



SPIN- ON FILTERS



Overall Information

In Line Spin-On type filters with disposable cartridge elements are suitable for applications on suction lines or pressure return lines. Filter heads are available with ports sizes of 1/2" NPT to 1 1/2" NPT. Type OMTI31 is available with dual 1 1/2" NPT/2" SAE 4-bolt flange. CSM Spin on replacement elements are supplied with safety feature to stop oil spillage during element replacement. The filter head on the OMTI and FTT feature mounting for both European standard and American cartridge elements.

Technical Data of the Complete Filter

Maximum Working Pressure 174 PSI (12 Bar)
 Maximum Test Pressure 261 PSI (18 Bar)
 Suction By-pass Valve Calibration 3.6 PSI (0.25 Bar)
 Return By-pass Valve Calibration 25 PSI (1.7 Bar)
 Working Temperature -13°F to 203°F (-25°C to 95°C)

Compatible with hydraulic oils tested per ISO 2943
 Cast aluminum filter head
 Filter element collapse rating 145 PSI (10 Bar)
 1/8" BSP indicator port standard
 Available with NPT or SAE ports

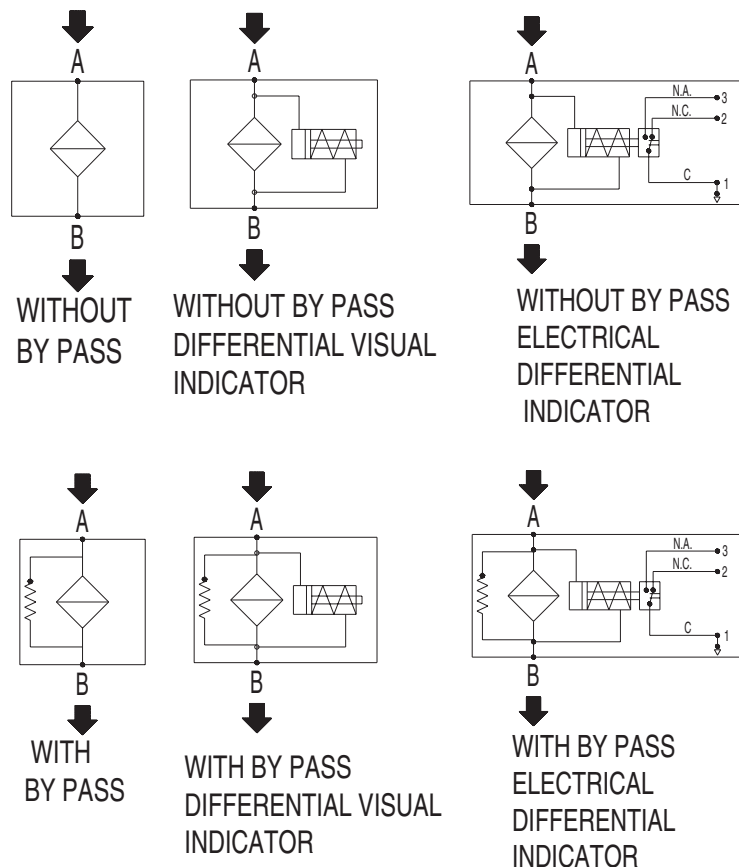
Element Data

Treated micropaper elements with filtration ratio of 10 or 25 micron $B_{\geq 20}$
 Steel wire mesh elements with filtration ratio of 60 micron
 Brass wire mesh elements with filtration ratio of 125 micron
 Filtration efficiency per multi pass test ISO 4572

Optional Indicators

DI125B	Return line filter gauge indicates when to replace the filter element
VV1	For suction line with gauge Scale to 30" Hg (75 CN Hg)
PE1	Pressure switch with NO electrical contacts Pressure setting 19 PSI (1.3 bar)
PE2	Pressure switch with NC electrical contacts Pressure setting 19 PSI (1.3 bar)
DV131M	Differential visual indicator calibrated at 19 PSI (1.3 bar) note: for use on OMTI31-36 only
DV130M	Differential visual indicator calibrated at 19 PSI (1.3 bar) note: for use on OMTI20-25 only
DE131M	Differential visual electrical indicator calibrated at 19 PSI (1.3 bar) note: for use on OMTI31-36 only
DE120M	Differential visual electrical indicator calibrated at 19 PSI (1.3 bar) note: for use on OMTI20-25 only
PE3	Membrane pressure switch Pressure setting 19 PSI (1.3 Bar)

See page 121-122 for clogging indicators specifications

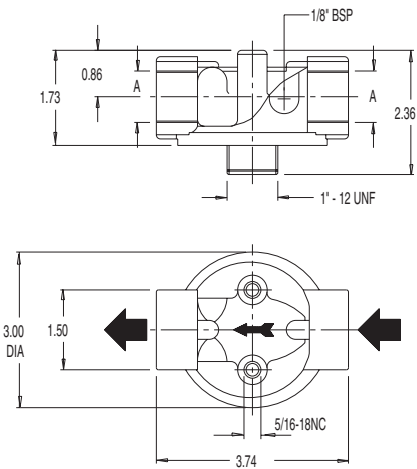




SPIN-ON FILTERS

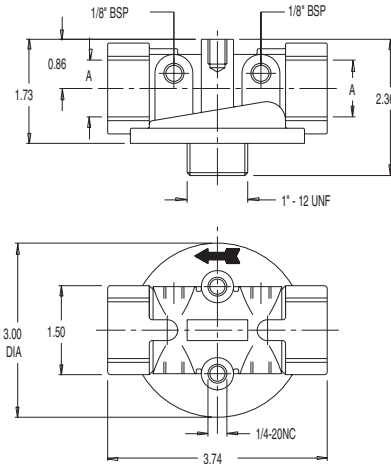
HEAD TYPE T05

Part Number	Port A Size
411595	1/2" NPT
T05V1R	3/4" NPT
411597	-12 SAE



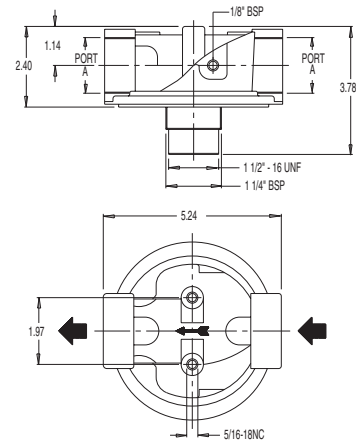
HEAD TYPE T05A

Part Number	Port A Size
411596	1" NPT



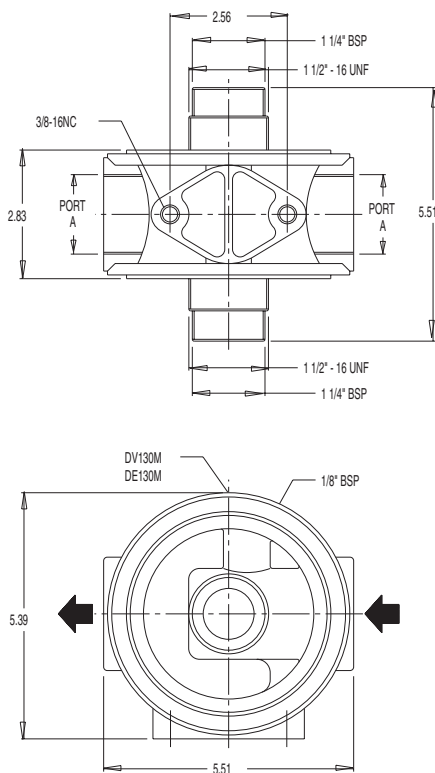
HEAD TYPE T10

Part Number	Port A Size
T10V1R	1 1/4" NPT
411598	#20 SAE



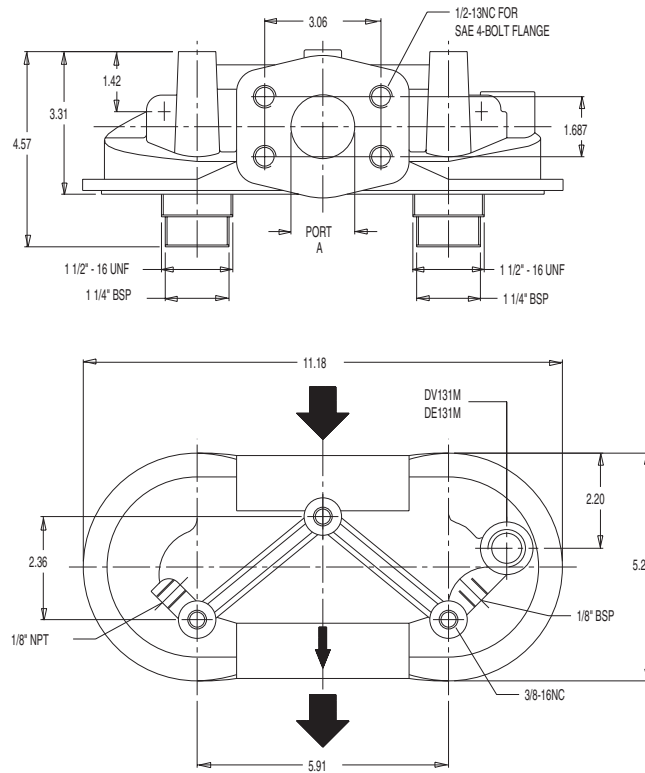
HEAD TYPE T20

Part Number	Port A Size
T20V1R	1 1/2" NPT



HEAD TYPE T31

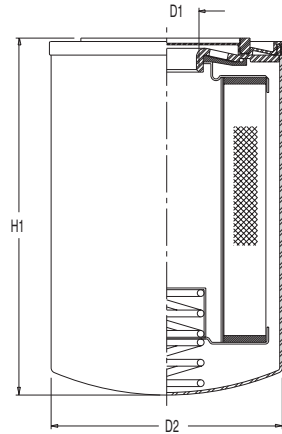
Part Number	Port A Size
411138	1 1/2" NPT 2" SAE Flange





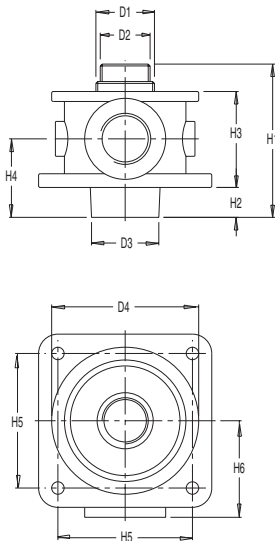
SPIN- ON FILTERS

Replacement Element CS



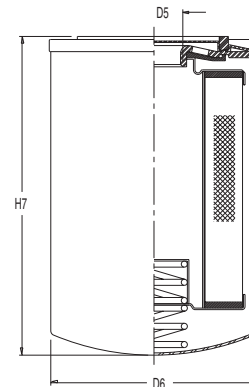
Part Number	Dimensions		
	D1	D2	H1
CS 05	1"-12 UNF	3.86	5.71
CS 10	1½"-16 UNF	5.20	7.09
CS 15	1½"-16 UNF	5.20	8.07

Head Type TF05-TF10



Part Number	FTT Series
TF05V1	FTT05
TF10V3	FTT10/15

Replacement Element CSM



Filter	Mounting Information
FTT 05	Requires a 2 ⁷ / ₁₆ " dia. hole with (4) 1/4-20NC tapped holes equally spaced on a 3.897 dia. B.C.
FTT 10	Requires a 3 ³ / ₄ " dia. hole with (4) 5/16-18NC tapped holes equally spaced on a 5.568 dia. B.C.
FTT 15	

Type	D1 BSP	D2 UNF	D3	D4	D5 BSP	D6	Dimensions							Capacity GPM
							H1	H2	H3	H4	H5	H6	H7	
FTT 05	¾"	N/A	1.38	3.00	¾"	3.86	3.15	0.63	1.97	1.61	2.75	1.97	5.71	25
FTT 10	1¼"	1½"-16 UNF	2.36	5.31	1¼"	5.20	5.00	0.79	2.87	2.20	3.94	2.75	7.09	63
FTT 15	1¼"	1½"-16 UNF	2.36	5.31	1¼"	5.20	5.00	0.79	2.87	2.20	3.94	2.75	8.07	63



SPIN- ON FILTERS

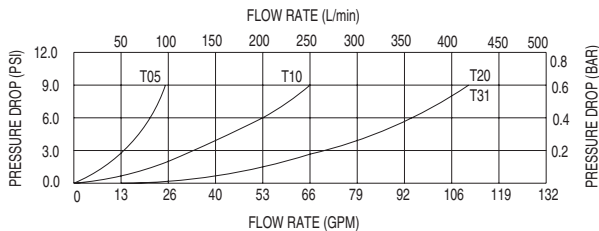
Pressure Drops

The pressure drop of the complete filter is calculated by adding the pressure drop of the housing to that of the filter element.

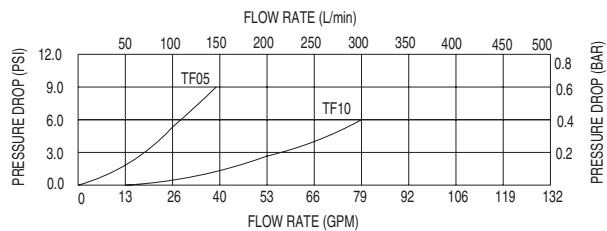
Pressure Drops in the Housings

The graphics refer to the use of mineral oil with a mass density of 54 pound/foot³. The pressure drop is proportional to the variations of mass density.

OMTI



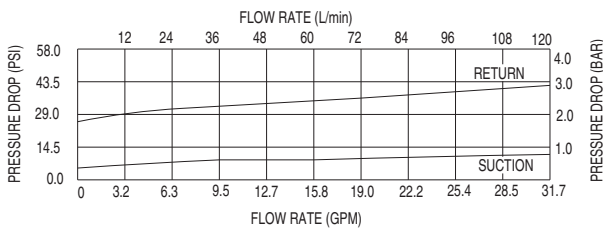
FTT



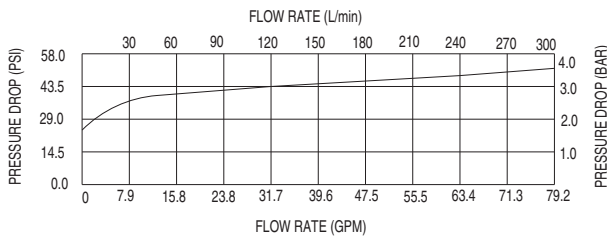
By-Pass Valve Pressure Drop

The graphics refer to the use of mineral oil with a mass density of 54 pound/foot³. The pressure drop is proportional to the variations of mass density.

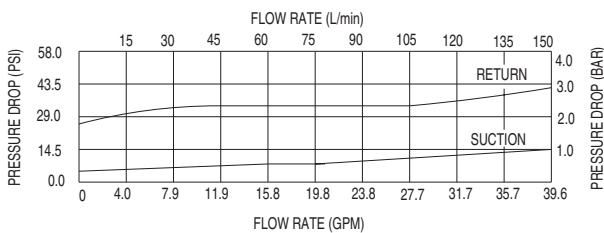
OMTI 05



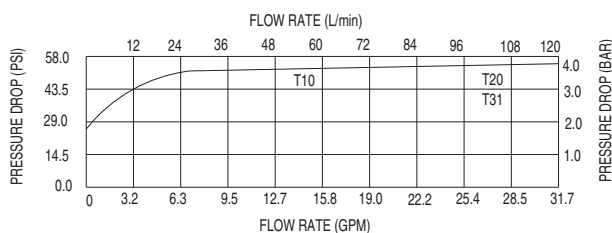
FTT 05



OMTI 10-15-20-25-31-36



FTT 10-15



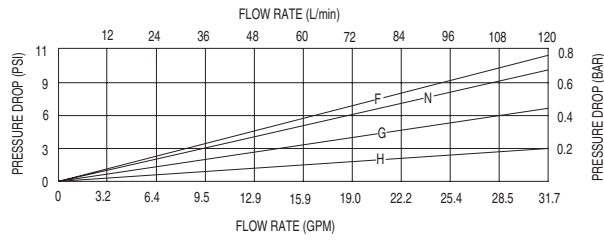


SPIN- ON FILTERS

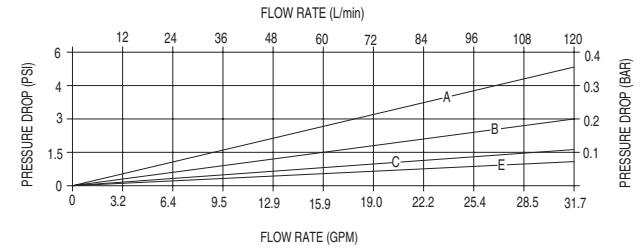
Pressure Drops in the Filter Elements

The graphics refer to mineral oil with a kinematic viscosity of 150 SUS. The variation of the pressure drop is proportional to viscosity.

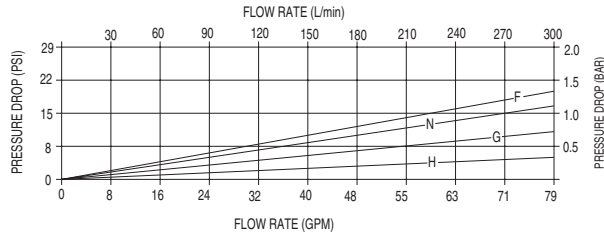
CS05-CSM05



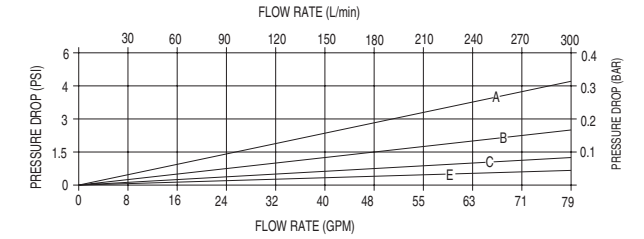
CS05-CSM05



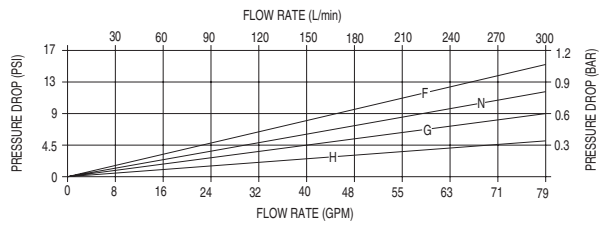
CS10-CSM10



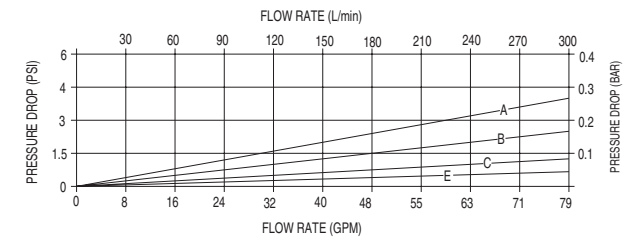
CS10-CSM10



CS15-CSM15



CS15-CSM15





SPIN- ON FILTERS

How to Order the Complete Filter

OMTI	05	A	N	R	08N	DI125B							
Series		Seals		By-pass Valve		Ports							
OMTI	Complete In-Line Filter	N	Buna-N	A	Suction by-pass only for OMTI-CS	Code	OMTI05	OMTI10	OMTI20	OMTI31	FTT05	FTT10	
FTT	Complete Tank Top Filter	V	Viton	R	Return by-pass			OMTI15	OMTI25	OMTI36		FTT15	
Size			Filter Media				08N	1/2" NPT					
	OMTI	FTT	A	10 Micron Resin Treated Paper B ₁₀ ≥2				12N	3/4" NPT				3/4" NPT
05	3/4"	3/4"	B	25 Micron Resin Treated Paper B ₂₅ ≥2				16N	1" NPT				
10	1 1/4"	1 1/2"	C	60 Micron Steel Mesh				20N		1 1/4" NPT			
15	1 1/4"	1 1/2"	E	125 Micron Brass Mesh				24N			1 1/2" NPT	1 1/2" NPT	1 1/2" NPT
20	1 1/2"	-	F	3 Micron Inorganic Fiber Media B ₃ ≥200				24N			2" SAE FLG		
25	1 1/2"	-	G	10 Micron Inorganic Fiber Media B ₁₀ ≥200				12S	-12 SAE				
31	SAE	-	H	25 Micron Inorganic Fiber Media B ₂₅ ≥200									
36	SAE	-	N	6 Micron Inorganic Fiber Media B ₆ ≥200									

See page 121-122 for clogging indicator specifications

Clogging Indicator	
Blank	No Indicator
DI125B	Return Line Filter Gauge
VV1	Suction Line
PE1	Pressure Switch (NO)
PE2	Pressure Switch (NC)
DV131M**	Differential Visual
DV130M*	Differential Visual
DE131M**	Differential Visual (electrical)
DE130M*	Differential Visual (electrical)
PE3	Membrane Pressure Switch

*OMTI20-OMTI25 **OMTI131-OMTI-136

How to Order Replacement Elements

CS	05	A	N	R
Series		Filter Media		
CS	In-Line Filter OMTI	A	10 Micron Resin Treated Paper B ₁₀ ≥2	
CSM	Tank Top Filter FTT	B	25 Micron Resin Treated Paper B ₂₅ ≥2	
Size		C	60 Micron Steel Mesh	
05	OMTI	E	125 Micron Brass Mesh	
10	OMTI 10	F	3 Micron Inorganic Fiber Media B ₃ ≥200	
10	OMTI 20	G	10 Micron Inorganic Fiber Media B ₁₀ ≥200	
10	OMTI 31	H	25 Micron Inorganic Fiber Media B ₂₅ ≥200	
15	OMTI 15	N	6 Micron Inorganic Fiber Media B ₆ ≥7200	
15	OMTI 25			
15	OMTI 36			
		Seals		
		N	Buna-N	
		V	Viton	
		By-pass Valve		
		A	Suction by-pass only for OMTI-CS	
		R	Return by-pass	
		S	Without by-pass	

How to Order Replacement Heads

Order replacement heads by Vescor Part Number. See pages 95



TANK MOUNTED RETURN FILTERS

OMTF Filter



Overall Information

The filters of our OMTF series are mounted on return lines semi-immersed in the hydraulic reservoir. They are furnished with by-pass valve in the element.

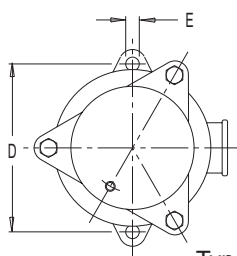
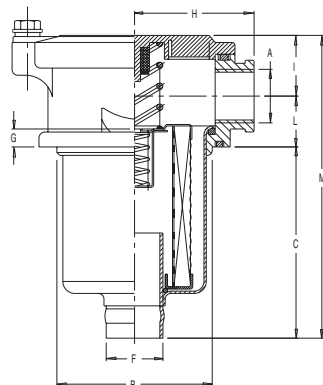
Technical Data of the Complete Filter

Maximum Working Pressure 43 PSI (3 Bar)
 Maximum Test Pressure 87 PSI (6 Bar)
 By-Pass Valve Calibration 25 PSI (1.7 Bar)
 Working Temperature -13°F to 203°F (-25°C to 95°C)
 Material Cast aluminum filter head

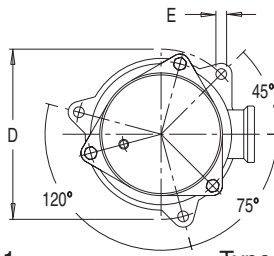
Fluid Compatibility hydraulic oils tested per ISO 2943
 Element Replacement through filter cover
 Indicator Port 1/8" BSP standard
 Ports NPT or SAE

Element Data

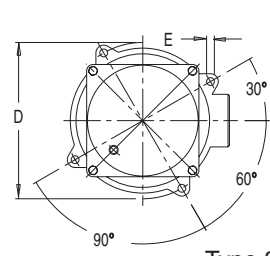
Treated micropaper elements with filtration ratio of 10 or 25 micron $B_{\geq 2}$
 Steel wire mesh elements with filtration ratio of 60 micron
 Brass wire mesh elements with filtration ratio of 125 micron
 Organic fiber elements with filtration ratio of 10 & 25 $B_{\geq 200}$
 Filtration efficiency per multi pass test ISO 4572



Type 1



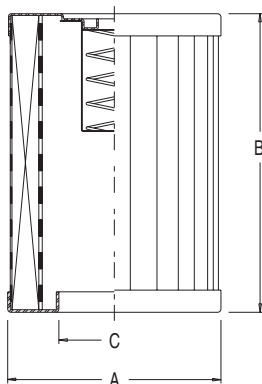
Type 2



Type 3

Filter Dimensions

Type	Size	A		B	C	D	E	F	G	H	I	L	M	Capacity (GPM)	Replace Element
		NPT	SAE												
1	OMTF40	1/2"	#8	2.60	3.23	3.54	0.27	0.94	0.31	1.97	1.08	0.83	5.07	8.0	CR40
1	OMTF65	1/2"	#8	3.38	3.62	4.53	0.35	1.10	0.39	2.64	1.34	1.14	6.10	13.0	CR65
1	OMTF75	3/4"	#12	3.38	3.62	4.53	0.35	1.10	0.39	2.64	1.34	1.14	6.10	16.0	CR65
1	OMTF85	3/4"	#12	3.38	5.39	4.53	0.35	1.10	0.39	2.64	1.34	1.14	7.87	21.0	CR100
1	OMTF100	1"	#16	3.38	5.39	4.53	0.35	1.10	0.39	2.64	1.34	1.14	7.87	26.0	CR100
2	OMTF150	1"	#16	5.08	9.25	6.89	0.43	1.57	0.39	3.74	1.77	1.38	12.40	40.0	CR200
2	OMTF200	1 1/4"	#20	5.08	9.25	6.89	0.43	1.57	0.39	3.74	1.77	1.38	12.40	48.0	CR200
3	OMTF280	1 1/4"	#20	6.81	6.53	8.66	0.43	1.97	0.43	4.72	1.89	1.50	9.84	53.0	CR280
3	OMTF300	1 1/2"	#24	6.81	8.90	8.66	0.43	1.97	0.43	4.72	1.89	1.50	12.20	92.0	CR300
3	OMTF350	2"	#32	6.81	10.87	8.66	0.43	2.48	0.43	4.72	1.89	1.50	14.17	158.0	CR350



Replacement Elements

Size	Dimensions			Filtration Surface (in)		
	A	B	C	10-25 Micron $B_{\geq 2}$	60-125 Micron	10-25 Micron $B_{\geq 200}$
CR40	1.97	2.76	0.98	85	51	60
CR65	2.76	3.35	1.12	217	85	233
CR100	2.76	3.35	1.12	329	132	233
CR200	3.90	8.27	1.61	713	325	570
CR280	5.39	5.51	1.61	775	341	728
CR300	5.39	7.87	2.00	1100	47	1054
CR350	5.39	9.84	2.52	1395	589	1240



TANK MOUNTED RETURN FILTERS

How to Order the Complete Filter

OMTF	Series
OMTF	Complete Filter
CR	Replacement Element

Size	Ports
40	1/2"
65	1/2"
75	3/4"
85	3/4"
100	1"
150	1"
200	1 1/4"
280	1 1/4"
300	1 1/2"
350	2"

Filter Media	
Without Filter Element	
A	10 Micron Resin Treated Paper B ₁₀ ≥2
B	25 Micron Resin Treated Paper B ₂₅ ≥2
C	60 Micron Wire Mesh
E	125 Micron Wire Mesh
G	10 Micron Inorganic Fiber Media B ₁₀ ≥200
H	25 Micron Inorganic Fiber Media B ₂₅ ≥200
U	90 Micron Brass Mesh

Seals	
N	Buna-N
V	Viton

Thread Type	
FN	NPT Ports with 1/8" BSP Indicator Port
SN	SAE Ports with 1/8" BSP Indicator Port

Clogging Indicator	
Blank	No Indicator
DI125B	Return Line Filter Gauge
PE1	Pressure Switch (N.O.)
PE2	Pressure Switch (N.C.)
PE3	Membrane Pressure Switch

Replace Element	Filter Size
40	OMTF40
65	OMTF65 OMTF75
100	OMTF85 OMTF100
200	OMTF150 OMTF200
280	OMTF280
300	OMTF300
350	OMTF350

OMTF **350** **A** **N** **FN** **DI125B**
CR **350** **A**

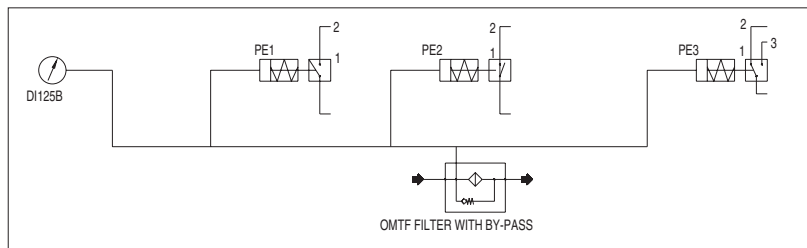
See page 121-122 for clogging indicator specifications

How to Order Replacement Elements

Optional Indicators

DI125B	Return line filter gauge indicates when to replace the filter element
PE1	Pressure switch with NO electrical contacts Pressure setting 19 PSI (1.3 bar)
PE2	Pressure switch with NC electrical contacts Pressure setting 19 PSI (1.3 bar)
PE3	Membrane pressure switch Pressure setting 19 PSI (1.3 Bar)

Clogging Symbols



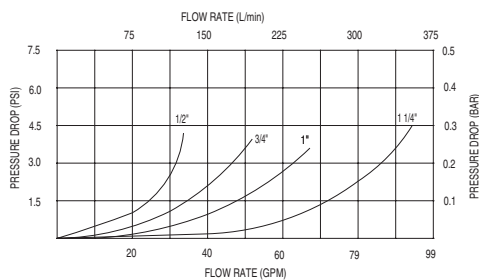
Pressure Drops

The pressure drop of the complete filter is calculated by adding the pressure drop of the housing to that of the filter element.

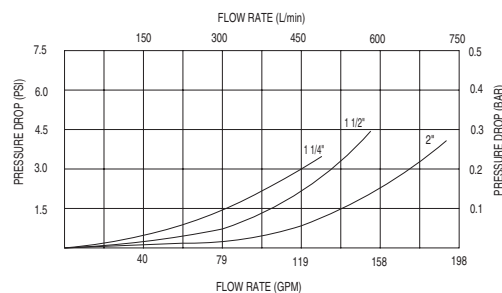
Pressure Drops in the Housings

The graphics refer to the use of mineral oil with a mass density of 54 pound/foot³. The pressure drop is proportional to the variations of mass density.

OMTF40-65-75-85-100-150-200



OMTF280-300-350



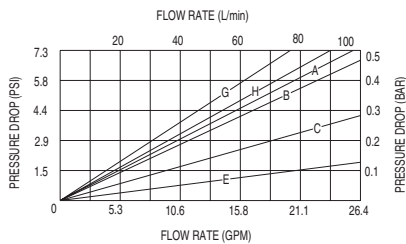


TANK MOUNTED RETURN FILTERS

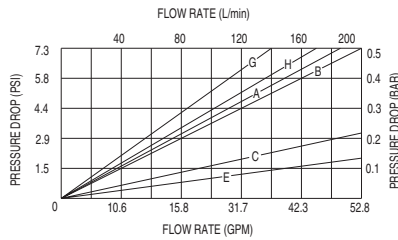
Pressure Drops in the Filter Elements

The graphics refer to mineral oil with a kinematic viscosity of 150 SUS. The variation of the pressure drop is proportional to viscosity.

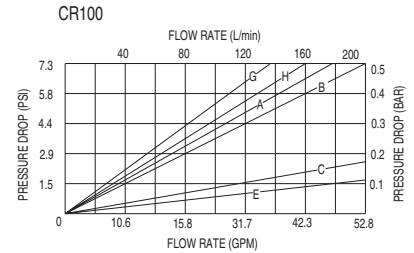
CR40



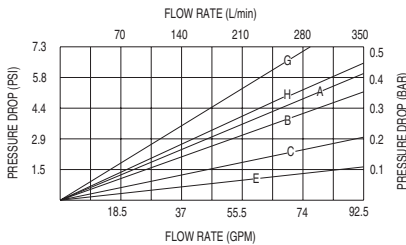
CR65



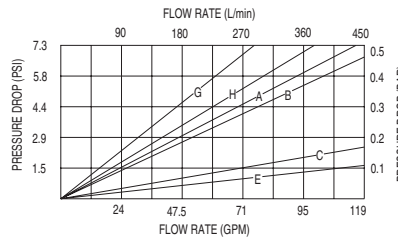
CR100



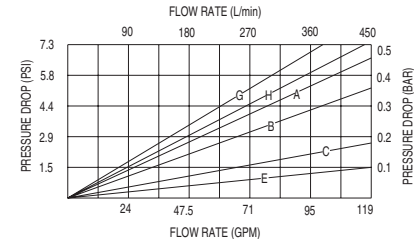
CR200



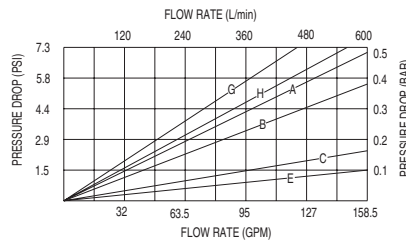
CR280



CR300



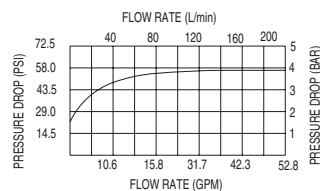
CR350



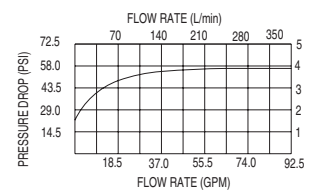
- A = 10 Micron B₁₀≥2
- B = 25 Micron B₂₅≥2
- C = 60 Micron
- E = 125 Micron
- G = 10 Micron B₁₀≥200
- H = 25 Micron B₂₅≥200

By-Pass Pressure Drop

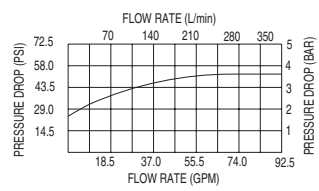
OMTF40



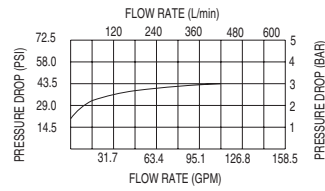
OMTF65-75-85-100



OMTF150-200



OMTF280-300-350



NOTE: WITH VESCORS' POLICY OF CONSTANTLY IMPROVING ITS PRODUCTS, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



RETURN FILTERS with BREATHERS

OMTP Filter

Overall Information

The filters of our OMTP series are for use in return lines with flow rates up to 40 GPM (150 l/min.). They are to be mounted to the tank top. All sizes are pre-equipped with a by-pass valve and a breather for elimination of solid contaminants from the in flowing air. The breather is available in two versions, 10 or 40 micron. Visual or electrical contamination indicators are also available. Easy installation and maintenance thanks to the screwable nylon-cover in addition to the high quality of the material used for the construction of this filter make it suitable for the use in a variety of applications.



OMTP series filters are manufactured and tested according to the following ISO standards:

- ISO 2941 - Hydraulic Fluid Power - Filter Elements - Verification of collapse/burst pressure resistance
- ISO 2942 - Hydraulic Fluid Power - Filter Elements - Verification of fabrication integrity and determination of the first bubble point
- ISO 2943 - Hydraulic Fluid Power - Filter Elements - Verification of material compatibility with fluid
- ISO 3723 - Hydraulic Fluid Power - Filter Elements - Method for end load test
- ISO 3724 - Hydraulic Fluid Power - Filter Elements - Verification of flow fatigue characteristics
- ISO 3968 - Hydraulic Fluid Power - Filters - Evaluation of pressure drop versus flow characteristics

Materials

Filter Housing

Head Aluminum alloy
Cap and Bowl Glass fiber reinforced nylon
Seals Buna-N or viton (optional)

Filter Elements

Filter Media Inorganic fiber
Resin treated paper
Steel and brass wire mesh
Internal Core Zinc plated steel

Working Pressure

Complete Filter

Max. working pressure 145 PSI (10 bar)
By-pass valve setting 22 PSI (1.5 bar)

Filter Elements

Collapse rating 72 PSI (5 bar)

Clogging Indicators

Pressure Gauge PVI

Construction Material: ABS and Steel
Range: 0-174PSI (0-12 bar)
Connection: 1/8" BSP
Radial: 40mm diameter

Pressure Switch PE1

Material: Steel
Setting: 19 PSI (1.3 bar)
Connection 1/8" BSP
Electrical connection: N.O.

Pressure Switch PE2

Electric Connection: N.C.

Fluid Compatibility

OMTP series filters are compatible with mineral oils type HH-HM-HR-HV-HG according to ISO6734/4 for temperature range between -4°F and 203°F (-20°C and 95°C). For any other applications please contact the Vescor Sales Department.

Inorganic Fiber Media – Filtration Ratio $B_{\geq 200}$
(filtration efficiency of 99.5 at referred dimension)

Code	Filtration Degree	Filtration Ratio
G	10 Micron	$B_{10} \geq 200$
H	25 Micron	$B_{25} \geq 200$
N	6 Micron	$B_6 \geq 200$

Resin Treated Paper – Filtration Ratio $B_{\geq 2}$
(filtration efficiency of 50% at referred dimension)

Code	Filtration Degree	Filtration Ratio
A	10 Micron	$B_{10} \geq 2$
B	25 Micron	$B_{25} \geq 2$

Filtration Area (cm²)

OMTPR	20	100-1	100-2	100-4
A	870	940	1500	1850
B	870	940	1500	1850
C	680	670	1020	1590
E	680	670	1020	1590
G	710	670	1020	1670
H	710	670	1020	1670
N	710	670	1020	1670
U	680	670	1020	1590
Z	680	670	1020	1590

Wire Mesh

The filtration rating is defined by the diameter of the largest spherical particle that will pass the media

Code	Filtration Degree	Filtration Ratio	Wire Material
C	60 Micron	Reps	Steel AISI 304
E	125 Micron	Square Mesh	Brass
U	90 Micron	Square Mesh	Brass
Z	25 Micron	Square Mesh	Steel AISI 304



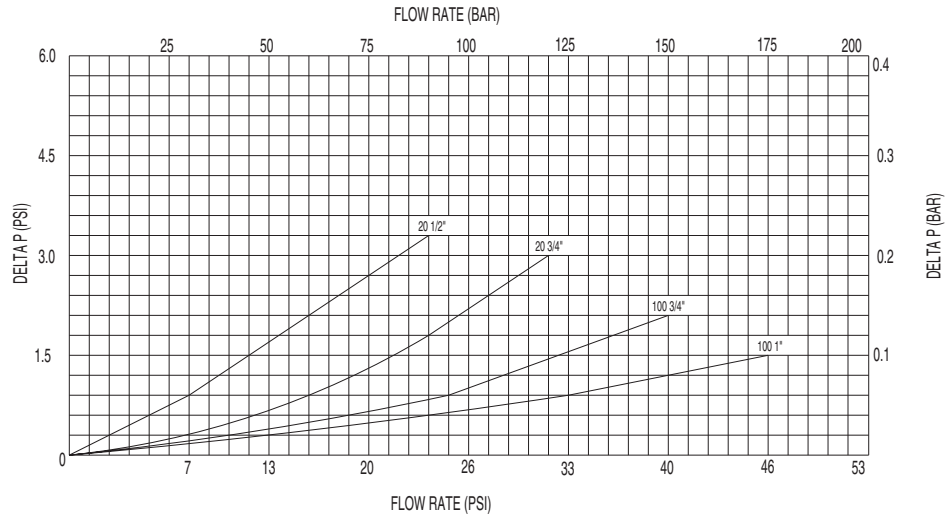
RETURN FILTERS with BREATHERS

Flow Characteristics

The pressure drop of the complete filter is calculated by adding the housing pressure drop to that of the filter element, referred as the working flow rate. The housing pressure drop is proportional due to the variations of the fluid kinematic viscosity. Select your OMTP filter so that the complete pressure drop of the clean filter, calculated at the working flow rate, is less than 33 PSI (0.45 Bar).

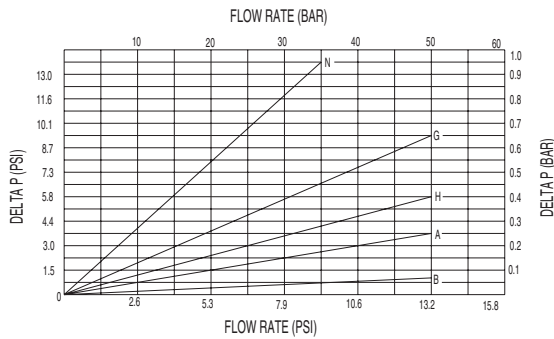
Pressure curves of the following graphs are for mineral oil with density of 54 LB/FT and kinematic viscosity of 150 SUS.

Housing Pressure Drop

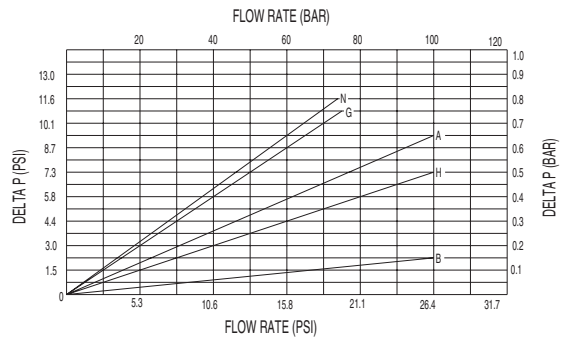


Filter Element Pressure Drop

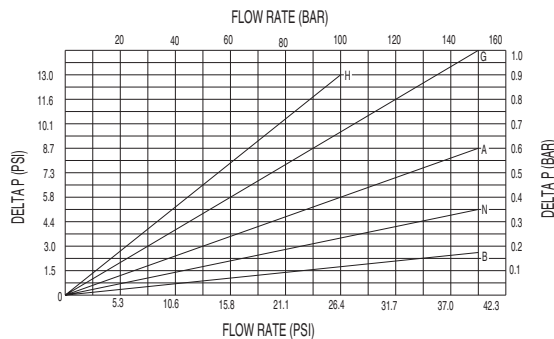
OMTPR20



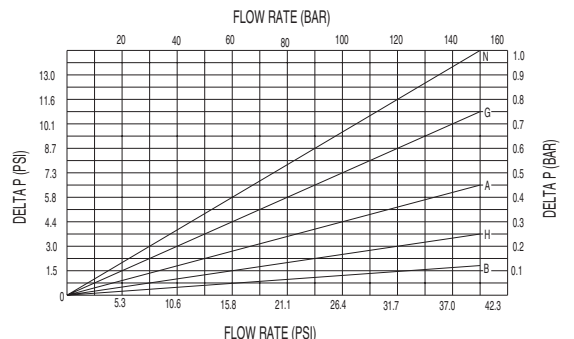
OMTPR 100 1



OMTPR 100 2



OMTPR 100 3

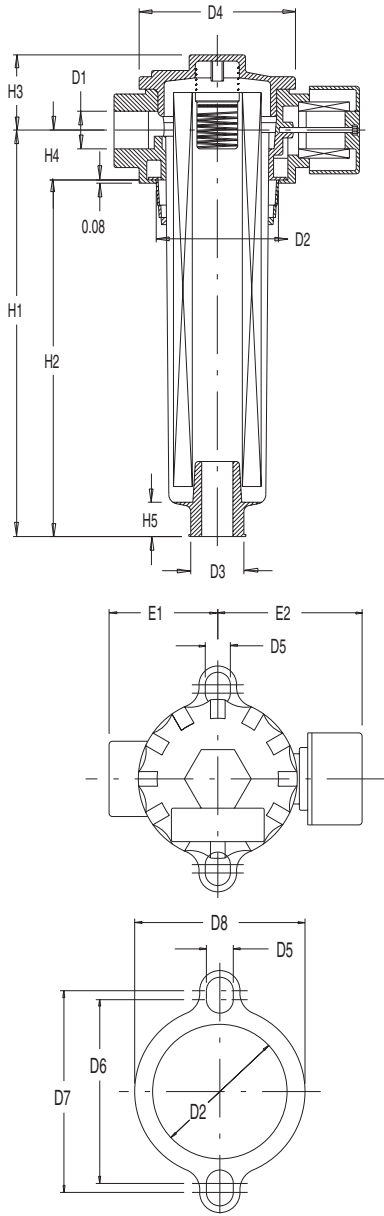


NOTE: WITH VESCORS' POLICY OF CONSTANTLY IMPROVING ITS PRODUCTS, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

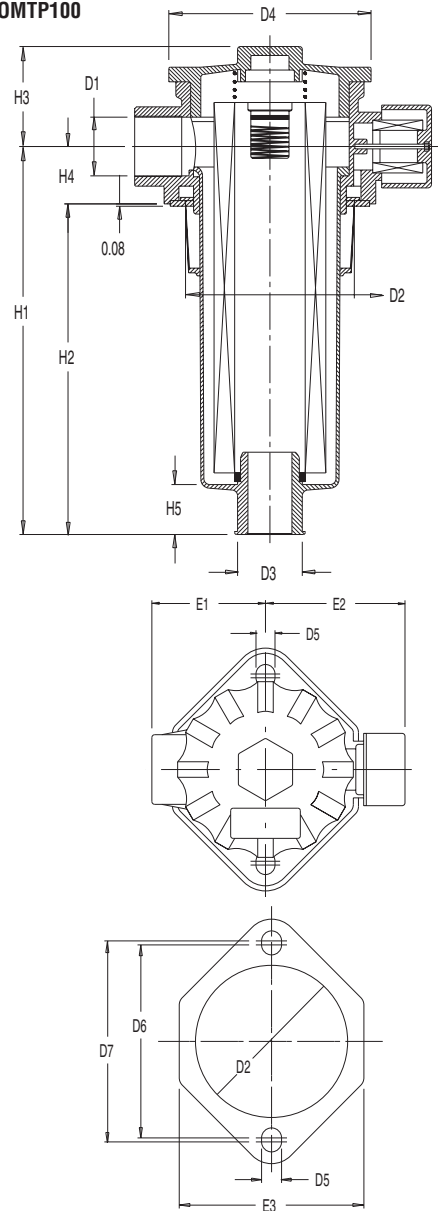


RETURN FILTERS WITH BREATHERS

OMTP20



OMTP100



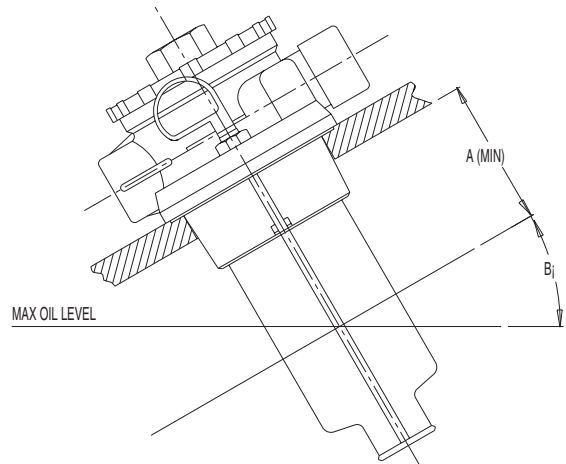
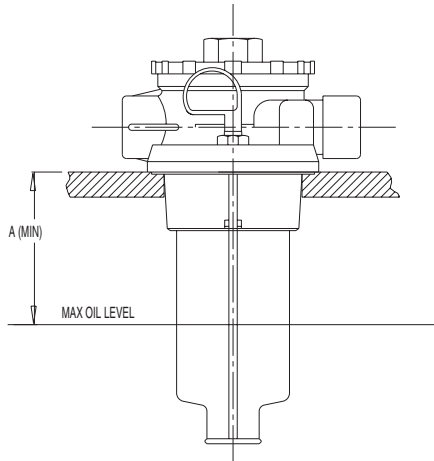
Type	D1		D2		D3	D4	D5	D6	D7	D8	H1	H2	H3	H4	H5	E1	E2	E3
	NPT	SAE	MIN	MAX														
OMTP20	1/2", 3/4"	#8	2.36	2.48	1.10	2.95	0.43	3.23	3.46	3.03	7.95	7.01	1.61	0.94	0.63	1.97	2.76	N/A
OMTP100-1	3/4", 1"	#12	3.42	3.58	1.42	4.09	0.43	4.33	4.53	N/A	5.51	4.33	2.36	2.36	0.87	2.76	3.27	4.05
OMTP100-2	3/4", 1"	#12	3.42	3.58	1.42	4.09	0.43	4.33	4.53	N/A	8.07	6.89	2.36	2.36	0.87	2.76	3.27	4.05
OMTP100-3	3/4", 1"	#12	3.42	3.58	1.42	4.09	0.43	4.33	4.53	N/A	12.00	10.83	2.36	2.36	0.87	2.76	3.27	4.05

Filter	Mounting Information
OMTP20	Requires a 2 ⁷ / ₁₆ " dia. hole with (4) 3 ⁸ / ₈ "-16NC tapped holes equally spaced in a 3 ¹ / ₃₂ " dia. B.C.
OMTP100	Requires a 3 ¹ / ₂ " dia. hole with (4) 3 ⁸ / ₈ "-16NC tapped holes equally spaced in a 4 ⁷ / ₁₆ " dia. B.C.



RETURN FILTERS with BREATHERS

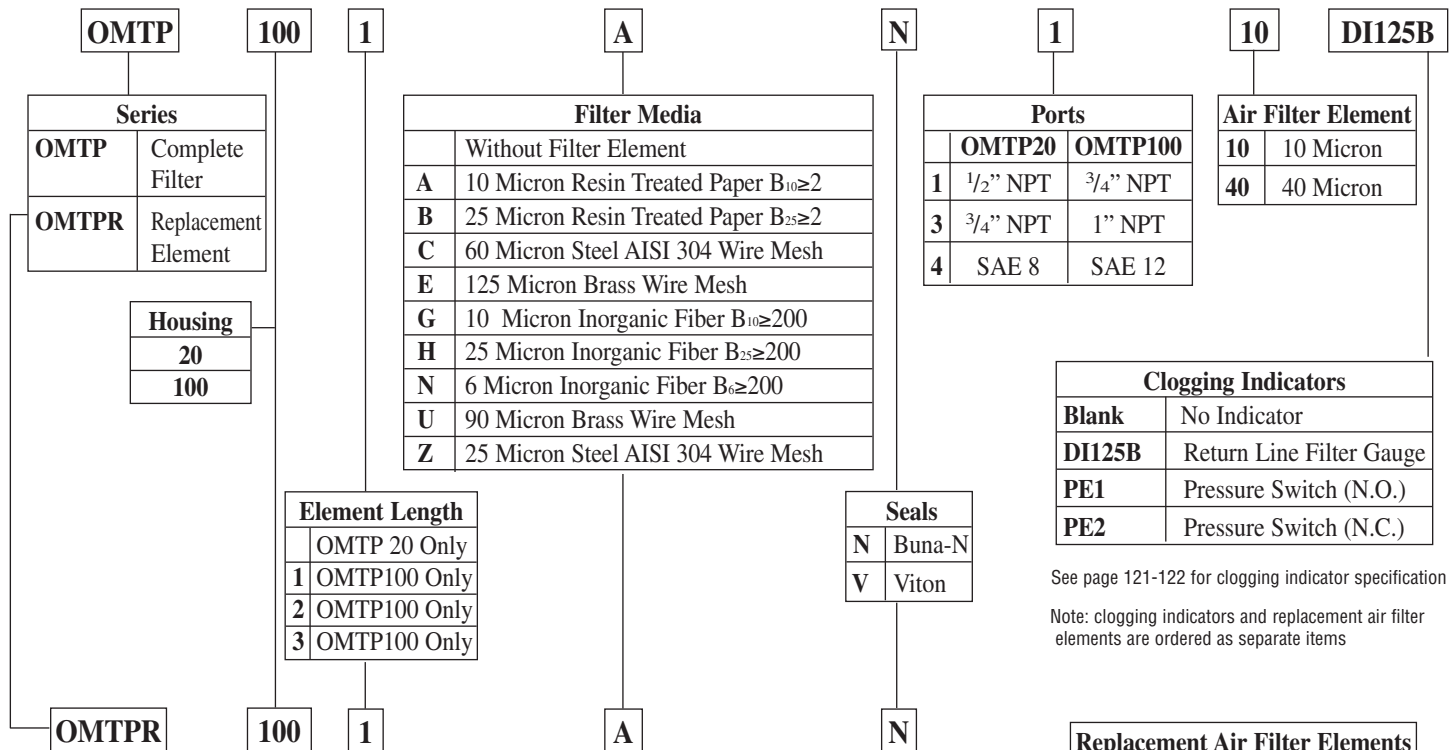
OMTP Dipstick (optional)



Type	Dimensions		Dipstick Part Number
	A	B°	
OMTP20	3.15	0°-45° (max)	OMTP20109
OMTP1001	2.75	0°-30° (max)	OMTP100109
OMTP1002	3.94	0°-30° (max)	OMTP100209
OMTP1003	7.94	0°-30° (max)	OMTP100309

Note: Fixing screws (M10) are included in the part number. Dipsticks are ordered as separate items

How to Order the Complete Filter



How to Order Replacement Elements

Part No.	Micron Rating
OMTP20205	10 Micron
OMTP20805	40 Micron



IN LINE MEDIUM PRESSURE FILTERS

APM Filter



Overall Information

The filters of our APM series are in-line medium pressure mounted on return lines. They are furnished without a by-pass valve or a 87 PSI (6 Bar) by-pass valve in the element.

Technical Data of the Complete Filter

Maximum Working Pressure 1595 PSI (110 Bar)

Maximum Test Pressure 2900 PSI (200 Bar)

By-pass Valve Calibration 87 PSI (6 Bar)

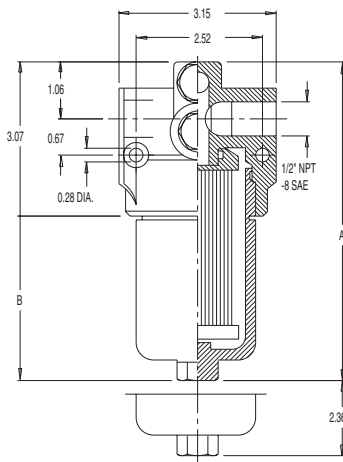
Working Temperature -13°F to 230°F (-25°C to 110°C)

Compatible with hydraulic oils tested per ISO 2943

M20 x 1.5 indicator port standard

Available with NPT or SAE ports

Available with fiberglass, cellulose or wire mesh elements



Element Data

Treated micropaper elements with filtration ratio of 10 or 25 micron $B_{\lambda \geq 2}$

Steel wire mesh elements with filtration ratio of 10, 20 and 60 micron

Organic fiber elements with filtration ratio of 3, 6, 10 and 25 $B_{\lambda \geq 200}$

Differential collapse pressure 29 PSI (20 Bar) as per ISO 2941

Manufactured per ISO 2942

Filtration efficiency per multi pass test ISO 4572

Type	Flow Rate (GPM)	Dimensions	
		A	B
APM37	16	6.81	3.11
APM38	24	9.61	6.53

Differential Indicators

Exchange contacts with the following values:

Voltage Supply (V)	Resistive Charge (A)	Inductive Charge (A)
125/60Hz	5 amps	5 amps
250/60Hz	5 amps	5 amps
15V DC	10 amps	10 amps
30V DC	5 amps	5 amps
50 V DC	1 amp	1 amp
125V DC.	0.5 amp	0.06 amp

Type	Surface (in ²)							
	A	B	C	F	G	H	I	M
APM37	37	37	49	52	52	52	49	49
APM38	77	77	99	107	107	107	99	99

Optional Indicators

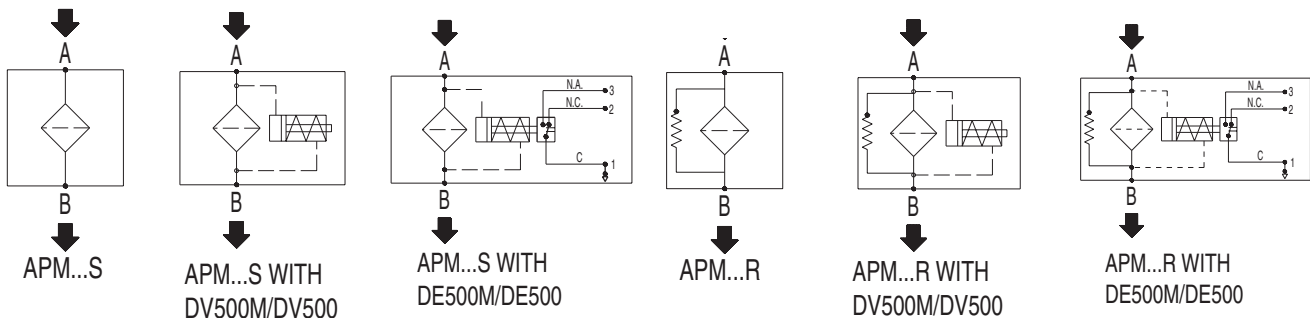
DV500 Differential visual indicator calibrated at 19 PSI (1.3 bar)

DR500M Visual indicator with reed contacts at 19 PSI (1.3 bar)

DE500M Differential visual electrical indicator calibrated at 19 PSI (1.3 bar)

See page 121-122 for clogging indicators specifications

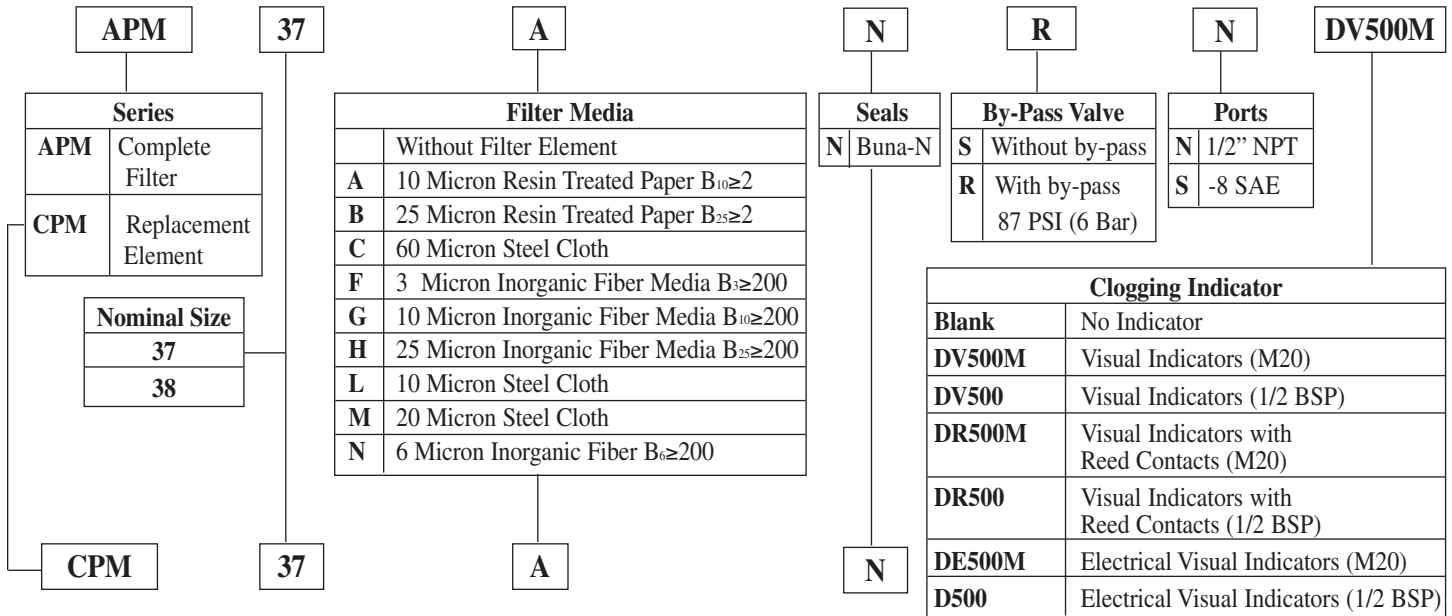
Clogging Indicator Symbols





IN LINE MEDIUM PRESSURE FILTERS

How to Order the Complete Filter



How to Order Replacement Elements

See page 121-122 or clogging indicator specifications
Note: clogging indicators are ordered as separate items

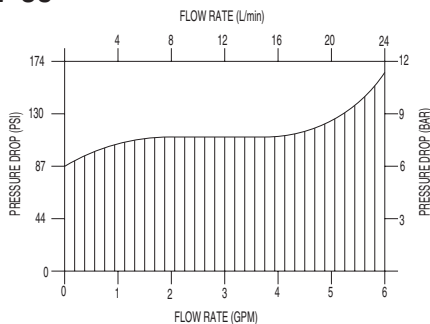
Pressure Drops

The pressure drop of the complete filter is calculated by adding the pressure drop of the housing to that of the filter element.

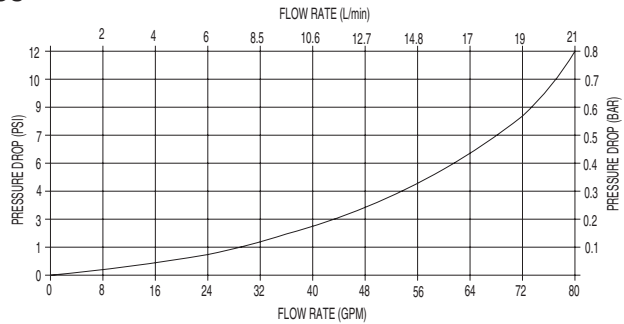
Pressure Drops in the Housings

The graphics refer to the use of mineral oil with a mass density of 54 pound/foot³. The pressure drop is proportional to the variations mass density.

APM-37-38



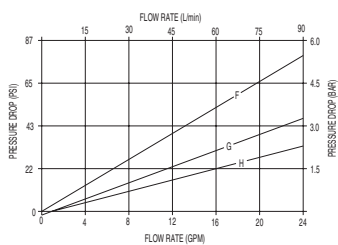
APM-37-38



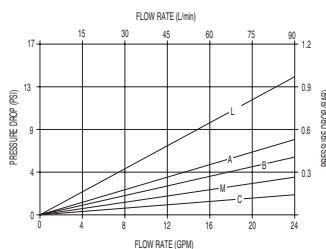
Pressure Drops in the Filter Elements

The graphics refer to mineral oil with a kinematic viscosity of 150 SUS. The variation of the pressure drop is proportional to viscosity.

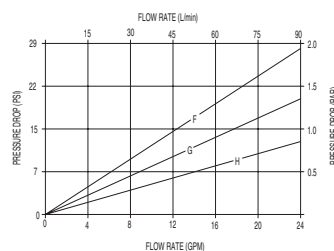
CPM37



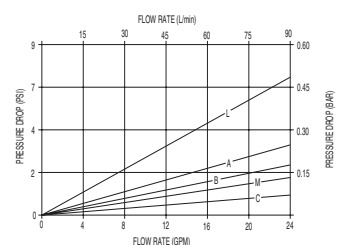
CPM37



CPM38



CPM38





IN LINE MINI FILTERS

MHP Filters



Overall Information

The filters of our MHP series are suitable for use in pressure lines with flow rates up to 1.5 GPM (6 l/min). They are to be mounted in line on the pressure tube. Two versions are available: with and without a by-pass valve. The replacement elements are available in inorganic fiber, resin treated paper or wire mesh.

MHP series filters are manufactured and tested according to the following ISO standards:

ISO 2941 - Hydraulic Fluid Power - Filter Elements - Verification of collapse/burst pressure resistance

ISO 2942 - Hydraulic Fluid Power - Filter Elements - Verification of fabrication integrity and determination of the first bubble point

ISO 2943 - Hydraulic Fluid Power - Filter Elements - Verification of material compatibility with fluid

ISO 3723 - Hydraulic Fluid Power - Filter Elements - Method for end load test

ISO 3724 - Hydraulic Fluid Power - Filter Elements - Verification of flow fatigue characteristics

ISO 3968 - Hydraulic Fluid Power - Filters - Evaluation of pressure drop versus flow characteristics

ISO 16889 - Hydraulic Fluid Power - Filters - Multi-pass method for evaluating filtration performance

Materials

Filter Housing

Head and Bowl Brass
Seals Buna-N or viton (optional)

Filter Elements

Filter Media Inorganic fiber
 Resin treated paper
 Steel and brass wire mesh
Support Wire Mesh Galvanized steel with epoxy
 treatment
Internal Core Zinc plated steel

Working Pressure

Complete Filter

Max. working pressure 4061 PSI (280 bar)
By-pass valve setting 73 PSI (5 bar)

Filter Elements

Collapse rating 290 PSI (20 bar)

Fluid Compatibility

MHP220 series filters are compatible with mineral oils type HH-HM-HR-HV-HG according to ISO6734/4 for temperature range between -4°F and 203°F (-20°C and 95°C). For any other applications please contact the Vescor Sales Department.

Filter Performance

The particular attention OMT has always dedicated to the choice of the filtration media used in OMT filters has allowed the R&D department to develop filtration elements suitable for even the most demanding applications, with a high filtration efficiency and an elevated dirt holding capacity of solid contaminants.

Inorganic Fiber Media – Filtration Ratio $B_{10} \geq 200$
(filtration efficiency of 99.5 at referred dimension)

Code	Filtration Degree	Filtration Ratio
G	10 Micron	$B_{10} \geq 200$
H	25 Micron	$B_{25} \geq 200$

Resin Treated Paper – Filtration Ratio $B \geq 2$
(filtration efficiency of 50% at referred dimension)

Code	Filtration Degree	Filtration Ratio
A	10 Micron	$B_{10} \geq 2$
B	25 Micron	$B_{25} \geq 2$

Wire Mesh-The filtration rating is defined by the diameter of the largest spherical particle that will pass the media

Code	Filtration Degree	Filtration Ratio	Wire Material
L	10 Micron	Reps	Steel AISI 304
M	20 Micron	Reps	Steel AISI 304
C	60 Micron	Reps	Steel AISI 304
U	90 Micron	Square Mesh	Brass
E	125 Micron	Square Mesh	Brass

Pressure Drops

The pressure drop of the complete filter is calculated by adding the pressure drop of the housing to that of the filter element. Referred as the working flow rate.

The housing pressure drop is proportional to the variations of the fluid mass density.

The filter element pressure drop is proportional to the variations of the fluid kinematic viscosity.

Select your MP220 filter so that the complete pressure drop of the clean filter, calculated at the working flow rate is less than 14-20 PSI (1-1.5 Bar)

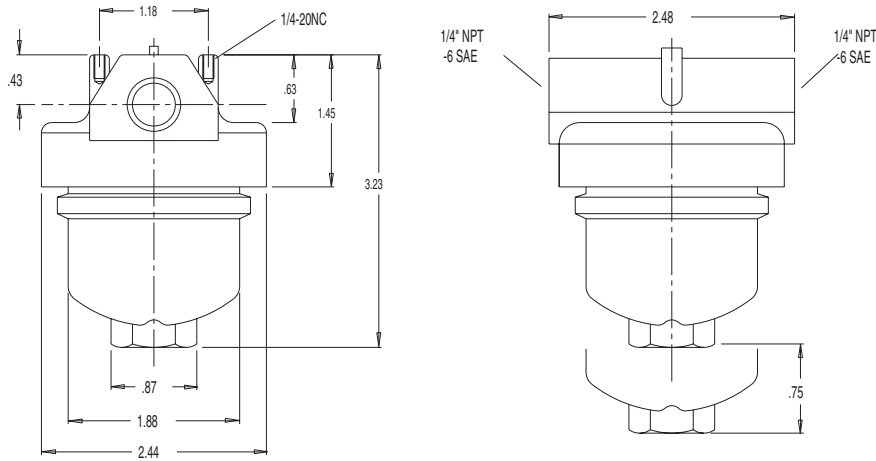
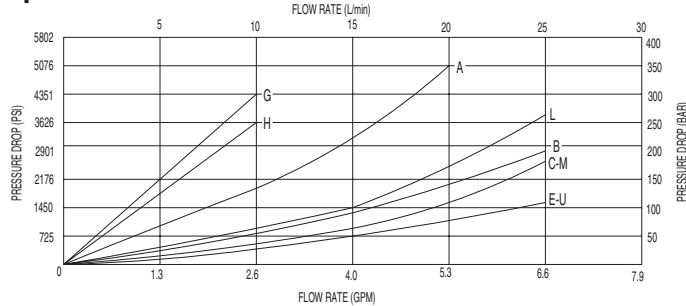


IN LINE MINI FILTERS

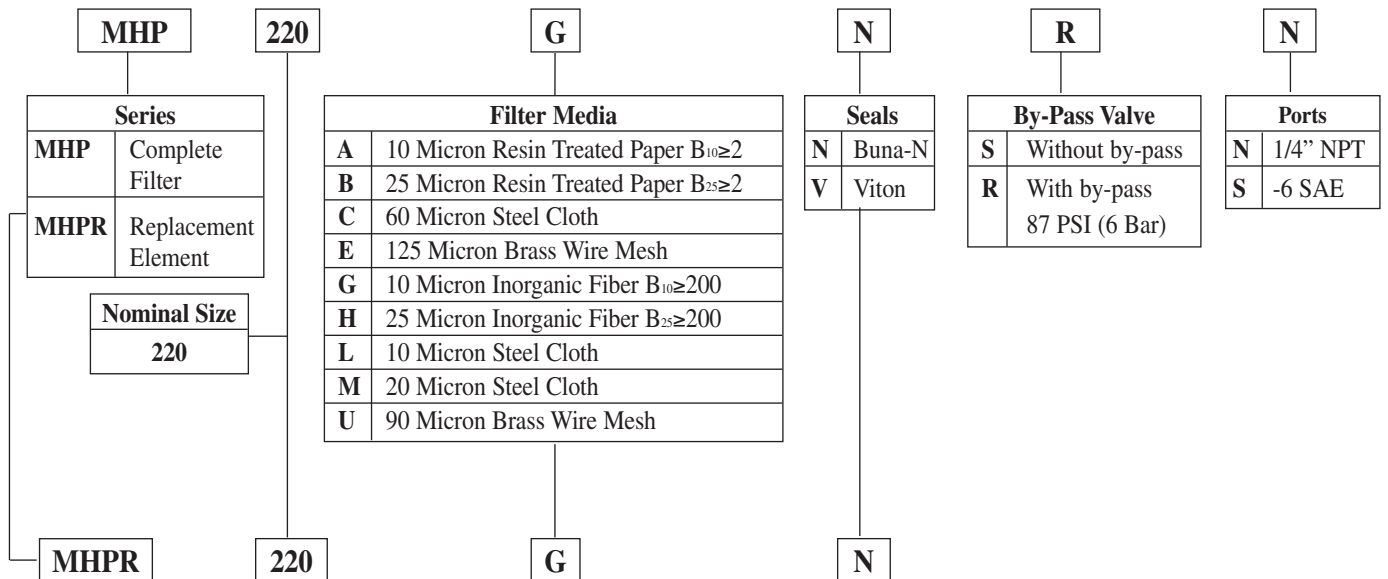
Pressure Curves

The pressure curves of the following graph is for mineral oil with density on 54 LB/FT and a kinematic viscosity of 150 SUS.

Complete Filter Pressure Drop



How to Order the Complete Filter



How to Order Replacement Elements



IN LINE HIGH PRESSURE FILTERS

HPM Filter



Overall Information

The filters of our HPM series are in-line high pressure mounted on return lines. They are furnished with out a by-pass valve or a 87 PSI (6 Bar) by-pass valve in the element.

Technical Data of the Complete Filter

Fatigue Pressure 2,000,000 cycles at 0-4350 PSI (0-300 Bar)

Static Pressure Testing 9137 PSI (630 Bar)

Collapse Pressure 1827 PSI (126 Bar)

By-pass Valve Calibration 87 PSI (6 Bar)

Compatible with hydraulic oils tested per ISO 2943

Steel body with cast iron head

M20 x 1.5 indicator port standard

Available with NPT or SAE ports

Available with fiberglass, cellulose or wire mesh elements

HPM series filters are manufactured and tested according to the following ISO standards:

ISO 2941 - Hydraulic Fluid Power - Filter Elements - Verification of collapse/burst pressure resistance

ISO 2942 - Hydraulic Fluid Power - Filter Elements - Verification of fabrication integrity and determination of the first bubble point

ISO 2943 - Hydraulic Fluid Power - Filter Elements - Verification of material compatibility with fluid

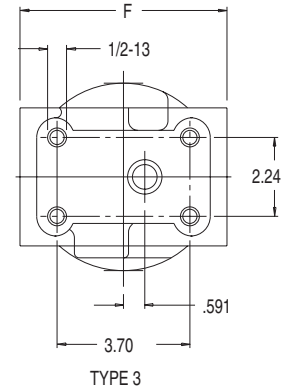
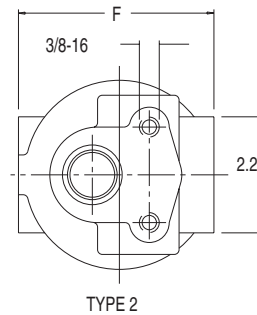
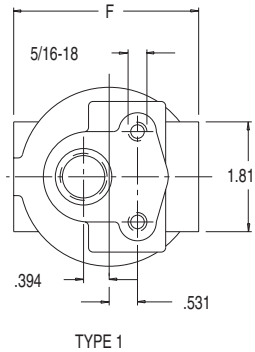
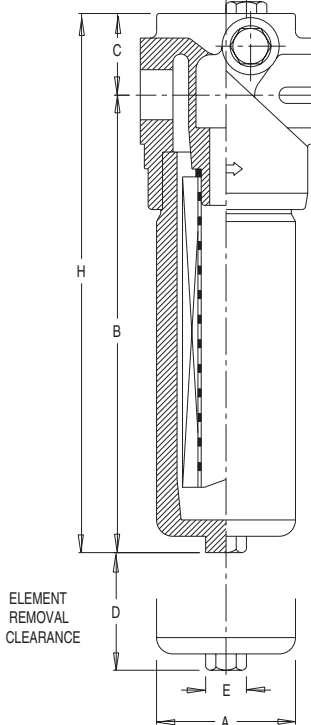
ISO 3723 - Hydraulic Fluid Power - Filter Elements - Method for end load test

ISO 3724 - Hydraulic Fluid Power - Filter Elements - Verification of flow fatigue characteristics

ISO 3968CI.B - Hydraulic Fluid Power - Filters - Evaluation of pressure drop versus flow characteristics

ISO 4572 - Hydraulic Fluid Power - Filters - Multi-pass method for evaluating filtration performance

SEE ORDERING INFORMATION
FOR AVAILABLE PORT SIZES



Type	Series	Dimensions						
		A	B	C	D	E	F	H
1	HPM281	2.75	5.67	1.77	3.94	0.94	3.31	7.44
1	HPM282	2.75	6.85	1.77	3.94	0.94	3.31	8.62
1	HPM283	2.75	10.79	1.77	3.94	0.94	3.31	12.56
2	HPM421	3.07	9.13	1.77	4.92	1.18	4.33	10.91
2	HPM422	3.07	13.58	1.77	4.92	1.18	4.33	15.35
3	HPM621	4.33	8.31	1.77	5.91	1.18	5.51	10.74
3	HPM622	4.33	13.03	1.77	5.91	1.18	5.51	15.47
3	HPM623	4.33	18.54	1.77	5.91	1.18	5.51	20.98
3	HPM624	4.33	24.06	1.77	5.91	1.18	5.51	26.50



IN LINE HIGH PRESSURE FILTERS

Differential Indicators

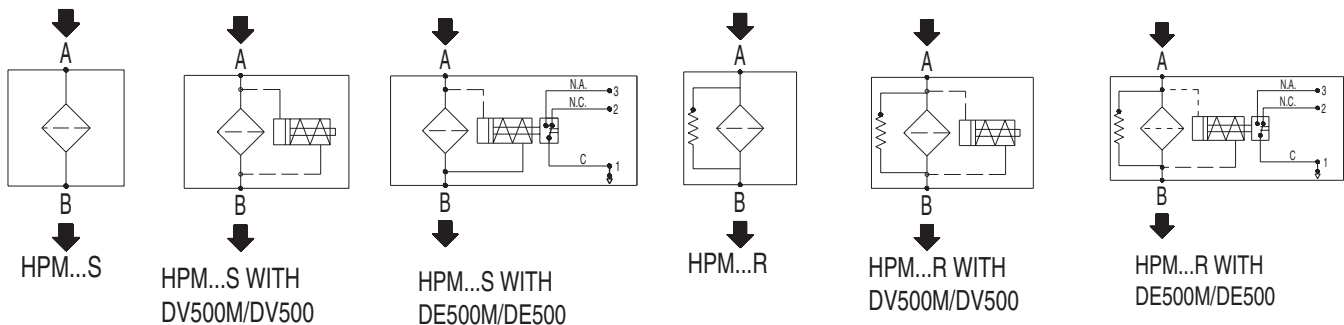
Exchange contacts with the following values:

Voltage Supply (V)	Resistive Charge (A)	Inductive Charge (A)
125/60Hz	5 amps	5 amps
250/60Hz	5 amps	5 amps
15V DC	10 amps	10 amps
30V DC	5 amps	5 amps
50 V DC	1 amp	1 amp
125V DC.	0.5 amp	0.06 amp

Optional Indicators

DV500M	Differential visual indicator calibrated at
DV500	19 PSI (1.3 bar)
DR500M	Visual indicator with reed contacts
DR500	19 PSI (1.3 bar)
DE500M	Differential visual electrical indicator calibrated
DE500	at 19 PSI (1.3 bar)

Clogging Indicator Symbols



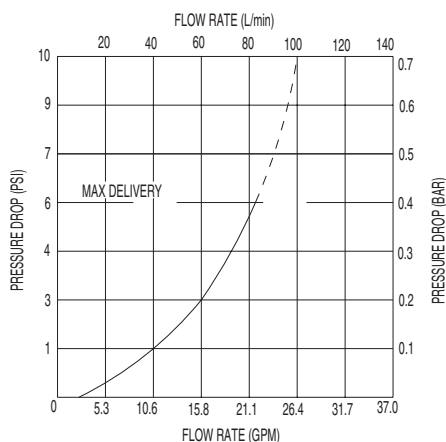
Pressure Drops

The pressure drop of the complete filter is calculated by adding the pressure drop of the housing to that of the filter element.

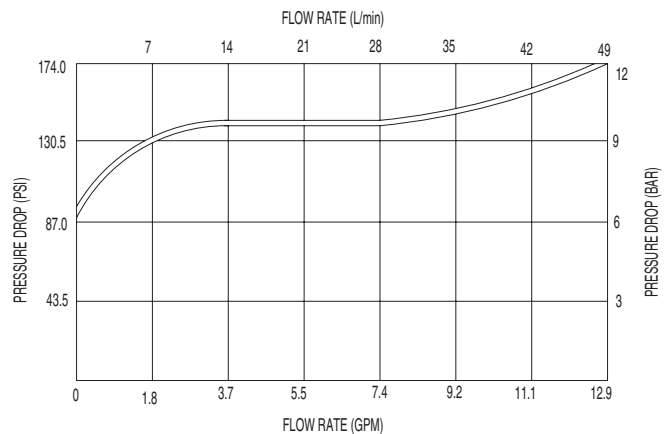
Pressure Drops in the Housings

The graphics refer to the use of mineral oil with a mass density of 54 pound/foot³. The pressure drop is proportional to the variations mass of density.

Housing Pressure Drop HPM28



Pressure Drop In By Pass Valve HPM28



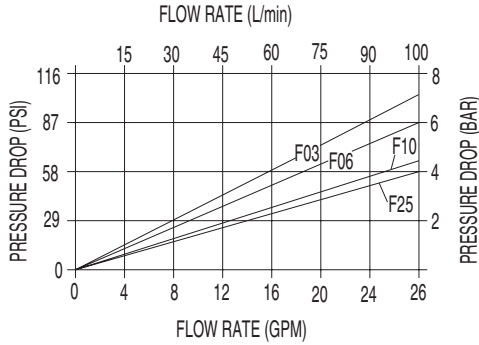


IN LINE HIGH PRESSURE FILTERS

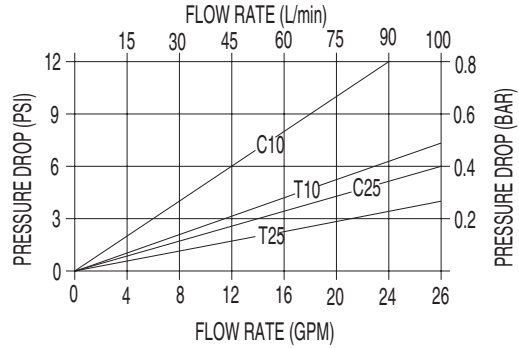
Pressure Drops in the Filter Elements

The graphics refer to mineral oil with a kinematic viscosity of 150 SUS. The variation of the pressure drop is proportional to viscosity.

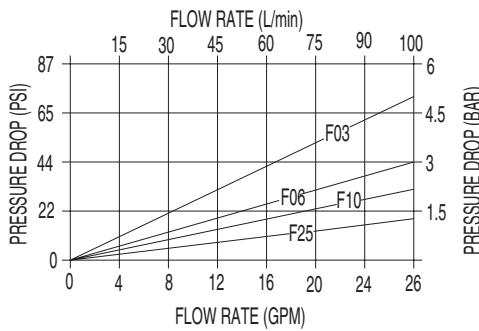
CHP281



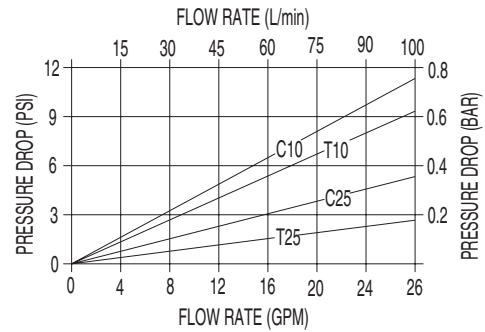
CHP281



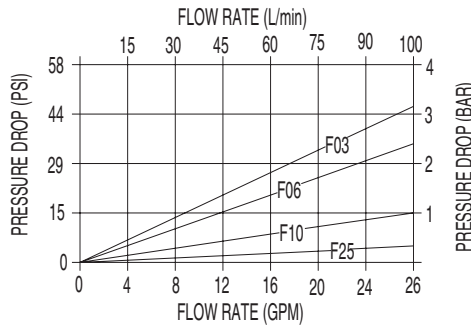
CHP282



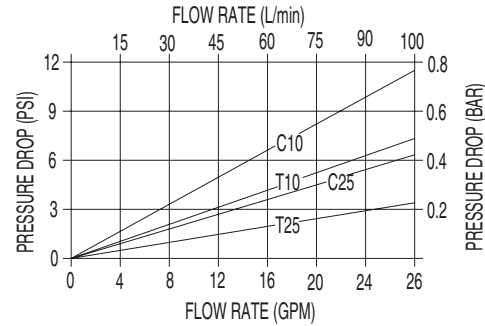
CHP282



CHP283

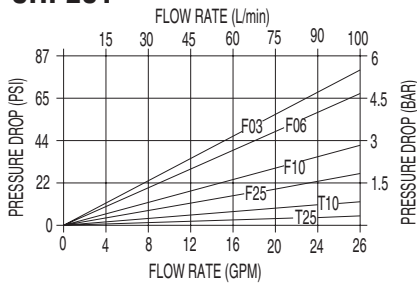


CHP283

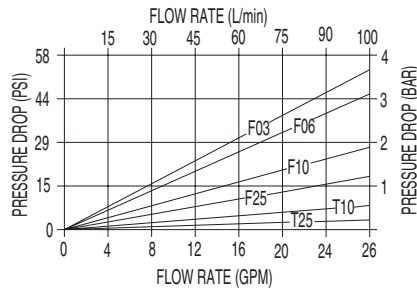


Filter Elements Pressure Drops (High Differential Pressure)

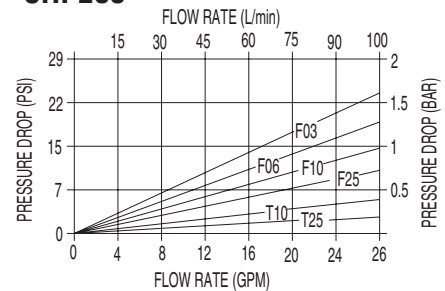
CHP281



CHP282



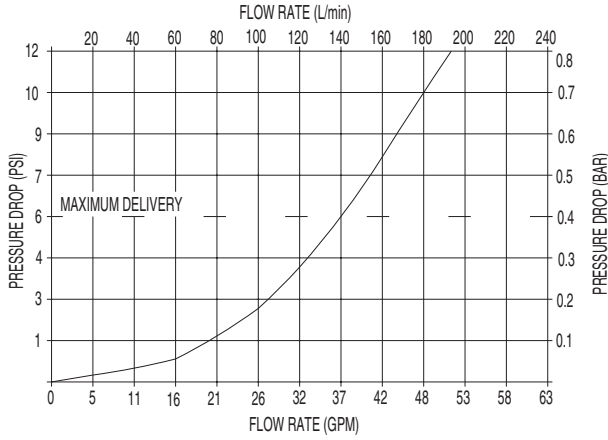
CHP283



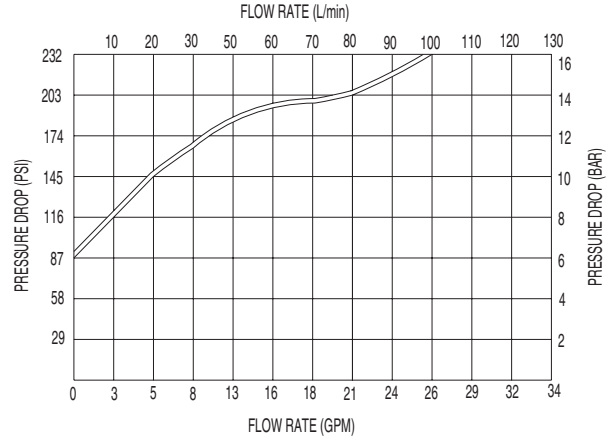


IN LINE HIGH PRESSURE FILTERS

Housing Pressure Drop HPM42

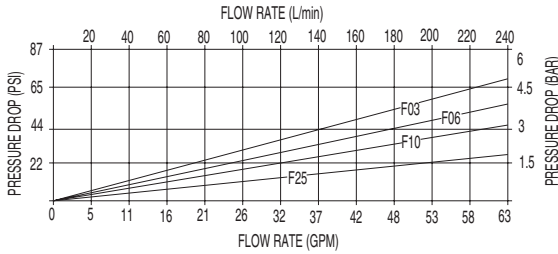


Pressure Drop In By Pass Valve HPM42

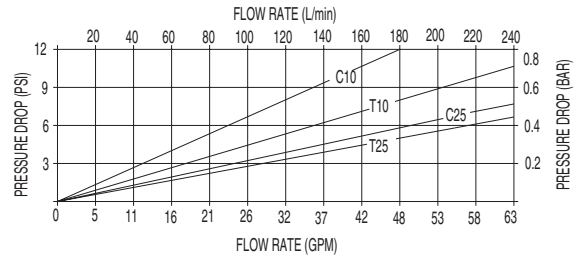


Filter Elements Pressure Drops (Low Differential Pressure)

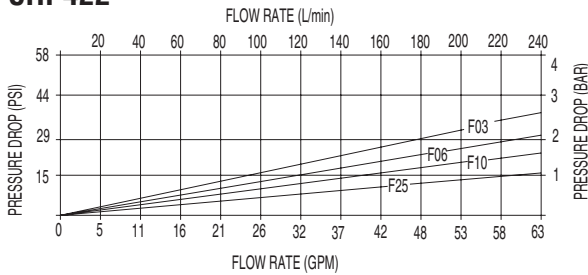
CHP421



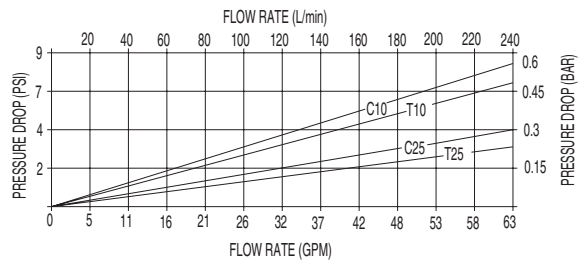
CHP421



CHP422

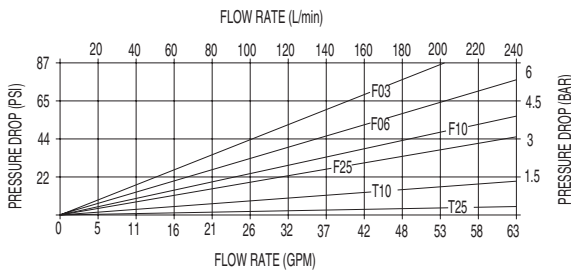


CHP422

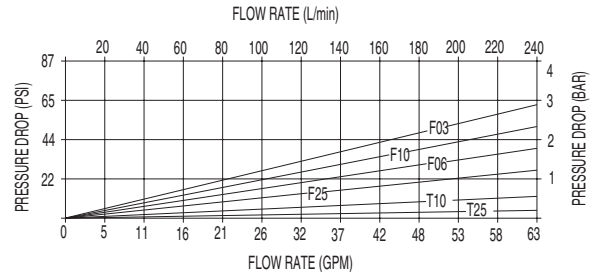


Filter Elements Pressure Drops (High Differential Pressure)

CHP421



CHP422

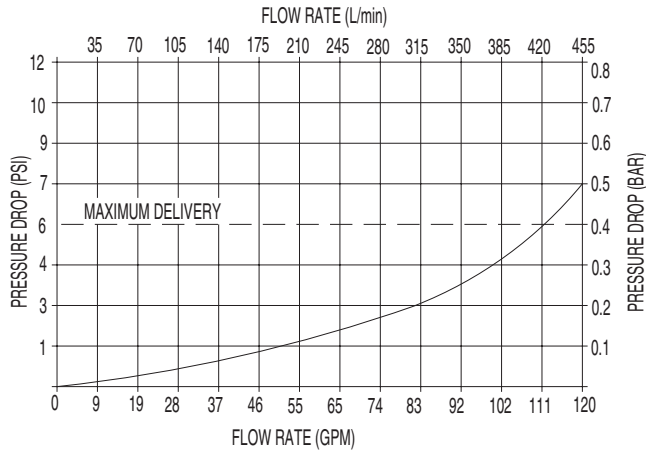


NOTE: WITH VESCORS' POLICY OF CONSTANTLY IMPROVING ITS PRODUCTS, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

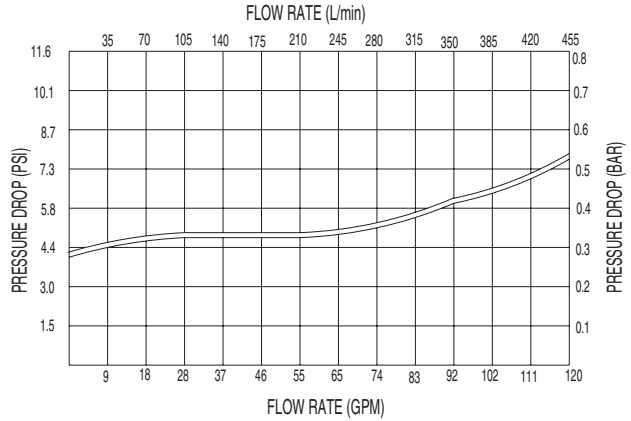


IN LINE HIGH PRESSURE FILTERS

Housing Pressure Drop HPM62

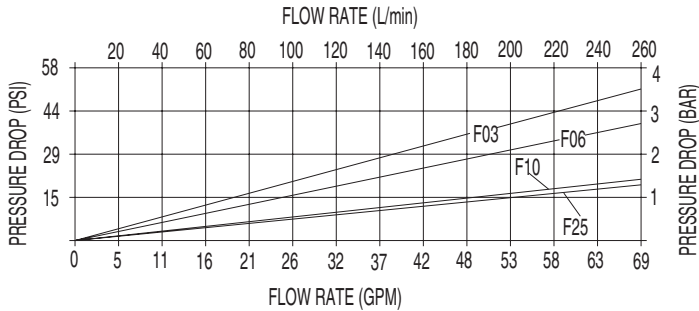


Pressure Drop In By Pass Valve HPM62

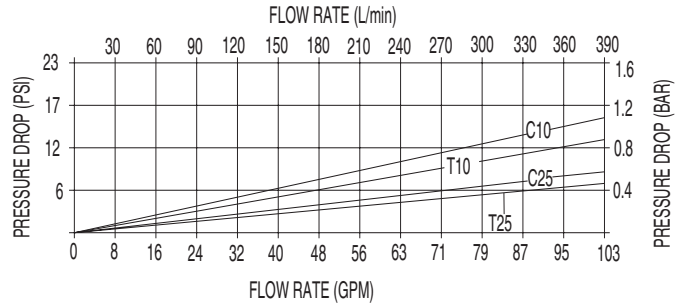


Filter Elements Pressure Drops (Low Differential Pressure)

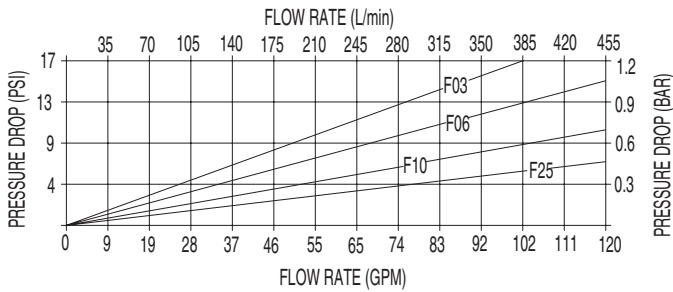
CHP621



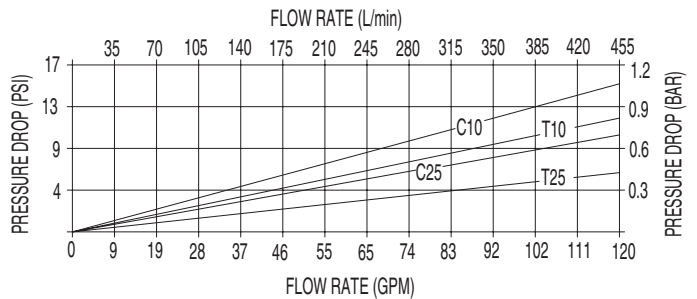
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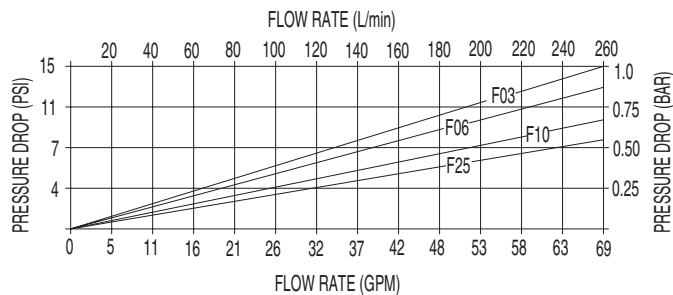
CHP622



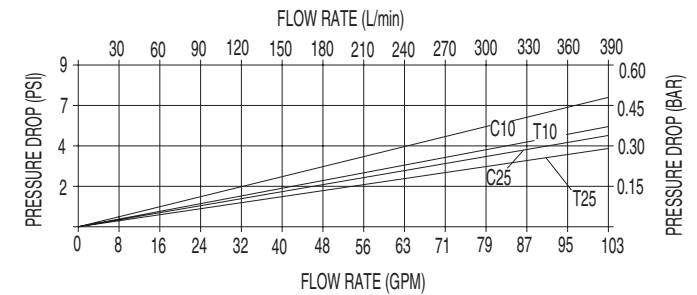
CHP622



CHP623



CHP623

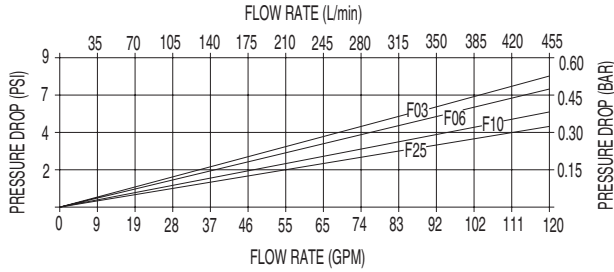




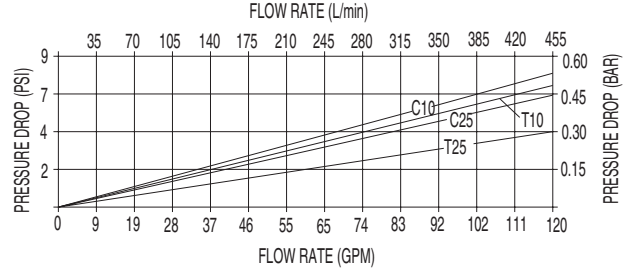
IN LINE HIGH PRESSURE FILTERS

Filter Elements Pressure Drops (Low Differential Pressure)

CHP624

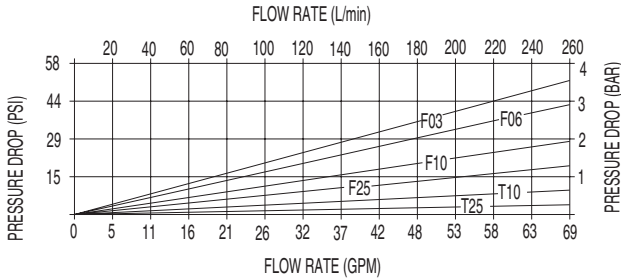


CHP624

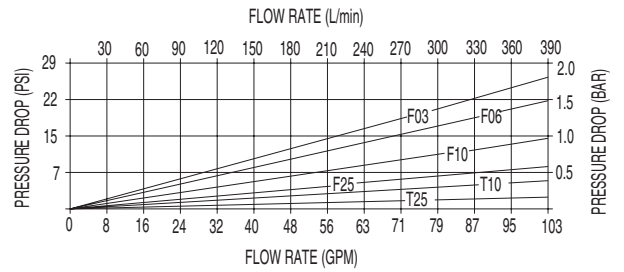


Filter Elements Pressure Drops (High Differential Pressure)

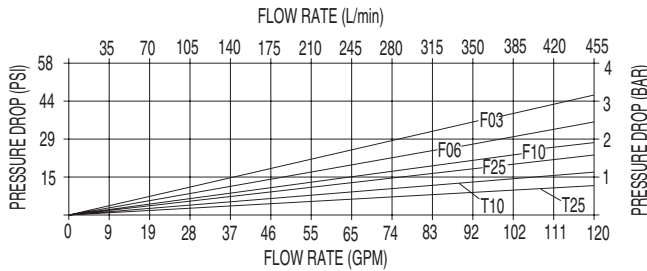
CHP621



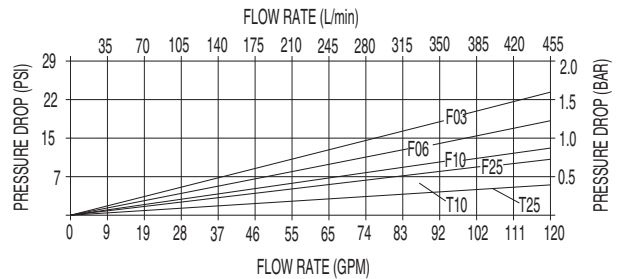
CHP622



CHP623



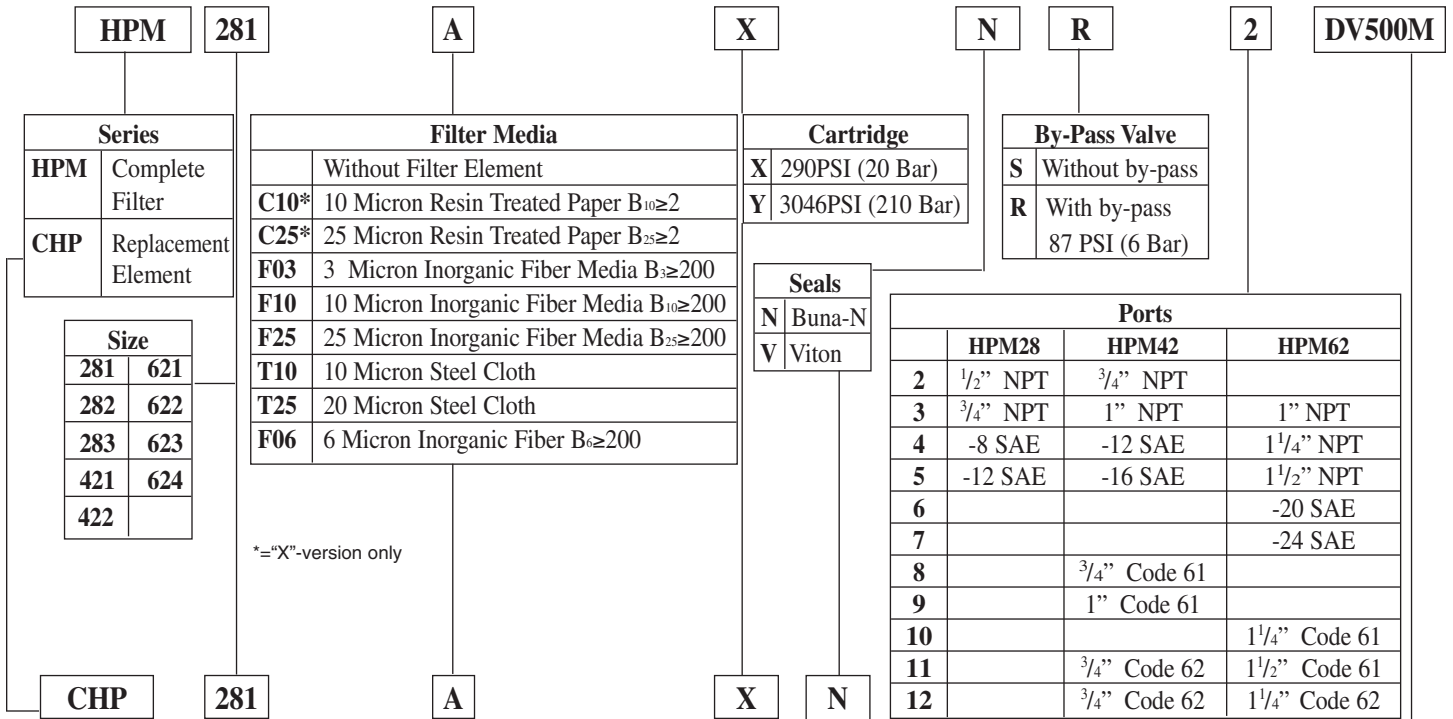
CHP624





IN LINE HIGH PRESSURE FILTERS

How to Order the Complete Filter



How to Order Replacement Elements

Clogging Indicator	
Blank	No Indicator
DV500M	Visual Indicators (M20)
DV500	Visual Indicators (1/2 BSP)
DR500M	Visual Indicators with Reed Contacts (M20)
DR500	Visual Indicators with Reed Contacts (1/2 BSP)
DE500M	Electrical Visual Indicators (M20)
DE500	Electrical Visual Indicators (1/2 BSP)

Note: clogging indicators are ordered as separate items
See page 121-122 for clogging indicator specification



HIGH PRESSURE FILTERS

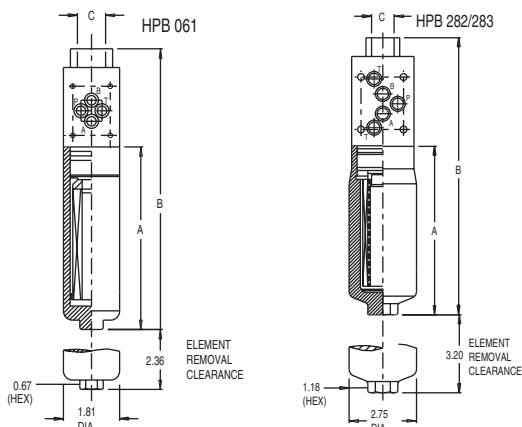
HPB Filters Valve/Manifold Mount

Overall Information

The filters of our HPB series are high pressure filters mounted on hydraulic valves or manifolds. They are furnished without a by-pass valve.

HPB series filters are manufactured and tested according to the following ISO standards:

- ISO 2941 - Hydraulic Fluid Power - Filter Elements - Verification of collapse/burst pressure resistance
- ISO 2942 - Hydraulic Fluid Power - Filter Elements - Verification of fabrication integrity and determination of the first bubble point
- ISO 2943 - Hydraulic Fluid Power - Filter Elements - Verification of material compatibility with fluid
- ISO 3723 - Hydraulic Fluid Power - Filter Elements - Method for end load test
- ISO 3724 - Hydraulic Fluid Power - Filter Elements - Verification of flow fatigue characteristics
- ISO 3968CLB - Hydraulic Fluid Power - Filters - Evaluation of pressure drop versus flow characteristics



Technical Data of the Complete Filter

- Maximum Working Pressure 4569 PSI (315 Bar)
- Fatigue Test Pressure 1,000,000 cycles at 0-4351 PSI (0-300 Bar)
- Static Test Pressure 6527 PSI (450 Bar)
- Collapse Pressure 13053 PSI (900 Bar)
- Working Temperature -4°F to 203°F (-20°C to 95°C)

- Compatible with hydraulic oils tested per ISO 2943
- Steel housing with case iron filter head
- M20 x 1.5 indicator ports standard
- Available with 1/2" NPT ports
- Available with 3, 6 or 10 cellulose elements
- Available with D03 and D05 valve patterns

Element Data

Inorganic fiber elements with filtration ratio of 3, 6, 10 and 25 $B_{\geq 200}$

Type	Valve Mount	A	B	C
HPB061	D03	5.90	9.11	1/2" NPT
HPB282	D05	6.77	11.08	1/2" NPT
HPB283	D05	10.71	15.02	1/2" NPT

Differential Indicators

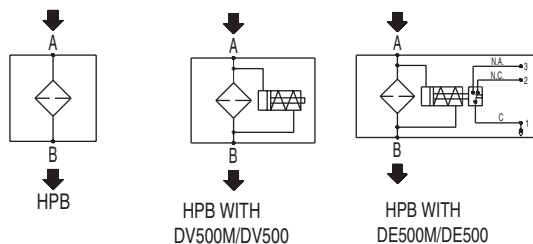
Exchange contacts with the following values:

Voltage Supply (V)	Resistive Charge (A)	Inductive Charge (A)
125/60Hz	5 amps	5 amps
250/60Hz	5 amps	5 amps
15V DC	10 amps	10 amps
30V DC	5 amps	5 amps
50 V DC	1 amp	1 amp
125V DC.	0.5 amp	0.06 amp

Optional Indicators

- DV500M Differential visual indicator calibrated at 19 PSI (1.3 bar)
- DV500 Visual indicator with reed contacts
- DR500M Visual indicator with reed contacts
- DR500 Visual indicator with reed contacts
- DE500M Differential visual electrical indicator
- DE500 Differential visual electrical indicator

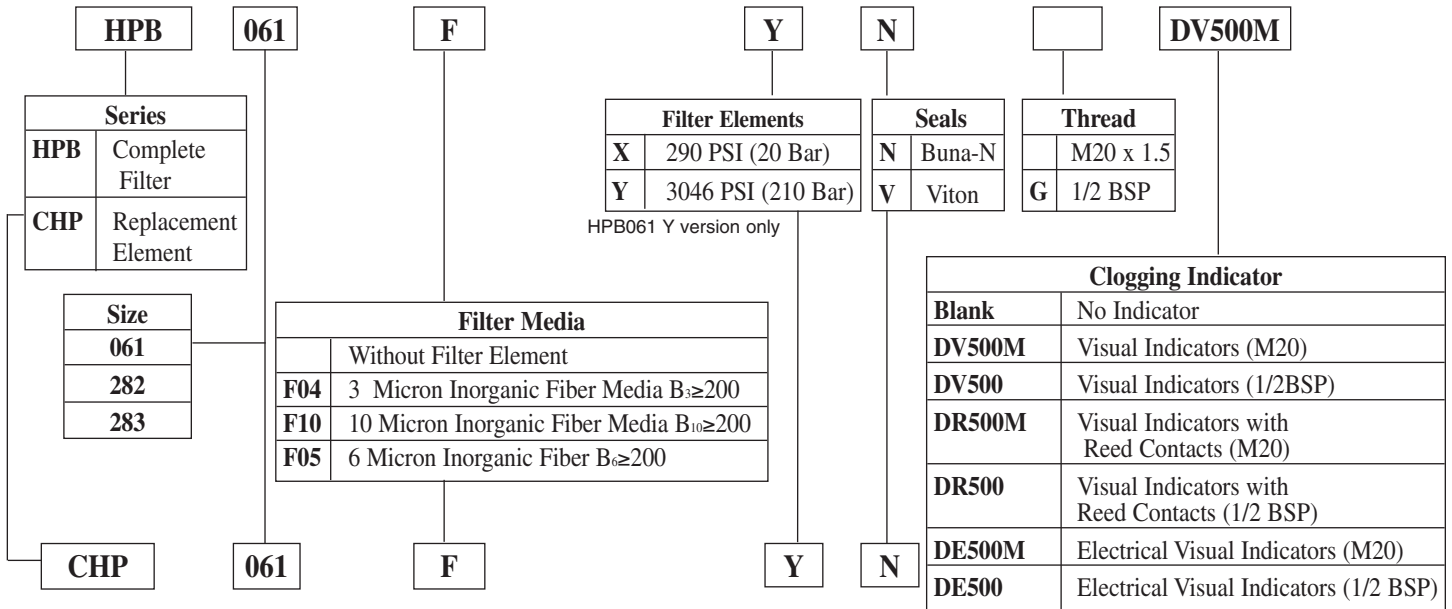
Clogging Indicator Symbols





HIGH PRESSURE FILTERS

How to Order the Complete Filter



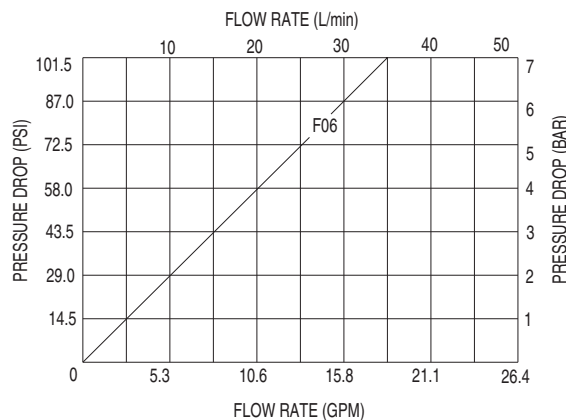
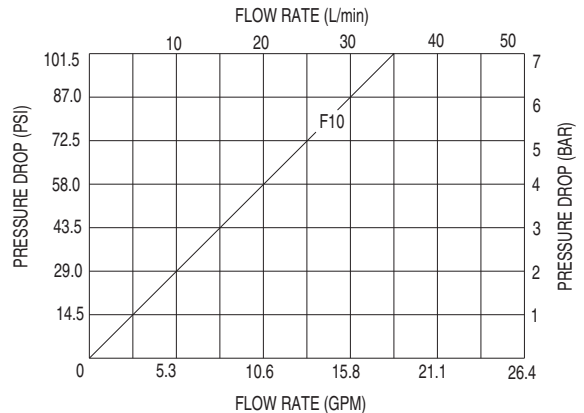
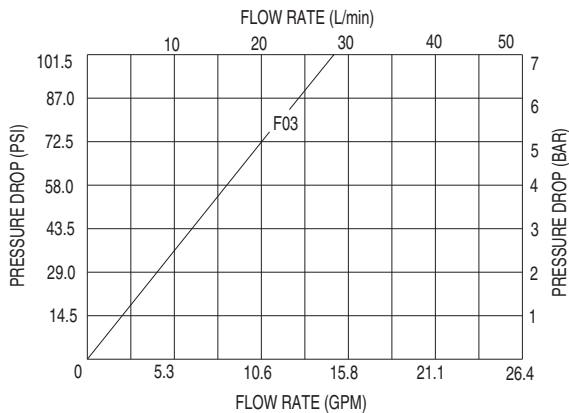
How to Order Replacement Elements

See page 121-122 for clogging indicator specifications
 Note: clogging indicators are ordered as separate items

Pressure Drops in the Filter Elements

The graphics refer to mineral oil with a kinematic viscosity of 150 SUS. The variation of the pressure drop is proportional to viscosity.

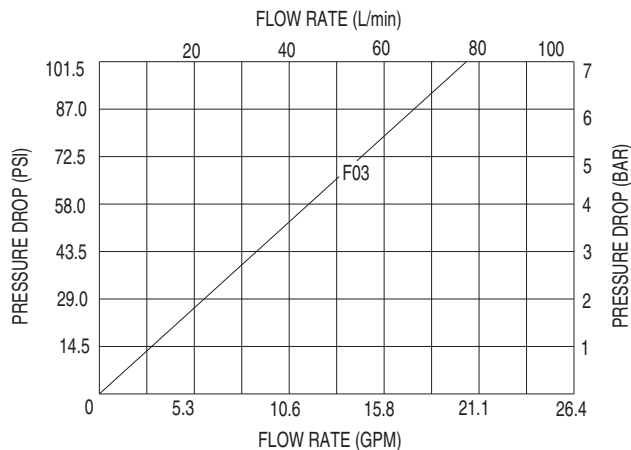
CHP061 (High Differential Pressure)



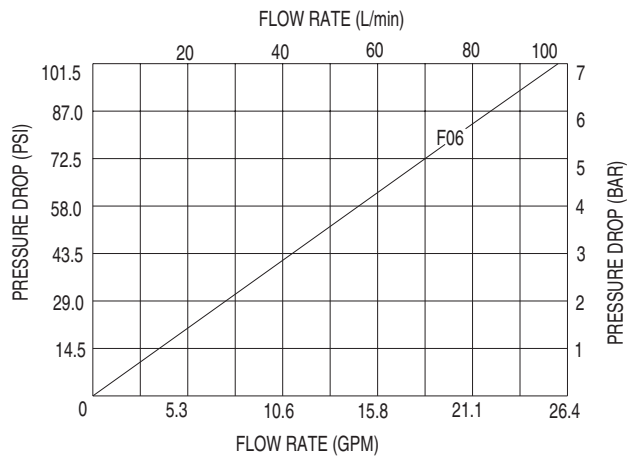
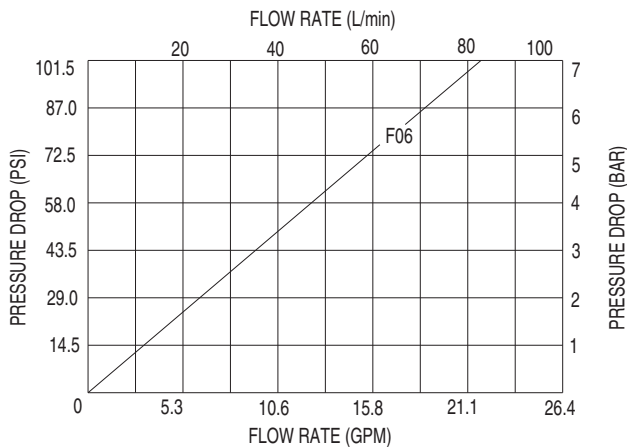
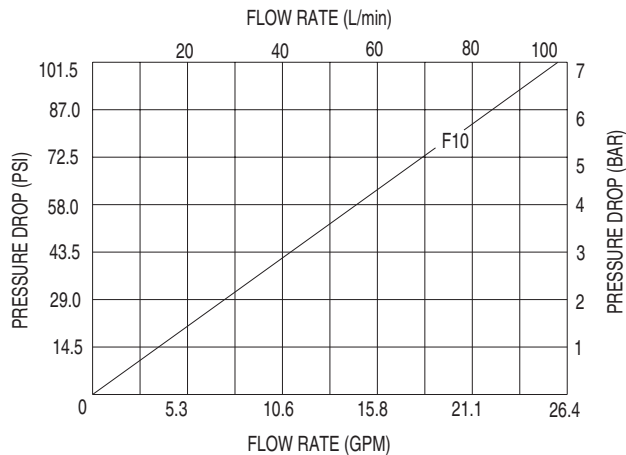
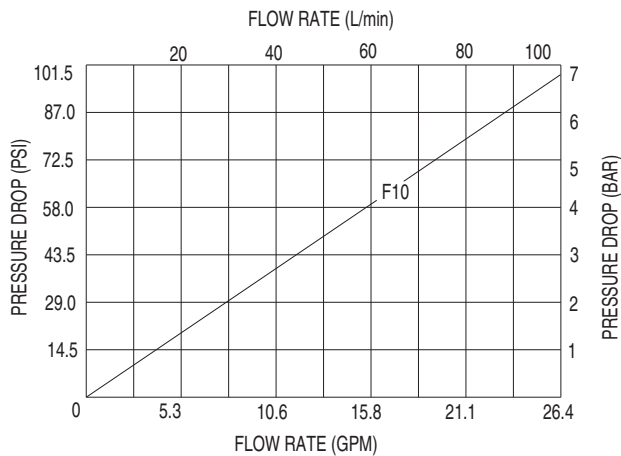
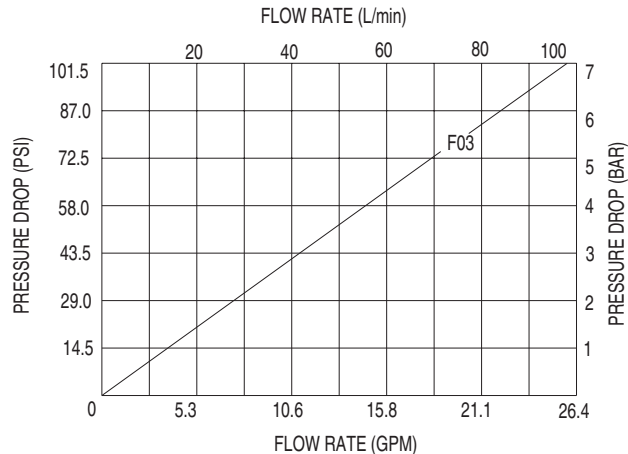


HIGH PRESSURE FILTERS

CHP282 (High Differential Pressure)



CHP282 (High Differential Pressure)

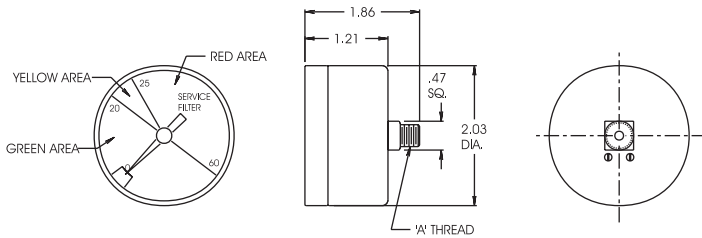


NOTE: WITH VESCORS' POLICY OF CONSTANTLY IMPROVING ITS PRODUCTS, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



CLOGGING INDICATORS

Visual Indicators-Return

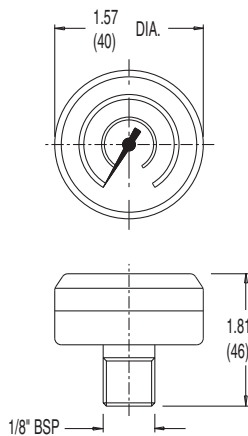


Return Line Filter Gauge indicates when to replace the filter element. Use with Vescor OMTI, FTT, OMTF and OMTP series filters

- black steel case
- brass stem
- glass lens

Part Number	Description	A thread
DI125B	25 PSI Return Line indicator	1/8" BSP
90046	25 PSI Return Line Indicator	1/8" NPT

Visual Indicators-Suction

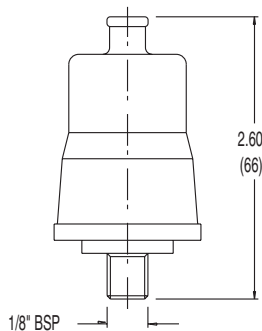


- Easy to view indicators for suction lines
- Built in snubber minimizes damage from pressure surges
- 1/8" BSP Threads
- Accuracy: $\pm 2\%$ full scale
- Visual indication of pressure drop across filter

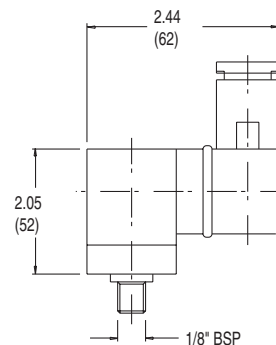
Part Number	Description	Use with Filter Series	Function
VV1	Pressure Gauge with range from 1 to 174 PSI (1 to 12 Bar) Replace Element when pressure reaches 22 PSI (1.5 Bar)	Spin On Type "T" Head Only	Suction

Electrical Indicators

- Activates electrical contact when set value is reached, signaling the element should be replaced
- 1/8" BSP threads
- Accuracy: $\pm 2\%$ full scale



Part Number	Description	Use with Filter Series
PE1	Pressure Switch Normally Open Setting 194 PSI (1.3 Bar)	Spin On OMTF/OMTP
PE2	Pressure Switch Normally Closed Setting 194 PSI (1.3 Bar)	Spin On OMTF/OMTP

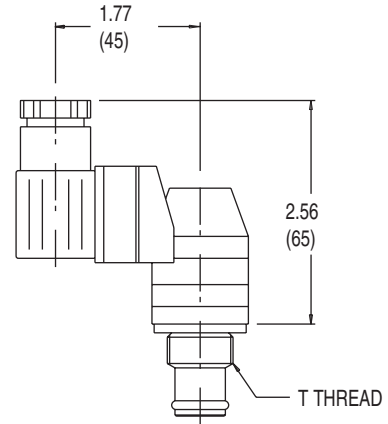
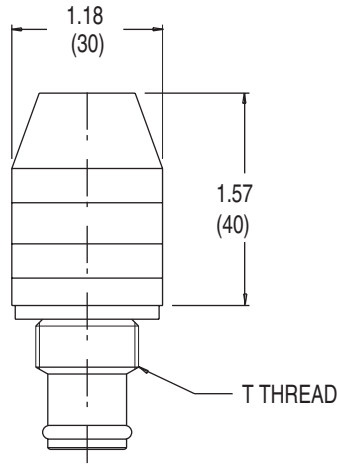


Part Number	Description	Use with Filter Series
PE3	Membrane Pressure Switch Normally Open Setting 194 PSI (1.3 Bar)	Spin On OMTF



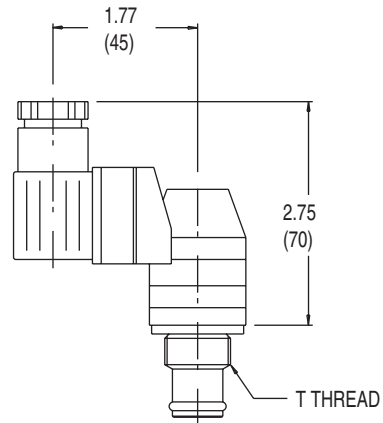
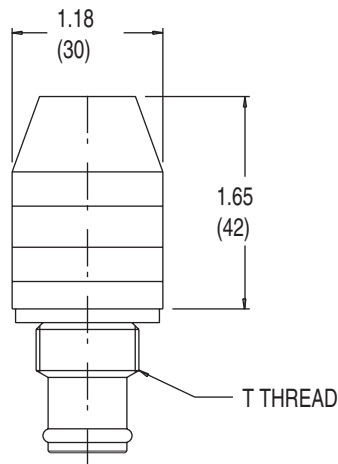
CLOGGING INDICATORS

Visual & Electrical Indicators



Part Number	Description	"T" Thread	Use with Filter Series
DV130M	Differential (visual) Indicator Setting 194 PSI (1.3 Bar)	M20 x 1.5	Spin On Head Type T20 Only
DV131M	Differential (visual) Indicator Setting 194 PSI (1.3 Bar)	M20 x 1.5	Spin On Head Type T31 Only
DV130	Differential (visual) Indicator Setting 194 PSI (1.3 Bar)	1/2" BSP	Spin On Head Type T20 Only
DV131	Differential (visual) Indicator Setting 194 PSI (1.3 Bar)	1/2" BSP	Spin On Head Type T31 Only

Part Number	Description	"T" Thread	Use with Filter Series
DE130M	Differential (visual electrical) Indicator Settings 194 PSI (1.3 Bar)	M20 x 1.5	Spin On Head Type T20 Only
DE131M	Differential (visual electrical) Indicator Settings 194 PSI (1.3 Bar)	M20 x 1.5	Spin On Head Type T31 Only
DE130	Differential (visual electrical) Indicator Settings 194 PSI (1.3 Bar)	1/2" BSP	Spin On Head Type T20 Only
DE131	Differential (visual electrical) Indicator Settings 194 PSI (1.3 Bar)	1/2" BSP	Spin On Head Type T31 Only



Part Number	Description	"T" Thread	Use with Filter Series
DV500M	Differential (visual) Indicator Setting 194 PSI (1.3 Bar)	M20 x 1.5	APM HPM/HPB
DV500	Differential (visual) Indicator Setting 194 PSI (1.3 Bar)	1/2" BSP	APM HPM/PHB

Part Number	Description	"T" Thread	Use with Filter Series
DE500M	Differential (visual electrical) Indicator Setting 194 PSI (1.3 Bar)	M20 x 1.5	APM HPM/HPB
DE500	Differential (visual electrical) Indicator Setting 194 PSI (1.3 Bar)	1/2" BSP	APM HPM/HPB