15/40/80CN Series

Medium Pressure Filters
Max. 600 l/min - 70 bar

Premium performance for medium pressure applications

An economical 'multi-purpose' filter solution

The CN Series utilizes a cast aluminium head and spin-on bowl and can be specified with Microglass III or Ecoglass III filter media. Maximum pressure 70 bar. Maximum flow 600 l/min. Excellent performance value from a globally proven, reliable medium pressure filter.

FEATURING ECOGLASS III

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Product Features:

- CN utilizes a cast aluminium head and bowl.
- Excellent fatigue pressure ratings.
- Maximum pressure 70 bar. Maximum flow 600 l/min.
- An economic 'multi-purpose' filter solution.

15/40/80CN Series
Medium Pressure Filters

Features & Benefits

Features	Advantages	Benefits
56 bar fatigue rating (eight times that of a spin-on)	Ability to provide reliable service under tough cyclic operating conditions	Reduced downtime due to premature filter failures
	Can be utilised in applications where high pressure filters may have been only option	Reduced costs, better "fit" for the application
Diametral (side) seal between head and bowl	Proven reliability in cyclic applications	No downtime, no leaks
	Reduced importance of bowl torque	Performs with "real world" service
Dust seal	Prevents contamination from building up on bowl/head threads	Easier service, eliminates thread galling
40CN-2 meets automotive HF3 standard	Automotive industry acceptance	Satisfies specifications without need for further testing and/or approval
15CN meets automotive HF2 standard		
Cast aluminium head	Low profile, lightweight and durable	Less weight, smaller envelop and cleaner appearance
Reinforced Microglass III replacement elements	Multi-layered design produced high capacity and efficiency	Great performance value
		Reliable performance throughout element life
	Wire support reduces pleat bunching, keeps performance consistent	Reduces downtime, maximises element life
Complete performance data disclosure	All pertinent information is provided in an easy-to-compare format	No hidden deficiencies
		Easy selection of proper filtration
Visual, electrical or electronic indicators available	Check element condition at a glance	Optimise element life, prevent bypassing
	Right style for the application	Matches your system electrical connections
Coreless Ecoglass III replacement elements	No metal content in element	Environmentally friendly disposal by incineration
	Reduced overall weight of 50%	Lower element replacement costs
	Easy compaction of used elements	Lower disposal cost
	Conversion kits available: new bowl with permanent core	Retrofit coreless design to housings already installed

Typical Applications

- Compressor lube oil
- Off-line filter loops
- Machine tools (Automotive standard)
- Hydrostatic drive charge pumps
- Mobile equipment
- Pilot lines for servo controls
- Oil patch drilling equipment
- Injection moulding

The Parker Filtration 15/40/80CN Series Medium Pressure Filters.

This partial list of applications for Parker "CN" Series Filters has a common factor, the need for an economical, medium pressure range filter with excellent fatigue pressure ratings. Prior to the availability of the "CN" filter, applications such as those listed were restricted by limitations of a spin-on can, or forced into the higher-cost range of high pressure filters.

The "CN" Series fills this gap and is now available with environmentally friendly Ecoglass III elements.

Specification

Pressure ratings:
Maximum allowable operating pressure: 70 bar
Rated fatigue pressure: 56 bar

Connections:
Several threaded port options available, flange faced ports available on 80CN.

Connection style	*Model* 15CN	40CN	80CN
BSPF(G)	1", 3/4"	1 1/4", 1 1/2"	1 1/2", 2"
SAE	12, 16	16, 24	24, 32
ISO 6149	M27	M33	M42, M48
Metric 3000-M			2"

Filter housing:
Head material aluminium.
Bowl material hard anodized aluminium.

Seal material:
Nitrile or fluoroelastomer.

Operating temperature range:
Seal material Nitrile: -40°C to +100°C.
Seal material Fluoroelastomer: -20°C to +120°C.

Bypass valve & indicator settings:
Table following gives bypass valve and corresponding indicator setting.

Bypass	*Indicator*
1.7 bar	1.2 bar
3.5 bar	2.5 bar

Filter element:
Degree of filtration:
Determined by Multipass-test according to ISO 16889.

Flow fatigue characteristics:
Filter media is supported so that the optimal fatigue life is achieved (ISO 3724).

Microglass III (available by request)
Supported with epoxy coated metal wire mesh, end cap material reinforced composite and metal inner core. Collapse rating 20 bar (ISO 2941).

Ecoglass III
Supported with plastic net, end cap material reinforced composite. No metal parts. Collapse rating 10 bar (ISO 2941).
Filter element can only be used together with bowl including Eco-adaptor.
Note: Ecoglass III contributes to ISO 14001 quality.

Par-Gel:
Water removal media absorbent copolymer laminate media with ability to remove free water from mineral based and synthetic fluids available for 40CN and 80CN.

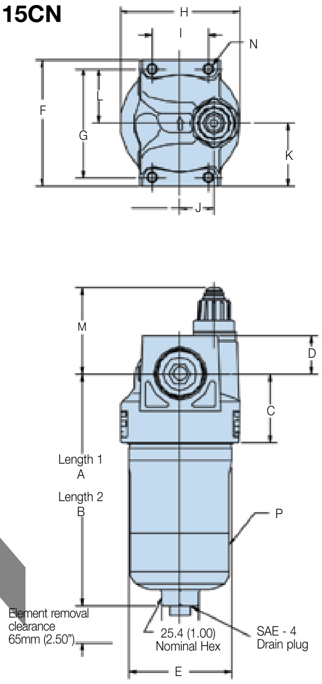
Indicator options:
- visual M3. - electrical T1.
- electronic F1(PNP). - electronic F2(NPN).
For indicator details see catalogue section 6.

Weights (kg):

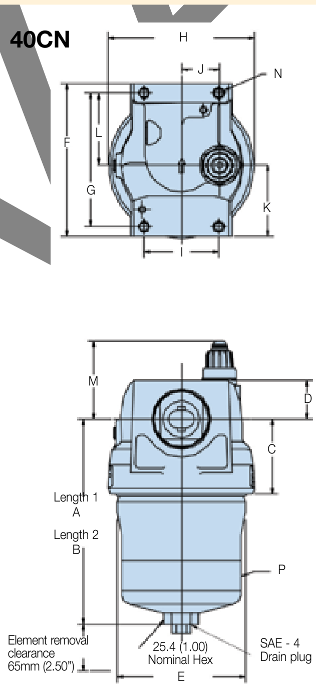
Model	*Length 1*	*Length 2*
15CN	1.1	1.6
40CN	2.0	2.5
80CN	5.6	6.9

Fluid compatibility:
Suitable for use with mineral and vegetable oils, and some synthetic oils. For other fluids, please consult Parker Filtration.

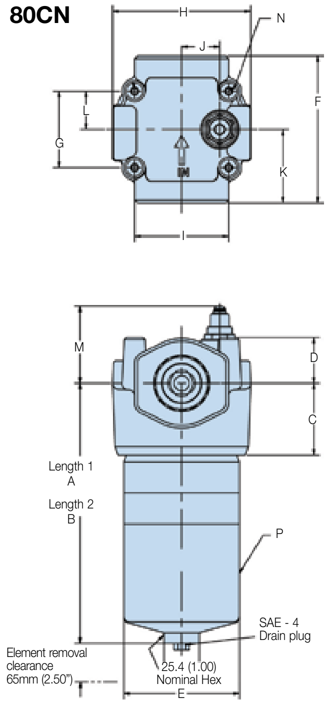
15CN



40CN



80CN



Dimensions in mm (inch)

Model	A	B	C	D	E	F	G	H	I	J	K	L	M*	N	P
15CN	156.6 (6.17)	250.7 (9.87)	46.5 (1.83)	25.4 (1.09)	71.1 (2.80)	85.9 (3.38)	73.2 (2.88)	82.6 (3.25)	38.1 (1.50)	22.9 (0.90)	42.9 (1.69)	36.6 (1.44)	53	4xM6-1.0x7.9 deep	20-27 Nm
40CN	170.8 (6.73)	262.4 (10.33)	62.0 (2.44)	32.6 (1.28)	107.2 (4.22)	127.0 (5.00)	111.0 (4.37)	121.9 (4.80)	62.0 (2.44)	31.8 (1.25)	58.8 (2.32)	60.2 (2.37)	53	4xM8-1.25x13 deep	57-68 Nm
80CN	280.9 (11.06)	401.6 (15.81)	77.7 (3.06)	49.5 (1.95)	124.8 (4.91)	158.7 (6.25)	82.6 (3.25)	151.4 (5.96)	101.6 (4.00)	41.1 (1.62)	79.4 (3.12)	41.3 (1.63)	69	4xM8-1.25x16 deep	80-95 Nm

Note: add 45mm for T and F indicators

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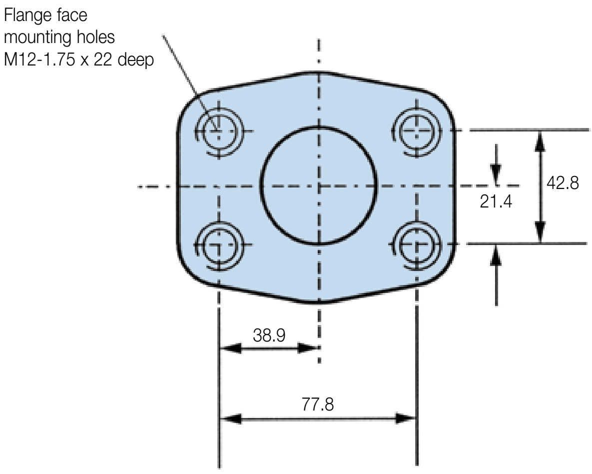
Hydraulic Filter Division Europe
FDHB500UK/15/40/80CN

15/40/80CN Series

Medium Pressure Filters

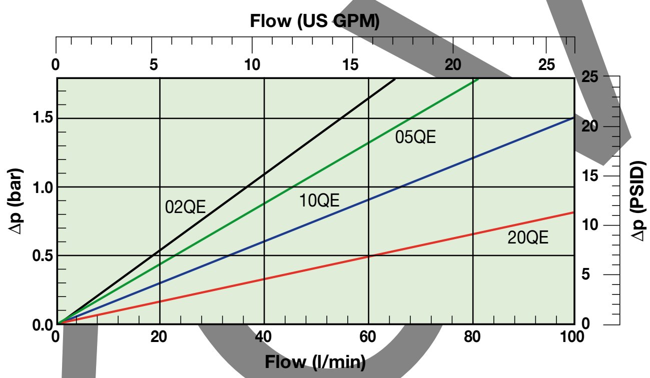
80CN Flange Face Details (SAE 2” 3000-M)



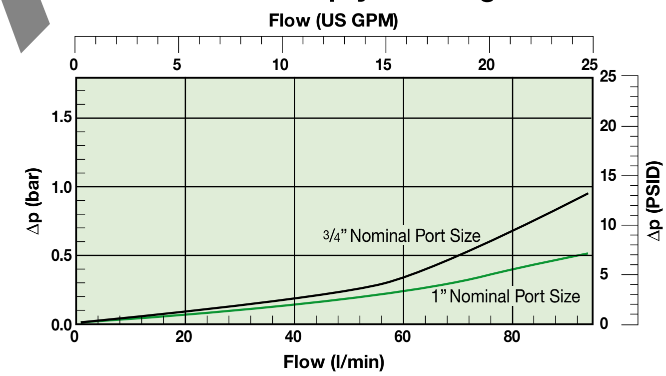
Pressure Drop Curves

With 1.7 bar bypass the recommended initial pressure drop is max 0.5 bar.
With 3.5 bar bypass the recommended initial pressure drop is max 1.0 bar.
If the medium used has a viscosity different from 30 cSt, pressure drop over the filter can be estimated as follows:
The total Δp = housing Δph + (element Δpe x working viscosity/30).

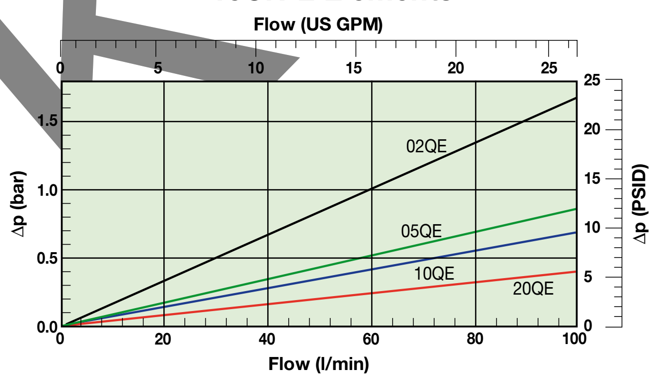
15CN-1 Elements



15CN Empty Housing

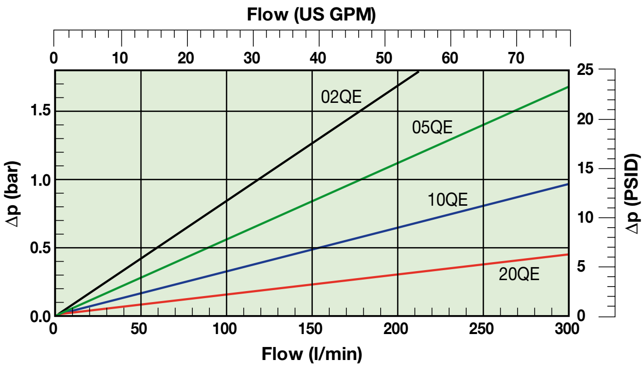


15CN-2 Elements

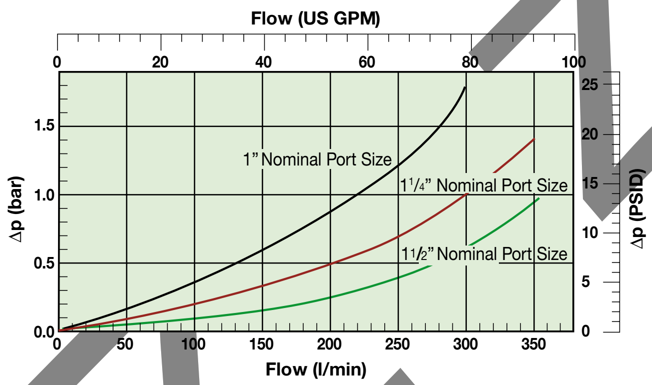


Pressure Drop Curves

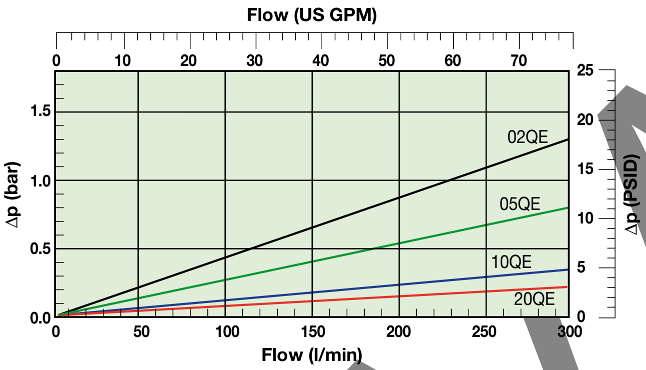
40CN-1 Elements



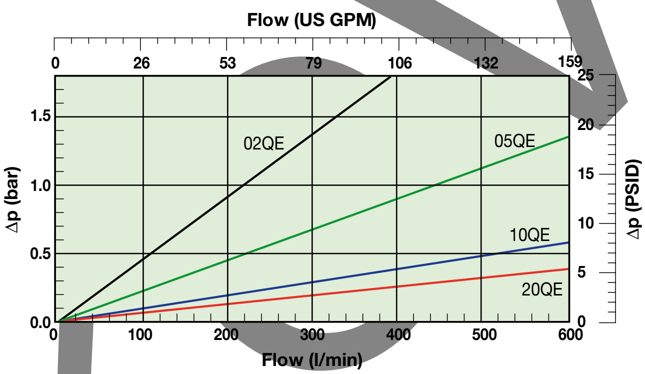
40CN Empty Housing



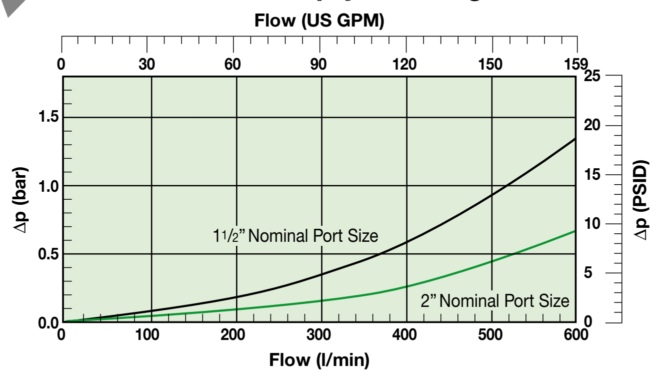
40CN-2 Elements



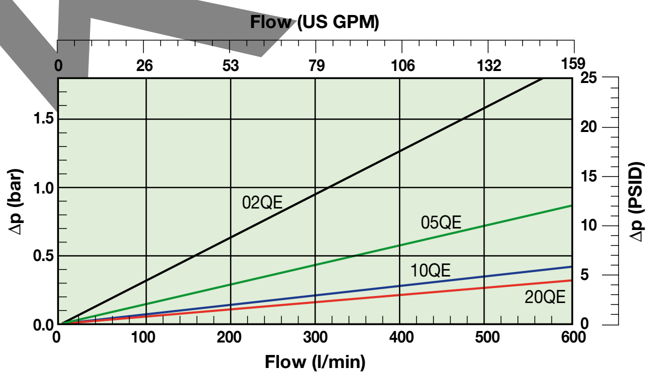
80CN-1 Elements



80CN Empty Housing



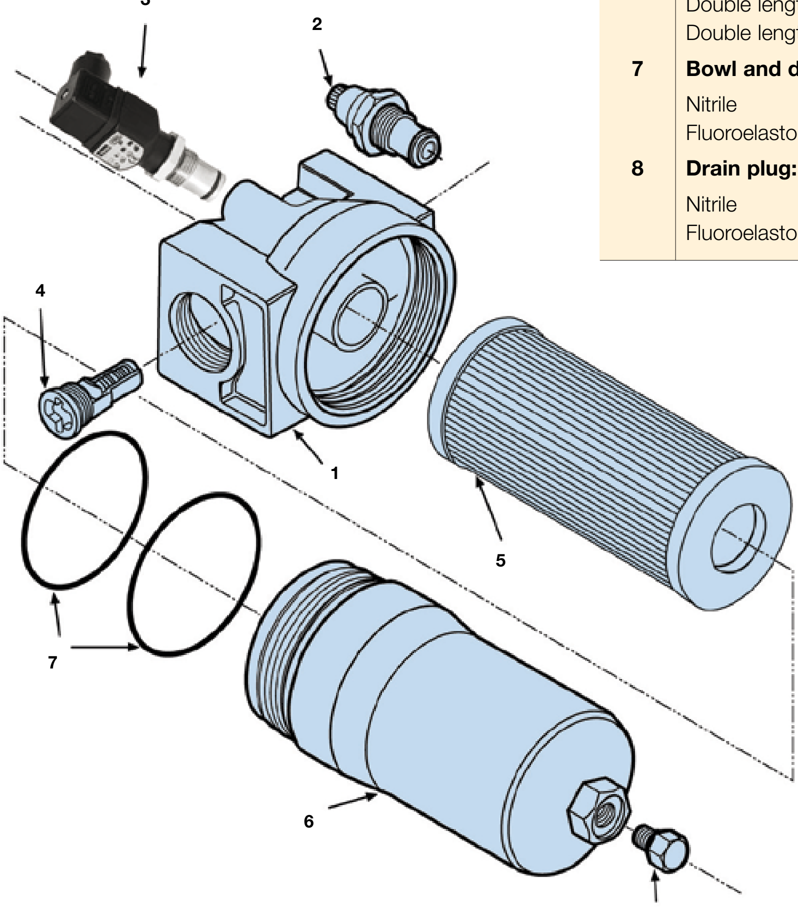
80CN-2 Elements



15/40/80CN Series
Medium Pressure Filters

Element Service

A. Stop the system's power unit.
B. Relieve any system pressure in the filter line.
C. Drain the filter bowl if drain port option is provided.
D. Loosen and remove bowl.
E. Remove element by pulling downward with a slight twisting motion and discard.
F. Check bowl o-ring and anti-extrusion ring for damage and replace if necessary.
G. Lubricate element o-ring with system fluid and place on post in filter head.
H. Install bowl by rotating counter clockwise and tighten to specified torque.
   15CN – 20-27 Nm (15-20ft. lbs)
   40CN – 57-68 Nm (42-50ft. lbs)
   80CN – 80-95 Nm (60-70ft. lbs)
I. Confirm there are no leaks after powering the system.



CN Filters Parts List

Index	Description
1	**Head**
2	**Indicators**
	M3-visual auto reset: 1.2 bar M3-visual auto reset: 2.5 bar
3	T1-electrical: 1.2 bar c/w DIN 43650 connector T1-electrical: 2.5 bar c/w DIN 43650 connector F1-electronic PNP with 4 LEDs: 1.2 bar F1-electronic PNP with 4 LEDs: 2.5 bar F2-electronic NPN with 4 LEDs: 1.2 bar F2-electronic NPN with 4 LEDs: 2.5 bar
4	**Bypass valve**
	1.7 bar assembly 3.5 bar assembly
5	**Element (see replacement element part numbers)**
6	**Bowl**
	Single length with drain Single length with reusable core and drain Single length without drain
	Double length with drain Double length with reusable core and drain Double length without drain
7	**Bowl and dust seal**
	Nitrile Fluoroelastomer
8	**Drain plug: SAE-4**
	Nitrile Fluoroelastomer

Ordering Information

Standard products table

Part numbers	Supersedes	Flow (l/min)	Model number	Element length	Media rating (µ)	Seals	Indicator	Bypass settings	Ports	Replacement elements
15CN110QEVT1KG164	F315CN1R10QETW350C2C219	50	15CN	Length 1	10	Fluoroelastomer	Electrical	3.5 bar	G1"	**936700Q**
15CN110QEVM3KG164	F315CN1R10QEM250C2C219	50	15CN	Length 1	10	Fluoroelastomer	Visual	3.5 bar	G1"	**936700Q**
15CN120QEVT1KG164	F315CN1R20QETW350C2C219	80	15CN	Length 1	20	Fluoroelastomer	Electrical	3.5 bar	G1"	**936701Q**
15CN120QEVM3KG164	F315CN1R20QEM250C2C219	80	15CN	Length 1	20	Fluoroelastomer	Visual	3.5 bar	G1"	**936701Q**
15CN210QEVT1KG164	F315CN2R10QETW350C2C219	80	15CN	Length 2	10	Fluoroelastomer	Electrical	3.5 bar	G1"	**936704Q**
15CN210QEVM3KG164	F315CN2R10QEM250C2C219	80	15CN	Length 2	10	Fluoroelastomer	Visual	3.5 bar	G1"	**936704Q**
15CN220QEVT1KG164	F315CN2R20QETW350C2C219	100	15CN	Length 2	20	Fluoroelastomer	Electrical	3.5 bar	G1"	**936705Q**
15CN220QEVM3KG164	F315CN2R20QEM250C2C219	100	15CN	Length 2	20	Fluoroelastomer	Visual	3.5 bar	G1"	**936705Q**
40CN105QEVT1KG244	F340CN1R05QETW350E2E219	120	40CN	Length 1	5	Fluoroelastomer	Electrical	3.5 bar	G1½"	**936707Q**
40CN105QEVM3KG244	F340CN1R05QEM250E2E219	120	40CN	Length 1	5	Fluoroelastomer	Visual	3.5 bar	G1½"	**936707Q**
40CN110QEVT1KG244	F340CN1R10QETW350E2E219	180	40CN	Length 1	10	Fluoroelastomer	Electrical	3.5 bar	G1½"	**936708Q**
40CN110QEVM3KG244	F340CN1R10QEM250E2E219	180	40CN	Length 1	10	Fluoroelastomer	Visual	3.5 bar	G1½"	**936708Q**
40CN120QEVT1KG244	F340CN1R20QETW350E2E219	260	40CN	Length 1	20	Fluoroelastomer	Electrical	3.5 bar	G1½"	**936709Q**
40CN120QEVM3KG244	F340CN1R20QEM250E2E219	260	40CN	Length 1	20	Fluoroelastomer	Visual	3.5 bar	G1½"	**936709Q**
40CN205QEVT1KG244	F340CN2R05QETW350E2E219	200	40CN	Length 2	5	Fluoroelastomer	Electrical	3.5 bar	G1½"	**936711Q**
40CN205QEVM3KG244	F340CN2R05QEM250E2E219	200	40CN	Length 2	5	Fluoroelastomer	Visual	3.5 bar	G1½"	**936711Q**
40CN210QEVT1KG244	F340CN2R10QETW350E2E219	280	40CN	Length 2	10	Fluoroelastomer	Electrical	3.5 bar	G1½"	**936601Q**
40CN210QEVM3KG244	F340CN2R10QEM250E2E219	280	40CN	Length 2	10	Fluoroelastomer	Visual	3.5 bar	G1½"	**936601Q**
40CN220QEVT1KG244	F340CN2R20QETW350E2E219	320	40CN	Length 2	20	Fluoroelastomer	Electrical	3.5 bar	G1½"	**936712Q**
40CN220QEVM3KG244	F340CN2R20QEM250E2E219	320	40CN	Length 2	20	Fluoroelastomer	Visual	3.5 bar	G1½"	**936712Q**
80CN110QEVT1KG324	F380CN1R10QETW350F2F219	370	80CN	Length 1	10	Fluoroelastomer	Electrical	3.5 bar	G2"	**936602Q**
80CN110QEVM3KG324	F380CN1R10QEM250F2F219	370	80CN	Length 1	10	Fluoroelastomer	Visual	3.5 bar	G2"	**936602Q**
80CN120QEVT1KG324	F380CN1R20QETW350F2F219	420	80CN	Length 1	20	Fluoroelastomer	Electrical	3.5 bar	G2"	**936715Q**
80CN120QEVM3KG324	F380CN1R20QEM250F2F219	420	80CN	Length 1	20	Fluoroelastomer	Visual	3.5 bar	G2"	**936715Q**
80CN210QEVT1KG324	F380CN2R10QETW350F2F219	530	80CN	Length 2	10	Fluoroelastomer	Electrical	3.5 bar	G2"	**936718Q**
80CN210QEVM3KG324	F380CN2R10QEM250F2F219	530	80CN	Length 2	10	Fluoroelastomer	Visual	3.5 bar	G2"	**936718Q**
80CN220QEVT1KG324	F380CN2R20QETW350F2F219	600	80CN	Length 2	20	Fluoroelastomer	Electrical	3.5 bar	G2"	**936719Q**
80CN220QEVM3KG324	F380CN2R20QEM250F2F219	600	80CN	Length 2	20	Fluoroelastomer	Visual	3.5 bar	G2"	**936719Q**

Note: Filter assemblies ordered from the product configurator on next page are on extended lead times. Where possible, please make your selection from the table above.

CN Series Seal Kits	
Part Number	**Description**
S04449	NITRILE SEAL KIT 15CN
S04450	FLUOROELASTOMER SEAL KIT 15CN
S04447	NITRILE SEAL KIT 40CN
S04448	FLUOROELASTOMER SEAL KIT 40CN
S04458	NITRILE SEAL KIT 80CN
S04459	FLUOROELASTOMER SEAL KIT 80CN

15/40/80CN Series

Medium Pressure Filters

Ordering Information (cont.)

Product Configurator

Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7	Box 8
40CN	**2**	**10QE**	**V**	**M3**	**K**	**G24**	**4**

Box 1

Code	
Model	**Code**
Small size MP filter, T-port	**15CN**
Medium size MP filter, T-port	**40CN**
Large size MP filter, T-port	**80CN**

Box 2

Filter type	
Length	**Code**
Length 1	**1**
Length 2	**2**

Highlights Key (Denotes part number availability)

123	Item is standard
123	Item is standard green option
123	Item is semi standard
123	Item is non standard

Box 3

Degree of filtration					
Element media	**Glass fibre**				**Water Removal**
	Media code				
Ecoglass III element	**02QE**	**05QE**	**10QE**	**20QE**	**WR**

Note: When using Ecoglass III elements a bowl with reusable Eco-adaptor is required. Consult Parker.
Filter assemblies with Microglass III elements are available by request.
WR: Water removal media.

Box 4

Seal type	
Seal material	**Code**
Fluoroelastomer	**V**
Nitrile	B

Box 5

Indicator	
	Code
No indicator port	**N**
Visual indicator	**M3**
Electrical indicator	**T1**
Plugged	P
Electronic 4 LED, PNP, N.O.	F1
Electronic 4 LED, NPN, N.O.	F2
Electronic 4 LED, PNP, N.C.	F3
Electronic 4 LED, NPN, N.C.	F4

Box 6

Bypass valve		
Bypass valve	**Indicator**	**Code**
1.7 bar	1.2 bar	G
3.5 bar	2.5 bar	**K**

When filter includes a bypass valve but not an indicator, code denotes bypass setting.

Box 7

Filter connection	
Ports	**Code**
15CN: Thread G3/4	G12
Thread G1	**G16**
Thread SAE 12	S12
Thread SAE 16	S16
Thread M27, ISO6149	M27
40CN: Thread G1 1/4	G20
Thread G1 1/2	**G24**
Thread SAE 16	S16
Thread SAE 24	S24
Thread M33, ISO6149	M33
80CN: Thread G1 1/2	G24
Thread G2	**G32**
Thread SAE 24	S24
Thread SAE 32	S32
Thread M42, ISO6149	M42
Thread M48, ISO6149	M48
SAE flange 2" 3000-M	**R32**

Box 8

Options	
Options	**Code**
Standard drain port on bowl	**4**
ATEX certified* (Category 2, non-electrical equipment)	EX

Note 1*: For ATEX classified filters add EX after the code.
ATEX certified filters with electrical indicator are available on request.
Visual indicators are classified as Category 2, non electrical equipment.
Filter assemblies with EX code will be supplied with a dedicated name plate.
Pls consult Parker Filtration for any questions related to the classification of our products.

Ecoglass III elements (Fluoroelastomer seals)				
Model	**02QE**	**05QE**	**10QE**	**20QE**
15CN-1	**936698Q**	**936699Q**	**936700Q**	**936701Q**
15CN-2	**936702Q**	**936703Q**	**936704Q**	**936705Q**
40CN-1	**936706Q**	**936707Q**	**936708Q**	**936709Q**
40CN-2	**936710Q**	**936711Q**	**936601Q**	**936712Q**
80CN-1	**936713Q**	**936714Q**	**936602Q**	**936715Q**
80CN-2	**936716Q**	**936717Q**	**936718Q**	**936719Q**

Conversion bowl assembly (to retrofit existing CN filter housings to use coreless elements)	
936758	15CN-1 coreless element bowl assembly
936759	15CN-2 coreless element bowl assembly
936760	40CN-1 coreless element bowl assembly
936761	40CN-2 coreless element bowl assembly
936763	80CN-1 coreless element bowl assembly
936764	80CN-2 coreless element bowl assembly

Replacement element part numbers for conventional assemblies

Elements with nitrile seals				
Model	**02Q**	**05Q**	**10Q**	**20Q**
15CN-1	928935Q	G04041Q	928934Q	930367Q
15CN-2	928953Q	G04169Q	928952Q	930368Q
40CN-1	926696Q	G04048Q	926835Q	930099Q
40CN-2	926697Q	G04167Q	926837Q	930118Q
80CN-1	932656Q	932657Q	932658Q	929899Q
80CN-2	932662Q	932663Q	932664Q	929923Q

Elements with Fluoroelastomer seals					
Model	**02Q**	**05Q**	**10Q**	**20Q**	**WR**
15CN-1	932610Q	G04189Q	932612Q	930369Q	-
15CN-2	932616Q	G04190Q	932618Q	930370Q	-
40CN-1	926716Q	G04191Q	926836Q	930100Q	931412
40CN-2	926717Q	G04192Q	926838Q	930119Q	931414
80CN-1	932659Q	932660Q	832661Q	929903Q	931416
80CN-2	932665Q	932666Q	932667Q	929927Q	931418

Degree of filtration						Code
Average filtration beta ratio ß (ISO 16889) / particle size µm [c]						
ßx(c)=2	**ßx(c)=10**	**ßx(c)=75**	**ßx(c)=100**	**ßx(c)=200**	**ßx(c)=1000**	
% efficiency, based on the above beta ratio (ßx)						Metal free
50.0%	**90.0%**	**98.7%**	**99.0%**	**99.5%**	**99.9%**	Ecoglass III
N/A	N/A	N/A	N/A	N/A	4.5	**02QE**
N/A	N/A	4.5	5	6	7	**05QE**
N/A	6	8.5	9	10	12	**10QE**
6	11	17	18	20	22	**20QE**

Please note the bolded options reflect standard options with a reduced lead-time of (4) weeks or less. Consult Parker Filtration on all other lead-time options.

Nominal flow (l/min) for filter assembly at viscosity 30cSt				
Housing, port size	**02QE**	**05QE**	**10QE**	**20QE**
15CN-1, G1	10	30	50	80
15CN-2, G1	30	70	80	100
40CN-1, G1 1/2	60	120	180	260
40CN-2, G1 1/2	80	200	280	320
80CN-1, G2	150	300	370	420
80CN-2, G2	180	420	530	600

* Fluoroelastomers are available under various registered trademarks, including Viton (a registered trademark of DuPont) and Fluorel (a registered trademark of 3M)

45M/45 Eco Series

Medium Pressure Filters
Max 260 l/min - 40 bar

Ideal for harsh and demanding environments

Approved for engine rooms and mines

The 45M Series utilizes a cast iron head and steel bowl design and can be specified with Microglass III or Ecoglass III filter media. Maximum pressure 40 bar. Maximum flow 260 l/min. Lower element replacement costs and lower disposal costs

Contact Information:

Parker Hannifin
Hydraulic Filter Division Europe

European Product Information Centre
Freephone: 00800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IT, PT, SE, SK, UK)
filtrationinfo@parker.com

www.parker.com/hfde

Product Features:

- 45M utilizes a cast iron head and steel bowl.
- Solves the problem of protecting system compopments at lower pressures.
- Maximum pressure 40 bar. Maximum flow 260 l/min.
- An ideal filter series for harsh environments.

45M/45 Eco Series

Medium Pressure Filters

Features & Benefits

Features	Advantages	Benefits
Cast iron head, steel bowl	Can be used in applications where aluminium is not allowed	Approved for engine rooms and mines
	Rugged construction	Reliable filtration in all conditions
Reinforced Microglass III replacement elements	Multi-layered design produced high capacity and efficiency	Great performance value
		Reliable performance throughout element life
	Wire support reduces pleat bunching, keeps performance consistent	Reduces downtime, maximises element life
Visual, electrical or electronic indicators available	Check element condition at glance	Optimise element life, prevent bypassing
	Right style for the application	Matches your system electrical connections
Test points in the filter head	Pressure measurement and Δp possible	Quick testing and maintenance
Coreless Ecoglass III replacement elements	No metal content in element	Environmentally friendly disposal by incineration
	Reduced overall weight of 50%	Lower element replacement costs
	Easy compaction of used elements	Lower disposal costs
	Eco adaptors available	Retrofit coreless design to housings already installed

Typical Applications

- Industrial power units
- Mobile construction equipment
- Forestry equipment

The Parker Filtration 45M/45 Eco Series Medium Pressure Filters.

The 45M/45 Eco Series of medium pressure filters offer an ideal solution to the problem of protecting system components at lower pressures.

The robust filter housing of the 45M allows the product to be applied in harsh environments. Filter bowl is designed for rapid element replacement. ECO Series elements reduces the waste over 50% due to the reusable element core.

Specification

Pressure ratings:
Maximum allowable operating pressure 40 bar.
Filter housing pressure pulse fatigue tested: 10^6 pulses 0-40 bar.

Connections:
Threads G1, G1¹/₄ (ISO 228/1) or flange SAE 1¹/₂" 3000-M.

Filter housing:
Head material cast iron (GSI).
Bowl material steel.

Seal material:
Nitrile or Fluoroelastomer.

Operating temperature range:
Seal material Nitrile: -40° to +100°C.
Seal material Fluoroelastomer: -20° to +120°C.

Bypass valve:
Opening pressure 3.5 bar.

Filter element:

Degree of filtration:
Determined by Multipass-test according to ISO 16889.

Flow fatigue characteristics:
Filter media is supported so that the optimal fatigue life is achieved (ISO 3724).

Microglass III:
Supported with epoxy coated metal wire mesh, end cap material reinforced composite and metal inner core.
Collapse rating 20 bar (ISO 2941).

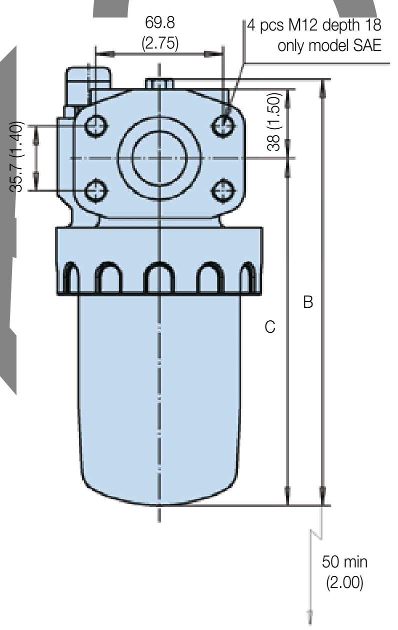
Ecoglass III:
Supported with plastic net, end cap material reinforced composite.
No metal parts. Collapse rating 10 bar (ISO 2941).
Filter element can only be used together with reusable FEA Eco-adapter.
Note: Ecoglass III contributes to ISO 14001 quality.

Indicator options:
Indicating differential pressure: 2.5 ± 0.3 bar.
- visual M3.
- electrical T1.
- electronic F1(PNP).
- electronic F2(NPN).
For indicator details see catalogue section 6.

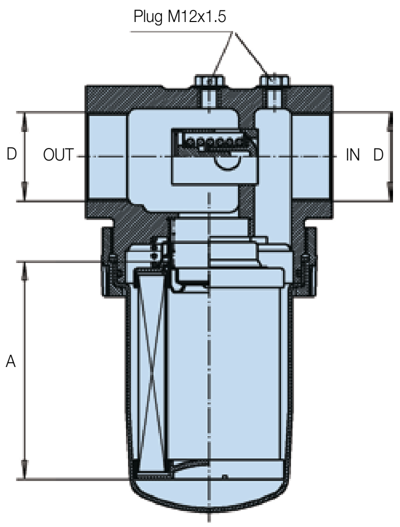
Fluid compatibility:
Suitable for use with mineral and vegetable oils, and some synthetic oils. For other fluids, please consult Parker Filtration.

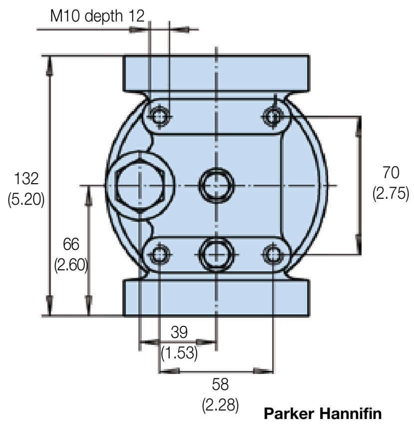
Installation Details

Type	A	B	C	Weight (kg)	D
Length 1	116 (4.57)	237 (9.33)	192 (7.56)	5.9	G1, G1¹/₄, G1¹/₂, Flange SAE 1¹/₂" 3000-M
Length 2	208 (8.20)	330 (13.00)	285 (11.22)	6.2	
Length 3	329 (13.00)	450 (17.72)	405 (15.94)	6.6	
Length 4	428 (16.85)	550 (21.65)	505 (19.90)	7.0	



mm
(inches)





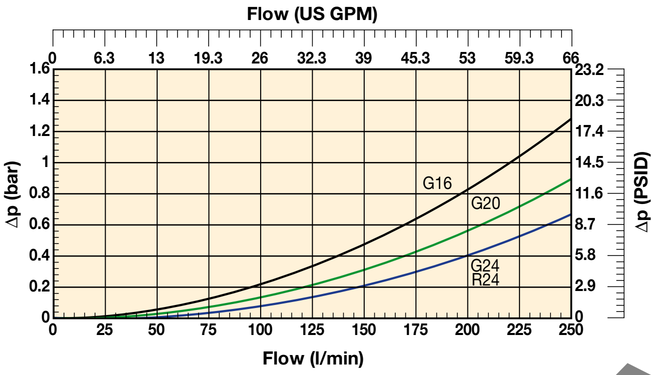
45M/45 Eco Series

Medium Pressure Filters

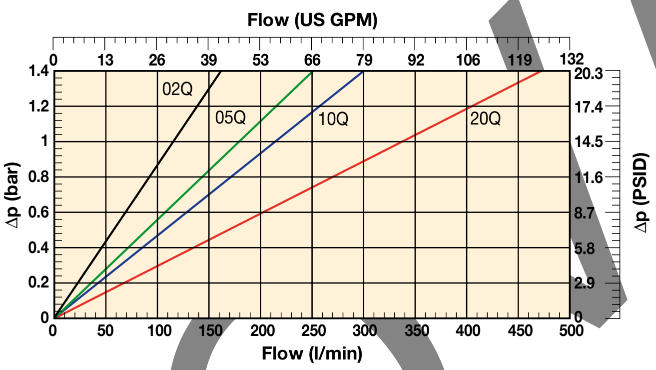
Pressure Drop Curves

The recommended level of the initial pressure drop is max 1.0 bar.
If the medium used has a viscosity different from 30 cSt, pressure drop over the filter can be estimated as follows:
The total Δp = housing Δph + (element Δpe x working viscosity/30).

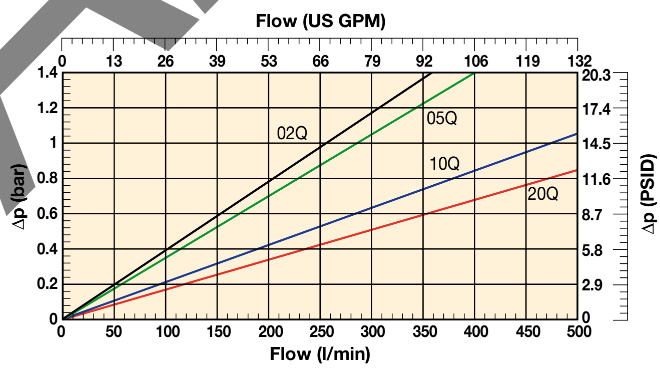
45M Series Empty Housing



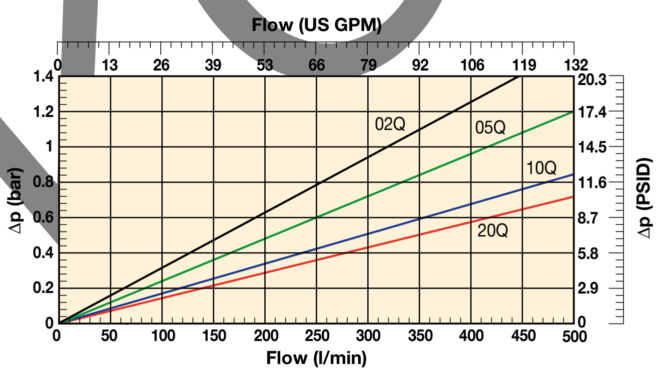
45M-1 Element with Microglass III



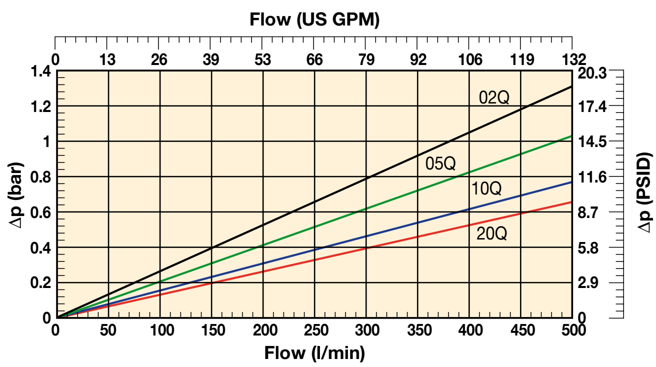
45M-2 Element with Microglass III



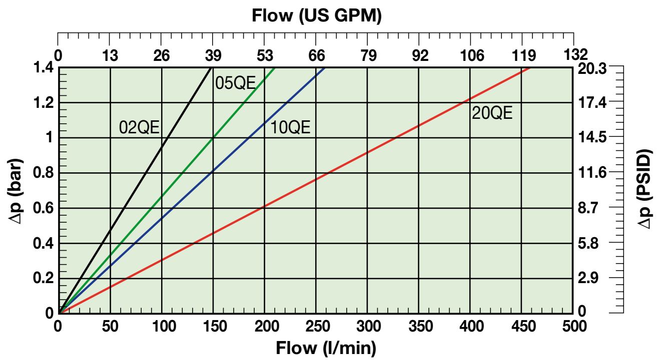
45M-3 Element with Microglass III



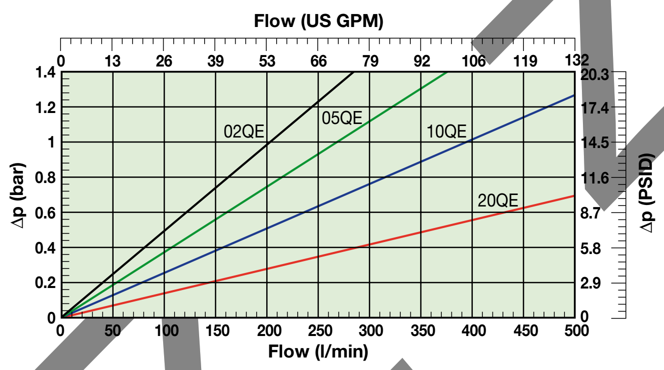
45M-4 Element with Microglass III



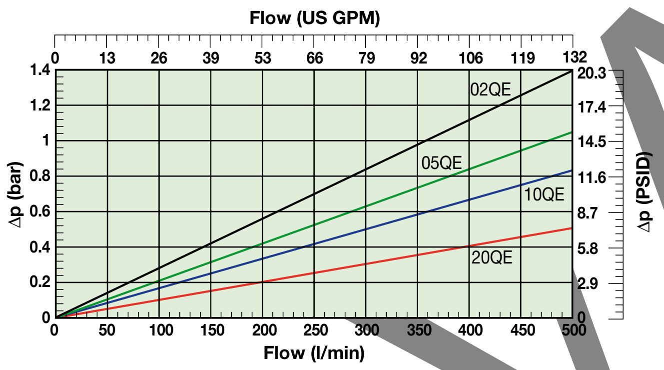
45M-1 Element with Ecoglass III



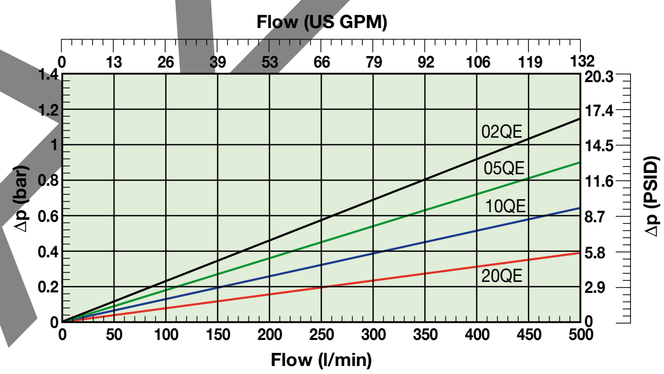
45M-2 Element with Ecoglass III



45M-3 Element with Ecoglass III



45M-4 Elements with Ecoglass III



Ordering Information

Standard products table

Product numbers	Supersedes	Flow (l/min)	Model number	Element length	Media rating (µ)	Seals	Indicator	Bypass settings	Ports	Replacement elements	Supersedes
45M110QBPKG161	FF1145.Q010.BS35.GT16	140	45M	Length 1	10	Nitrile	Plugged	3.5 bar	G1"	**938962Q**	FC7005.Q010.BK
45M120QBPKG161	FF1145.Q020.BS35.GT16	160	45M	Length 1	20	Nitrile	Plugged	3.5 bar	G1"	**938963Q**	FC7005.Q020.BK
45M110QEBPKG161	FF1145.QE10.BS35.GT16	140	45M	Length 1	10	Nitrile	Plugged	3.5 bar	G1"	**938978Q**	FC7005.QE10.BK
45M120QEBPKG161	FF1145.QE20.BS35.GT16	160	45M	Length 1	20	Nitrile	Plugged	3.5 bar	G1"	**938979Q**	FC7005.QE20.BK
45M210QBPKG201	FF1146.Q010.BS35.GT20	200	45M	Length 2	10	Nitrile	Plugged	3.5 bar	G1 1/4"	**938966Q**	FC7006.Q010.BK
45M220QBPKG201	FF1146.Q020.BS35.GT20	220	45M	Length 2	20	Nitrile	Plugged	3.5 bar	G1 1/4"	**938967Q**	FC7006.Q020.BK
45M210QEBPKG201	FF1146.QE10.BS35.GT20	200	45M	Length 2	10	Nitrile	Plugged	3.5 bar	G1 1/4"	**938982Q**	FC7006.QE10.BK
45M220QEBPKG201	FF1146.QE20.BS35.GT20	220	45M	Length 2	20	Nitrile	Plugged	3.5 bar	G1 1/4"	**938983Q**	FC7006.QE20.BK
45M310QBPKG241	FF1147.Q010.BS35.GT24	230	45M	Length 3	10	Nitrile	Plugged	3.5 bar	G1 1/2"	**938970Q**	FC7007.Q010.BK
45M320QBPKG241	FF1147.Q020.BS35.GT24	250	45M	Length 3	20	Nitrile	Plugged	3.5 bar	G1 1/2"	**938971Q**	FC7007.Q020.BK
45M310QEBPKG241	FF1147.QE10.BS35.GT24	230	45M	Length 3	10	Nitrile	Plugged	3.5 bar	G1 1/2"	**938986Q**	FC7007.QE10.BK
45M320QEBPKG241	FF1147.QE20.BS35.GT24	250	45M	Length 3	20	Nitrile	Plugged	3.5 bar	G1 1/2"	**938987Q**	FC7007.QE20.BK

Note: Filter assemblies ordered from the product configurator below are on extended lead times. Where possible, please make your selection from the table above.
Note 1: Part numbers featured with bold highlighted codes will ensure a 'standard' product selection.

45M Series Seal Kits	
Part Number	**Description**
918045049	NITRILE SEAL KIT 45M
918045050	NITRILE SEAL KIT 45M Eco
918045054	FLUOROELASTOMER SEAL KIT 45M
918045055	FLUOROELASTOMER SEAL KIT 45M Eco

45M/45 Eco Series

Medium Pressure Filters

Ordering Information (cont.)

Product configurator

Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7	Box 8
45M	**2**	**10Q**	**B**	**M3**	**K**	**G20**	**1**

Box 1

Code	
Model	**Code**
Medium pressure filter, T-port	**45M**

Highlights Key (Denotes part number availability)

123	Item is standard
123	Item is standard green option
123	Item is semi standard
123	Item is non standard

Box 2

Filter type	
Length	**Code**
Length 1	**1**
Length 2	**2**
Length 3	**3**
Length 4	**4**

Box 3

Degree of filtration				
Element media	**Glass fibre**			
	Media code			
Microglass III element	**02Q**	**05Q**	**10Q**	**20Q**
Ecoglass III element	**02QE**	**05QE**	**10QE**	**20QE**

Note: When using Ecoglass III elements a bowl with reusable Eco-adaptor is required.

Box 4

Seal type	
Seal material	**Code**
Nitrile	**B**
Fluoroelastomer	V

Box 5

Indicator	
	Code
Plugged with steel plug	**P**
Visual indicator	**M3**
Electrical indicator	**T1**
Electronic 4 LED, PNP, N.O.	F1
Electronic 4 LED, NPN, N.O.	F2
Electronic 4 LED, PNP, N.C.	F3
Electronic 4 LED, NPN, N.C.	F4

Box 6

Bypass valve			
Bypass valve	**Indicator**	**Code**	
3.5 bar	2.5 bar	**K**	
No bypass	7.0 bar	N	+ Box 8: code 2
No bypass	No indicator (P)	X	+ Box 8: code 2

When filter includes a bypass valve but not an indicator, code denotes bypass setting.

Box 7

Filter connection					
Connections	**Code**	Length 1	Length 2	Length 3	Length 4
Thread G 1	**G16**	**S**	**S**	**S**	x
Thread G 1 1/4	**G20**	**S**	**S**	**S**	**S**
Thread G 1 1/2	**G24**	x	**S**	**S**	**S**
SAE flange 1 1/2" 3000-M	R24	x	x	x	x

Availability: **S** = standard option
x = non-standard, ask for availability

Box 8

Options	
Options	**Code**
Standard	**1**
No bypass	2
ATEX certified* (Category 2, non-electrical equipment)	EX

Note 1*: For ATEX classified filters add EX after the code.
ATEX certified filters with electrical indicator are available on request.
Visual indicators are classified as Category 2, non electrical equipment.
Filter assemblies with EX code will be supplied with a dedicated name plate.
Pls consult Parker Filtration for any questions related to the classification of our products.

Replacement elements with nitrile seals				
Media	Length 1	Length 2	Length 3	Length 4
02Q	**938960Q**	**938964Q**	**938968Q**	**938972Q**
05Q	**938961Q**	**938965Q**	**938969Q**	**938973Q**
10Q	**938962Q**	**938966Q**	**938970Q**	**938974Q**
20Q	**938963Q**	**938967Q**	**938971Q**	**938975Q**
02QE	**938976Q**	**938980Q**	**938984Q**	**938988Q**
05QE	**938977Q**	**938981Q**	**938985Q**	**938989Q**
10QE	**938978Q**	**938982Q**	**938986Q**	**938990Q**
20QE	**938979Q**	**938983Q**	**938987Q**	**938991Q**

Nominal flow (l/min) at viscosity 30 cSt - connection size				
Filter length	Media	G16	G20	G24 & R24
Length 1	02Q/02QE	80	80	80
	05Q/05QE	120	120	120
	10Q/10QE	140	150	150
	20Q/20QE	160	180	200
Length 2	02Q/02QE	130	150	170
	05Q/05QE	150	170	190
	10Q/10QE	170	200	230
	20Q/20QE	190	220	250
Length 3	02Q/02QE	150	170	190
	05Q/05QE	170	190	210
	10Q/10QE	190	210	230
	20Q/20QE	200	230	250
Length 4	02Q/02QE	170	190	210
	05Q/05QE	180	210	230
	10Q/10QE	190	220	240
	20Q/20QE	200	230	260

Degree of filtration						Code	
Average filtration beta ratio ß (ISO 16889) / particle size µm [c]							
ßx(c)=2	**ßx(c)=10**	**ßx(c)=75**	**ßx(c)=100**	**ßx(c)=200**	**ßx(c)=1000**		
% efficiency, based on the above beta ratio (ßx)						Disposable	Metal free
50.0%	**90.0%**	**98.7%**	**99.0%**	**99.5%**	**99.9%**	Microglass III	Ecoglass III
N/A	N/A	N/A	N/A	N/A	4.5	**02Q**	02QE
N/A	N/A	4.5	5	6	7	**05Q**	05QE
N/A	6	8.5	9	10	12	**10Q**	**10QE**
6	11	17	18	20	22	**20Q**	**20QE**

Eco130 Series

Medium Pressure Filters
Max. 1400 l/min. 30 bar

Modular system for industrial applications

High flow return filters for industrial use on hydraulic or lubrication systems. High flow and pressure up to 30 bar in single units. Ability to bank multiple filters together enables continuous filtration during element changes. Coreless Ecoglass III elements.

Contact Information:

Parker Hannifin
Hydraulic Filter Division Europe

European Product Information Centre
Freephone: 00800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IT, PT, SE, SK, UK)
filtrationinfo@parker.com

www.parker.com/hfde

Applications:

- Paper production plants
- Steel mills
- Aluminium mills
- Industrial power packs
- Lubrication systems
- Power generation

Specification

Assembly:
In-line filter as a single filter, a dual unit, a parallel unit or a filter system with L-bore selecting valve assembly (only one side in use). Vertical installation.
Maximum operating pressure:
Single filter: 30 bar
Dual and parallel units and filter systems: 16 bar
Nominal flow rate (30 cSt):
Single filter: 1000 l/min (60 m^3/h)
Dual and parallel units and filter systems: 1400 l/min (84 m3/h)
Connections:
Single filter: Flanges SAE 2” 3000-M, SAE 2½” 3000-M or with adaptor threads G1½ or G2.
Dual units: Flanges SAE 3” 3000-M or with adaptor threads G2.
Parallel units and filter systems: DN80/PN16 or DN100/PN16.
Seal material:
Nitrile or optionally fluoroelastomer
Operating temperature:
-40°C...+100°C with Nitrile seals, -20°C...+120°C with Fluoroelastomer seals. For other temperatures consult Parker Filtration.
Housing material:
Aluminium
Weight:
See a table in dimension drawing
Bypass valve:
Opening pressure 3.5 bar
Filtration materials:
- Glassfibre Microglass III
- Environmentally friendly Ecoglass III. No metal parts.
- Cleanable metal mesh

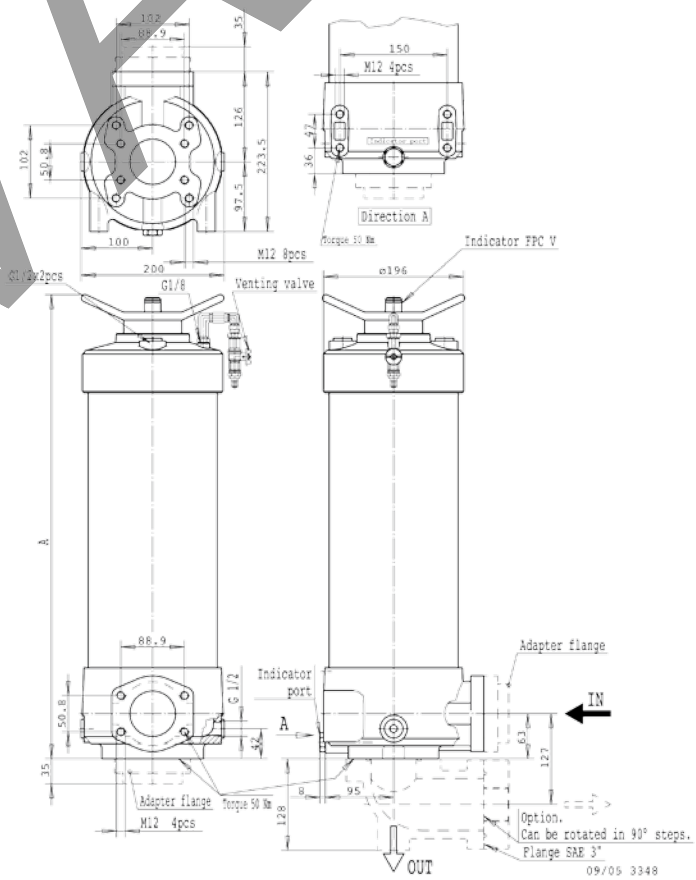
Indicator options:
For details see indicator options table on product description page and catalogue section 4.
Differential pressure indicators:
Visual indicator always included to each column, setting 2.5 bar. Optional electrical or electronic indicators to be mounted on lower indicator port.
Fluid compatibility:
Suitable for use with regular hydraulic and lubrication oils. For other fluids consult Parker Filtration.

Single Assemblies 130M

Connection options	
Body flange	SAE 2” 3000-M
	SAE 2½” 3000-M
Adaptor flange	G1½
	G2
	SAE 3” 3000-M (90° elbow)

Weights (kg)	Length 2	Length 3
Single	25	33
Dual D2	70	86
Parallel P2	75	90
System S2	110	130
System S4	205	235
System S6	260	310
System S8	340	705

Type	A
Length 2	650
Length 3	1210



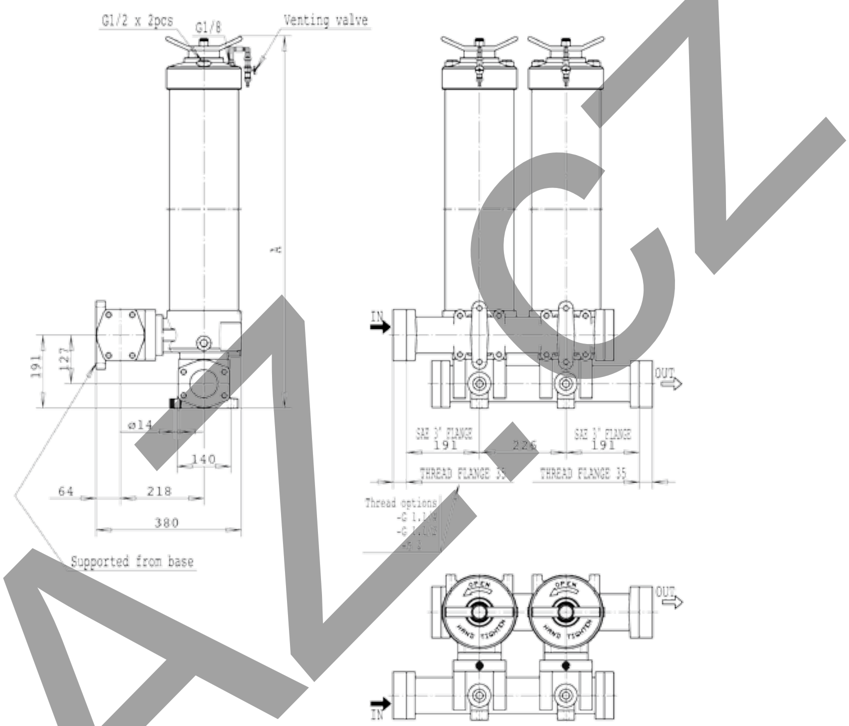
Eco130 Series

Medium Pressure Filters

Dual System 130D

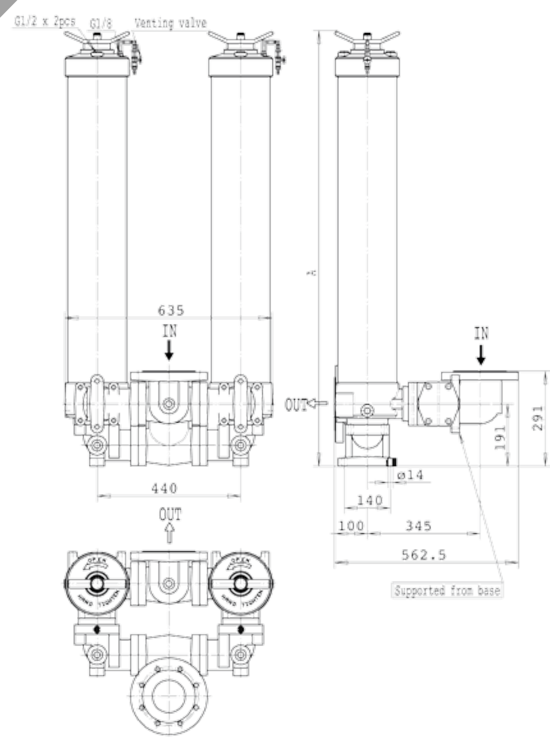
Connection options	
Body flange	SAE 3" 3000-M
Adaptor flange thread	G2

Type	A
Length 2	780
Length 3	1340



Parallel System 130N

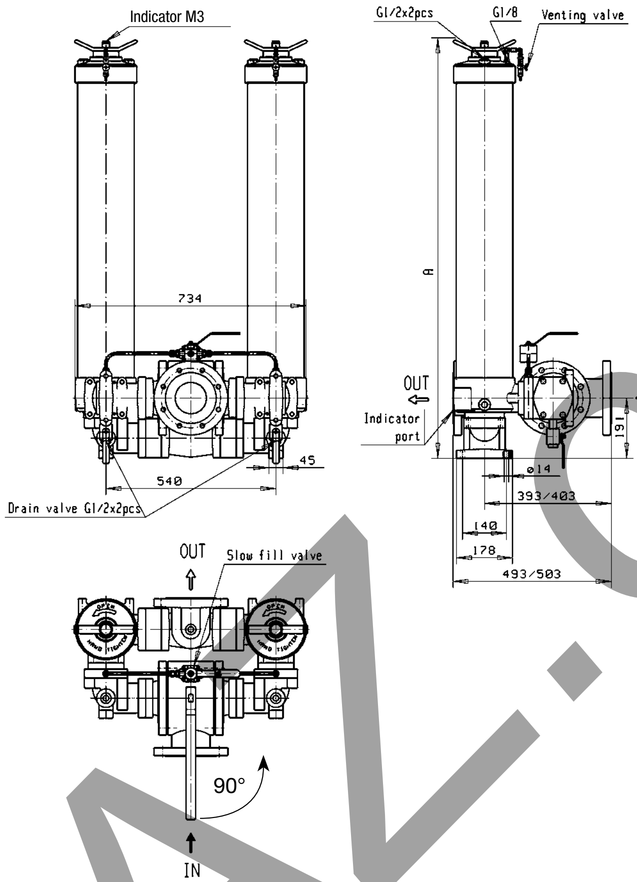
Type	A
Length 2	780
Length 3	1340



130S System 1 + 1 units

T-model

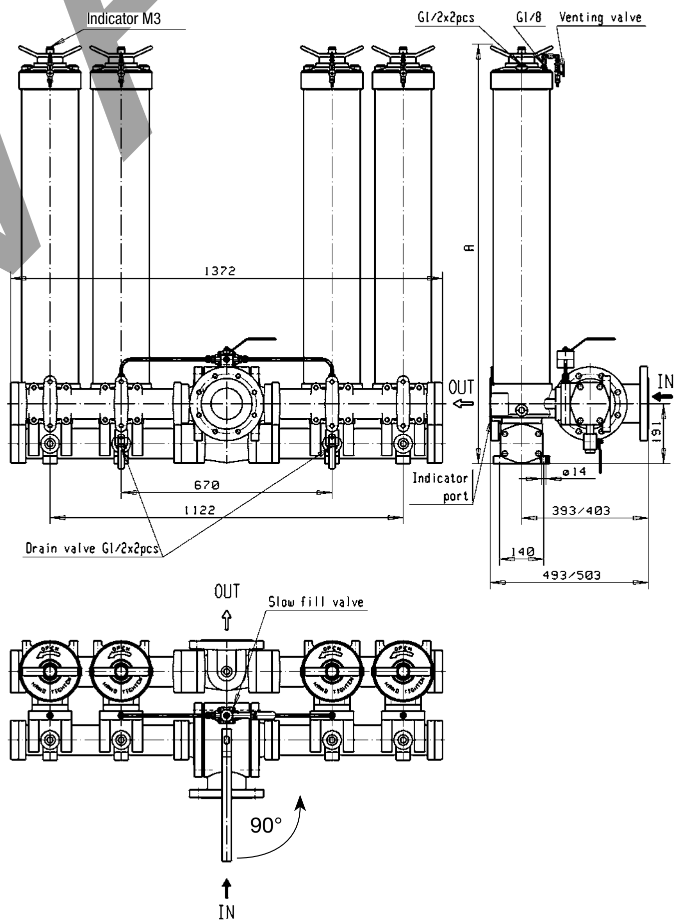
Type	A
Length 2	780
Length 3	1340



130S System 2 + 2 units

T-model

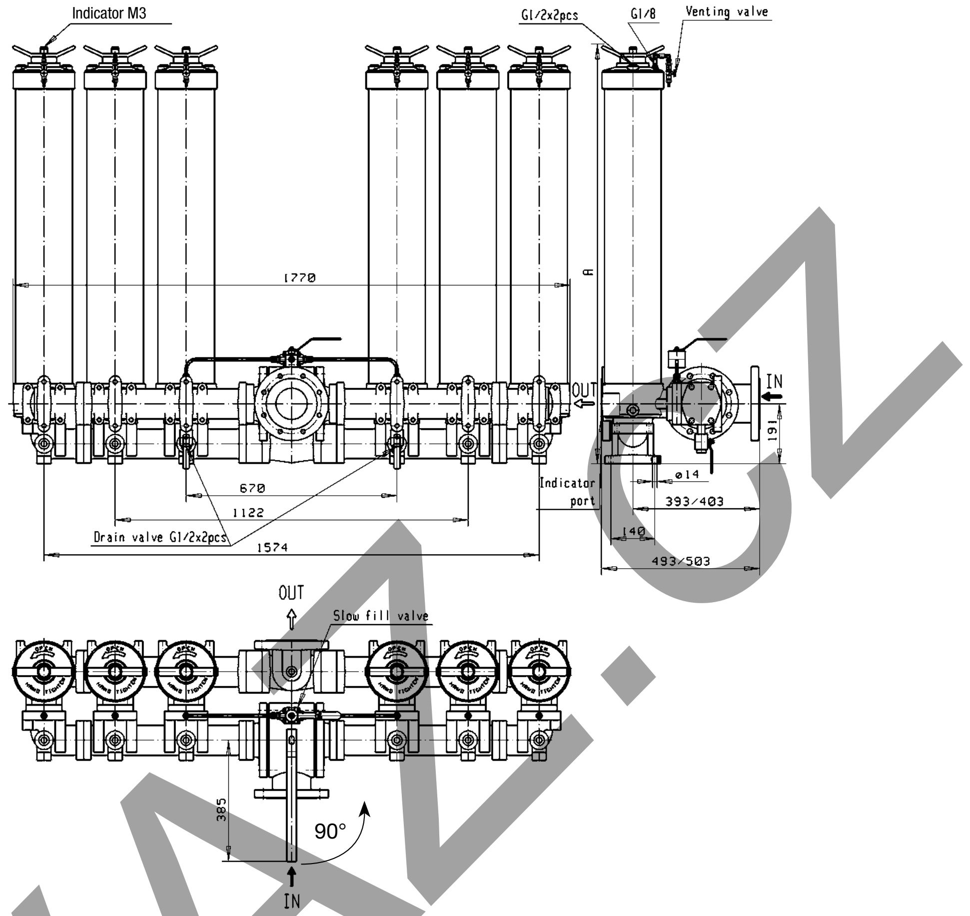
Type	A
Length 2	780
Length 3	1340



130S System 3 + 3 units

T-model

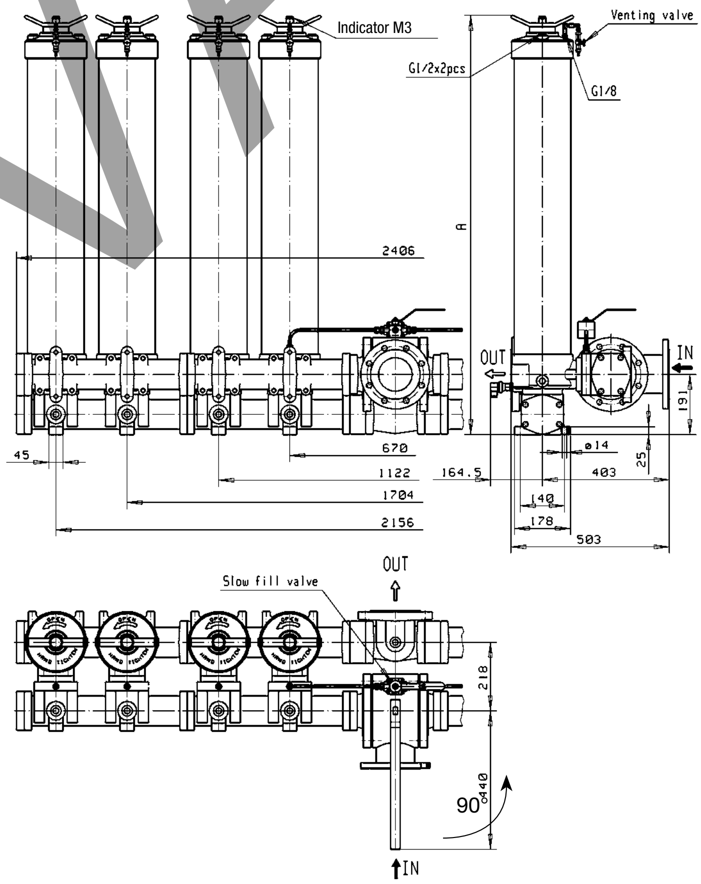
Type	A
Length 2	780
Length 3	1340



130S System 4 + 4 units

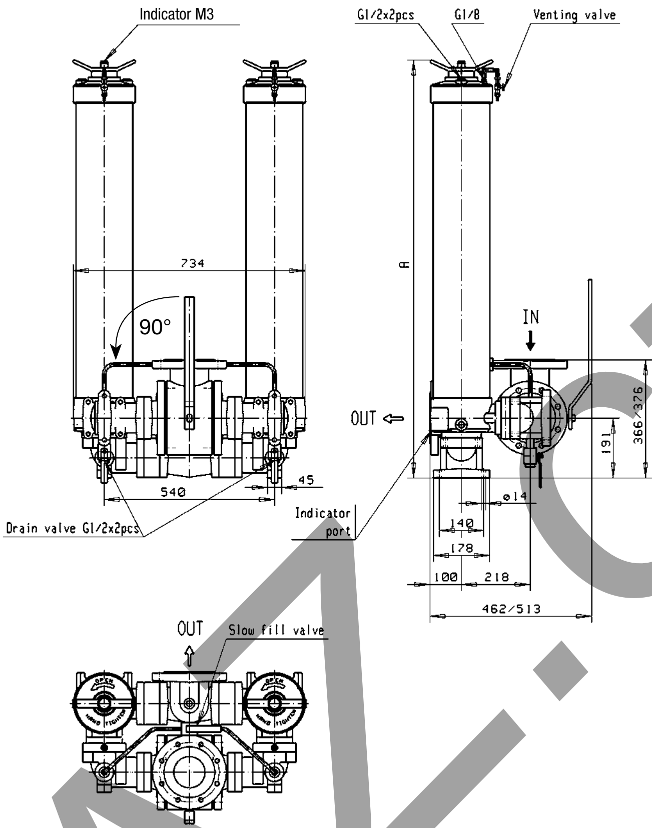
T-model

Type	A
Length 2	780
Length 3	1340



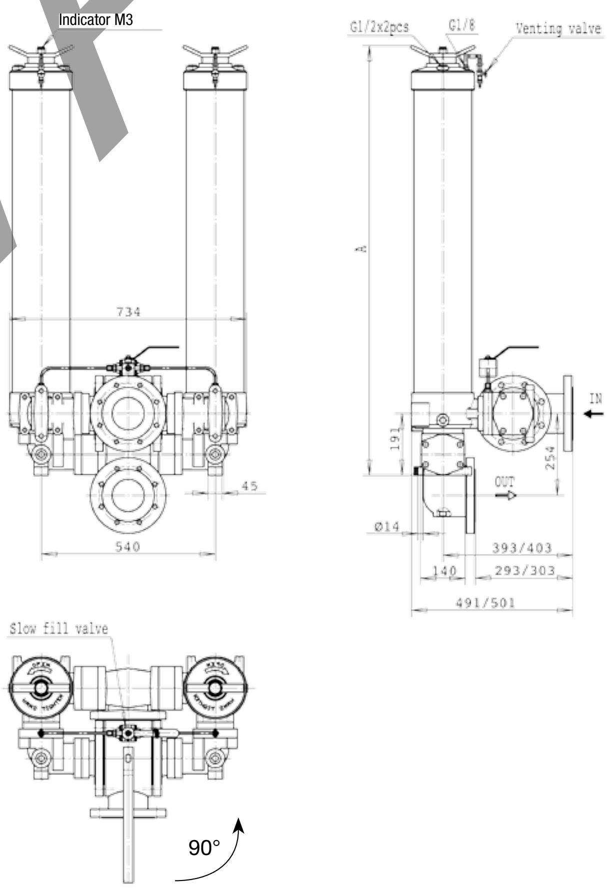
130S System
L-model

Type	A
Length 2	780
Length 3	1340



130S System
C-model

Type	A
Length 2	780
Length 3	1340



Eco130 Series

Pressure Drop Curves

$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element}$

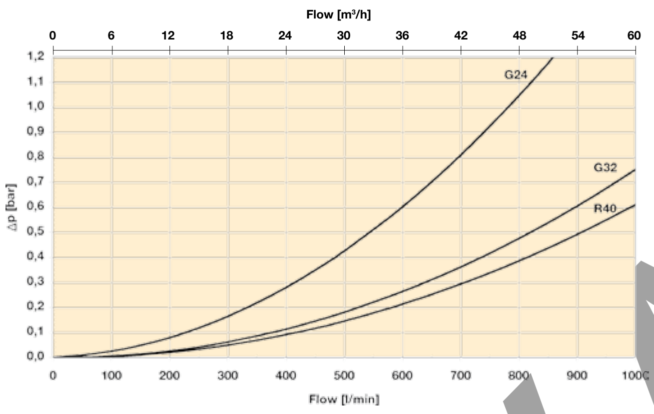
The recommended level of the initial pressure drop for this filter is maximum 0.8 bar.

Δ p-curves are measured at 30 cSt.

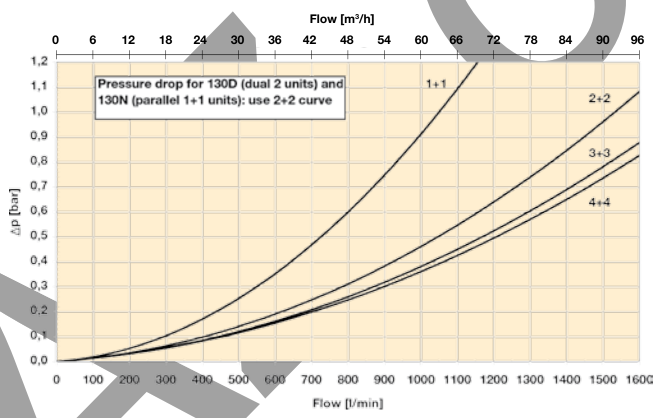
If the medium used has a viscosity different from 30 cSt, pressure drop over the element can be estimated as follows:

$$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element} \times \frac{\text{working viscosity}}{30 \text{ cSt}}$$

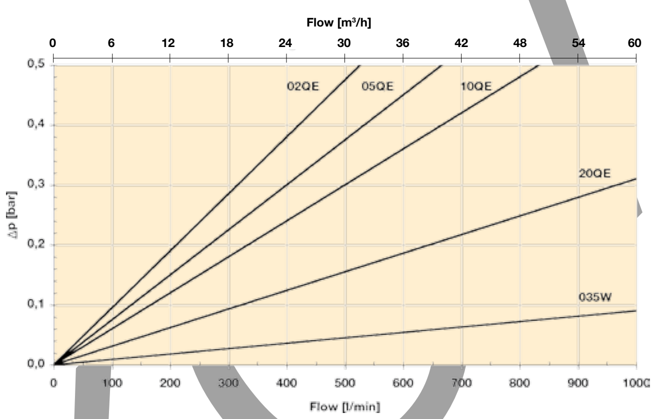
130M single unit housings



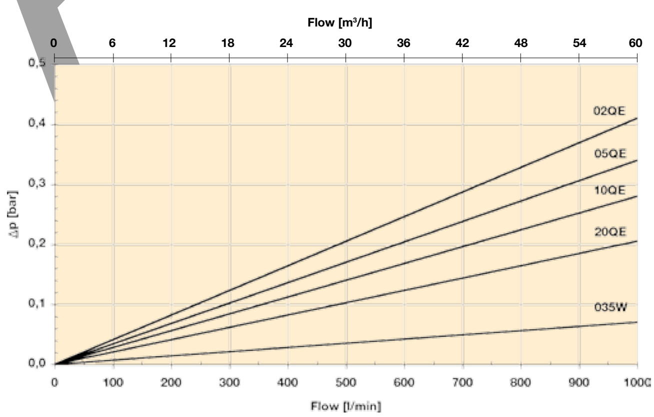
130S3 system housings with DN100



Length 2 elements



Length 3 elements



REPLACEMENT ECO-ELEMENTS WITH NITRILE SEALS		
Media	Length 2	Length 3
02QE	938721Q	938725Q
05QE	**938722Q**	**938726Q**
10QE	**938723Q**	**938727Q**
20QE	**938724Q**	**938728Q**

REPLACEMENT ELEMENTS WITH NITRILE SEALS		
Microglass III	Length 2	Length 3
02Q	938733Q	938737Q
05Q	938734Q	938738Q
10Q	938735Q	938739Q
20Q	938736Q	938740Q
Wire mesh		
035W	938760	938765
060W	938761	938766

Elements with fluoroelastomer seals: ask order codes from Parker Filtration.

Product Description for Eco130

Complete Filter:

Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8

Table 1

FILTER TYPE	
Model	**CODE**
Single unit	**130M**
Dual unit	**130D**
Parallel unit	**130N**
System	**130S**

Table 2

FILTER TYPE	
Element length	**CODE**
Length 2	**2**
Length 3	**3**

Table 3

DEGREE OF FILTRATION	
Element type	**CODE**
Ecoglass III	
Glassfibre 2 µm	02QE
Glassfibre 5 µm	**05QE**
Glassfibre 10 µm	**10QE**
Glassfibre 20 µm	**20QE**

Filters with Microglass III and wire mesh elements available by request.

Table 4

SEAL TYPE	
Seal material	**CODE**
Nitrile	**B**
Fluoroelastomer	V

SPARE PARTS	
Seal kit	**CODE**
Seal material	
Nitrile	918045059
Fluoroelastomer	918045076
ECO adapter	
130M2	918042078
130M3	918042077

Table 5

INDICATORS	
Options	**CODE**
Visual indicator	**M3**
Electrical indicator	T1
Electronic indicator (PNP/N.O.)	F1
Electronic indicator (NPN/N.O.)	F2

Table 6

BYPASS VALVE	
Bypass/indicator setting	**CODE**
3.5 bar/2.5 bar	**K**

Table 7

FILTER CONNECTIONS		
Port size	**Filter type**	**CODE**
G1½	130M	G24
G2	130M, 130D	G32
SAE flange 2”-3000M	130M	R32
SAE flange 2½”-3000M	130M	**R40**
SAE flange 3”-3000M	130D	**R48**
DN80/PN16	130N, 130S	**D80**
DN100/PN16	130N, 130S	**D100**

Table 8

OPTIONS	
Options	**CODE**
Standard single	**1**
Dual 2 units	**21**
Dual 3 units	31
Parallel 1+1 units	**21**
Parallel 2+2 units	41
T-system 1+1 units	**21**
T-system 2+2 units	**41**
T-system 3+3 units	**61**
T-system 4+4 units	**81**
L-system 1+1 units	27
L-system 2+2 units	47
L-system 3+3 units	67
L-system 4+4 units	87

Please note the bolded options reflect standard options with reduced lead-time.

130S Valve Seal Kit	
Part Number	**Description**
918045062	NITRILE SEAL KIT 130S VALVE

GS Series

Medium Pressure Filters
Max. 350 l/min. - 40 bar

In-line peace of mind

Three different housing sizes and several media options allow a wide range of applications. Cast iron housings are operable up to 40 bars. Pre-filtration with magnets is available as well as several connection options.

Contact Information:

Parker Hannifin
Hydraulic Filter Division Europe

European Product Information Centre
Freephone: 00800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IT, PT, SE, SK, UK)
filtrationinfo@parker.com

www.parker.com/hfde

Typical application examples. At the top of each product section, a ‘typical application’ photo example has been included.

Applications:

- Industrial gear boxes
- Heavy fuel oil filter for diesel engines
- Suction filter for fuel systems
- Medium pressure hydraulic filter

Providing heavy duty filtration solutions

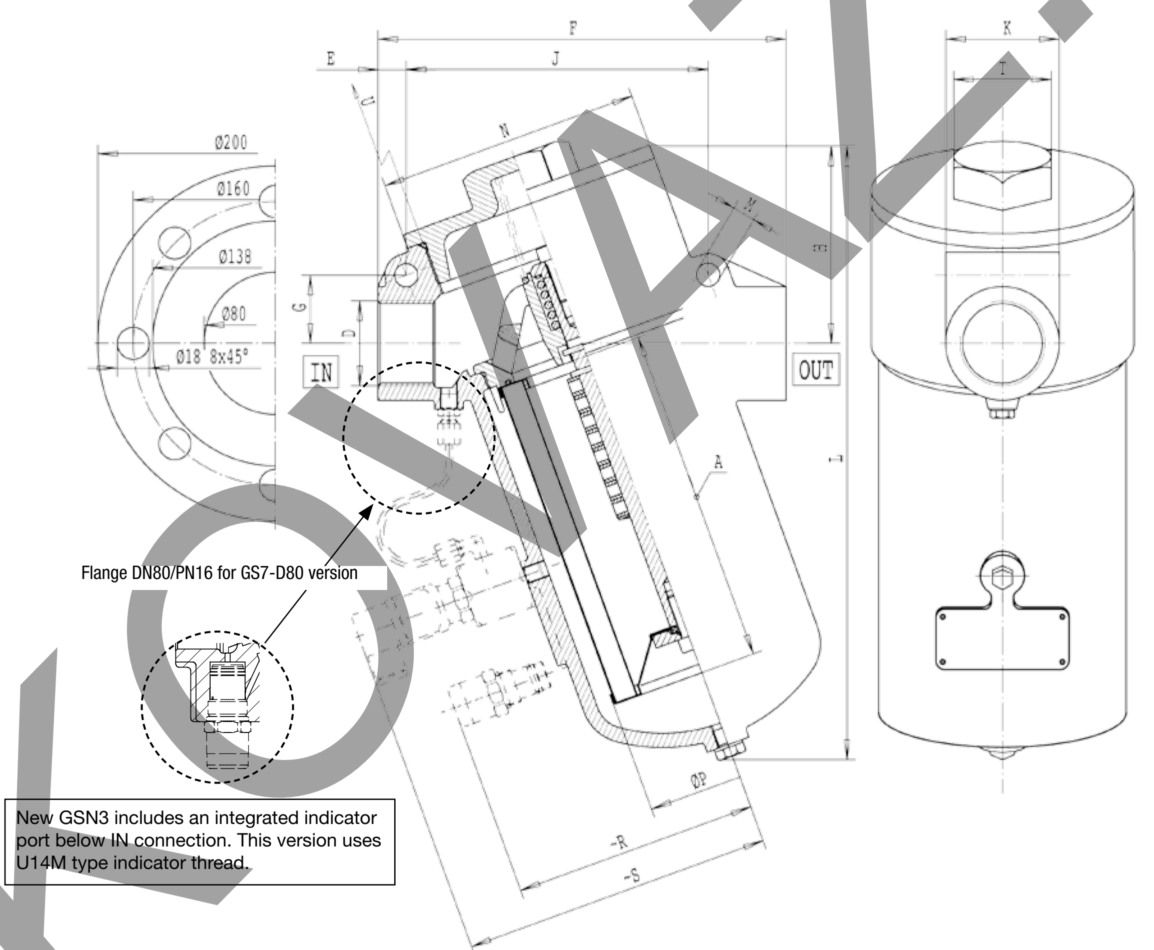
Parker can provide correct filtration solutions for a multitude of fuel, gas, hydraulic oil and lubrication systems. A wide selection of low and medium pressure multi-purpose filters that offer several different filter elements – environmentally sound choices too – allowing highly customized solutions. Duplex filters and the ability to bank multiple filters together enables continuous filtration during element changes. Parker’s heavy duty solutions for clean fluids and peace of mind.

Specification

Assembly:
In-line filter
Maximum operating pressure:
40 bar. For DN80 flanges 16 bar.
Nominal flow rate (30cSt):
350 l/min (21 m^3/h)
Connections:
Threads G1 for GSN3 and G1½ for GS6 and GS7. GS7 is available also with flanges DN80/PN16.
Seal material:
Fluoroelastomer or optionally nitrile
Operating temperature:
-40°C...+100°C with Nitrile seals, -20°C...+120°C with Fluoroelastomer seals, -20°C...+160°C with metal mesh elements and Fluoroelastomer seals.
Housing material:
Cast iron

Weight:
See dimensions table
Magnet pack:
Available as option
Bypass valve:
Standard opening pressure 1.6 bar, optionally with blocked bypass
Indicator options:
Visual, electrical or electronic indicator requires an indicator block. For details see indicator options table on product description page and catalogue section 4.
Filtration materials:
- Glassfibre Microglass III
- Cleanable metal mesh

Fluid compatibility:
Suitable for use with regular hydraulic and lubrication oils and fuel oils. For other fluids consult Parker Filtration.



Type	Weight	A	D	F	G	H	J	K	L	M	N	P	R	S	T	U
GSN3	5.5 kg	150	G1	170	27	83	125	45	280	11	108	71	118	159	32	200
GS6	12 kg	190	G1½	230	38	112	170	64	350	13	148	106	139	180	55	210
GS7	15 kg	260	G1½	230	38	112	170	64	420	13	148	106	139	180	55	240
GS7-D80	24 kg	260	80	310	-	112	-	200	420	-	148	106	139	180	55	240

GS Series

Pressure Drop Curves

$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element}$

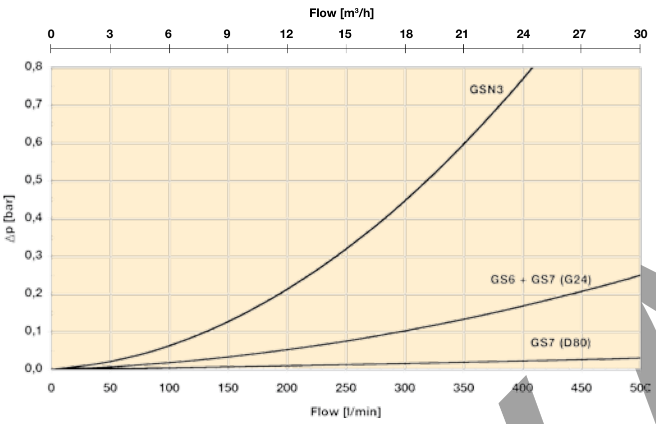
The recommended level of the initial pressure drop for this filter is maximum 0.5 bar.

Δ p-curves are measured at 30 cSt.

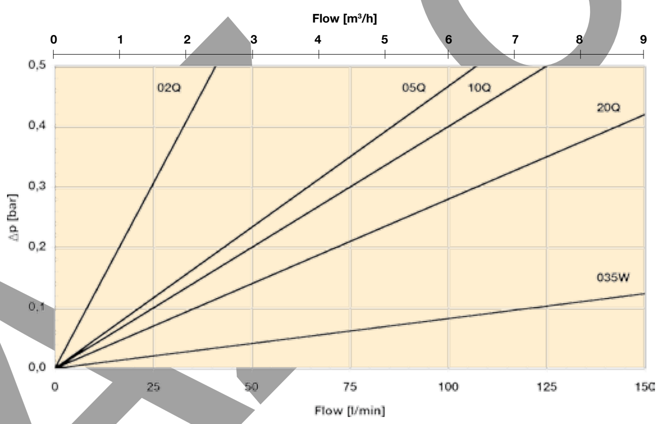
If the medium used has a viscosity different from 30 cSt, pressure drop over the element can be estimated as follows:

$$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element} \times \frac{\text{working viscosity}}{30\ \text{cSt}}$$

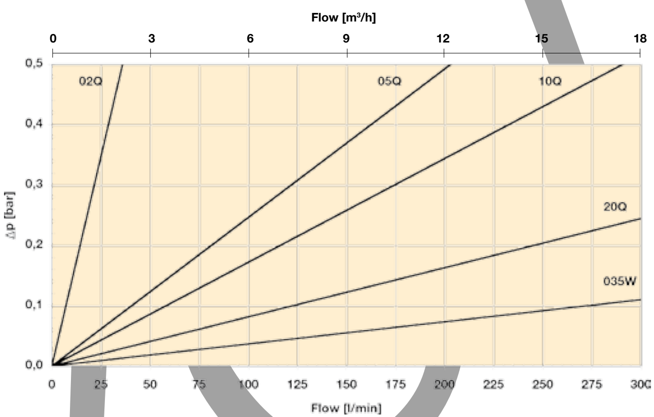
GS Series housings



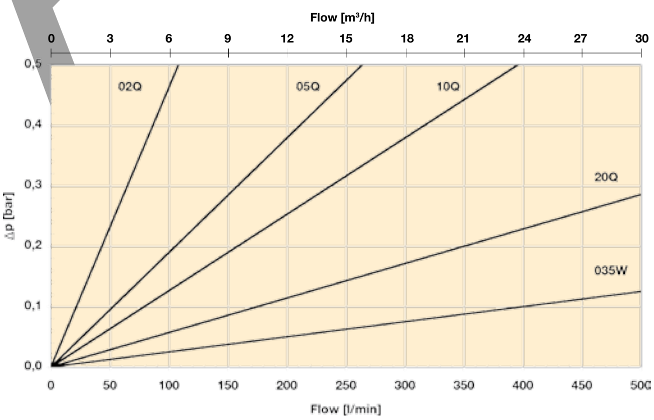
Elements for GSN3



Elements for GS6



Elements for GS7



REPLACEMENT ELEMENTS (with Fluoroelastomer or Nitrile seal)					
Media code	**Order code for GSN3**	**Order code for GS6**		**Order code for GS7**	
Glassfibre	**Standard (no seal)**	**Fluoroelastomer**	**Nitrile**	**Fluoroelastomer**	**Nitrile**
02Q	937973Q	938208Q	937747Q	938209Q	937746Q
05Q	937974Q	938361Q	937758Q	938364Q	937759Q
10Q	**937952Q**	**938362Q**	937783Q	**938075Q**	937782Q
20Q	**937953Q**	**938363Q**	937794Q	**938005Q**	937795Q
Cleanable metal mesh					
035W	939180	939182	NA	939184	NA
060W	939181	939183	NA	939185	NA

Parker Hannifin
Hydraulic Filter Division Europe
FDHB500UK/GS

Product Description for GS

Complete Filter:

Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8

Table 1

FILTER TYPE	
Model	**CODE**
Medium pressure filter, cast iron	**GS**

Table 2

FILTER SIZE	
Housing size - element length	**CODE**
1-90 (former 1087)	**N3**
2-170 (former 1088)	**6**
2-230 (former 1089)	**7**

Table 3

DEGREE OF FILTRATION	
Element type	**CODE**
Microglass III	
Glassfibre 2 µm	02Q
Glassfibre 5 µm	05Q
Glassfibre 10 µm	**10Q**
Glassfibre 20 µm	**20Q**
Other medias	
Cleanable metal mesh 35 µm	035W
Cleanable metal mesh 60 µm	060W

Table 4

SEAL TYPE	
Seal material	**CODE**
Nitrile	B
Fluoroelastomer	**V**

Table 5

INDICATORS	
Options	**CODE**
No indicator block	**N**
Indicator port plugged	P
Visual indicator	**M3**
Electrical indicator	**T1**
Electronic indicator (PNP/N.O.)	F1
Electronic indicator (NPN/N.O.)	F2

Table 6

BYPASS VALVE	
Bypass/indicator setting	**CODE**
1.6 bar/1.0 bar	**F**
No/No	X

Table 7

FILTER CONNECTIONS	
Port size	**CODE**
G1 (length N3)	**G16**
G1½ (length 6 and 7)	**G24**
Flange DN80 (length 7)	D80

Table 8

OPTIONS	
Options	**CODE**
With bypass and magnets	**1**
No bypass, with magnets	2
With bypass, no magnets	5
No bypass, no magnets	6
Safety guard, no bypass, no magnets	7

SPARE PARTS		
Seal kit	**CODE**	
Seal material	**GSN3**	**GS6-7**
Fluoroelastomer	918045044	918045038
Nitrile	918045034	918045023

Please note the bolded options reflect standard options with reduced lead-time.

GA Series

Medium Pressure Filters
Max. 230 l/min. 30 bar

Contamination-proof and customizable filter solution

Designed for various applications. In-out filter principle means there is no possibility for contaminated leak back into the system. Supplied with magnetic pre-filtration. Customizable for filter coolants thus ideal for metal cutting equipment. Visual or electronic differential pressure indicators and environmentally friendly filtration elements available.

Contact Information:

Parker Hannifin
Hydraulic Filter Division Europe

European Product Information Centre
Freephone: 00800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IT, PT, SE, SK, UK)
filtrationinfo@parker.com

www.parker.com/hfde

Applications:

- Gearboxes
- Bypass filtration
- Stone crushers
- Lube oil systems
- Metal cutting equipment

Specification

Assembly:
In-line filter

Maximum operating pressure:
30 bar

Nominal flow rate (30 cSt):
230 l/min (13.8 m^3/h)

Connections:
Threaded BSP ports. SAE ports available by request.

Seal material:
Nitrile, optionally Fluoroelastomer or Neoprene

Operating temperature:
-40°C...+100°C with Nitrile seals, -20°C...+120°C with Fluoroelastomer seals. For other temperatures consult Parker Filtration.

Housing material:
Aluminium

Weight:
See dimensions table

Bypass setting:
Opening pressure standard 1.5 bar, optionally 0.8 bar, 2.0 bar or blocked bypass

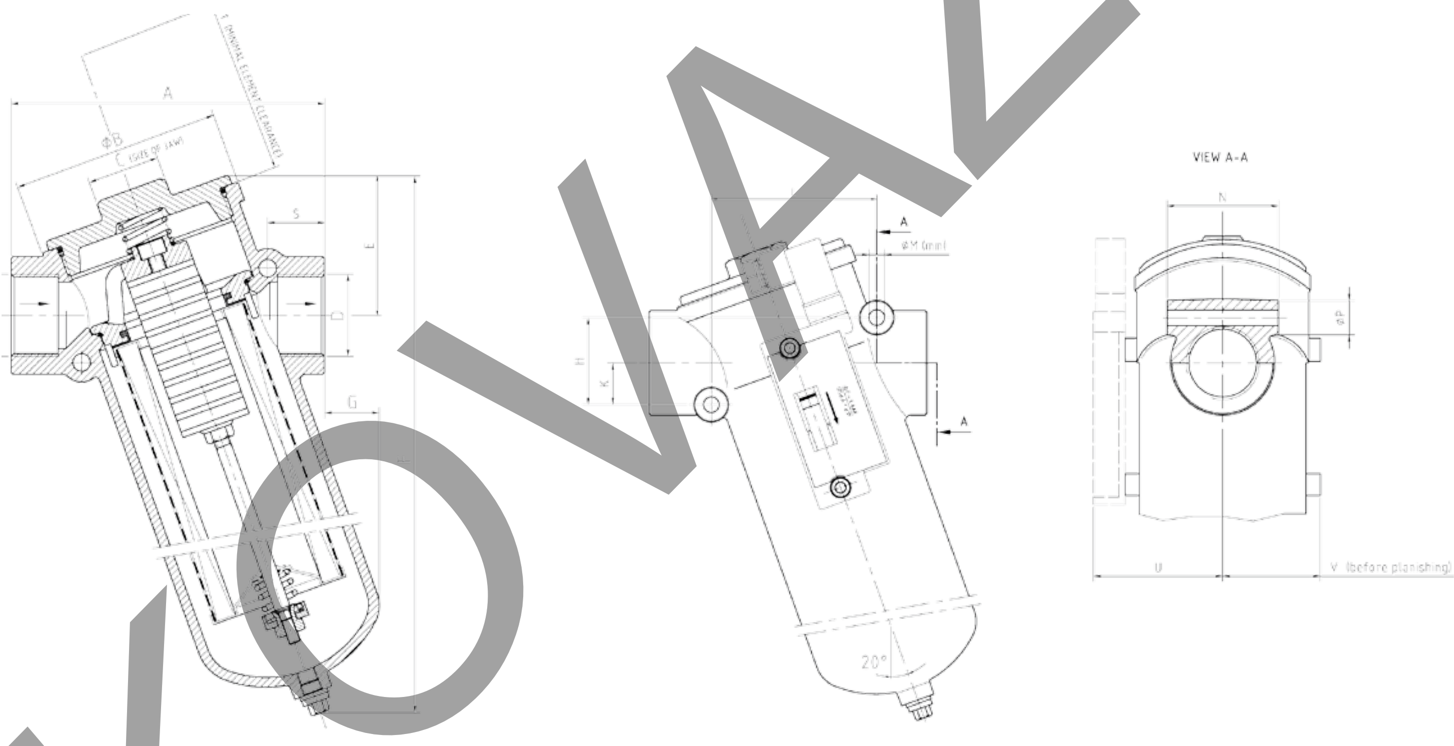
Filtration materials:

- Ecoglass for *LEIF*® element with reusable metal element sleeve. *LEIF*® contributes to ISO14001.
- Glassfibre Microglass III
- Resin impregnated cellulose paper 10 µm nominal
- Cleanable metal mesh

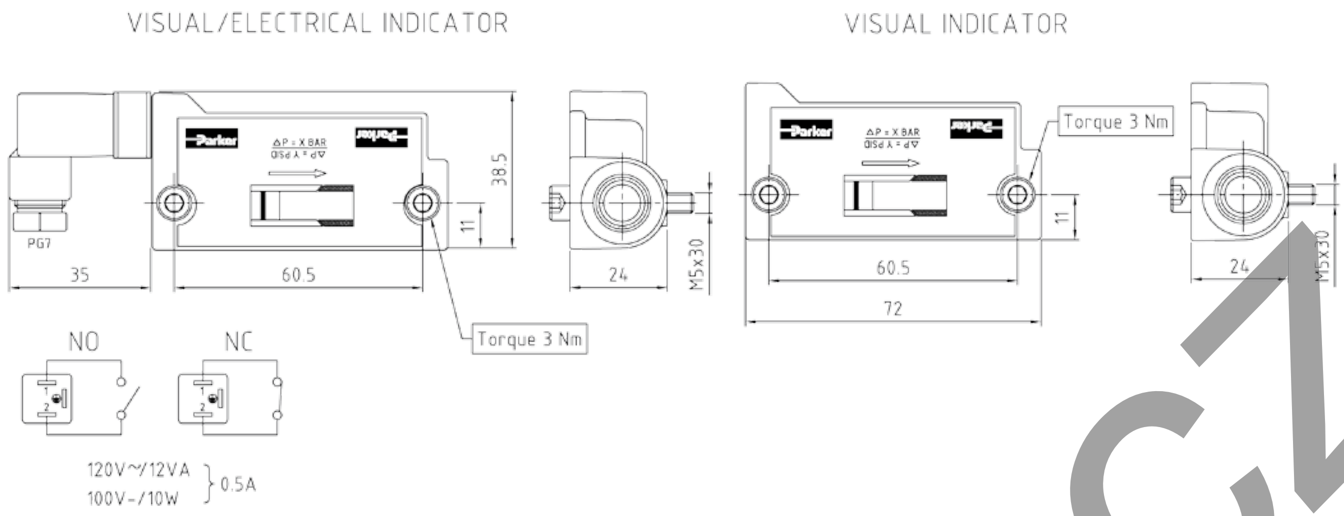
Magnetic pack:
Standard

Differential pressure indicators:
Visual or Visual-electrical indicator
Setting 1.2 bar (for 2.0 bar and 1.5 bar bypass) or 0.7 bar (for 0.8 bar bypass)

Fluid compatibility:
Suitable for use with regular hydraulic and lubrication oils. For other fluids consult Parker Filtration.



Type	A	B	C	D		E	F	G	H	K	L	M	N	P	S	T	U	V	Kg
				BSP ISO228	SAE														
GA1-30	150	106	32	G¾	12	70	180	3	50	24	95	9	44	20	28	143	86	63	2.1
GA1-60	160	106	32	G1	16	70	235	18	50	24	95	9	54	20	29	194	86	63	2.6
GA1-90	160	106	32	G1	16	70	275	29	50	24	95	9	54	20	29	238	86	63	3.2
GA1-120	160	106	32	G1¼	20	70	325	46	50	24	95	9	64	20	29	288	86	63	4.0
GA2-170	230	150	55	G1½	24	105	390	35	75	37	140	12	72	25	43	338	110	88	7.9
GA2-230	230	150	55	G1½	24	105	460	58	75	37	140	12	72	25	43	408	110	88	9.0



Visual Indicator - Manifold connected to filter housing	
Code (0.7 bar setting)	FMUD5BBAXXXL
Code (1.2 bar setting)	FMUD5EBAXXXL
Visual / Electrical Indicator - Manifold connected to filter housing	
Code (0.7 bar setting and NO type switch)	FMUE5BBAXXXL
Code (1.2 bar setting and NO type switch)	FMUE5EBAXXXL
Electric rating	120Vac/12VA or 100Vdc/10W
Electrical connection	AMP terminal 6.3. x 0.8 with plugged cable gland
Protection	IP65
Switch type	NO (NC on request)

Pressure Drop Curves for Housing

$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element}$

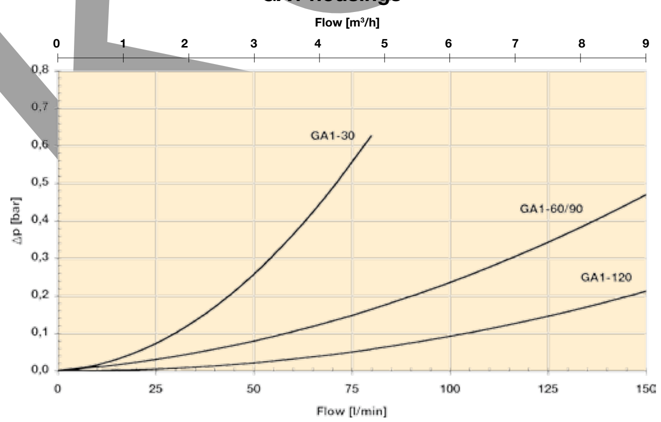
The recommended level of the initial pressure drop for this filter is maximum 0.5 bar.

Δ p-curves are measured at 30 cSt.

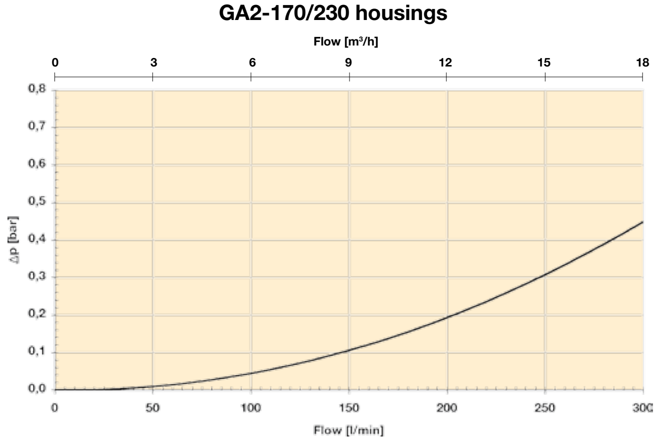
If the medium used has a viscosity different from 30 cSt, pressure drop over the element can be estimated as follows:

$$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element} \times \frac{\text{working viscosity}}{30\ \text{cSt}}$$

GA1 housings



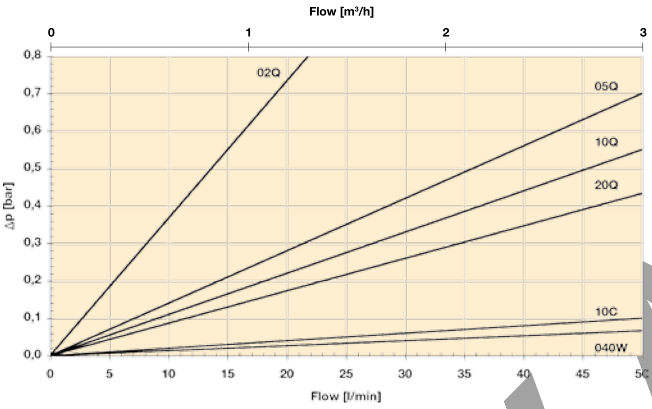
GA2-170/230 housings



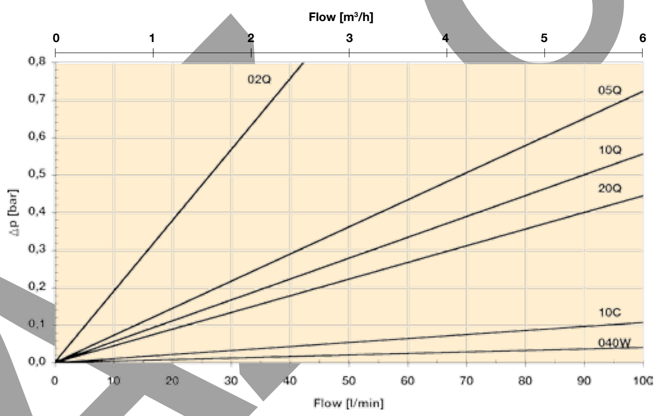
GA Series

Pressure Drop Curves for Elements

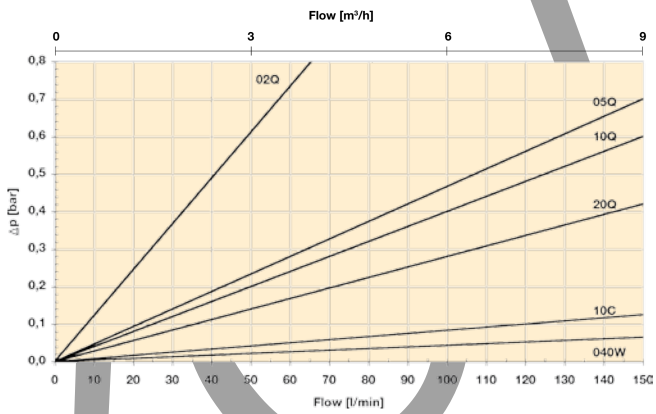
GA1-30 elements (Length 0)



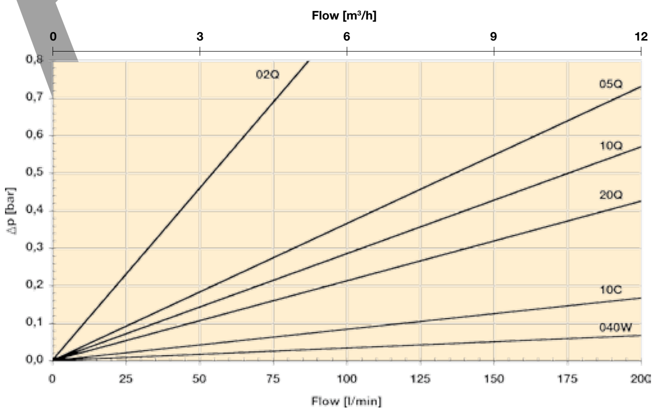
GA1-60 elements (Length 2)



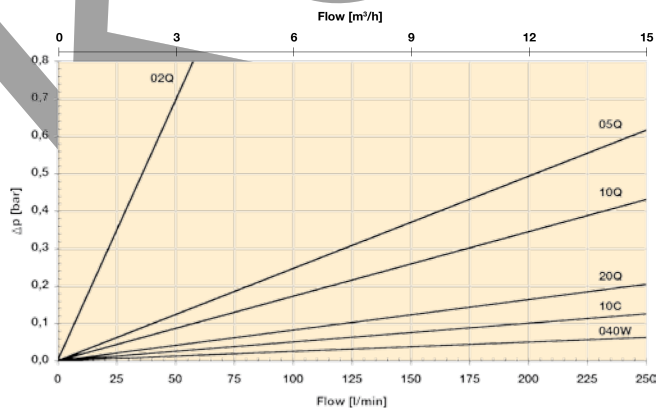
GA1-90 elements (Length 3)



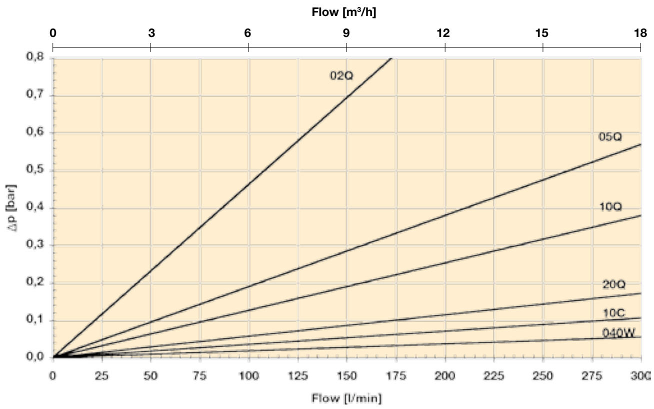
GA1-120 elements (Length 4)



GA2-170 elements (Length 6)



GA2-230 elements (Length 7)



Parker Hannifin
Hydraulic Filter Division Europe
FDHB500UK/GA

GA Series

Medium Pressure Filters

Product Description for GA Complete Filter:

Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8

Table 1

FILTER TYPE	
Model	**CODE**
Medium pressure filter, aluminium	**GA**

Table 2

FILTER SIZE	
Housing size - element length	**CODE**
1-30	0
1-60	**2**
1-90	3
1-120	**4**
2-170	6
2-230	**7**

Table 3

DEGREE OF FILTRATION	
Element type	**CODE**
Microglass III	
Glassfibre 2 µm	02Q
Glassfibre 5 µm	05Q
Glassfibre 10 µm	**10Q**
Glassfibre 20 µm	**20Q**
***LEIF®* elements**	
Glassfibre 2 µm	02QL
Glassfibre 5 µm	05QL
Glassfibre 10 µm	**10QL**
Glassfibre 20 µm	**20QL**
Other medias	
Cellulose 10 µm (nom)	10C
Cleanable metal mesh 40 µm	040W

Table 4

SEAL TYPE	
Seal material	**CODE**
Nitrile	**B**
Fluoroelastomer	V
Neoprene	N

Table 5

INDICATORS	
Options	**CODE**
Visual indicator on right*	**D3**
Visual indicator on left*	D4
Visual-electrical indicator on right*	**E3**
Visual-electrical indicator on left*	E4
Both indicator ports plugged	**P2**

* Indicator ports on other side machined and plugged.

Table 6

BYPASS VALVE	
Bypass/indicator setting	**CODE**
0.8 bar/0.7 bar	B
1.5 bar/1.2 bar	**E**
2.0 bar/1.2 bar	H
No/No	X

Table 7

FILTER CONNECTIONS	
Port size	**CODE**
G¾ (length 0)	G12
G1 (length 2 and 3)	**G16**
G1¼ (length 4)	**G20**
G1½ (length 6 and 7)	**G24**

Table 8

OPTIONS	
Options	**CODE**
With bypass and magnets	**1**
No bypass, with magnets	2
With bypass, no magnets	5
No bypass, no magnets	6

CONVENTIONAL TYPE REPLACEMENT ELEMENTS WITH NITRILE SEALS

Element length	Housing size	Microglass III				Cellulose 10 µm (nom)	Cleanable metal mesh 40 µm
		02Q	05Q	10Q	20Q		
0	1 - 30	937752Q	937753Q	937788Q	937789Q	937720	937821
2	**1 - 60**	937751Q	937754Q	**937787Q**	**937790Q**	937721	937820
3	1 - 90	937750Q	937755Q	937786Q	937791Q	937722	937819
4	**1 - 120**	937749Q	937756Q	**937785Q**	**937792Q**	937723	937818
6	2 - 170	937747Q	937758Q	937783Q	937794Q	937725	937816
7	**2 - 230**	937746Q	937759Q	**937782Q**	**937795Q**	937726	937815

LEIF® REPLACEMENT ELEMENTS

Element length	Housing size	Ecoglass III			
		02QL	05QL	10QL	20QL
0	1 - 30	937822Q	937885Q	937884Q	937883Q
2	**1 - 60**	937823Q	937880Q	**937881Q**	**937882Q**
3	1 - 90	937824Q	937879Q	937878Q	937877Q
4	**1 - 120**	937825Q	937850Q	**937851Q**	**937876Q**
6	2 - 170	937827Q	937848Q	937853Q	937874Q
7	**2 - 230**	937828Q	937847Q	**937854Q**	**937873Q**

SPARE PARTS

Seal kit	CODE	
Seal material	**GA0-4**	**GA6-7**
Nitrile	2049010009	2049010010
Fluoroelastomer	2049010031	2049010032
Neoprene	2049010038	2049010039

Please note the bolded options reflect standard options with reduced lead-time.

GMF iprotect®

Medium Pressure Filters
Max. 600 l/min - 70 bar

A compact, cost effective medium pressure filter

Designed with the iprotect® patented filtration technology

The Parker GMF iprotect® is designed to provide high quality filtration of hydraulic systems, providing new possibilities to reduce the cost of ownership by improving the productivity and profitability.
A new patented design of the filter element ensures the quality of filtration is secured.
With less space available for filters, Parker has taken on board the requirements to provide more compact solutions. A unique feature is the filter element remains inside the filter bowl when changing the filter element. This can save over 500 mm of space envelope in comparison with traditional medium pressure filters.

Contact Information:

Parker Hannifin
Hydraulic Filter Division Europe

European Product Information Centre
Freephone: 00800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IT, PT, SE, SK, UK)
filtrationinfo@parker.com

www.parker.com/hfde

Product Features:

The patented element design guarantees the quality of filtration, wich directly impacts the oil cleanliness level as the usage of pirate type after market filters with unknown quality of filter media is excluded. This in-build safety has a direct, positive impact on the productivity and profitability of equipment.

- Guaranteed quality of filtration
- More compact solutions are possible
- Filter element remains in filter bowl during filter service
- Reduce waste over 50% thanks to re-usable element core
- No risk of installation mistake due to a 'foolproof' design
- Unique OEM branding opportunities
- Easy to intergrate into hydraulic manifold solutions

GMF iprotect®

Features & Benefits

Features	Advantages	Benefits
Patented filter element	Avoid use of non-genuine parts	Guaranteed quality of filtration
Filter element remains in filter bowl	Less space needed to change/service filter	More compact solutions are possible
Environmental-friendly design	Re-usable filter element core located in filter bowl	Reduces environmental waste over 50%
Service-friendly product design	No handling of loose re-usable parts	Reduce service time for filter over 40%
Wide range of differential pressure indicators	Continuous feedback of condition filter elements	Optimized filter element life, contributes to scheduled maintenance

Typical Applications

- Compressor lube oil
- Off-line filter loops
- Machine tools (Automotive standard)
- Hydrostatic drive charge pumps
- Mobile equipment
- Pilot lines for servo controls
- Oil patch drilling equipment
- Injection moulding

The Parker Filtration GMF iprotect® Series Medium Pressure Filters.

This partial list of applications for Parker “GMF” Series Filters has a common factor, the need for an economical, medium pressure range filter with excellent fatigue pressure ratings. Prior to the availability of the “GMF” filter, applications such as those listed were restricted by limitations of a spin-on can, or forced into the higher-cost range of high pressure filters.

The “GMF” Series fills this gap and is now available with environmentally friendly iprotect® elements.

Specification

Pressure ratings:
Maximum allowable operating pressure: 70 bar
Rated fatigue pressure: 56 bar

Connections:
Several threaded port options available, flange faced ports available on GMF size 4.

Connection style	*Model*		
	GMF size 2	GMF size 3	GMF size 4
BSPF(G)	1", 3/4"	1 1/4", 1 1/2"	1 1/2", 2"
SAE	12, 16	16, 24	24, 32
Metric 3000-M			2"

Filter housing:
Head material aluminium.
Bowl material hard anodized aluminium.

Seal material:
Nitrile or fluoroelastomer.

Operating temperature range:
Seal material Nitrile: -20°C to +100°C.
Seal material Fluoroelastomer: -20°C to +120°C.

Bypass valve & indicator settings:
Table following gives bypass valve and corresponding indicator setting.

Bypass	*Indicator*
1.7 bar	1.2 bar
3.5 bar	2.5 bar
6 bar	5 bar

Filter element:
Degree of filtration:
Quantumfiber™ filter media, determined by Multipass-test according to ISO16889

iprotect® QI
Supported with epoxy coated metal wire mesh, end cap material reinforced composite. Collapse pressure rated at 20 bar (ISO 2941)

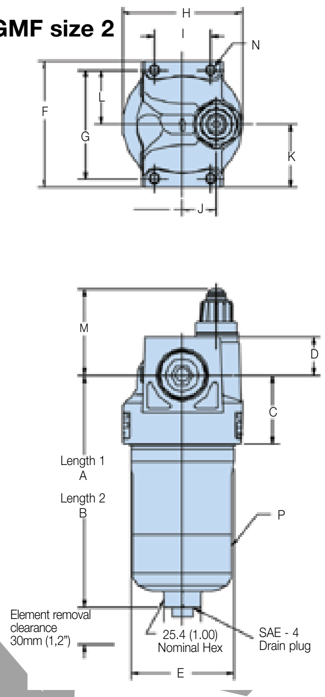
Indicator options (all with SAE8 thread):
- visual M3. - electrical T1.
- electronic F1(PNP). - electronic F2(NPN).
For indicator details see seperate indicator brochure.

Weights (kg):

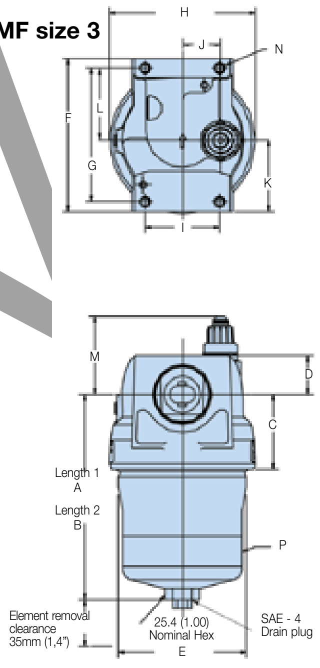
Model	*Length 1*	*Length 2*
GMF size 2	1.1	1.6
GMF size 3	2.0	2.5
GMF size 4	5.6	6.9

Fluid compatibility:
Suitable for use with mineral and vegetable oils, and some synthetic oils. For other fluids, please consult Parker Filtration.

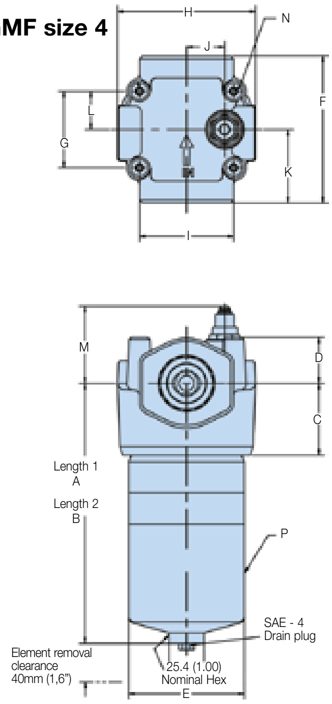
GMF size 2



GMF size 3



GMF size 4



Dimensions in mm (inch)

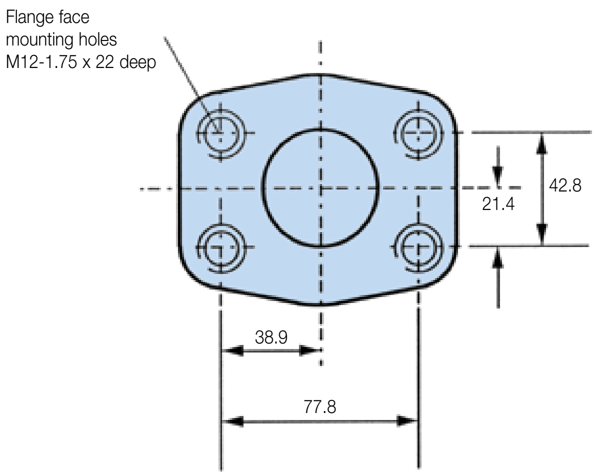
Model	A	B	C	D	E	F	G	H	I	J	K	L	M*	N	P
GMF size 2	156.6 (6.17)	250.7 (9.87)	46.5 (1.83)	25.4 (1.09)	71.1 (2.80)	85.9 (3.38)	73.2 (2.88)	82.6 (3.25)	38.1 (1.50)	22.9 (0.90)	42.9 (1.69)	36.6 (1.44)	53	4xM6-1.0x7.9 deep	20-27 Nm
GMF size 3	170.8 (6.73)	262.4 (10.33)	62.0 (2.44)	32.6 (1.28)	107.2 (4.22)	127.0 (5.00)	111.0 (4.37)	121.9 (4.80)	62.0 (2.44)	31.8 (1.25)	58.8 (2.32)	60.2 (2.37)	53	4xM8-1.25x13 deep	57-68 Nm
GMF size 4	280.9 (11.06)	401.6 (15.81)	77.7 (3.06)	49.5 (1.95)	124.8 (4.91)	158.7 (6.25)	82.6 (3.25)	151.4 (5.96)	101.6 (4.00)	41.1 (1.62)	79.4 (3.12)	41.3 (1.63)	69	4xM8-1.25x16 deep	80-95 Nm

*Note: add 45mm for T and F indicators

GMF iprotect®

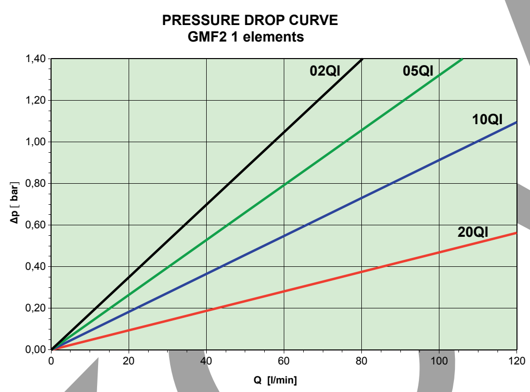
Medium Pressure Filters

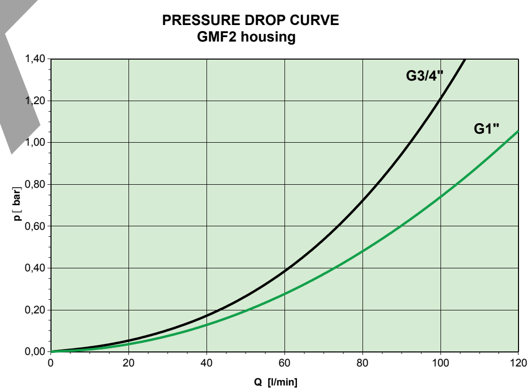
GMF size 4 Flange Face Details (SAE 2” 3000-M)

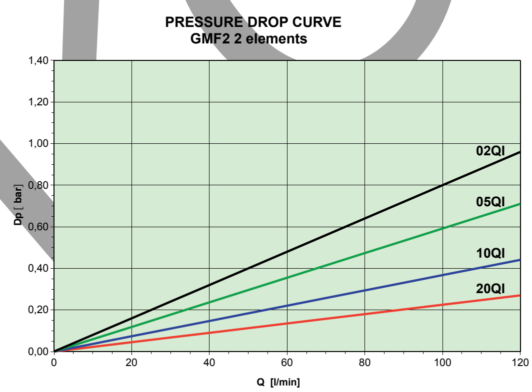


Pressure Drop Curves

With 1.7 bar bypass the recommended initial pressure drop is max 0.5 bar.
With 3.5 bar bypass the recommended initial pressure drop is max 1.0 bar.
With 6.0 bar bypass the recommended initial pressure drop is max 2.0 bar
If the medium used has a viscosity different from 30 cSt, pressure drop over the filter can be estimated as follows:
The total Δp = housing Δph + (element Δpe x working viscosity/30).



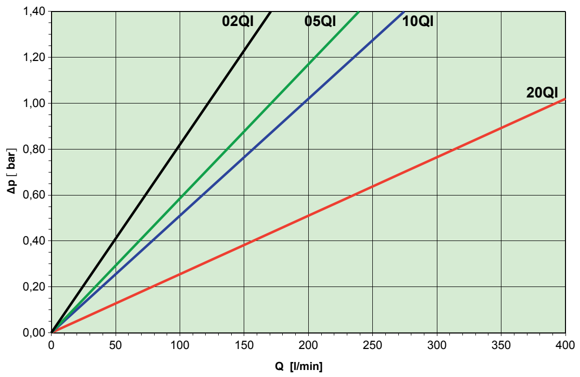




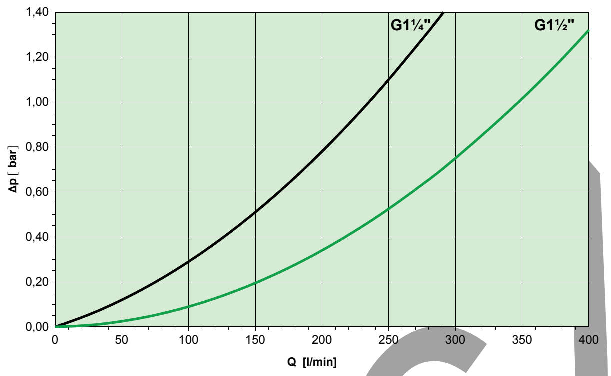
Pressure drop curves based on 30 cSt

Pressure Drop Curves

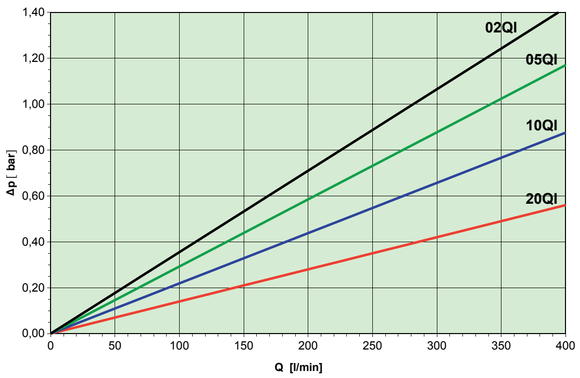
PRESSURE DROP CURVE
GMF3 1 elements



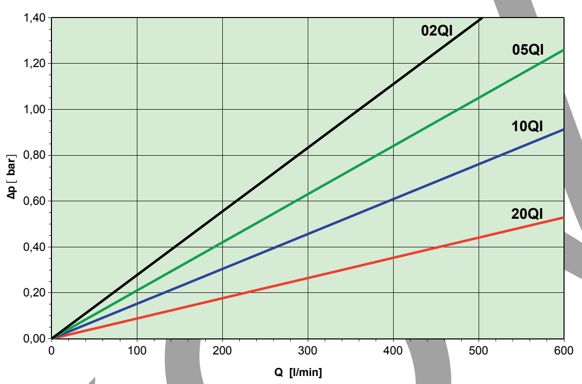
PRESSURE DROP CURVE
GMF3 housing



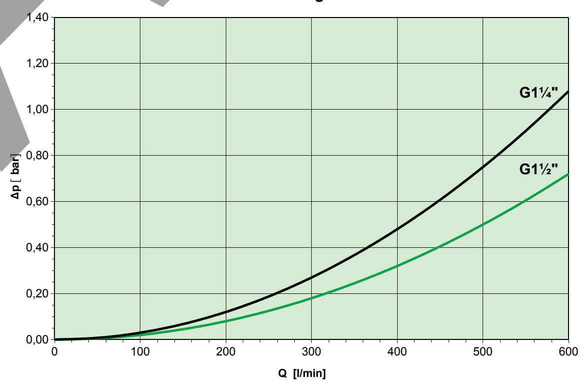
PRESSURE DROP CURVE
GMF3 2 elements



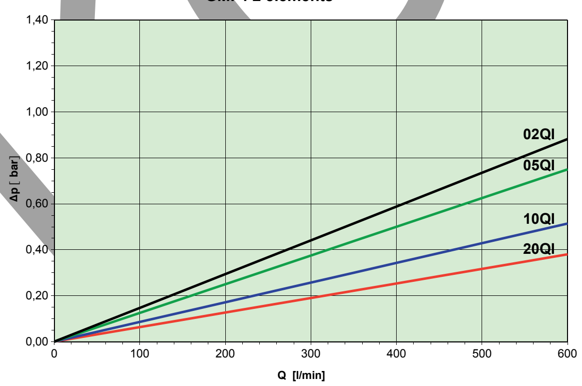
PRESSURE DROP CURVE
GMF4 1 elements



PRESSURE DROP CURVE
GMF4 housing



PRESSURE DROP CURVE
GMF4 2 elements

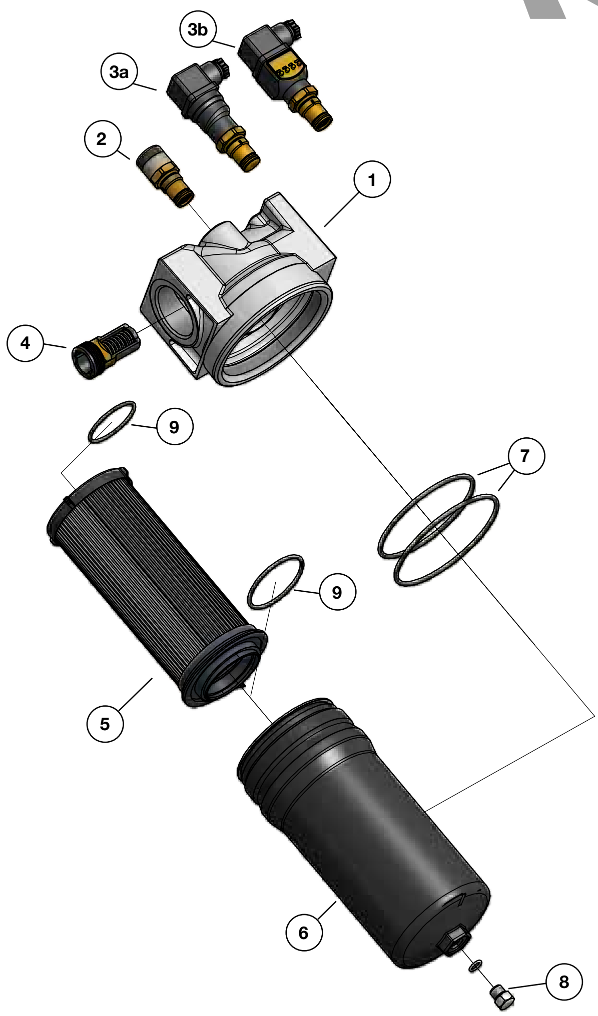


Pressure drop curves based on 30 cSt

GMF iprotect® Series
Medium Pressure Filters

Element Service

A. Stop the system's power unit.
B. Relieve any system pressure in the filter line.
C. Drain the filter bowl if drain port option is provided.
D. Loosen and remove bowl.
E. Remove filter from filter bowl.
F. Check bowl o-ring and dust seal for damage and replace if necessary.
G. Lubricate element o-ring with system fluid and drop in filter bowl with a rotational movement of the filter element.
H. Install bowl by rotating clockwise and tighten to specified torque.
   GMF size 2 – 20-27 Nm (15-20ft. lbs)
   GMF size 3 – 57-68 Nm (42-50ft. lbs)
   GMF size 4 – 80-95 Nm (60-70ft. lbs)
I. Confirm there are no leaks after powering the system.



GMF Filters Parts List

Index	Description
1	**Head**
2	**Indicators with SAE 8 thread (code S08)**
	M3-visual auto reset: 1.2 bar
	M3-visual auto reset: 2.5 bar
	M3-visual auto reset: 5.0 bar
3a	T1-electrical: 1.2 bar c/w DIN 43650 connector
	T1-electrical: 2.5 bar c/w DIN 43650 connector
	T1-electrical: 5.0 bar c/w DIN 43650 connector
3b	F1-electrical PNP with 4 LEDs: 1.2 bar/2.5 bar/5.0 bar, NO type switch
	F2-electrical NPN with 4 LEDs: 1.2 bar/2.5 bar/5.0 bar, NO type switch
	F3-electrical PNP with 4 LEDs: 1.2 bar/2.5 bar/5.0 bar, NC type switch
	F4-electrical NPN with 4 LEDs: 1.2 bar/2.5 bar/5.0 bar, NC type switch
4	**Bypass valve**
	1.7 bar assembly
	3.5 bar assembly
	6,0 bar assembly
5	**Element (see replacement element part numbers)**
6	**Bowl**
	Single length with drain
	Single length without drain
	Double length with drain
	Double length without drain
7	**Bowl and dust seal**
	Nitrile
	Fluoroelastomer
8	**Drain plug: SAE-4**
	Nitrile
	Fluoroelastomer
9	**Element seals are supplied with pos 5**

GMF iprotect® Series

Medium Pressure Filters

Ordering Information (cont.)

Product Configurator

Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7	Box 8
GMF2	**2**	**10QI**	**B**	**T1**	**K**	**G16**	**4**

Box 1

Code	
Model	**Code**
Small size MP filter, T-port	**GMF 2**
Medium size MP filter, T-port	**GMF 3**
Large size MP filter, T-port	**GMF 4**

Box 2

Filter type	
Length	**Code**
Length 1	**1**
Length 2	**2**

Highlights Key (Denotes part number availability)

123	Item is standard
123	Item is standard green option
123	Item is semi standard
123	Item is non standard

Box 3

Degree of filtration				
Quantumfiber™ filter media	**Glass fibre**			
	Media code			
iprotect® QI (20 bar collapse rating)	**02QI**	**05QI**	**10QI**	**20QI**

Box 4

Seal type	
Seal material	**Code**
Fluoroelastomer	**V**
Nitrile	B

Box 5

Indicator	
	Code
Visual indicator	**M3**
Electrical indicator	**T1**
Plugged	**P**
Electronic 4 LED, PNP, N.O.	F1
Electronic 4 LED, NPN, N.O.	F2
Electronic 4 LED, PNP, N.C.	F3
Electronic 4 LED, NPN, N.C.	F4

Box 6

Bypass valve		
Bypass valve	**Indicator**	**Code**
1.7 bar	1.2 bar	G
3.5 bar	2.5 bar	**K**
6.0 bar	5.0 bar	M

When filter includes a bypass valve but not an indicator, code denotes bypass setting.

Box 7

Filter connection		
Ports		**Code**
GMF size 2:	Thread G3/4	G12
	Thread G1	**G16**
GMF size 3:	Thread G1 1/4	G20
	Thread G1 1/2	**G24**
GMF size 4:	Thread G1 1/2	G24
	Thread G2	**G32**
	SAE flange 2" 3000-M	**R32**

Box 8

Options	
Options	**Code**
Standard	**1**
Bowl with drain port	4
ATEX certified* (Category 2, non-electrical equipment)	EX

Note 1*: For ATEX classified filters add EX after the code.
ATEX certified filters with electrical indicator are available on request.
Visual indicators are classified as Category 2, non electrical equipment.
Filter assemblies with EX code will be supplied with a dedicated name plate.
Pls consult Parker Filtration for any questions related to the classification of our products.

Degree of filtration						Code
Average filtration beta ratio ß (ISO 16889) / particle size µm [c]						
ßx(c)=2	**ßx(c)=10**	**ßx(c)=75**	**ßx(c)=100**	**ßx(c)=200**	**ßx(c)=1000**	
% efficiency, based on the above beta ratio (ßx)						
50.0%	**90.0%**	**98.7%**	**99.0%**	**99.5%**	**99.9%**	
N/A	N/A	N/A	N/A	N/A	4.5	**02QI**
N/A	N/A	4.5	5	6	7	**05QI**
N/A	6	8.5	9	10	12	**10QI**
6	11	17	18	20	22	**20QI**

Please note the bolded options reflect standard options with a reduced lead-time of (4) weeks or less. Consult Parker Filtration on all other lead-time options.

Nominal flow (l/min) for filter assembly at viscosity 30cSt				
Filter size, port size	**02QI**	**05QI**	**10QI**	**20QI**
GMF 21 - G1"	30	40	55	90
GMF 22 - G1"	60	80	90	100
GMF 31 - G1½"	70	90	120	200
GMF 32 - G1½"	150	180	230	270
GMF 41 - G2"	200	250	350	520
GMF 42 - G2"	350	400	530	600

* Fluoroelastomers are available under various registered trademarks, including Viton (a registered trademark of DuPont) and Fluorel (a registered trademark of 3M)

GMF Seal Kits	
Order code	**Filter size and seal type**
930000140	GMF21 & GMF22 Seal Kit Nitrile
930000141	GMF31 & GMF32 Seal Kit Nitrile
930000142	GMF41 & GMF42 Seal Kit Nitrile
930000149	GMF21 & GMF22 Seal Kit Fluoroelastomer
930000150	GMF31 & GMF32 Seal Kit Fluoroelastomer
930000151	GMF41 & GMF42 Seal Kit Fluoroelastomer

GMF spare elements

Standard products table

Fluoroelastomer seals Element type	iprotect® QI Order code	Collapse pressure 20 bar Description
GMF 21 Glassfibre 2 µm	938895Q	GMF 21 02QI V Element
GMF 21 Glassfibre 5 µm	938896Q	GMF 21 05QI V Element
GMF 21 Glassfibre 10 µm	938897Q	GMF 21 10QI V Element
GMF 21 Glassfibre 20 µm	938898Q	GMF 21 20QI V Element
GMF 22 Glassfibre 2 µm	938899Q	GMF 22 02QI V Element
GMF 22 Glassfibre 5 µm	938900Q	GMF 22 05QI V Element
GMF 22 Glassfibre 10 µm	938901Q	GMF 22 10QI V Element
GMF 22 Glassfibre 20 µm	938902Q	GMF 22 20QI V Element
GMF 31 Glassfibre 2 µm	938903Q	GMF 31 02QI V Element
GMF 31 Glassfibre 5 µm	938904Q	GMF 31 05QI V Element
GMF 31 Glassfibre 10 µm	938905Q	GMF 31 10QI V Element
GMF 31 Glassfibre 20 µm	938906Q	GMF 31 20QI V Element
GMF 32 Glassfibre 2 µm	938907Q	GMF 32 02QI V Element
GMF 32 Glassfibre 5 µm	938908Q	GMF 32 05QI V Element
GMF 32 Glassfibre 10 µm	938909Q	GMF 32 10QI V Element
GMF 32 Glassfibre 20 µm	938910Q	GMF 32 20QI V Element
GMF 41 Glassfibre 2 µm	938911Q	GMF 41 02QI V Element
GMF 41 Glassfibre 5 µm	938912Q	GMF 41 05QI V Element
GMF 41 Glassfibre 10 µm	938913Q	GMF 41 10QI V Element
GMF 41 Glassfibre 20 µm	938914Q	GMF 41 20QI V Element
GMF 42 Glassfibre 2 µm	938915Q	GMF 42 02QI V Element
GMF 42 Glassfibre 5 µm	938916Q	GMF 42 05QI V Element
GMF 42 Glassfibre 10 µm	938917Q	GMF 42 10QI V Element
GMF 42 Glassfibre 20 µm	938918Q	GMF 42 20QI V Element

Ordering Information

Standard products table

Part numbers	Flow (l/min)	Model number	Element length	Media rating (µ)	Seals	Indicator	Bypass settings	Ports	Element collapse pressure	Replacement elements
GMF2205QIVPKG161	60	GMF size 2	2	5	Fluorelastomer	Plugged indicator port	3.5 bar	G1"	20 bar	**938900Q**
GMF2210QIVPKG161	80	GMF size 2	2	10	Fluorelastomer	Plugged indicator port	3.5 bar	G1"	20 bar	**938901Q**
GMF2220QIVPKG161	100	GMF size 2	2	20	Fluorelastomer	Plugged indicator port	3.5 bar	G1"	20 bar	**938902Q**
GMF3205QIVPKG241	200	GMF size 3	2	5	Fluorelastomer	Plugged indicator port	3.5 bar	G1½"	20 bar	**938908Q**
GMF3210QIVPKG241	280	GMF size 3	2	10	Fluorelastomer	Plugged indicator port	3.5 bar	G1½"	20 bar	**938909Q**
GMF3220QIVPKG241	320	GMF size 3	2	20	Fluorelastomer	Plugged indicator port	3.5 bar	G1½"	20 bar	**938910Q**
GMF4205QIVPKG321	490	GMF size 4	2	5	Fluorelastomer	Plugged indicator port	3.5 bar	G2"	20 bar	**938916Q**
GMF4210QIVPKG321	530	GMF size 4	2	10	Fluorelastomer	Plugged indicator port	3.5 bar	G2"	20 bar	**938917Q**
GMF4220QIVPKG321	600	GMF size 4	2	20	Fluorelastomer	Plugged indicator port	3.5 bar	G2"	20 bar	**938918Q**

Note: Filter assemblies ordered from the product configurator on previous page are on extended lead times. Where possible, please make your selection from the table above.
Selecting the M3 or T1 type indicator will not extend the lead time for the standard products.