



EFRH Series

EVOTEK Return Filters

Product Description

- Operating pressure up to 25 bar
- 1300 l/min max. flow rate
- installation in Tank-top or in line
- application in Mobiles equipment, Power unit fabricators and Off-line filter loops
- compliant with industry relevant ISO standards(see ISO test below)

Technical Specifications

Application

Tank-top/in-line return filter

Port Sizes:

Threaded Connections according to BSP and NPT standard in 1-1/4", 2", SAE08/SAE20 threads and Flange Connections in SAE DN50/ SAE DN80 / SAE DN90 and SAE DN100 for 3000 psi

Flow Rate:

max. 1300 l/min

Operating Pressure:

max. 25 bar

Burst Pressure:

min. 83 bar

Element Collapse Pressure:

10 bar for cellulose media

21 bar for fiberglass media

30 bar for wire mesh

By-pass Opening Pressure:

$\Delta p = 3 \text{ bar} \pm 10\%$

Material

Seals:

NBR or FPM (-25°C to 100°C)

Filter Head:

Steel or Aluminium

Filter Bowl:

Steel or Aluminium

Compatibility:

Suitable for mineral oils, lubrication oils, non-flam fluids, synthetic and rapidly biodegradable oils (for use with water or other fields please contact our technical department)

Tested according to ISO standards:

ISO2941 Collapse/burst resistance

ISO2942 Fabrication integrity

ISO2943 Material compatibility integrity

ISO3723 Method for end load test

ISO3724 Flow fatigue characteristics

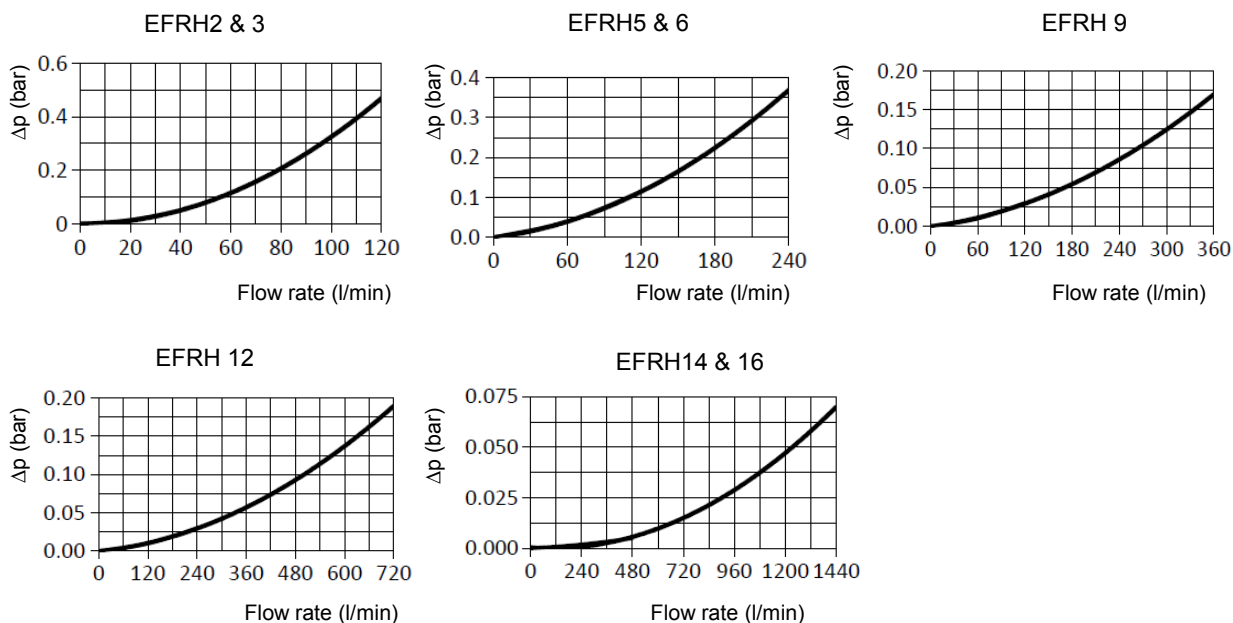
ISO3968 Pressure Drop vs. Flow Rate

ISO16889 Multi-Pass Test

EFRH Return Filter Series

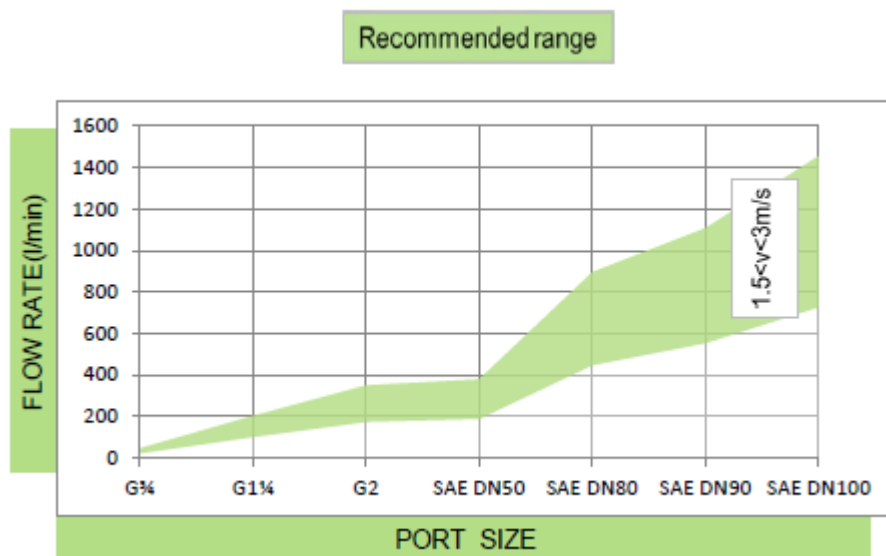
Pressure Drop Graphs (Δp)

Pressure Drop of Filter Housing only



Graph of oil flow velocity

(we recommend to select size of the filter considering range of oil velocity between 1.5 to 3 m/s for return series)

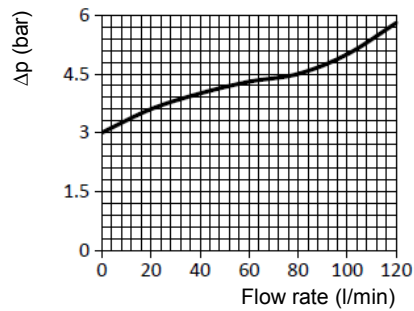


EFRH Return Filter Series

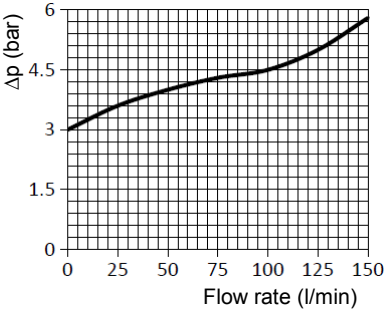
Pressure Drop Graphs (Δp)

Pressure drop graph on by-pass valve

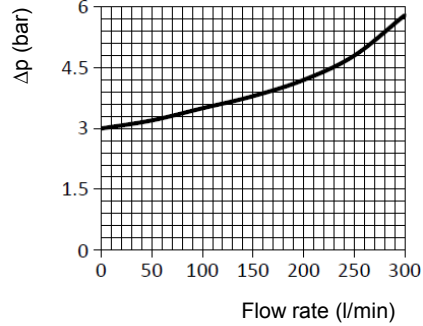
EFRH2&3



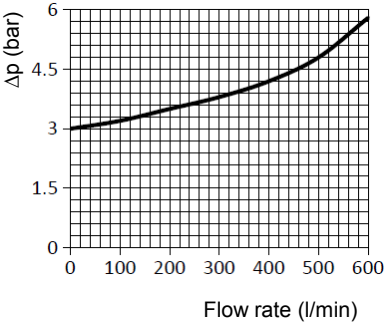
EFRH5&6



EFRH9&12



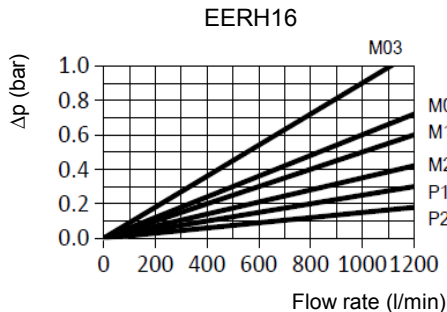
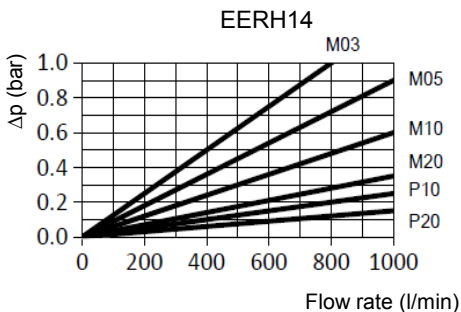
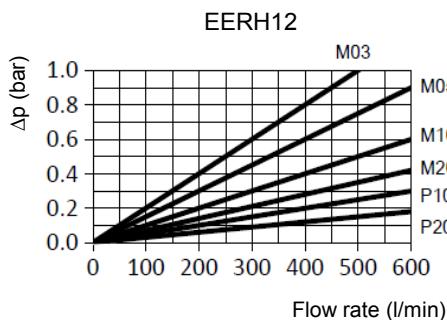
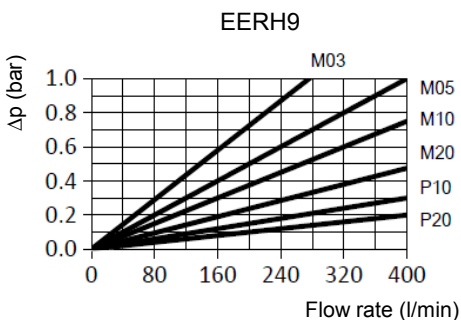
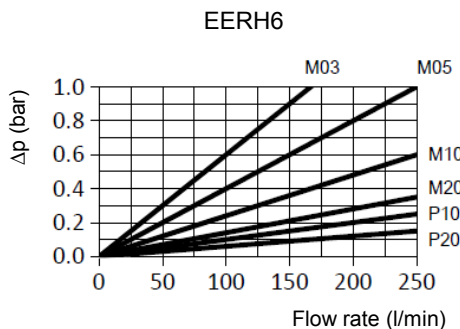
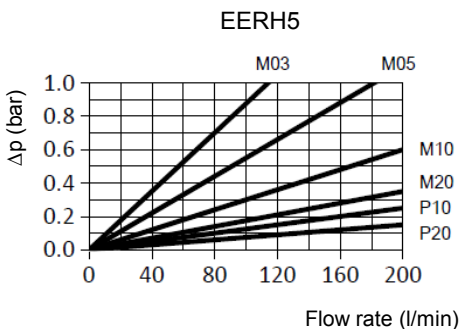
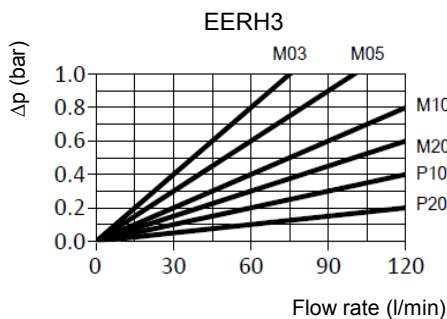
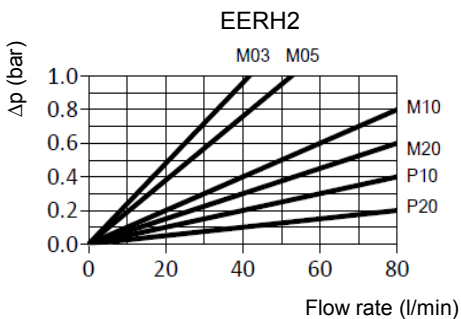
EFRH14&16



EFRH Return Filter Series

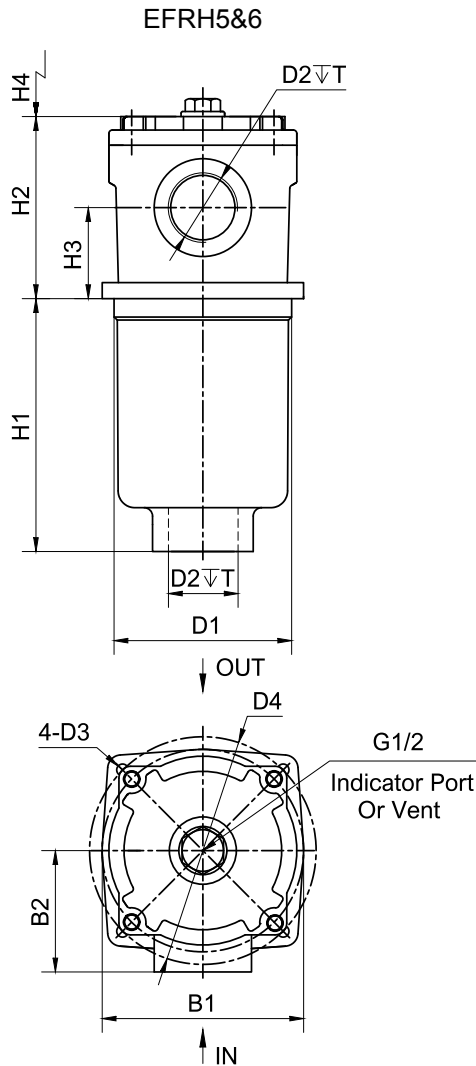
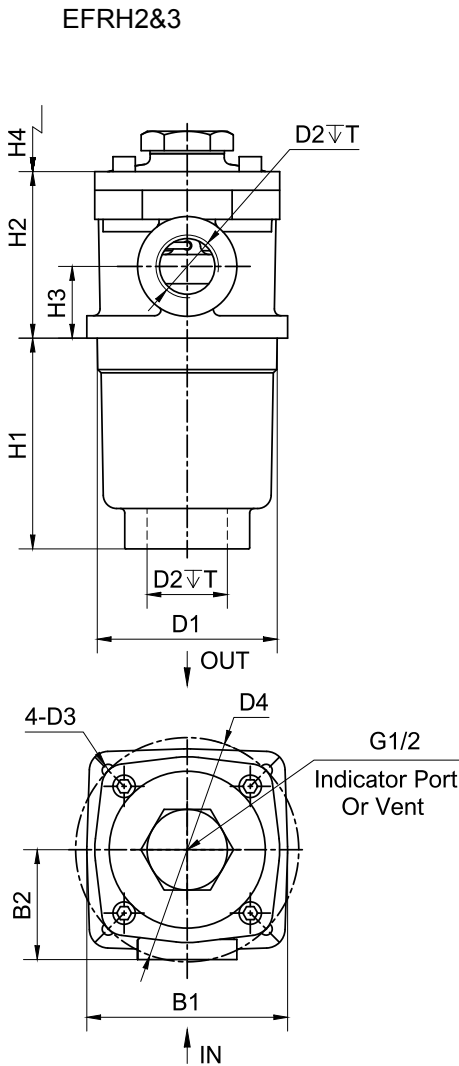
Pressure Drop Graphs (Δp)

Pressure Drop with Clean Filter Elements (M and P filter media)



EFRH Return Filter Series

Technical Drawings and Dimension

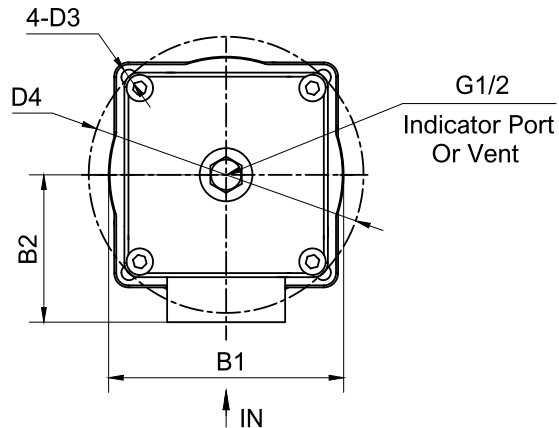
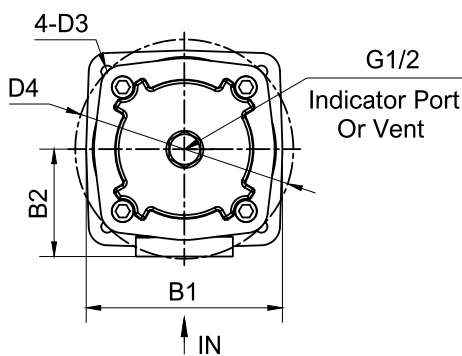
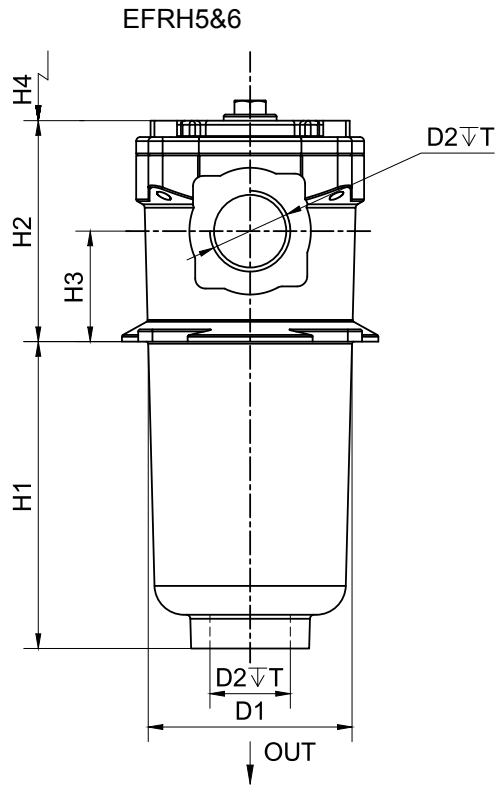
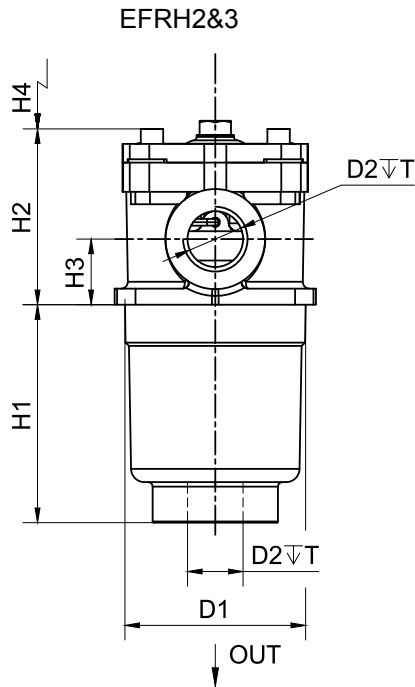


Threaded Connection Ports (Material:Aluminium)

	Connection Port (BSP/NPT/SAE)		Height								
	mm	inch	mm								
Type	D1	D2	D3	D4	B1	B2	T	H1	H2	H3	H4
EFRH2	80	¾", SAE08	5.5	100	94	48	16	94	88	32	80
EFRH3	80	¾", SAE08	5.5	100	94	48	16	161	88	32	145
EFRH5	106	1¼", SAE20	7	135	125	66	20	95	112	52	120
EFRH6	106	1¼", SAE20	7	135	125	66	20	154	112	52	180

EFRH Return Filter Series

Technical Drawings and Dimension

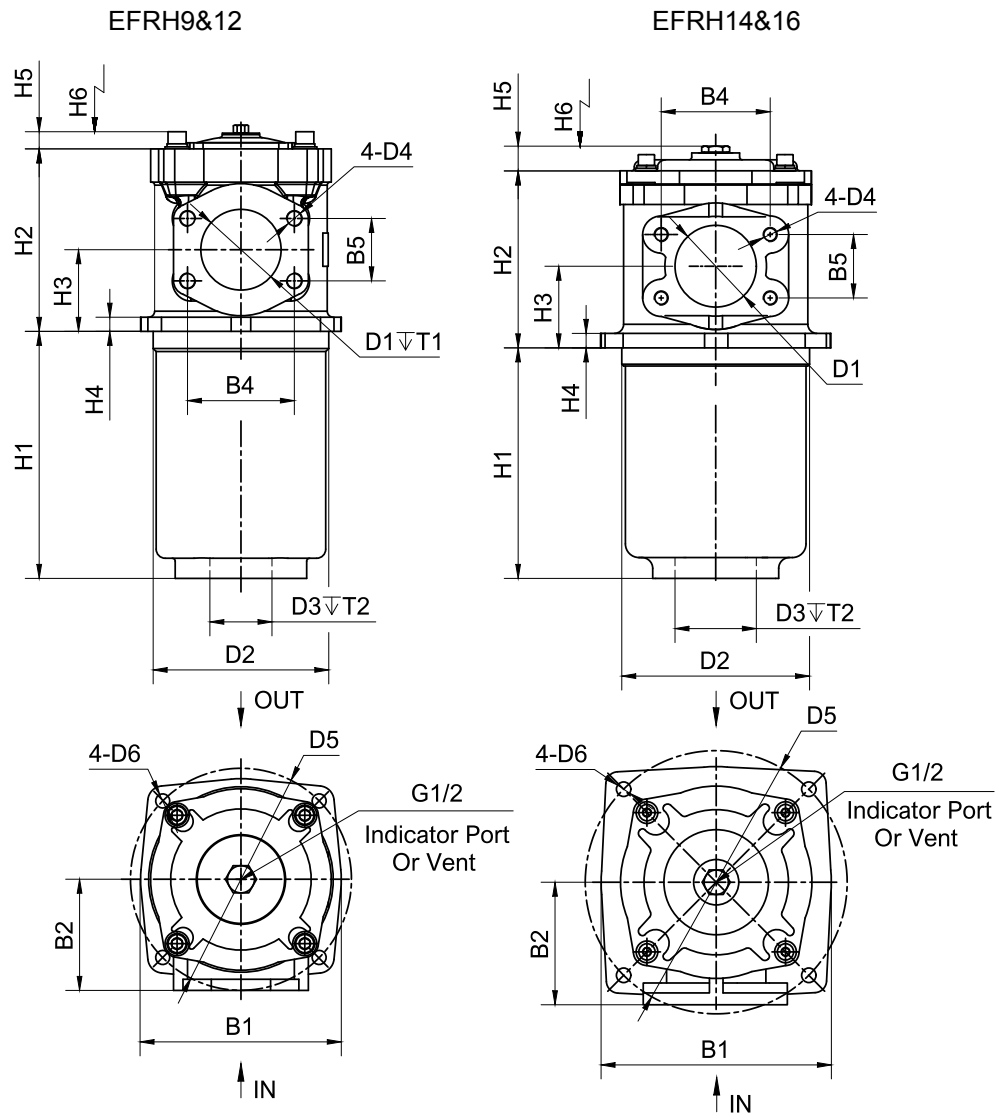


Threaded Connection Ports (Material: Steel)

Type	Connection Port (BSP/NPT/SAE)							Height			
	mm	inch						mm			
Type	D1	D2	D3	D4	B1	B2	T	H1	H2	H3	H4
EFRH2	69	¾",SAE08	6	100	96	57	16	66	88	44	80
EFRH3	69	¾",SAE08	6	100	96	57	16	133	88	44	145
EFRH5	106	1¼", SAE20	7	135	126	72	20	89	108	54	120
EFRH6	106	1¼", SAE20	7	135	126	72	20	150	108	54	180

EFRH Return Filter Series

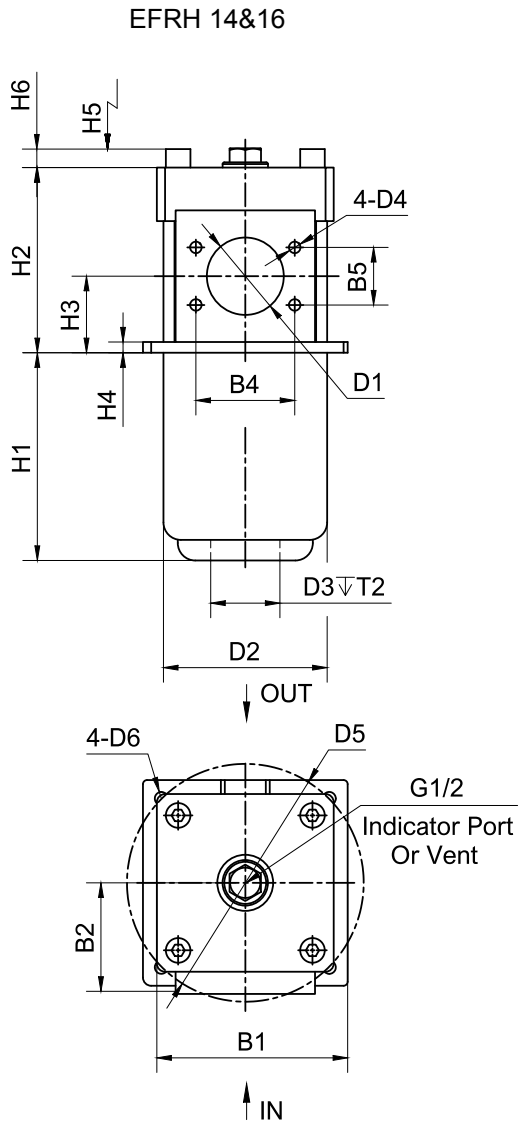
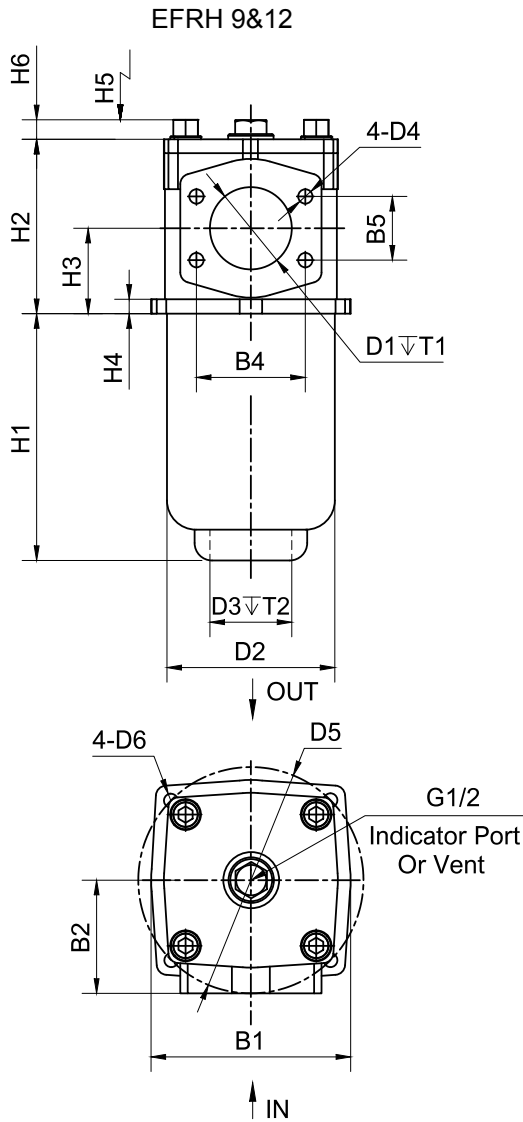
Technical Drawings and Dimension



Threaded Connection Ports(Material:Aluminium)

Type	Connection Port (BSP/NPT/SAE)						Height										T1	T2
	D1	D2	D3	D4	D5	D6	H1	H2	H3	H4	H5	H6	B1	B2	B4	B5		
EFRH9	2" SAE DN50(2")	135	2"	M12	170	9	133	137	61	10	20.5	180	163	85	77.8	42.9	27	27
EFRH12	3" SAE DN80(3")	175	3" SAE DN80(3")	M16	220	9	245	166	81	14	20.5	320	210	110	106.4	61.9	28	28
EFRH14	3 1/2" SAE DN90 (3 1/2")	208	3 1/2" SAE DN90 (3 1/2")	M16	290	18	254	195	90	16	22.5	385	262.5	135	120.7	69.9	-	-
EFRH16	4" SAE DN100(4")	208	4" SAE DN100(4")	M16	290	18	335	238	118	16	22.5	485	272.5	145	130.2	77.8	-	-

EFRH Return Filter Series
 Technical Drawings and Dimension



Threaded Connection Ports(Material: Steel)

Type	Connection Port (BSP/NPT/SAE)			Height															
	D1	D2	D3	D4	D5	D6	H1	H2	H3	H4	H5	H6	T1	T2	B1	B2	B4	B5	
EFRH9	2"																		
	SAE DN 50 3000psi	135	G 2"	M12	170	M8	139	130	63	13	12	180	27	27	150	85	77.8	42.9	
EFRH12	SAE DN 80 3000psi	180	G 3"	M16	220	M12	246	203	83	13	8	320	28	28	195	110	106.4	61.9	
EFRH14	SAE DN 90 3000psi	208	SAE DN 90 (3½")	M16	290	M16	252.5	225	93	13	8	385	-	-	250	135	120.7	69.9	
EFRH16	SAE DN 100 3000psi	208	SAE DN 100 (4")	M16	290	M16	330.5	269	121	13	8	485	-	-	250	145	130.2	77.8	

EFRH Return Filter Series

Order Codes

Filter Assembly Series	A	B	C	-	D	E	-	F	G	Element Series	A	C	D	E
EFRH	5	BE	B	-	08	P10	-	2RE	/AL	EERH	5	B	08	P10

Select the code for each filter (or element) feature according to your requirements and place it in the sequence (see example above) to create the corresponding product order code.

A Size	Flow Rate
2	60 l/min
3	110 l/min
5	160 l/min
6	240 l/min
9	330 l/min
12	660 l/min
14	950 l/min
16	1300 l/min

B Connection Ports
BC BSP ¾"
BE BSP 1-¼"
BH BSP 2"
NC NPT ¾"
NE NPT 1-¼"
NH NPT 2"
A08 SAE08
A20 SAE20
FF SAE DN50 (3000psi)
FH SAE DN80 (3000psi)
FK SAE DN90 (3000psi)
FL SAE DN100 (3000psi)

C Seal
B NBR
V FPM

D By-pass Valve
00 No
08 3bar
11 6bar
X Special

E Media	Material	Filtration	Collapse Pressure
P10	Cellulose	10µm	10 bar
P20	Cellulose	20µm	10 bar
M03	Fibreglass	5µm	21bar
M05	Fibreglass	7µm	21 bar
M10	Fibreglass	12µm	21 bar
M20	Fibreglass	21µm	21 bar
Y25	Wire Mesh	25µm	30 bar
Y60	Wire Mesh	60µm	30 bar
Y90	Wire Mesh	90µm	30 bar
Y125	Wire Mesh	125µm	30 bar

F Indicator	Connection
0 No	
2RE 2bar electrical	BSP ½" Thread
5PE 5bar visual/electrical	BSP ½" Thread

G Shell	Material
	Steel
/AL	Aluminium