

**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: Polyamide  
 Seals: NBR Nitrile  
 (FKM - on request fluoroelastomer)  
 Indicator housing: Brass

**HOUSINGS**

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

**CLOGGING INDICATOR**

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

**ELEMENT to be added**

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

# SUCTION FILTER - SE

## Ordering Codes - Filter

<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	
S	E	<b>Family, Nominal Size, Length</b>	11	12	21	22	31	32	41	42
<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	12
<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"/>		<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	
X	X	<b>Accessories XX = no access available</b>	XX	XX	XX	XX	XX	XX	XX	

**NOTE**

ESE31+++ = NR. 2 x ESE21+++

ESE32+++ = NR. 2 x ESE22+++

ESE41+++ = NR. 2 x ESE21+++

ESE42+++ = NR. 2 x ESE22+++

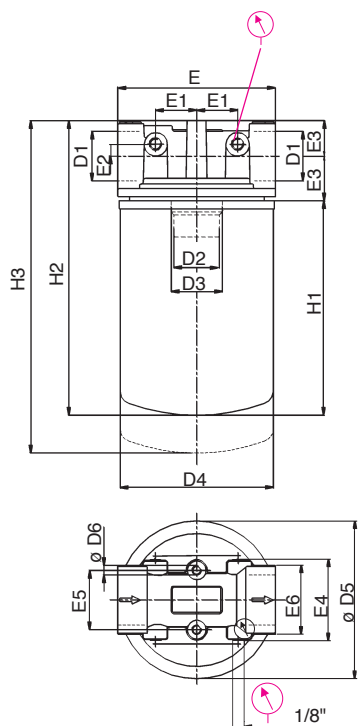
## Ordering Codes - Element

<input type="checkbox"/>		<b>Element</b>								
E										
S	E	<b>Family, Nominal Size, Length</b>	11	12	21	22	31	32	41	42
<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	

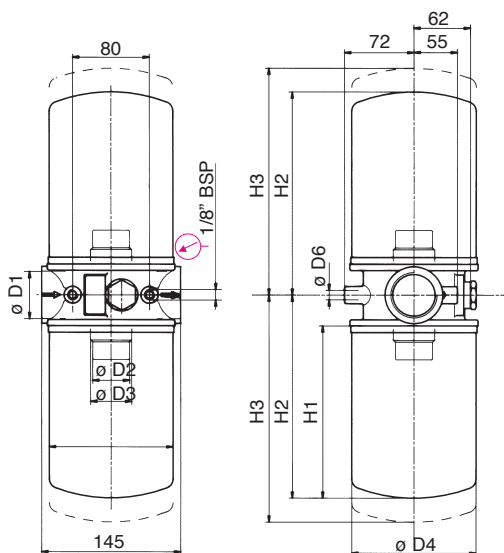
# SUCTION FILTERS

## SUCTION FILTER - SE

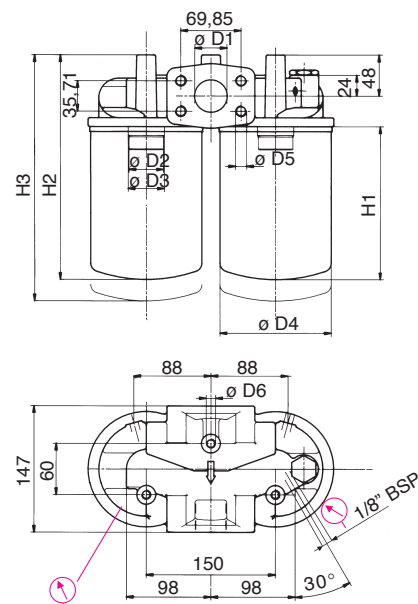
FSE 1+ & FSE 2+



FSE 3+

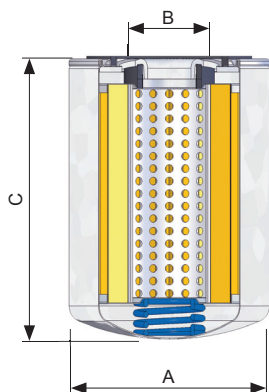


FSE 4+



### Dimensions (mm) - FILTER HOUSING

	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



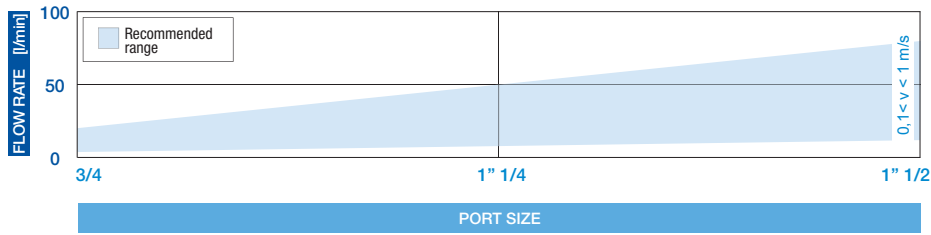
### Dimensions (mm) - FILTER ELEMENT

	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

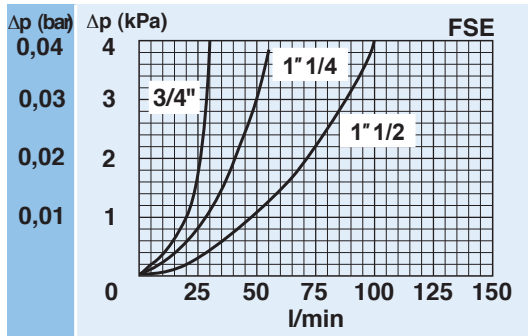
(when selecting the filter size, we suggest to consider also the max recommended fluid speed (in suction lines normally  $0,1 < v < 1$  m/s))



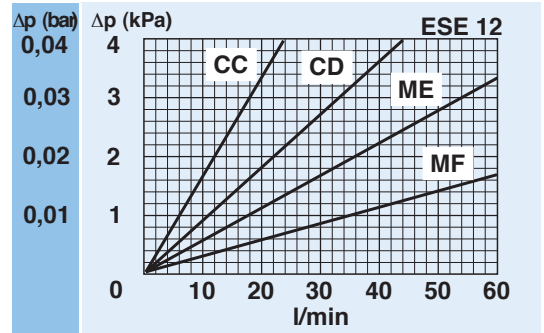
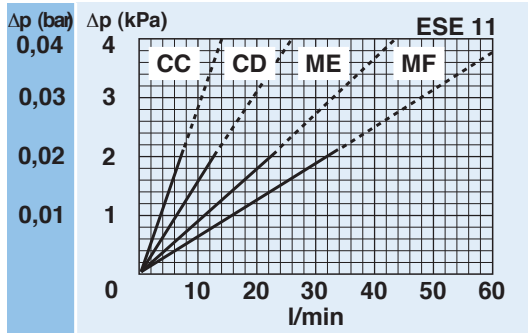
## PRESSURE DROP CURVES ( $\Delta p$ )

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).

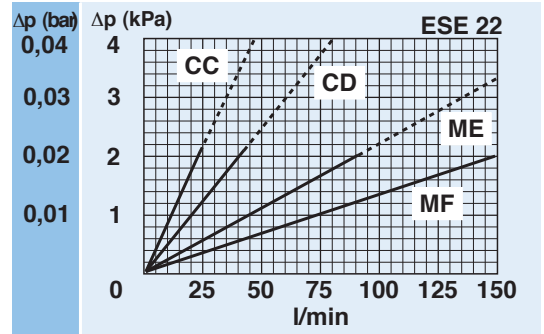
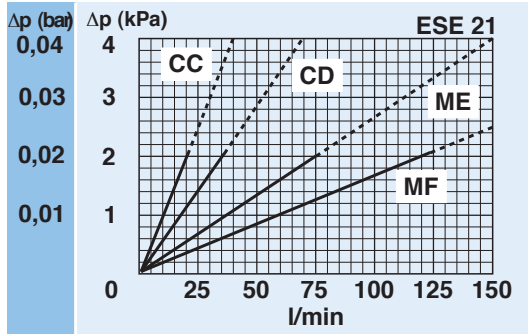
**FILTER HOUSING PRESSURE DROP**  
(mainly depending on the port size)



**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.

