

### Application Example



## 'Spin-On' Pressure Filter - PE

### 12 BAR RATED - FLOWS UP TO 300LPM

#### 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: 170 kPa (1,7 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

Article No	Connection	Element Type	Flow Rate	Price	Price
Body Size	BSP	Add Price Below	Max LPM	£	€
<b>FPE11</b>	3/4"	11	50	<b>ON REQUEST</b>	
<b>FPE12</b>	3/4"	12	50	<b>ON REQUEST</b>	
<b>FPE21</b>	1 1/4"	21	130	<b>ON REQUEST</b>	
<b>FPE31</b>	1 1/2"	21 x 2	240	<b>ON REQUEST</b>	
<b>FPE32</b>	1 1/2"	22 x 2	240	<b>ON REQUEST</b>	

#### Above body with 1.7 Bar bypass valve

### CLOGGING INDICATORS - TO BE ADDED

Type	Article No	Price £	Price €
None - Plugged - AS STANDARD	<b>06</b>	<b>ON REQUEST</b>	
Pressure gauge	<b>31</b>	<b>ON REQUEST</b>	
ELECTRICAL 1.5 BAR	<b>P1</b>	<b>ON REQUEST</b>	

### ELEMENTS - TO BE ADDED

Element	Filtration	Price £	Price €
<b>ESE11CC</b>	10 MICRON PAPER	<b>ON REQUEST</b>	
<b>ESE11CD</b>	25 MICRON PAPER	<b>ON REQUEST</b>	
<b>ESE11FA</b>	5 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE11FB</b>	7 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE11FC</b>	12 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE11FD</b>	21 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE12CC</b>	10 MICRON PAPER	<b>ON REQUEST</b>	
<b>ESE12CD</b>	25 MICRON PAPER	<b>ON REQUEST</b>	
<b>ESE12FA</b>	5 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE12FB</b>	7 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE12FC</b>	12 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE12FD</b>	21 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE21CC</b>	10 MICRON PAPER	<b>ON REQUEST</b>	
<b>ESE21CD</b>	25 MICRON PAPER	<b>ON REQUEST</b>	
<b>ESE21FA</b>	5 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE21FB</b>	7 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE21FC</b>	12 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE21FD</b>	21 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE22CC</b>	10 MICRON PAPER	<b>ON REQUEST</b>	
<b>ESE22CD</b>	25 MICRON PAPER	<b>ON REQUEST</b>	
<b>ESE22FA</b>	5 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE22FB</b>	7 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE22FC</b>	12 MICRON FIBRE	<b>ON REQUEST</b>	
<b>ESE22FD</b>	21 MICRON FIBRE	<b>ON REQUEST</b>	

# 'Spin-On' Pressure Filter - PE

**12 BAR RATED - FLOWS UP TO 300LPM**

## Ordering Codes - Filter

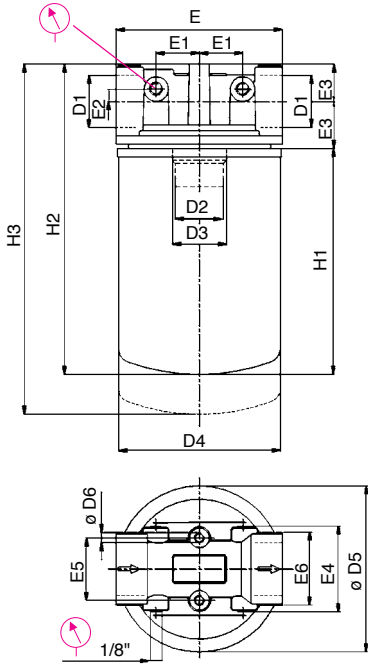
<input type="checkbox"/>	<b>Type</b>								
	F = Filter Complete	F	F	F	F	F	F	F	F
	B = Filter Housing	B	B	B	B	B	B	B	B
<input type="checkbox"/>	<b>Family, Nominal Size, Length</b>	11	12	21	22	31	32	41	42
<input type="checkbox"/>	<b>Port Type</b>								
	B = BSP Thread	B	B	B	B	B	B	B	B
	F = SAE flanged 3000 psi	-	-	-	-	-	-	F	F
<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	W
	B = 170 kPa (1.7 bar)	B	B	B	B	B	B	B	B
<input type="checkbox"/>	<b>Seals</b>								
	N = NBR Nitrile	N	N	N	N	N	N	N	N
	F = FKM Fluoroelastomer	F	F	F	F	F	F	F	F
<input type="checkbox"/>	<b>Filter Media</b>								
	CC = Cellulose 10µm β>2	CC	CC	CC	CC	CC	CC	CC	CC
	CD = Cellulose 25µm β>2	CD	CD	CD	CD	CD	CD	CD	CD
	FA = Fibre 5µm <sup>(e)</sup> β>1.000	FA	FA	FA	FA	FA	FA	FA	FA
	FB = Fibre 7µm <sup>(e)</sup> β>1.000	FB	FB	FB	FB	FB	FB	FB	FB
	FC = Fibre 12µm <sup>(e)</sup> β>1.000	FC	FC	FC	FC	FC	FC	FC	FC
	FD = Fibre 21µm <sup>(e)</sup> β>1.000	FD	FD	FD	FD	FD	FD	FD	FD
<input type="checkbox"/>	<b>Clogging Indicator</b>								
	06 = 1/8" ports, plugged	06	06	06	06	06	06	06	06
	31 = pressure gauge, rear connection	31	31	31	31	31	31	31	31
	P1 = SPDT, pressure switch	P1	P1	P1	P1	P1	P1	P1	P1
<input checked="" type="checkbox"/>	<b>Accessories XX = no access available</b>	XX	XX	XX	XX	XX	XX	XX	XX

## Ordering Codes - Element

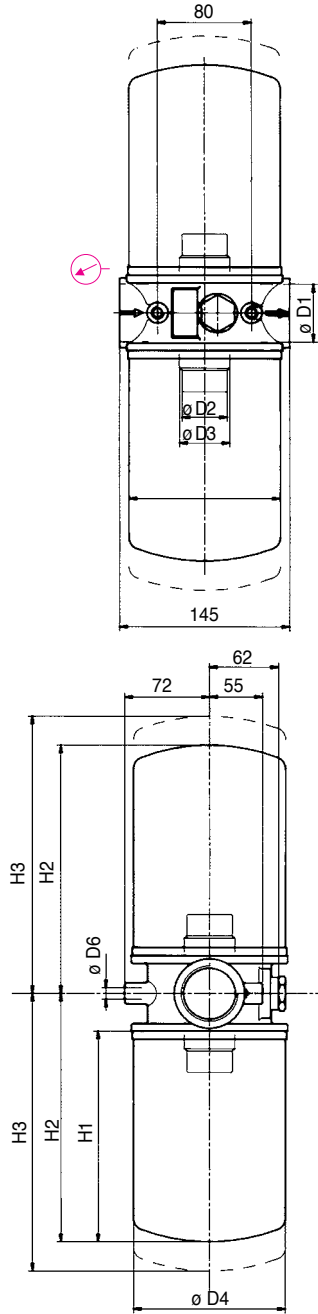
<input type="checkbox"/>	<b>Element</b>								
<input type="checkbox"/>	<b>Family, Nominal Size, Length</b>	11	12	21	22	31	32	41	42
<input type="checkbox"/>	<b>Seals</b>								
	N = NBR Nitrile	N	N	N	N	N	N	N	N
	F = FKM Fluoroelastomer	F	F	F	F	F	F	F	F
<input type="checkbox"/>	<b>Filter Media</b>								
	CC = Cellulose 10µm β>2	CC	CC	CC	CC	CC	CC	CC	CC
	CD = Cellulose 25µm β>2	CD	CD	CD	CD	CD	CD	CD	CD
	FA = Fibre 5µm <sup>(e)</sup> β>1.000	FA	FA	FA	FA	FA	FA	FA	FA
	FB = Fibre 7µm <sup>(e)</sup> β>1.000	FB	FB	FB	FB	FB	FB	FB	FB
	FC = Fibre 12µm <sup>(e)</sup> β>1.000	FC	FC	FC	FC	FC	FC	FC	FC
	FD = Fibre 21µm <sup>(e)</sup> β>1.000	FD	FD	FD	FD	FD	FD	FD	FD

# 'Spin-On' Pressure Filter - PE

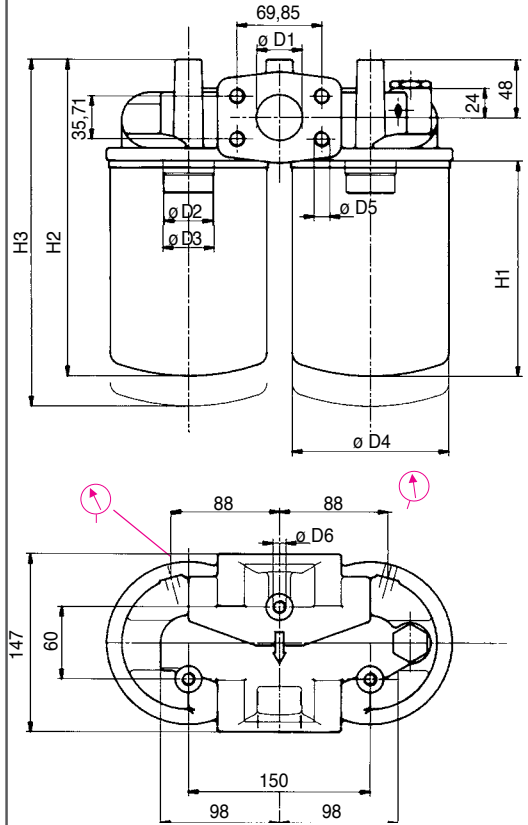
FPE 1+ & FPE 2+



FPE 3+



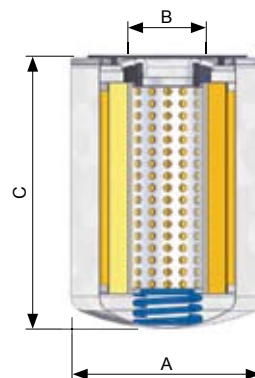
FPE 4+



FILTER HOUSING																	
	D1	D2	D3	D4	D5	D6	E	E1	E2	E3	E4	E5	E6	H1	H2	H3	kg
FPE11	3/4"	3/4" BSP	-	96	96	M8	95	20,5	7	20	49	38	37	145	188	208	1,2
FPE12	3/4"	3/4" BSP	-	96	96	M8	95	20,5	7	20	49	38	37	191	234	254	1,5
FPE21	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
FPE31	1" 1/2	1" 1/2 16-UN	1" 1/4 BSP	129	-	M10	-	-	-	-	-	-	-	181	216	246	3,6
FPE41	1" 1/2	1" 1/2 16-UN	1" 1/4 BSP	129	M12	M10	-	-	-	-	-	-	-	181	269	299	4,8
FPE22	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
FPE32	1" 1/2	1" 1/2 16-UN	1" 1/4 BSP	129	-	M10	-	-	-	-	-	-	-	226	261	291	3,8
FPE42	1" 1/2	1" 1/2 16-UN	1" 1/4 BSP	129	M12	M10	-	-	-	-	-	-	-	226	314	344	5,0

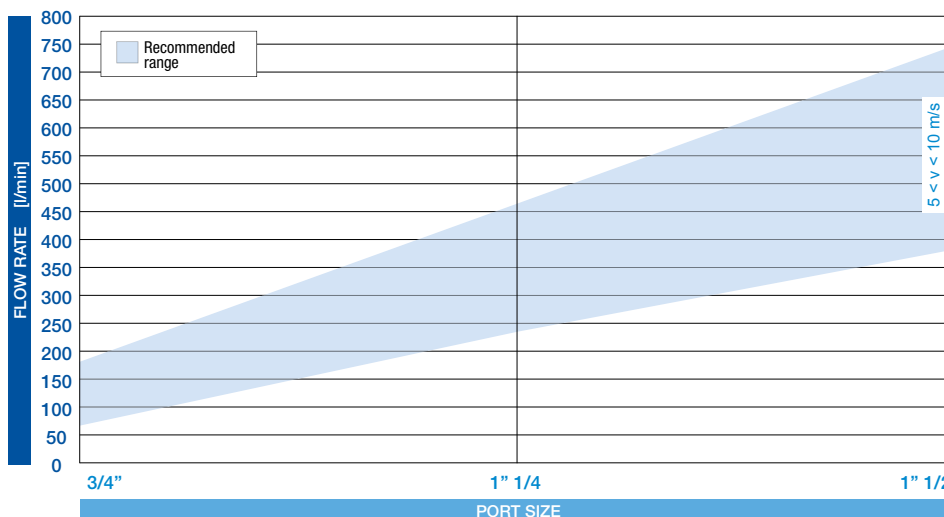
# 'Spin-On' Pressure Filter - PE

FILTER ELEMENT	A	B	C	kg	Area (cm <sup>2</sup> )	
					Media F+	Media C+
					ESE11	96,5
ESE12	96,5	3/4" BSP	191	0,80	3.630	4.745
ESE21	129	1" 1/4 BSP	181	1,20	4.450	5.560
ESE22	129	1" 1/4 BSP	226	1,40	5.890	7.360



### FLUID SPEED

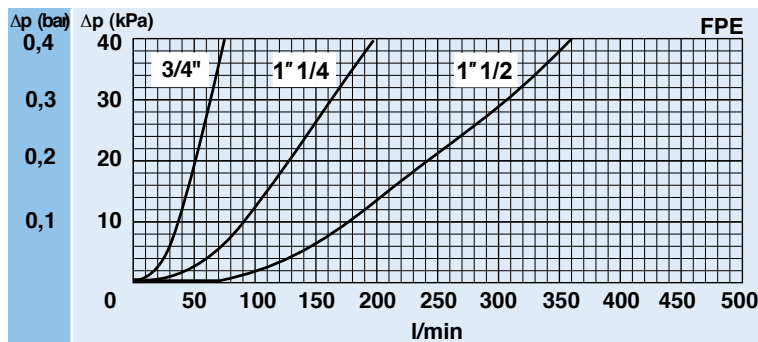
(when selecting the filter size, we suggest to consider also the max recommended fluid speed (in pressure lines normally  $5 < v < 10$  m/s).



### 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 50 kPa (0,5 bar).

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



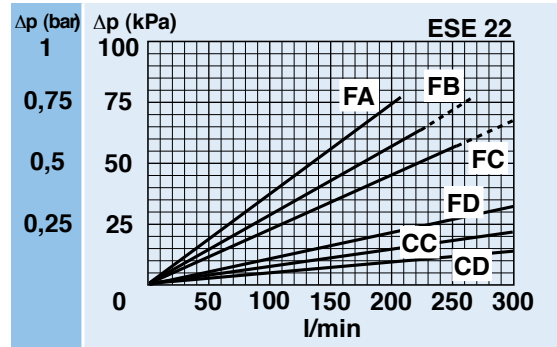
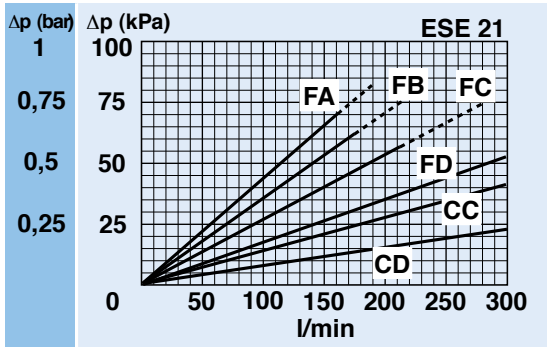
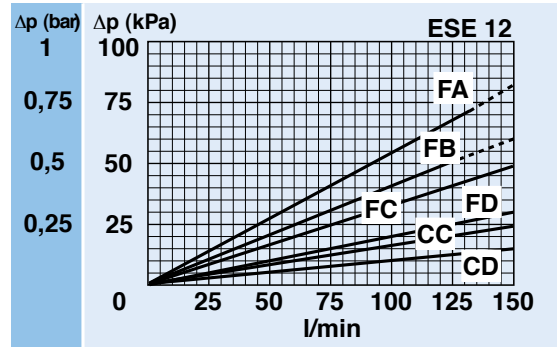
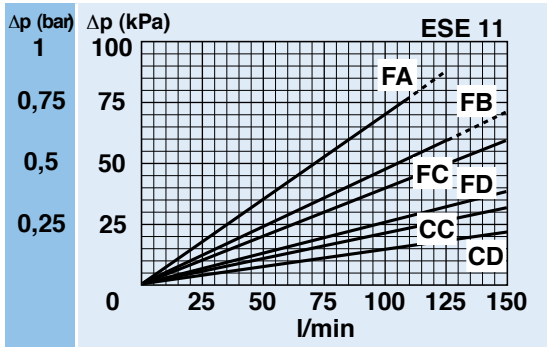
# 'Spin-On' Pressure Filter - PE

## 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 50 kPa (0,5 bar).

### CLEAN FILTER ELEMENT PRESSURE DROP WITH F+ AND C+ MEDIA

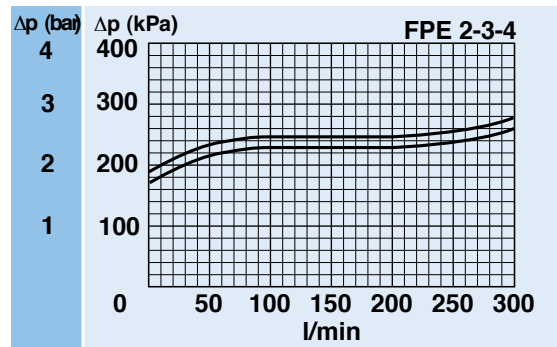
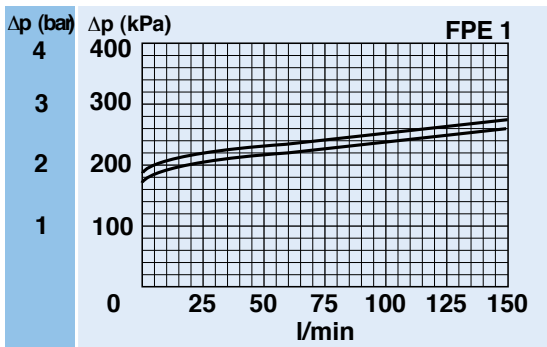
(depending both on the internal diameter of the element and on the filter media)



FPE3+ and FPE4+ 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 FPE31----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.



## 'Spin-On' Pressure Filter - PE

### CLOGGING INDICATOR

A visual or electrical indicator is available as an option and allows monitoring of the element conditions, giving an indication of the right time to replace the element.

### 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.

### "LONG LIFE" FILTER ELEMENT

The filter elements are designed with a very large filter area giving a highest dirt holding capacity.

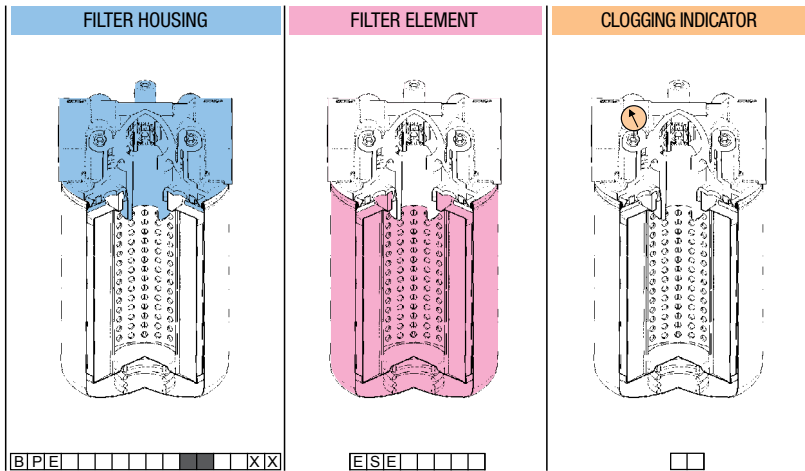
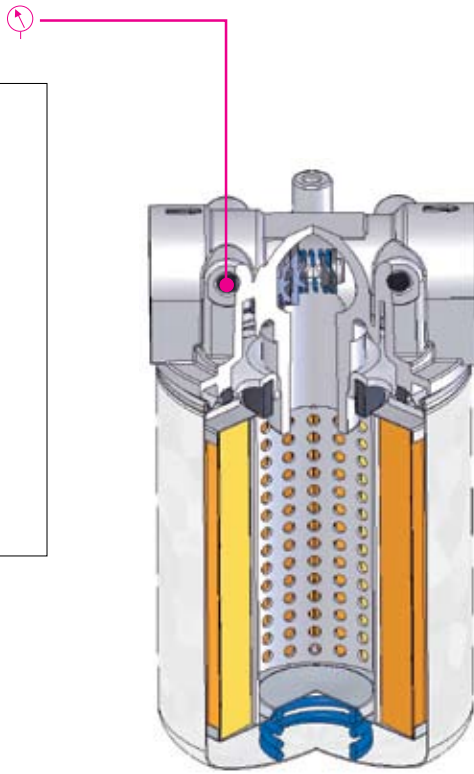
### EASY MAINTENANCE

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

### STRONG CONSTRUCTION

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

### CLOGGING INDICATOR



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