# FPB-MHT
## PRESSURE FILTERS

### MATERIALS

Head: Cast iron
Bowl: Steel
Bypass valve: Steel
Seals: NBR Nitrile (FKM - on request fluoroelastomer)
Indicator housing: Brass

### PRESSURE

Max working: 42 MPa (420 bar)
Collapse, differential for the filter element (ISO 2941):
series standard 2 MPa (20 bar)
series H+ 21 MPa (210 bar)

### BYPASS VALVE

Setting: 600 kPa (6 bar) ± 10%

### WORKING TEMPERATURE

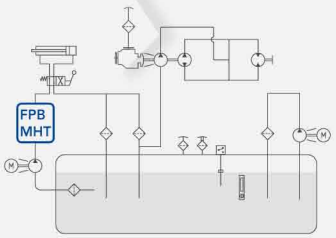
From -25° to +110° C

### COMPATIBILITY (ISO 2943)

Full with fluids: HH-HL-HM-HV-HTG
(according to ISO 6743/4)
For fluids different than the above mentioned,
please contact our Customer Service



### HYDRAULIC DIAGRAM




Is this datasheet the latest release? Please check on our website.

# FPB
## PRESSURE FILTERS

## ORDERING AND OPTION CHART

| F | P | B | COMPLETE FILTER FAMILY | | | | | | | | | | FILTER ELEMENT FAMILY | E | P | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SIZE & LENGTH | 11 | 12 | 13 | 21 | 22 | 31 | 32 | 33 | 34 | 35 | SIZE & LENGTH | | | |
| | | | PORT TYPE | | | | | | | | | | | | | | |
| | | | B = BSP thread | B | B | B | B | B | B | B | B | B | B | | | | |
| | | | N = NPT thread | N | N | N | N | N | N | N | N | N | N | | | | |
| | | | S = SAE thread | S | S | S | S | S | S | S | S | S | S | | | | |
| | | | F = SAE flange 3000 psi | - | - | - | F | F | F | F | F | F | F | | | | |
| | | | G = SAE flange 6000 psi | - | - | - | G | G | G | G | G | G | G | | | | |
| | | | PORT SIZE | | | | | | | | | | | | | | |
| | | | 04 = 1/2" (N04 not available) | 04 | 04 | 04 | - | - | - | - | - | - | - | | | | |
| | | | 06 = 3/4" (F06 not available) | 06 | 06 | 06 | 06 | 06 | - | - | - | - | - | | | | |
| | | | 08 = 1" (G08 not available; F08 for FPB2 only) | - | - | - | 08 | 08 | 08 | 08 | 08 | 08 | 08 | | | | |
| | | | 10 = 1" 1/4 (N10 not available) | - | - | - | - | - | 10 | 10 | 10 | 10 | 10 | | | | |
| | | | 12 = 1" 1/2 (G12 option not available) | - | - | - | - | - | 12 | 12 | 12 | 12 | 12 | | | | |
| | | | BYPASS VALVE | | | | | | | | | | | | | | |
| | | | W = without | W | W | W | W | W | W | W | W | W | W | | | | |
| | | | C = 600 kPa (6 bar) | C | C | C | C | C | C | C | C | C | C | | | | |
| | | | R = reverse flow valve* | - | - | - | R | R | R | R | R | R | R | | | | |
| | | | P = reverse flow + bypass valve* | - | - | - | P | P | P | P | P | P | P | | | | |
| | | | SEALS | | | | | | | | | | | SEALS | | | |
| | | | N = NBR Nitrile | N | N | N | N | N | N | N | N | N | N | | | | |
| | | | F = FKM Fluoroelastomer | F | F | F | F | F | F | F | F | F | F | | | | |
| | | | FILTER MEDIA | | | | | | | | | | | FILTER MEDIA | | | |
| | | | FA = fibreglass 5 µm(c) β>1.000 Δp 2MPa (20 bar) | FA | FA | FA | FA | FA | FA | FA | FA | FA | FA | | | | |
| | | | FB = fibreglass 7 µm(c) β>1.000 Δp 2MPa (20 bar) | FB | FB | FB | FB | FB | FB | FB | FB | FB | FB | | | | |
| | | | FC = fibreglass 12 µm(c) β>1.000 Δp 2MPa (20 bar) | FC | FC | FC | FC | FC | FC | FC | FC | FC | FC | | | | |
| | | | FS = fibreglass 16 µm(c) β>1.000 Δp 2MPa (20 bar) | FS | FS | FS | FS | FS | FS | FS | FS | FS | FS | | | | |
| | | | FD = fibreglass 21 µm(c) β>1.000 Δp 2MPa (20 bar) | FD | FD | FD | FD | FD | FD | FD | FD | FD | FD | | | | |
| | | | FE = fibreglass 30 µm(c) β>1.000 Δp 2MPa (20 bar) | FE | FE | FE | FE | FE | FE | FE | FE | FE | FE | | | | |
| | | | HA =fibreglass 5 µm(c) β>1.000 Δp 21MPa (210 bar) | HA | HA | HA | HA | HA | HA | HA | HA | HA | HA | | | | |
| | | | HB = fibreglass 7 µm(c) β>1.000 Δp 21MPa (210 bar) | HB | HB | HB | HB | HB | HB | HB | HB | HB | HB | | | | |
| | | | HC = fibreglass 12 µm(c) β>1.000 Δp 21MPa (210 bar) | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | | | | |
| | | | HD = fibreglass 21 µm(c) β>1.000 Δp 21MPa (210 bar) | HD | HD | HD | HD | HD | HD | HD | HD | HD | HD | | | | |
| | | | CLOGGING INDICATOR ** | | | | | | | | | | | | | | |
| | | | 03 = port, plugged | 03 | 03 | 03 | 03 | 03 | 03 | 03 | 03 | 03 | 03 | | | | |
| | | | 5E = visual differential 500 kPa (5 bar) | 5E | 5E | 5E | 5E | 5E | 5E | 5E | 5E | 5E | 5E | | | | |
| | | | 5F = visual differential 800 kPa (8 bar) | 5F | 5F | 5F | 5F | 5F | 5F | 5F | 5F | 5F | 5F | | | | |
| | | | 6E = electrical differential 500 kPa (5 bar) | 6E | 6E | 6E | 6E | 6E | 6E | 6E | 6E | 6E | 6E | | | | |
| | | | 6F = electrical differential 800 kPa (8 bar) | 6F | 6F | 6F | 6F | 6F | 6F | 6F | 6F | 6F | 6F | | | | |
| | | | 7E = indicator 6E with LED | 7E | 7E | 7E | 7E | 7E | 7E | 7E | 7E | 7E | 7E | | | | |
| | | | 7F = indicator 6F with LED | 7F | 7F | 7F | 7F | 7F | 7F | 7F | 7F | 7F | 7F | | | | |
| | | | T2 = elect. diff. 500 kPa (5 bar) with thermostat 30°C | T2 | T2 | T2 | T2 | T2 | T2 | T2 | T2 | T2 | T2 | | | | |
| | | | T3 = elect. diff. 800 kPa (8 bar) with thermostat 30°C | T3 | T3 | T3 | T3 | T3 | T3 | T3 | T3 | T3 | T3 | | | | |
| X | X | | ACCESSORIES | | | | | | | | | | | | | | |
| | | | XX = no accessory available | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | | | | |

* Not standard version, please check availability with our Customer Service

** When the filter is ordered with FKM seals, the first digit of the indicator code is a letter (please see Clogging Indicator Chapter for further details)

# MHT
## PRESSURE FILTERS

## ORDERING AND OPTION CHART

| M | H | T | COMPLETE FILTER FAMILY | | | | | | | | | | | FILTER ELEMENT FAMILY | C | C | H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SIZE & LENGTH | 151 | 152 | 153 | 301 | 302 | 801 | 802 | 803 | 804 | 805 | SIZE & LENGTH | | | |
| | | | FILTER MEDIA | | | | | | | | | | | FILTER MEDIA | | | |
| | | | FT = fibreglass 5 µm(c) β>1.000 Δp 2MPa (20 bar) | FT | FT | FT | FT | FT | FT | FT | FT | FT | FT | | | | |
| | | | FC = fibreglass 7 µm(c) β>1.000 Δp 2MPa (20 bar) | FC | FC | FC | FC | FC | FC | FC | FC | FC | FC | | | | |
| | | | FD = fibreglass 12 µm(c) β>1.000 Δp 2MPa (20 bar) | FD | FD | FD | FD | FD | FD | FD | FD | FD | FD | | | | |
| | | | FS = fibreglass 16 µm(c) β>1.000 Δp 2MPa (20 bar) | FS | FS | FS | FS | FS | FS | FS | FS | FS | FS | | | | |
| | | | FV = fibreglass 21 µm(c) β>1.000 Δp 2MPa (20 bar) | FV | FV | FV | FV | FV | FV | FV | FV | FV | FV | | | | |
| | | | 2T = fibreglass 5 µm(c) β>1.000 Δp 21MPa (210 bar) | 2T | 2T | 2T | 2T | 2T | 2T | 2T | 2T | 2T | 2T | | | | |
| | | | 2C = fibreglass 7 µm(c) β>1.000 Δp 21MPa (210 bar) | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C | | | | |
| | | | 2D = fibreglass 12 µm(c) β>1.000 Δp 21MPa (210 bar) | 2D | 2D | 2D | 2D | 2D | 2D | 2D | 2D | 2D | 2D | | | | |
| | | | 2V = fibreglass 21 µm(c) β>1.000 Δp 21MPa (210 bar) | 2V | 2V | 2V | 2V | 2V | 2V | 2V | 2V | 2V | 2V | | | | |
| | | | SEALS | | | | | | | | | | | SEALS | | | |
| | | | 1 = NBR 1itrile | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| | | | 2 = FKM Fluoroelastomer | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | |
| | | | BYPASS VALVE | | | | | | | | | | | | | | |
| | | | S = without | S | S | S | S | S | S | S | S | S | S | | | | |
| | | | C = 600 kPa (6 bar) | C | C | C | C | C | C | C | C | C | C | | | | |
| | | | R = reverse flow valve* | - | - | - | R | R | R | R | R | R | R | | | | |
| | | | P = reverse flow + bypass valve* | - | - | - | P | P | P | P | P | P | P | | | | |
| | | | PORT TYPE | | | | | | | | | | | | | | |
| | | | B = BSP thread | B | B | B | B | B | B | B | B | B | B | | | | |
| | | | N = NPT thread | N | N | N | N | N | N | N | N | N | N | | | | |
| | | | S = SAE thread | S | S | S | S | S | S | S | S | S | S | | | | |
| | | | F = SAE flange 3000 psi | - | - | - | F | F | F | F | F | F | F | | | | |
| | | | H = SAE flange 6000 psi | - | - | - | H | H | H | H | H | H | H | | | | |
| | | | PORT SIZE | | | | | | | | | | | | | | |
| | | | 3 = 1/2" (N3 not available) | 3 | 3 | 3 | - | - | - | - | - | - | - | | | | |
| | | | 4 = 3/4" (F4 not available) | 4 | 4 | 4 | 4 | 4 | - | - | - | - | - | | | | |
| | | | 5 = 1" (G5 not available; F5 for FPB2 only) | - | - | - | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | | | |
| | | | 6 = 1" 1/4 (N6 not available) | - | - | - | - | - | 6 | 6 | 6 | 6 | 6 | | | | |
| | | | 7 = 1" 1/2 (G7 option not available) | - | - | - | - | - | 7 | 7 | 7 | 7 | 7 | | | | |
| | | | CLOGGING INDICATOR | | | | | | | | | | | | | | |
| | | | 03 = port, plugged | 03 | 03 | 03 | 03 | 03 | 03 | 03 | 03 | 03 | 03 | | | | |
| | | | 5E = visual differential 500 kPa (5 bar) | 5E | 5E | 5E | 5E | 5E | 5E | 5E | 5E | 5E | 5E | | | | |
| | | | 5F = visual differential 800 kPa (8 bar) | 5F | 5F | 5F | 5F | 5F | 5F | 5F | 5F | 5F | 5F | | | | |
| | | | 6E = electrical differential 500 kPa (5 bar) | 6E | 6E | 6E | 6E | 6E | 6E | 6E | 6E | 6E | 6E | | | | |
| | | | 6F = electrical differential 800 kPa (8 bar) | 6F | 6F | 6F | 6F | 6F | 6F | 6F | 6F | 6F | 6F | | | | |
| | | | 7E = indicator 6E with LED | 7E | 7E | 7E | 7E | 7E | 7E | 7E | 7E | 7E | 7E | | | | |
| | | | 7F = indicator 6F with LED | 7F | 7F | 7F | 7F | 7F | 7F | 7F | 7F | 7F | 7F | | | | |
| | | | T2 = elect. diff. 500 kPa (5 bar) with thermostat 30°C | T2 | T2 | T2 | T2 | T2 | T2 | T2 | T2 | T2 | T2 | | | | |
| | | | T3 = elect. diff. 800 kPa (8 bar) with thermostat 30°C | T3 | T3 | T3 | T3 | T3 | T3 | T3 | T3 | T3 | T3 | | | | |
| X | X | | ACCESSORIES | | | | | | | | | | | | | | |
| | | | XX = no accessory available | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | | | | |

* Not standard version, please check availability with our Customer Service

** When the filter is ordered with FKM seals, the first digit of the indicator code is a letter (please see Clogging Indicator Chapter for further details)

# FPB-MHT
## PRESSURE FILTERS

## SPARE PARTS ELEMENTS

| FILTER HOUSING | FILTER ELEMENT | CLOGGING INDICATOR |
|---|---|---|
|  |  |  |
| B P B ▢ ▢ ▢ ▢ ▢ ▢ ▢ ■ ■ ▢ ▢ X X | E P B ▢ ▢ ▢ ▢ | ▢ ▢ |

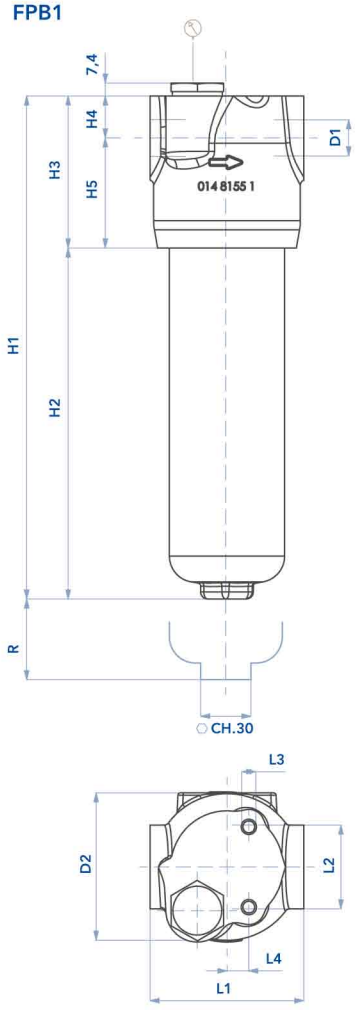
## SPARE SEAL KIT

| | NBR | FKM |
|---|---|---|
| FPB11<br>MHT151 | 521.0002.2 | 521.0086.2 |
| FPB12<br>MHT152 | 521.0002.2 | 521.0086.2 |
| FPB13<br>MHT153 | 521.0002.2 | 521.0086.2 |
| FPB21<br>MHT301 | 521.0003.2 | 521.0030.2 |
| FPB22<br>MHT302 | 521.0003.2 | 521.0030.2 |
| FPB31<br>MHT801 | 521.0004.2 | 521.0087.2 |
| FPB32<br>MHT802 | 521.0004.2 | 521.0087.2 |
| FPB33<br>MHT803 | 521.0004.2 | 521.0087.2 |
| FPB34<br>MHT804 | 521.0004.2 | 521.0087.2 |
| FPB35<br>MHT805 | 521.0004.2 | 521.0087.2 |



## INSTALLATION DRAWING

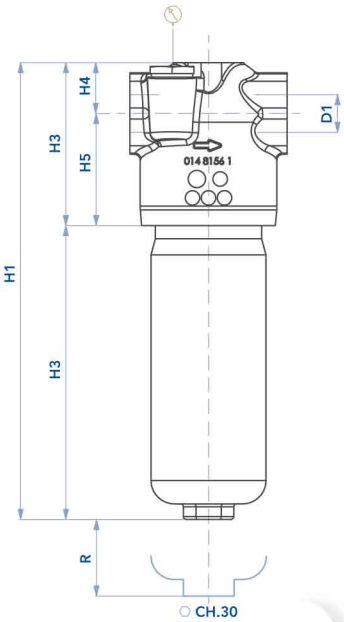
FPB1

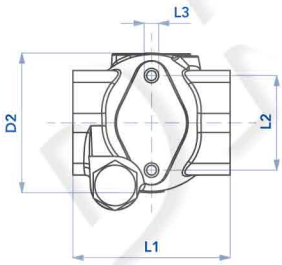




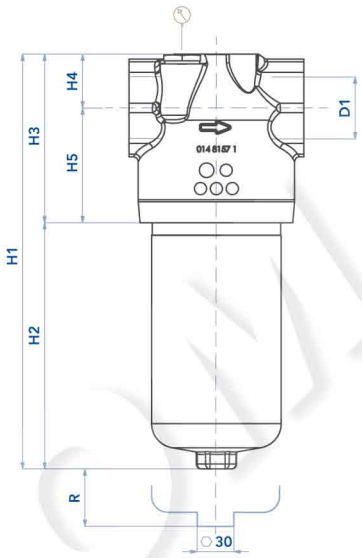


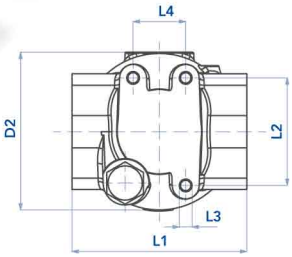
FPB2



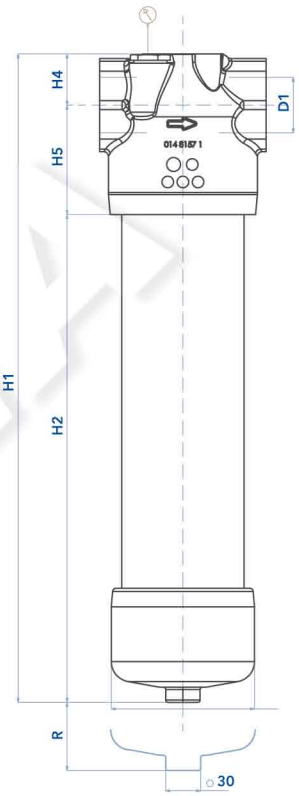



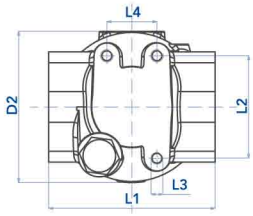

FPB 31-32-33




FPB 34-35



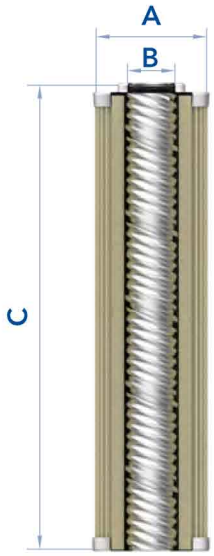

## FILTER HOUSING

| | D1 | D2 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | R | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FPB11 MHT151 | 1/2"-3/4" | 86 | 166 | 79 | 87 | 24 | 63 | 88 | 46 | M8 | 12,5 | 100 | 4,4 |
| FPB12 MHT152 | 1/2"-3/4" | 86 | 196 | 109 | 87 | 24 | 63 | 88 | 46 | M8 | 12,5 | 100 | 4,6 |
| FPB13 MHT153 | 1/2"-3/4" | 86 | 296 | 209 | 87 | 24 | 63 | 88 | 46 | M8 | 12,5 | 100 | 5,2 |
| FPB21 MHT301 | 3/4" - 1" | 94 | 226 | 116 | 112 | 35 | 77 | 108 | 65 | M8 | - | 100 | 6,6 |
| FPB22 MHT302 | 3/4" - 1" | 94 | 317 | 207 | 112 | 35 | 77 | 108 | 65 | M8 | - | 100 | 8,2 |
| FPB31 MHT801 | 1" - 1"1/4 - 1"1/2 | 128 | 245 | 107 | 138 | 44 | 94 | 143 | 88 | M10 | 43 | 100 | 11,0 |
| FPB32 MHT802 | 1" - 1"1/4 - 1"1/2 | 128 | 337 | 199 | 138 | 44 | 94 | 143 | 88 | M10 | 43 | 100 | 13,9 |
| FPB33 MHT803 | 1" - 1"1/4 - 1"1/2 | 128 | 457 | 319 | 138 | 44 | 94 | 143 | 88 | M10 | 43 | 100 | 17,2 |
| FPB34 MHT804 | 1" - 1"1/4 - 1"1/2 | 128 | 558 | 420 | 138 | 44 | 94 | 143 | 88 | M10 | 43 | 100 | 22,0 |
| FPB35 MHT805 | 1" - 1"1/4 - 1"1/2 | 128 | 658 | 520 | 138 | 44 | 94 | 143 | 88 | M10 | 43 | 100 | 25,0 |

# FPB-MHT
## PRESSURE FILTERS

## MAINTENANCE

The best time to change your filter element is just before it reaches its maximum dirt-holding capacity. For this reason, we recommend to monitor the pressure of the hydraulic oil flowing through the filter with a clogging indicator. When it is time to change the filter element, switch off the system before opening the filter housing and make sure there is no pressure in the filter. Unscrew the bowl and remove the dirty filter element. Replace it with an original UFI element, verifying the part number on the filter label or on the catalogue. Clean the bowl; check the gaskets conditions and replace if necessary. Insert the clean element into his seat, handling with care and cleanliness. Screw the housing until it stops, with a tightening torque of 70 Nm +5/0.
We recommend the stocking of a spare UFI filter element for timely replacement when required.






## FILTER ELEMENT

| | A | B | C | Kg Media F | Kg Media H | AREA (cm²) Media F+ | AREA (cm²) Media H+ |
|---|---|---|---|---|---|---|---|
| EPB11 CCH151 | 45 | 25 | 85 | 0,15 | 0,25 | 355 | 340 |
| EPB12 CCH152 | 45 | 25 | 116 | 0,20 | 0,55 | 500 | 475 |
| EPB13 CCH153 | 45 | 25 | 211 | 0,30 | 0,45 | 935 | 915 |
| EPB21 CCH301 | 52 | 23,5 | 115 | 0,25 | 0,40 | 975 | 975 |
| EPB22 CCH302 | 52 | 23,5 | 210 | 0,35 | 0,55 | 1.830 | 1.785 |
| EPB31 CCH801 | 78 | 42,5 | 118 | 0,40 | 0,70 | 2.000 | 1.470 |
| EPB32 CCH802 | 78 | 42,5 | 210 | 0,80 | 1,30 | 3.695 | 2.695 |
| EPB33 CCH803 | 78 | 42,5 | 330 | 1,00 | 1,60 | 5.025 | 4.325 |
| EPB34 CCH804 | 78 | 42,5 | 430 | 1,20 | 1,80 | 6.585 | 5.685 |
| EPB35 | 78 | 42,5 | 530 | 1,40 | 2,00 | 8.145 | 7.045 |

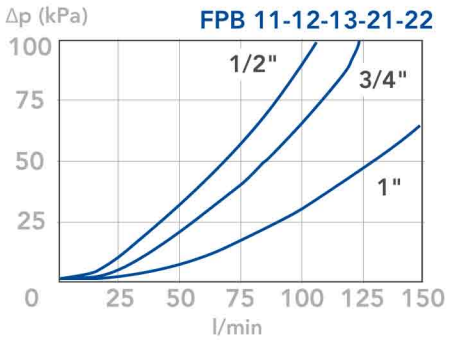
The used filter elements cannot be cleaned and are classified as "Dangerous waste material". They must be disposed according to local laws by authorized Companies.
Verify that the Company you choose has the expertise and authorization to dispose this type of waste material.

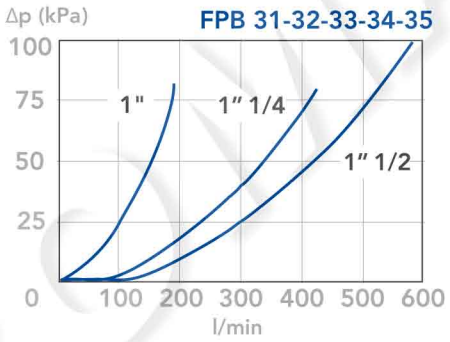


## PRESSURE DROP CURVES (ΔP)

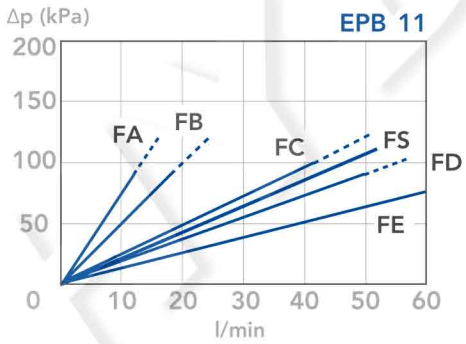
The "Assembly Pressure Drop (Δp)" is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow Rate and it must be lower than 120 kPa (1,2 bar) and should never exceed 1/3 of the bypass setting.

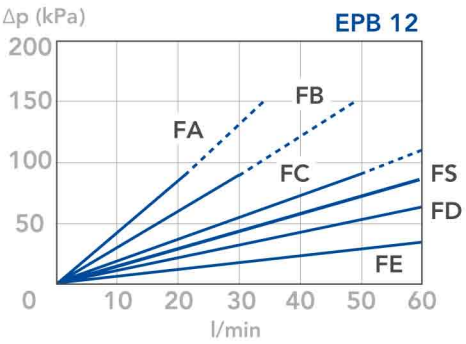
FILTER HOUSING PRESSURE DROP
(mainly depending on the port size)




CLEAN FILTER ELEMENT PRESSURE DROP WITH F+ MEDIA
(depending both on the internal diameter of the element and on the filter media)

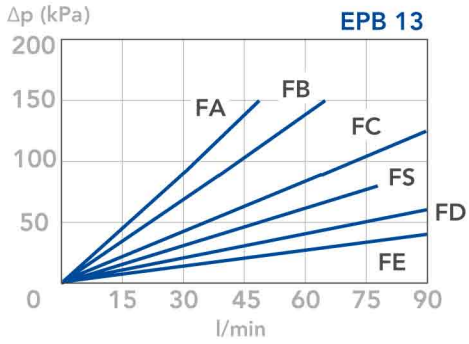


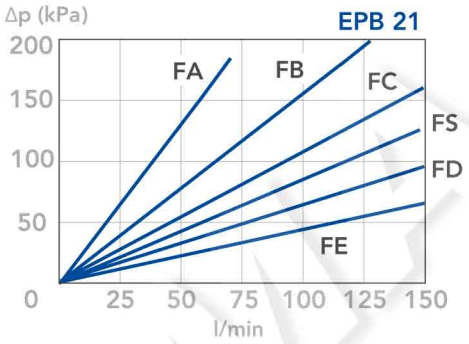



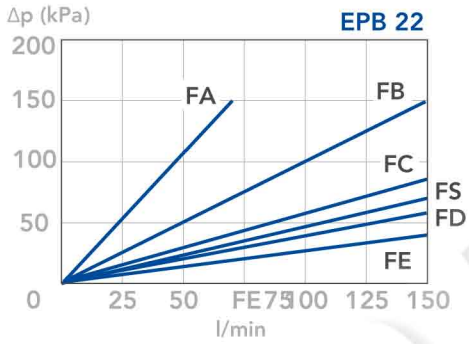
# FPB-MHT
## PRESSURE FILTERS

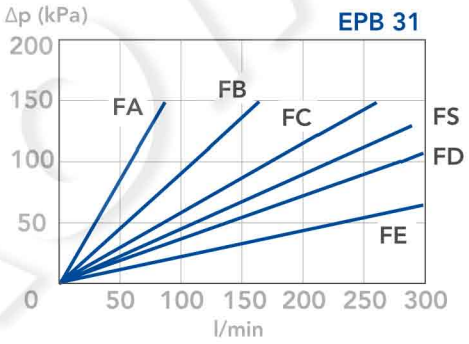


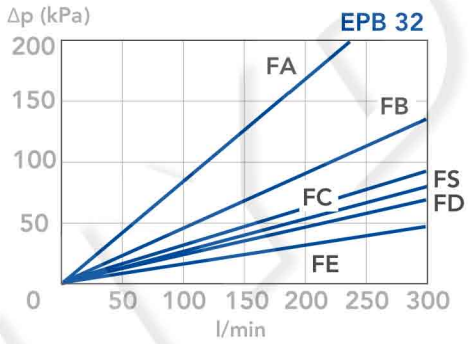
CLEAN FILTER ELEMENT PRESSURE DROP WITH F+ MEDIA
(depending both on the internal diameter of the element and on the filter media)

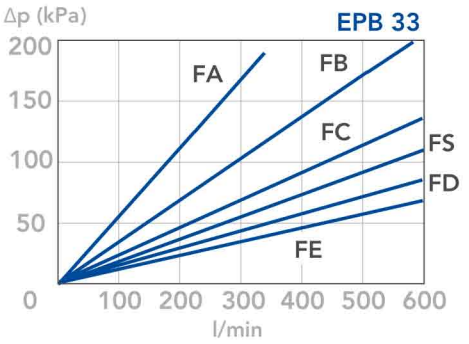


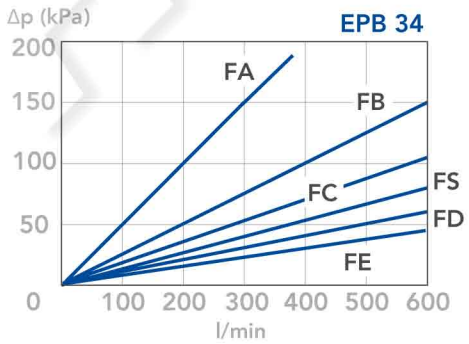



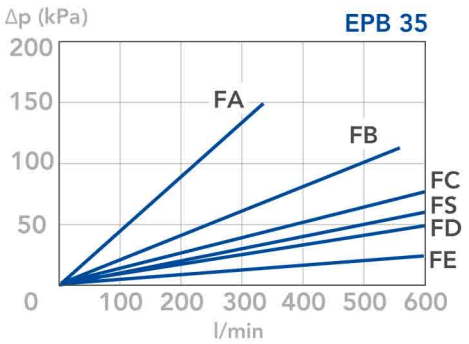



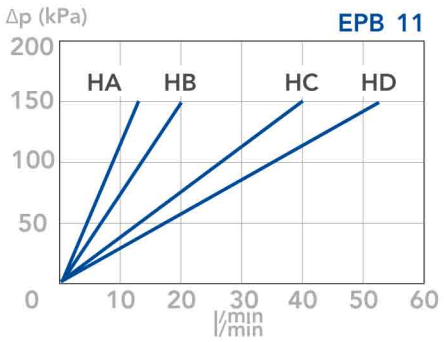



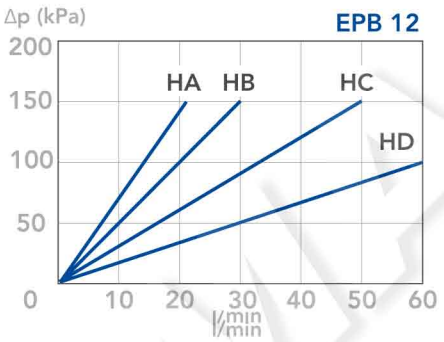



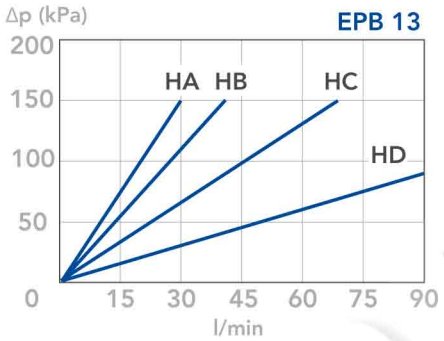



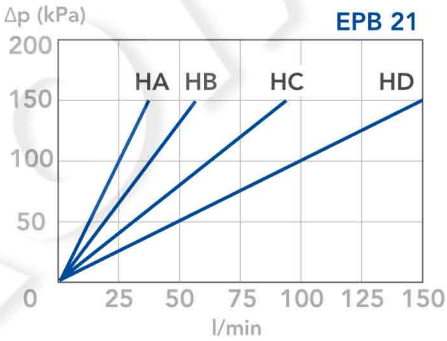


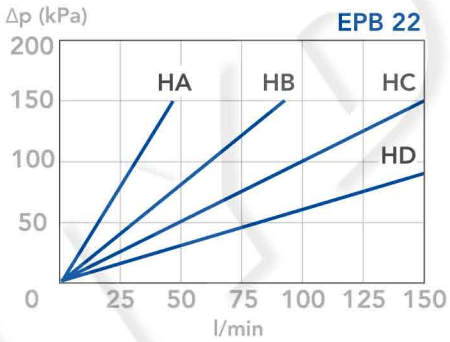
CLEAN FILTER ELEMENT PRESSURE DROP WITH H+ MEDIA
depending both on the internal diameter of the element and on the filter media) - Recommended with no bypass option

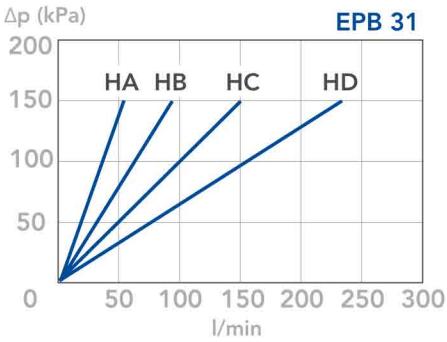


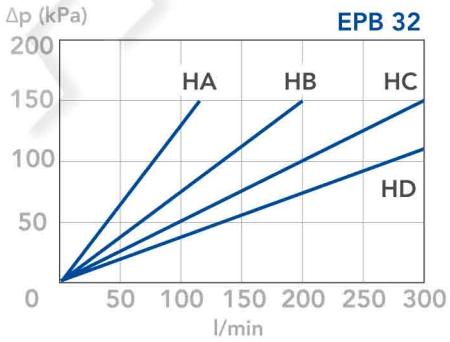



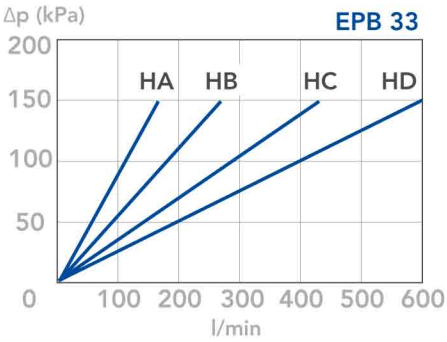



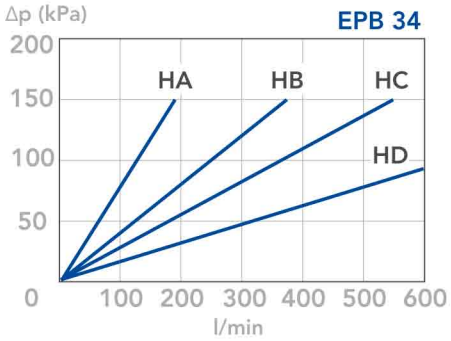



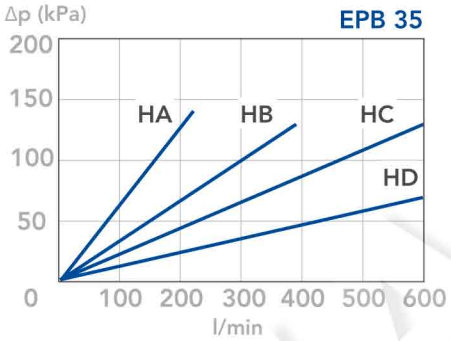



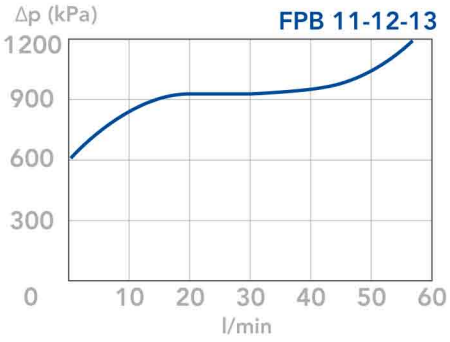
# FPB-MHT
## PRESSURE FILTERS

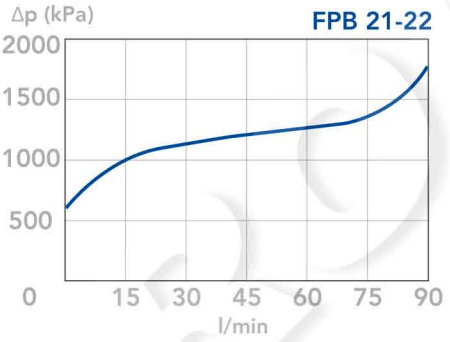
CLEAN FILTER ELEMENT PRESSURE DROP WITH H+ MEDIA
depending both on the internal diameter of the element and on the filter media) - Recommended with no bypass option

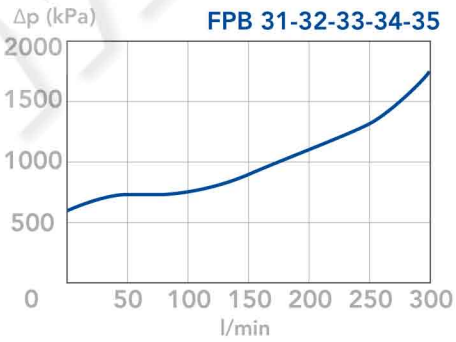


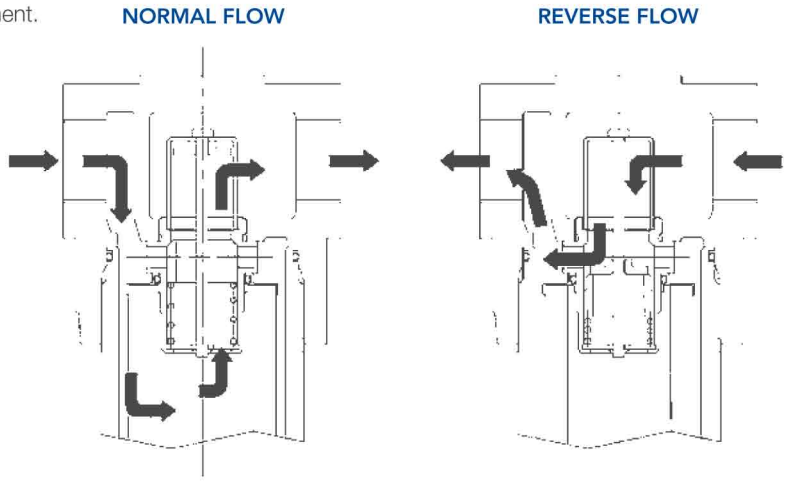

BYPASS VALVE PRESSURE DROP
When selecting the filter size, these curves must be taken into account if it is foreseen that any flow peak is to be absorbed by the bypass valve, it also must be of proper configuration to avoid pressure peaks. The valve pressure drop is directly proportional to fluid specific gravity.




REVERSE FLOW VALVE
For hydraulic systems where reverse flow can occur, the pressure filters series FPB2+ and FPB3+ are available with a free reverse flow valve allowing the fluid to pass through the filter element in the normal direction and to bypass the filter element in the reverse direction (option “R”).
The reverse flow valve is available also with incorporated bypass valve for the normal flow direction, set at 6 bar (option “P”).
In normal flow conditions the whole flow pass through the filter element. In the option “P”, if the differential pressure across the element exceeds 6 bar the bypass is activated.
In reverse flow conditions the flow bypasses the filter element.
Pressure drop through the valve in the reverse direction:
0,4 bar at 100 L/min
0,6 bar at 200 L/min
0,8 bar at 300 L/min




## N.B.

All the curves have been obtained with mineral oil having a kinematic viscosity 30 cSt and specific gravity 0,86 Kg/dm3; for fluids with different features, please consider the factors described in the first part of this catalogue. All the curves are obtained from test done at the UFI HYDRAULIC DIVISION Laboratory, according to the specification ISO 3968. In case of discrepancy, please check the contamination level, viscosity and features of the fluid in use.



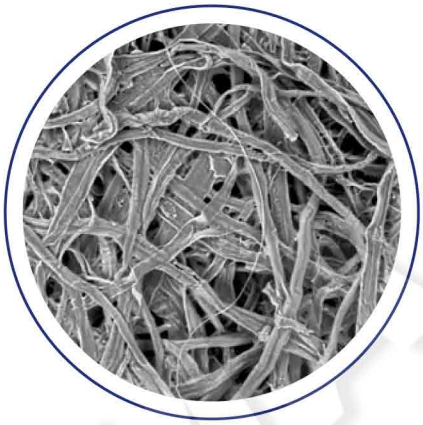
# FORMULA UFI.CELL

## DESCRIPTION

FormulaUFI.Cell is based on paper fibers made from pure cellulose impregnated with resin to maximize the filter life and reduce pressure drop.

Cellulose provides effective filtration for a variety of hydraulic applications, like concrete pumps and mining vehicles. It is also used for air breathers, return line filters and spin-on cartridges, in which a good quality-price ratio should be recommended.

Cellulose presents a porous surface, so that filtering media are classified on average pore size.



## APPLICATIONS

AGRICULTURAL
CONSTRUCTION
HEAVY DUTY
INDUSTRIAL
MATERIAL HANDLING
POWER GENERATION

## PLUS

+ **Improved performances** in mechanical stability and filter life
+ **High stiffness to retain stability** also during low temperature conditions
+ **Effective filtration** for a wide variety of petroleum-based fluids

Main FormulaUFI.Cell available options are highlighted in the following table. Additional customized options are available on request under technical evaluation of the specific application requirements.

| FormulaUFI | FILTRATION RATING $\beta_x \geq 2$ ISO 16889 | UFI CODIFICATION | SOFIMA CODIFICATION |
|---|---|---|---|
| FormulaUFI.CELL | 10 µm | CC | CD |
| FormulaUFI.CELL | 25 µm | CD | CV |
| FormulaUFI.CELL - Reinforced version | 10 µm | RC | DR |
| FormulaUFI.CELL - Reinforced version | 25 µm | RD | VR |