



ORELL

SUCTION FILTERS SE



MATERIALS

Head:
Aluminium alloy

Spin-on cartridge:
Steel

Bypass valve:
Polyamide

Seals:
NBR Nitrile
(FKM - on request fluoroelastomer)

Indicator housing:
Brass

PRESSURE (ISO 10771-1:2002)

Max working:
1,2 MPa (12 bar)

Test:
1,5 MPa (15 bar)

Bursting:
2,5 MPa (25 bar)

Collapse, differential
for the filter element (ISO 2941):
400 kPa (4 bar)

BYPASS VALVE

Setting:
35 kPa (0,35 bar) \pm 10%

WORKING TEMPERATURE

From -25° to +110° C

COMPATIBILITY (ISO 2943:1999)

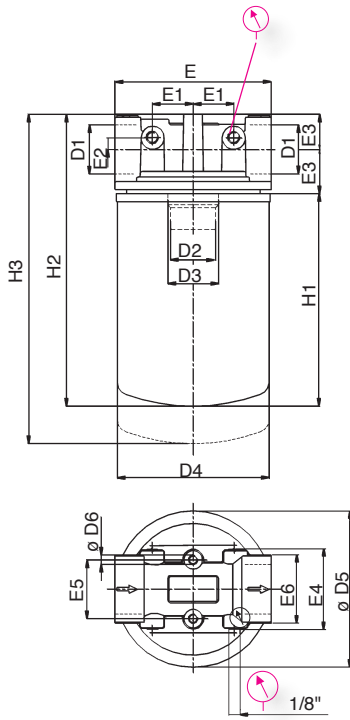
Full with fluids:
HH-HL-HM-HV-HTG
(according to ISO 6743/4)
For fluids different than the above
mentioned, please contact our
Sales Department.

APPLICATION EXAMPLE

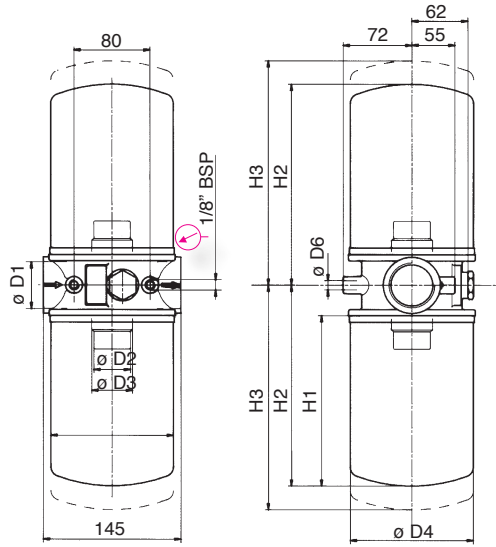


OHF 230

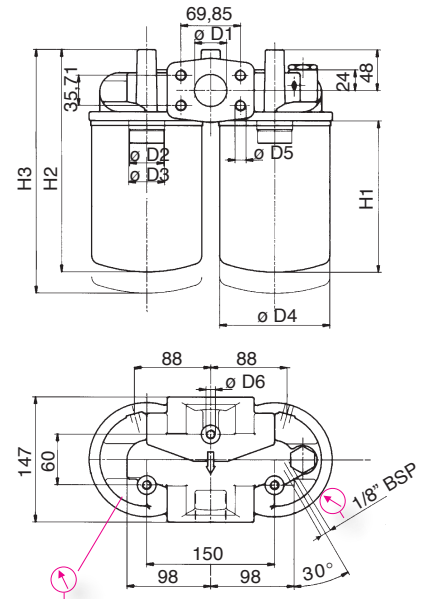
FSE 1+ & FSE 2+



FSE 3+



FSE 4+

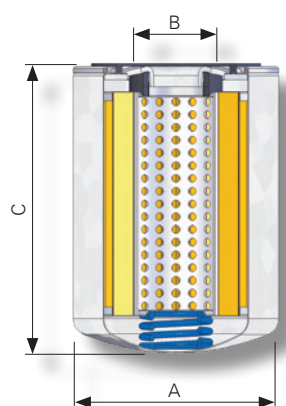


FILTER HOUSING

| | D1 | D2 | D3 | D4 | D5 | D6 | E | E1 | E2 | E3 | E4 | E5 | E6 | H1 | H2 | H3 | kg |
|-------|--------|--------------|------------|-----|-----|-----|-----|------|----|----|----|----|----|-----|-----|-----|-----|
| FSE11 | 3/4" | 3/4" BSP | - | 96 | 96 | M8 | 95 | 20,5 | 7 | 20 | 49 | 38 | 37 | 145 | 188 | 208 | 1,2 |
| FSE12 | 3/4" | 3/4" BSP | - | 96 | 96 | M8 | 95 | 20,5 | 7 | 20 | 49 | 38 | 37 | 191 | 234 | 254 | 1,5 |
| FSE21 | 1" 1/4 | 1" 1/2 16-UN | 1" 1/4 BSP | 129 | 134 | M8 | 133 | 35 | 10 | 30 | 64 | 50 | 57 | 181 | 248 | 278 | 1,9 |
| FSE31 | 1" 1/2 | 1" 1/2 16-UN | 1" 1/4 BSP | 129 | - | M10 | - | - | - | - | - | - | - | 181 | 216 | 246 | 3,6 |
| FSE41 | 1" 1/2 | 1" 1/2 16-UN | 1" 1/4 BSP | 129 | M12 | M10 | - | - | - | - | - | - | - | 181 | 269 | 299 | 4,8 |
| FSE22 | 1" 1/4 | 1" 1/2 16-UN | 1" 1/4 BSP | 129 | 134 | M8 | 133 | 35 | 10 | 30 | 64 | 50 | 57 | 226 | 293 | 323 | 2,0 |
| FSE32 | 1" 1/2 | 1" 1/2 16-UN | 1" 1/4 BSP | 129 | - | M10 | - | - | - | - | - | - | - | 226 | 261 | 291 | 3,8 |
| FSE42 | 1" 1/2 | 1" 1/2 16-UN | 1" 1/4 BSP | 129 | M12 | M10 | - | - | - | - | - | - | - | 226 | 314 | 344 | 5,0 |

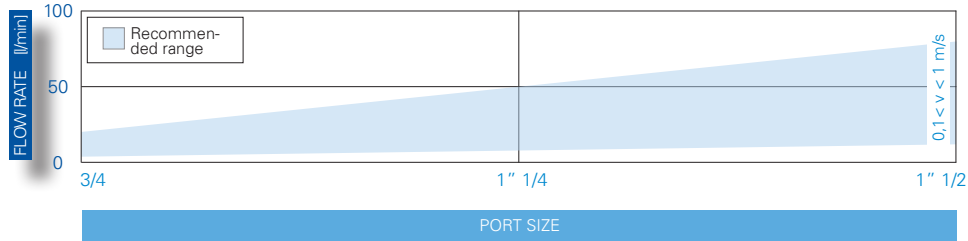
| | | | | | | | | | | | | |
|--|---|----|----|----|----|----|----|----|----|-----------------------------|--|-----|
| TYPE | | F | F | F | F | F | F | F | F | ELEMENT | | E |
| F = FILTER COMPLETE | | | | | | | | | | FAMILY SIZE & LENGTH | | S E |
| B = FILTER HOUSING | | B | B | B | B | B | B | B | B | | | |
| S E | FAMILY NOMINAL SIZE & LENGTH | 11 | 12 | 21 | 22 | 31 | 32 | 41 | 42 | | | |
| PORT TYPE | | | | | | | | | | NOTE | | |
| B = BSP thread | | B | B | B | B | B | B | B | B | ESE31+++ = nr. 2 x ESE21+++ | | |
| F = SAE flange 3000 psi, metric screws | | - | - | - | - | - | - | F | F | ESE32+++ = nr. 2 x ESE22+++ | | |
| PORT SIZE (quote "D1") | | | | | | | | | | ESE41+++ = nr. 2 x ESE21+++ | | |
| 06 = 3/4 | | 06 | 06 | - | - | - | - | - | - | ESE42+++ = nr. 2 x ESE22+++ | | |
| 10 = 1" 1/4 | | - | - | 10 | 10 | - | - | - | - | | | |
| 12 = 1" 1/2 | | - | - | - | - | 12 | 12 | 12 | 12 | | | |
| BYPASS VALVE | | | | | | | | | | | | |
| W = without | | W | W | W | W | W | W | W | W | | | |
| A = 35 kPa (0,35 bar) | | A | A | A | A | A | A | A | A | | | |
| SEALS | | | | | | | | | | SEALS | | |
| N = NBR Nitrile | | N | N | N | N | N | N | N | N | N = NBR | | |
| F = FKM Fluoroelastomer | | F | F | F | F | F | F | F | F | F = FKM | | |
| FILTER MEDIA | | | | | | | | | | FILTER MEDIA | | |
| CC = cellulose 10µm β>2 | | CC | CC | CC | CC | CC | CC | CC | CC | CC = cell. 10µm | | |
| CD = cellulose 25µm β>2 | | CD | CD | CD | CD | CD | CD | CD | CD | CD = cell. 25µm | | |
| ME = metal wire mesh 60µm | | ME | ME | ME | ME | ME | ME | ME | ME | ME = w. mesh 60µm | | |
| MF = metal wire mesh 90µm | | MF | MF | MF | MF | MF | MF | MF | MF | MF = w. mesh 90µm | | |
| CLOGGING INDICATOR | | | | | | | | | | | | |
| 06 = 1/8" seat, plugged | | 06 | 06 | 06 | 06 | 06 | 06 | 06 | 06 | | | |
| 10 = vacuum gauge, bottom connection | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | | | |
| 91 = SPDT, vacuum switch | | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | | | |
| X X | ACCESSORIES | | | | | | | | | | | |
| XX = no accessory available | | XX | XX | XX | XX | XX | XX | XX | XX | | | |

| FILTER ELEMENT | | | | | | |
|----------------|------|---------------|-----|------|-------------------------|----------|
| | A | B | C | kg | Area (cm ²) | |
| | | | | | Media M+ | Media C+ |
| ESE11 | 96,5 | 3/4" BSP | 146 | 0,70 | 980 | 3.305 |
| ESE12 | 96,5 | 3/4" BSP | 191 | 0,80 | 1.390 | 4.745 |
| ESE21 | 129 | 1" 1/4 BSP | 181 | 1,20 | 1.940 | 5.560 |
| ESE22 | 129 | 1" 1/4 BSP | 226 | 1,40 | 2.570 | 7.360 |



FLUID SPEED

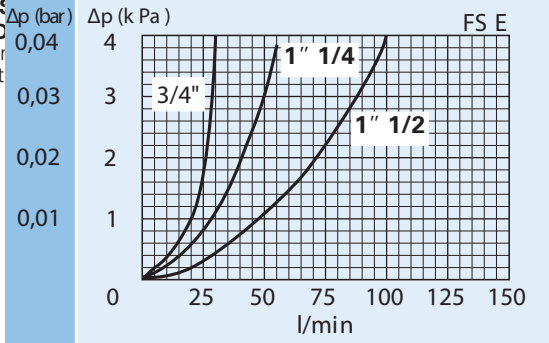
when selecting the filter size, we suggest to consider also the max recommended fluid speed (in suction lines normally $0,1 < v < 1$ m/s)



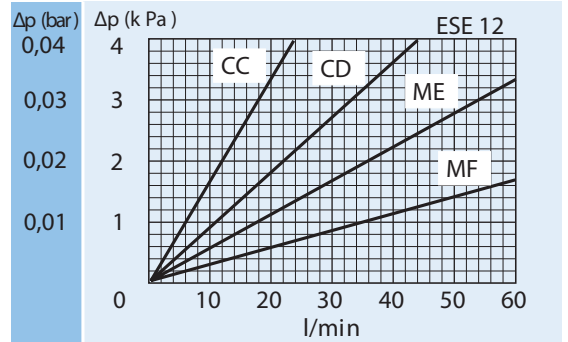
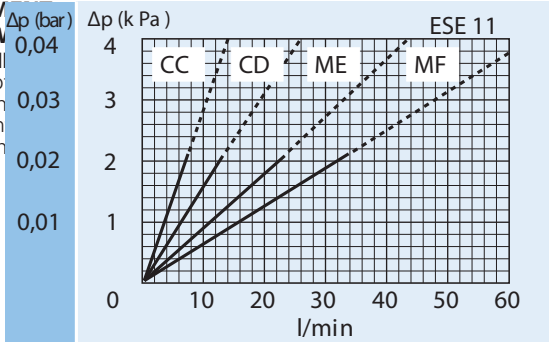
PRESSURE DROP CURVES (Δp)

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 3 kPa (0,03 bar).

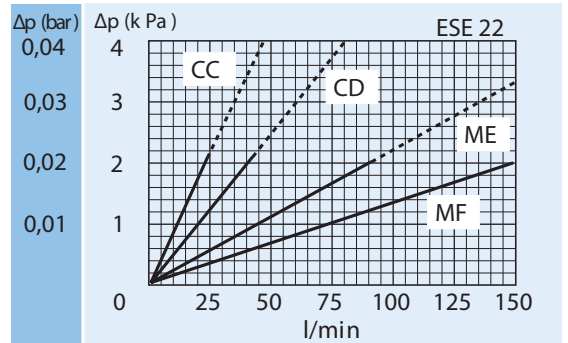
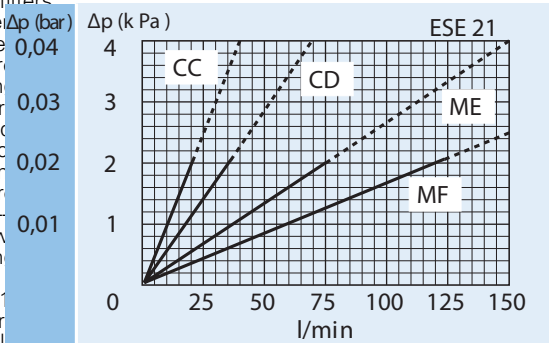
FILTER HOUSING PRESSURE DROP
(mainly dependent on the port size)



CLEAN FILTER ELEMENT PRESSURE DROP
C+ AND M+ (depending both on the internal diameter of the element and on the filter media)

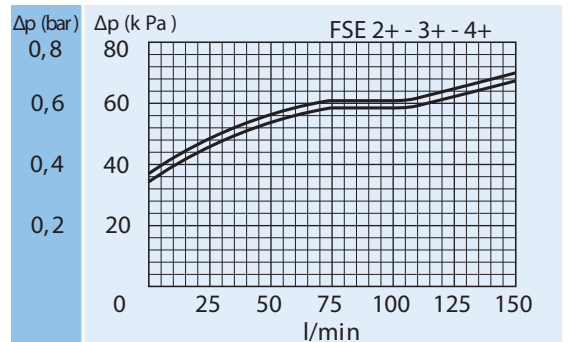
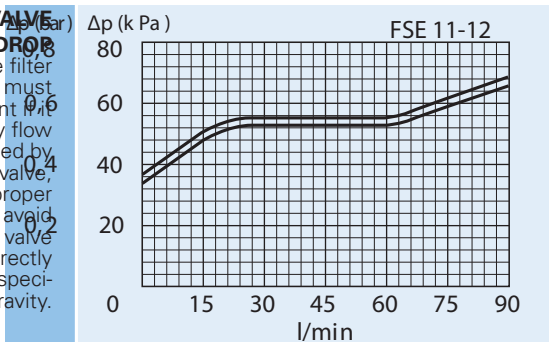


FSE3+ and FSE4+ filters use double element canisters. The Assembly Pressure Drop is then determined by adding the Housing Pressure Drop to the real flow rate and the pressure drop of the ESE2+ element.
E.g. The pressure drop of a complete FSE31 filter at a 60 l/min flow rate is obtained by adding the Housing Pressure Drop and half the ESE21 element pressure drop at 60 l/min.



BYPASS VALVE PRESSURE DROP

When selecting the filter size, these curves must be taken into account. 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. All the curves have been obtained with mineral oil having a kinematic viscosity 30 cSt and specific gravity 0,9 kg/dm³; for fluids with different features, please consider the factors described in the first part of this catalogue.

