

## MHT

### 42 MPa (420 bar)

Port sizes: 1/2" ÷ 1" 1/2

Flow rates: 10 ÷ 420 l/min

#### TECHNICAL DATA

Max. working pressure: 42 MPa (420 bar)

Max. testing pressure: 62 MPa (620 bar)

Min. bursting pressure: 126 MPa (1260 bar)

Fatigue test: 0 ÷ 28 MPa (280 bar)

Bypass valve: standard  $\Delta p$  600 kPa (6 bar)  $\pm$  10%

Reverse flow valve: available on request

Filter element collapse pressure:

$\Delta p$  2,1 MPa (21 bar) all types

$\Delta p$  21 MPa (210 bar) 2T - 2C - 2D - 2V - TD - TV - TT - TS

Working temperature: -25°C ÷ +110°C

#### MATERIALS

Head: cast iron

Bowl: forged steel

Seals: standard NBR

on request FKM

#### COMPATIBILITY (ISO 2943:1999)

Full with fluids: HH-HL-HM-HV-HTG

(according to ISO 6743/4).

For fluids different than the above mentioned, please contact our Sales Department.

All tests performed according to the following standards:

ISO 2941: Element collapse resistance test

ISO 2942: Production integrity test

ISO 2943: Fluids compatibility

ISO 3723: End load test method

ISO 3724: Flow fatigue resistance method

ISO 3968: Pressure drop versus flow rate

ISO 16889: Multipass test.

For further information contact our Technical Dept.

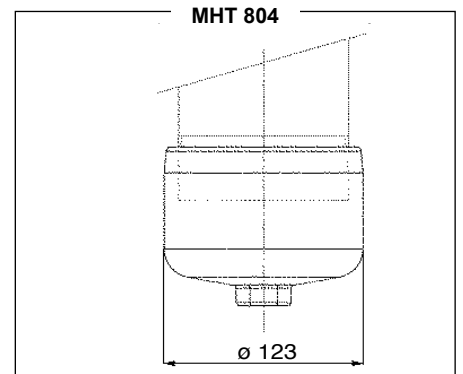
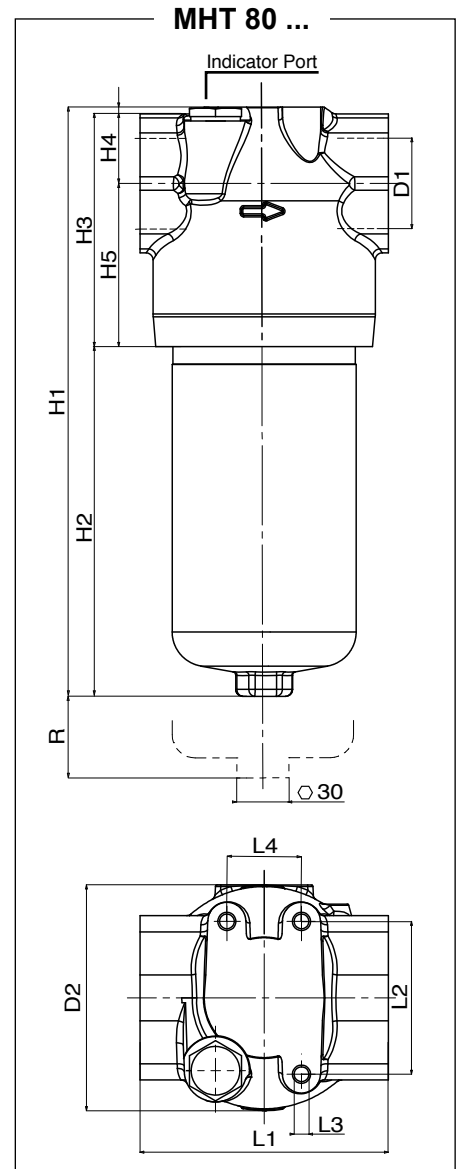
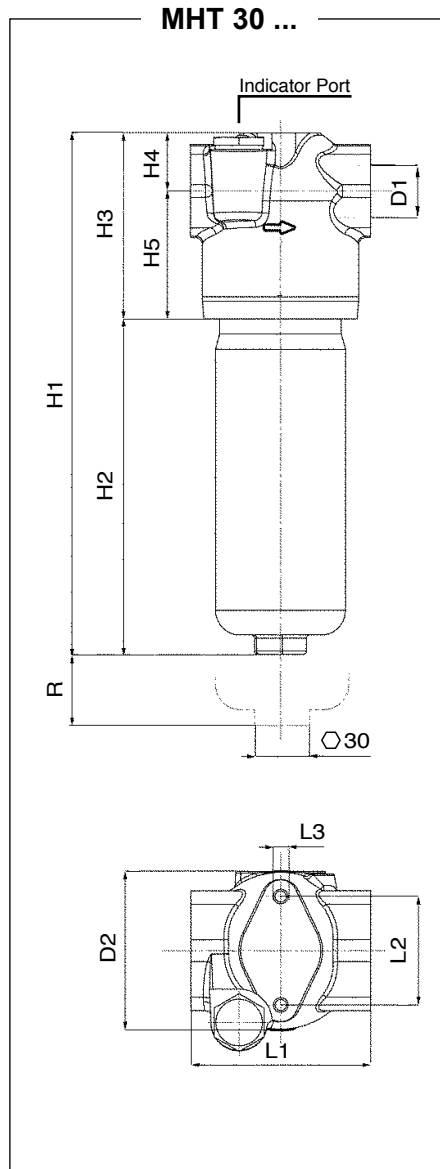
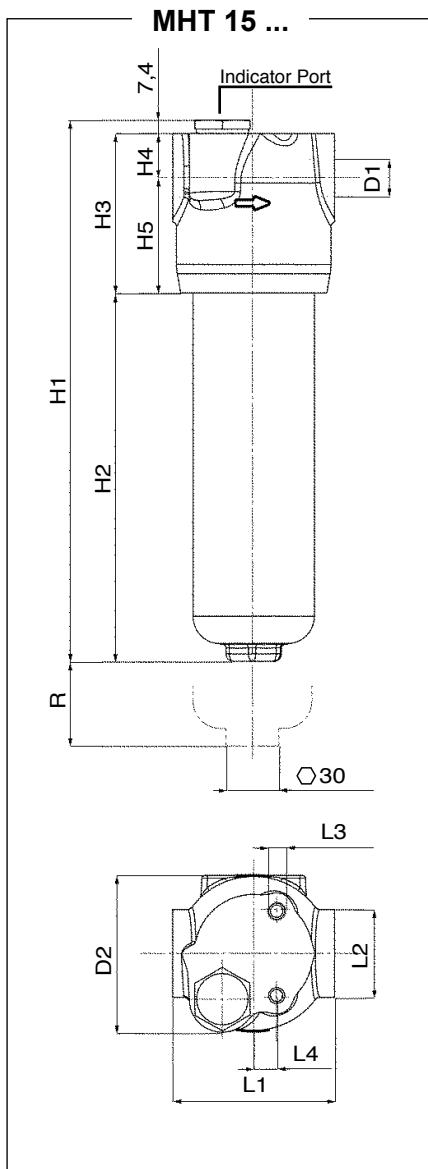
## HOW TO ORDER THE COMPLETE FILTER

## HOW TO ORDER THE FILTER ELEMENT

| MHT | Type  |     |     |     | Type  | CCH |
|-----|---|-----|-----|-----|---|-----|
|     |   | 151 | 301 | 801 |   |     |
|     |   | 152 | 302 | 802 |   |     |
|     |   | 153 | -   | 803 |   |     |
|     |   | -   | -   | 804 |   |     |
|     | Filter media  |     |     |     | Filter media  |     |
|     | FT = 5 $\mu$ m <sub>(c)</sub>   | FT  | FT  | FT  | FT = 5 $\mu$ m <sub>(c)</sub>   |     |
|     | FC = 7 $\mu$ m <sub>(c)</sub> Inorganic fiber $\beta$ >1000   | FC  | FC  | FC  | FC = 7 $\mu$ m <sub>(c)</sub> Inorganic fiber $\beta$ >1000                                 |     |
|     | FD = 12 $\mu$ m <sub>(c)</sub>  | FD  | FD  | FD  | FD = 12 $\mu$ m <sub>(c)</sub>  |     |
|     | FV = 21 $\mu$ m <sub>(c)</sub>  | FV  | FV  | FV  | FV = 21 $\mu$ m <sub>(c)</sub>  |     |
|     | CD = 10 $\mu$ Paper   | CD  | CD  | CD  | CD = 10 $\mu$ Paper   |     |
|     | CV = 25 $\mu$   | CV  | CV  | CV  | CV = 25 $\mu$   |     |
|     | RD = 10 $\mu$ Steel wire mesh   | RD  | RD  | RD  | RD = 10 $\mu$ Steel wire mesh   |     |
|     | MV = 25 $\mu$   | MV  | MV  | MV  | MV = 25 $\mu$   |     |
|     | 2T = 5 $\mu$ m <sub>(c)</sub>   | 2T  | 2T  | 2T  | 2T = 5 $\mu$ m <sub>(c)</sub>   |     |
|     | 2C = 7 $\mu$ m <sub>(c)</sub> Inorganic fiber $\beta$ >1000 - $\Delta$ p = 21 MPa (210 bar)                             | 2C  | 2C  | 2C  | 2C = 7 $\mu$ m <sub>(c)</sub> Inorganic fiber $\beta$ >1000 - $\Delta$ p = 21 MPa (210 bar) |     |
|     | 2D = 12 $\mu$ m <sub>(c)</sub>  | 2D  | 2D  | 2D  | 2D = 12 $\mu$ m <sub>(c)</sub>  |     |
|     | 2V = 21 $\mu$ m <sub>(c)</sub>  | 2V  | 2V  | 2V  | 2V = 21 $\mu$ m <sub>(c)</sub>  |     |
|     | TD = 10 $\mu$ Steel wire mesh $\Delta$ p = 21 MPa (210 bar)   | TD  | TD  | TD  | TD = 10 $\mu$ Steel wire mesh $\Delta$ p = 21 MPa (210 bar)                                 |     |
|     | TV = 25 $\mu$   | TV  | TV  | TV  | TV = 25 $\mu$   |     |
|     | Seals   |     |     |     | Seals   |     |
|     | 1 = NBR Nitrile   | 1   | 1   | 1   | 1 = NBR Nitrile   |     |
|     | 2 = FKM Fluoroelastomer   | 2   | 2   | 2   | 2 = FKM Fluoroelastomer   |     |
|     | Bypass type   |     |     |     |   |     |
|     | S = Without   | S   | S   | S   | } On request only   |     |
|     | C = 600 kPa (6 bar)   | C   | C   | C   |   |     |
|     | R = Reverse flow valve  | -   | R   | R   |   |     |
|     | P = 600 kPa (6 bar) + option R  | -   | P   | P   |   |     |
|     | Ports   |     |     |     |   |     |
|     | B = BSP   | B   | B   | B   |   |     |
|     | N = NPT (N3 not available)  | N   | N   | N   |   |     |
|     | S = SAE   | S   | S   | S   |   |     |
|     | F = SAE flange 3000 psi   | -   | F   | F   |   |     |
|     | H = SAE flange 6000 psi   | -   | H   | H   |   |     |
|     | Port size   |     |     |     |   |     |
|     | 3 = 1/2"  | 3   | -   | -   | (*) = F5 only for MHT30+,<br>H5 > MHT30+ not available<br>F5/H5 > MHT80+ not available      |     |
|     | 4 = 3/4"  | 4   | 4   | -   |   |     |
|     | 5 = 1" (*)  | -   | 5   | 5   |   |     |
|     | 6 = 1" 1/4  | -   | -   | 6   |   |     |
|     | 7 = 1" 1/2 (H7 not available)   | -   | -   | 7   |   |     |
|     | Indicators  |     |     |     |   |     |
|     | 03 = Port, plugged  | 03  | 03  | 03  |   |     |
|     | 5E = Visual differential 500 kPa (5 bar)  | 5E  | 5E  | 5E  |   |     |
|     | 5F = Visual differential 800 kPa (8 bar)  | 5F  | 5F  | 5F  |   |     |
|     | 6E = Electrical differential 500 kPa (5 bar)  | 6E  | 6E  | 6E  |   |     |
|     | 6F = Electrical differential 800 kPa (8 bar)  | 6F  | 6F  | 6F  |   |     |
|     | 7E = 6E with LED  | 7E  | 7E  | 7E  |   |     |
|     | 7F = 6F with LED  | 7F  | 7F  | 7F  |   |     |
|     | T2 = Electrical 500 kPa (5 bar) with thermostat 30°C  | T2  | T2  | T2  | Indicator 72 - 73<br>on request only  |     |
|     | T3 = Electrical 800 kPa (8 bar) with thermostat 30°C  | T3  | T3  | T3  |   |     |
|     | When the filter is ordered with FKM seals, the first digit of the indicator code is a letter (please see page 188-189). |     |     |     |   |     |
| XX  | Accessories   |     |     |     |   |     |
|     | XX = Not available  | XX  | XX  | XX  |   |     |

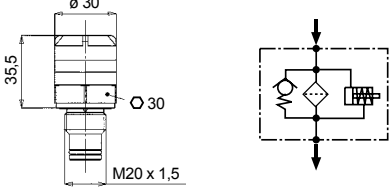
**DIMENSIONAL LAYOUT**

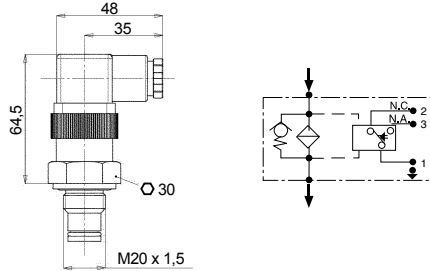
(mm)



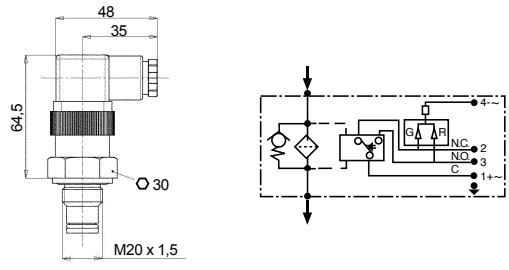
| Type    | D1             | D2  | H1  | H2  | H3  | H4 | H5 | L1  | L2 | L3                     | L4   | R   | Weight Kg |
|---------|----------------|-----|-----|-----|-----|----|----|-----|----|------------------------|------|-----|-----------|
| MHT 151 | 1/2" - 3/4"    | 86  | 166 | 79  | 87  | 24 | 63 | 88  | 46 | M8<br>5/16"<br>18 UNC  | 12,5 | 100 | 4,4       |
| MHT 152 | 1/2" - 3/4"    | 86  | 196 | 109 | 87  | 24 | 63 | 88  | 46 |                        | 12,5 | 100 | 4,6       |
| MHT 153 | 1/2" - 3/4"    | 86  | 296 | 209 | 87  | 24 | 63 | 88  | 46 |                        | 12,5 | 100 | 5,2       |
| MHT 301 | 3/4" - 1"      | 94  | 226 | 116 | 112 | 35 | 77 | 108 | 65 |                        | =    | 100 | 6,6       |
| MHT 302 | 3/4" - 1"      | 94  | 317 | 207 | 112 | 35 | 77 | 108 | 65 |                        | =    | 100 | 8,2       |
| MHT 801 | 1"-1"1/4-1"1/2 | 128 | 245 | 107 | 138 | 44 | 94 | 143 | 88 | M10<br>7/16"<br>14 UNC | 43   | 100 | 11,0      |
| MHT 802 | 1"-1"1/4-1"1/2 | 128 | 337 | 199 | 138 | 44 | 94 | 143 | 88 |                        | 43   | 100 | 13,9      |
| MHT 803 | 1"-1"1/4-1"1/2 | 128 | 457 | 319 | 138 | 44 | 94 | 143 | 88 |                        | 43   | 100 | 17,2      |
| MHT 804 | 1"-1"1/4-1"1/2 | 128 | 558 | 420 | 138 | 44 | 94 | 143 | 88 |                        | 43   | 100 | 22,0      |

**CLOGGING INDICATORS**

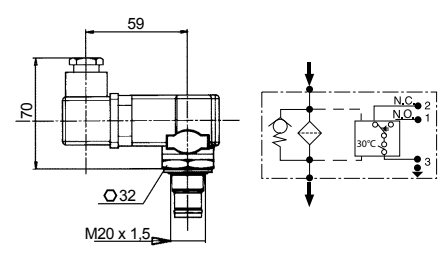
| NBR | FKM | Differential VISUAL indicators | Recommended tightening torque 90 Nm<br> |
|-----|-----|--------------------------------|---|
| 5E  | AE  | Setting 500 kPa (5 bar)        |   |
| 5F  | AF  | Setting 800 kPa (8 bar)        |   |

| NBR | FKM | Differential ELECTRICAL indicators | Recommended tightening torque 90 Nm<br> |
|-----|-----|------------------------------------|---|
| 6E  | CE  | Setting 500 kPa (5 bar)            |   |
| 6F  | CF  | Setting 800 kPa (8 bar)            |   |

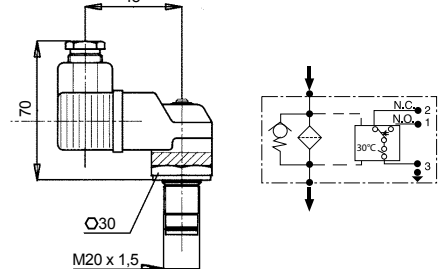
SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively  
C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650

| NBR | FKM | Differential ELECTRICAL indicators with LED (24 V) for visual indication | Recommended tightening torque 90 Nm<br> |
|-----|-----|--|--|
| 7E  | EE  | Setting 500 kPa (5 bar)  |  |
| 7F  | EF  | Setting 800 kPa (8 bar)  |  |

SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively  
C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650

| NBR | FKM | Differential ELECTRICAL indicators with THERMOSTAT 30°C | Recommended tightening torque 90 Nm<br> |
|-----|-----|---|---|
| T2  | DE  | Setting 500 kPa (5 bar)                                 |   |
| T3  | DF  | Setting 800 kPa (8 bar)                                 |   |

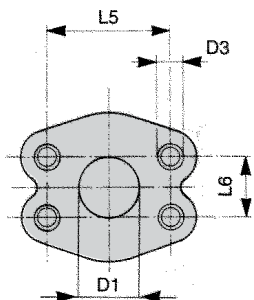
SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively  
C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650

| NBR | FKM | Differential VISUAL ELECTRICAL indicators | Recommended tightening torque 90 Nm<br> |
|-----|-----|---|---|
| 72  | E2  | Setting 500 kPa (5 bar)                   |   |
| 73  | E3  | Setting 800 kPa (8 bar)                   |   |

SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively  
C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650

**FLANGE MOUNTING BOLT DIMENSIONS**

(mm)



| Type   | Code | D1     | Max Pressure     | L5    | L6    | D3  | T (min. thread depth) |
|--------|------|--------|------------------|-------|-------|-----|-----------------------|
| MHT 30 | H4   | 3/4"   | 42 MPa (420 bar) | 50,8  | 23,8  | M10 | 14                    |
|        | F5   | 1"     | 21 MPa (210 bar) | 52,4  | 26,2  |     | 14                    |
| MHT 80 | H6   | 1" 1/4 | 42 MPa (420 bar) | 66,7  | 31,8  | M14 | 19                    |
|        | F6   | 1" 1/4 | 21 MPa (210 bar) | 58,72 | 30,18 | M10 | 19                    |
|        | F7   | 1" 1/2 | 21 MPa (210 bar) | 70,0  | 35,7  | M12 | 19                    |

## FLOW RATES

(l/min)

| Type                 | Filter Media | Δ p                 |                    |                      |
|----------------------|--------------|---------------------|--------------------|----------------------|
|                      |              | 50 kPa<br>(0,5 bar) | 100 kPa<br>(1 bar) | 150 kPa<br>(1,5 bar) |
| MHT 151<br>Port 3/4" | FT           | 11                  | 21                 | 28                   |
|                      | FC           | 14                  | 26                 | 40                   |
|                      | FD           | 19                  | 38                 | 57                   |
|                      | FV           | 31                  | 60                 | 85                   |
|                      | CD           | 45                  | 75                 | 90                   |
|                      | CV           | 75                  | 90                 | 90                   |
|                      | RD           | 70                  | 90                 | 90                   |
|                      | MV           | 80                  | 90                 | 90                   |
|                      | TD           | 68                  | 90                 | 90                   |
|                      | TV           | 78                  | 90                 | 90                   |
|                      | 2T           | 9                   | 19                 | 25                   |
|                      | 2C           | 12                  | 23                 | 35                   |
|                      | 2D           | 16                  | 33                 | 52                   |
|                      | 2V           | 27                  | 50                 | 77                   |
| MHT 152<br>Port 3/4" | FT           | 15                  | 30                 | 45                   |
|                      | FC           | 18                  | 35                 | 50                   |
|                      | FD           | 25                  | 50                 | 75                   |
|                      | FV           | 40                  | 68                 | 90                   |
|                      | CD           | 50                  | 80                 | 90                   |
|                      | CV           | 80                  | 90                 | 90                   |
|                      | RD           | 75                  | 90                 | 90                   |
|                      | MV           | 85                  | 90                 | 90                   |
|                      | TD           | 73                  | 90                 | 90                   |
|                      | TV           | 83                  | 90                 | 90                   |
|                      | 2T           | 13                  | 26                 | 41                   |
|                      | 2C           | 15                  | 30                 | 47                   |
|                      | 2D           | 22                  | 46                 | 70                   |
|                      | 2V           | 35                  | 60                 | 85                   |
| MHT 153<br>Port 3/4" | FT           | 22                  | 35                 | 50                   |
|                      | FC           | 24                  | 41                 | 56                   |
|                      | FD           | 35                  | 55                 | 85                   |
|                      | FV           | 55                  | 83                 | 90                   |
|                      | CD           | 72                  | 90                 | 90                   |
|                      | CV           | 85                  | 90                 | 90                   |
|                      | RD           | 80                  | 90                 | 90                   |
|                      | MV           | 90                  | 90                 | 90                   |
|                      | TD           | 78                  | 90                 | 90                   |
|                      | TV           | 90                  | 90                 | 90                   |
|                      | 2T           | 20                  | 33                 | 48                   |
|                      | 2C           | 22                  | 38                 | 52                   |
|                      | 2D           | 31                  | 50                 | 81                   |
|                      | 2V           | 50                  | 78                 | 90                   |

| Type               | Filter Media | Δ p                 |                    |                      |
|--------------------|--------------|---------------------|--------------------|----------------------|
|                    |              | 50 kPa<br>(0,5 bar) | 100 kPa<br>(1 bar) | 150 kPa<br>(1,5 bar) |
| MHT 301<br>Port 1" | FT           | 25                  | 55                 | 70                   |
|                    | FC           | 27                  | 62                 | 81                   |
|                    | FD           | 39                  | 73                 | 95                   |
|                    | FV           | 62                  | 110                | 150                  |
|                    | CD           | 80                  | 130                | 150                  |
|                    | CV           | 110                 | 150                | 150                  |
|                    | RD           | 100                 | 150                | 150                  |
|                    | MV           | 120                 | 150                | 150                  |
|                    | TD           | 97                  | 150                | 150                  |
|                    | TV           | 117                 | 150                | 150                  |
|                    | 2T           | 23                  | 51                 | 67                   |
|                    | 2C           | 24                  | 58                 | 76                   |
|                    | 2D           | 36                  | 67                 | 90                   |
|                    | 2V           | 57                  | 100                | 145                  |
| MHT 302<br>Port 1" | FT           | 34                  | 63                 | 79                   |
|                    | FC           | 38                  | 73                 | 90                   |
|                    | FD           | 50                  | 84                 | 104                  |
|                    | FV           | 75                  | 119                | 150                  |
|                    | CD           | 122                 | 150                | 150                  |
|                    | CV           | 135                 | 150                | 150                  |
|                    | RD           | 130                 | 150                | 150                  |
|                    | MV           | 148                 | 150                | 150                  |
|                    | TD           | 127                 | 150                | 150                  |
|                    | TV           | 144                 | 150                | 150                  |
|                    | 2T           | 30                  | 60                 | 74                   |
|                    | 2C           | 34                  | 68                 | 86                   |
|                    | 2D           | 47                  | 78                 | 100                  |
|                    | 2V           | 70                  | 109                | 150                  |
| MHT 801<br>Port 1" | FT           | 39                  | 73                 | 124                  |
|                    | FC           | 46                  | 91                 | 142                  |
|                    | FD           | 79                  | 154                | 193                  |
|                    | FV           | 105                 | 194                | 240                  |
|                    | CD           | 159                 | 240                | 240                  |
|                    | CV           | 219                 | 240                | 240                  |
|                    | RD           | 178                 | 240                | 240                  |
|                    | MV           | 186                 | 240                | 240                  |
|                    | TD           | 150                 | 240                | 240                  |
|                    | TV           | 155                 | 240                | 240                  |
|                    | 2T           | 27                  | 48                 | 74                   |
|                    | 2C           | 36                  | 62                 | 87                   |
|                    | 2D           | 50                  | 98                 | 131                  |
|                    | 2V           | 73                  | 130                | 184                  |

| Type                   | Filter Media | Δ p                 |                    |                      |
|------------------------|--------------|---------------------|--------------------|----------------------|
|                        |              | 50 kPa<br>(0,5 bar) | 100 kPa<br>(1 bar) | 150 kPa<br>(1,5 bar) |
| MHT 802<br>Port 1 1/2" | FT           | 93                  | 198                | 250                  |
|                        | FC           | 128                 | 218                | 281                  |
|                        | FD           | 163                 | 286                | 300                  |
|                        | FV           | 201                 | 300                | 300                  |
|                        | CD           | 239                 | 300                | 300                  |
|                        | CV           | 279                 | 300                | 300                  |
|                        | RD           | 261                 | 300                | 300                  |
|                        | MV           | 291                 | 300                | 300                  |
|                        | TD           | 217                 | 300                | 300                  |
|                        | TV           | 242                 | 152                | 300                  |
|                        | 2T           | 71                  | 152                | 190                  |
|                        | 2C           | 125                 | 167                | 216                  |
|                        | 2D           | 125                 | 230                | 280                  |
|                        | 2V           | 153                 | 280                | 300                  |
| MHT 803<br>Port 1 1/2" | FT           | 131                 | 270                | 340                  |
|                        | FC           | 140                 | 287                | 350                  |
|                        | FD           | 170                 | 325                | 420                  |
|                        | FV           | 225                 | 380                | 420                  |
|                        | CD           | 290                 | 420                | 420                  |
|                        | CV           | 320                 | 420                | 420                  |
|                        | RD           | 311                 | 420                | 420                  |
|                        | MV           | 335                 | 420                | 420                  |
|                        | TD           | 260                 | 420                | 420                  |
|                        | TV           | 280                 | 420                | 420                  |
|                        | 2T           | 109                 | 225                | 283                  |
|                        | 2C           | 116                 | 239                | 291                  |
|                        | 2D           | 141                 | 270                | 408                  |
|                        | 2V           | 187                 | 316                | 420                  |
| MHT 804<br>Port 1 1/2" | FT           | 173                 | 351                | 420                  |
|                        | FC           | 188                 | 363                | 420                  |
|                        | FD           | 237                 | 410                | 420                  |
|                        | FV           | 312                 | 420                | 420                  |
|                        | CD           | 330                 | 420                | 420                  |
|                        | CV           | 340                 | 420                | 420                  |
|                        | RD           | 331                 | 420                | 420                  |
|                        | MV           | 355                 | 420                | 420                  |
|                        | TD           | 277                 | 420                | 420                  |
|                        | TV           | 295                 | 420                | 420                  |
|                        | 2T           | 144                 | 292                | 310                  |
|                        | 2C           | 156                 | 302                | 362                  |
|                        | 2D           | 197                 | 341                | 420                  |
|                        | 2V           | 260                 | 390                | 420                  |

The reference fluid has a kinematic viscosity of 30 cSt and a density of 0,86 Kg/dm<sup>3</sup>.  
For different oil viscosity please contact our Sales Department for further information.

## **DIRT HOLDING CAPACITY**

(g) ISO MTD  $\Delta p = 500$  kPa (5 bar)

| Type    | Filter Media |      |      |      |      |      |      |      |
|---------|--------------|------|------|------|------|------|------|------|
|         | FT           | 2T   | FC   | 2C   | FD   | 2D   | FV   | 2V   |
| CCH 151 | 2,0          | 2,0  | 2,6  | 2,6  | 3,0  | 3,0  | 4,3  | 4,3  |
| CCH 152 | 3,0          | 3,0  | 3,8  | 3,8  | 3,9  | 3,9  | 6,2  | 6,2  |
| CCH 153 | 5,5          | 5,5  | 7,2  | 7,2  | 7,8  | 7,8  | 11,5 | 11,5 |
| CCH 301 | 5,7          | 5,7  | 7,5  | 7,5  | 8,2  | 8,2  | 12,1 | 12,1 |
| CCH 302 | 10,9         | 10,9 | 14,1 | 14,1 | 15,6 | 15,6 | 21,8 | 21,8 |
| CCH 801 | 11,9         | 11,9 | 15,5 | 11,3 | 17,2 | 12,6 | 25,3 | 18,4 |
| CCH 802 | 22,0         | 16,1 | 27,6 | 20,7 | 31,0 | 23,0 | 46,0 | 33,3 |
| CCH 803 | 28,0         | 25,3 | 37,9 | 32,2 | 42,5 | 36,8 | 62,1 | 52,9 |
| CCH 804 | 39,1         | 33,3 | 49,4 | 42,5 | 56,3 | 48,3 | 80,5 | 70,1 |

## **FILTER AREA**

(cm<sup>2</sup>)

| Type    | Filter Media |      |      |      |      |      |
|---------|--------------|------|------|------|------|------|
|         | RD           | TD   | MV   | TV   | CD   | CV   |
| CCH 151 | 300          | 300  | 300  | 300  | 310  | 310  |
| CCH 152 | 430          | 430  | 430  | 430  | 475  | 475  |
| CCH 153 | 805          | 805  | 805  | 805  | 915  | 915  |
| CCH 301 | 770          | 770  | 770  | 770  | 975  | 975  |
| CCH 302 | 1455         | 1455 | 1455 | 1455 | 1785 | 1785 |
| CCH 801 | 1710         | 1430 | 1710 | 1430 | 1720 | 1720 |
| CCH 802 | 3160         | 2210 | 3160 | 2210 | 2695 | 2695 |
| CCH 803 | 5020         | 3560 | 5020 | 3560 | 4325 | 4325 |
| CCH 804 | 6580         | 4700 | 6580 | 4700 | 5685 | 5685 |