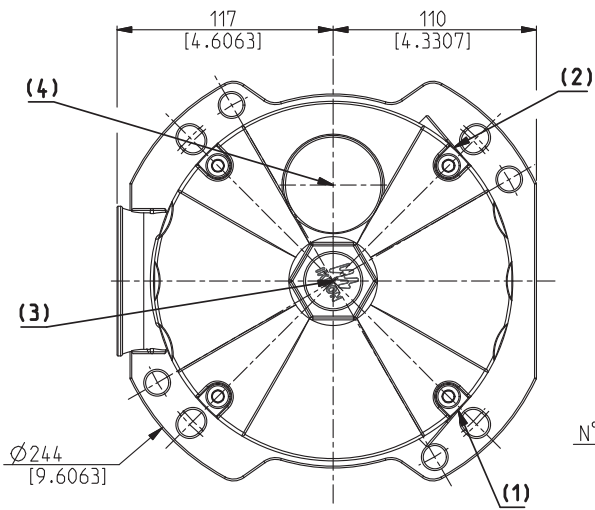
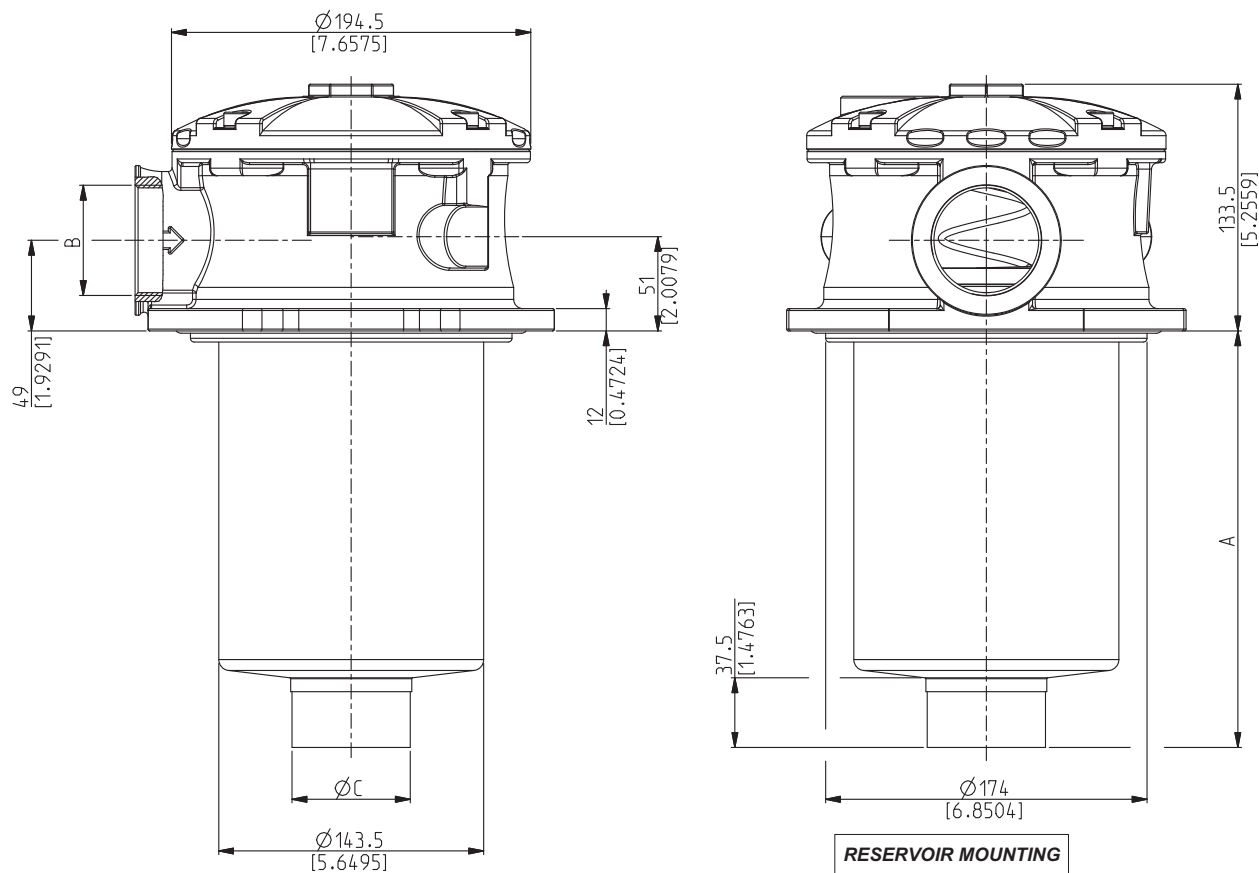
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| Filter type          | Weight<br>kg(lbs) | A<br>mm(in)        | B (GAS-BSPP) |               | (1)(2)(4)(GAS-BSPP)                    | (1)(2)(3)(GAS-BSPP) | (4)(GAS-BSPP) |
|----------------------|-------------------|--------------------|--------------|---------------|--|---------------------|---------------|
|                      |                   |                    | Standard     | On request    | Secondary inlet                        | Indicators          | Filler cap    |
| <b>HF 554-30.195</b> | 3,44<br>(7.58)    | 226,5<br>(8.9172)  | G 1 1/4      | G 1 - G 1 1/2 | G 3/8 Pos.(1)-(2)<br>G 1/2 Pos.(1)-(2) | G 1/8               | G 3/4         |
| <b>HF 554-30.239</b> | 3,63<br>(8.00)    | 269,5<br>(10.6102) | G 1 1/2      | G 1 - G 1 1/4 | G 3/4 Pos.(4)                          |                     |               |

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



**HF 554-40 DIMENSIONS**



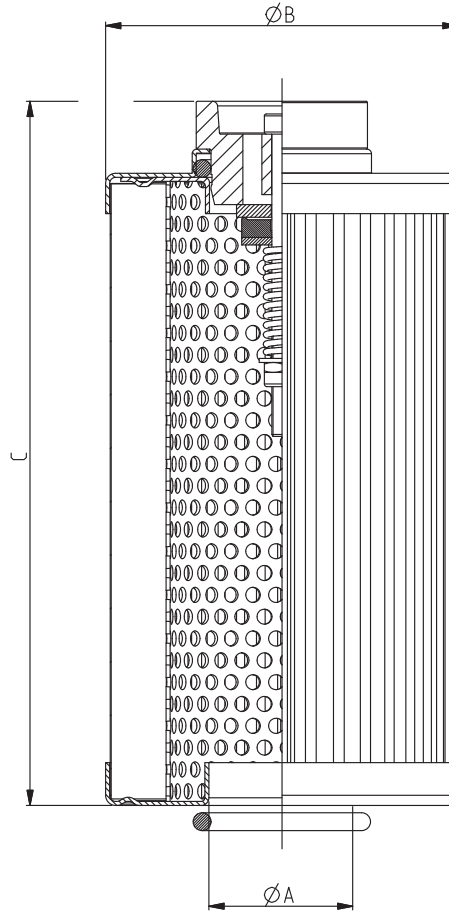
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| Filter type          | Weight<br>kg(lbs) | A<br>mm(in)        | B (GAS-BSPP) |            | ØC<br>mm(in)   | (1)(2)(4)(GAS-BSPP)<br>Secondary inlet | (1)(2)(3)(GAS-BSPP)<br>Indicators | (4)(GAS-BSPP)<br>Filler cap |
|----------------------|-------------------|--------------------|--------------|------------|----------------|--|-----------------------------------|-----------------------------|
|                      |                   |                    | Standard     | On request |                |  |                                   |                             |
| <b>HF 554-40.122</b> | 4.93<br>(10.87)   | 159.5<br>(6.2795)  |              |            | 50<br>(1.9684) | G 3/8 Pos.(1)-(2)-(4)                  |                                   |                             |
| <b>HF 554-40.194</b> | 5.30<br>(11.68)   | 225.5<br>(8.8779)  | G 1 1/2      | G 2        |                | G 1/2 Pos.(1)-(2)-(4)                  |                                   |                             |
| <b>HF 554-40.195</b> |                   |                    |              |            |                |  | G 1/8                             | G 1 1/4                     |
| <b>HF 554-40.239</b> | 5.69<br>(12.54)   | 285.5<br>(11.2401) |              |            | 64             | G 1 Pos.(4)                            |                                   |                             |
| <b>HF 554-40.390</b> | 8.05<br>(17.75)   | 429.5<br>(16.9094) | G 2          | G 1 1/2    | (2.5196)       | G 1 1/4 Pos.(4)                        |                                   |                             |
| <b>HF 554-40.512</b> | 9.13<br>(20.13)   | 554.5<br>(21.8306) |              |            |                |  |                                   |                             |

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

## ELEMENTS DIMENSIONS FOR HF 554



ICAT\_014\_007\_HF502

Element series HE K02-40.239, HE K02-40.390, HE K02-40.512 are only available with (FS) version.

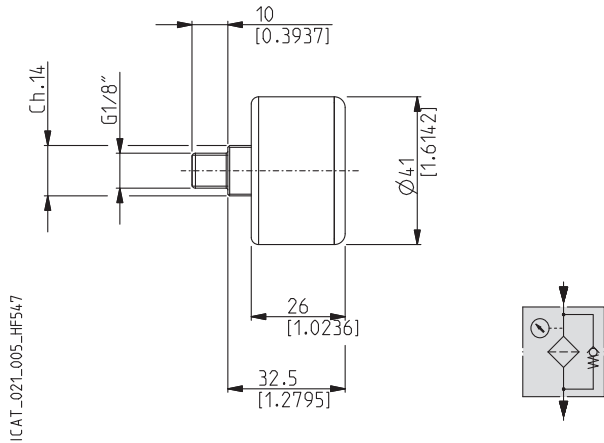
| Element type         | Ø A<br>mm(in)  | Ø B<br>mm(in)   | C<br>mm(in)      | Filtering surface<br>type | Filtering surface                        |   |   |
|----------------------|----------------|-----------------|------------------|---------------------------|--|---|---|
|                      |                |                 |                  |                           | FG<br>cm <sup>2</sup> (in <sup>2</sup> ) | MI / MS<br>cm <sup>2</sup> (in <sup>2</sup> ) | RP / SP<br>cm <sup>2</sup> (in <sup>2</sup> ) |
| <b>HE K02-10.060</b> | 26<br>(1.0226) | 52<br>(2.0472)  | 75<br>(2.9527)   | AS                        | 346<br>(53.6301)                         | 227<br>(35.1850)                              | 400<br>(62.0001)                              |
| <b>HE K02-10.129</b> |                |                 | 144<br>(5.6692)  | AS                        | 743<br>(115.1652)                        | 488<br>(75.6401)                              | 859<br>(133.1453)                             |
| <b>HE K02-20.077</b> | 29<br>(1.1417) | 70<br>(2.7558)  | 95<br>(3.7401)   | AS                        | 702<br>(108.8102)                        | 444<br>(68.8201)                              | 850<br>(131.7503)                             |
| <b>HE K02-20.122</b> |                |                 | 140<br>(5.5117)  | AS                        | 1113<br>(172.5153)                       | 615<br>(95.3251)                              | 1347<br>(208.7854)                            |
| <b>HE K02-20.201</b> | 41<br>(1.6141) | 70<br>(2.7558)  | 225<br>(8.8582)  | AS                        | 1680<br>(260.4005)                       | 929<br>(143.9953)                             | 2034<br>(315.2706)                            |
| <b>HE K02-20.280</b> |                |                 | 304<br>(11.9684) | AS                        | 2341<br>(362.8557)                       | 1294<br>(200.5704)                            | 2834<br>(439.2709)                            |
| <b>HE K02-30.195</b> | 41<br>(1.6141) | 99<br>(3.8976)  | 212<br>(8.3664)  | AS                        | 3705<br>(574.2761)                       | 2048<br>(317.4406)                            | 4485<br>(695.1764)                            |
| <b>HE K02-30.239</b> |                |                 | 255<br>(10.0393) | AS                        | 4541<br>(703.8564)                       | 2510<br>(389.0508)                            | 5497<br>(852.0367)                            |
| <b>HE K02-40.122</b> | 52<br>(2.0472) | 130<br>(5.1180) | 139<br>(5.4724)  | AS                        | 3821<br>(592.2562)                       | 2174<br>(336.3707)                            | 4019<br>(622.9462)                            |
| <b>HE K02-40.194</b> |                |                 | 212<br>(8.3464)  | AS                        | 6107<br>(946.5869)                       | 3159<br>(489.6460)                            | 6423<br>(995.5670)                            |
| <b>HE K02-40.195</b> | 65<br>(2.5590) | 130<br>(5.1180) | 212<br>(8.3464)  | AS                        | 6107<br>(946.5869)                       | 3159<br>(489.6460)                            | 6423<br>(995.5670)                            |
| <b>HE K02-40.239</b> |                |                 | 256<br>(10.0787) | FS                        | 10325<br>(1600.3780)                     | 4646<br>(720.1314)                            | 9809<br>(1520.3980)                           |
| <b>HE K02-40.390</b> | 65<br>(2.5590) | 130<br>(5.1180) | 407<br>(16.0235) | FS                        | 16536<br>(2563.0850)                     | 7441<br>(1153.3570)                           | 15709<br>(2434.9000)                          |
| <b>HE K02-40.512</b> |                |                 | 529<br>(20.8267) | FS                        | 21709<br>(3364.9020)                     | 9769<br>(1514.1980)                           | 20623<br>(3196.5710)                          |

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**INDICATORS**

**REAR MANOMETER**

Code: **M**

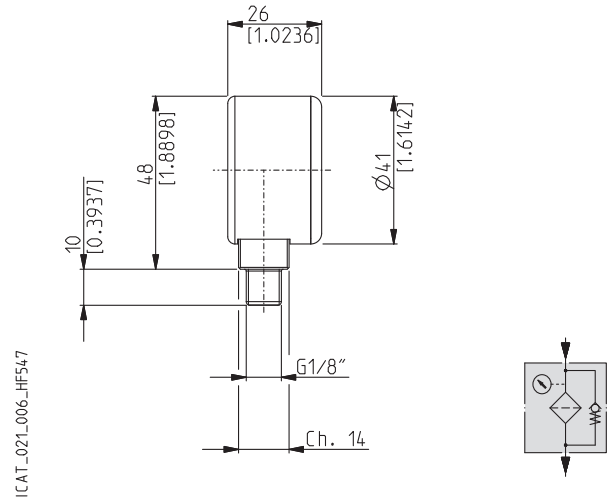


ICAT\_021\_005\_HF547

Scale 0 + +145 psi (0 + +10 bar)

**RADIAL MANOMETER**

Code: **N**

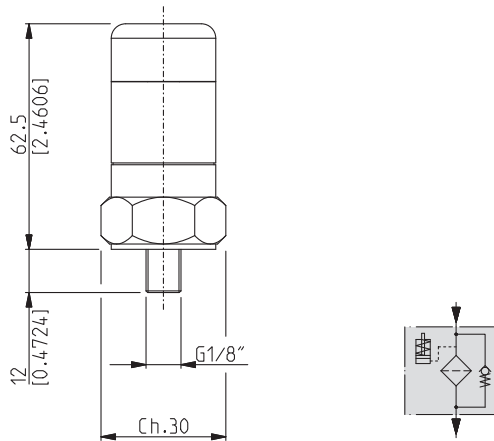


ICAT\_021\_006\_HF547

Scale 0 + +145 psi (0 + +10 bar)

**VISUAL INDICATOR**

Code: **P**

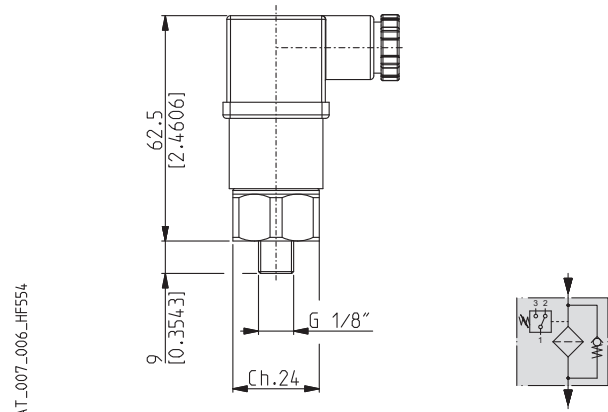


ICAT\_021\_007\_HF547

Pressure setting 21.8 psi (1,5 bar)

**ELECTRICAL INDICATOR**

Code: **S**



ICAT\_007\_006\_HF554

Pressure setting 21.8 psi (1,5 bar)

Max. working voltage 250 VCA

110 VCC

Max. working current 0,5 A (resistivity)

0,15 A (inductive)

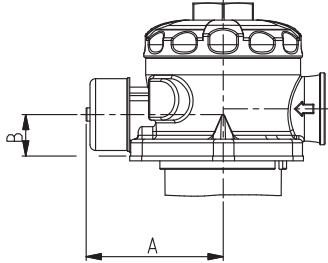
Protection class IP65

Contacts N.O. and N.C.

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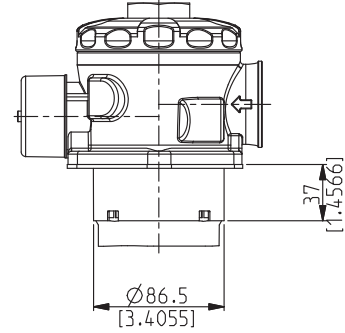
**ACCESSORIES**

**WITH AIR BREATHER**  
only for HF 554-10 and HF 554-20

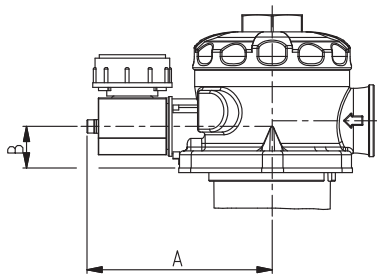


| Filter with air breather | A                | B                |
|--------------------------|------------------|------------------|
|                          | mm(in)           | mm(in)           |
| <b>HF 554-10</b>         | 72,5<br>(2.8543) | 22<br>(0.8661)   |
| <b>HF 554-20</b>         | 93,5<br>(3.6810) | 32,5<br>(1.2795) |

**WITH ANTISPLASH**  
only for HF 554-20

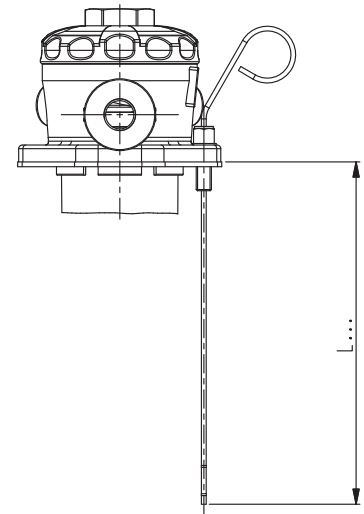


**WITH PRESSURIZED AIR BREATHER**  
only for HF 554-10 and HF 554-20

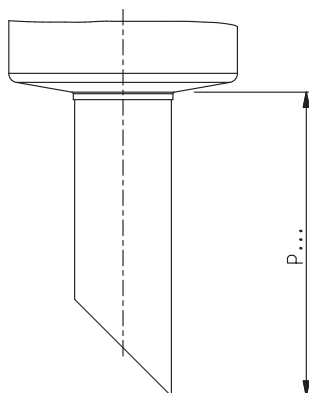


| Filter with press. air breather | A                 | B                |
|---------------------------------|-------------------|------------------|
|                                 | mm(in)            | mm(in)           |
| <b>HF 554-10</b>                | 98<br>(3.8582)    | 22<br>(0.8661)   |
| <b>HF 554-20</b>                | 119,5<br>(4.7047) | 32,5<br>(1.2795) |

**WITH LEVEL DIPSTICK**

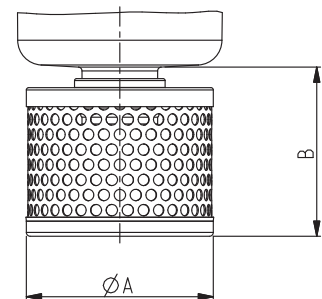


**WITH BOWL EXTENSION**



| Filter with diffuser | A               | B               |
|----------------------|-----------------|-----------------|
|                      | mm(in)          | mm(in)          |
| <b>HF 554-10</b>     | 52<br>(2.0472)  | 50<br>(1.9684)  |
| <b>HF 554-20</b>     | 70<br>(2.7558)  | 65<br>(2.5590)  |
| <b>HF 554-30</b>     | 99<br>(3.8976)  | 90<br>(3.5432)  |
| <b>HF 554-40</b>     | 140<br>(5.5117) | 150<br>(5.9054) |

**WITH DIFFUSER**



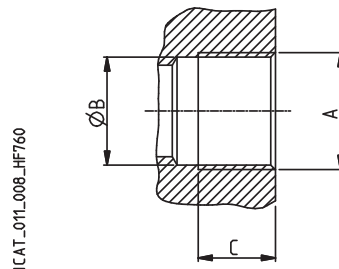
## INLET PORTS

| Filter type | PORTS TYPE   |          |     |         |
|-------------|--------------|----------|-----|---------|
|             | Nominal size | Gas BSPP | NPT | SAE ODT |
| HF 554-10   | 3/8"         | GC       | NC  | OA      |
|             | 1/2"         | GD       | ND  | OB      |
|             | 3/4"         | GE       | NE  | OD      |
| HF 554-20   | 1/2"         | GD       | ND  | OB      |
|             | 3/4"         | GE       | NE  | OD      |
|             | 1"           | GF       | NF  | OF      |
|             | 1" 1/4       | GG       | NG  | OG      |
| HF 554-30   | 1"           | GF       | NF  | OF      |
|             | 1" 1/4       | GG       | NG  | OG      |
|             | 1" 1/2       | GH       | NH  | OH      |
| HF 554-40   | 1" 1/2       | GH       | NH  | OH      |
|             | 2"           | GL       | NL  | OI      |

## GAS THREAD

## BSPP

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



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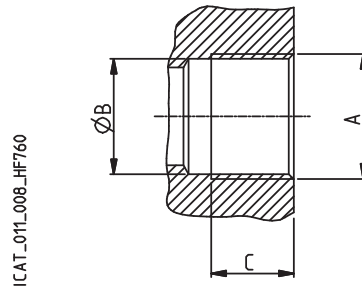
| CODE | Nominal size | A       | Ø B  |          | C              | Nm (lbf in)                         |
|------|--------------|---------|------|----------|----------------|-------------------------------------|
|      |              |         | mm   | (in)     |                |                                     |
| GC   | 3/8"         | G 3/8   | 15   | (0.5905) | 14<br>(0.5511) | 15 <sup>+1</sup><br>(133 ÷ 142)     |
| GD   | 1/2"         | G 1/2   | 19   | (0.7480) | 17<br>(0.6692) | 20 <sup>+1</sup><br>(177 ÷ 186)     |
| GE   | 3/4"         | G 3/4   | 24,5 | (0.9645) | 20<br>(0.7873) | 30 <sup>+2,5</sup><br>(266 ÷ 288)   |
| GF   | 1"           | G 1     | 30,5 | (1.2007) | 22<br>(0.8661) | 50 <sup>+2,5</sup><br>(443 ÷ 465)   |
| GG   | 1" 1/4       | G 1 1/4 | 39   | (1.5354) | 24<br>(0.9448) | 60 <sup>+5</sup><br>(531 ÷ 575)     |
| GH   | 1" 1/2       | G 1 1/2 | 45   | (1.7716) | 26<br>(1.0236) | 70 <sup>+5</sup><br>(620 ÷ 664)     |
| GL   | 2"           | G 2     | 57   | (2.2440) | 32<br>(1.2598) | 150 <sup>+10</sup><br>(1328 ÷ 1416) |

## INLET PORTS

### NPT THREAD

**NPT**

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

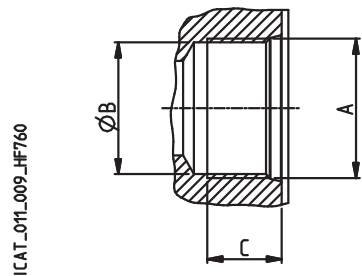


| CODE      | Nominal size | A         | Ø B   |          | C    | Nm (lbf in) |                                    |
|-----------|--------------|-----------|-------|----------|------|-------------|------------------------------------|
|           |              |           | mm    | (in)     |      |             |                                    |
| <b>NC</b> | 3/8"         | 3/8 NPT   | 14,75 | (0.5807) | 10   | (0.3936)    | 5 <sup>+1</sup><br>(44 ÷ 53)       |
| <b>ND</b> | 1/2"         | 1/2 NPT   | 18    | (0.7086) | 13   | (0.5118)    | 10 <sup>+1</sup><br>(88 ÷ 97)      |
| <b>NE</b> | 3/4"         | 3/4 NPT   | 23,5  | (0.9251) | 14   | (0.5511)    | 25 <sup>+1</sup><br>(221 ÷ 230)    |
| <b>NF</b> | 1"           | 1 NPT     | 29,5  | (1.1614) | 17   | (0.6692)    | 30 <sup>+2,5</sup><br>(265 ÷ 287)  |
| <b>NG</b> | 1" 1/4       | 1 1/4 NPT | 38,5  | (1.5157) | 18   | (0.7086)    | 50 <sup>+2,5</sup><br>(442 ÷ 464)  |
| <b>NH</b> | 1" 1/2       | 1 1/2 NPT | 44    | (1.7322) | 18,5 | (0.7283)    | 70 <sup>+5</sup><br>(620 ÷ 664)    |
| <b>NL</b> | 2"           | 2 NPT     | 57    | (2.2440) | 19,5 | (0.7677)    | 130 <sup>+5</sup><br>(1150 ÷ 1195) |

### 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)     |    |             |                                     |
| <b>OA</b> | 3/8"         | 9/16" - 18 UNF - 2B   | 12,75 | (0.5019) | 12 | (0.4724)    | 15 <sup>+1</sup><br>(133 ÷ 142)     |
| <b>OB</b> | 1/2"         | 3/4" - 16 UNF - 2B    | 17,3  | (0.6811) | 15 | (0.5905)    | 20 <sup>+1</sup><br>(177 ÷ 186)     |
| <b>OD</b> | 3/4"         | 1 1/16" - 12 UNF - 2B | 24,7  | (0.9724) | 20 | (0.7873)    | 40 <sup>+2,5</sup><br>(354 ÷ 376)   |
| <b>OF</b> | 1"           | 1 5/16" - 12 UNF - 2B | 30,5  | (1.2007) | 20 | (0.7873)    | 60 <sup>+5</sup><br>(531 ÷ 575)     |
| <b>OG</b> | 1" 1/4       | 1 5/8" - 12 UNF - 2B  | 39,1  | (1.5393) | 20 | (0.7873)    | 70 <sup>+5</sup><br>(620 ÷ 664)     |
| <b>OH</b> | 1" 1/2       | 1 7/8" - 12 UNF - 2B  | 45,3  | (1.7834) | 20 | (0.7873)    | 100 <sup>+5</sup><br>(885 ÷ 929)    |
| <b>OI</b> | 2"           | 2 1/2" - 12 UNF - 2B  | 61,3  | (2.4133) | 20 | (0.7873)    | 150 <sup>+10</sup><br>(1328 ÷ 1416) |

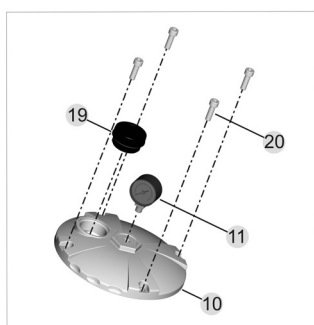
01/12.2010

## 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 inlet port.
- B Secure the filter in the tank through the holes in the body's flange (pos.2) tightening them as follows:  
 HF 554-10 and HF 554-20 = 44 lbf in (5 Nm)  
 HF 554-30 = 62 lbf in (7 Nm)  
 HF 554-40 = 88 lbf in (10 Nm)
- C Connect the piping of the return line to the inlet port using the tightening torque indicated on pages 27 and 28.
- D In the presence of secondary inlet ports, prepare the required connections.
- E If the filter has a clogging indicator (pos.11 - 12 - 13 - 14), take the protection cap off and screw the indicator in the dedicated seat, then tighten to a tightening torque of 177 lbf in (20 Nm). If the indicator is electric, complete the required connections.
- F Start the circuit for a few minutes.
- G Make sure there are no leaks.

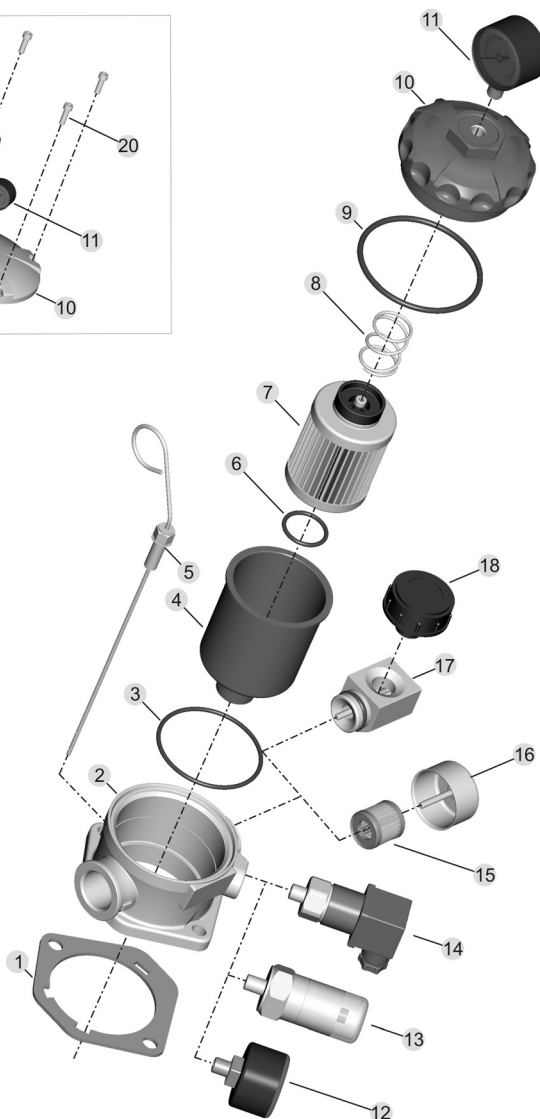


### REPLACING ELEMENT

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. Each time the filtering element gets substituted we advise to change the air filter one too (pos.15).

Proceed as follows:

- A Stop the system in "machine stopped" status.
- B Secure any shut-off valves on the hydraulic circuit.
- C Unscrew the cover's screw (pos.20)(only for dimension HF 554-30 and 40) and take off the closing cap (pos.10).
- D Remove the clogged filtering element (pos.7) and clean the bowl's bottom (pos.4) from the residual particles left during the functioning.
- E Check out that the O-rings (pos.3, 6 and 9) are not damaged, otherwise replace them and consequently position the new ones correctly..
- F In case of leakages between the tank and the filter's body (pos.2) check out the seal condition (pos.1)(or O-ring). If it is damaged replace it and consequently position the new one correctly.
- G Insert the new filtering element pre-emptively lubricating the O-Ring (pos. 6).
- H Insert the placement spring (pos.8) in the dedicated seat of the filter's cover (pos.10). Reassemble it using the fixing screws (pos.20) with a tightening torque of 44 lbf in (5 Nm).
- I Re-open the eventual valves closed before.
- L Start the machine for a few minutes.
- M Make sure there are no leaks.



| Pos. | Description        | Pos. | Description                    |
|------|--------------------|------|--------------------------------|
| 1    | Filter's body seal | 11   | Radial manometer               |
| 2    | Filter's body      | 12   | Rear manometer                 |
| 3    | Bowl O-ring        | 13   | Visual indicator               |
| 4    | Bowl               | 14   | Electric indicator             |
| 5    | Level dipstick     | 15   | Air breather element           |
| 6    | Element O-ring     | 16   | Breather protection            |
| 7    | Filtering element  | 17   | Pressurized air breather joint |
| 8    | Placement spring   | 18   | Pressurized air breather       |
| 9    | Cover's O-ring     | 19   | Filler cap                     |
| 10   | Closing cap        | 20   | Cover's fixing screws          |

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

Example: Spare parts pos. 9 - HHD10004 - Q.ty 3

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**HOW TO ORDER A COMPLETE FILTER HF 554-10 / 20**

|               |                 |             |                |              |             |            |            |            |          |
|---------------|-----------------|-------------|----------------|--------------|-------------|------------|------------|------------|----------|
| <b>1</b>      | <b>2</b>        | <b>3</b>    | <b>4</b>       | <b>5</b>     | <b>6</b>    | <b>7</b>   | <b>8</b>   |            |          |
| <b>HF 554</b> | <b>- 20.122</b> | <b>- AS</b> | <b>- FG010</b> | <b>- B17</b> | <b>- GG</b> | <b>- B</b> | <b>- S</b> | <b>- Z</b> | <b>-</b> |
| <b>9</b>      | <b>10</b>       | <b>11</b>   | <b>12</b>      | <b>13</b>    | <b>14</b>   | <b>15</b>  |            |            |          |
| <b>XA</b>     | <b>- GA</b>     | <b>- M</b>  | <b>- YC</b>    | <b>- GC</b>  | <b>- A</b>  | <b>- K</b> |            |            |          |

| 1 | Filter type                                     | CODE            |
|---|---|-----------------|
|   | See table from pag. 20 to pag. 21               | <b>HF 554..</b> |
| 2 | Filtering surface                               | CODE            |
|   | Standard  | <b>AS</b>       |
|   | Oversize  | <b>FS</b>       |
| 3 | Degree of filtration                            | CODE            |
|   | 3 [µm] Micro-fibre glass                        | <b>FG003</b>    |
|   | 6 [µm] Micro-fibre glass                        | <b>FG006</b>    |
|   | 10 [µm] Micro-fibre glass                       | <b>FG010</b>    |
|   | 25 [µm] Micro-fibre glass                       | <b>FG025</b>    |
|   | 25 [µm] Stainless steel wire mesh               | <b>MI025</b>    |
|   | 60 [µm] Stainless steel wire mesh               | <b>MI060</b>    |
|   | 125[µm] Stainless steel wire mesh               | <b>MI125</b>    |
|   | 90 [µm] Steel wire mesh                         | <b>MS090</b>    |
|   | 10 [µm] Cellulose                               | <b>SP010</b>    |
|   | 25 [µm] Cellulose                               | <b>SP025</b>    |
|   | 10 [µm] Reinforced cellulose                    | <b>RP010</b>    |
|   | 25 [µm] Reinforced cellulose                    | <b>RP025</b>    |
| 4 | By-pass setting valve                           | CODE            |
|   | With By-pass setting valve 25 [psi] (1,7 [bar]) | <b>B17</b>      |
|   | With By-pass setting valve 51 [psi] (3,5 [bar]) | <b>B35</b>      |
| 5 | Inlet port                                      | CODE            |
|   | <b>GAS threads (BSPP)</b>                       |                 |
|   | G 3/8   | <b>GC</b>       |
|   | G 1/2   | <b>GD</b>       |
|   | G 3/4   | <b>GE</b>       |
|   | G 1   | <b>GF</b>       |
|   | G 1 1/4   | <b>GG</b>       |
|   | <b>NPT threads</b>                              |                 |
|   | 3/8   | <b>NC</b>       |
|   | 1/2   | <b>ND</b>       |
|   | 3/4   | <b>NE</b>       |
|   | 1   | <b>NF</b>       |
|   | 1 1/4   | <b>NG</b>       |
|   | <b>SAE threads ODT</b>                          |                 |
|   | 3/8   | <b>OA</b>       |
|   | 1/2   | <b>OB</b>       |
|   | 3/4   | <b>OD</b>       |
|   | 1   | <b>OF</b>       |
|   | 1 1/4   | <b>OG</b>       |
| 6 | Seals   | CODE            |
|   | Buna  | <b>B</b>        |
|   | Viton   | <b>V</b>        |

| 7  | Air breather  | CODE        |
|----|---|-------------|
|    | Without   | <b>C</b>    |
|    | With breather and filter 10 [µm]  | <b>S</b>    |
|    | With breather and filter 40 [µm]  | <b>U</b>    |
|    | With pressurized breather 4.4 psi(0,3 bar) and filter 40 [µm]   | <b>J</b>    |
|    | With pressurized breather 4.4 psi(0,3 bar), pressurized suction -0.4 psi(0,03 bar) and filter 40 [µm] | <b>W</b>    |
| 8  | Magnetic set  | CODE        |
|    | Without   | <b>Z</b>    |
|    | With magnetic set   | <b>R</b>    |
| 9  | Indicators arranged   | CODE        |
|    | Without   | <b>XN</b>   |
|    | On the housing - right (1)  | <b>XA</b>   |
|    | On the housing - left (2)   | <b>XB</b>   |
|    | On the cover (3)  | <b>XD</b>   |
| 10 | Indicator's ports dimensions  | CODE        |
|    | <b>GAS Threads (BSPP)</b>   |             |
|    | G 1/8   | <b>GA</b>   |
|    | G 1/8 with plug   | <b>DA</b>   |
| 11 | Indicators  | CODE        |
|    | Without   | <b>G</b>    |
|    | Manometer - rear connection   | <b>M</b>    |
|    | Manometer - radial connection   | <b>N</b>    |
|    | Visual indicator  | <b>P</b>    |
|    | Electrical indicator  | <b>S</b>    |
| 12 | Secondary ports   | CODE        |
|    | Without   | <b>YN</b>   |
|    | On the housing - right (1)  | <b>YA</b>   |
|    | On the housing - left (2)   | <b>YB</b>   |
|    | On the housing - front-left (5) (only for HF 554-20)  | <b>YC</b>   |
|    | On the cover (4)  | <b>YD</b>   |
| 13 | Secondary ports dimensions  | CODE        |
|    | G 1/4   | <b>GB</b>   |
|    | G 3/8   | <b>GC</b>   |
|    | G 1/2   | <b>GD</b>   |
| 14 | Antisplash  | CODE        |
|    | Without   | <b>O</b>    |
|    | With Antisplash (only for HF 554-20)  | <b>A</b>    |
| 15 | Accessories   | CODE        |
|    | Without   | <b>K</b>    |
|    | With diffuser   | <b>D</b>    |
|    | With bowl extension(ex. bowl extension length 150=P150)   | <b>P...</b> |

Standard
  On request

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**HOW TO ORDER A COMPLETE FILTER HF 554-30 / 40**

|   |    |    |    |    |    |   |   |
|---|----|----|----|----|----|---|---|
| 1 | 2  | 3  | 4  | 5  | 6  | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 |   |   |

HF 554 - 30.195 - AS - FG010 - B17 - GG - B - H - Z -

XA - GA - M - YD - GE - K

|          |   |                 |
|----------|---|-----------------|
| <b>1</b> | <b>Filter type</b>                              | <b>CODE</b>     |
|          | See table from pag. 22 to pag. 23               | <b>HF 554..</b> |
| <b>2</b> | <b>Filtering surface</b>                        | <b>CODE</b>     |
|          | Standard  | <b>AS</b>       |
|          | Oversize  | <b>FS</b>       |
| <b>3</b> | <b>Degree of filtration</b>                     | <b>CODE</b>     |
|          | 3 [µm] Micro-fibre glass                        | <b>FG003</b>    |
|          | 6 [µm] Micro-fibre glass                        | <b>FG006</b>    |
|          | 10 [µm] Micro-fibre glass                       | <b>FG010</b>    |
|          | 25 [µm] Micro-fibre glass                       | <b>FG025</b>    |
|          | 25 [µm] Stainless steel wire mesh               | <b>MI025</b>    |
|          | 60 [µm] Stainless steel wire mesh               | <b>MI060</b>    |
|          | 125[µm] Stainless steel wire mesh               | <b>MI125</b>    |
|          | 90 [µm] Steel wire mesh                         | <b>MS090</b>    |
|          | 10 [µm] Cellulose                               | <b>SP010</b>    |
|          | 25 [µm] Cellulose                               | <b>SP025</b>    |
|          | 10 [µm] Reinforced cellulose                    | <b>RP010</b>    |
|          | 25 [µm] Reinforced cellulose                    | <b>RP025</b>    |
| <b>4</b> | <b>By-pass setting valve</b>                    | <b>CODE</b>     |
|          | With By-pass setting valve 25 [psi] (1,7 [bar]) | <b>B17</b>      |
|          | With By-pass setting valve 51 [psi] (3,5 [bar]) | <b>B35</b>      |
| <b>5</b> | <b>Inlet port</b>                               | <b>CODE</b>     |
|          | <b>GAS threads (BSPP)</b>                       |                 |
|          | G 1   | <b>GF</b>       |
|          | G 1 1/4   | <b>GG</b>       |
|          | G 1 1/2   | <b>GH</b>       |
|          | G 2   | <b>GL</b>       |
|          | <b>NPT threads</b>                              |                 |
|          | 1   | <b>NF</b>       |
|          | 1 1/4   | <b>NG</b>       |
|          | 1 1/2   | <b>NH</b>       |
|          | 2   | <b>NL</b>       |
|          | <b>SAE threads ODT</b>                          |                 |
|          | 1   | <b>OF</b>       |
|          | 1 1/4   | <b>OG</b>       |
|          | 1 1/2   | <b>OH</b>       |
|          | 2   | <b>OI</b>       |
| <b>6</b> | <b>Seals</b>                                    | <b>CODE</b>     |
|          | Buna  | <b>B</b>        |
|          | Viton   | <b>V</b>        |

|           |  |             |
|-----------|--|-------------|
| <b>7</b>  | <b>Filler cap</b>  | <b>CODE</b> |
|           | Without  | <b>H</b>    |
|           | With filler cap  | <b>L</b>    |
| <b>8</b>  | <b>Magnetic set</b>                                      | <b>CODE</b> |
|           | Without  | <b>Z</b>    |
|           | With magnetic set  | <b>R</b>    |
| <b>9</b>  | <b>Indicators arranged</b>                               | <b>CODE</b> |
|           | Without  | <b>XN</b>   |
|           | On the housing - right (1)                               | <b>XA</b>   |
|           | On the housing - left (2)                                | <b>XB</b>   |
|           | On the cover (3)   | <b>XD</b>   |
| <b>10</b> | <b>Indicator's ports dimensions</b>                      | <b>CODE</b> |
|           | <b>GAS threads (BSPP)</b>                                |             |
|           | G 1/8  | <b>GA</b>   |
|           | G 1/8 with plug  | <b>DA</b>   |
| <b>11</b> | <b>Indicators</b>  | <b>CODE</b> |
|           | Without  | <b>G</b>    |
|           | Manometer - rear connection                              | <b>M</b>    |
|           | Manometer - radial connection                            | <b>N</b>    |
|           | Visual Indicator   | <b>P</b>    |
|           | Electrical indicator                                     | <b>S</b>    |
| <b>12</b> | <b>Secondary ports</b>                                   | <b>CODE</b> |
|           | Senza  | <b>YN</b>   |
|           | On the housing - right (1)                               | <b>YA</b>   |
|           | On the housing - left (2)                                | <b>YB</b>   |
|           | On the cover (4)   | <b>YD</b>   |
| <b>13</b> | <b>Secondary ports dimensions</b>                        | <b>CODE</b> |
|           | G 3/8  | <b>GC</b>   |
|           | G 1/2  | <b>GD</b>   |
|           | G 3/4  | <b>GE</b>   |
|           | G 1 (only for HF 554-40)                                 | <b>GF</b>   |
|           | G 1 1/4 (only for HF 554-40)                             | <b>GG</b>   |
| <b>14</b> | <b>Accessories</b>                                       | <b>CODE</b> |
|           | Without  | <b>K</b>    |
|           | With diffuser  | <b>D</b>    |
|           | With bowl extension (ex. bowl extension lenght 150=P150) | <b>P...</b> |
|           | With level dipstick (ex. level dipstick lenght 175=L175) | <b>L...</b> |

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|  |          |  |            |
|--|----------|--|------------|
|  | Standard |  | On request |
|--|----------|--|------------|

## HOW TO ORDER A REPLACEMENT ELEMENT

|               |                 |             |                |             |              |
|---------------|-----------------|-------------|----------------|-------------|--------------|
| <b>1</b>      | <b>2</b>        | <b>3</b>    | <b>4</b>       | <b>5</b>    | <b>6</b>     |
| <b>HE K02</b> | <b>- 20.201</b> | <b>- AS</b> | <b>- FG010</b> | <b>- VM</b> | <b>- B17</b> |
|               |                 |             |                |             | <b>- B</b>   |

| 1 | Element type      | CODE            |
|---|-------------------|-----------------|
|   | See table pag. 24 | <b>HE K02..</b> |

| 2 | Filtering surface | CODE      |
|---|-------------------|-----------|
|   | Standard          | <b>AS</b> |
|   | Oversize          | <b>FS</b> |

| 3 | Degree of filtration              | CODE         |
|---|-----------------------------------|--------------|
|   | 3 [µm] Micro-fibre glass          | <b>FG003</b> |
|   | 6 [µm] Micro-fibre glass          | <b>FG006</b> |
|   | 10 [µm] Micro-fibre glass         | <b>FG010</b> |
|   | 25 [µm] Micro-fibre glass         | <b>FG025</b> |
|   | 25 [µm] Stainless steel wire mesh | <b>MI025</b> |
|   | 60 [µm] Stainless steel wire mesh | <b>MI060</b> |
|   | 125[µm] Stainless steel wire mesh | <b>MI125</b> |
|   | 90 [µm] Steel wire mesh           | <b>MS090</b> |
|   | 10 [µm] Cellulose                 | <b>SP010</b> |
|   | 25 [µm] Cellulose                 | <b>SP025</b> |
|   | 10 [µm] Reinforced cellulose      | <b>RP010</b> |
|   | 25 [µm] Reinforced cellulose      | <b>RP025</b> |

| 4 | By-pass valve               | CODE      |
|---|-----------------------------|-----------|
|   | With valve and spring       | <b>VM</b> |
|   | With valve - without spring | <b>VV</b> |

| 5 | By-pass setting valve                           | CODE       |
|---|---|------------|
|   | With By-pass setting valve 25 [psi] (1,7 [bar]) | <b>B17</b> |
|   | With By-pass setting valve 51 [psi] (3,5 [bar]) | <b>B35</b> |

| 6 | Seals | CODE     |
|---|-------|----------|
|   | Buna  | <b>B</b> |
|   | Viton | <b>V</b> |

Standard  
 On request

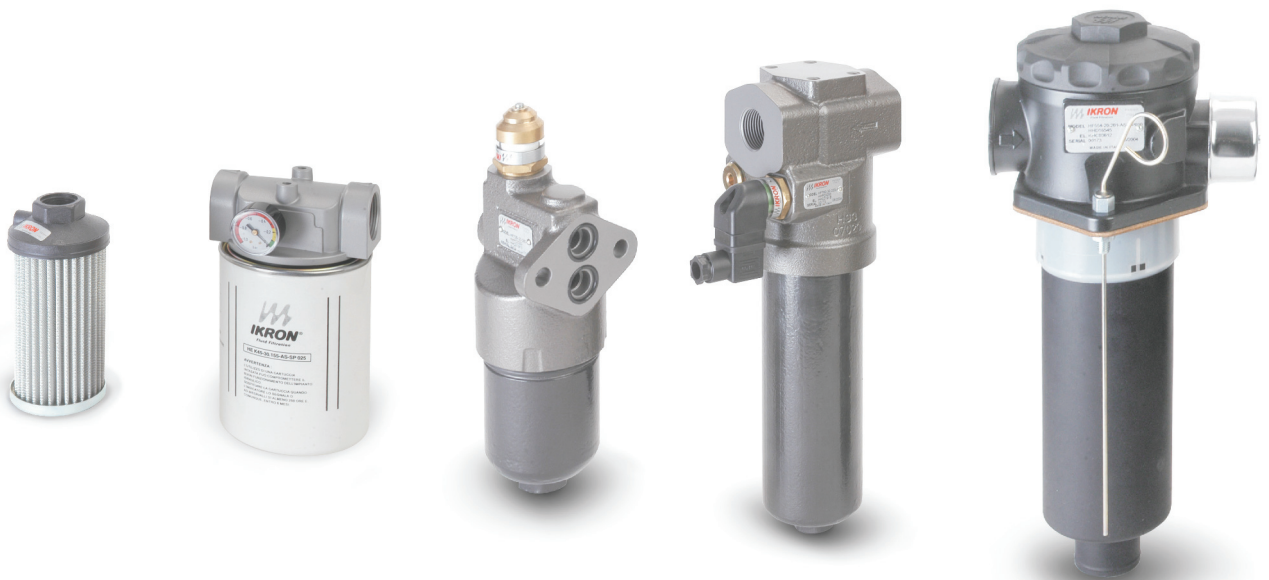
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Truck Market

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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