

**Application Example**



## Suction Filter - SE

### 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) ± 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.

### Materials

Head:	Aluminium alloy
Spin-on cartridge:	Steel
Bypass valve:	Polyammide
Seals:	NBR Nitrile (FKM - on request fluoroelastomer)
Indicator housing:	Brass

### HOUSINGS

Body Size	Connection BSP	Element Type		Price £	Price €
FSE11	3/4"	11		<b>ON REQUEST</b>	
FSE12	3/4"	12		<b>ON REQUEST</b>	
FSE21	1 1/4"	21		<b>ON REQUEST</b>	
FSE22	1 1/4"	22		<b>ON REQUEST</b>	Above body with 0.35 Bar bypass valve
FSE31	1 1/2"	21 x 2 OFF	Double flow	<b>ON REQUEST</b>	
FSE32	1 1/2"	22 x 2 OFF	Double flow	<b>ON REQUEST</b>	
FSE41	1 1/2"	21 x 2 OFF	Double flow	<b>ON REQUEST</b>	
FSE42	1 1/2"	22 x 2 OFF	Double flow	<b>ON REQUEST</b>	

### CLOGGING INDICATOR

Article No.	Type	Price £	Price €
06	None - Plugged - AS STANDARD	<b>ON REQUEST</b>	
10	Vacuum Pressure gauge	<b>ON REQUEST</b>	
91	Vacuum Electrical Switch 0.2 BAR	<b>ON REQUEST</b>	

### ELEMENT to be added

Element	Filtration	Max LPM	Price £	Price €
ESE11CC	10 MICRON PAPER	4 LPM	<b>ON REQUEST</b>	
ESE11CD	25 MICRON PAPER	6 LPM	<b>ON REQUEST</b>	
ESE12CC	10 MICRON PAPER	6 LPM	<b>ON REQUEST</b>	
ESE12CD	25 MICRON PAPER	10 LPM	<b>ON REQUEST</b>	
ESE21CC	10 MICRON PAPER	12 LPM	<b>ON REQUEST</b>	
ESE21CD	25 MICRON PAPER	21 LPM	<b>ON REQUEST</b>	
ESE22CC	10 MICRON PAPER	12 LPM	<b>ON REQUEST</b>	
ESE22CD	25 MICRON PAPER	21 LPM	<b>ON REQUEST</b>	
ESE11ME	60 MICRON WIRE MESH	12 LPM	<b>ON REQUEST</b>	
ESE11MF	90 MICRON WIRE MESH	16 LPM	<b>ON REQUEST</b>	
ESE12ME	60 MICRON WIRE MESH	18 LPM	<b>ON REQUEST</b>	
ESE12MF	90 MICRON WIRE MESH	35 LPM	<b>ON REQUEST</b>	
ESE21ME	60 MICRON WIRE MESH	40 LPM	<b>ON REQUEST</b>	
ESE21MF	90 MICRON WIRE MESH	65 LPM	<b>ON REQUEST</b>	
ESE22ME	60 MICRON WIRE MESH	45 LPM	<b>ON REQUEST</b>	
ESE22MF	90 MICRON WIRE MESH	75 LPM	<b>ON REQUEST</b>	

# Suction Filter - SE

## Ordering Codes - Filter

<input type="checkbox"/>	<input type="checkbox"/>	<b>Type</b>								
		F = Filter Complete	F	F	F	F	F	F	F	
		B = Filter Housing	B	B	B	B	B	B	B	
<b>S</b>	<b>E</b>	<b>Family, Nominal Size, Length</b>	<b>11</b>	<b>12</b>	<b>21</b>	<b>22</b>	<b>31</b>	<b>32</b>	<b>41</b>	<b>42</b>
<input type="checkbox"/>	<input type="checkbox"/>	<b>Port Type</b>								
		B = BSP Thread	B	B	B	B	B	B	B	
		F = SAE flanged 3000psi, metric screws	-	-	-	-	-	F	F	
<input type="checkbox"/>	<input type="checkbox"/>	<b>Port Size</b>								
		06 = 3/4"	06	06	-	-	-	-	-	
		10 = 1 1/4"	-	-	10	10	-	-	-	
		12 = 1 1/2"	-	-	-	-	12	12	12	
<input type="checkbox"/>	<input type="checkbox"/>	<b>Bypass Valve</b>								
		W = Without	W	W	W	W	W	W	W	
		A = 35 kPa (0.35 bar)	A	A	A	A	A	A	A	
<input type="checkbox"/>	<input type="checkbox"/>	<b>Seals</b>								
		N = NBR Nitrile	N	N	N	N	N	N	N	
		F = FKM Fluoroelastomer	F	F	F	F	F	F	F	
<input type="checkbox"/>	<input type="checkbox"/>	<b>Filter Media</b>								
		CC = Cellulose 10µm β>2	CC	CC	CC	CC	CC	CC	CC	
		CD = Cellulose 25µm β>2	CD	CD	CD	CD	CD	CD	CD	
		ME = Metal wire mesh 60µm	ME	ME	ME	ME	ME	ME	ME	
		MF = Metal wire mesh 90µm	MF	MF	MF	MF	MF	MF	MF	
<input type="checkbox"/>	<input type="checkbox"/>	<b>Clogging Indicator</b>								
		06 = 1/8" seat, plugged	08	08	08	08	08	08	08	
		10 = vacuum gauge, bottom connection	10	10	10	10	10	10	10	
		91 = SPDT, vacuum switch	91	91	91	91	91	91	91	
<b>X</b>	<b>X</b>	<b>Accessories XX = no access available</b>	<b>XX</b>	<b>XX</b>	<b>XX</b>	<b>XX</b>	<b>XX</b>	<b>XX</b>	<b>XX</b>	

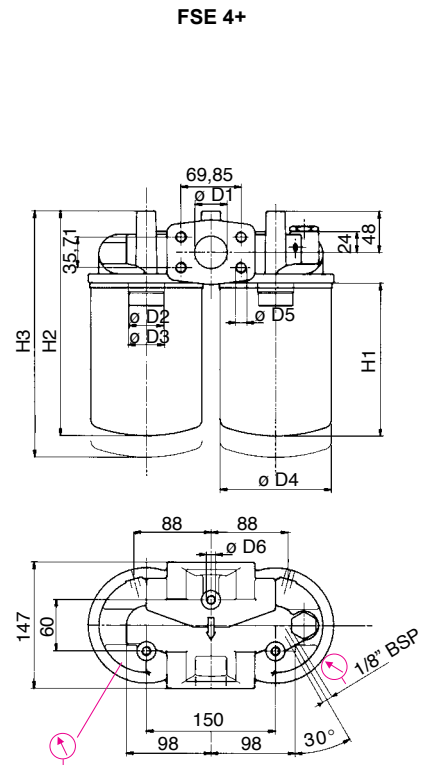
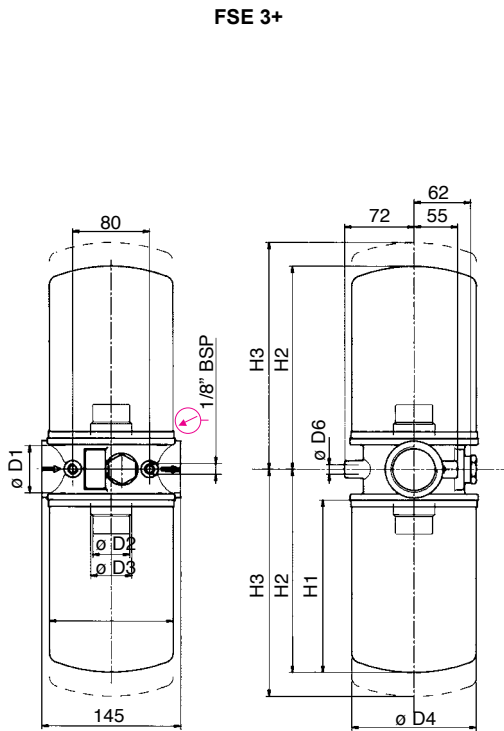
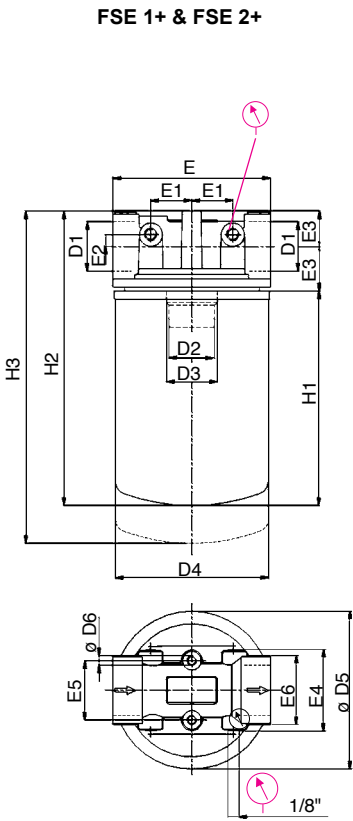
**NOTE**

ESE31+++ = NR. 2 x ESE21+++  
 ESE32+++ = NR. 2 x ESE22+++  
 ESE41+++ = NR. 2 x ESE21+++  
 ESE42+++ = NR. 2 x ESE22+++

## Ordering Codes - Element

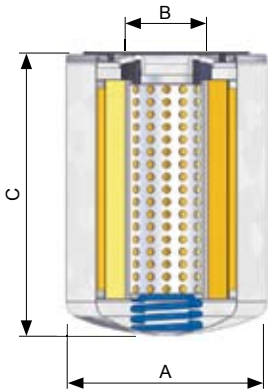
<b>E</b>	<input type="checkbox"/>	<b>Element</b>								
<b>S</b>	<b>E</b>	<b>Family, Nominal Size, Length</b>	<b>11</b>	<b>12</b>	<b>21</b>	<b>22</b>	<b>31</b>	<b>32</b>	<b>41</b>	<b>42</b>
<input type="checkbox"/>	<input type="checkbox"/>	<b>Seals</b>								
		N = NBR Nitrile	B	B	B	B	B	B	B	
		F = FKM Fluoroelastomer	-	-	-	-	-	F	F	
<input type="checkbox"/>	<input type="checkbox"/>	<b>Filter Media</b>								
		CC = Cellulose 10µm β>2	CC	CC	CC	CC	CC	CC	CC	
		CD = Cellulose 25µm β>2	CD	CD	CD	CD	CD	CD	CD	
		ME = Metal wire mesh 60µm	ME	ME	ME	ME	ME	ME	ME	
		MF = Metal wire mesh 90µm	MF	MF	MF	MF	MF	MF	MF	

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FILTER HOUSING - Dimensions (mm)

	D1	D2	D3	D4	D5	D5	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 1/4" BSP	129	134	M8	133	35	10	30	64	50	57	181	248	278	1.9
FSE31	1 1/2"	-	1 1/4" BSP	129	-	M10	-	-	-	-	-	-	-	181	216	246	3.6
FSE41	1 1/2"	-	1 1/4" BSP	129	M12	M10	-	-	-	-	-	-	-	181	269	299	4.8
FSE22	1 1/4"	-	1 1/4" BSP	129	134	M8	133	35	10	30	64	50	57	226	293	323	2.0
FSE32	1 1/2"	-	1 1/4" BSP	129	-	M10	-	-	-	-	-	-	-	226	261	291	3.8
FSE42	1 1/2"	-	1 1/4" BSP	129	M12	M10	-	-	-	-	-	-	-	226	314	344	5.0



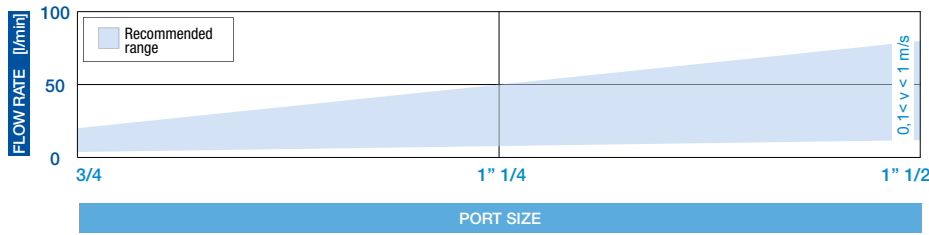
FILTER ELEMENT - Dimensions (mm)

	A	B	C	kg	Area (cm <sup>2</sup> ) media M+	Area (cm <sup>2</sup> ) 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

# Suction Filter - SE

## FLUID SPEED

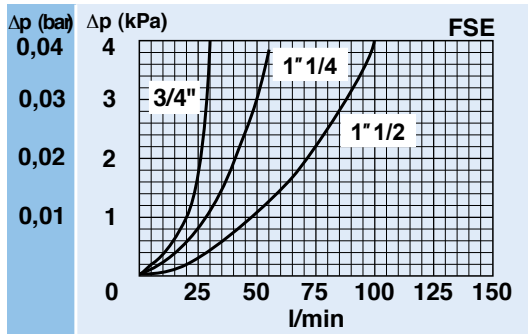
(when selecting the filter size, we suggest to consider also the max recommended fluid speed (in suction lines normally  $0,1 < v < 1$  m/s))



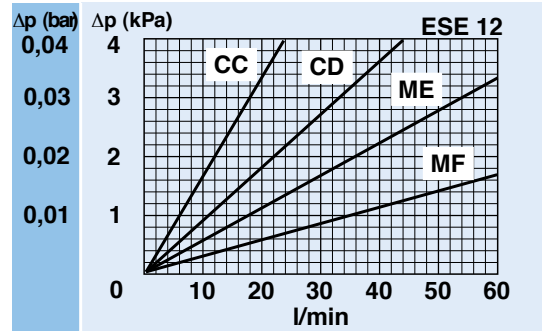
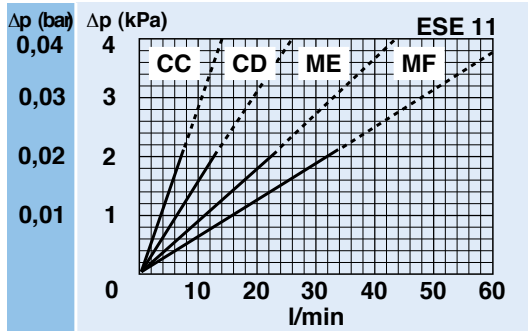
## PRESSURE DROP CURVES ( $\Delta p$ )

The "Assembly Pressure Drop ( $\Delta p$ )" 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).

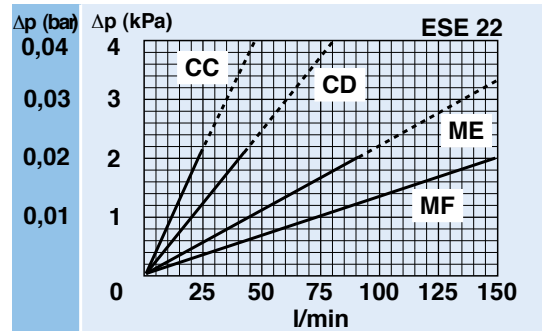
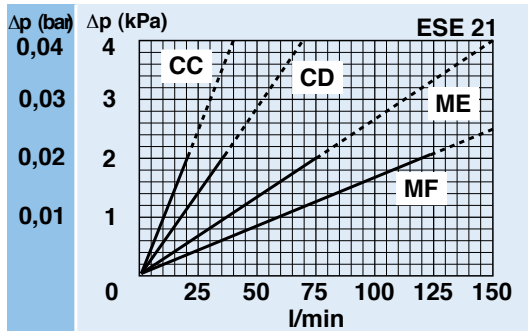
**FILTER HOUSING PRESSURE DROP**  
(mainly depending on the port size)



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

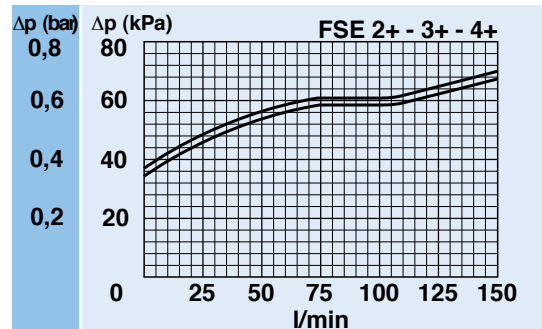
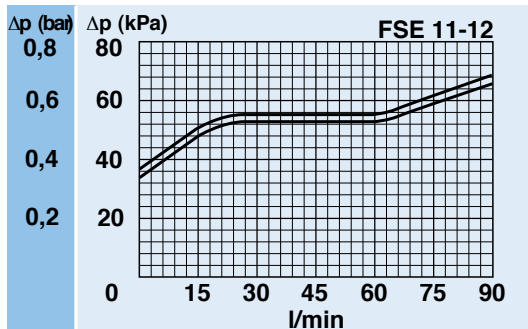


FSE3+ and FSE4+ filters use double element canisters. The Assembly Pressure Drop is therefore determined by adding the Housing Pressure Drop at the real flow rate and half the pressure drop of the ESE2+ element.  
e.g. The pressure drop of a complete FSE31----FC---- filter at a 60 l/min flow rate is obtained by adding the Housing Pressure Drop and half the ESE21NFC element pressure drop at 60 l/min.



**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.



### Suction Filter - SE

#### CLOGGING INDICATOR

A visual or electrical indicator allows monitoring of the element condition, and gives an indication of the proper time for replacement. The port for the indicator is a standard feature.

#### BYPASS VALVE

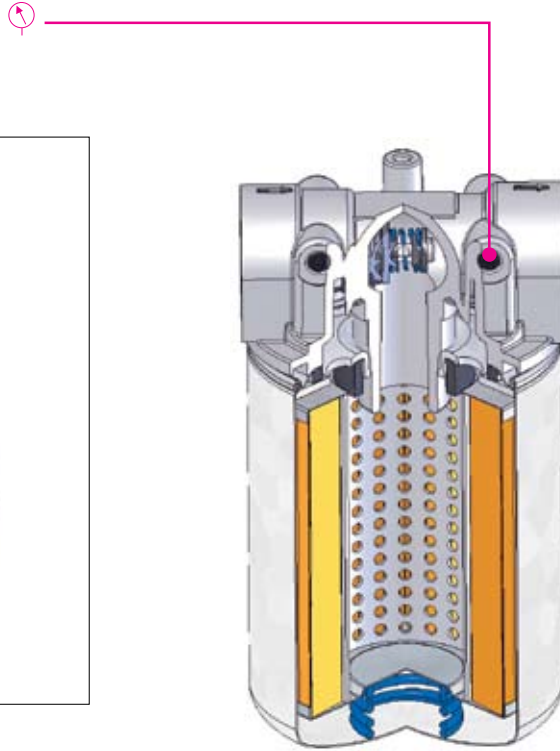
In the head, a full-flow bypass valve can be mounted as an option; the bypass flow is designed in such a way that the contaminant is retained in the filter element during bypass conditions.

#### STRONG CONSTRUCTION

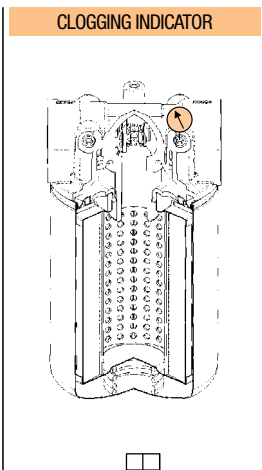
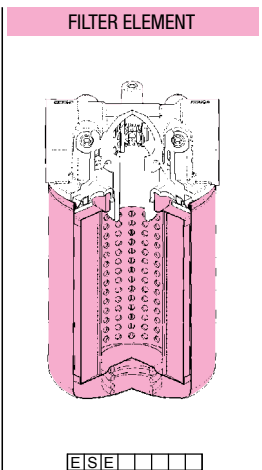
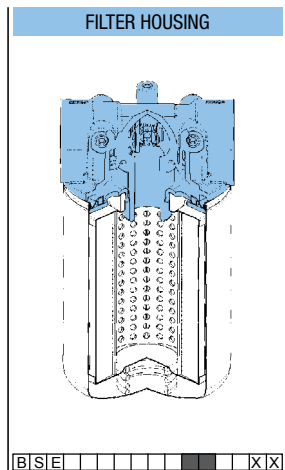
The materials and the design ensure a superior resistance to fatigue even at working pressures up to 1.200 kPa (12 bar).

#### EASY MAINTENANCE

The spin-on cartridge filter element allows a easy and quick replacement of the element itself.



#### CLOGGING INDICATOR



**SPARE PARTS ELEMENTS**  
(For filling up see table "Ordering and option chart")