

## FDM SERIES

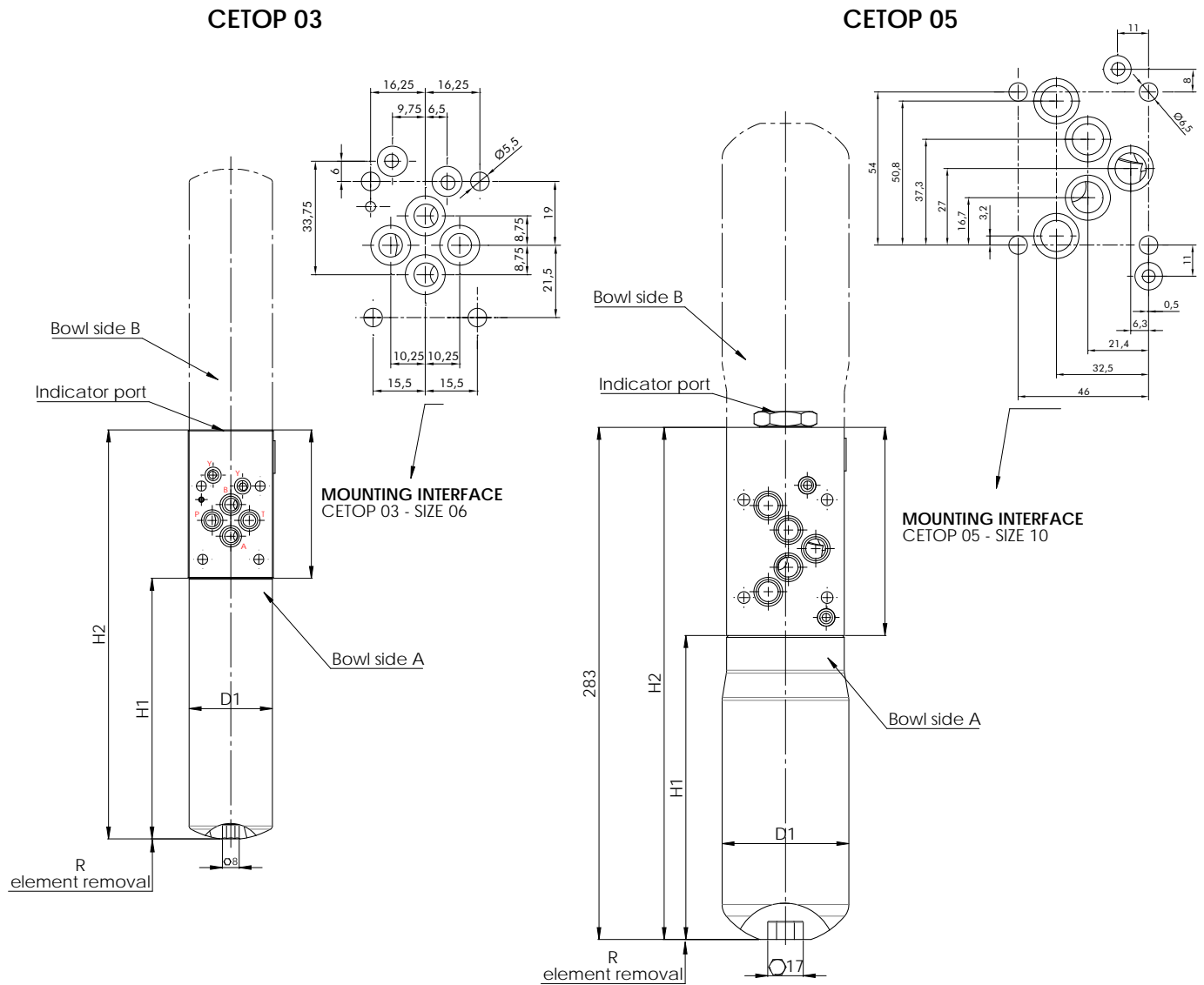
Modular in-line high pressure filters

Modular in-line filters with CETOP interface for operating pressure up to 315 bar. Flow rate up to 60 l/min.



|                             |   |
|-----------------------------|---|
| <b>HOUSING</b>              | tested according to NFPA T3.10.5.1, ISO 10771, ISO 3968   |
| <b>PRESSURE:</b>            | Max operating: 315 bar<br>Fatigue rating: 10 <sup>6</sup> cycles 0÷315 bar<br>Burst: 945 bar  |
| <b>CONNECTIONS:</b>         | CETOP 03<br>CETOP 05  |
| <b>MATERIALS:</b>           | Head: steel<br>Bowl: steel<br>Seal: NBR (FKM on request)  |
| <b>BYPASS VALVE:</b>        | no by-pass  |
| <b>ELEMENT</b>              | tested according to ISO 11170, 2941, 2942, 2943, 3724, 3968, 16889, 16908, 23181  |
| <b>FILTER MEDIA:</b>        | Fiberglass: G01 - G03 - G06<br>G10 - G15 - G25  |
| <b>COLLAPSE PRESSURE:</b>   | 210 bar   |
| <b>TEMPERATURE RANGE:</b>   | with NBR seal<br>from -30 °C to +100 °C<br><br>with FKM seal (OPTION)<br>from -25 °C to +120 °C   |
| <b>FLUID COMPATIBILITY:</b> | Full with HH-HL-HM-HV<br>HETG-HEES (acc. to ISO 6743/4).<br>For use with other fluid please contact Filtrec Customer Service (info@filtrec.it). |

## OVERALL DIMENSIONS



## NOMINAL SIZE

| MODEL     | D1   | H1  | H2  | R  | WEIGHT |
|-----------|------|-----|-----|----|--------|
| FDM-D1-08 | Ø 46 | 144 | 266 | 60 | 2.5 Kg |
| FDM-D1-11 | Ø 70 | 169 | 284 | 80 | 4.0 Kg |
| FDM-D1-12 |      | 265 | 380 |    | 5.4 Kg |

## ORDERING INFORMATION

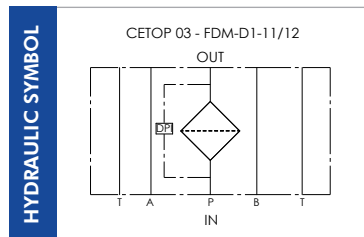
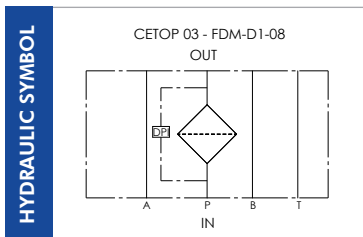
|               |            |           |            |            |          |          |          |          |            |
|---------------|------------|-----------|------------|------------|----------|----------|----------|----------|------------|
|               | 1.         | 2.        | 3.         | 4.         | 5.       | 6.       | 7.       | 8.       | 9.         |
|               | <b>FDM</b> | <b>D1</b> | <b>12</b>  | <b>G10</b> | <b>B</b> | <b>B</b> | <b>D</b> | <b>W</b> | <b>000</b> |
| SPARE ELEMENT | <b>D1</b>  | <b>12</b> | <b>G10</b> | <b>B</b>   |          |          |          |          |            |

|                          |       |   |
|--------------------------|-------|---|
| 1. FILTER SERIES         | FDM   |   |
| 2. FILTER ELEMENT SERIES | D1    |   |
| 3. FILTER SIZE           | 08    |   |
|                          | 11-12 |   |
| 4. FILTER MEDIA          | 000   | no element                                      |
|                          | G01   | glassfiber $\beta_{4\mu\text{m(c)}} \geq 1000$  |
|                          | G03   | glassfiber $\beta_{5\mu\text{m(c)}} \geq 1000$  |
|                          | G06   | glassfiber $\beta_{7\mu\text{m(c)}} \geq 1000$  |
|                          | G10   | glassfiber $\beta_{12\mu\text{m(c)}} \geq 1000$ |
|                          | G15   | glassfiber $\beta_{17\mu\text{m(c)}} \geq 1000$ |
|                          | G25   | glassfiber $\beta_{22\mu\text{m(c)}} \geq 1000$ |
| 5. ELEMENT COLLAPSE      | B     | 210 bar   |
| 6. SEALS                 | B     | NBR (omit for element)                          |
|                          | V     | FKM   |
| 7. BOWL POSITION         | D     | bowl side A - (standard)                        |
|                          | S     | bowl side B - (optional)                        |
| 8. INDICATOR PORT OPTION | S     | indicator seat with metal plug                  |
|                          | W     | indicator seat with plastic plug                |
| 9. COMPULSORY FIELD      | 000   | Filtrec standard                                |

## ACCESSORIES

The accessories must be ordered separately

|  |             |                                     |
|--|-------------|-------------------------------------|
| INDICATOR<br>(Y) digit for FKM seal option<br>*LC24=Led connector<br>For other options see clogging indicators catalogue | VX5 (VY5)   | differential visual 5 bar           |
|  | EX5 (EY5)   | differential electric 5 bar         |
|  | EX5L (EY5L) | differential electric 5 bar + *LC24 |
|  | VX8 (VY8)   | differential visual 8 bar           |
|  | EX8 (EY8)   | differential electric 8 bar         |
|  | EX8L (EY8L) | differential electric 8 bar + *LC24 |



## PRESSURE DROP ( $\Delta p$ ) INFORMATION FOR FILTER SIZING

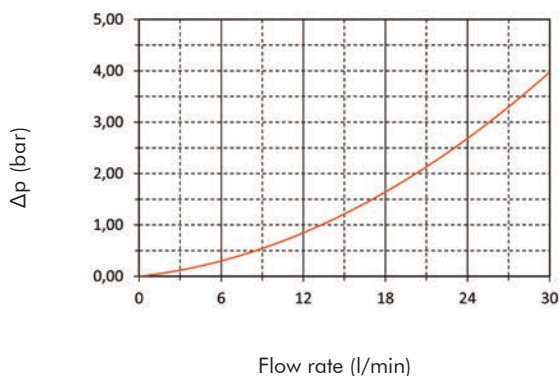
The total  $\Delta p$  through a filter assembly is given from Housing  $\Delta p$  + Element  $\Delta p$ .  
This ideally should not exceed 1,5 bar with clean element.

N.B. All the reported data have been obtained at our laboratory, according to specification ISO3968 with mineral oil having 32 cSt viscosity and density 0,875 Kg/dm<sup>3</sup>.

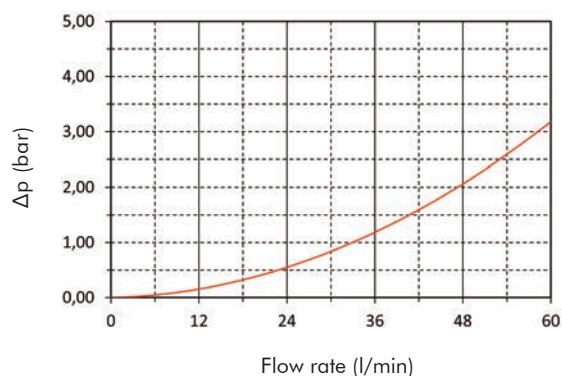
### HOUSING PRESSURE DROP

The housing  $\Delta p$  is given by the curve of the considered model and port, in correspondence of the flow rate value.

**FDM D1-08**



**FDM D1-11/12**



## ELEMENT PRESSURE DROP (filter elements 210 bar collapse)

The element  $\Delta p$  (bar) is given by the flow rate (l/min) multiplied by the factor in the table here below corresponding to the selected media and divided by 1000.

If the oil has a viscosity  $V_x$  different than 32 cSt a corrective factor  $V_x/32$  must be applied.

example: 24 l/min with D112G10B and oil viscosity 46 cSt:  $(24 \times 8,33 / 1000) \times (46/32) = 0,29$  bar

|             | <b>G01</b> | <b>G03</b> | <b>G06</b> | <b>G10</b> | <b>G15</b> | <b>G25</b> |
|-------------|------------|------------|------------|------------|------------|------------|
| <b>D108</b> | 120,86     | 83,59      | 57,25      | 34,76      | 24,65      | 15,93      |
| <b>D111</b> | 59,98      | 41,99      | 28,63      | 17,10      | 12,38      | 8,59       |
| <b>D112</b> | 28,51      | 19,96      | 11,70      | 8,33       | 8,33       | 4,77       |

### EXAMPLE OF TOTAL $\Delta p$ CALCULATION

FDMD112G10BBDW000 with 24 l/min and oil 46 cSt:

Housing  $\Delta p$  0,55 bar + element  $\Delta p$  0,29 bar, i.e  $0,55 + (24 \times 8,33 / 1000) \times (46/32) =$  total assembly  $\Delta p$  0,84 bar

## USER TIPS



- 1 FILTER HEAD
- 2 INDICATOR PORT
- 3 MOUNTING INTERFACE
- 4 FILTER ELEMENT
- 5 FILTER BOWL
- 6 SEAL KIT
- 7 IDENTIFICATION LABEL
- 8 INDICATOR PLUG

### INDICATOR TIGHTENING TORQUE

90 Nm

### BOWL TIGHTENING TORQUE

FDM D108

FDM D111-12

70 Nm

### SPARE SEAL KIT PART NUMBER (6)

|             | NBR          | FKM          |
|-------------|--------------|--------------|
| FDM D108    | 06.021.00154 | 06.021.00124 |
| FDM D111-12 | 06.021.00155 | 06.021.00125 |

## WARNING

- ⚠ Make sure that Personal Protective Equipment (PPE) is worn during installation and maintenance operation.

## DISPOSAL OF FILTER ELEMENT

- ⚠ The used filter elements and the filter parts dirty of oil are classified as "Dangerous waste material": they must be disposed according to the local laws by authorized Companies.

## INSTALLATION

- ⚠ 1. The filter head (1) must be properly mounted, facing correctly the corresponding components interface.
- 2. Secure the filter head (1) between valve and block, through the dedicated fixing holes.
- 3. Enough space must be available for filter element replacement.
- 4. The visual clogging indicator must be in a easily viewable position.
- 5. When an electrical indicator is used, make sure that is properly wired.
- ⚠ 6. Never run the system with no filter element fitted.
- ⚠ 7. Keep in stock a spare FILTREC filter element for timely replacement when required.
- 8. Filter housing should be earthed.

## OPERATION

- ⚠ 1. The filter must work within the operating conditions of pressure, temperature and compatibility given in the first page of this data sheet.
- 2. The filter element must be replaced as soon as the clogging indicator signals at working temperature (in cold start conditions, oil temperature lower than 30°C, a false alarm can be given due to oil viscosity).
- 3. If no clogging indicator is mounted, replace the element according to the system manufacturer's recommendations.

## MAINTENANCE

- ⚠ 1. Make sure that the system is switched off and there is no residual pressure in the filter.
- 2. Unscrew the bowl (5) by turning it anti-clockwise and remove it.
- 3. Remove the dirty element (4).
- 4. Fit a new FILTREC element (4), verifying the part number, particularly concerning the micron rating; open its plastic protection on the open-end side and insert it onto the spigot in the filter head, then remove completely the plastic protection.
- 5. Clean the bowl carefully; check condition of O- rings (6) and replace them if necessary.
- 6. Lubricate the bowl's thread (5) and screw it by hand into the filter head (1) by turning it clockwise.
- 7. Screw in the bowl to stop.
- ⚠ 8. The used filter elements cannot be cleaned and re-used.