



FH100 SERIES

In line pressure filters

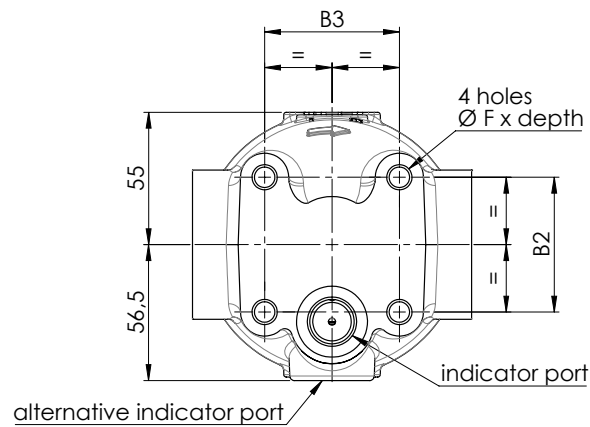
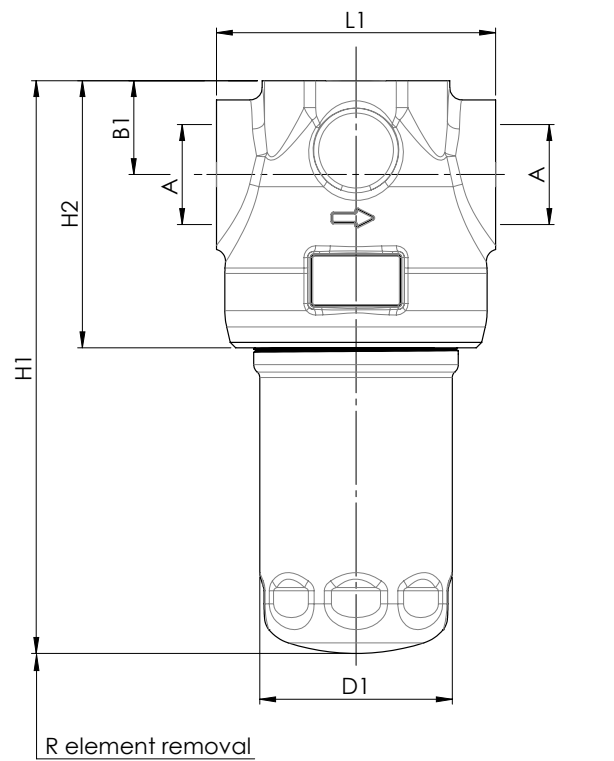
Inline filters for operating pressure up to 100 bar.  
Flow rate up to 300 l/min



| HOUSING              | tested according to NFPA T3.10.5.1, ISO 10771, ISO 3968                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| PRESSURE:            | Max operating: 100 bar<br>Fatigue pressure test, over 10 <sup>6</sup> cycles from zero to max working pressure.<br>Burst: 300 bar               |
| CONNECTIONS:         | G 1" ÷ G 1 1/4"                                                                                                                                 |
| MATERIALS:           | Head: cast iron<br>Bowl: carbon steel<br>Seal: NBR (FKM on request)                                                                             |
| BYPASS VALVE:        | 6 bar<br>3,5 bar (on request)<br>ABF valve<br>ABF valve+ RF valve                                                                               |
| ELEMENT              | tested according to ISO 11170, 2941, 2942, 2943, 3724, 3968,16889, 16908, 23181                                                                 |
| FILTER MEDIA:        | Inorganic microfiber:<br>G01 - G03 - G06 - G10<br>G15 - G25<br>Synthetic:<br>M05 - M10 - M15                                                    |
| COLLAPSE PRESSURE:   | 21 bar<br>210 bar                                                                                                                               |
| TEMPERATURE RANGE:   | with NBR seal<br>from -30 °C to +100 °C<br><br>with FKM seal (OPTION)<br>from -25 °C to +120 °C                                                 |
| FLUID COMPATIBILITY: | 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

FH100-D1-3x



## NOMINAL SIZE

| MODEL      | A        | B1 | B2 | B3 | D1 | F      | H1  | H2  | L1  | R   | WEIGHT |
|------------|----------|----|----|----|----|--------|-----|-----|-----|-----|--------|
| FH100-D136 | G 1"     | 39 | 56 | 56 | 80 | M10X15 | 298 | 111 | 116 | 120 | 5,5 Kg |
| FH100-D137 | G 1 1/4" | 39 | 56 | 56 | 80 | M10X15 | 368 | 111 | 116 | 120 | 5,9 Kg |

## ORDERING INFORMATION

|               | 1.           | 2.        | 3.         | 4.         | 5.       | 6.       | 7.        | 8.       | 9.       | 10.      | 11.        | 12.      | 13.      |
|---------------|--------------|-----------|------------|------------|----------|----------|-----------|----------|----------|----------|------------|----------|----------|
|               | <b>FH100</b> | <b>D1</b> | <b>36</b>  | <b>G10</b> | <b>A</b> | <b>B</b> | <b>B5</b> | <b>D</b> | <b>0</b> | <b>W</b> | <b>E05</b> | <b>S</b> | <b>0</b> |
| SPARE ELEMENT | <b>D1</b>    | <b>36</b> | <b>G10</b> | <b>A</b>   |          |          |           |          |          |          |            |          |          |

1. FILTER SERIES **FH100**

2. FILTER ELEMENT SERIES **D1**

3. FILTER SIZE **36-37**

|                                                                                      |     |                                            |
|--------------------------------------------------------------------------------------|-----|--------------------------------------------|
| 4. FILTER MEDIA                                                                      | 000 | no element                                 |
| For different media options please check availability with Filtrec Customer Service. | G01 | glassfiber $\beta_{4\mu m(c)} \geq 1.000$  |
|                                                                                      | G03 | glassfiber $\beta_{5\mu m(c)} \geq 1.000$  |
|                                                                                      | G06 | glassfiber $\beta_{7\mu m(c)} \geq 1.000$  |
|                                                                                      | G10 | glassfiber $\beta_{12\mu m(c)} \geq 1.000$ |
|                                                                                      | G15 | glassfiber $\beta_{17\mu m(c)} \geq 1.000$ |
|                                                                                      | G25 | glassfiber $\beta_{22\mu m(c)} \geq 1.000$ |
|                                                                                      | M05 | synthetic $\beta_{10\mu m(c)} \geq 1.000$  |
|                                                                                      | M10 | synthetic $\beta_{15\mu m(c)} \geq 1.000$  |
|                                                                                      | M15 | synthetic $\beta_{20\mu m(c)} \geq 1.000$  |

|                     |   |                               |
|---------------------|---|-------------------------------|
| 5. ELEMENT COLLAPSE | A | 21 bar                        |
|                     | Y | 21 bar - with ABF / RF valve  |
|                     | B | 210 bar                       |
|                     | X | 210 bar - with ABF / RF valve |

not available for "M" media

|                            |    |              |
|----------------------------|----|--------------|
| 6. SEALS                   | *B | NBR          |
| *omitted for spare element | V  | FKM (option) |

|                                                                                       |    |          |
|---------------------------------------------------------------------------------------|----|----------|
| 7. CONNECTIONS                                                                        | B5 | G 1"     |
| For different thread options please check availability with Filtrec Customer Service. | B6 | G 1 1/4" |

|                 |   |                      |
|-----------------|---|----------------------|
| 8. BYPASS VALVE | 0 | no by-pass           |
|                 | D | 6 bar                |
|                 | L | 3,5 bar (on request) |

|                          |   |                    |
|--------------------------|---|--------------------|
| 9. ABF VALVE / RF VALVE  | 0 | no valve           |
| ABF=anti back flow valve | C | ABF valve          |
| RF= reverse flow valve   | R | ABF valve+RF valve |

Continued on the next page

## 10. INDICATOR PORT OPTION

|   |                                                     |
|---|-----------------------------------------------------|
| S | upper differential indicator seat with metallic cap |
| W | upper differential indicator seat with plastic cap  |

## 11. INDICATOR

(F) digit for FKM seal option

\*LC24=Led connector (see clogging indicators catalogue)

|             |                                       |                                   |
|-------------|---------------------------------------|-----------------------------------|
| 000         | no indicator                          |                                   |
| V02 (VF2)   | differential visual 2,7 bar           |                                   |
| E02 (EF2)   | differential electrical 2,7 bar       |                                   |
| E02L (EF2L) | differential electric 2,7 bar + *LC24 |                                   |
| V05 (VF5)   | differential visual 5 bar             |                                   |
| E05 (EF5)   | differential electrical 5 bar         |                                   |
| E05L (EF5L) | differential electric 5 bar + *LC24   |                                   |
| V08 (VF8)   | differential visual 8 bar             |                                   |
| E08 (EF8)   | differential electrical 8 bar         | recommended for no by-pass option |
| E08L (EF8L) | differential electric 8 bar + *LC24   |                                   |

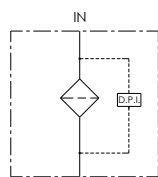
## 12. CORROSION PROTECTION

|   |          |
|---|----------|
| S | standard |
|---|----------|

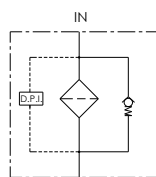
## 13. OPTION

|   |          |
|---|----------|
| 0 | standard |
|---|----------|

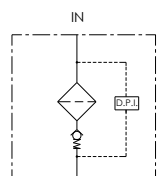
## VALVES OPTION



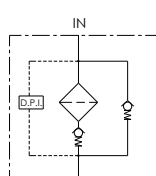
NO VALVE



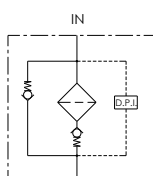
WITH BY-PASS VALVE



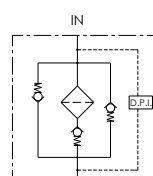
WITH ABF VALVE



WITH BY-PASS VALVE  
WITH ABF VALVE



WITH RF VALVE  
WITH ABF VALVE



WITH BY-PASS VALVE  
WITH RF VALVE  
WITH ABF VALVE

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

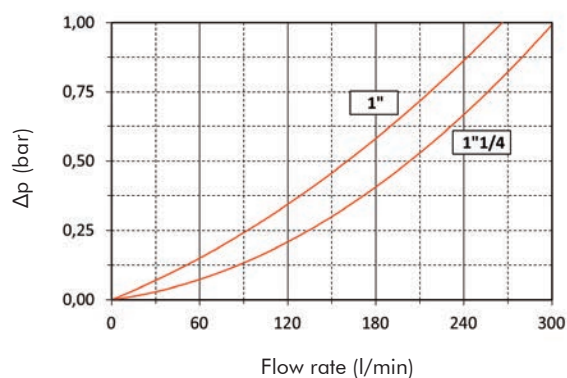
The total Delta P through a filter assembly is given from Housing  $\Delta p$  + Element  $\Delta p$ .

This ideally should not exceed 1,0 bar and should never exceed 1/3 of the set value of the by-pass valve.  
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.

**FH100 D1-3x**



## ELEMENT PRESSURE DROP (filter elements 21 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: 90 l/min with D136G10A and oil viscosity 46 cSt:  $(90 \times 3,71)/1000 \times (46/32) = 0,48$  bar

|             | G01   | G03  | G06  | G10  | G15  | G25  | M05  | M10  | M15  |
|-------------|-------|------|------|------|------|------|------|------|------|
| <b>D136</b> | 13,19 | 9,23 | 6,06 | 3,71 | 2,53 | 2,39 | 2,59 | 1,97 | 1,32 |
| <b>D137</b> | 9,63  | 6,74 | 4,43 | 2,71 | 1,85 | 1,75 | 1,89 | 1,44 | 0,96 |

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

FH100D136G10ABB5D0WE05S0 with **90** l/min and oil **46** cSt:

Housing  $\Delta p$  0,25 bar + element  $\Delta p$  0,48 bar:  $(90 \times 3,71)/1000 \times (46/32) =$  total assembly  $\Delta p$  0,73 bar

## 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: 90 l/min with D136G10B and oil viscosity 46 cSt:  $(90 \times 4,72)/1000 \times (46/32) = 0,61$  bar

|             | G01   | G03   | G06  | G10  | G15  | G25  |
|-------------|-------|-------|------|------|------|------|
| <b>D136</b> | 16,90 | 11,83 | 7,92 | 4,72 | 3,34 | 2,84 |
| <b>D137</b> | 12,35 | 8,64  | 5,79 | 3,45 | 2,44 | 2,07 |

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

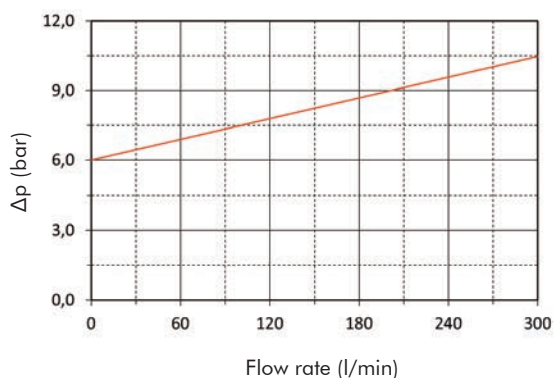
FH100D136G10BBB5D0WE05S0 with **90** l/min and oil **46** cSt :

Housing  $\Delta p$  0,25 bar + element  $\Delta p$  0,61 bar:  $(90 \times 4,72)/1000 \times (46/32) =$  total assembly  $\Delta p$  0,86 bar

## BYPASS VALVE PRESSURE DROP

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

**FH100 D13x**



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>.

## USER TIPS



- 1 FILTER HEAD
- 2 INDICATOR PORT
- 3 FIXING HOLES
- 4 FILTER ELEMENT
- 5 SEAL KIT
- 6 FILTER BOWL
- 7 IDENTIFICATION LABEL

### INDICATOR TIGHTENING TORQUE

90 Nm

### SPARE SEAL KIT PART NUMBER

|             | NBR          | FKM          |
|-------------|--------------|--------------|
| FH100 D1-3x | 06.021.00270 | 06.021.00271 |

### BOWL TIGHTENING TORQUE

screw up filter bowl till end

## 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



- the IN and OUT ports must be connected to the hoses in the correct flow direction (an arrow shows on the filter head (1))
- the filter housing should be preferably mounted with the bowl (6) downward
- secure to the frame the filter head (1) using the threaded fixing holes (3)
- verify that no tension is present on the filter after mounting
- enough space must be available for filter element replacement
- the visual clogging indicator must be in a easily viewable position
- when a electrical indicator is used, make sure that it is properly wired



- never run the system with no filter element fitted
- keep in stock a spare FILTREC filter element for timely replacement when required
- filter housing should be earthed

## OPERATION



- the filter must work within the operating conditions of pressure, temperature and compatibility given in the first page of this data sheet
- 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)
- If no clogging indicator is mounted, replace the element according to the system manufacturer's recommendations

## MAINTENANCE



- make sure that the system is switched off and there is no residual pressure in the filter
- unscrew the bowl (6) by turning it anti-clockwise and remove it
- remove the dirty element (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
- clean carefully the bowl; check the O-rings (5) conditions and replace if necessary
- lubricate the bowl's thread (6) and screw it by hand in the filter head (1) by turning it clockwise
- screw in the bowl to stop
- the used filter elements cannot be cleaned and re-used

