



FPL

PRESSURE FILTERS



DESCRIPTION

Pressure filter manifold side mounting

MATERIALS

Head: Cast iron

Bowl: Steel

Bypass valve: Steel

Seals: NBR Nitrile (FKM Fluoroelastomer on request)

Indicator housing: Brass

PRESSURE

Max. working: 31,5 MPa (315 bar)

Collapse, differential for the filter element
standard series: 2 MPa (20 bar)

H+ series: 21 MPa (210 bar)

BYPASS VALVE

Setting: 600 kPa (6 bar) \pm 10%

FLOW RATE

Qmax 400 l/min

WORKING TEMPERATURE

From -25° to +110° C

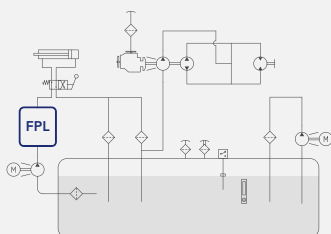
COMPATIBILITY (ISO 2943)

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

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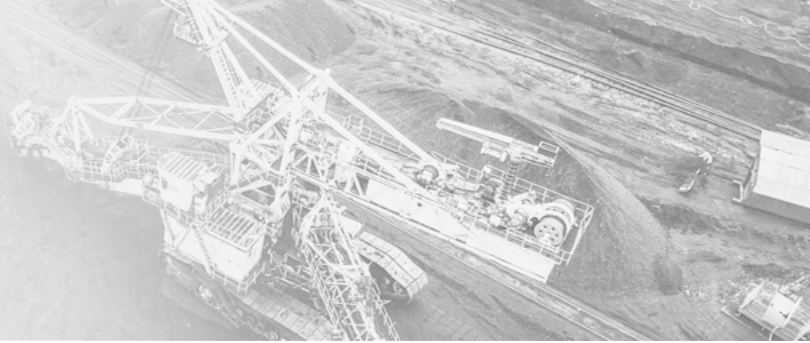
PRESSURE FILTERS



ORDERING AND OPTION CHART

| F | P | L | 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 | | | | | | | | | | | | | | | |
| | | | C = Flanges 90° (manifold) | C | C | C | C | C | C | C | C | C | C | | | | | |
| | | | PORT SIZE | | | | | | | | | | | | | | | |
| | | | 15 = size 15 | 15 | 15 | 15 | - | - | - | - | - | - | - | | | | | |
| | | | 20 = size 20 | - | - | - | 20 | 20 | - | - | - | - | - | | | | | |
| | | | 32 = size 32 | - | - | - | - | - | 32 | 32 | 32 | 32 | 32 | | | | | |
| | | | 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 | | | | | |
| | | | 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 | | | | | |
| | | | FormulaUFI MEDIA | | | | | | | | | | | | FormulaUFI MEDIA | | | |
| | | | FA = FormulaUFI.MICRON 5 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 2MPa (20 bar) | FA | FA | FA | FA | FA | FA | FA | FA | FA | FA | | | | | |
| | | | FB = FormulaUFI.MICRON 7 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 2MPa (20 bar) | FB | FB | FB | FB | FB | FB | FB | FB | FB | FB | | | | | |
| | | | FC = FormulaUFI.MICRON 12 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 2MPa (20 bar) | FC | FC | FC | FC | FC | FC | FC | FC | FC | FC | | | | | |
| | | | FS = FormulaUFI.MICRON 16 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 2MPa (20 bar) | FS | FS | FS | FS | FS | FS | FS | FS | FS | FS | | | | | |
| | | | FD = FormulaUFI.MICRON 21 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 2MPa (20 bar) | FD | FD | FD | FD | FD | FD | FD | FD | FD | FD | | | | | |
| | | | FE = FormulaUFI.MICRON 30 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 2MPa (20 bar) | FE | FE | FE | FE | FE | FE | FE | FE | FE | FE | | | | | |
| | | | HA = FormulaUFI.MICRON 5 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 21MPa (210 bar) | HA | HA | HA | HA | HA | HA | HA | HA | HA | HA | | | | | |
| | | | HB = FormulaUFI.MICRON 7 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 21MPa (210 bar) | HB | HB | HB | HB | HB | HB | HB | HB | HB | HB | | | | | |
| | | | HC = FormulaUFI.MICRON 12 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 21MPa (210 bar) | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | | | | | |
| | | | HD = FormulaUFI.MICRON 21 $\mu\text{m}_{(c)}$ $\beta > 1.000 \Delta p$ 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 | | ACCESSORI / ACCESSORIES | | | | | | | | | | | | | | | |
| | | | XX = no accessory available | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | | | | | |

** 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)



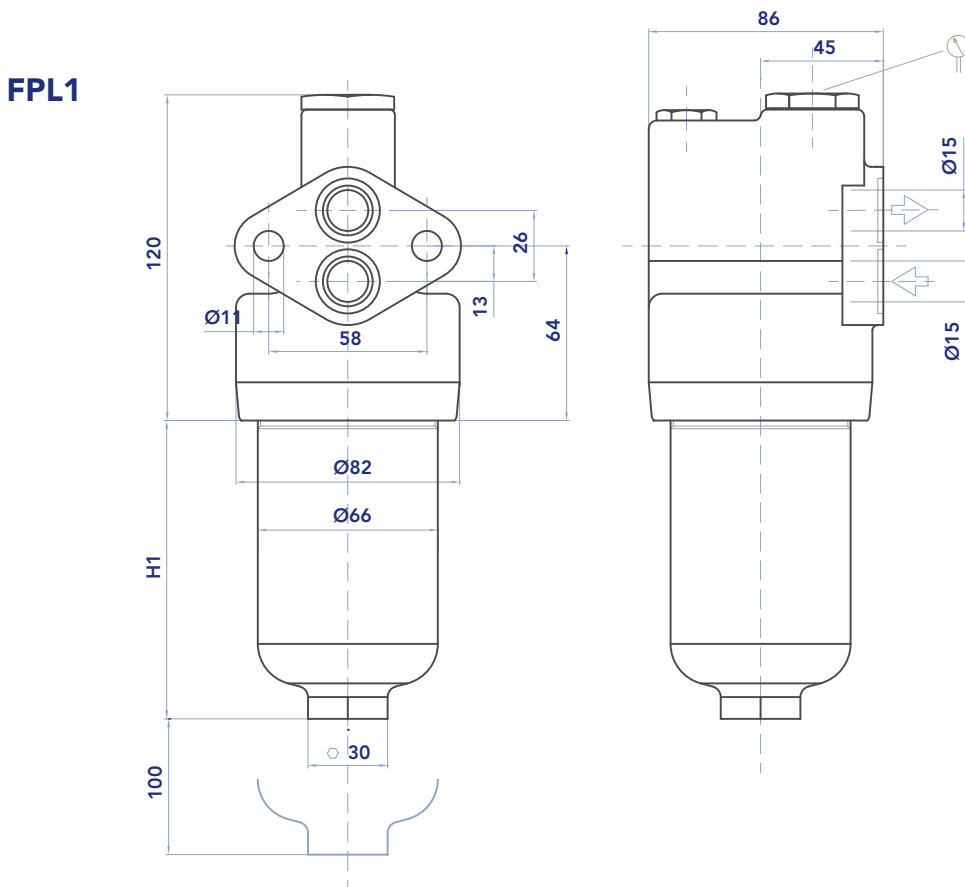
SPARE PARTS

| FILTER HOUSING | FILTER ELEMENT | CLOGGING INDICATOR |
|---|--|---|
| | | |
| B P L X X | E P B | |

SPARE SEAL KIT

| | NBR | FKM | | NBR | FKM |
|-------------|------------|------------|-------------------|------------|------------|
| FPL11-12-13 | 521.0080.2 | 521.0083.2 | FPL31-32-33-34-35 | 521.0082.2 | 521.0085.2 |
| FPL21-22 | 521.0081.2 | 521.0084.2 | | | |

INSTALLATION DRAWING



FILTER HOUSING

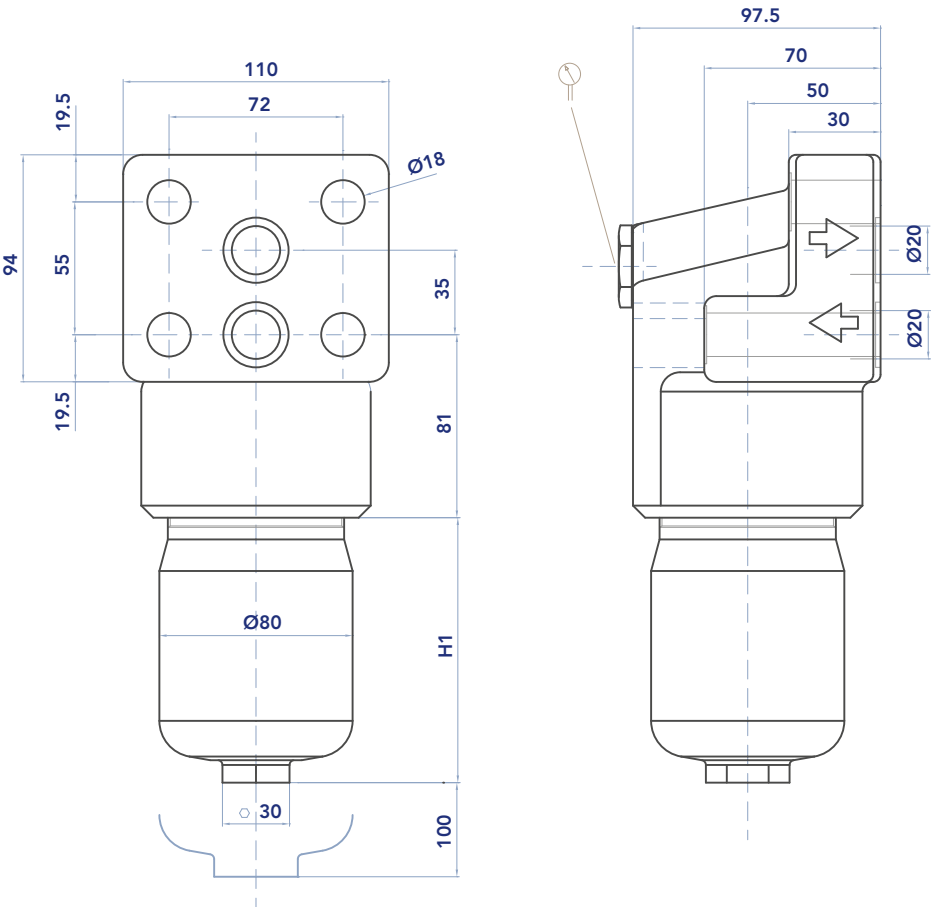
| | H1 | Kg |
|-------|-----|-----|
| FPL11 | 75 | 4,4 |
| FPL12 | 107 | 4,6 |
| FPL13 | 201 | 5,2 |

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INSTALLATION DRAWING

FPL2



FILTER HOUSING

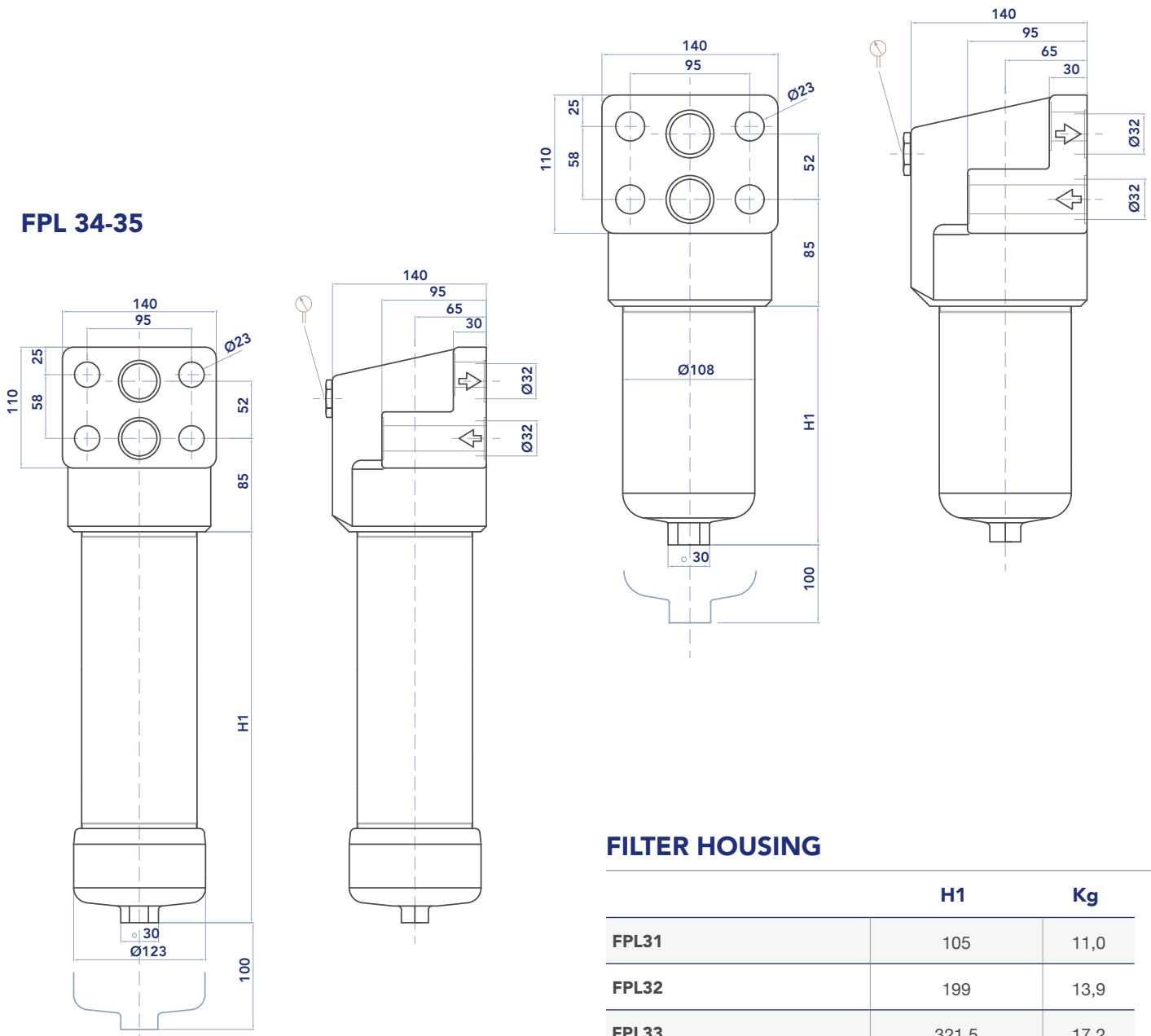
| | H1 | Kg |
|-------|-----|-----|
| FPL21 | 107 | 6,6 |
| FPL22 | 202 | 8,2 |



INSTALLATION DRAWING

FPL 31-32-33

FPL 34-35



FILTER HOUSING

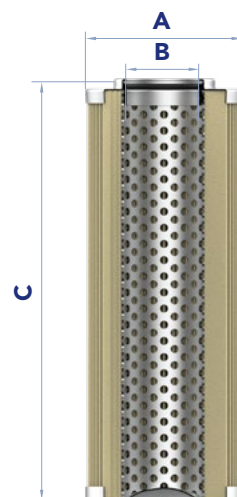
| | H1 | Kg |
|-------|-------|------|
| FPL31 | 105 | 11,0 |
| FPL32 | 199 | 13,9 |
| FPL33 | 321,5 | 17,2 |
| FPL34 | 420 | 22,0 |
| FPL35 | 520 | 25,0 |

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FILTER ELEMENT

| | A | B | C | Kg | Kg | AREA (cm ²) | |
|-------|----|------|-----|---------|---------|-------------------------|----------|
| | | | | Media F | Media H | Media F+ | Media H+ |
| EPB11 | 45 | 25 | 85 | 0,15 | 0,25 | 355 | 340 |
| EPB12 | 45 | 25 | 116 | 0,20 | 0,55 | 500 | 475 |
| EPB13 | 45 | 25 | 211 | 0,30 | 0,45 | 935 | 915 |
| EPB21 | 52 | 23,5 | 115 | 0,25 | 0,40 | 975 | 975 |
| EPB22 | 52 | 23,5 | 210 | 0,35 | 0,55 | 1.830 | 1.785 |
| EPB31 | 78 | 42,5 | 118 | 0,40 | 0,70 | 2.000 | 1.470 |
| EPB32 | 78 | 42,5 | 210 | 0,80 | 1,30 | 3.695 | 2.695 |
| EPB33 | 78 | 42,5 | 330 | 1,00 | 1,60 | 5.025 | 4.325 |
| EPB34 | 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 |



MAINTENANCE

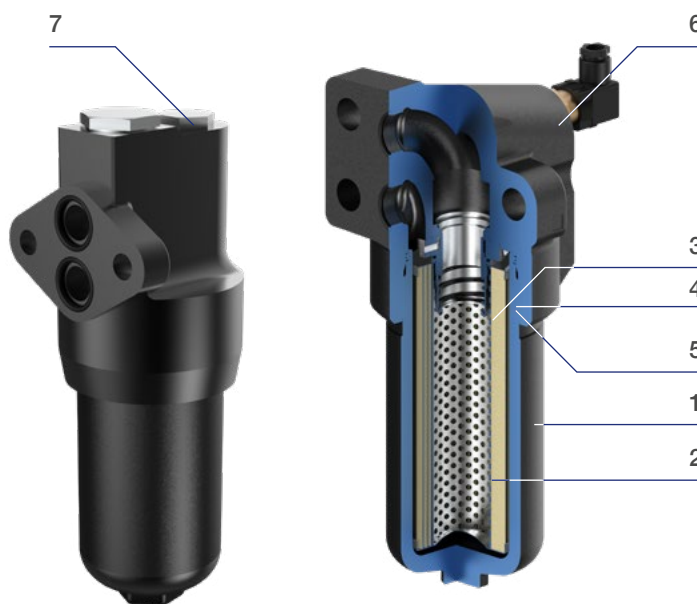
- 1) Stop the system and verify there is no pressure in the filter.
- 2) Collect the oil inside the filter with a suitable container.
- 3) Unscrew the bowl (1) and clean it.
- 4) Remove the dirty filter element (2).
N.B. The exhausted filter elements and the oil dirty filter parts are classified "Dangerous waste material" and must be disposed of according to the local laws, by authorized Companies.
- 5) Check the filter element part number on the filter label or in the ordering and option chart.
Use only original spare parts.
- 6) Lubricate the element o-ring gasket (3) with oil.
- 7) Insert the clean element into its seat with care.
- 8) Check the bowl o-ring condition (4) and lubricate with oil. If damaged, check the seal kit part number in the spare seal kit table.
N.B. The anti-extrusion o-ring (5) must be positioned downwards (under the gasket).
- 9) Screw the bowl (1) until it stops, with a tightening torque of 70 Nm + 5/0.

Accessories:

Clogging indicator (6)

If damaged, unscrew and replace it (check the part number in the ordering and option chart).

Lubricate the o-ring gasket with oil and tighten until it stops, with a tightening torque of 40 Nm +5/0.



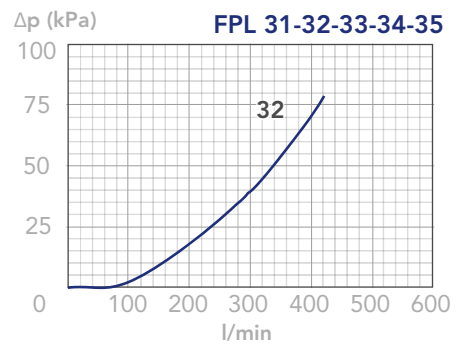
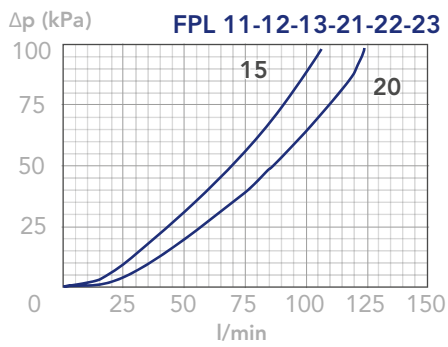


PRESSURE DROP CURVES (Δp)

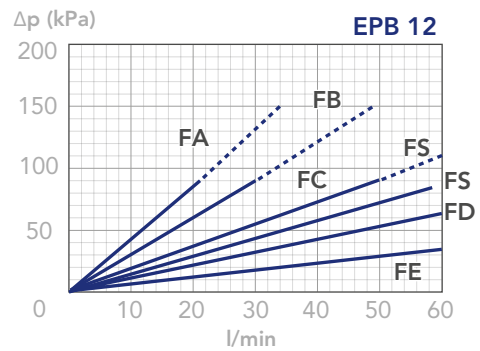
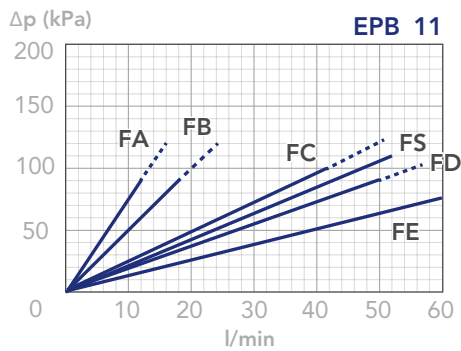
The “Assembly Pressure Drop (Δp)” is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow Rate and it must be

lower than 120 kPa (1,2 bar). In any case this value should never exceed 1/3 of the bypass setting.

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

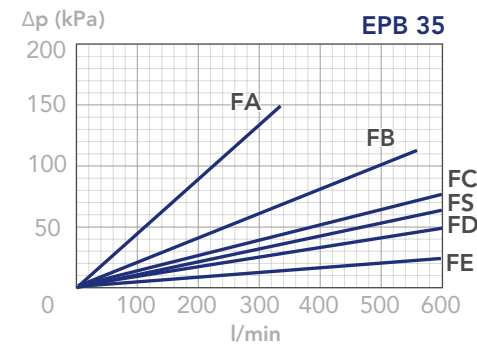
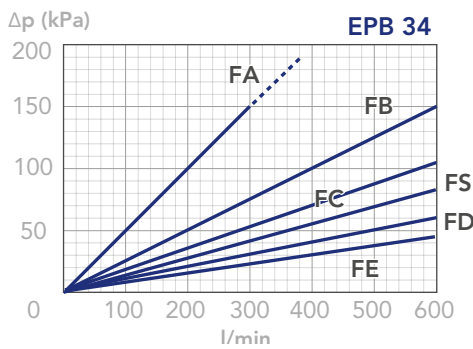
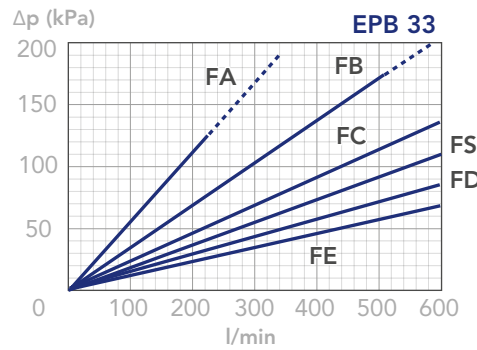
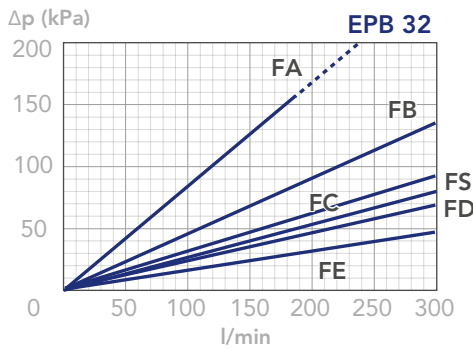
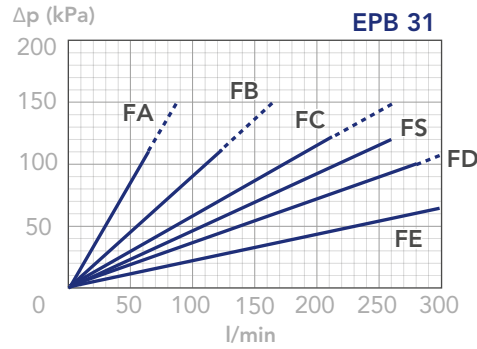
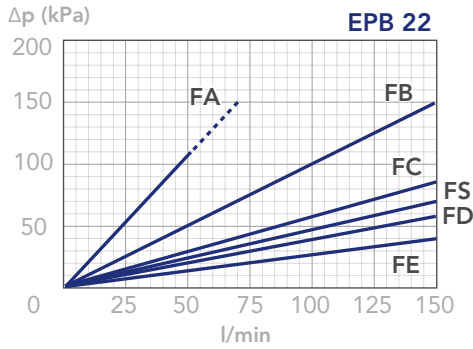
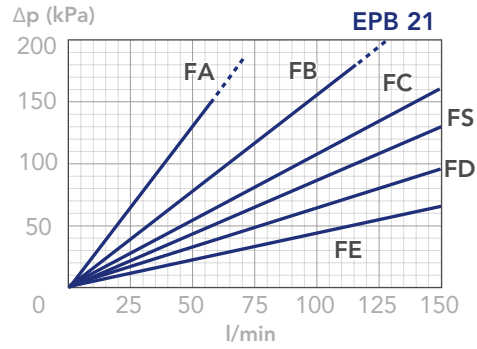
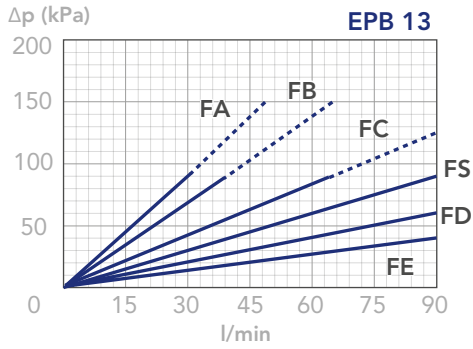


CLEAN FILTER ELEMENT PRESSURE DROP WITH F+ MEDIA
(depending both on the internal diameter of the element and on the filter media)



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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

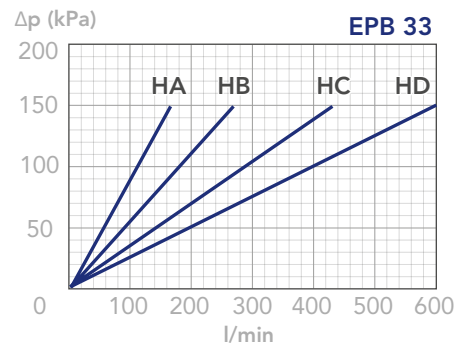
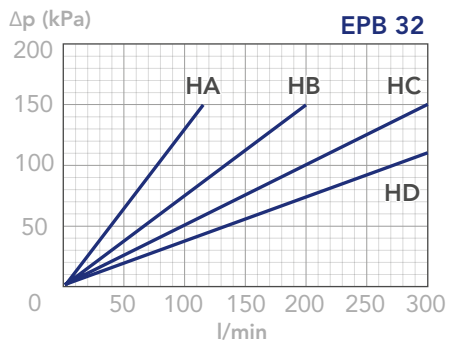
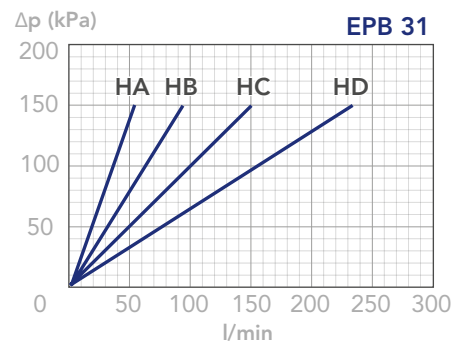
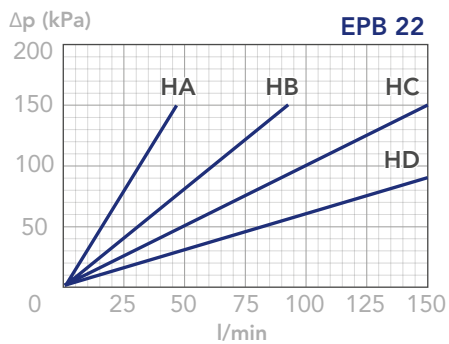
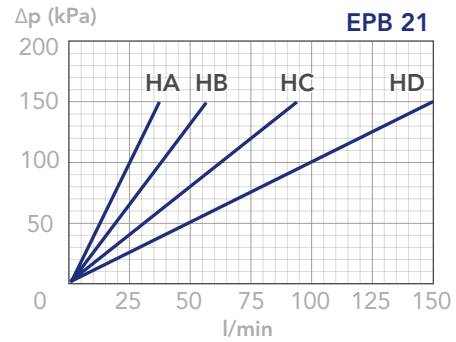
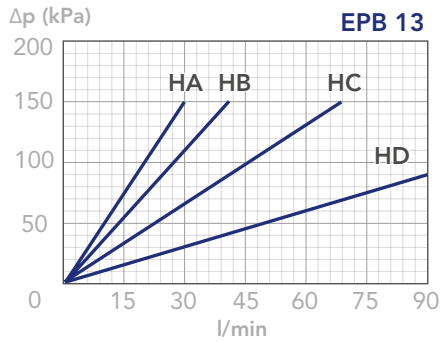
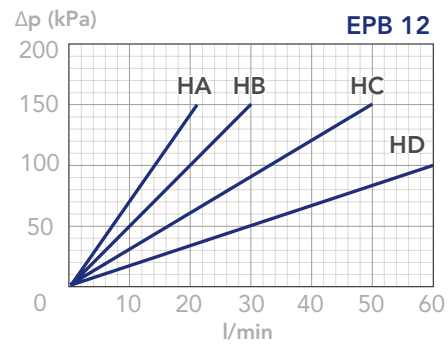
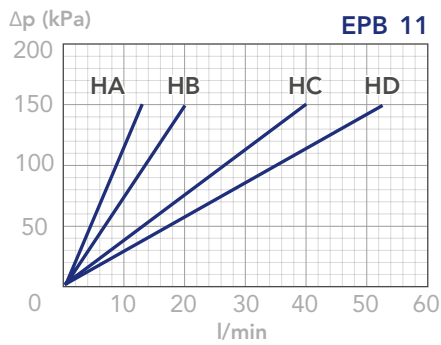
are obtained from test done at the UFI FILTERS HYDRAULICS Laboratory, according to the specification ISO 3968. In case of discrepancy, please check the contamination level, viscosity and features of the fluid in use.



PRESSURE DROP CURVES (Δp)

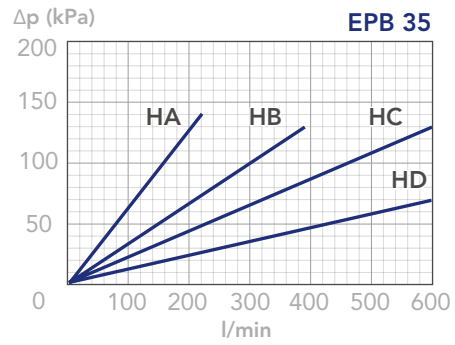
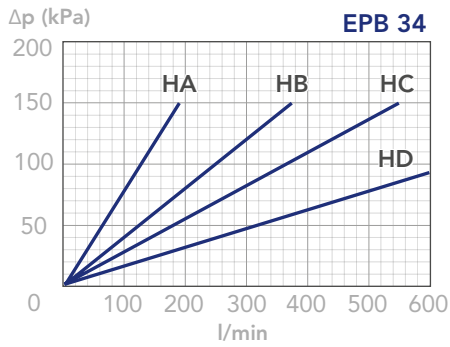
CLEAN FILTER ELEMENT PRESSURE DROP WITH H+ MEDIA

depending both on the internal diameter of the element and on the filter media) - Recommended with no bypass option



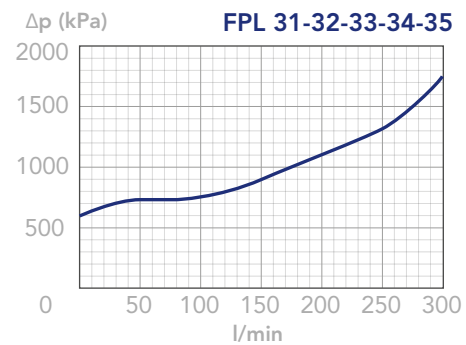
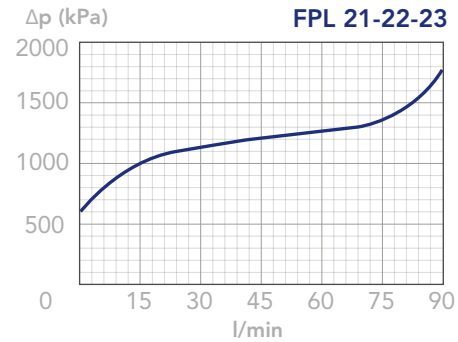
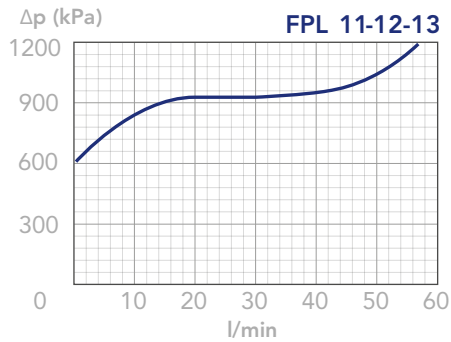
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BYPASS VALVE PRESSURE DROP

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.



N.B.

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