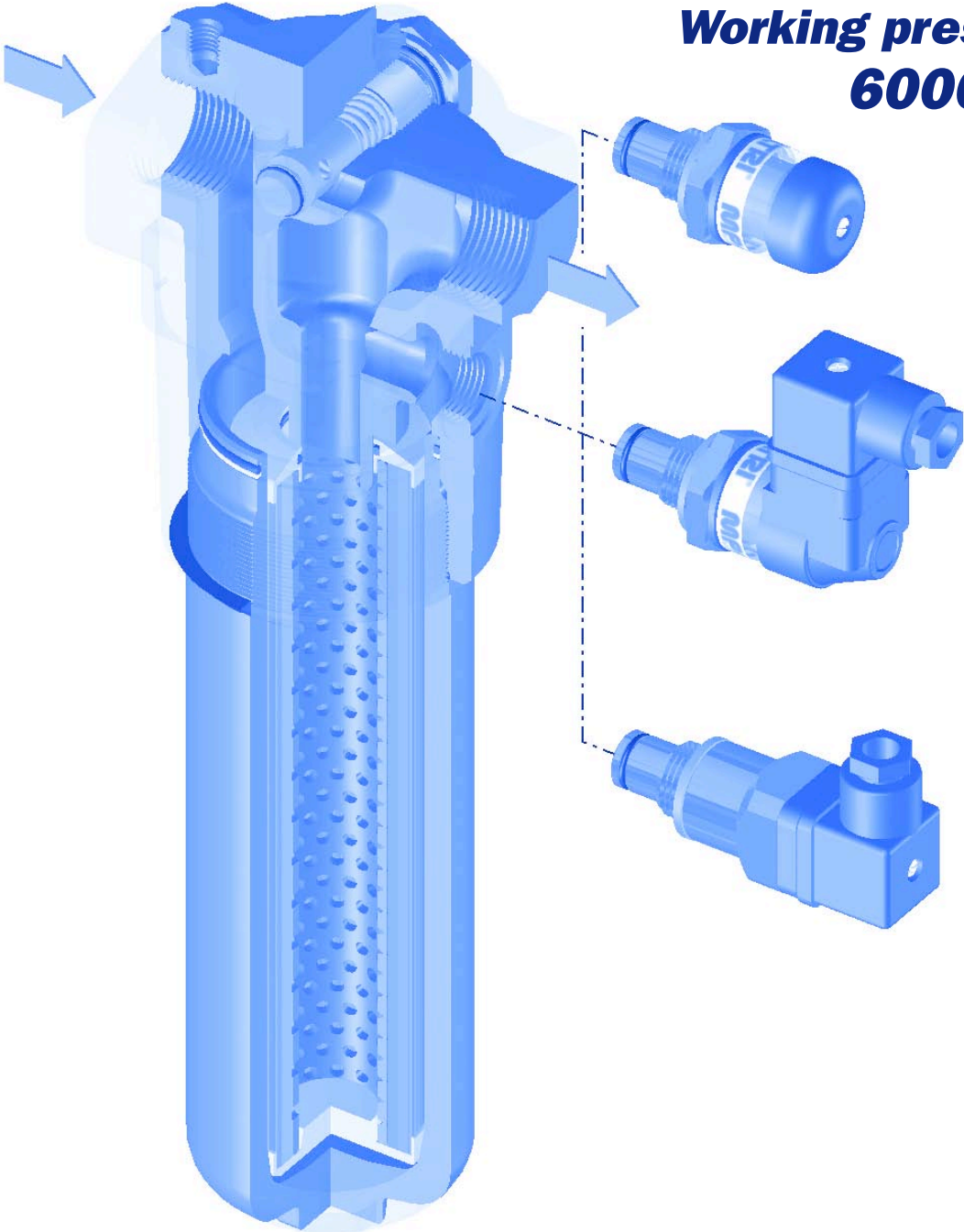


# FHP

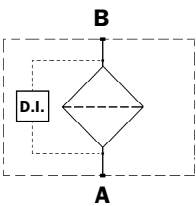


# SERIES FHP

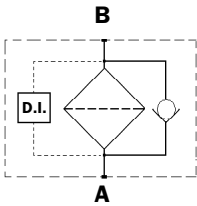
**Working pressure  
6000 psi**



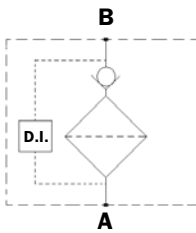
Style S



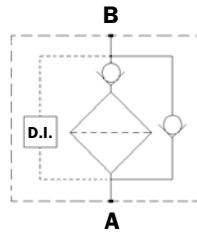
Style B



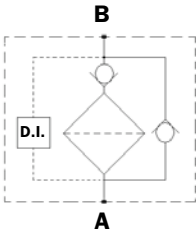
Style T



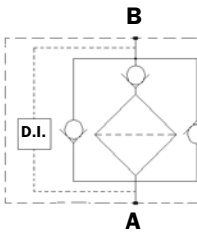
Style D



Style V



Style Z



# Technical data

## Filter body (Materials)

- Head: Cast iron (chemical heat treatment)
- Housing: Steel (chemical heat treatment)
- Bypass valve: Brass
- Reverse Flow : Steel (only for series 320)

## Pressure

- Maximum operating pressure: 6000 psi (42 MPa)
- Test pressure: 9000 psi (63 MPa)
- Burst pressure: 18000 psi (125 MPa)
- Pulsed pressure fatigue test 1,000,000 of cycles with pressure from 0 to 6000 psi (42 MPa)

## Temperature

- From -13°F to + 230°F

## Bypass valve

- Opening pressure 90 psi  $\pm$ 10%
- Other opening pressures on request.

## Elements type $\Delta p$

- Elements in micro fibre series N-R: 300 psi
- Elements in micro fibre series H-S: 3000 psi
- Elements in stainless steel mesh series N: 300 psi
- Oil flow from exterior to interior.

## Seals

- Standard Nitrile (NBR) series A
- Optional FPM series V

## Weights without filter elements (lbs)

Length	1	2	3	4
• FHP 065	8.6	9.3	12.6	—
• FHP 135	16.3	20.7	26.5	—
• FHP 320/321	32	36.4	49.6	56.2

## Filter internal volumes (in<sup>3</sup>)

Length	1	2	3	4
• FHP 065	21.4	24.4	36.6	—
• FHP 135	33.6	51.9	73.2	—
• FHP 320/321	76.3	119	170.9	213

## Connections

In-line Inlet/Outlet  
Style FHP 321 inlet/outlet 90°

## Compatibility

- Bodies compatible with:  
Mineral oils to ISO 2943 - aqueous emulsions  
Synthetic fluids, water/glycol.
- Filter elements compatible with:  
Mineral oils to ISO 2943 - aqueous emulsions  
Synthetic fluids, water/glycol.
- Nitrile (NBR) seals series A, compatible with:  
Mineral oils to ISO 2943 - aqueous emulsions  
Synthetic fluids, water/glycol.
- V series FPM seals, compatible with:  
Synthetic fluids type HS-HFDR-HFDS-HFDU.

## Filter Element Area

Filter element in stainless steel mesh  
Length

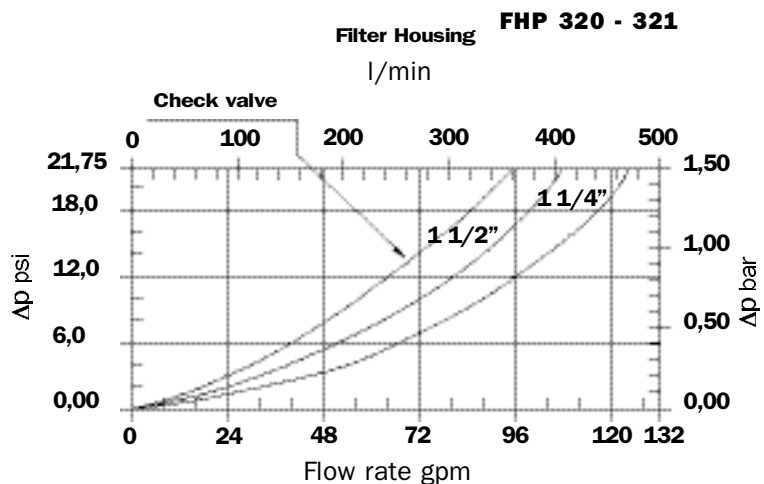
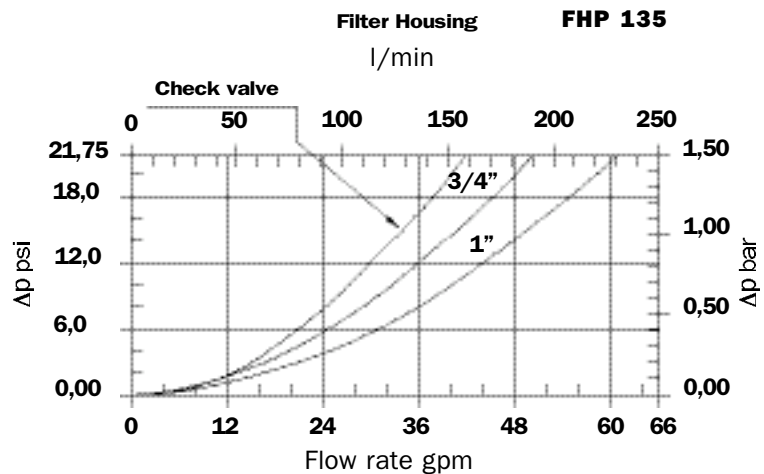
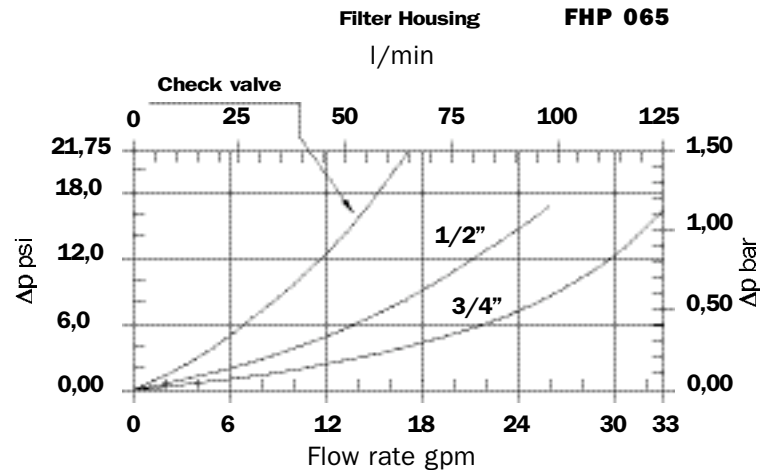
Type	1	2	3	4
HP065	58	82,2	164,9	-
HP135	147	313,1	418,5	-
HP320	255,8	565	925,3	1283,4

Values in in<sup>2</sup>

## Pressure drops $\Delta p$ Body

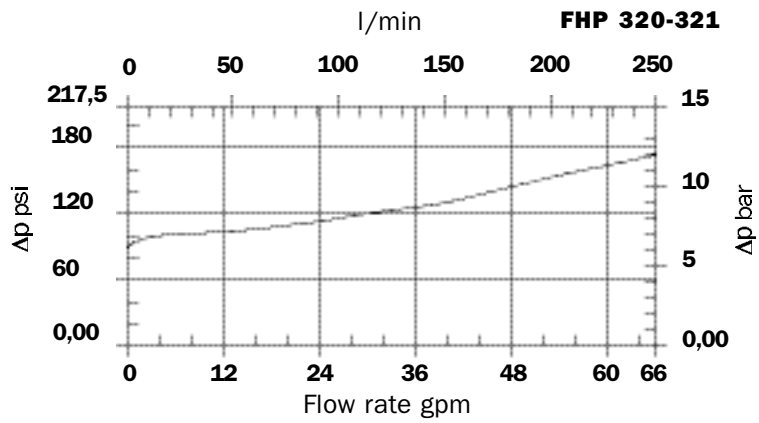
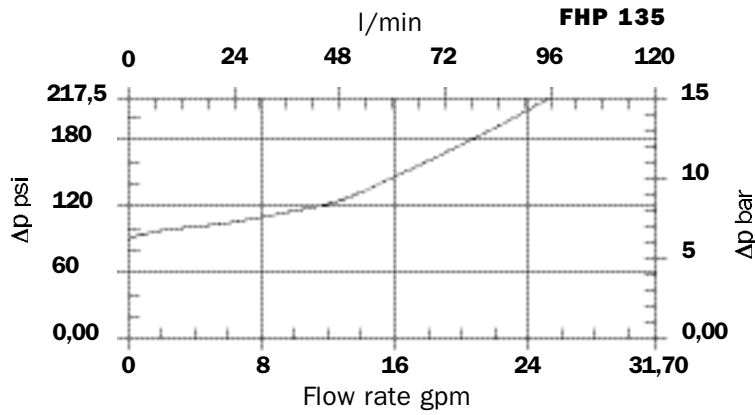
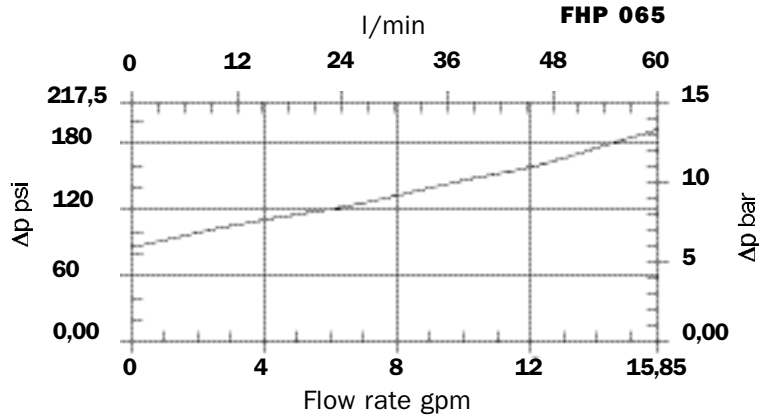
The curves are plotted using mineral oil with specific density 0,86.

$\Delta p$  varies proportional with density.

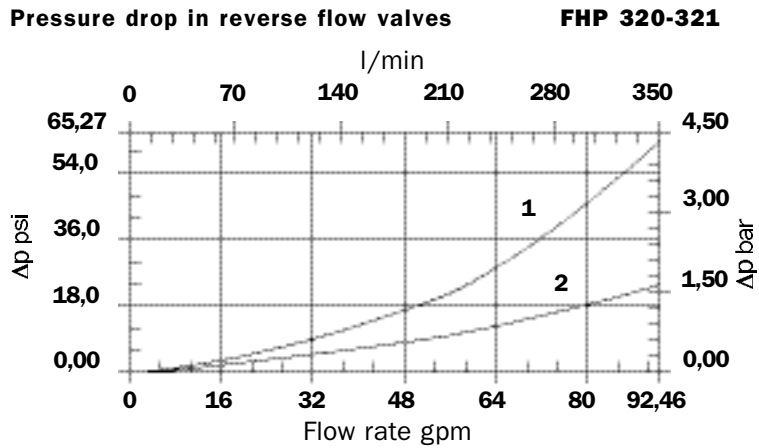


# Valves

## Pressure drop in bypass valve



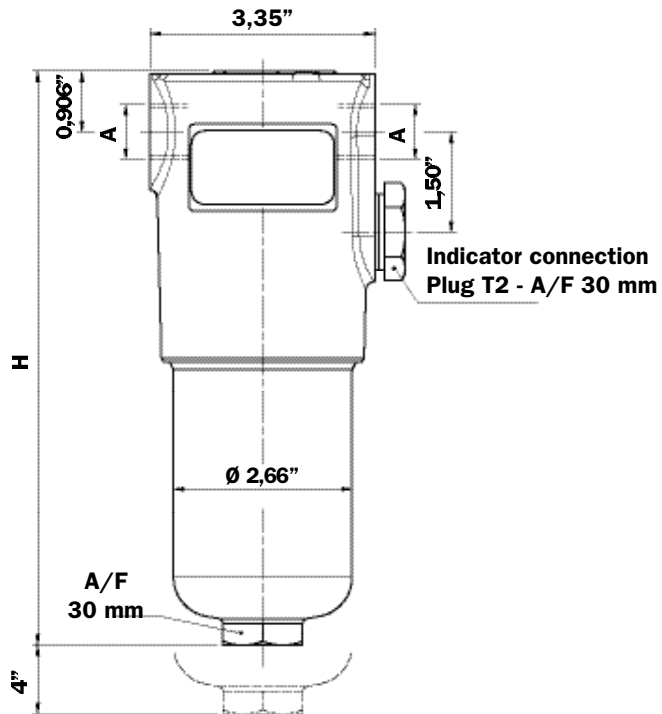
## Pressure drop in reverse flow valves



- 1- Reverse Flow
- 2- In filter direction

# Dimensions

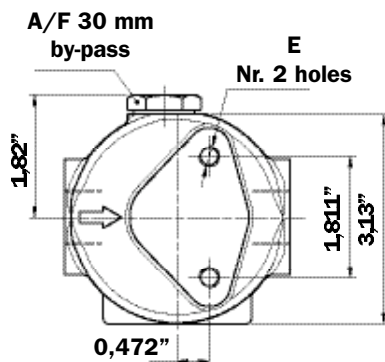
## FHP065



### Recommended maximum flow rate

- Pressure drop of complete filter equal to  $\Delta p$  21,75 psi.
- Oil kinematic viscosity 150 SUS.
- Density 53,69 lbs/ft<sup>3</sup>.
- Connections of filter under test G 3/4".

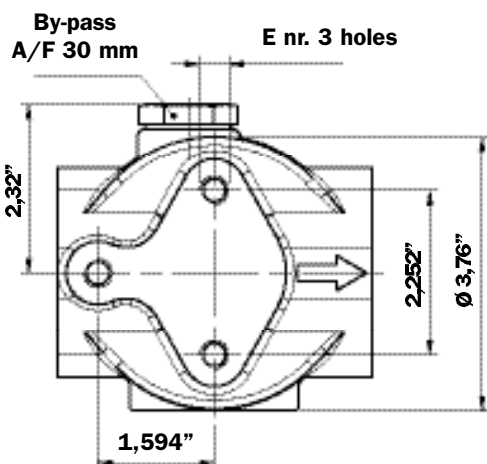
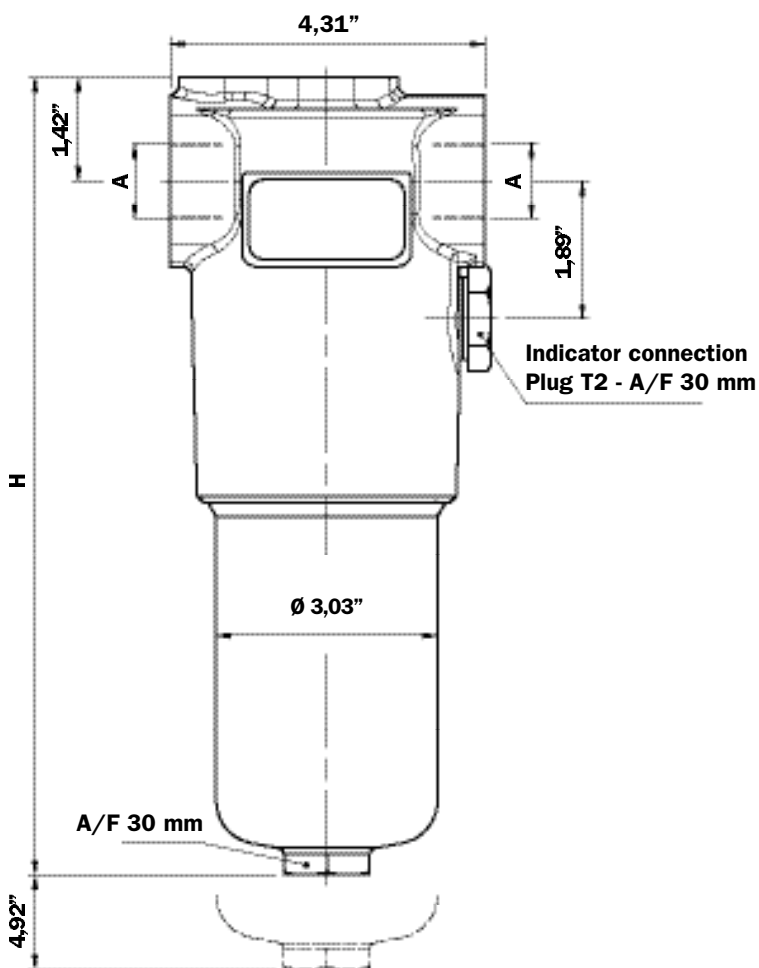
Filter element type	Flow rate gpm Series N	Flow rate gpm Series H	Filter Length
A03	6,1	5,8	1
A06	7,9	6,1	
A10	12,7	11,4	
A16	14,0	13,2	
A25	19,0	18,0	
M25	27,7	-	2
A03	8,2	7,9	
A06	11,9	9,2	
A10	15,9	15,1	
A16	16,9	16,6	
A25	21,7	20,3	3
M25	28,0	-	
A03	14,0	13,7	
A06	16,1	15,3	
A10	20,9	20,6	
A16	22,2	21,9	3
A25	24,8	24,6	
M25	28,5	-	



A Threaded Connections	E Depth 0,6"
G 1/2"	M8
G 3/4"	M8
1/2" NPT	5/16" UNC
3/4" NPT	5/16" UNC
SAE 8 (3/4"- 16 UNF)	5/16" UNC
SAE 12 (1 1/16"- 12 UN)	5/16" UNC

Filter Length	H inch
1	7,72"
2	8,94"
3	12,95"

# FHP135



## Recommended maximum flow rate

- Pressure drop of complete filter equal to  $\Delta p$  21,75 psi.
- Oil kinematic viscosity 150 SUS.
- Density 53,69 lbs/ft<sup>3</sup>.
- Connections of filter under test G 1".

Filter element type	Flow rate gpm Series N	Flow rate gpm Series H	Filter Length
A03	18,2	13,2	1
A06	19,5	15,1	
A10	31,7	25,9	
A16	34,1	26,7	
A25	45,2	41,2	
M25	52,8	-	
A03	29,1	24,0	2
A06	30,9	29,1	
A10	39,1	35,9	
A16	39,9	36,7	
A25	54,9	46,2	
M25	60,8	-	
A03	39,6	33,3	3
A06	40,4	37,0	
A10	50,7	44,9	
A16	51,5	47,3	
A25	56,3	51,8	
M25	61,3	-	

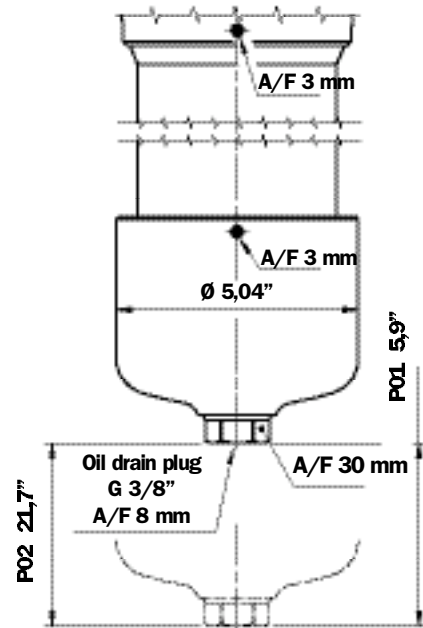
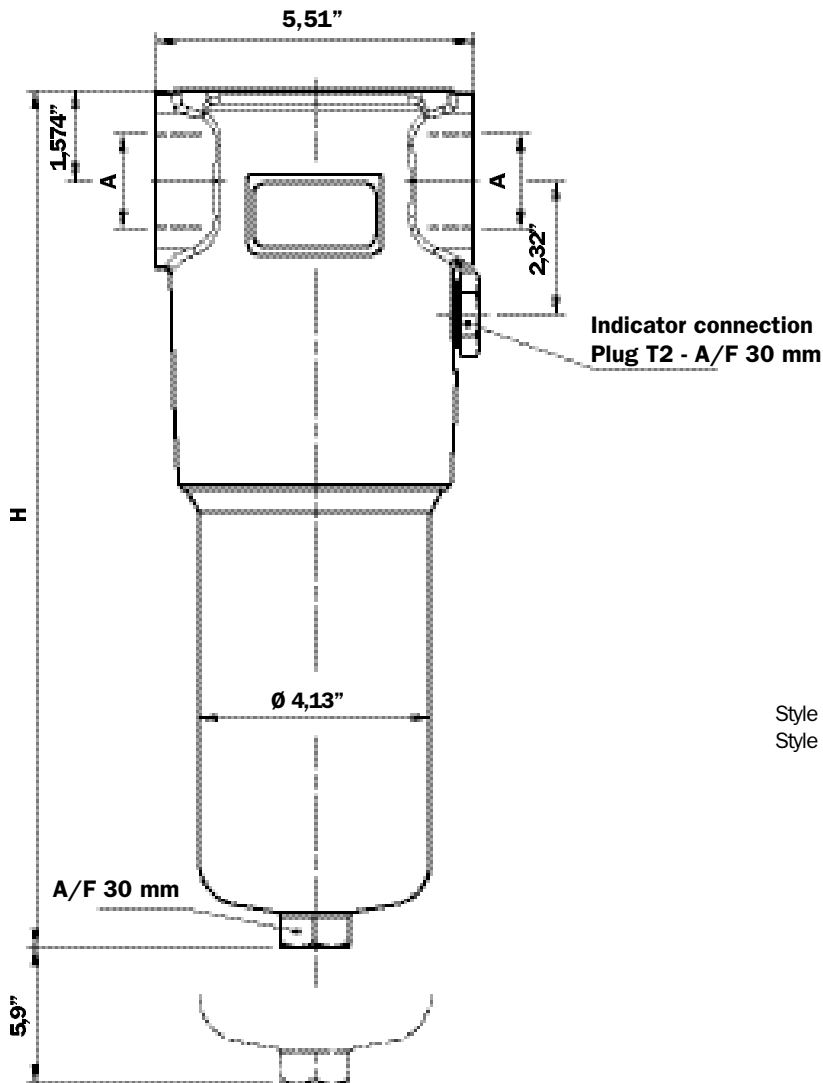
A Threaded Connections	E Depth 0,6"
G 3/4"	M10
G 1"	M10
3/4" NPT	3/8" UNC
1 NPT	3/8" UNC
SAE 12 (1 1/16" - 12 UN)	3/8" UNC
SAE 16 (1 5/16" - 12 UN)	3/8" UNC

A Flanged Connections	B Depth 0,6"
3/4" SAE 3000 psi/M	M10
1" SAE 3000 psi/M	M10
3/4" SAE 3000 psi/UNC	3/8" UNC
1" SAE 3000 psi/UNC	3/8" UNC
3/4" SAE 6000 psi/M	M10
3/4" SAE 6000 psi/UNC	3/8" UNC

Filter Length	H inch
1	10,23"
2	14,69"
3	17,64"

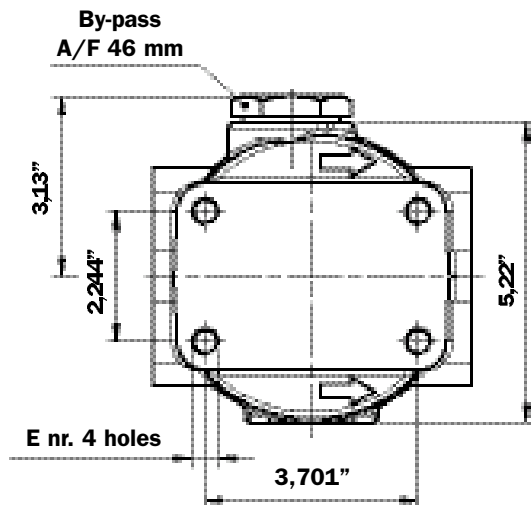
# FHP320/321

Only for FHP 320 length 4

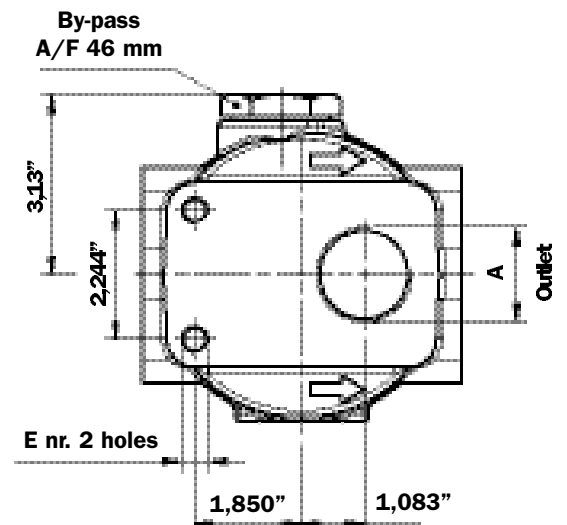


Style P01 standard maintenance from head.  
Style P02 maintenance option from housing base.

FHP 320



FHP 321  
Top Outlet



### Recommended maximum flow rate

- Pressure drop of complete filter equal to  $\Delta p$  21,75 psi.
- Oil kinematic viscosity 150 SUS.
- Density 53,69 lbs/ft<sup>3</sup>.
- Connections of filter under test G 1 1/2".

Filter element type	Flow rate gpm Series N	Flow rate gpm Series H	Filter Length
A03	33,3	28,3	1
A06	36,2	29,6	
A10	60,8	48,9	
A16	72,4	51,0	
A25	87,2	77,1	
M25	112,3	-	
A03	65,5	50,7	2
A06	71,3	58,7	
A10	99,3	79,3	
A16	104,3	82,4	
A25	116,2	99,9	
M25	117,6	-	
A03	84,3	67,4	3
A06	93,3	79,3	
A10	112,8	97,0	
A16	116,2	99,1	
A25	118,9	110,2	
M25	122,8	-	
A03	93,5	78,7	4
A06	99,1	84,5	
A10	113,6	99,1	
A16	118,1	100,9	
A25	123,4	111,5	
M25	125,5	-	

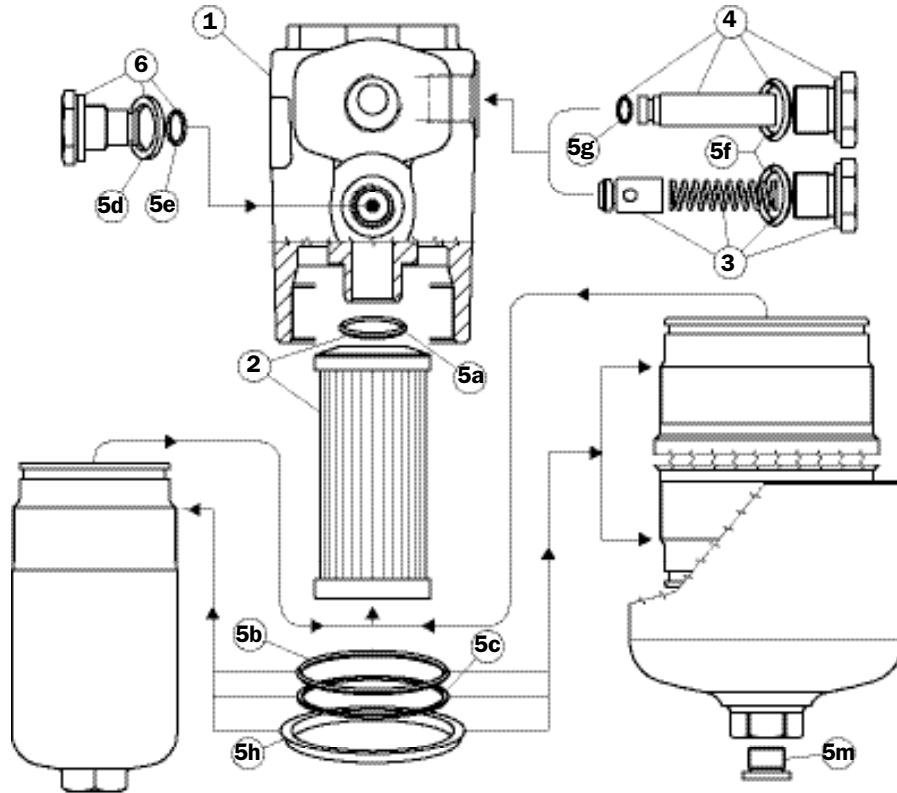
A Threaded Connections	E Depth 0,6"
G 1 1/4"	M12
G 1 1/2"	M12
1 1/4" NPT	1/2" UNC
1 1/2" NPT	1/2" UNC
SAE 20 (1 5/8"- 12 UN)	1/2" UNC
SAE 24 (1 7/8"- 12 UN)	1/2" UNC

A Flanged Connections (For FHP 320)	E Depth 0,6"
1 1/4" SAE 3000 psi/M	M12
1 1/2" SAE 3000 psi/M	M12
1 1/4" SAE 3000 psi/UNC	1/2" UNC
1 1/2" SAE 3000 psi/UNC	1/2" UNC
1 1/4" SAE 6000 psi/M	M12
1 1/4" SAE 6000 psi/UNC	1/2" UNC

Filter Length	H inch
1	11,73"
2	16,61"
3	21,81"
4	27,91"



# Spare parts FHP



Pos.	Description	Qty.	FHP Series FILTER					
			065 1 - 2 - 3		135 1 - 2 - 3		320 1 - 2 - 3 - 4	
1	Complete filter	1	See order table					
2	Filter element	1	See order table					
3	Bypass assembly	1	02001116 (NBR) 02001136 (FPM)		02001117 (NBR) 02001137 (FPM)		02001118 (NBR) 02001138 (FPM)	
4	Non bypass assembly	1	02001142 (NBR) 02001139 (FPM)		02001143 (NBR) 02001392 (FPM)		02001144 (NBR) 02001395 (FPM)	
5	Seal kits	1	NBR 02050265	FPM 02050276	NBR 02050269	FPM 02050280	NBR 02050272	FPM 02050283
5a	Filter element O-Ring	1	OR 4100 ID 984" x 139"		OR 3106 ID 1,049" x 103"		OR 144 ID 1,563" x 139"	
5b	O-Ring for housing	1	OR 159 ID 2,187" x 139"		OR 3256 ID 2,550" x 103"		2 pcs.	OR 3350 ID 3,487" x 103"
5c	Anti-extrusion ring	1	Parbak 227 ID 2,147" x 118"		Parbak 144 ID 2,519" x 086"		2pcs.	Parbak 153 ID 3,518" x 086"
5d	Gasket	1	01030058 (HNBR)	01030046 (FPM)	01030058 (HNBR)	01030046 (FPM)	01030058 (HNBR)	01030046 (FPM)
5e	O-Ring	1	O-R 2050 ID 489" x 070"					
5f	Bp or Non Bp O-Ring	1	OR 121 ID 625" x 103"		OR 3087(NBR 90 Sh A) ID 862" x 103"		OR 3143 (NBR 90 Sh A) ID 1,424" x 103"	
5g	Bp or Non Bp O-Ring	1	OR 2031 ID 301" x 070"		OR 2037 ID 364" x 070"		OR 2081 ID 801" x 070"	
5h	Protective seal	1	01026521		01026509		01026510	
5m	Drain plug	1	-		-		G 3/8" with seal	
-	Indicators	1	See order table					
6	Indicator plug	1	T2H			T2V		

# Ordering information FHP

## Filter assembly

### FHP

Example: FHP

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8 a</b>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>135</b>	<b>1</b>	<b>S</b>	<b>A</b>	<b>G1</b>	<b>A03</b>	<b>H</b>	<b>P01</b>

## Filter element

### HP

Example: HP

<b>1</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>7</b>	<b>8 b</b>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>135</b>	<b>1</b>	<b>A</b>	<b>A03</b>	<b>H</b>	<b>P01</b>

### 1 - Size

<b>065</b>
<b>135</b>
<b>320</b>
<b>321</b>

### 2 - Filter length

<b>1</b>
<b>2</b>
<b>3</b>
<b>4</b>

(only for FHP 320-321)

### 3 - Valves

<b>S</b>	Without bypass
<b>B</b>	With bypass
<b>D</b>	With bypass + check valve*
<b>V</b>	With Reverse Flow* (only for FHP 320)
<b>Z</b>	With Reverse Flow + bypass (only for FHP 320)
<b>T</b>	Without bypass + check valve*

\*Reduced cross-section oilways

### 4 - Seals

<b>A</b>	NBR
<b>V</b>	FPM

### 5 - Connections

Type	065	135	320	321
<b>G1</b>	G 1/2"	G 3/4"	G 1 1/4"	G 1 1/4"
<b>G2</b>	G 3/4"	G 1"	G 1 1/2"	G 1 1/2"
<b>G3</b>	1/2" NPT	3/4" NPT	1 1/4" NPT	1 1/4" NPT
<b>G4</b>	3/4" NPT	1" NPT	1 1/2" NPT	1 1/2" NPT
<b>G5</b>	SAE 8	SAE 12	SAE 20	SAE 20
<b>G6</b>	SAE 12	SAE 16	SAE 24	SAE 24
<b>F1</b>	-	3/4" SAE 3000 PSI/M	1 1/4" SAE 3000 PSI/M	-
<b>F2</b>	-	1" SAE 3000 PSI/M	1 1/2" SAE 3000 PSI/M	-
<b>F3</b>	-	3/4" SAE 3000 PSI/UNC	1 1/4" SAE 3000 PSI/UNC	-
<b>F4</b>	-	1" SAE 3000 PSI/UNC	1 1/2" SAE 3000 PSI/UNC	-
<b>F5</b>	-	3/4" SAE 6000 PSI/M	1 1/4" SAE 6000 PSI/M	-
<b>F6</b>	-	3/4" SAE 6000 PSI/UNC	1 1/4" SAE 6000 PSI/UNC	-

### 6 - Filter elements

<b>A03</b>	Inorganic microfibre 3 μ
<b>A06</b>	Inorganic microfibre 6 μ
<b>A10</b>	Inorganic microfibre 10 μ
<b>A16</b>	Inorganic microfibre 16 μ
<b>A25</b>	Inorganic microfibre 25 μ
<b>M25</b>	Stainless steel mesh 25 μ (style N only)

βx (c) ≥ 1000  
See page 10

### 7 - Filter elements differential pressure

<b>N</b>	300 psi	<b>R</b>	(Filter with Reverse Flow + bypass)
<b>H</b>	3000 psi	<b>S</b>	(Filter with Reverse Flow)

### 8 - Options

#### a) Filter

<b>P01</b>	MP Standard filters
<b>P02</b>	Maintenance from base of housing (FHP 320 - 4 only)
<b>Pxx</b>	Customer request

#### b) Filter element

<b>P01</b>	MP Filtri standard
<b>Pxx</b>	Customer request

DIFFERENTIAL INDICATORS  
(see page 15)

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