

TECHNICAL CHARACTERISTICS

The filters of the HF745 / HF748 series are connected to the pressure line of the circuit and protect the system's components against contaminant particles.

The standard filters are supplied with by-pass valve calibrated at 87 psi (6 bar).

For applications which need maximum protection of the system, such as servo drives or proportional controls, the filters are equipped with highly resistant filtering elements (versions "HC") and do not have a by-pass valve.

- Flow up to 58 US gpm (220 l/min)
- Maximum working pressure 4496 psi (310 bar)
- High efficiency multilayer system
- Low pressure drop

MATERIALS

| | |
|--------------|--|
| Head | Spheroidal cast iron GS 450-10 UNI ISO 1083 |
| Bowl | Steel |
| Seals | Buna - Viton |
| End cap | Zinc plated steel |
| Inner tube | Zinc plated steel |
| Filter media | Inorganic micro-fibre glass |

FLUID COMPATIBILITY

Conforming to ISO 2943 (Norm ISO 6743/4)

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

FLOW

| | |
|-----------|-----------------------|
| Flow max. | 45 US gpm (170 l/min) |
|-----------|-----------------------|

PRESSURE

| | |
|---|--|
| Working pressure | 4496 psi (310 bar) |
| Testing pressure | 6744 psi (465 bar) |
| Burst pressure | 8992 psi (620 bar) |
| Element collapse pressure rating (conforming to ISO 2941) | 290 psi (20 bar) (version LC) 3045 psi (210 bar) (version HC) |

BY-PASS VALVE

| | |
|-----------------|----------------|
| By-pass setting | 87 psi (6 bar) |
|-----------------|----------------|

06/03/2016

OPERATING TEMPERATURE

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

ENDURANCE STRENGTH

1.000.000 cycle
0 ÷ 4496 psi (0 ÷ 310 bar)

DEGREE OF FILTRATION

Multi-pass test conforming to ISO 16889 (regulation in force)
Contaminant ISO MTD - final Δp 87 psi (6 bar)

| Code | Degree of filtration | Ratio $\beta_{x(c)}$ | Percentage of efficiency |
|-------|----------------------|--------------------------|--------------------------|
| FG003 | 5 μm | $\beta_{5(c)} \geq 200$ | 99,5 % |
| FG006 | 7 μm | $\beta_{7(c)} \geq 200$ | 99,5 % |
| FG010 | 10 μm | $\beta_{10(c)} \geq 200$ | 99,5 % |
| FG025 | 21 μm | $\beta_{21(c)} \geq 200$ | 99,5 % |

Multi-pass test conforming to ISO 4572 (previous regulation)
Contaminant ACFTD - final Δp 87 psi (6 bar)

| Code | Degree of filtration | Ratio β_x | Percentage of efficiency |
|-------|----------------------|-----------------------|--------------------------|
| FG003 | 3 μm | $\beta_3 \geq 200$ | 99,5 % |
| FG006 | 6 μm | $\beta_6 \geq 200$ | 99,5 % |
| FG010 | 10 μm | $\beta_{10} \geq 200$ | 99,5 % |
| FG025 | 25 μm | $\beta_{25} \geq 200$ | 99,5 % |

INDICATORS (3)

- Visual differential indicator
- Visual electrical differential indicator
- Visual electrical differential indicator with thermostat

(3) Characteristics and dimensions pag. 14

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 Δp = Δp in housing + Δp in element

In filters of series HF 745 in normal working conditions, the total Δp must not be more than 11 psi (0,75 bar) whereas, for use in harsh conditions, it must be within 14.5 ÷ 22 psi (1 ÷ 1,5 bar).

To establish the values of pressure drop involved, the following pages provide some diagrams with curves referred to the use of mineral oils ISO VG46 with kinematic viscosity of 120 SSU (30 cSt) and density of 7.29 lb/gal (0,856 kg/dm³).

Calculation example

Filter HF745-20.106-AS-FG010-LC-B60-GD-B-DD-G

Flow rate= 12 US gpm (45 l/min)

Kinematic viscosity: 120 SSU (30 cSt)

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

Filtering degree: 10 µm

Data obtained from the diagrams:

Δp in housing = 2.00 psi (0,14 bar) (page 4)

Δp in element = 7.25 psi (0,50 bar) (page 5)

Total Δp = 2.00 + 7.25 = 9.25 psi (0,64 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:

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

Or

$$\Delta p \text{ in housing} = \frac{\Delta p \text{ of diagram (bar)}}{0.856 \text{ (kg/dm}^3\text{)}} \cdot \text{Oil density (kg/dm}^3\text{)} \quad [\text{bar}]$$

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:

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

Or

$$\Delta p \text{ element} = \Delta p \text{ of diagram (bar)} \cdot \frac{\text{Oil density (kg/dm}^3\text{)}}{0.856 \text{ (kg/dm}^3\text{)}} \cdot \frac{\text{Oil viscosity (cSt)}}{30 \text{ (cSt)}} \quad [\text{bar}]$$

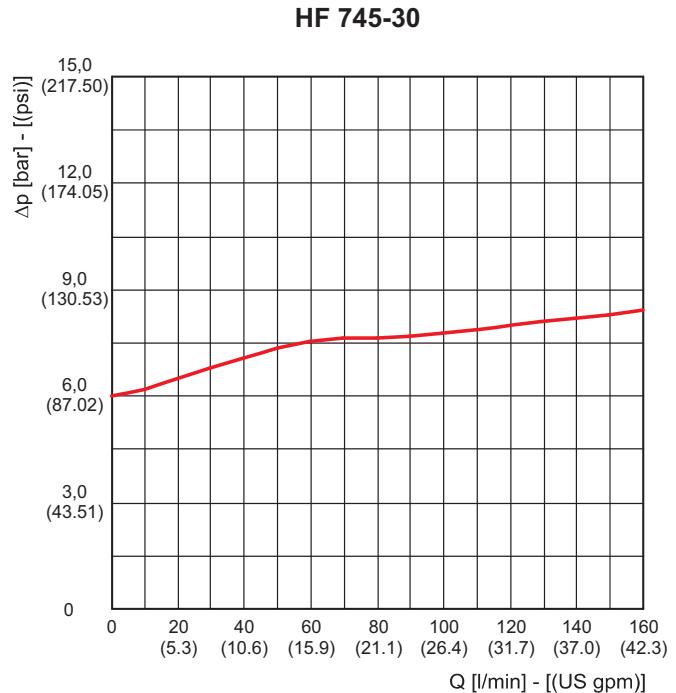
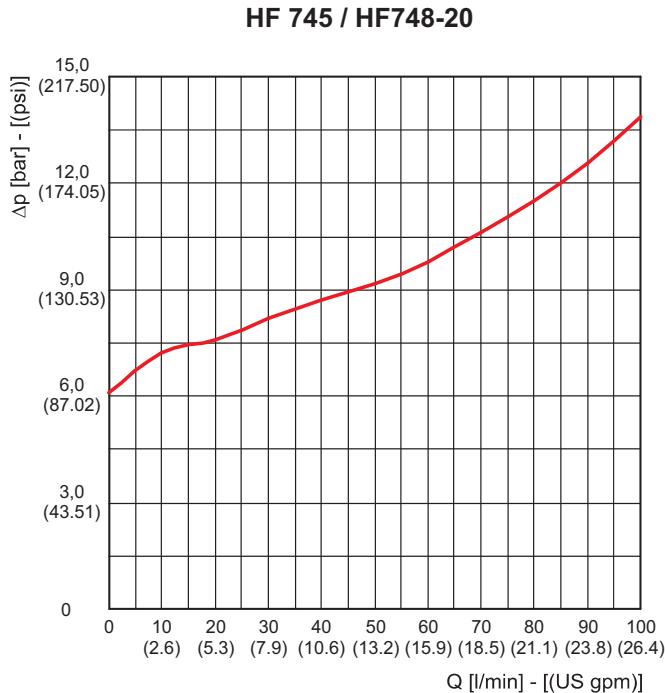
Now you sum the values of the pressure drop of the housing to the value of the pressure drop of the filtering element, always making sure the total Δp does not exceed the pressure limit of 11 psi (0,75 bar).

06/03/2016

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 ISO VG46
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



PRESSURE DROP CURVES THROUGH THE HOUSING

The curves are obtained in the following conditions:

Mineral oil type ISO VG46

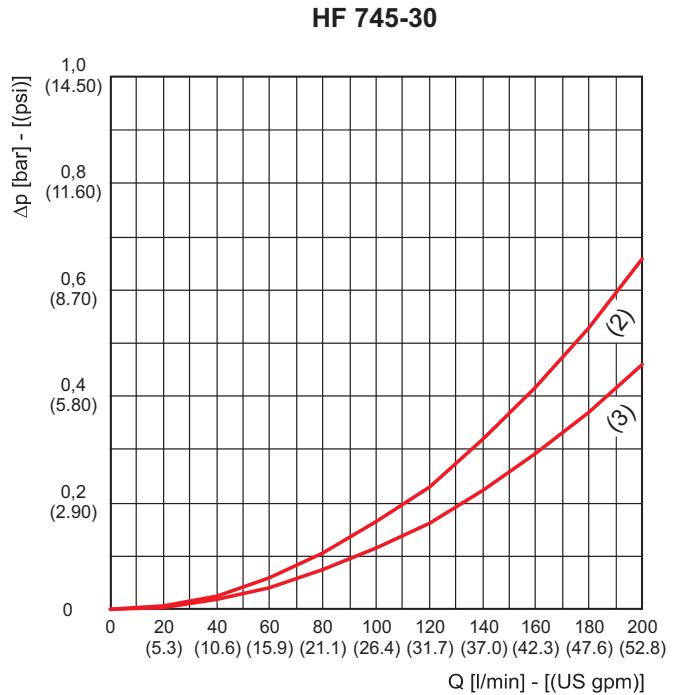
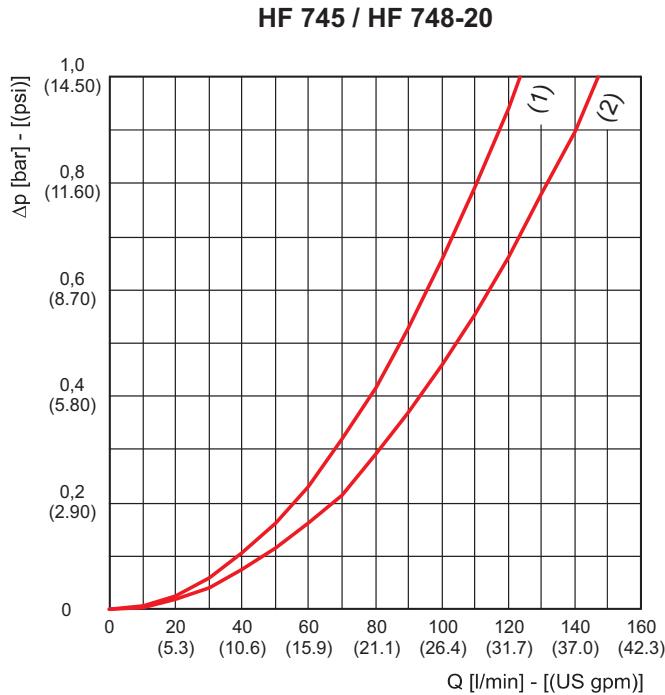
Kinematic viscosity 120 SSU (30 cSt)

Density 7.29 lb/gal (0,856 kg/dm³).

(1) G 1/2

(2) G 3/4

(3) G 1



PRESSURE DROP CURVES THROUGH THE ELEMENT HEK85-20

The curves are obtained in the following conditions:

Mineral oil type ISO VG46

Kinematic viscosity 120 SSU (30 cSt)

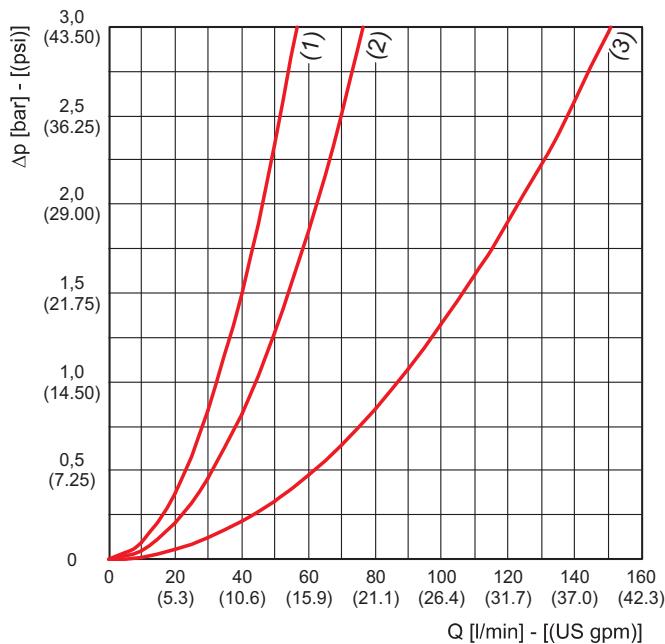
Density 7.29 lb/gal (0,856 kg/dm³).

(1) HEK85-20.080

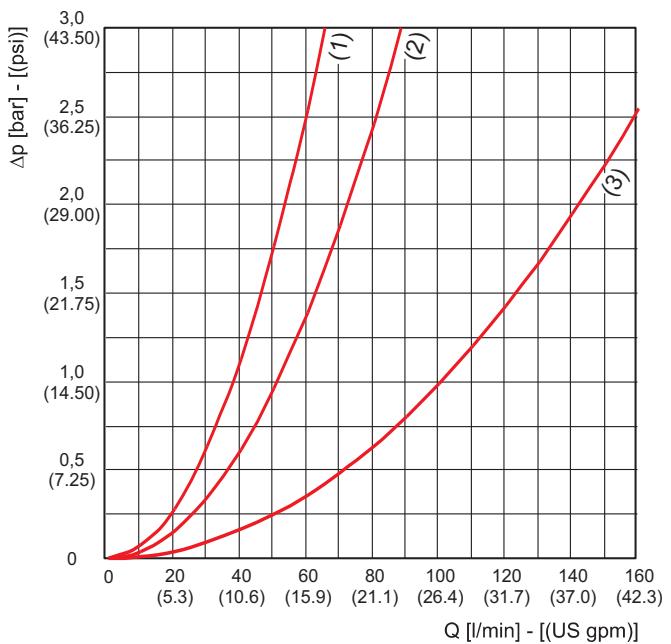
(2) HEK85-20.106

(3) HEK85-20.203

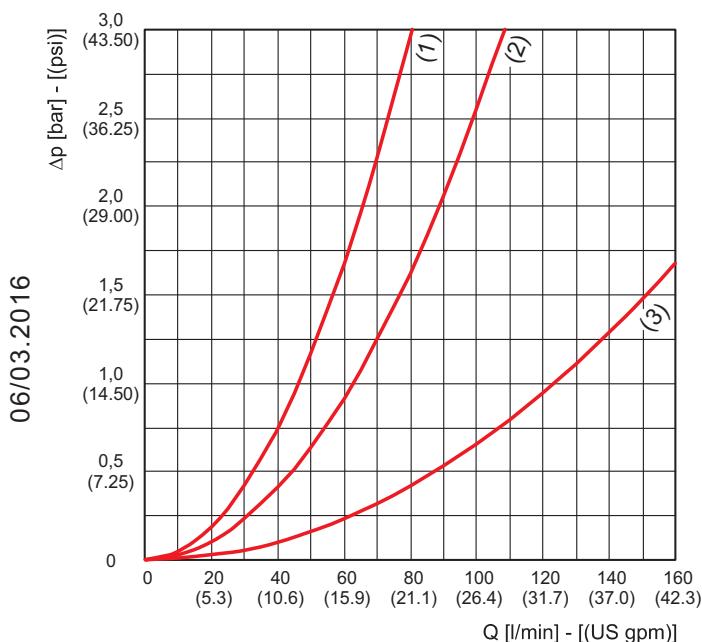
FG003



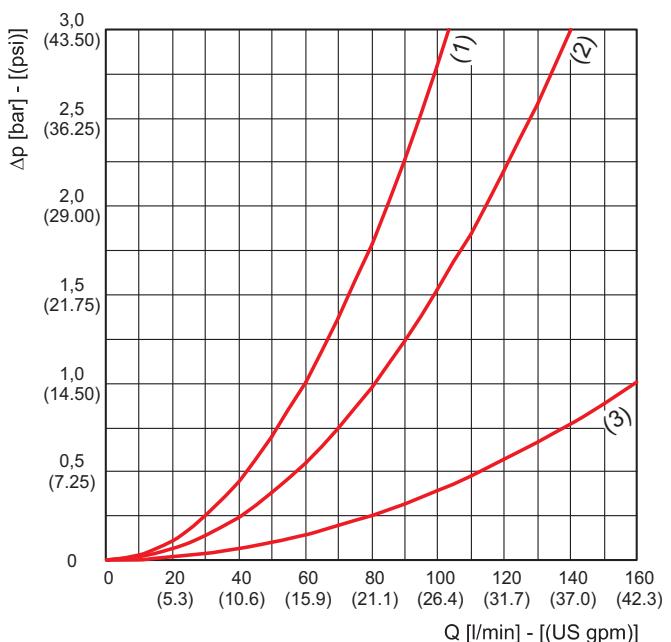
FG006



FG010



FG025



06/03/2016

PRESSURE DROP CURVES THROUGH THE ELEMENT HEK85-30

The curves are obtained in the following conditions:

Mineral oil type ISO VG46

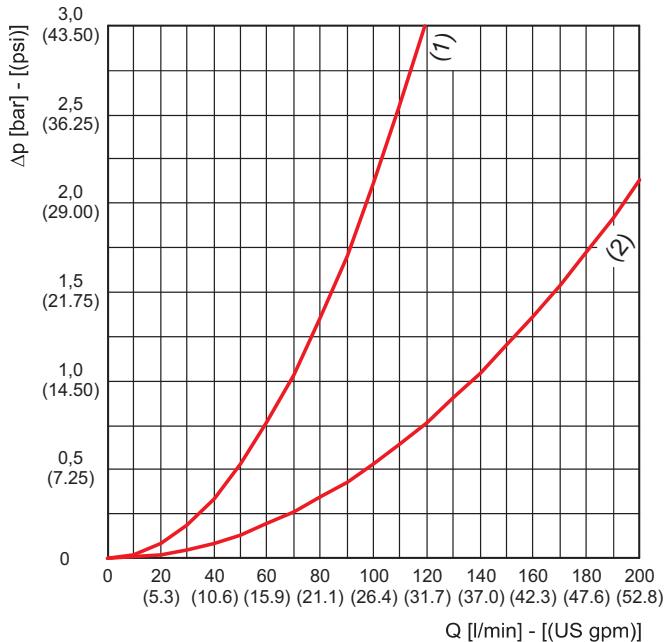
Kinematic viscosity 120 SSU (30 cSt)

Density 7.29 lb/gal (0,856 kg/dm³).

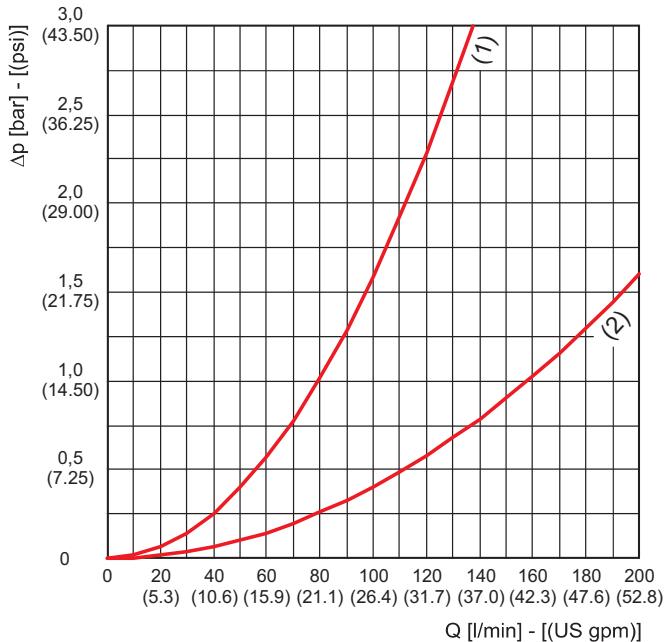
(1) HEK85-30.115

(2) HEK85-30.223

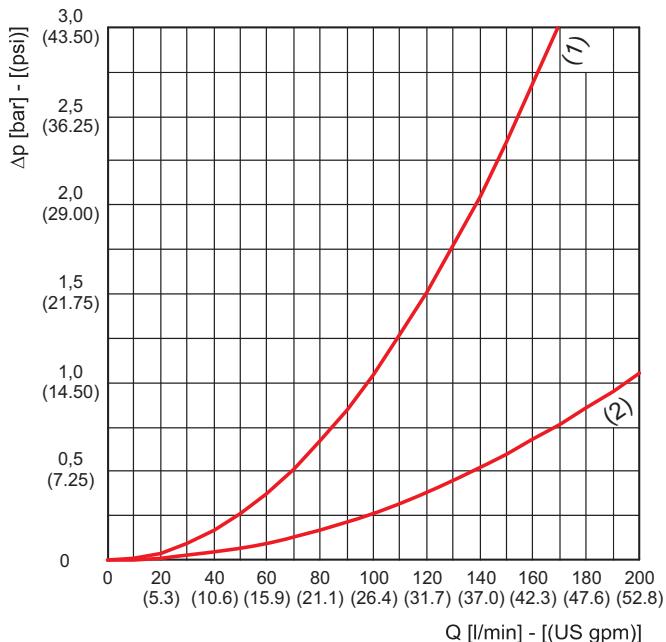
FG003



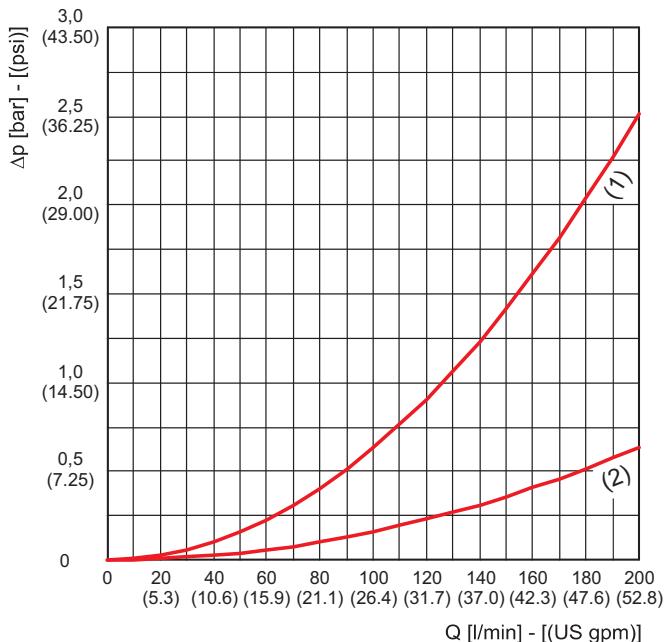
FG006



FG010



FG025



06/03/2016

PRESSURE DROP CURVES THROUGH THE ELEMENT HEK86-20

The curves are obtained in the following conditions:

Mineral oil type ISO VG46

Kinematic viscosity 120 SSU (30 cSt)

Density 7.29 lb/gal (0,856 kg/dm³).

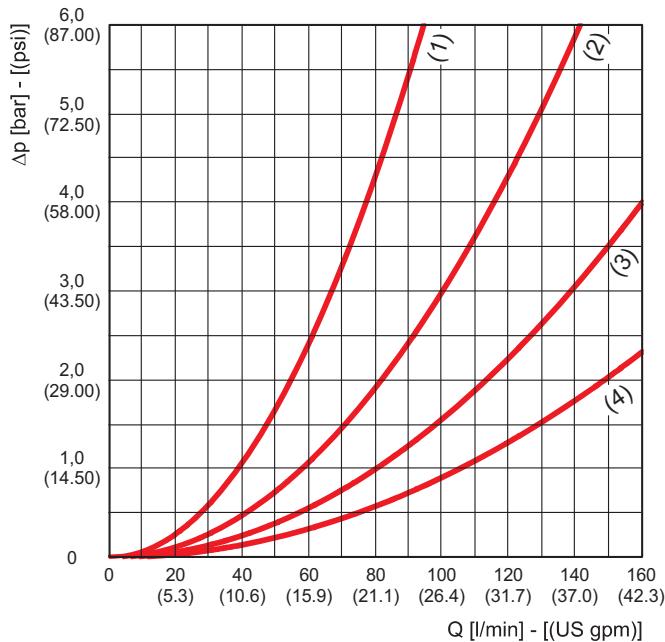
(1) HEK86-20.074

(2) HEK86-20.111

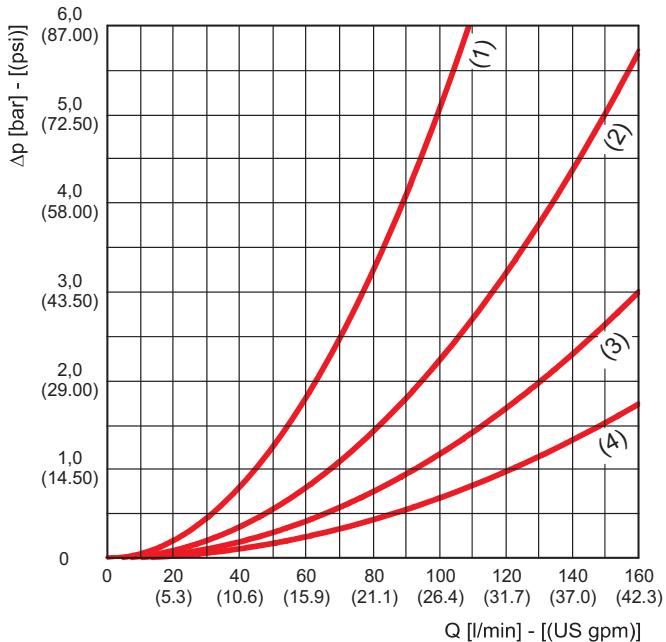
(3) HEK86-20.153

(4) HEK86-20.201

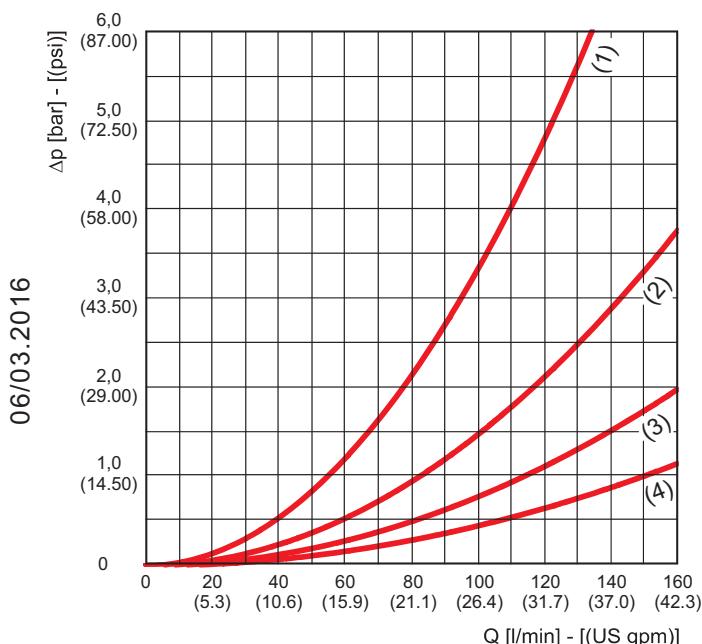
FG003



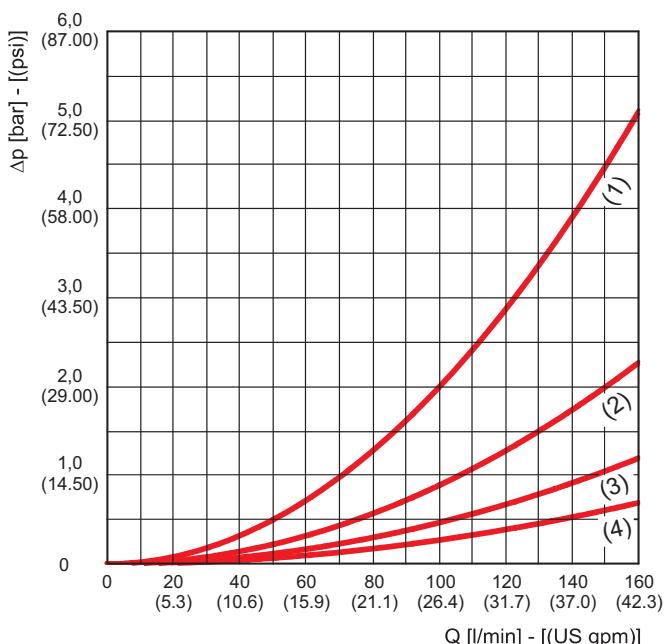
FG006



FG010



FG025



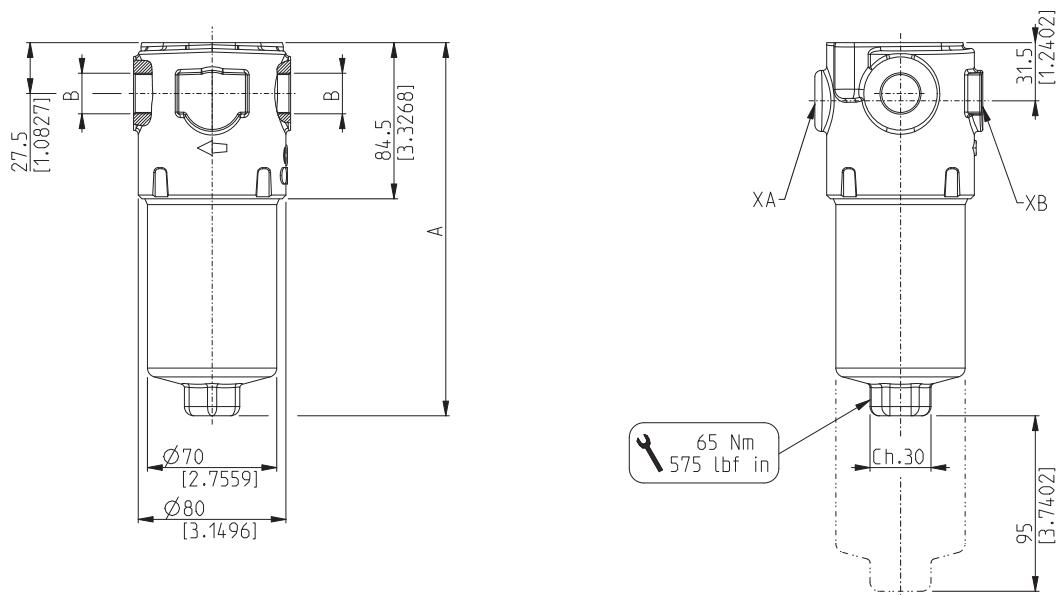
FLOW

| Filter type | Ports IN/OUT | | | Degree of filtration | | | | | | | |
|----------------------|--------------|---------|-----------------|--|---------------|---------------|---------------|---|---------------|---------------|---------------|
| | | | | Flow US gpm (l/min) Δp= 11 psi (0.75 bar) | | | | Flow US gpm (l/min) Δp= 21.8 psi (1.5 bar) | | | |
| | GAS (BSPP) | NPT | SAE J514b | FG003 | FG006 | FG010 | FG025 | FG003 | FG006 | FG010 | FG025 |
| HF 745-20.080 | G 1/2 | 1/2 NPT | 3/4-16 UNF-2B | 6.6 (25) | 7.9 (30) | 9.2 (35) | 11.9 (45) | 9.2 (35) | 11.9 (45) | 14.5 (55) | 17.2 (65) |
| | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 6.6 (25) | 7.9 (30) | 9.2 (35) | 11.9 (45) | 10.6 (40) | 11.9 (45) | 14.5 (55) | 17.2 (65) |
| HF 745-20.106 | G 1/2 | 1/2 NPT | 3/4-16 UNF-2B | 9.2 (35) | 10.6 (40) | 13.2 (50) | 15.9 (60) | 13.2 (50) | 14.5 (55) | 18.5 (70) | 22.5 (85) |
| | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 9.2 (35) | 10.6 (40) | 13.2 (50) | 15.9 (60) | 14.5 (55) | 15.9 (60) | 19.8 (75) | 22.5 (85) |
| HF 745-20.203 | G 1/2 | 1/2 NPT | 3/4-16 UNF-2B | 15.9 (60) | 17.2 (65) | 19.8 (75) | 22.5 (85) | 22.5 (85) | 25.1 (95) | 29.1 (110) | 31.7 (120) |
| | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 17.2 (65) | 18.5 (70) | 21.1 (80) | 25.1 (95) | 25.1 (95) | 27.7 (105) | 30.4 (115) | 34.3 (130) |
| HF 745-30.115 | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 15.9 (60) | 17.2 (65) | 21.1 (80) | 26.4 (100) | 21.1 (80) | 23.8 (90) | 29.1 (110) | 34.3 (130) |
| | G 1 | 1 NPT | 1 5/16-12 UN-2B | 15.9 (60) | 18.5 (70) | 22.5 (85) | 27.7 (105) | 21.1 (80) | 23.8 (90) | 29.1 (110) | 37.0 (140) |
| HF 745-30.223 | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 27.7 (105) | 31.7 (120) | 35.7 (135) | 40.9 (155) | 39.6 (150) | 44.9 (170) | 50.2 (190) | 55.5 (210) |
| | G 1 | 1 NPT | 1 5/16-12 UN-2B | 29.1 (110) | 33.0 (125) | 38.3 (145) | 44.9 (170) | 39.6 (150) | 44.9 (170) | 52.8 (200) | 58.1 (220) |

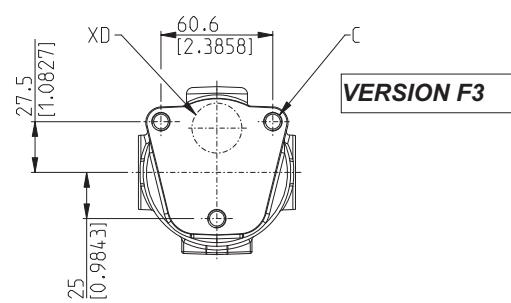
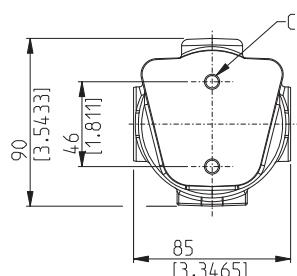
| Filter type | Ports IN/OUT | | | Degree of filtration | | | | | | | |
|----------------------|--------------|---------|-----------------|--|--------------|--------------|---------------|---|---------------|---------------|---------------|
| | | | | Flow US gpm (l/min) Δp= 11 psi (0.75 bar) | | | | Flow US gpm (l/min) Δp= 21.8 psi (1.5 bar) | | | |
| | GAS (BSPP) | NPT | SAE J514b | FG003 | FG006 | FG010 | FG025 | FG003 | FG006 | FG010 | FG025 |
| HF 748-20.074 | G 1/2 | 1/2 NPT | 3/4-16 UNF-2B | 9.2 (35) | 10.6 (40) | 11.9 (45) | 14.5 (55) | 10.6 (40) | 13.2 (50) | 15.9 (60) | 19.8 (75) |
| | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 9.2 (35) | 10.6 (40) | 11.9 (45) | 14.5 (55) | 11.9 (45) | 14.5 (55) | 17.2 (65) | 21.1 (80) |
| HF 748-20.111 | G 1/2 | 1/2 NPT | 3/4-16 UNF-2B | 11.9 (45) | 14.2 (55) | 15.9 (60) | 18.5 (70) | 15.9 (60) | 18.5 (70) | 22.5 (85) | 26.4 (100) |
| | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 11.9 (45) | 14.2 (55) | 17.2 (65) | 19.8 (75) | 17.2 (65) | 19.8 (75) | 23.8 (90) | 27.7 (105) |
| HF 748-20.153 | G 1/2 | 1/2 NPT | 3/4-16 UNF-2B | 15.9 (60) | 17.2 (65) | 19.8 (75) | 22.5 (85) | 21.1 (80) | 23.8 (90) | 27.7 (105) | 31.7 (120) |
| | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 17.2 (65) | 18.5 (70) | 21.1 (80) | 23.8 (90) | 22.5 (85) | 25.1 (95) | 29.1 (110) | 35.7 (135) |
| HF 748-20.201 | G 1/2 | 1/2 NPT | 3/4-16 UNF-2B | 18.5 (70) | 19.8 (75) | 22.5 (85) | 25.1 (95) | 26.4 (100) | 27.7 (105) | 31.7 (120) | 34.3 (130) |
| | G 3/4 | 3/4 NPT | 1 1/16-12 UN-2B | 19.8 (70) | 22.5 (80) | 25.1 (95) | 27.7 (105) | 27.7 (105) | 30.4 (115) | 34.3 (130) | 38.3 (145) |

06/03/2016

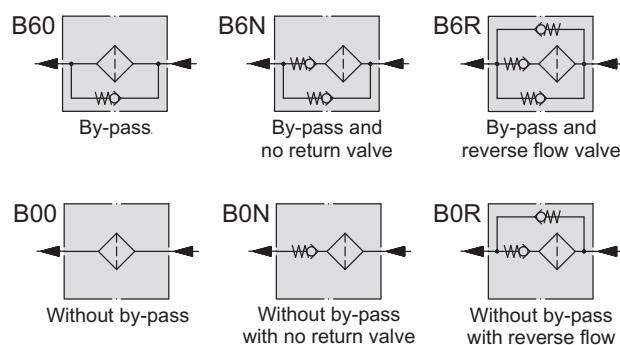
HF745-20 DIMENSIONS



VERSION F2



VERSION F3



ICAT_018_001_HF745

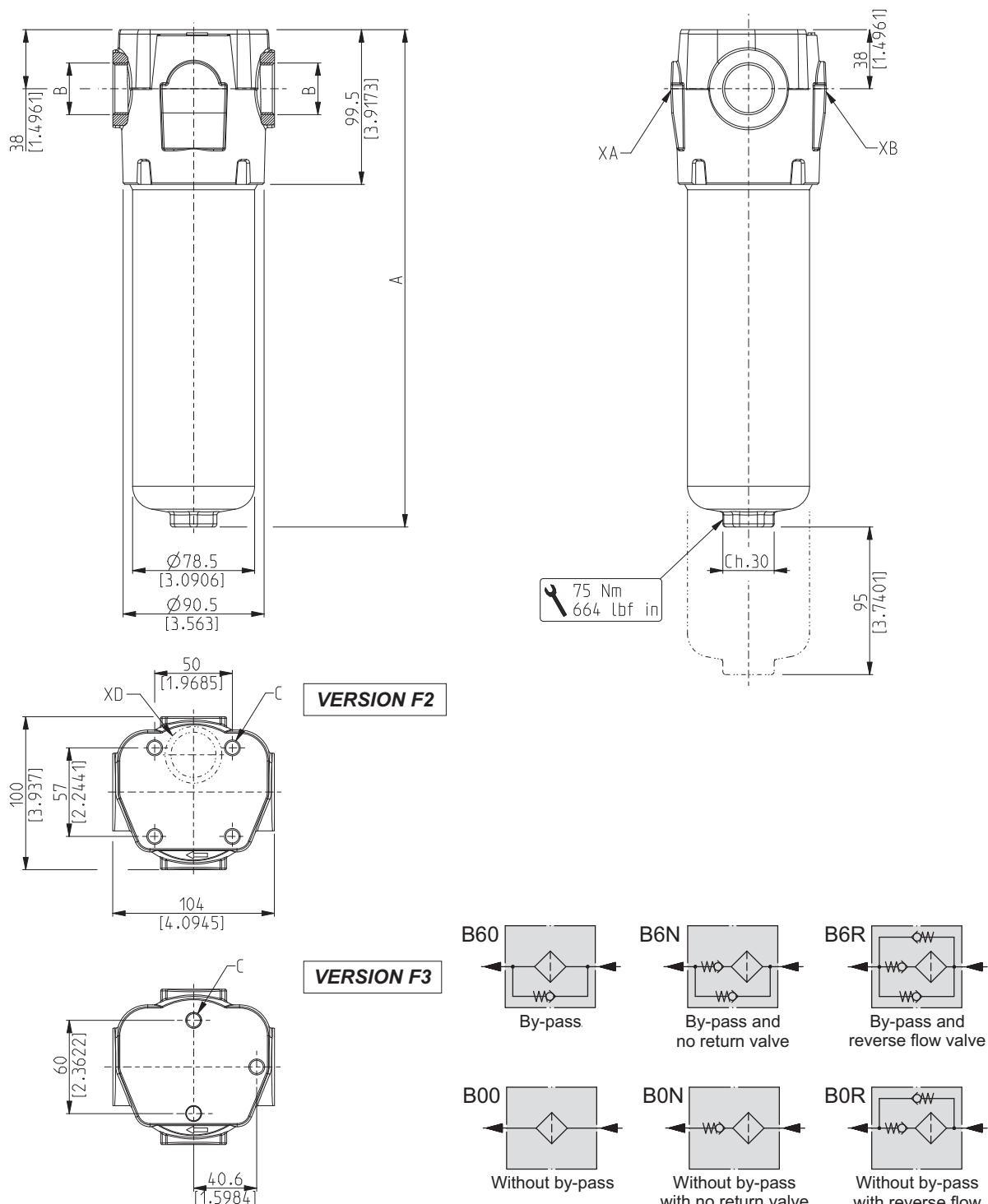
06/03/2016

| Filter type | Weight kg (lbs) | A mm (in) | B (Ports) (1) | C (2) |
|---------------------|-----------------------|------------------|---------------|-------------------|
| HF745-20.080 | 3,8 (8.38) | 173 (6.8110) | GAS (BSPP) | M 8 (drilling F2) |
| HF745-20.106 | 4,2 (9.26) | 199 (7.8346) | NPT | M10 (drilling F3) |
| HF745-20.203 | 5,7 (12.57) | 299 (11.7716) | SAE J514b | |

(1) Ports dimensions: see pages 15 ÷ 16

(2) Are available the respective threads 5/16-18 UNC-2B for drilling F2 and 3/8-16 UNC-2B for drilling F3.
On request, mounting holes can have special threads and different locations between center lines.

HF745-30 DIMENSIONS



ICAT_018_018_HF745

| Filter type | Weight | A | B (ports) (1) | C (2) |
|--------------|----------------|------------------|------------------|-------|
| | kg (lbs) | mm (in) | Availability | |
| HF745-30.115 | 6,0 (13.23) | 213 (8.3858) | GAS (BSPP) | |
| HF745-30.223 | 7,8 (17.20) | 320 (12.5984) | NPT SAE J514b | M 10 |

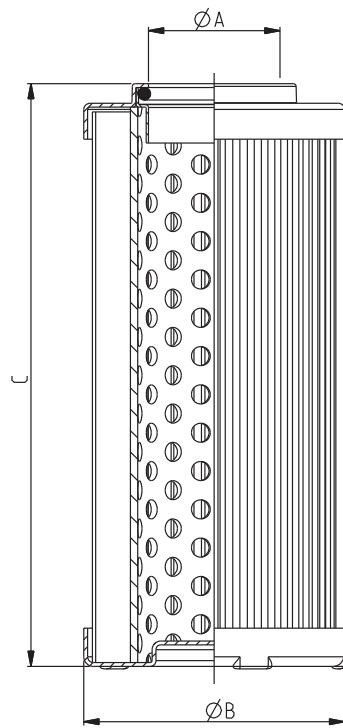
(1) Ports dimensions: see pages 15 + 16

(2) The respective threads 3/8-16 UNC-2B are available.

On request, mounting holes can have special threads and different locations between center lines.

06/03/2016

ELEMENTS DIMENSIONS FOR HF745



ICAT_011_004_HF760

Filtering elements with Δp - collapse pressure of 3046 psi (210 bar) are also available (please consult our technical department).

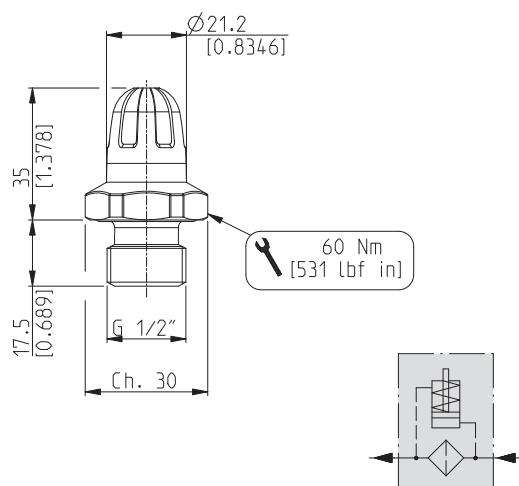
Technical data for (MS) version elements are available on request.

| Element type | $\varnothing A$ mm (in) | $\varnothing B$ mm (in) | C mm (in) | Filtering surface (AS) cm^2 (in^2) | Dirt holding capacity (ISO MTD) $\Delta p = 72.5 \text{ psi (5 bar)}$ | | | |
|---------------------|-------------------------------|-------------------------------|-----------------|---|--|----------------------|----------------------|----------------------|
| | | | | | FG003 gr (lbs) | FG006 gr (lbs) | FG010 gr (lbs) | FG025 gr (lbs) |
| HEK85-20.080 | | | | 87 (3.4252) | 415 (64.3251) | 2,3 (0.0051) | 3,0 (0.0066) | 3,3 (0.0073) |
| HEK85-20.106 | 25,5 (1.0039) | 46,5 (1.8307) | | 113 (4.4488) | 560 (86.8002) | 3,1 (0.0069) | 4,0 (0.0089) | 4,5 (0.0099) |
| HEK85-20.203 | | | | 210 (8.2677) | 1103 (170.9653) | 6,2 (0.0136) | 7,9 (0.0175) | 8,8 (0.0195) |
| HEK85-30.115 | | | | 122 (4.8031) | 908 (140.7403) | 5,1 (0.0112) | 6,5 (0.0144) | 7,3 (0.0160) |
| HEK85-30.223 | 27,5 (1.0827) | 54,5 (2.1457) | | 230 (9.0551) | 1808 (280.2405) | 10,1 (0.0223) | 13,0 (0.0287) | 14,5 (0.0319) |
| | | | | | | | | 21,0 (0.0462) |

06/03/2016

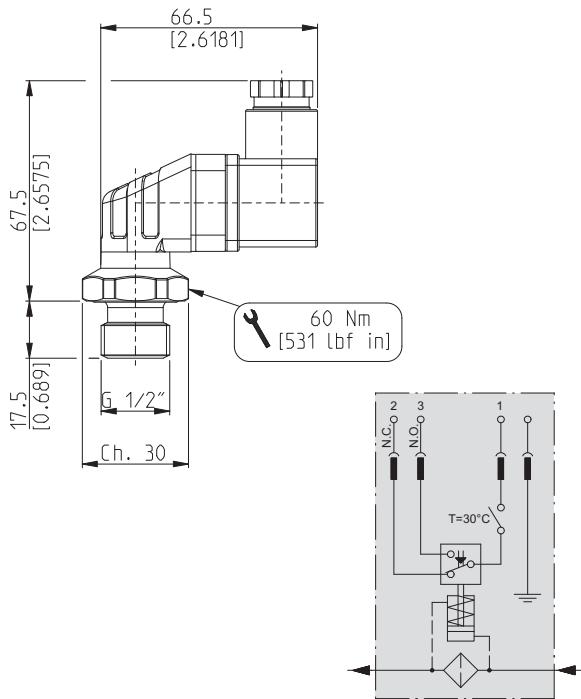
INDICATORS

VISUAL DIFFERENTIAL

Code: **H**


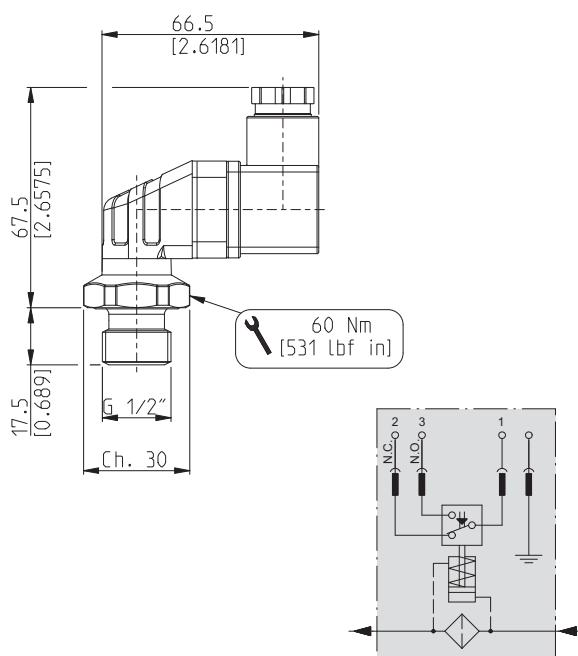
| | |
|-------------------------------|--|
| Differential pressure setting | 116 psi (8 bar) without by-pass 72.5 psi (5 bar) with by-pass |
|-------------------------------|--|

VISUAL ELECTRICAL DIFFERENTIAL WITH THERMOSTAT

Code: **W**


ICAT_011_006_HF760

VISUAL ELECTRICAL DIFFERENTIAL

Code: **U**


ICAT_011_007_HF760

| | |
|-------------------------------|--|
| Differential pressure setting | 116 psi (8 bar) without by-pass 72.5 psi (5 bar) with by-pass |
| Max. working voltage | 250 VAC 30 VCC |
| Max. working current | 3 A (resistivity) 3 A (inductive) |
| Protection class | IP 66 - Cable clamp PG 11 |
| Min. function temperature | 86 °F (30 °C) |

06/03/2016

PORTS IN/OUT

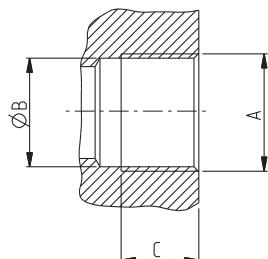
| Filter type | PORTS TYPE | | | |
|------------------|--------------|------|-----|-----|
| | Nominal size | Gas | NPT | SAE |
| | | BSPP | ODT | |
| HF745-20 | 1/2" | GD | ND | OB |
| HF748-20 | 3/4" | GE | NE | OD |
| HF 745-30 | 3/4" | GE | NE | OD |
| | 1" | GF | NF | OF |

GAS STRAIGHT THREAD PORTS

BSPP

British standard pipe parallel (55°) conforms to UNI - ISO 228

ICAT_011_008_HF760



06/03/2016

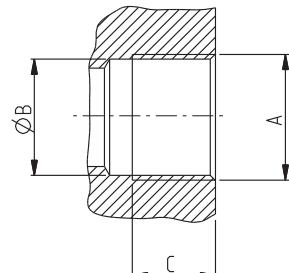
| CODE | Nominal size | A | $\varnothing B$ | C | |
|-----------|--------------|-------|------------------|------------------|-------------------------------------|
| | | | mm (in) | mm (in) | Nm (lbf in) |
| GD | 1/2" | G 1/2 | 19,0 (0.7480) | 16,0 (0.6299) | 50 ^{+2,5} (443 ÷ 465) |
| GE | 3/4" | G 3/4 | 24,5 (0.9646) | 18,0 (0.7087) | 90 ⁺⁵ (797 ÷ 841) |
| GF | 1" | G 1 | 30,5 (1.2008) | 22,0 (0.8661) | 130 ⁺¹⁰ (1151 ÷ 1239) |

PORTS IN/OUT

NPT STRAIGHT THREAD PORTS

NPT

NPT thread (60°) conforms to ANSI - ASME B1-20

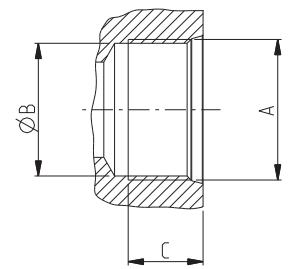


| CODE | Nominal size | A | \varnothing B | | C | |
|-----------|--------------|---------|------------------|------------|------------------|-------------------------------------|
| | | | mm (in) | mm (in) | | |
| ND | 1/2" | 1/2 NPT | 18,0 (0.7087) | | 13,5 (0.5315) | 45 ^{+2,5} (398 ÷ 420) |
| NE | 3/4" | 3/4 NPT | 23,5 (0.9252) | | 14,0 (0.5512) | 75 ⁺⁵ (664 ÷ 708) |
| NF | 1" | 1 NPT | 29,5 (1.1614) | | 17,5 (0.6889) | 120 ⁺¹⁰ (1062 ÷ 1151) |

SAE STRAIGHT THREAD PORTS J514

ODT

American straight thread UNC-UNF 60° conforms to ANSI B 1.1



| CODE | Nominal size | A | \varnothing B | | C | |
|-----------|--------------|----------------------|------------------|------------|------------------|-------------------------------------|
| | | | mm (in) | mm (in) | | |
| OB | 1/2" | 3/4" - 16 UNF - 2B | 17,3 (0.6811) | | 15,0 (0.5906) | 45 ^{+2,5} (398 ÷ 420) |
| OD | 3/4" | 1 1/16" - 12 UN - 2B | 24,7 (0.9724) | | 20,0 (0.7874) | 120 ⁺¹⁰ (1062 ÷ 1151) |
| OF | 1" | 1 5/16" - 12 UN - 2B | 31,0 (1.2205) | | 20,0 (0.7874) | 170 ⁺¹⁰ (1505 ÷ 1593) |

06/03/2016

ASSEMBLY AND REPLACING ELEMENT INSTRUCTIONS

ASSEMBLY

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

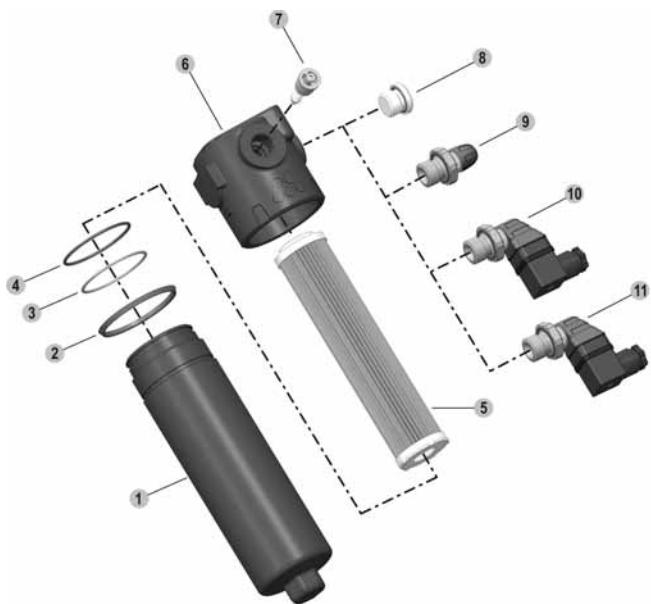
- A Secure the filter to the attachment device via the threaded holes in the head (pos.6).
- B Take the protection caps off the oil inlet and outlet.
- C Connect the circuit pipes to the filter, checking the flow direction, which is pointed out by the arrow on the head (pos.6).
- D If the clogging indicator (pos.9 - 10 - 11) is immediately mounted in the filter, take the protection cap off and screw the indicator in the dedicated seat, then tighten to a tightening torque of 531 lbf in (60 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 hours 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 cartridge must be replaced, remembering that this procedure involves the drainage of hydraulic oil and therefore you need to prepare suitable containers to collect the oil.

Proceed as follows:

- A Stop the system in "Machine stopped" status.
- B Secure any shut-off valves on the hydraulic circuit.
- C Unscrew the filter container (pos.1).
- D Remove the clogged filtering cartridge (pos.5), making sure no residual particles have settled on the bowl bottom (pos.1).
- E Make sure the seal (pos.2), the O-ring (pos.4) and the anti-extrusion ring (pos.3) are not damaged, otherwise replace them and consequently position the new ones correctly.
- F Insert the new filtering cartridge, lubricating the sealing O-ring beforehand.
- G Screw the container tight (pos.1) making sure the threading is screwed correctly. Tighten to a tightening torque as indicated on pages 9, 10 and 11.
- H Start the machine for a few minutes.
- I Make sure there are no leaks.



Pos. Description

| | |
|----|--|
| 1 | Filter bowl |
| 2 | External O-Ring |
| 3 | Anti-extrusion ring |
| 4 | Sealing O-Ring |
| 5 | Filtering element |
| 6 | Filter head |
| 7 | By-pass valve |
| 8 | Sealing cap |
| 9 | Visual differential indicator |
| 10 | Visual electrical differential indicator |
| 11 | Visual electrical differential indicator with thermostat |

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

Example: Spare part pos. 4 - HHP51430 - Qty 2

HOW TO ORDER A COMPLETE FILTER

1 2 3 4 5 6 7 8 9 10

HF745 - 20.080 - AS - FG010 - LC - B60 - GD - B - XA - G - F2
HF748

| 1 | Filter type | CODE |
|---|---|---------------|
| | See table from pag. 9 to pag. 11 | HF74.. |
| 2 | Filtering surface | CODE |
| | Standard | AS |
| | Multilayer | MS |
| 3 | Degree of filtration | CODE |
| | 3 [μm] Micro-fibre glass | FG003 |
| | 6 [μm] Micro-fibre glass | FG006 |
| | 10 [μm] Micro-fibre glass | FG010 |
| | 25 [μm] Micro-fibre glass | FG025 |
| 4 | Δp collaps pressure | CODE |
| | 290 [psi] (20 [bar]) | LC |
| | 3046 [psi] (210 [bar]) | HC |
| 5 | Valves | CODE |
| | By-pass setting 87 [psi] (6 [bar]) | B60 |
| | By-pass setting 87 [psi] (6 [bar]) and no returne valve | B6N |
| | By-pass setting 87 [psi] (6 [bar]) and reverse flow valve | B6R |
| | Without | B00 |
| | Without by-pass, with no returne valve | B0N |
| | Without by-pass, with reverse flow valve | B0R |
| 6 | Ports IN/OUT | CODE |
| | Threads GAS (BSPP) | |
| | G 1/2 | GD |
| | G 3/4 | GE |
| | G 1 | GF |
| | Threads NPT | |
| | 1/2 | ND |
| | 3/4 | NE |
| | 1 | NF |
| | Threads SAE ODT | |
| | 1/2 | OB |
| | 3/4 | OD |
| | 1 | OF |

| 7 | Seals | CODE |
|----|---|-----------|
| | Buna | B |
| | Viton | V |
| 8 | Indicator ports | CODE |
| | Right side arranged | XA |
| | Left side arranged | XB |
| | Upper side arranged (only for HF745/748-20...F3 and HF745-30...F2) | XD |
| 9 | Indicator | CODE |
| | Without indicator, with plug | G |
| | Visual differential indicator | H |
| | Visual electrical differential indicator | U |
| | Visual electrical differential indicator with thermostat | W |
| 10 | Drilling | CODE |
| | 2 Holes M8 (HF745/HF748-20) | F2 |
| | 4 Holes M10 (HF745-30) | |
| | 3 Holes M10 | F3 |

Standard
 On request

HOW TO ORDER A REPLACEMENT ELEMENT

| 1 | 2 | 3 | 4 | 5 |
|----------------|------------|----|-----------|--------|
| HEK85 HEK86 | - 20.080 - | AS | - FG010 - | LC - B |

| 1 | Element type | CODE |
|-------------------|--------------|----------|
| See table pag. 11 | | HEK85... |
| See table pag. 13 | | HEK86... |

| 2 | Filtering surface | CODE |
|------------|-------------------|------|
| Standard | | AS |
| Multilayer | | MS |

| 3 | Degree of filtration | CODE |
|---------|----------------------|-------|
| 3 [µm] | Micro-fibre glass | FG003 |
| 6 [µm] | Micro-fibre glass | FG006 |
| 10 [µm] | Micro-fibre glass | FG010 |
| 25 [µm] | Micro-fibre glass | FG025 |

| 4 | Δp collapse pressure | CODE |
|------------------------|----------------------|------|
| 290 [psi] (20 [bar]) | | LC |
| 3046 [psi] (210 [bar]) | | HC |

| 5 | Seals | CODE |
|-------|-------|------|
| Buna | | B |
| Viton | | V |

Standard

On request