

15P/30P Series

High Pressure Filters

Max 200 l/min - 207 bar



When it comes to lightweight filter solutions

Compact aluminium housing and lightweight design

The 15P/30P Series utilizes a compact aluminium housing with 2 head sizes and 2 bowl lengths, large ports and wide flow paths. Maximum pressure 207 bar. Maximum flow 200 l/min. Efficient filtration and maximized element life.



Contact Information:

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Product Features:

- 15P/30P utilizes a compact aluminium housing with 2 head sizes and 2 bowl lengths.
- Microglass III filter media.
- Maximum pressure 207 bar. Maximum flow 200 l/min.
- A quality filter for better control and long component life.

15P/30P Series

High Pressure Filters

Features & Benefits

| Features | Advantages | Benefits |
|--|---|--|
| Compact aluminium housing | Light weight but still robust design | Reliable and continuous operation both in mobile and industrial applications |
| Two head sizes and two bowl lengths | Optimised sizing | Efficient filtration |
| | | Right filter for each application |
| Large ports and wide flow paths | Low differential pressure across housing and element | Higher flow rates possible |
| | | Less lost energy |
| Microglass III replacement elements | Multi-layered design produced high capacity and efficiency | Great performance value |
| | | Reliable performance throughout element life |
| Visual, electrical and electronic indicators available | Wire support reduces pleat bunching, keeps performance consistent | Reduces downtime, maximises element life |
| | Check element condition at a glance | Optimise element life, prevent bypassing |
| | Right style for the application | Matches your system electrical connections |

Typical Applications

- Saw mills
- Aircraft ground support equipment
- Asphalt pavers
- Hydraulic fan drives
- Power steering circuits
- Domestic refuse vehicles
- Cement trucks
- Servo control protection
- Logging equipment



The Parker Filtration 15P/30P Series High Pressure Filters.

These application examples have one thing in common...the need for clean hydraulic fluid.

Modern high pressure hydraulic systems are demanding. Better controls and long component life are expected. To deliver the high standards of performance, hydraulic components are built with tighter tolerances which increases their sensitivity to contamination.

That's where Parker pressure filters come into play. They filter out ingressed contamination before it jams a valve or scores a cylinder. They block pump generated debris before it gets to servo or proportional valves. Parker pressure filters are a key ingredient in meeting today's system demands.

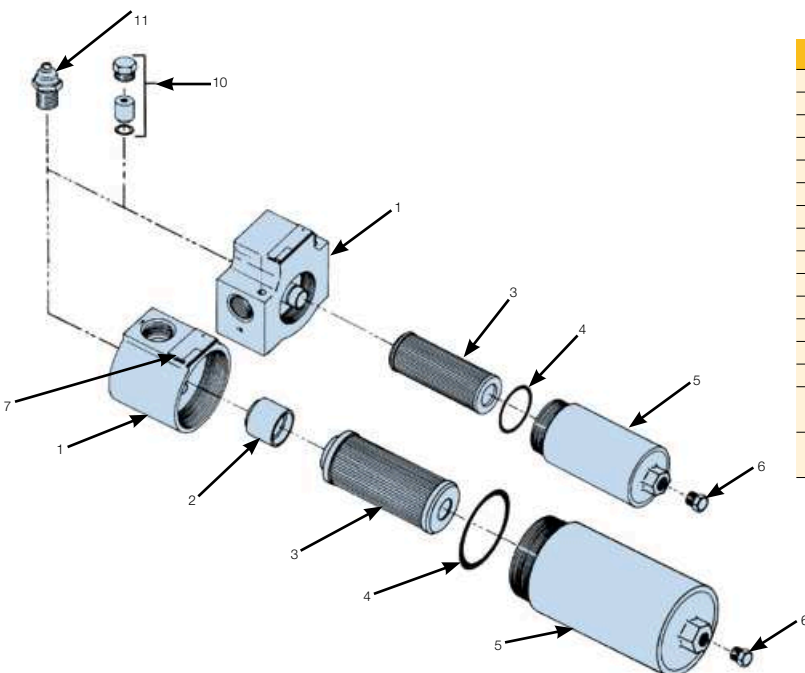
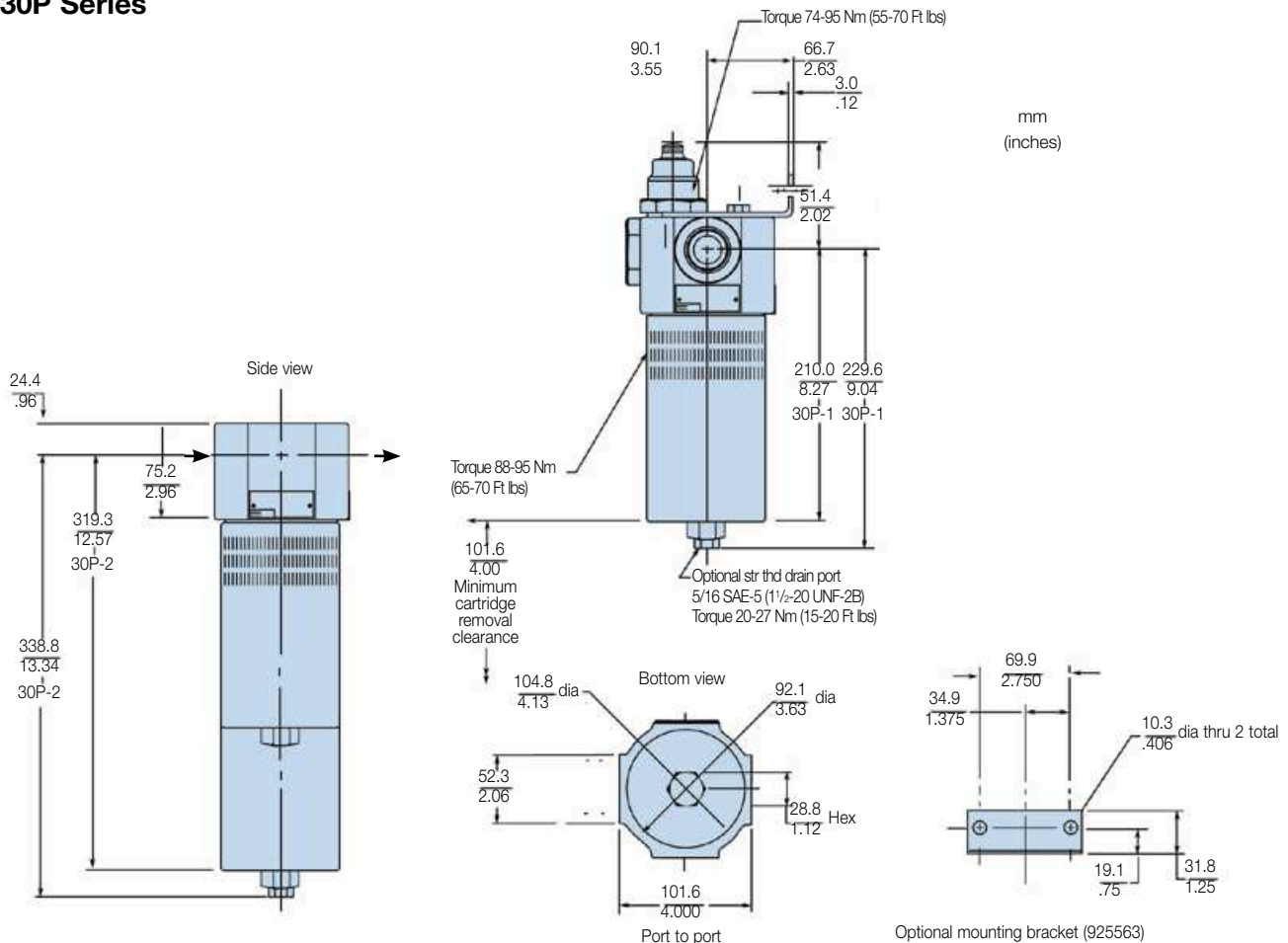
Put your hydraulic systems in the care of Parker Filtration. We are committed to designing and building the best filters available to industry.

15P/30P Series

High Pressure Filters

Installation Details (cont.)

30P Series



| Index | Description | 15P | 30P |
|-------|---------------------------------------|-----------------------------------|---------|
| 1 | Head | | |
| 2 | Bypass assembly | | |
| 3 | Element | See chart in product configurator | |
| 4 | Bowl O-ring - Nitrile | OR04074 | OR06037 |
| | Bowl O-ring - fluoroelastomer | V92138 | V92151 |
| 5 | Bowl | | |
| 6 | Drain plug - c/w buna seal | | |
| | Drain plug - c/w Fluoroelastomer seal | | |
| 7 | Nameplate | | |
| 10 | Blank indicator kit | | |
| 11 | Indicators | | |
| | M3 - Visual auto reset indicator | FMUM3KVMU14M | |
| | T1 - Electrical indicator | FMUT1KVMU14M | |
| | F1 - Electronic indicator | | |
| | PNP with 4 LED | FMUF1KVMU14M | |
| | F2 - Electronic indicator | | |
| | NPN with 4 LED | FMUF2KVMU14M | |

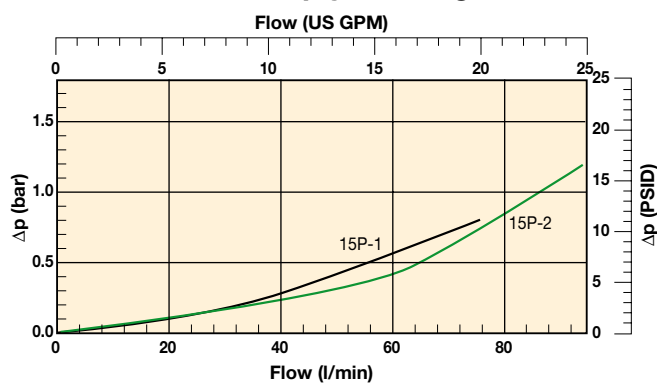
Pressure Drop Curves

The recommended level of the initial pressure drop is max. 1.2 bar.

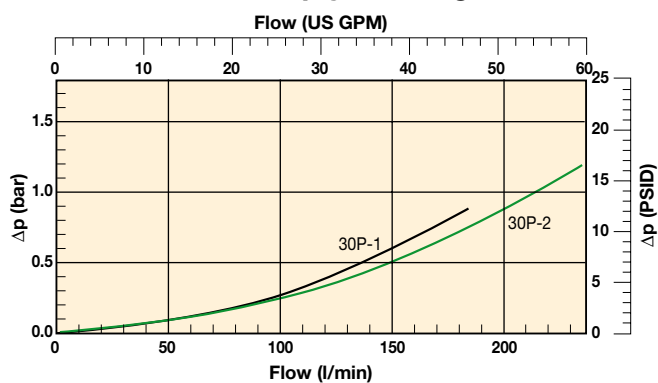
If the medium used has a viscosity different from 30 cSt, pressure drop over the filter can be estimated as follows:

$$\Delta p = (\Delta p_{30} \times \text{viscosity of medium used}) / 30 \text{ cSt.}$$

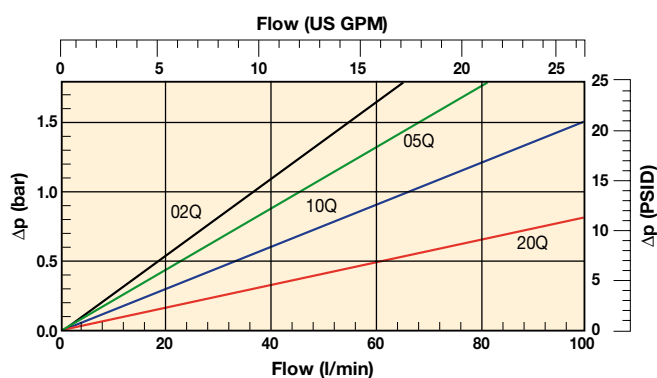
15P Empty Housing



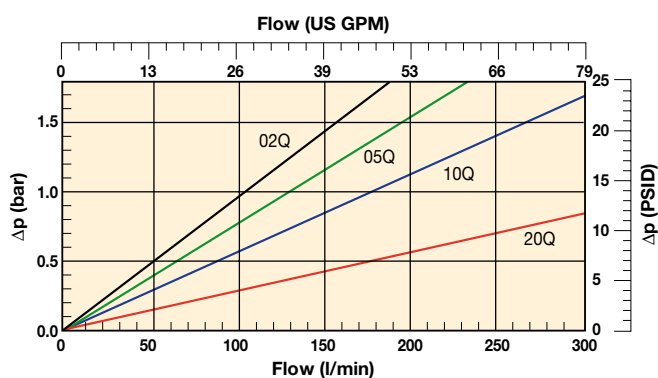
30P Empty Housing



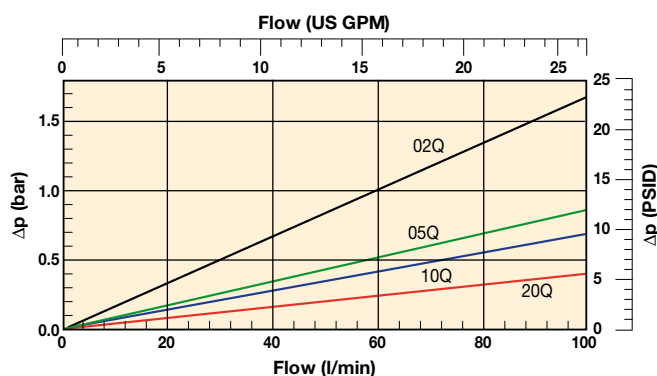
15P-1 Elements



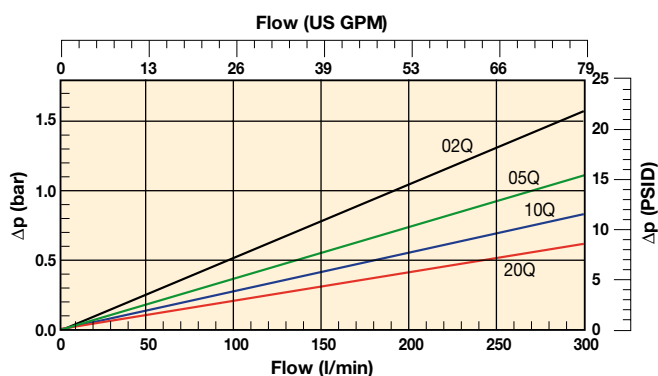
30P-1 Elements



15P-2 Elements



30P-2 Elements



15P/30P Series

High Pressure Filters

Ordering Information

Standard products table

| Part number | Supersedes | Flow (l/min) | Model number | Element length | Media rating (µ) | Seals | Indicator | Bypass settings | Ports | Replacement elements |
|------------------------|-------------------------|--------------|--------------|----------------|------------------|---------|------------|-----------------|-------------------|----------------------|
| 15P110QBM3KG121 | 15P-1-10Q-M2-50-B2B2-1 | 45 | 15P | Length 1 | 10 | Nitrile | Visual | 3.5 bar | G $\frac{1}{4}$ " | 939102Q |
| 15P110QBT1KG121 | 15P-1-10Q-TW3-50-B2B2-1 | 45 | 15P | Length 1 | 10 | Nitrile | Electrical | 3.5 bar | G $\frac{1}{4}$ " | 939102Q |
| 15P210QBM3KG121 | 15P-2-10Q-M2-50-B2B2-1 | 70 | 15P | Length 2 | 10 | Nitrile | Visual | 3.5 bar | G $\frac{1}{4}$ " | 939106Q |
| 15P210QBT1KG121 | 15P-2-10Q-TW3-50-B2B2-1 | 70 | 15P | Length 2 | 10 | Nitrile | Electrical | 3.5 bar | G $\frac{1}{4}$ " | 939106Q |
| 30P110QBM3KG161 | 30P-1-10Q-M2-50-C2C2-1 | 120 | 30P | Length 1 | 10 | Nitrile | Visual | 3.5 bar | G1" | 939110Q |
| 30P110QBT1KG161 | 30P-1-10Q-TW3-50-C2C2-1 | 120 | 30P | Length 1 | 10 | Nitrile | Electrical | 3.5 bar | G1" | 939110Q |
| 30P210QBM3KG161 | 30P-2-10Q-M2-50-C2C2-1 | 170 | 30P | Length 2 | 10 | Nitrile | Visual | 3.5 bar | G1" | 939114Q |
| 30P210QBT1KG161 | 30P-2-10Q-TW3-50-C2C2-1 | 170 | 30P | Length 2 | 10 | Nitrile | Electrical | 3.5 bar | G1" | 939114Q |

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.

Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.

Product configurator

| | | | | | | | |
|------------|----------|------------|----------|-----------|----------|------------|----------|
| Box 1 | Box 2 | Box 3 | Box 4 | Box 5 | Box 6 | Box 7 | Box 8 |
| 15P | 1 | 10Q | B | M3 | K | G12 | 1 |

Box 1

| Code | |
|------------------------------|------------|
| Model | Code |
| High pressure filter, T-port | 15P |
| High pressure filter, T-port | 30P |

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 |

Box 3

| Degree of filtration | | | |
|------------------------|--|-------------|----------------------------------|
| Element media | | Glass fibre | |
| | | Media code | |
| Microglass III element | | 02Q | 05Q 10Q 20Q |

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 |
| No indicator port | N |
| 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 and indicator settings | | |
|-------------------------------|-----------|----------|
| Bypass valve | Indicator | Code |
| 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 | |
|-----------------------------|------------|
| Connections | Code |
| 15P: Thread G $\frac{1}{4}$ | G12 |
| Thread M27, ISO 6149 | M27 |
| 30P: Thread G 1 | G16 |
| Thread M33, ISO 6149 | M33 |

Box 8

| Options | |
|--------------------|----------|
| Options | Code |
| Standard | 1 |
| Drain port on bowl | 4 |

| Replacement elements with nitrile seals | | | | |
|---|----------------|----------------|----------------|----------------|
| Media | 15P-1 | 15P-2 | 30P-1 | 30P-2 |
| 02Q | 939100Q | 939104Q | 939108Q | 939112Q |
| 05Q | 939101Q | 939105Q | 939109Q | 939113Q |
| 10Q | 939102Q | 939106Q | 939110Q | 939114Q |
| 20Q | 939103Q | 939107Q | 939111Q | 939115Q |

Nominal flow (l/min) at viscosity 30 cSt

| | | | | |
|--------------|-----|-----|-----|-----|
| Filter model | 02Q | 05Q | 10Q | 20Q |
| 15P-1 | 25 | 30 | 45 | 70 |
| 15P-2 | 40 | 60 | 70 | 90 |
| 30P-1 | 70 | 90 | 120 | 170 |
| 30P-2 | 120 | 150 | 170 | 200 |

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



100P Series

High Pressure Filters

Max 1000 l/min - 414 bar



**When it comes to
high flow capacity
for high pressure
systems**

A high flow rate filter solution

The 100P Series design means on element change only the bowl end-cap has to be removed. Microglass III glassfibre media is standard. Maximum pressure 414 bar. Maximum flow 1000 l/min. An ideal solution where space is at a premium.



Contact Information:

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Hydraulic Filter Division Europe

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(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:

- 100P design, only the bowl end-cap is removed on element change.
- Microglass III glassfibre media is standard.
- Maximum pressure 414 bar. Maximum flow 1000 l/min.
- An ideal solution where space is at a premium.

100P Series

High Pressure Filters

Features & Benefits

| Features | Advantages | Benefits |
|--|---|---|
| High 414 bar pressure rating | Strong and robust housing for heavy duty applications | Reliable and continuous operation for open and closed loop applications |
| Flow rates up to 1000 l/min | Pressure filtration possible for high flow rates | Excellent protection of high performance machinery |
| Optional reverse flow valve | Allows reverse flow and prevents back wash of element | Ideal for applications where back flow is expected |
| Bottom access bowl | Only bottom of the bowl must be opened for element change | Easy service |
| Microglass III replacement elements | Multi-layered design produced high capacity and efficiency | Great performance value |
| | | Reliable performance throughout element life |
| Visual and electrical indicators available | Wire support reduces pleat bunching, keeps performance consistent | Reduces downtime, maximises element life |
| | Check element condition at a glance | Optimises element life, prevents bypassing |
| | Right style for the application | Matches your system electrical connections |

Typical Applications

- Drilling rigs
- Power packs
- Oil/gas industry
- Flight simulators
- Test rigs

The Parker Filtration Model 100P High Pressure Filters.

The 100P Series is designed to meet the growing demand for high-pressure filters with a flow rate capacity of up to 1000 l/min at 414 bar working pressure. For systems where reverse flow can be expected, an optional integrated reverse flow valve avoids back wash of contamination. When changing the element, only the end cap of the bowl has to be removed. The filter is ideal for applications where space is at a premium. The filter media used in the elements is high quality Microglass III glass fibre.



Specification

Pressure ratings:

Maximum allowable operating pressure 414 bar.

Filter housing pressure pulse fatigue tested: 3×10^6 pulses 0 - 276 bar.

Connections:

Inlet and outlet connections are threaded internally or flange faced.

Threads G1½", G2" (ISO 228/1), SAE 24, SAE 32.

or flanges 1½" SAE 6000, 2" SAE 6000, 1½" SAE 6000-M, 2" SAE 6000-M.

*6000-M is a SAE style with appropriate metric fixing threads.

Filter housing:

Head material cast iron (GSI).

Bowl material extruded steel, max torque 200 Nm.

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:

Opening pressure 7.0 bar.

Options:

Reverse flow valve, which directs back flow from port to port.

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).

Indicator options:

Indicating differential pressure: 5.0 bar.

- visual indicator.

- electrical indicator.

Weights (kg):

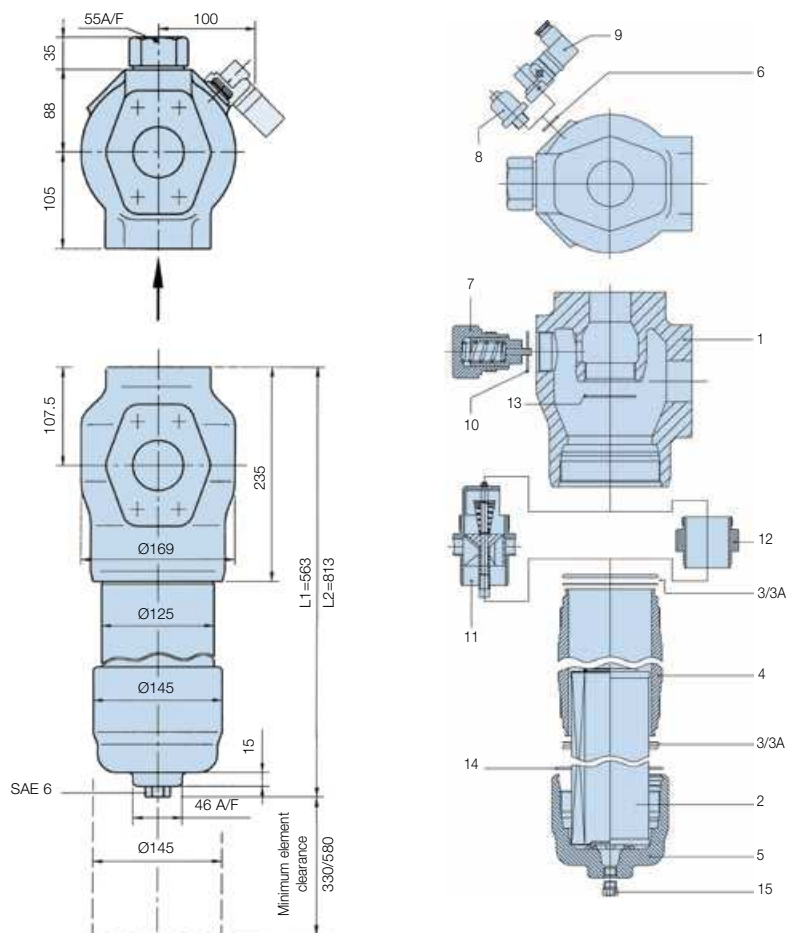
100P-1: 37 kg.

100P-2: 47 kg.

Fluid compatibility:

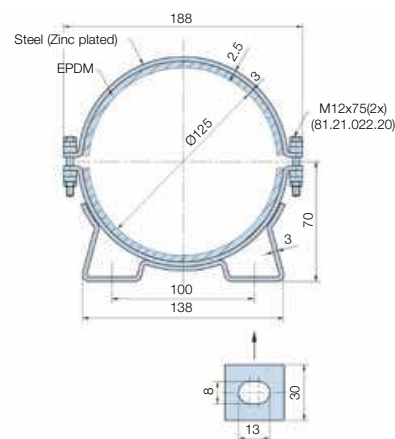
Suitable for use with mineral and vegetable oils, and some synthetic oils. For other fluids, please consult Parker Filtration.

Installation Details



Note: For installation drawings of the SAE 1½" and 2" flanges, contact Parker.

Mounting Clamp Item 16



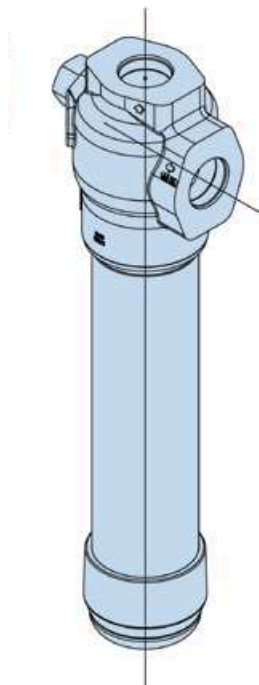
Type H model 1000

| | |
|----|---------------------------|
| 1 | Filter head |
| 2 | Filter element |
| 3 | Bowl seal |
| 3A | Bowl back-up ring |
| 4 | Housing |
| 5 | Cover |
| 6 | Indicator seal |
| 7 | Bypass set |
| 8 | Visual indicator |
| 9 | Electrical indicator |
| 10 | Bypass seal |
| 11 | Reverse flow set |
| 12 | Adaptor |
| 13 | Adaptor/reverse flow seal |
| 14 | Cover seal |
| 15 | Drain plug |
| 16 | Mounting clamp |

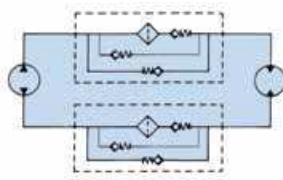
100P Series

High Pressure Filters

Additional Information

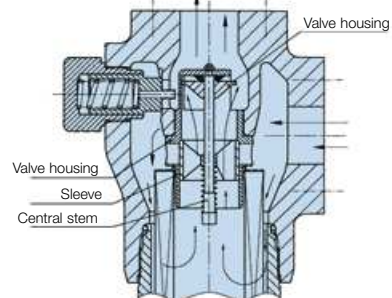


Filter with Reverse Flow Valve

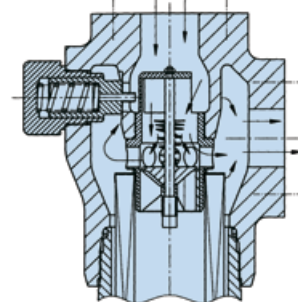


Circuit symbol

Normal Flow Condition



Reverse Flow Condition



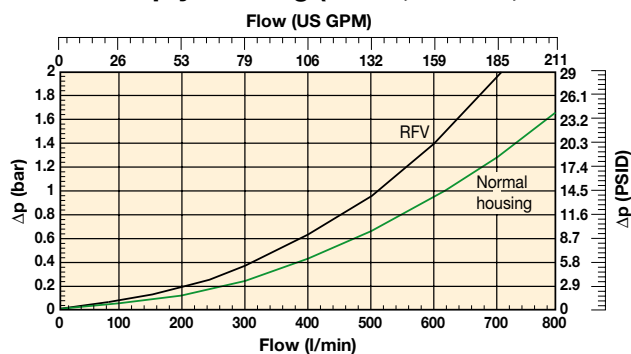
Pressure Drop Curves

The recommended level of the initial pressure drop is max. 2.3 bar.

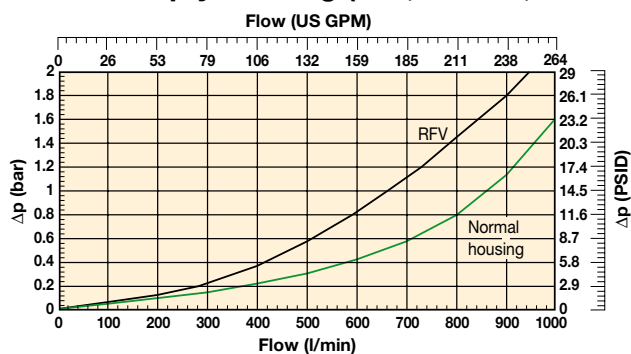
If the medium used has a viscosity different from 30 cSt, pressure drop can be estimated as follows:

The total Δp = housing Δp_h + (element $\Delta p_e \times \text{working viscosity}/30$).

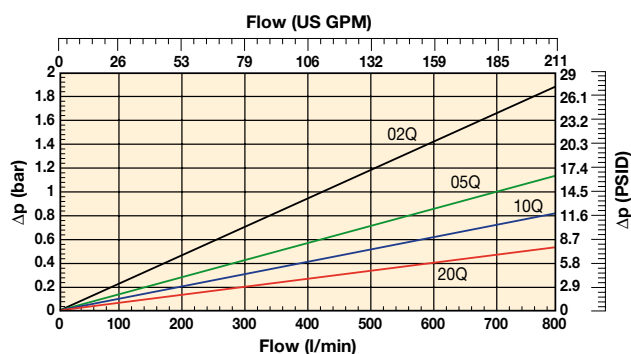
100P-1 Empty Housing (G1½", SAE 24, SAE 1½")



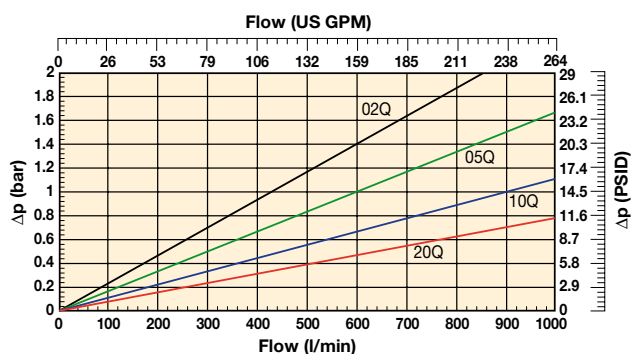
100P-2 Empty Housing (G2", SAE 32, SAE 2")



100P-1 Elements



100P-2 Elements



Ordering Information

Standard products table

| Part number | Supersedes | Flow (l/min) | Model number | Element length | Media rating (µ) | Seals | Indicator | Bypass settings | Ports | Replacement elements | Supersedes |
|-------------------------|--------------------|--------------|--------------|----------------|------------------|---------|-----------|-----------------|------------------------|----------------------|------------|
| 100P105QBM4MF241 | 1074A.2HN70.FZ1210 | 600 | 100P | Length 1 | 5 | Nitrile | Visual | 7.0 bar | SAE flange 1 1/2" 6000 | 939061Q | 1070Z121A |
| 100P110QBM4MF241 | 1074A.2HN70.FZ1220 | 700 | 100P | Length 1 | 10 | Nitrile | Visual | 7.0 bar | SAE flange 1 1/2" 6000 | 939062Q | 1070Z122A |
| 100P120QBM4MF241 | 1074A.2HN70.FZ1230 | 800 | 100P | Length 1 | 20 | Nitrile | Visual | 7.0 bar | SAE flange 1 1/2" 6000 | 939063Q | 1070Z123A |
| 100P205QBM4MF321 | 1074A.2HN70.TZ2210 | 840 | 100P | Length 2 | 5 | Nitrile | Visual | 7.0 bar | SAE flange 2" 6000 | 939065Q | 1070Z221A |
| 100P210QBM4MF321 | 1074A.2HN70.TZ2220 | 920 | 100P | Length 2 | 10 | Nitrile | Visual | 7.0 bar | SAE flange 2" 6000 | 939066Q | 1070Z222A |
| 100P220QBM4MF321 | 1074A.2HN70.TZ2230 | 1000 | 100P | Length 2 | 20 | Nitrile | Visual | 7.0 bar | SAE flange 2" 6000 | 939067Q | 1070Z223A |

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

Product configurator

| | | | | | | | |
|-------------|----------|------------|----------|-----------|----------|------------|----------|
| Box 1 | Box 2 | Box 3 | Box 4 | Box 5 | Box 6 | Box 7 | Box 8 |
| 100P | 2 | 10Q | B | M4 | M | F32 | 1 |

Box 1

| Code | |
|-------------------------|-------------|
| Model | Code |
| Large HP filter, L-port | 100P |

Box 2

| Filter type | |
|-------------|----------|
| Length | Code |
| Length 1 | 1 |
| Length 2 | 2 |

Box 3

| Degree of filtration | | | |
|------------------------|--|-------------|------------|
| Element media | | Glass fibre | |
| Microglass III element | | Media code | |
| | | 02Q | 05Q |
| | | 10Q | 20Q |

Box 4

| Seal type | |
|-----------------|----------|
| Seal material | Code |
| Nitrile | B |
| Fluoroelastomer | V |

Box 5

| Indicator | |
|--|-----------|
| | Code |
| Indicator port plugged | P |
| Visual indicator | M4 |
| Electrical indicator | T2 |
| Electrical indicator with red lamp 28 Vdc, N.O. | T3 |
| Electrical indicator with red lamp 110 VAC, N.O. | T4 |
| Electrical indicator with red lamp 250 VAC, N.O. | T5 |

Box 6

| Bypass and indicator settings | | |
|-------------------------------|-----------|----------|
| Bypass valve | Indicator | Code |
| 7.0 bar | 5.0 bar | M |

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

Box 7

| Filter connection | |
|--------------------------|------------|
| Connections | Code |
| Thread G 1 1/2 | G24 |
| Thread G 2 | G32 |
| Thread SAE 24 | S24 |
| Thread SAE 32 | S32 |
| SAE flange 1 1/2" 6000 | F24 |
| SAE flange 1 1/2" 6000-M | on request |
| SAE flange 2" 6000 | F32 |
| SAE flange 2" 6000-M | on request |

Box 8

| Options | |
|--|----------|
| Options | Code |
| Standard | 1 |
| Reverse flow valve | 3 |
| 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 |
| 02Q | 939060Q | 939064Q |
| 05Q | 939061Q | 939065Q |
| 10Q | 939062Q | 939066Q |
| 20Q | 939063Q | 939067Q |

| Nominal flow (l/min) at viscosity 30 cSt | | | | |
|--|-----|-----|-----|------|
| Filter port size | 02Q | 05Q | 10Q | 20Q |
| 100P-1, 1 1/2" | 540 | 600 | 700 | 800 |
| 100P-2, 2" | 700 | 840 | 920 | 1000 |

| Seal Kit and Mounting Clamp | |
|-----------------------------|--------------|
| Options | Code |
| Seal kit (nitrile) | 8069000070 |
| Seal kit (fluoroelastomer) | 8061000013 |
| Mounting Clamp | 84.47.265.01 |

| Spare Indicators | |
|------------------|--------|
| Part Number | Option |
| 8060050033 | M4 |
| 8060070002 | T2 |
| 8060070007 | T3 |
| 8060070006 | T5 |

Note: Refer to Box 5 for options explanation.

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 |

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

Note 1: Part numbers featured with bold highlighted codes will ensure a 'standard' product selection.

Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.



EPF *iprotect*®

(Ecological Pressure Filter)

High Pressure Filters
Max 700 l/min - 450 bar



A compact, cost effective pressure filter solution

Designed with the *iprotect*® patented filtration technology

The Parker EPF *iprotect*® (Ecological High Pressure Filter) is designed to provide high quality filtration of hydraulic systems, providing new possibilities to reduce the cost of ownership by improving their productivity and profitability.

A radical, innovative approach was applied with the design of the EPF *iprotect*®, suitable for a flow capacity up to 700 l/min at 450 bar working pressure.

A new patented design of the filter element allows integration of the bypass valve and element core as re-usable parts in the filter bowl.

This makes the product fool proof as there is no risk of forgetting to re-install re-usable parts.

With less space being available for filters, Parker has taken on board the requirement 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 500mm of space envelope in comparison with traditional high pressure filters.



Product Features:

The patented element design guarantees the quality of filtration, which 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 of 50%
- No risk of installation mistakes due to a 'foolproof' design
- Unique OEM branding opportunities
- Easy to integrate into hydraulic manifold solutions

| 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 Reduce service time for filter over 40% |
| Environmentally-friendly design | Reduces environmental waste over 50% | Lower disposal cost |
| Service-friendly product design | No handling of loose re-usable parts | No risk of making mistakes during change of element |
| Bypass valve integral part of filter bowl | Easy to integrate in manifold systems | More compact and lower cost of manifold (only one cavity is needed) |
| | Lower pressure lost across filter | Saving energy, improving system efficiency |
| Wide range of differential pressure indicators | Continuous feedback of condition filter elements | Optimizing filter element life |
| | | Contributes to scheduled maintenance |

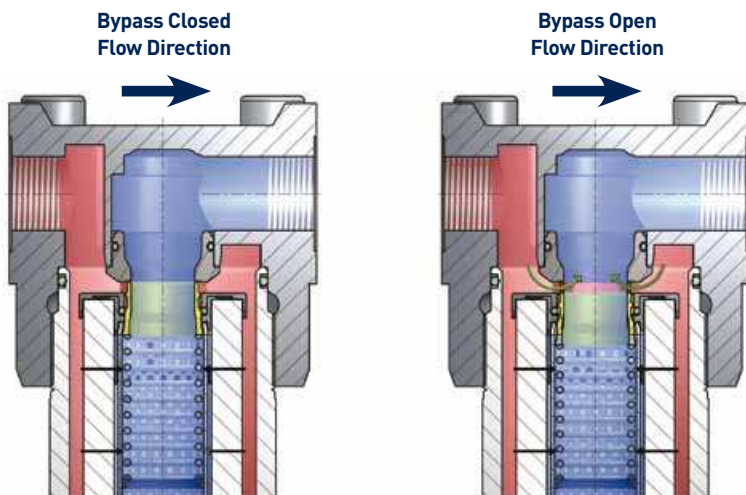
Typical Applications

- Mobile working hydraulics
- Mobile drive system
- Pilot line filtration
- Servo controls
- Reverse flow valve applications
- Industrial working hydraulics
- Control systems

The Parker EPF *iprotect*® series patented bypass valve technology

Bypass settings are available up to 7 bar or completely blocked in conjunction with patented, high strength filter elements. The principle is

based on differential pressure measurement across the filter element. During bypass only a part of the mainflow is flowing through the bypass valve.

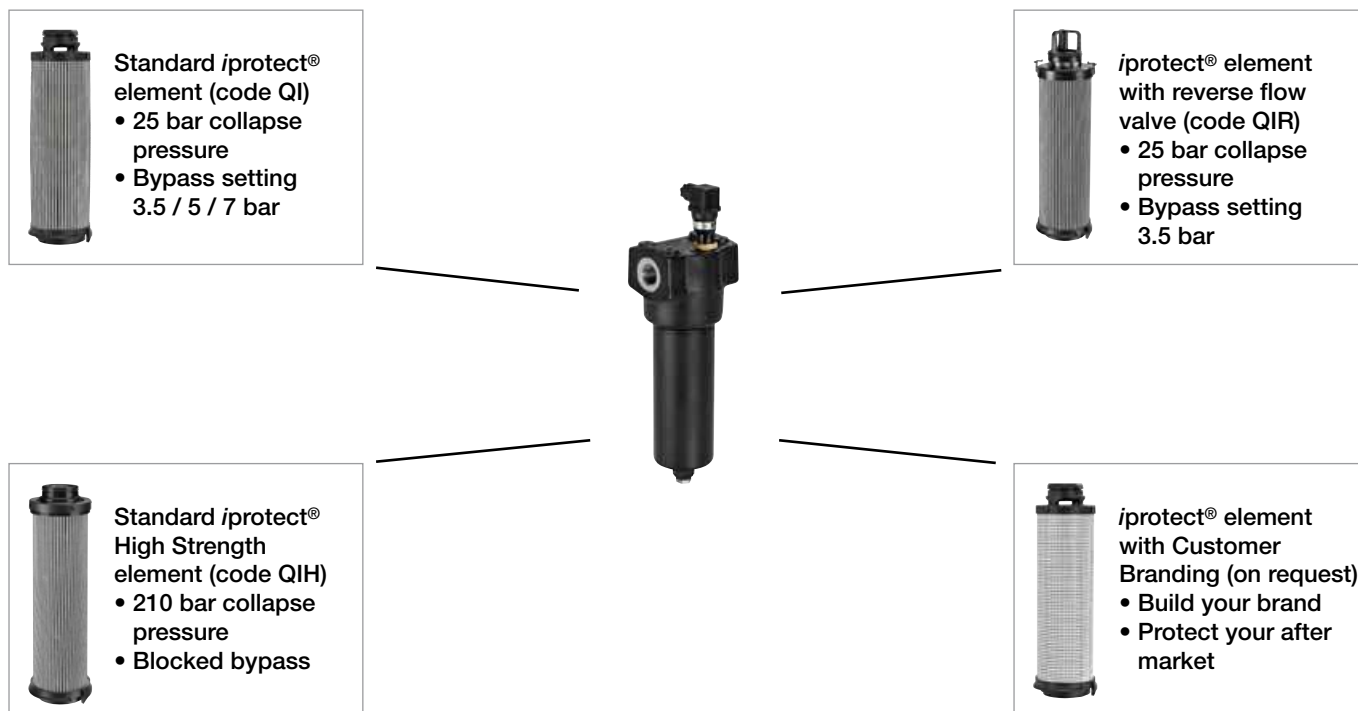


Epf *iprotect*® applies the latest generation of Microglass III filter media. The patented element design guarantees the quality of filtration.

EPF *iprotect*®

High Pressure Filters

Selecting the right EPF element



EPF Spare Element Information

Type QI

| | |
|-------------------------|---------|
| EPF Size1 L1 2 micron | 944418Q |
| EPF Size1 L1 5 micron | 944419Q |
| EPF Size1 L1 10 micron | 944420Q |
| EPF Size1 L1 20 micron | 944421Q |
| EPF Size 2 L1 2 micron | 944426Q |
| EPF Size 2 L1 5 micron | 944427Q |
| EPF Size 2 L1 10 micron | 944428Q |
| EPF Size 2 L1 20 micron | 944429Q |
| EPF Size 2 L2 2 micron | 944430Q |
| EPF Size 2 L2 5 micron | 944431Q |
| EPF Size 2 L2 10 micron | 944432Q |
| EPF Size 2 L2 20 micron | 944433Q |
| EPF Size 3 L1 2 micron | 944434Q |
| EPF Size 3 L1 5 micron | 944435Q |
| EPF Size 3 L1 10 micron | 944436Q |
| EPF Size 3 L1 20 micron | 944437Q |
| EPF Size 3 L2 2 micron | 944438Q |
| EPF Size 3 L2 5 micron | 944439Q |
| EPF Size 3 L2 10 micron | 944440Q |
| EPF Size 3 L2 20 micron | 944441Q |
| EPF Size 4 L1 2 micron | 944442Q |
| EPF Size 4 L1 5 micron | 944443Q |
| EPF Size 4 L1 10 micron | 944444Q |
| EPF Size 4 L1 20 micron | 944445Q |
| EPF Size 4 L2 2 micron | 944446Q |
| EPF Size 4 L2 5 micron | 944447Q |
| EPF Size 4 L2 10 micron | 944448Q |
| EPF Size 4 L2 20 micron | 944449Q |
| EPF Size 5 L1 2 micron | 944450Q |
| EPF Size 5 L1 5 micron | 944451Q |
| EPF Size 5 L1 10 micron | 944452Q |
| EPF Size 5 L1 20 micron | 944453Q |

Type QIH

| | |
|---------------------------------------|---------|
| EPF High Strength Size1 L1 2 micron | 944481Q |
| EPF High Strength Size1 L1 5 micron | 944482Q |
| EPF High Strength Size1 L1 10 micron | 944483Q |
| EPF High Strength Size1 L1 20 micron | 944484Q |
| EPF High Strength Size 2 L1 2 micron | 944489Q |
| EPF High Strength Size 2 L1 5 micron | 944490Q |
| EPF High Strength Size 2 L1 10 micron | 944491Q |
| EPF High Strength Size 2 L1 20 micron | 944492Q |
| EPF High Strength Size 2 L2 2 micron | 944493Q |
| EPF High Strength Size 2 L2 5 micron | 944494Q |
| EPF High Strength Size 2 L2 10 micron | 944495Q |
| EPF High Strength Size 2 L2 20 micron | 944496Q |
| EPF High Strength Size 3 L1 2 micron | 944497Q |
| EPF High Strength Size 3 L1 5 micron | 944498Q |
| EPF High Strength Size 3 L1 10 micron | 944499Q |
| EPF High Strength Size 3 L1 20 micron | 944500Q |
| EPF High Strength Size 3 L2 2 micron | 944501Q |
| EPF High Strength Size 3 L2 5 micron | 944502Q |
| EPF High Strength Size 3 L2 10 micron | 944503Q |
| EPF High Strength Size 3 L2 20 micron | 944504Q |
| EPF High Strength Size 4 L1 2 micron | 944505Q |
| EPF High Strength Size 4 L1 5 micron | 944506Q |
| EPF High Strength Size 4 L1 10 micron | 944507Q |
| EPF High Strength Size 4 L1 20 micron | 944508Q |
| EPF High Strength Size 4 L2 2 micron | 944509Q |
| EPF High Strength Size 4 L2 5 micron | 944510Q |
| EPF High Strength Size 4 L2 10 micron | 944511Q |
| EPF High Strength Size 4 L2 20 micron | 944512Q |
| EPF High Strength Size 5 L1 2 micron | 944513Q |
| EPF High Strength Size 5 L1 5 micron | 944514Q |
| EPF High Strength Size 5 L1 10 micron | 944515Q |
| EPF High Strength Size 5 L1 20 micron | 944516Q |

Type QIR

| | |
|--------------------------------------|---------|
| EPF Size1 L1 2 micron reverse flow | 944561Q |
| EPF Size1 L1 5 micron reverse flow | 944562Q |
| EPF Size1 L1 10 micron reverse flow | 944563Q |
| EPF Size1 L1 20 micron reverse flow | 944564Q |
| EPF Size 2 L1 2 micron reverse flow | 944569Q |
| EPF Size 2 L1 5 micron reverse flow | 944570Q |
| EPF Size 2 L1 10 micron reverse flow | 944571Q |
| EPF Size 2 L1 20 micron reverse flow | 944572Q |
| EPF Size 2 L2 2 micron reverse flow | 944573Q |
| EPF Size 2 L2 5 micron reverse flow | 944574Q |
| EPF Size 2 L2 10 micron reverse flow | 944575Q |
| EPF Size 2 L2 20 micron reverse flow | 944576Q |
| EPF Size 3 L1 2 micron reverse flow | 944577Q |
| EPF Size 3 L1 5 micron reverse flow | 944578Q |
| EPF Size 3 L1 10 micron reverse flow | 944579Q |
| EPF Size 3 L1 20 micron reverse flow | 944580Q |
| EPF Size 3 L2 2 micron reverse flow | 944581Q |
| EPF Size 3 L2 5 micron reverse flow | 944582Q |
| EPF Size 3 L2 10 micron reverse flow | 944583Q |
| EPF Size 3 L2 20 micron reverse flow | 944584Q |
| EPF Size 4 L1 2 micron reverse flow | 944585Q |
| EPF Size 4 L1 5 micron reverse flow | 944586Q |
| EPF Size 4 L1 10 micron reverse flow | 944587Q |
| EPF Size 4 L1 20 micron reverse flow | 944588Q |
| EPF Size 4 L2 2 micron reverse flow | 944589Q |
| EPF Size 4 L2 5 micron reverse flow | 944590Q |
| EPF Size 4 L2 10 micron reverse flow | 944591Q |
| EPF Size 4 L2 20 micron reverse flow | 944592Q |
| EPF Size 5 L1 2 micron reverse flow | 944593Q |
| EPF Size 5 L1 5 micron reverse flow | 944594Q |
| EPF Size 5 L1 10 micron reverse flow | 944595Q |
| EPF Size 5 L1 20 micron reverse flow | 944596Q |

Protecting your system and the environment

Protect your system performance and profit

The new *iprotect*® generation of filter elements provide high filtration performance combined with Parker technology. The bespoke design prevents the use of pirate type alternatives.



Less space needed to accommodate the filter

More compact solutions are possible as the filter element remains in the filter bowl during change of filter element. Compared to traditional solutions it does not only save space, it also reduces the required manual handling during the filter change process.



Saving cost and our environment

What does it take to introduce a new ground-breaking design which saves the environment? Parker's EPF *iprotect*® applies a re-usable element core and bypass, both integral parts of the filter bowl. This solution avoids the handling of re-usable parts during element change and reduces over 50% disposal weight.



Smart valve technology

Parker hydraulic control valve technology is applied for the reusable bypass valve. This leakage-free valve has a patented interface with the filter element, which ensures that genuine parts are always applied. With bypass settings up to 7 bar filtration during cold start conditions, more compact solutions, can be realised. The valve also optimizes the flow path, reducing the pressure lost across the filter.



Easier to integrate

Parker has set the trend to integrate filtration into manifolds. With Parker's EPF *iprotect*® we have taken the design one step further. Only one cavity is needed to accommodate the filter instead of two, this is because the re-usable bypass valve is integrated into the filter bowl, reducing space and cost.



Customized solutions

Parker's motion & control technologies provide new opportunities for our customers. Customized manifolds or duplex filters, as in this example offer complete automatic change-over. The EPF *iprotect*® contributes to realizing new solutions, improving your productivity and profitability.



A protective 'gene'

The performance and profitability of systems directly depends upon the filter media.



It goes without saying that Parker's products aim to avoid the use of unknown filter performance, jeopardizing safety and performance. Our Microglass III media is continuously upgraded and acts as a protective 'gene' in the system.

When going into reverse

Parker's EPF can be equipped with an optional reverse flow. This valve assembly is integrated in the element end cap and isolates the filter medium during reverse flow conditions.



A new design of the filter element allows integration of the bypass valve and element core as re-usable parts in the filter bowl. This results in cost reduction when integrating the high pressure filter in manifold type solutions. But it also reduces the waste when changing the filter element by over 50% as the element core is an integral part of the filter bowl.

The design of the EPF *iprotect*®, is unique, there is no need to re-install any re-usable parts as with some other filters in the market. This makes the product fool proof as there is no risk of forgetting to re-install re-usable parts.



Replacing the filter element:

- Drain the filter housing using the plugged drain port.
- Thanks to the filter lock the element remains in the bowl.
- Pull out the old element. The re-usable element core and bypass valve are integral parts of the bowl.
- Filtration is from 'Out to In,' the element core is located in the clean oil side.
- Just drop the new element in the bowl.
- Screw the bowl, including element into the filter head.

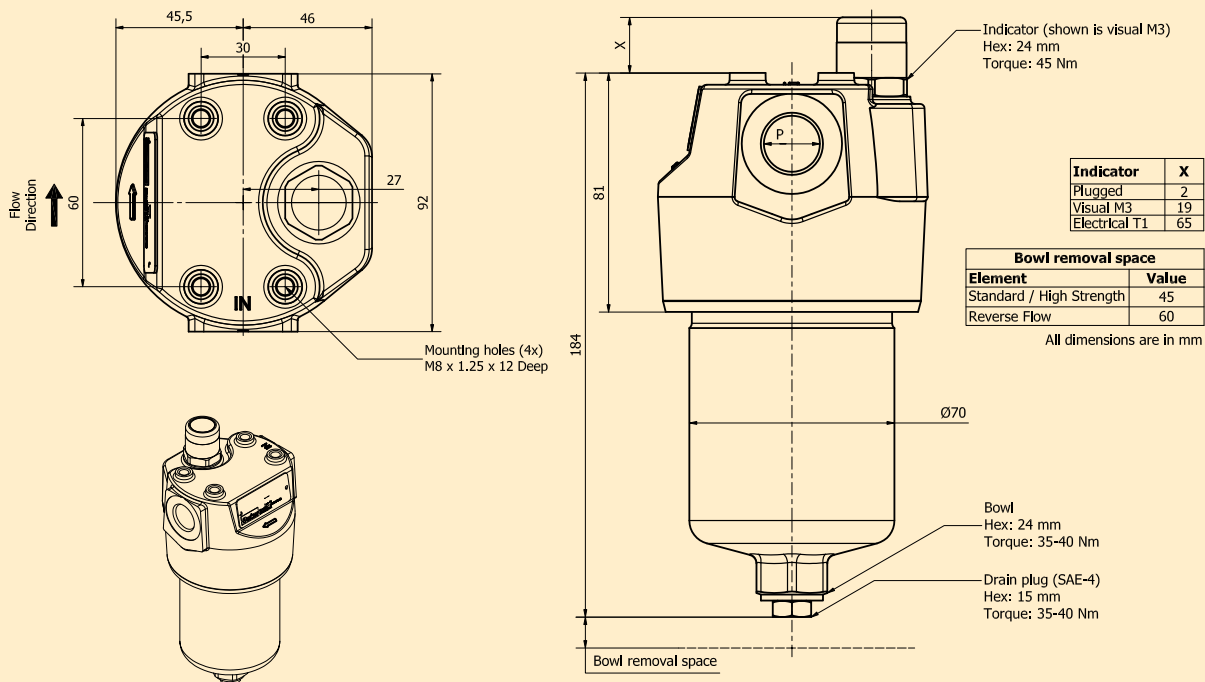
EPF *iprotect*®

Size 1

Specification EPF *iprotect*® Size 1

| | | |
|--|--|--|
| Specification Nominal flow 40 l/min | Bypass valve & Indicator settings Bypass Indicator 3.5 bar 2.5 bar 5.0 bar 3.5 bar 7.0 bar 5.0 bar Blocked 5.0 bar | Indicator options Indicating differential pressure: 2.5 +/- 0.3 bar 3.5 +/- 0.3 bar 5.0 +/- 0.3 bar Visual M3 Electrical T1 Electronic F1 (PNP) Electronic F2 (NPN) Atex versions are available on request |
| Pressure ratings Maximum allowable operating pressure 450 bar Filter housing pressure pulse fatigue tested 10^6 pulses 0-414 bar | Filter element Degree of filtration Determined by multipass test in accordance to ISO16889 | Weights (kg) EPF Size 1: 3 |
| Connections Inlet and outlet connections are threaded internally | Flow fatigue characteristics Filter media is supported so that the optimal fatigue life is achieved (ISO 3724) | Fluid compatibility <ul style="list-style-type: none">Hydraulic mineral oils H to class HLPD (DIN51524)Operating fluids DIN ISO 2943Lubrication fluids ISO6743, APJ, DIN 51517, ACEA, ASTMVegetable oils60/40 Water GlycolsOn request - Industrial grade phosphate estersNon aggressive synthetic oilsNon aggressive bio-degradable oils (HETG, HEPG and HEES to VDMA 24568) |
| Connection style Thread G½ Threat SAE 8 | Microglass III Supported with epoxy coated metal wire mesh, end cap material reinforced composite and reusable metal inner core. Collapse pressure 25 bar (ISO 2941) | |
| Filter housing Head material cast iron (GSI) Bowl material steel | High collapse elements To be used when bypass blocked option is selected Collapse pressure 210 bar (ISO 2941) | |
| Seal material Nitrile of Fluorelastomer | | |
| Operating temperature range Seal material Nitrile : -40 °C to +100 °C Seal material Fluorelastomer : -20 °C to +120 °C | | |

EPF *iprotect*® - Size 1 (Inline)



EPF *i*protect® Size 1 Pressure Drop Curves

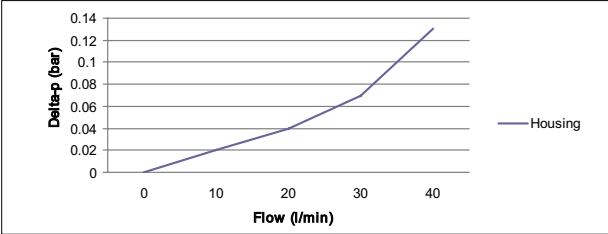
With 3.5 bar bypass the recommended initial pressure drop max is 1.2 bar

With 7.0 bar bypass the recommended initial pressure drop max is 2.3 bar

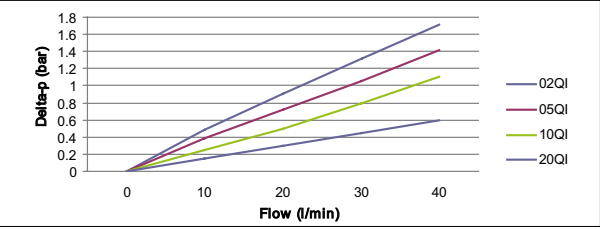
If the medium used has a viscosity different from 30cSt, pressure drop over the filter can be estimated as follows:

The total Δp = housing Δp + (element $\Delta p_e \times \text{working viscosity}/30$).

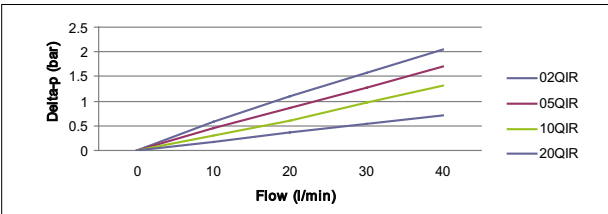
EPF Size 1 Empty housing



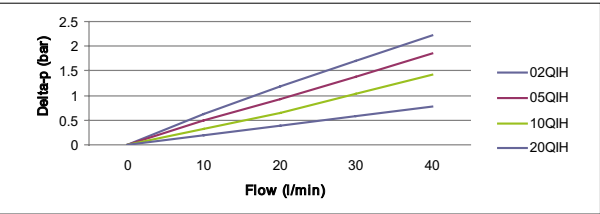
EPF Size 1 Filter Elements



EPF Size 1 Filter Elements with reverse flow valve



EPF Size 1 High Strength Filter Elements



EPF *iprotect*®

Size 2

Specification EPF *iprotect*® Size 2

Specification

Nominal flow >100 l/min

Pressure ratings

Maximum allowable operating pressure 450 bar

Filter housing pressure pulse fatigue tested

10⁶ pulses 0-414 bar

Connections

Inlet and outlet connections are threaded internally

Connection style

Thread G $\frac{3}{4}$

Thread SAE 12

Thread M27, ISO 6149

SAE flange $\frac{3}{4}$ = 6000M

SAE flange $\frac{3}{4}$ = 6000

Manifold

Filter housing

Head material cast iron (GSI)

Bowl material steel

Seal material

Nitrile or Fluorelastomer

Operating temperature range

Seal material Nitrile : -40 °C to +100 °C

Seal material Fluorelastomer : -20 °C to +120 °C

Bypass valve & Indicator settings

Bypass Indicator

3.5 bar 2.5 bar

5.0 bar 3.5 bar

7.0 bar 5.0 bar

Blocked 5.0 bar

Filter element

Degree of filtration

Determined by multipass test in accordance to ISO16889

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 reusable metal inner core. Collapse pressure 25 bar (ISO 2941)

High collapse elements

To be used when bypass blocked option is selected

Collapse pressure 210 bar (ISO 2941)

Indicator options

Indicating differential pressure:

2.5 +/- 0.3 bar

3.5 +/- 0.3 bar

5.0 +/- 0.3 bar

Visual M3

Electrical T1

Electronic F1 (PNP)

Electronic F2 (NPN)

Atex versions are available on request

Weights (kg)

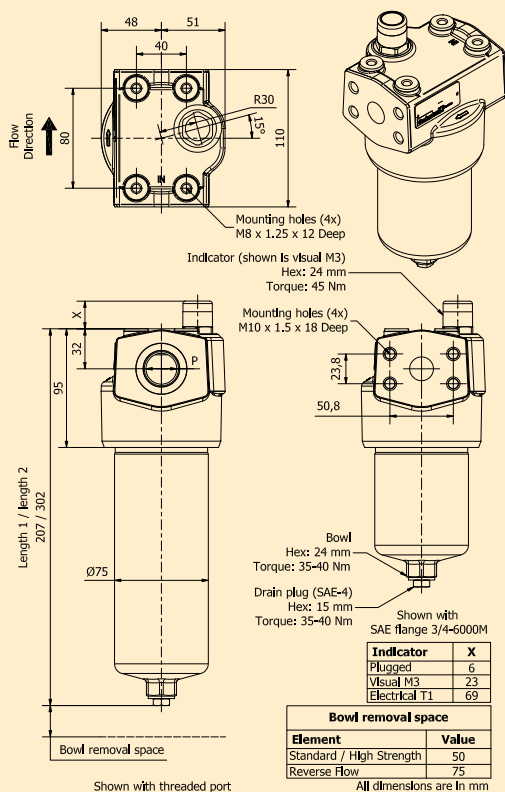
EPF Size 2 length 1: 4,2

EPF Size 2 length 2: 5,7

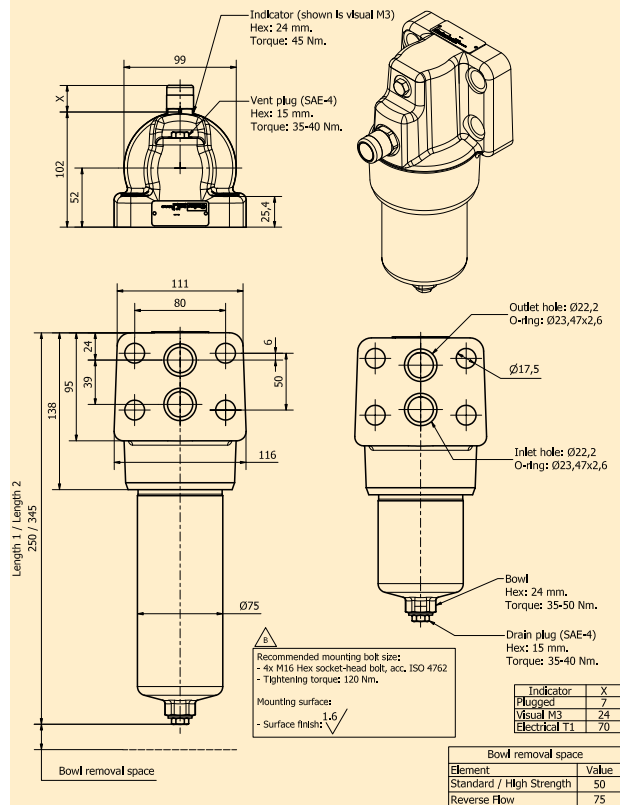
Fluid compatibility

- Hydraulic mineral oils H to class HLPD (DIN51524)
- Operating fluids DIN ISO 2943
- Lubrication fluids ISO6743, APJ, DIN 51517, ACEA, ASTM
- Vegetable oils
- 60/40 Water Glycols
- On request - Industrial grade phosphate esters
- Non aggressive synthetic oils
- Non aggressive bio-degradable oils (HETG, HEPG and HEES to VDMA 24568)

EPF *iprotect*® - Size 2 (Inline)



EPF *iprotect*® - Size 2 (Manifold)



EPF *i*protect® Size 2 Pressure Drop Curves

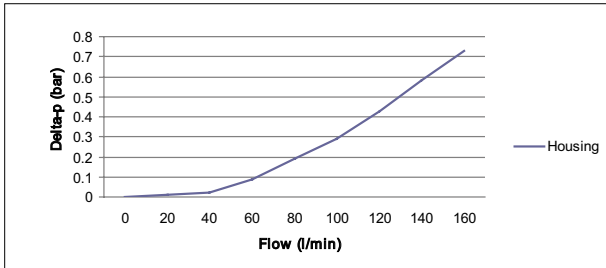
With 3.5 bar bypass the recommended initial pressure drop max is 1.2 bar

With 7.0 bar bypass the recommended initial pressure drop max is 2.3 bar

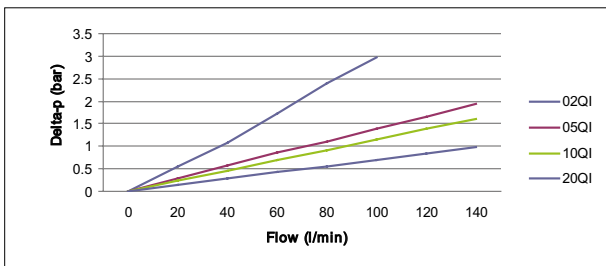
If the medium used has a viscosity different from 30cSt, pressure drop over the filter can be estimated as follows:

The total $\Delta p = \text{housing } \Delta p_h + (\text{element } \Delta p_e \times \text{working viscosity}/30)$.

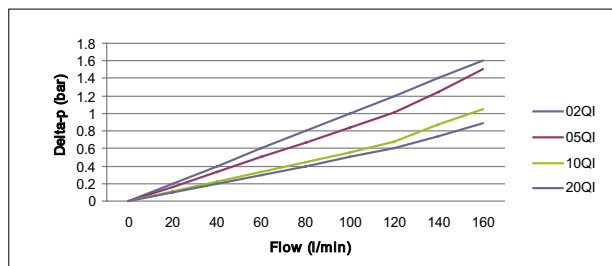
Empty Housing EPF Size 2



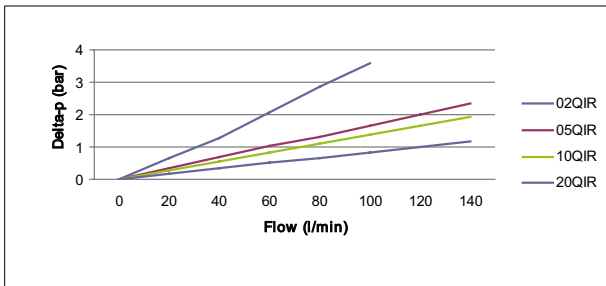
EPF Size 2 Length 1 Filter Elements



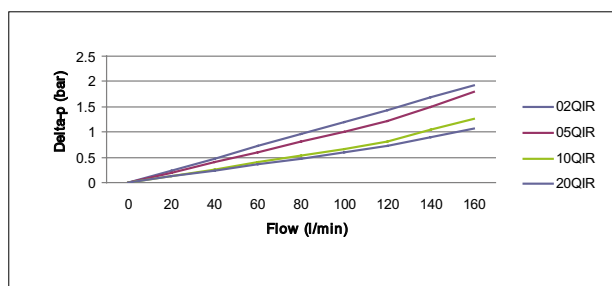
EPF Size 2 Length 2 Filter Elements



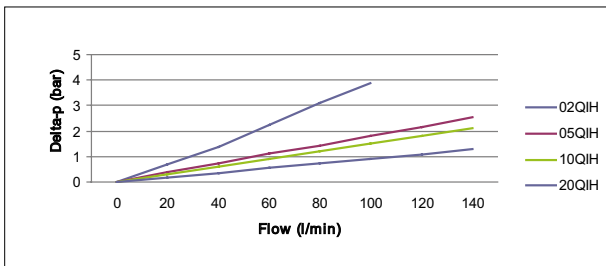
EPF Size 2 Length 1 Filter Elements with reverse flow valve



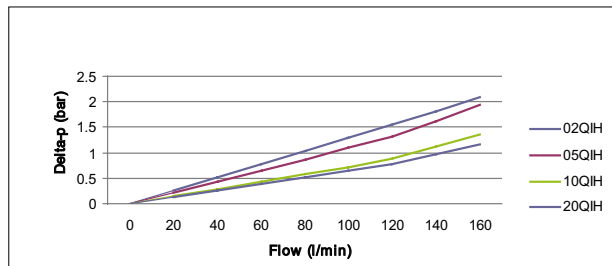
EPF Size 2 Length 2 Filter Elements with reverse flow valve



EPF Size 2 Length 1 High Strength Filter Elements



EPF Size 2 Length 2 High Strength Filter Elements



EPF *iprotect*®

Size 3

Specification EPF *iprotect*® Size 3

Specification

Nominal flow >160 l/min

Pressure ratings

Maximum allowable operating pressure 450 bar

Filter housing pressure pulse fatigue tested

10⁶ pulses 0-414 bar

Connections

Inlet and outlet connections are threaded internally

Connection style

Thread G1

Thread SAE 16

Thread M33, ISO 6149

SAE flange 1 = 6000M

SAE flange 1 = 6000

Filter housing

Head material cast iron (GSI)

Bowl material steel

Seal material

Nitrile of Fluorelastomer

Operating temperature range

Seal material Nitrile : -40 °C to +100 °C

Seal material Fluorelastomer : -20 °C to +120 °C

Bypass valve & Indicator settings

Bypass Indicator

3.5 bar 2.5 bar

5.0 bar 3.5 bar

7.0 bar 5.0 bar

Blocked 5.0 bar

Filter element

Degree of filtration

Determined by multipass test in accordance to ISO16889

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 reusable metal inner core. Collapse pressure 25 bar (ISO 2941)

High collapse elements

To be used when bypass blocked option is selected

Collapse pressure 210 bar (ISO 2941)

Indicator options

Indicating differential pressure:

2.5 +/- 0.3 bar

3.5 +/- 0.3 bar

5.0 +/- 0.3 bar

Visual M3

Electrical T1

Electronic F1 (PNP)

Electronic F2 (NPN)

Atex versions are available on request

Weights (kg)

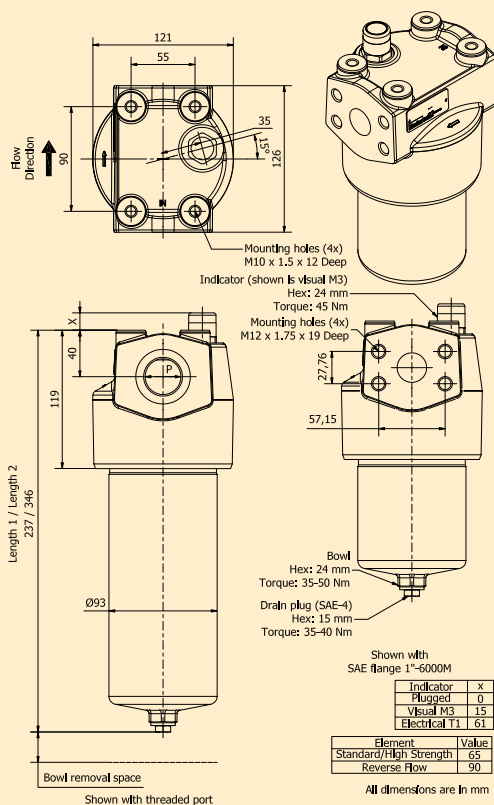
EPF Size 3 length 1: 6,7

EPF Size 3 length 2: 9,2

Fluid compatibility

- Hydraulic mineral oils H to class HLPD (DIN51524)
- Operating fluids DIN ISO 2943
- Lubrication fluids ISO6743, APJ, DIN 51517, ACEA, ASTM
- Vegetable oils
- 60/40 Water Glycols
- On request - Industrial grade phosphate esters
- Non aggressive synthetic oils
- Non aggressive bio-degradable oils (HETG, HEPG and HEES to VDMA 24568)

EPF *iprotect*® - Size 3 (Inline)



EPF *i*protect® Size 3 Pressure Drop Curves

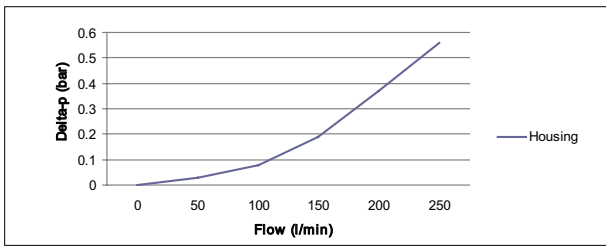
With 3.5 bar bypass the recommended initial pressure drop max is 1.2 bar

With 7.0 bar bypass the recommended initial pressure drop max is 2.3 bar

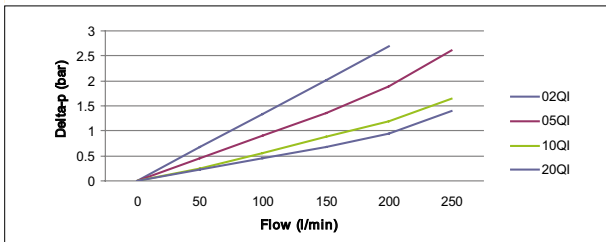
If the medium used has a viscosity different from 30cSt, pressure drop over the filter can be estimated as follows:

The total $\Delta p = \text{housing } \Delta p_h + (\text{element } \Delta p_e \times \text{working viscosity}/30)$.

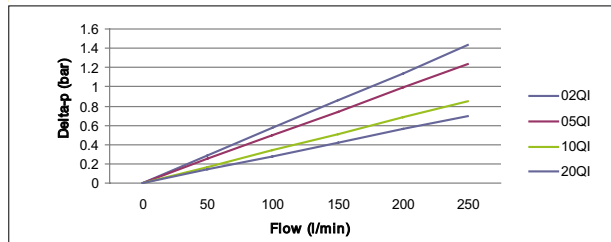
EPF Size 3 Empty Housing



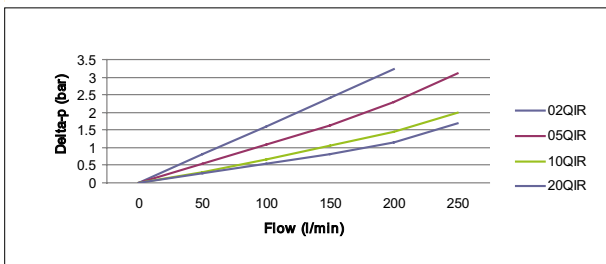
EPF Size 3 Length 1 Filter Elements



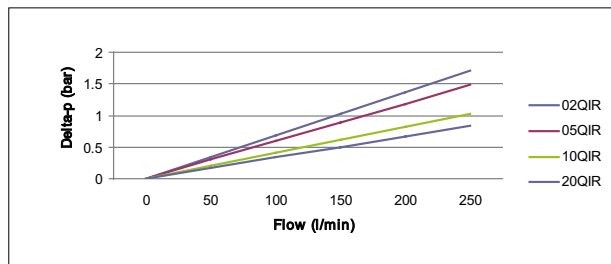
EPF Size 3 Length 2 Filter Elements



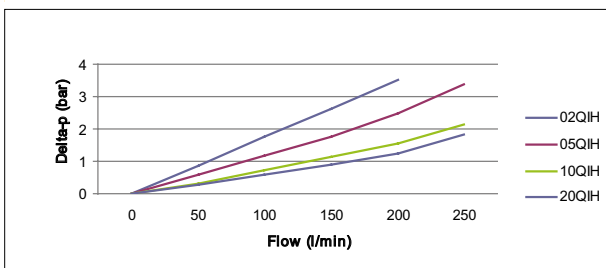
EPF Size 3 Length 1 Filter Elements with reverse flow valve



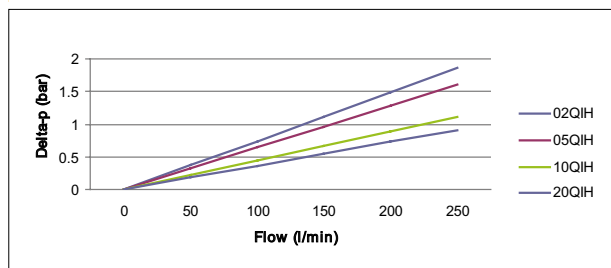
EPF Size 3 Length 2 Filter Elements with reverse flow valve



EPF Size 3 Length 1 High Strength Filter Elements



EPF Size 3 Length 2 High Strength Filter Elements



Size 4

Specification

Nominal flow >320 l/min

Pressure ratings

Maximum allowable operationg pressure 450 bar
Filter housing pressure pulse fatigue tested 10⁶
pulses 0-414 bar

Connections

Inlet and outlet connections are threaded internally

Connection style

Thread G11/4
Thread G11/2
Thread SAE 20
Thread SAE 24
Thread M42, ISO 6149
SAE flange 1¼ = 6000M
SAE flange 1¼ = 6000
Manifold

Filter housing

Head material cast iron (GSI)
Bowl material steel
Seal material
Nitrile or Fluorelastomer

Operating temperature range

Seal material Nitrile : -40 °C to +100 °C
Seal material Fluorelastomer : -20 °C to +120 °C

Bypass valve & Indicator settings

| Bypass | Indicator |
|---------|-----------|
| 3.5 bar | 2.5 bar |
| 5.0 bar | 3.5 bar |
| 7.0 bar | 5.0 bar |
| Blocked | 7.0 bar |

Filter element

Degree of filtration
Determined by multipass test in accordance to
ISO16889

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 reusable metal inner core. Collapse pressure 25 bar (ISO 2941)

High collapse elements

To be used when bypass blocked option is selected
Collapse pressure 210 bar (ISO 2941)

Indicator options

Indicating differential pressure:
2.5 +/- 0.3 bar
3.5 +/- 0.3 bar
5.0 +/- 0.3 bar

Visual M3

Electrical T1
Electronic F1 (PNP)
Electronic F2 (NPN)
Atex versions are available on request

Weights (kg)

EPF Size 4 length 1: 15,8
EPF Size 4 length 2: 20,3

Fluid compatibility

- Hydraulic mineral oils H to class HLPD (DIN51524)
- Operating fluids DIN ISO 2943
- Lubrication fluids ISO6743, APJ, DIN 51517, ACEA, ASTM
- Vegetable oils
- 60/40 Water Glycols
- On request - Industrial grade phosphate esters
- Non aggressive synthetic oils
- Non aggressive bio-degradable oils (HETG, HEPG and HEES to VDMA 24568)

Flow Direction ↑

160
50
R48
163
120
51°

Mounting holes (4x)
M10 x 1.5 x 12 deep

Indicator (shown is visual M3)
Hex: 24 mm
Torque: 45 Nm

Mounting holes (4x)
M14 x 2 x 20 Deep

139
49
X
Ø128

Bowl
Hex: 36 mm
Torque: 80-95 Nm

Drain plug (SAE-5)
Hex: 16 mm
Torque: 35-40 Nm

Shown with SAE flange 11/4"-6000M

| Indicator | x |
|---------------|----|
| Plugged | 0 |
| Visual M3 | 16 |
| Electrical T1 | 62 |

Bowl removal space

| Element | Value |
|--------------------------|-------|
| Standard / High Strength | 75 |
| Reverse Flow | 100 |

Shown with threaded port

All dimensions are In mm

Indicator (shown as visual M3)

Hex: 24 mm.
Torque: 45 Nm.
Vent plug (SAE-4)
Hex: 15 mm.
Torque: 35-40 Nm.

162
162
81
29
X

142
100
13
38
57
75
149
Ø128
225
140

Outlet hole: Ø34
O-ring: Ø36,17x2,6

Inlet hole: Ø34
O-ring: Ø36,17x2,6

Ø21

Bowl
Hex: 36 mm.
Torque: 80-95 mm.
Drain plug (SAE-5)
Hex: 16 mm.
Torque: 35-40 Nm.

Indicator x
Plugged 5
Visual M3 22
Electrical T1 68

Bowl removal space

Recommended mounting bolt size:
- 4x M10 Hex socket-head bolt, acc. ISO 4762
- Tightening torque: 200 Nm.
Mounting surface:
- Surface finish

EPF *i*protect® Size 4 Pressure Drop Curves

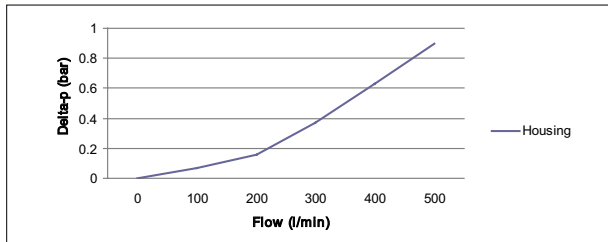
With 3.5 bar bypass the recommended initial pressure drop max is 1.2 bar

With 7.0 bar bypass the recommended initial pressure drop max is 2.3 bar

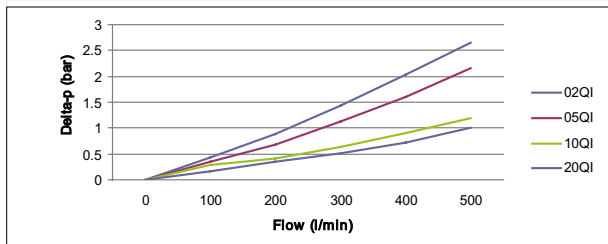
If the medium used has a viscosity different from 30cSt, pressure drop over the filter can be estimated as follows:

The total $\Delta p = \text{housing } \Delta p_h + (\text{element } \Delta p_e \times \text{working viscosity}/30)$.

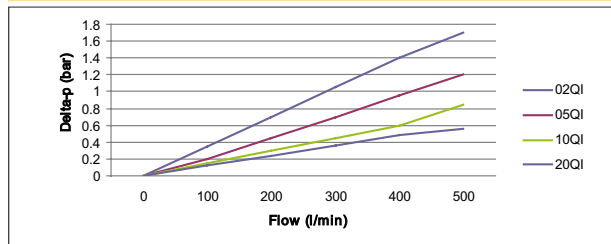
EPF Size 4 Empty Housing



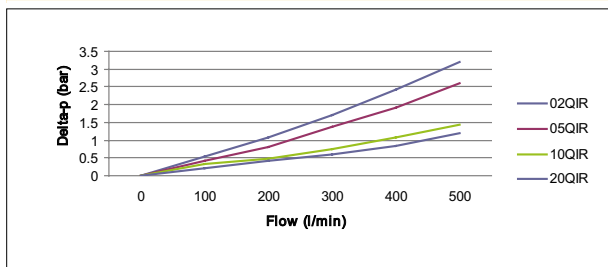
EPF Size 4 Length 1 Filter Elements



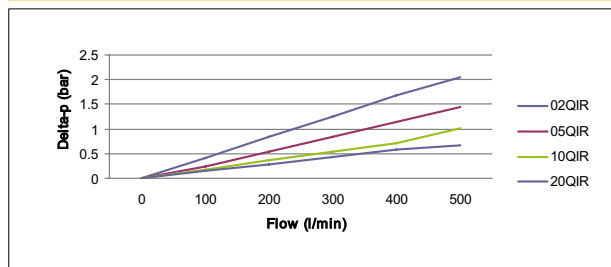
EPF Size 4 Length 2 Filter Elements



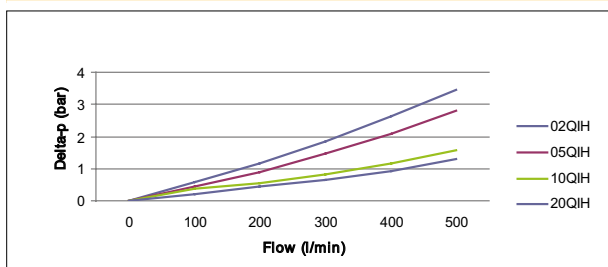
EPF Size 4 Length 1 Filter Elements with reverse flow valve



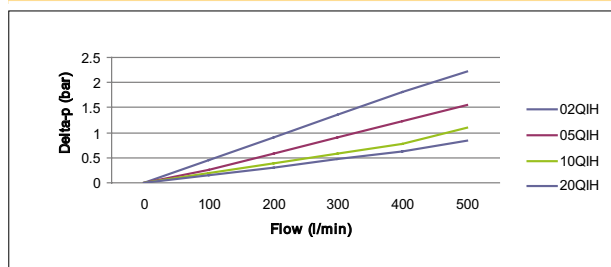
EPF Size 4 Length 2 Filter Elements with reverse flow valve



EPF Size 4 Length 1 High Strength Filter Elements



EPF Size 4 Length 2 High Strength Filter Elements



EPF *iprotect*®

Size 5

Specification EPF *iprotect*® Size 5

Specification

Nominal flow >320 l/min

Pressure ratings

Maximum allowable operating pressure 450 bar
Filter housing pressure pulse fatigue tested 10⁶ pulses 0-414 bar

Connections

Inlet and outlet connections are threaded internally

Connection style

Thread G1½
Thread SAE 24
Manifold
SAE flange 1½ - 6000M

Filter housing

Head material cast iron (GSI)
Bowl material steel
Seal material
Nitrile of Fluorelastomer

Operating temperature range

Seal material Nitrile : -40 °C to +100 °C
Seal material Fluorelastomer : -20 °C to +120 °C

Bypass valve & Indicator settings

| Bypass | Indicator |
|---------|-----------|
| 3.5 bar | 2.5 bar |
| 5.0 bar | 3.5 bar |
| 7.0 bar | 5.0 bar |
| Blocked | 5.0 bar |

Filter element

Degree of filtration
Determined by multipass test in accordance to ISO16889

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 reusable metal inner core. Collapse pressure 25 bar (ISO 2941)

High collapse elements

To be used when bypass blocked option is selected
Collapse pressure 210 bar (ISO 2941)

Indicator options

Indicating differential pressure:

2.5 +/- 0.3 bar
3.5 +/- 0.3 bar
5.0 +/- 0.3 bar

Visual M3

Electrical T1

Electronic F1 (PNP)

Electronic F2 (NPN)

Atex versions are available on request

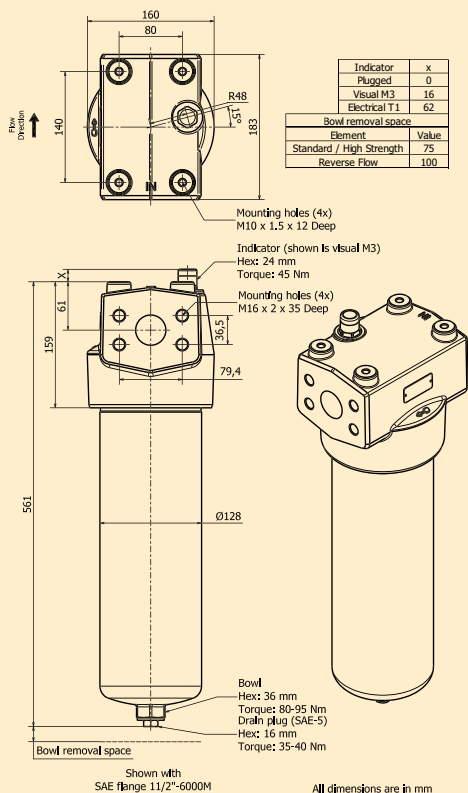
Weights (kg)

EPF Size 5 length 1: 31

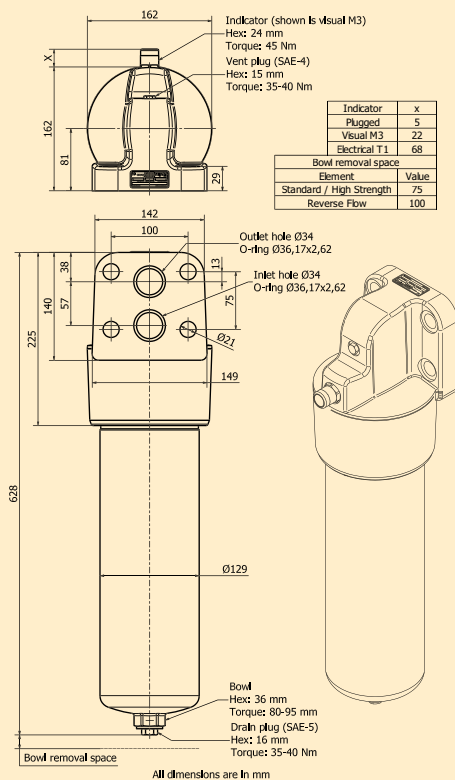
Fluid compatibility

- Hydraulic mineral oils H to class HLPD (DIN51524)
- Operating fluids DIN ISO 2943
- Lubrication fluids ISO6743, APJ, DIN 51517, ACEA, ASTM
- Vegetable oils
- 60/40 Water Glycols
- On request - Industrial grade phosphate esters
- Non aggressive synthetic oils
- Non aggressive bio-degradable oils (HETG, HEPG and HEES to VDMA 24568)

EPF *iprotect*® - Size 5 (Inline)

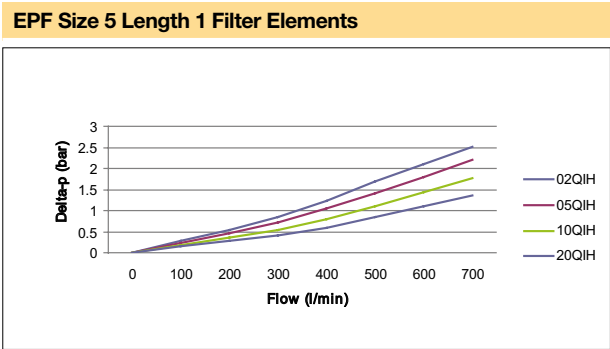
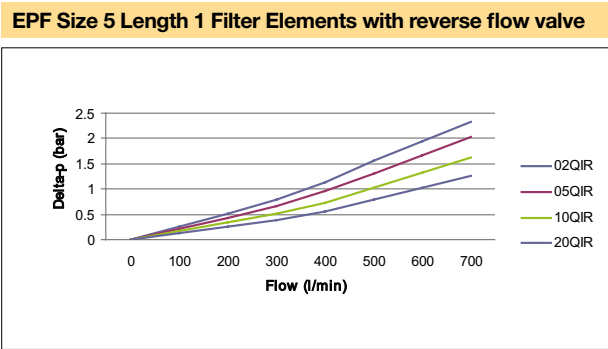
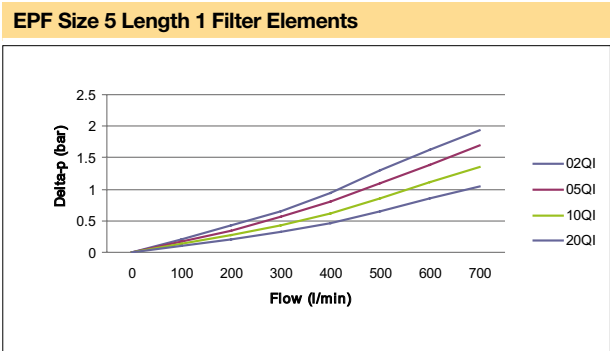
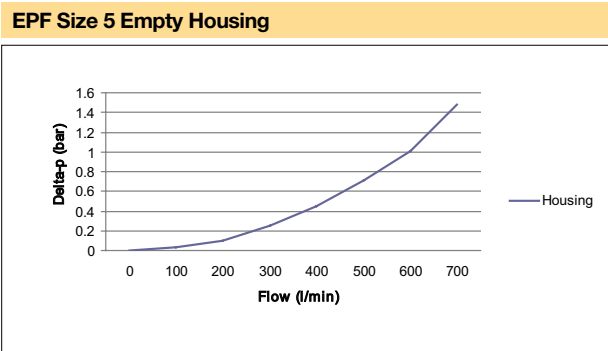


EPF *iprotect*® - Size (Manifold)



EPF iprotect® Size 5 Pressure Drop Curves

With 3.5 bar bypass the recommended initial pressure drop max is 1.2 bar
With 7.0 bar bypass the recommended initial pressure drop max is 2.3 bar
If the medium used has a viscosity different from 30cSt. pressure drop over the filter can be estimated as follows:
The total Δp = housing Δp + (element $\Delta p_e \times \text{working viscosity}/30$).



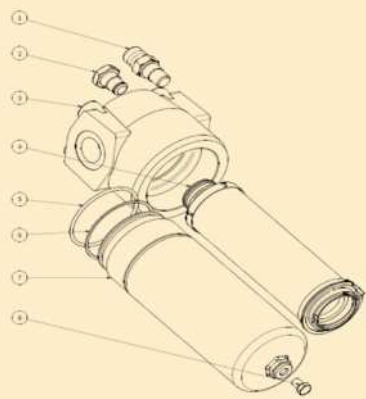
Parts list

| Index | Description | Part number |
|-------|----------------|------------------------------------|
| 1 | Indicator | On Request |
| 2 | Plug | On Request |
| 3 | Filter head | On Request |
| 4 | Filter element | See element table |
| 5 | Back-up ring | In seal kit/spare filter elements |
| 6 | O-ring | In seal kit/ spare filter elements |
| 7 | Filter bowl | On Request |
| 8 | Drain plug | On Request |

Seal kit numbers

| Filter | Nitrile | Fluorelastomer |
|-----------|----------|----------------|
| EPF 1 | EPFSK001 | EPFSK011 |
| EPF 2 | EPFSK002 | EPFSK012 |
| EPF 3 | EPFSK003 | EPFSK013 |
| EPF 4 + 5 | EPFSK004 | EPFSK014 |

Exploded view spare parts drawing



See opposite for parts list
and seal kit numbers

Indicator Options

FMU Δp -Indicators and Pressure Indicators

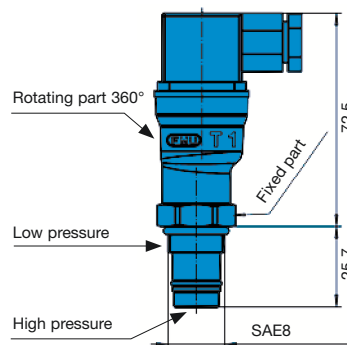
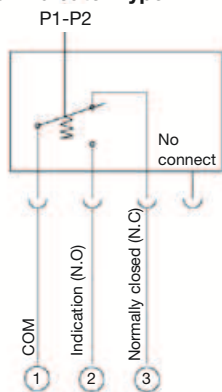
FMUT Electrical

| Rated voltage | Non-inductive load (A) | | | | Inductive load (A) | | | | Inrush current (A) | |
|---------------|------------------------|------|-----------|------|--------------------|------|------------|------|--------------------|---------|
| | Resistive load | | Lamp load | | Inductive load | | Motor load | | | |
| | N.C. | N.O. | N.C. | N.O. | N.C. | N.O. | N.C. | N.O. | N.C. | N.O. |
| 125VAC | 5 | | 1.5 | 0.7 | 3 | | 2.5 | 1.3 | 20 max. | 10 max. |
| 250VAC | 3 | | 1.0 | 0.5 | 2 | | 1.5 | 0.8 | | |
| 8VDC | 5 | | 2 | | 5 | 4 | 3 | | | |
| 14VDC | 5 | | 2 | | 4 | 4 | 3 | | | |
| 30VDC | 4 | | 2 | | 3 | 3 | 3 | | | |
| 125VDC | 0.4 | | 0.05 | | 0.4 | 0.4 | 0.05 | | | |
| 250VDC | 0.2 | | 0.03 | | 0.2 | 0.2 | 0.03 | | | |

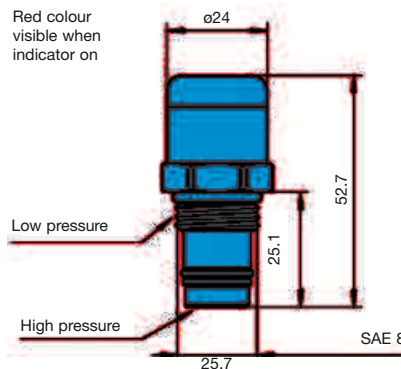
| | |
|----------------------|----------------|
| Enclosure class | IP65 |
| Electrical connector | DIN 43650 |
| Overvoltage category | II (EN61010-1) |

Contact configuration

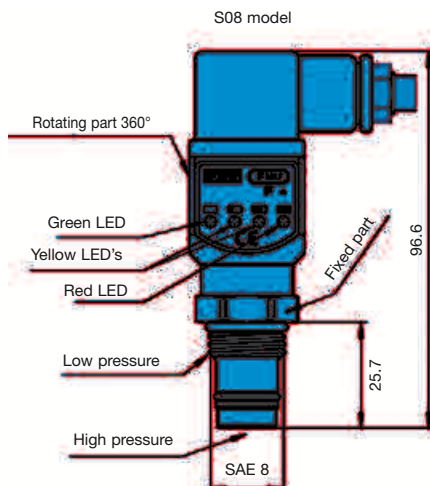
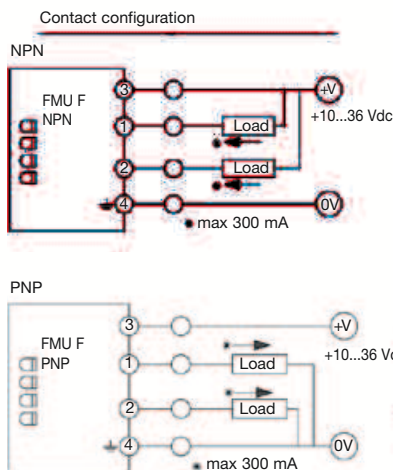
Electrical Indicator Type T1



FMUM3 Visual Auto Reset Operation



FMUF Electronic



Thermal lock-out (standard setting +20 °C)

- Indicator operates only when temperature is above setting.

| Ind. press. setting | LED status | | | | Output |
|---------------------|------------|----|----|---|----------|
| | G | Y1 | Y2 | R | |
| < 50 % | ⊗ | | | | - |
| 50 % | ⊗ | ⊗ | | | - |
| 75 % | ⊗ | ⊗ | ⊗ | | 2 active |
| 100 % | ⊗ | ⊗ | ⊗ | ⊗ | 1 active |

| | |
|----------------------|---|
| Enclosure class | IP65 |
| Electrical connector | DIN 43650, cable connection PG9 or optionally M12 4-pin |
| Input supply voltage | +10 to 36 Vdc |
| *Indication output | max. 300 mA/36 Vdc |
| Output type: | N.O. or N.C./NPN or PNP |

Note: Do not connect output terminals 1 or 2 directly (without load) to power supply terminals, because this will damage the equipment.

Filter media efficiency

| Degree of filtration | | | | | | Code | | | | | |
|--|----------|----------|-----------|-----------|------------|------------------------------|---------------------------------------|--------------------------|------|-------|-------|
| Average filtration beta ratio β (ISO 16889) / particle size μm [c] | | | | | | | | | | | |
| βx(c)=2 | βx(c)=10 | βx(c)=75 | βx(c)=100 | βx(c)=200 | βx(c)=1000 | | | | | | |
| % efficiency, based on the above beta ration (βx) | | | | | | Disposable Microglass III | Element with reverse flow valve | High strength Element | | | |
| 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 | 02QIR | 02QIH |
| N/A | N/A | 4.5 | 5 | 6 | 7 | | | | 05QI | 05QIR | 05QIH |
| N/A | 6 | 8.5 | 9 | 10 | 12 | | | | 10QI | 10QIR | 10QIH |
| 6 | 11 | 17 | 18 | 20 | 22 | | | | 20QI | 20QIR | 20QIH |

Ordering information. Standard part numbers

| Filter Assemblies | Part Number | Flow (l/min) | Model Number | Element length | Media Rating (micron) | Seals | Indicator | Bypass (bar) | Ports | Replacement elements |
|-------------------|------------------|--------------|--------------|----------------|-----------------------|---------|--------------|--------------|---------|----------------------|
| | EPF1105QIBPMG081 | 40 | EPF1 | 1 | 5 | Nitrile | Plugged port | 7 | G1/2" | 944419Q |
| | EPF1110QIBPMG081 | 40 | EPF1 | 1 | 10 | Nitrile | Plugged port | 7 | G1/2" | 944420Q |
| | EPF1120QIBPMG081 | 40 | EPF1 | 1 | 20 | Nitrile | Plugged port | 7 | G1/2" | 944421Q |
| | EPF2205QIBPMG121 | 140 | EPF2 | 2 | 5 | Nitrile | Plugged port | 7 | G3/4" | 944431Q |
| | EPF2210QIBPMG121 | 140 | EPF2 | 2 | 10 | Nitrile | Plugged port | 7 | G3/4" | 944432Q |
| | EPF2220QIBPMG121 | 140 | EPF2 | 2 | 20 | Nitrile | Plugged port | 7 | G3/4" | 944433Q |
| | EPF3205QIBPMG161 | 250 | EPF3 | 2 | 5 | Nitrile | Plugged port | 7 | G1" | 944439Q |
| | EPF3210QIBPMG161 | 250 | EPF3 | 2 | 10 | Nitrile | Plugged port | 7 | G1" | 944440Q |
| | EPF3220QIBPMG161 | 250 | EPF3 | 2 | 20 | Nitrile | Plugged port | 7 | G1" | 944441Q |
| | EPF4205QIBPMG201 | 450 | EPF4 | 2 | 5 | Nitrile | Plugged port | 7 | G1 1/4" | 944447Q |
| | EPF4210QIBPMG201 | 450 | EPF4 | 2 | 10 | Nitrile | Plugged port | 7 | G1 1/4" | 944448Q |
| | EPF4220QIBPMG201 | 450 | EPF4 | 2 | 20 | Nitrile | Plugged port | 7 | G1 1/4" | 944449Q |
| | EPF5105QIBPMG241 | 500 | EPF5 | 1 | 5 | Nitrile | Plugged port | 7 | G1 1/2" | 944451Q |
| | EPF5110QIBPMG241 | 500 | EPF5 | 1 | 10 | Nitrile | Plugged port | 7 | G1 1/2" | 944452Q |
| | EPF5120QIBPMG241 | 500 | EPF5 | 1 | 20 | Nitrile | Plugged port | 7 | G1 1/2" | 944453Q |

| Visual Indicators | Part Number | Setting (bar) |
|-------------------|-------------|---------------|
| | FMUM3MVMS08 | 5 |

For spare element see page 130.

| Electrical Indicators | Part Number | Setting (bar) | Switch Type | Additional |
|-----------------------|-------------|---------------|-------------|-----------------------|
| | FMUT1MVMS08 | 5 | NO/NC | |
| | FMUF1MVMS08 | 5 | NO | Electronic 4 LED, PNP |
| | FMUF2MVMS08 | 5 | NO | Electronic 4 LED, NPN |
| | FMUF3MVMS08 | 5 | NC | Electronic 4 LED, PNP |
| | FMUF4MVMS08 | 5 | NC | Electronic 4 LED, NPN |

EPF *iprotect*®

High Pressure Filter

Ordering Information

| | | | | | | | |
|-------------|----------|-------------|----------|----------|----------|------------|----------|
| Box 1 | Box 2 | Box 3 | Box 4 | Box 5 | Box 6 | Box 7 | Box 8 |
| EPF3 | 2 | 02QI | B | P | M | G16 | 1 |

Box 1

| Capacity | |
|-----------------------|-------------|
| Model | Code |
| Size 1 (40 l/min) | EPF1 |
| Size 2 (replaces 18P) | EPF2 |
| Size 3 (replaces 28P) | EPF3 |
| Size 4 (replaces 38P) | EPF4 |
| Size 5 | EPF5 |

Box 2

| Filter Length | |
|---|----------|
| | Code |
| Length 1 | 1 |
| Length 2 (not for Size 1 and Size 5) | 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 | | | | |
|--|-------------|-------------|-------------|-------------|
| | Media code | | | |
| <i>iprotect</i> ® Glassfibre element | 02QI | 05QI | 10QI | 20QI |
| <i>iprotect</i> ® with reverse flow valve(*) | 02QIR | 05QIR | 10QIR | 20QIR |
| <i>iprotect</i> ® High Strength element | 02QIH | 05QIH | 10QIH | 20QIH |

(*Note: Only in combination with 3.5 bar bypass)

Box 4

| Seal Material | |
|----------------|----------|
| | Code |
| Nitrile | B |
| Fluorelastomer | V |

Box 5

| Indicator | |
|---------------------------|-----------|
| | Code |
| Visual Indicator | M3 |
| Electrical Indicator | T1 |
| Electronic 4 LED, PNP, NO | F1 |
| Electronic 4 LED, NPN, NO | F2 |
| Electronic 4 LED, PNP, NC | F3 |
| Electronic 4 LED, NPN, NC | F4 |
| Plugged with Steel plug | P |
| No indicator port | N |

Other versions like ATEX on request
All electrical indicators are CE-certified

Box 6

| Bypass Setting | | |
|----------------|-------------------|----------|
| | Indicator Setting | Code |
| 3.5 bar | 2.5 bar | K |
| 5.0 bar | 3.5 bar | L |
| 7.0 bar | 5.0 bar | M |
| No bypass | 5.0 bar | M |
| No bypass | No indicator | X |

Important notes: When no bypass is selected Parker strongly advises the use of high strength elements

Box 8

| Options | | |
|---|---|----------|
| | | Code |
| Standard | | 1 |
| No bypass | | 2 |
| Reverse flow valve | Safeguard valve only in combination with 3.5 bar bypass | RFV |
| ATEX certified* (Category 2, non-electrical equipment) | | EX |

Note 1: For non-bypass please select High strength element type QIH
Note 2: 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.
Pis consult Parker Filtration for any questions related to the classification of our products.

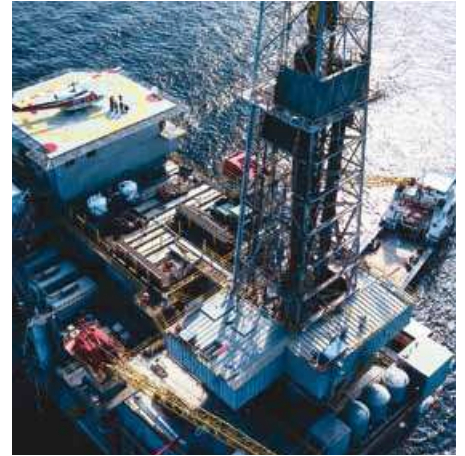
Box 7

| Filter Connection | | |
|-------------------|------------------------|------------|
| | Connection type & size | Code |
| Size 1 | Thread G½ | G08 |
| | Thread SAE 8 | S08 |
| Size 2 | Thread G½ | G08 |
| | Thread G¾ | G12 |
| | Thread SAE 12 | S12 |
| | Thread M27, ISO 6149 | M27 |
| | SAE flange ¾ - 6000M | H12 |
| | SAE flange ¾ - 6000 | F12 |
| | Manifold | X12 |
| Size 3 | Thread G1 | G16 |
| | Thread SAE 16 | S16 |
| | Thread M33, ISO 6149 | M33 |
| | SAE flange 1 - 6000M | H16 |
| | SAE flange 1 - 6000 | F16 |
| Size 4 | Thread G1¼ | G20 |
| | Thread G1½ | G24 |
| | Thread SAE20 | S20 |
| | Thread SAE24 | S24 |
| | Thread M42, ISO 6149 | M42 |
| | SAE flange 1¼ - 6000M | H20 |
| | SAE flange 1¼ - 6000 | F20 |
| | Manifold | X20 |
| Size 5 | Thread G1½ | G24 |
| | Thread SAE 24 | S24 |
| | SAE flange 1½ - 6000M | H24 |
| | Manifold | X20 |

EAPF iprotect®

(Ecological ATEX Pressure Filter)

High Pressure Stainless Steel Filters
Max 120 l/min - 690 bar



Safety is a process that never stops

Designed with the iprotect® patented filtration technology

The Parker EAPF iprotect® is designed to provide high quality filtration of hydraulic systems, providing new possibilities reduce the cost of ownership by improving their productivity and profitability.

Meeting the stringent demands of the Marine, Oil & Gas and process equipment markets, the EAPF iprotect® covers a range up to 120 l/min at 690 bar working pressure.

A radical, innovative approach was applied, utilising a new patented design of the filter element providing a high level of embedded safety. Thanks to the patented product design, a service-friendly product has resulted which avoids the use of pirate-type spare parts with unknown quality of filtration. The iprotect® product applies a re-usable element core which can be combined with a bypass valve, reducing the environmental impact over 50% typically.

The EAPF applies twin seal technology. One seal ensures that seawater and contamination cannot ingress the threaded connection between the filter head and bowl. A special hole pattern is applied in the bowl for decompression of the threaded area, this ensures maximum sealing performance of the main seal.

Combined with the flexibility of various connection types (NPT, BSP, Autoclave) and optional versions with integrated check valves to handle system back flushing, the modular EAPF range provides effective integration of high pressure filter solutions in hydraulic systems.



Product Features:

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

- Duplex stainless steel housing
- 690 bar rated filter housing
- Twin Seal concept for maximum protection and seal performance
- iprotect® patented filter element
- Wide range of fibreglass and stainless steel mesh filter media
- Optional versions for back-flush systems
- ATEX certified filter housing and indicators
- Coated filter housing to prevent grating of threaded connections

| Features | Advantages | Benefits |
|--|---|--|
| Patented filter element | Avoid use of non-genuine parts | Guaranteed quality of filtration |
| Service element remains in filter bowl | Less space needed to change/service the filter | More compact solutions are possible |
| Environmentally-friendly design | Reduces environmental waste over 50% | Lower disposal cost |
| Service-friendly product design | No handling of loose re-usable parts | No risk of making mistakes while servicing the filter |
| Twin-Seal technology | Improved sealing of filter housing parts | Lower risk of leakage |
| | | No corrosion of threaded connection filter head and bowl |
| Wide range of indicators | Continuous feedback of condition filter elements | Optimising filter element life time |
| | | Contributes to scheduled maintenance |
| Coated filter housing | Prevents grating of threaded filter head and bowl | Long life time of filter housing |

Typical Applications

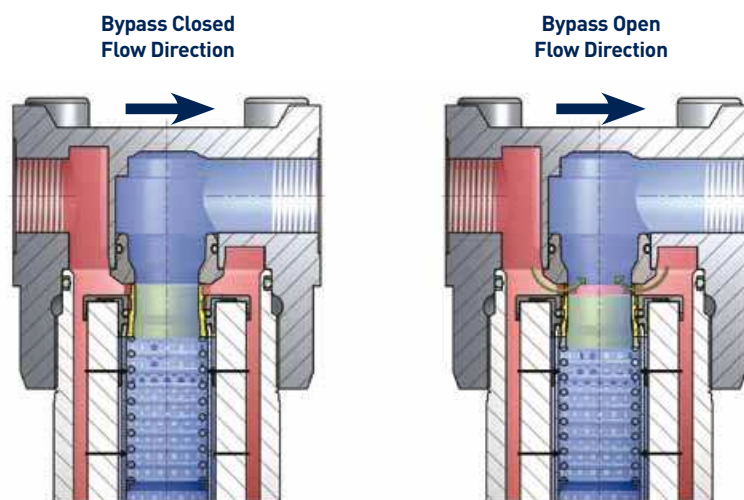
- Drilling equipment
- Lifting equipment
- Sub sea systems
- Deck equipment
- Flushing rigs
- Chemical injection



The Parker EAPF *iprotect*® series patented bypass valve technology

Bypass settings are available up to 7 bar or completely blocked in conjunction with patented, high strength filter elements. The principle is based on differential pressure measurement

across the filter element. During bypass only a part of the main flow is flowing through the bypass valve.



EAPF *iprotect*®

High Pressure Stainless Steel Filters

Selecting the right EAPF element



EAPF Spare Element Information

Type QI

| | |
|--------------------------|---------|
| EAPF Size 1 L1 2 micron | 944418Q |
| EAPF Size 1 L1 5 micron | 944419Q |
| EAPF Size 1 L1 10 micron | 944420Q |
| EAPF Size 1 L1 20 micron | 944421Q |
| EAPF Size 1 L2 2 micron | 944422Q |
| EAPF Size 1 L2 5 micron | 944423Q |
| EAPF Size 1 L2 10 micron | 944424Q |
| EAPF Size 1 L2 20 micron | 944425Q |

Type QIH

| | |
|--------------------------|---------|
| EAPF Size 1 L1 2 micron | 944481Q |
| EAPF Size 1 L1 5 micron | 944482Q |
| EAPF Size 1 L1 10 micron | 944483Q |
| EAPF Size 1 L1 20 micron | 944484Q |
| EAPF Size 1 L2 2 micron | 944485Q |
| EAPF Size 1 L2 5 micron | 944486Q |
| EAPF Size 1 L2 10 micron | 944487Q |
| EAPF Size 1 L2 20 micron | 944488Q |

Type QIR

| | |
|--------------------------|---------|
| EAPF Size 1 L1 2 micron | 944561Q |
| EAPF Size 1 L1 5 micron | 944562Q |
| EAPF Size 1 L1 10 micron | 944563Q |
| EAPF Size 1 L1 20 micron | 944564Q |
| EAPF Size 1 L2 2 micron | 944565Q |
| EAPF Size 1 L2 5 micron | 944566Q |
| EAPF Size 1 L2 10 micron | 944567Q |
| EAPF Size 1 L2 20 micron | 944568Q |

Protecting your system and the environment

Protect your system performance and profit

The new *iprotect*® generation of filter elements provide high filtration performance combined with patented technology. The bespoke design prevents the use of pirate type alternatives.



Less space needed to accommodate the filter

More compact solutions are possible as the filter element remains in the filter bowl during change of filter element. Compared to traditional solutions it does not only save space, it also reduces the required manual handling during the filter change process.



Saving cost and our environment

What does it take to introduce a new ground-breaking design which saves the environment? Parker's EAPF *iprotect*® applies a re-usable element core and bypass, both integral parts of the filter bowl. This solution avoids the handling of re-usable parts during element change and reduces over 50% disposal weight.



Smart valve technology

Parker hydraulic control valve technology is applied for the reusable bypass valve. This leakage-free valve has a patented interface with the filter element, which ensures that genuine parts are always applied. With bypass settings up to 7 bar filtration during cold start conditions, more compact solutions, can be realised. The valve also optimises the flow path, reducing the pressure lost across the filter.



Easier to integrate

Parker has set the trend to integrate filtration into manifolds. With Parker's EAPF *iprotect*® we have taken the design one step further. Only one cavity is needed to accommodate the filter instead of two, this is because the re-usable bypass valve is integrated into the filter bowl, reducing space and cost.



Customised solutions

Parker's motion & control technologies provide new opportunities for our customers. Customised manifolds or duplex filters, as in this example offer complete automatic change-over. The EAPF *iprotect*® contributes to realizing new solutions, improving your productivity and profitability.



A protective 'gene'

The performance and profitability of systems directly depends upon the filter media.



It goes without saying that Parker's patented products aim to avoid the use of unknown filter performance, jeopardising safety and performance. Our III media is continuously upgraded and acts as a protective 'gene' in the system.

When going into reverse

Parker's EAPF can be equipped with an optional reverse flow. This valve assembly is integrated in the element end cap and isolates the filter medium during reverse flow conditions.



A new patented design of the filter element allows integration of the bypass valve and element core as re-usable parts in the filter bowl. This results in cost reduction when integrating the high pressure filter in manifold type solutions. But it also reduces the waste when changing the filter element by over 50% as the element core is an integral part of the filter bowl.

The design of the EAPF *iprotect*®, is unique, there is no need to re-install any re-usable parts as with some other filters in the market. This makes the product fool proof as there is no risk of forgetting to re-install re-usable parts.



Replacing the filter element:

- Drain the filter housing using the plugged drain port.
- Thanks to the filter lock the element remains in the bowl.
- Pull out the old element. The re-usable element core and bypass valve are integral parts of the bowl.
- Filtration is from 'Out to In,' the element core is located in the clean oil side.
- Just drop the new element in the bowl.
- Screw the bowl, including element into the filter head.

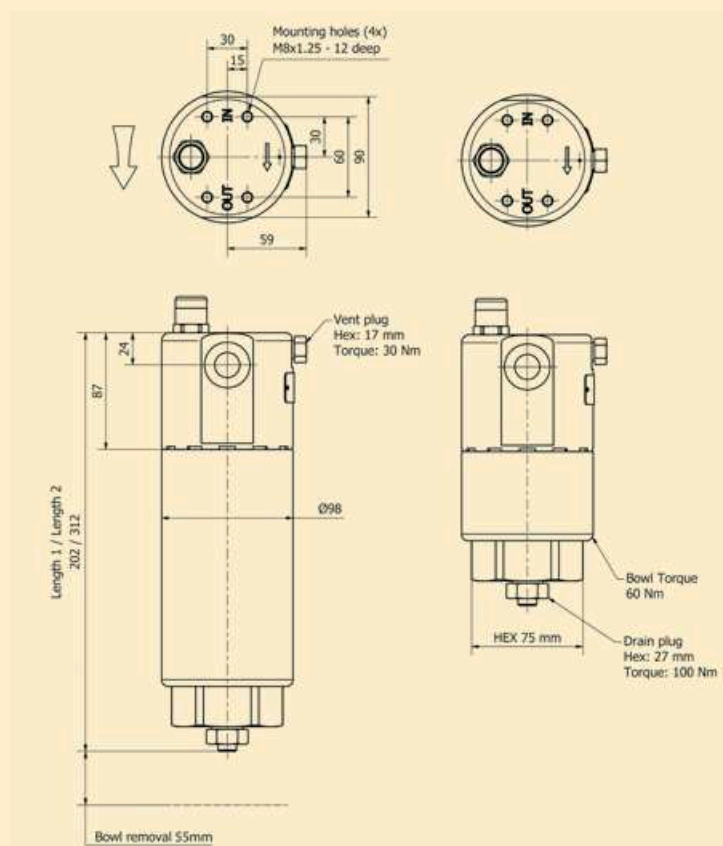
EAPF *iprotect*®

Size 1

Specification EAPF *iprotect*® Size 1

| | | | |
|--|---|-----------|--|
| Specification Nominal flow 120 l/min | Bypass valve & Indicator settings | | Indicator options |
| | Bypass | Indicator | Indicating differential pressure: |
| Pressure ratings | 3.5 bar | 2.5 bar | 2.5 +/- 0.3 bar |
| Maximum allowable operating pressure 690 bar | 5.0 bar | 4.0 bar | 5.0 +/- 0.3 bar |
| Filter housing pressure pulse fatigue tested 10^6 pulses 0-690 bar | 7.0 bar | 5.0 bar | 7.0 +/- 0.3 bar |
| | Blocked | 7.0 bar | |
| Connections | Filter element | | Visual M3 |
| Inlet and outlet connections are threaded internally | Degree of filtration | | Electrical T1 |
| | Determined by multipass test in accordance to ISO16889 | | Electronic F1 (PNP) |
| | | | Electronic F2 (NPN) |
| | | | Atex versions are available on request |
| Connection style | Flow fatigue characteristics | | Weights (kg) |
| 1/2" and 3/4" NPT | Filter media is supported so that the optimal fatigue life is achieved (ISO 3724) | | EPF Size 1 length 1: 13 |
| Autoclave type connection | | | EPF Size 1 length 2: 17 |
| 1/2" and 3/4" BSP | | | |
| Filter housing | Microglass III | | |
| Head material Duplex Stainless Steel | Supported with epoxy coated metal wire mesh, end cap material reinforced composite and reusable metal inner core. Collapse pressure 25 bar (ISO 2941) | | |
| Bowl material Duplex Stainless Steel | | | |
| Seal material | High collapse elements | | |
| Nitrile of Fluorelastomer | To be used when bypass blocked option is selected | | |
| | Collapse pressure 210 bar (ISO 2941) | | |
| Operating temperature range | | | |
| Seal material Nitrile : -40C to +100 C | | | |
| Seal material Fluorelastomer : -20C to +120 C | | | |

EAPF *iprotect*® - Size 1 (Inline)



EAPF *iprotect*® Size 1 Pressure Drop Curves

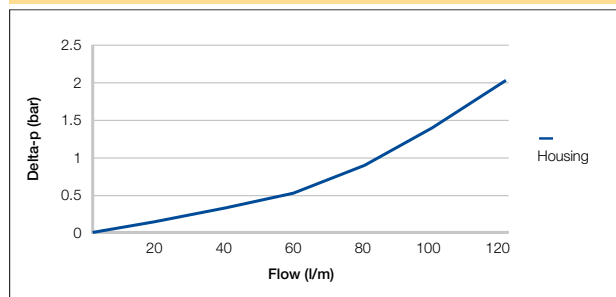
With 3.5 bar bypass the recommended initial pressure drop max is 1.2 bar

With 7.0 bar bypass the recommended initial pressure drop max is 2.3 bar

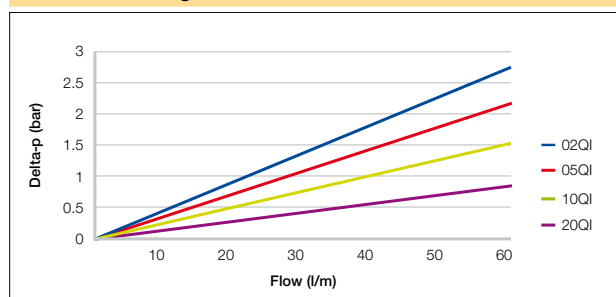
If the medium used has a viscosity different from 30cSt, pressure drop over the filter can be estimated as follows:

The total Δp = housing Δp_h + (element $\Delta p_e \times \text{working viscosity}/30$).

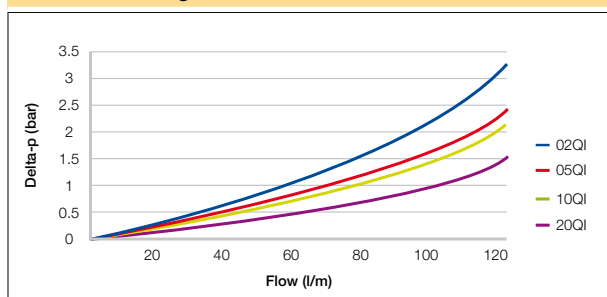
EAPF Size 1 Empty Housing



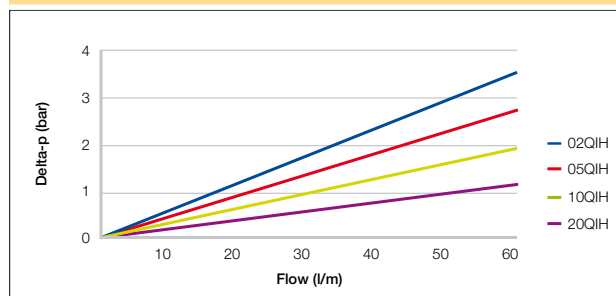
EAPF Size 1 Length Filter Elements



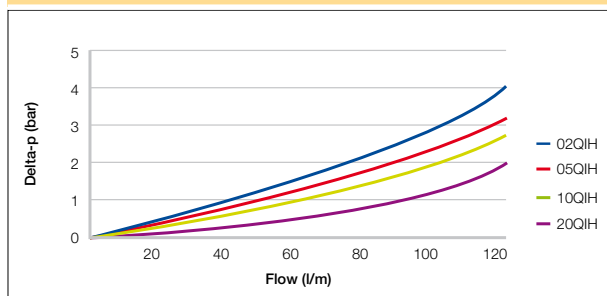
EAPF Size 1 Length 2 Filter Elements



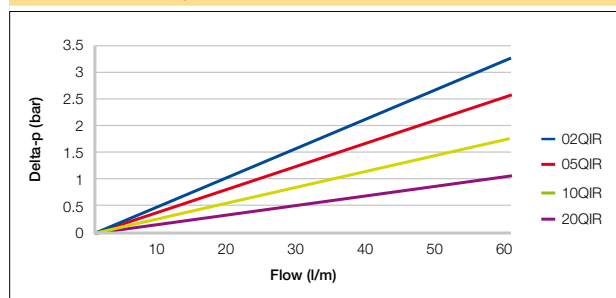
EAPF Size 1 Length 1 High Strength Filter Elements



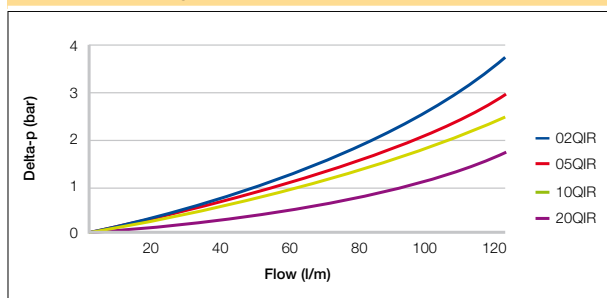
EAPF Size 1 Length 2 High Strength Filter Elements



EAPF Size 1 Length 1 Filter Element with Reverse Flow Valve



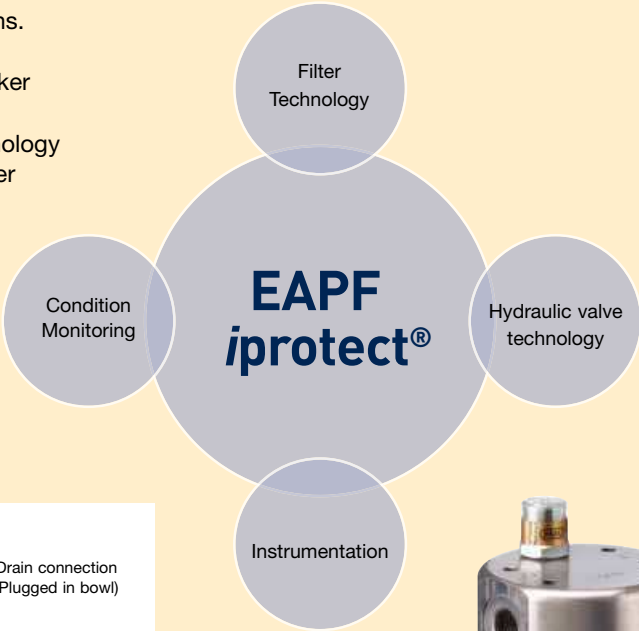
EAPF Size 1 Length 2 Filter Element with Reverse Flow Valve



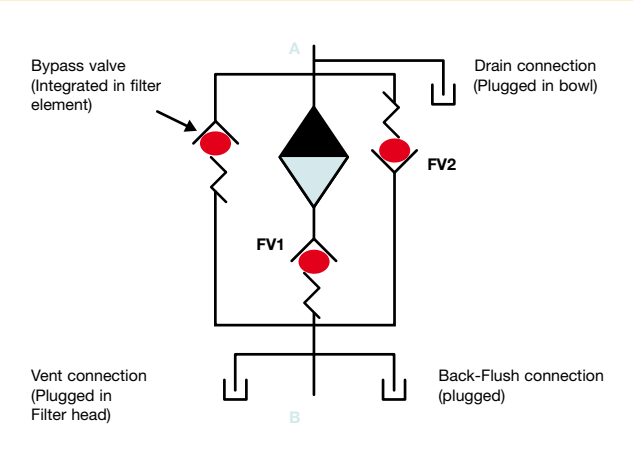
EAPF *iprotect*®

Filter Configuration for Back - Flush Systems

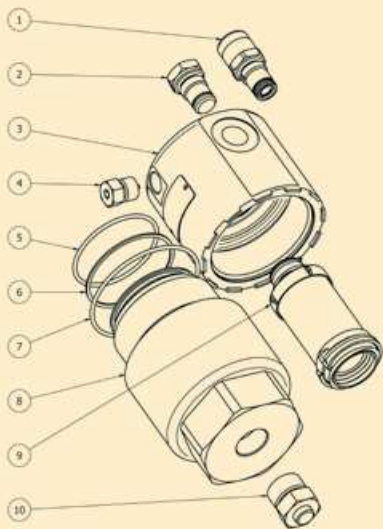
Parker provides tailor-made filtration solutions. For systems with back-flush requirements a customised solution can be considered. Parker Filtration can integrate condition monitoring, instrumentation and fluid control valve technology into the filter. Please consult your local Parker representative for more information.



EAPF circuit Back flush filter version



EAPF *iprotect*® - Size 1



| Index | Description | Part Number |
|-------|----------------|-------------|
| 1 | Indicator | On Request |
| 2 | Plug | On Request |
| 3 | Filter head | On Request |
| 4 | Vent plug | On Request |
| 5 | O-ring | In seal kit |
| 6 | Back-up ring | In seal kit |
| 7 | O-ring | In seal kit |
| 8 | Filter bowl | On Request |
| 9 | Filter element | On Request |
| 10 | Drain plug | On Request |

| Filter | Nitrile | Fluorelastomer |
|-------------|-----------|----------------|
| EAPF Size 1 | EAPFSK001 | EAPFSK002 |

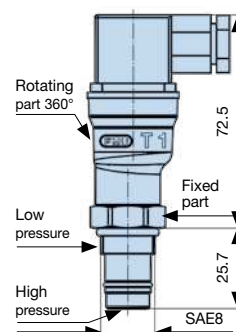
Indicator Options

FMU Δp-Indicators and Pressure Indicators

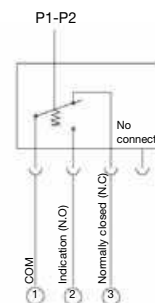
FMUT Electrical

| Rated voltage | Non-inductive load (A) | | | | Inductive load (A) | | | | Inrush current (A) | |
|---------------|------------------------|------|-----------|------|--------------------|------|------------|------|--------------------|---------|
| | Resistive load | | Lamp load | | Inductive load | | Motor load | | N.C. | N.O. |
| | N.C. | N.O. | N.C. | N.O. | N.C. | N.O. | N.C. | N.O. | | |
| 125VAC | 5 | 1.5 | 0.7 | | 3 | 2.5 | 1.3 | | 20 max. | 10 max. |
| 250VAC | 3 | 1.0 | 0.5 | | 2 | 1.5 | 0.8 | | | |
| 8VDC | 5 | | 2 | | 5 | 4 | 3 | | | |
| 14VDC | 5 | | 2 | | 4 | 4 | 3 | | | |
| 30VDC | 4 | | 2 | | 3 | 3 | 3 | | | |
| 125VDC | 0.4 | | 0.05 | | 0.4 | 0.4 | 0.05 | | | |
| 250VDC | 0.2 | | 0.03 | | 0.2 | 0.2 | 0.03 | | | |

Electrical Indicator Type T1



Contact configuration

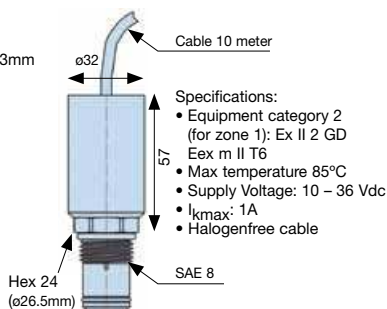


| | |
|----------------------|----------------|
| Enclosure class | IP65 |
| Electrical connector | DIN 43650 |
| Overvoltage category | II (EN61010-1) |

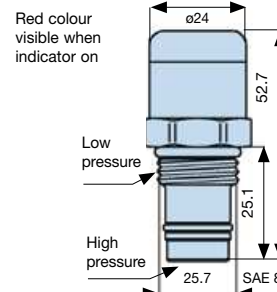
Electrical Connection

Voltage: 10 - 36 Vdc
Current: 300 MA (Max.)
Cable: Halogen free HABIA N2419 I14 4x0, 3mm
Red = Input voltage
Blue = GND
White = Pre - Indication
Black = Indication

FMUX ATEX Approved Electronic



FMUM3 Visual Auto Reset Operation



Ordering Information

| | | | | | | | |
|--|-------------------|---|-------------------|---|-------------------|---|-------------------|
| Box 1 EAPF1 | Box 2 2 | Box 3 05QI | Box 4 B | Box 5 X1 | Box 6 M | Box 7 N08 | Box 8 1 |
| Box 1 Capacity Model Code Size 1 EAPF1 | | Box 2 Filter Length Length 1 (60 l/min) 1 Length 2 (120 l/min) 2 | | Box 3 Degree of filtration Media code i/protect® Glassfibre element 02QI 05QI 10QI 20QI i/protect® high strength element 02QIH 05QIH 10QIH 20QIH i/protect® with reverse flow valve(*) 02QIR 05QIR 10QIR 20QIR (*Note: Only in combination with 3.5 bar bypass) | | Box 5 Indicator Visual Indicator M3 Electrical Indicator (non ATEX) T1 Ex version, PNP, NO (LED's are not available) X1 Electronic 4 LED, PNP, NO on request Electronic 4 LED, NPN, NO on request Electronic 4 LED, PNP, NC on request Electronic 4 LED, NPN, NC on request Plugged with Stainless Steel plug P No indicator port N | |
| Box 4 Seal Material Code Nitrile B Fluorelastomer V | | Box 6 Bypass Setting Indicator Setting Code 3.5 bar 2.5 bar K 5.0 bar 4.0 bar L 7.0 bar 5.0 bar M No bypass 5.0 bar M No bypass No indicator X | | Box 7 Filter Connection Connection type & size Code Size 1 Thread 1/2" NPT N08 Thread 3/8" G08 Autoclave on request | | Box 8 Options Code Standard 1 No bypass 2 Reverse flow valve Safeguard valve only in combination with 3.5 bar bypass RFV ATEX certified* (Category 2, non-electrical equipment) EX | |

Note 1: Important notes: When no bypass is selected Parker strongly advises the usage of high strength elements

Note 2*: 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.

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 |



EMDPF *i*protect®

(Manually Operated High Pressure Duplex Filter)

High Pressure Filters
Max. 300 l/min - 420 bar



A compact, cost effective pressure filter solution

Designed with the *i*protect® patented filtration technology

The Parker EMDPF *i*protect® duplex filter is designed to provide high quality filtration of hydraulic and lubrication type systems, providing new possibilities to reduce the cost of ownership by improving productivity and profitability.

A radical, innovative approach was applied with the design of the EMDPF duplex family. The standard range covers a flow capacity up to 300 l/min at 420 bar working pressure.

A new patented design of the filter element allows integration of the bypass valve and element core as re-usable parts in the filter bowl. This makes the product foolproof as there is no risk of forgetting to re-install re-usable parts.

Because the filter element remains in the bowl during service events, less space is needed to change the filter element.

The EMDPF features various safety functions such as integrated pressure equalizing line, pressure peak protection of the element indicator and low torque for switching the ball valve. High quality seal technology makes the change of the filter element possible with the system able to continue operating.



Product Features:

The Parker element design guarantees the quality of filtration, which directly impacts on 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 of equipment.

- Guaranteed quality of filtration
- Filter element remains in-bowl during service
- Maximum use of re-usable parts
- Integrated safety functions
- Unique OEM branding opportunities
- No risk of installation mistakes due to a foolproof design

EMDPF *iprotect*®

High Pressure Filters

| 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 |
| | | Reduce service time for filter by over 40% |
| Environmentally-friendly design | Reduces environmental waste over 50% | Lower disposal cost |
| Service-friendly product design | No handling of loose re-usable parts | No risk of making mistakes during change of element |
| Bypass valve integral part of filter bowl | Easy to integrate in manifold systems | More compact and lower cost of manifold (only one cavity is needed) |
| | Lower pressure loss across filter | Saving energy, improving system efficiency |
| Wide range of differential pressure indicators | Continuous feedback of filter element condition | Optimizing filter element life |
| | | Contributes to scheduled maintenance |

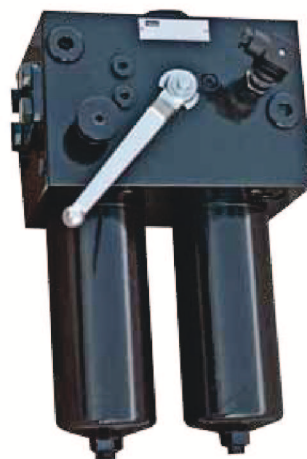
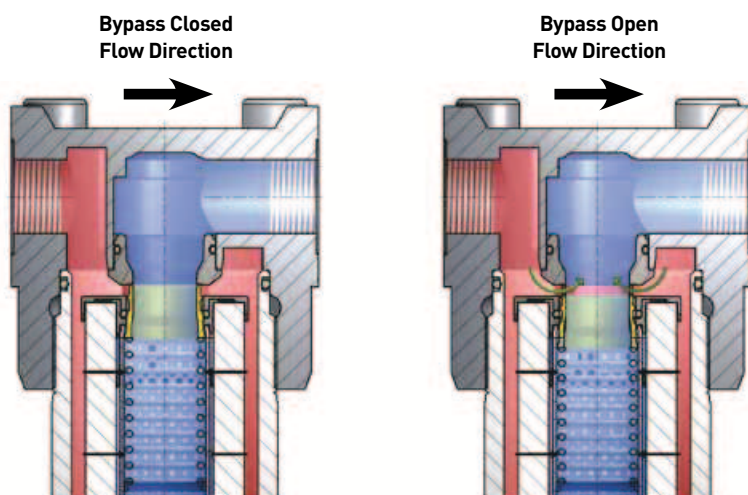
Typical Applications

- Servo controls
- Industrial working hydraulics
- Control systems

The Parker EMDPF *iprotect*® series patented bypass valve technology

Bypass settings are available up to 7 bar or completely blocked in conjunction with patented, high strength filter elements. The principle is

based on differential pressure measurement across the filter element. During bypass only a part of the main flow is flowing through the bypass valve.



EMDPF *iprotect*® applies the latest generation of Microglass III filter media. The patented element design guarantees the quality of filtration.

Protecting your system and the environment

Protect your system performance and profit

The new *iprotect*® generation of filter elements provide high filtration performance combined with Parker technology. The bespoke design prevents the use of pirate type alternatives.



Less space needed to accommodate the filter

More compact solutions are possible as the filter element remains in the filter bowl during change of filter element. Compared to traditional solutions it does not only save space, it also reduces the required manual handling during the filter change process.



Saving cost and our environment

What does it take to introduce a new ground-breaking design which saves the environment? Parker's EMDPF *iprotect*® applies a re-usable element core and bypass, both integral parts of the filter bowl. This solution avoids the handling of re-usable parts during element change and reduces over 50% disposal weight.



Smart valve technology

Parker hydraulic control valve technology is applied for the reusable bypass valve. This leakage-free valve has a patented interface with the filter element, which ensures that genuine parts are always applied. With bypass settings up to 7 bar filtration during cold start conditions, more compact solutions, can be realised. The valve also optimizes the flow path, reducing the pressure lost across the filter.



Easier to integrate

Parker has set the trend to integrate filtration into manifolds. With Parker's EMDPF *iprotect*® we have taken the design one step further.



Only one cavity is needed to accommodate the filter instead of two, this is because the re-usable bypass valve is integrated into the filter bowl, reducing space and cost.

Customized solutions

Parker's motion & control technologies provide new opportunities for our customers. Customized manifolds or duplex filters, as in this example offer complete automatic change-over. The EMDPF *iprotect*® contributes to realizing new solutions, improving your productivity and profitability.



A protective 'gene'

The performance and profitability of systems directly depends upon the filter media.



It goes without saying that Parker's products aim to avoid the use of unknown filter performance, jeopardizing safety and performance. Our Microglass III media is continuously upgraded and acts as a protective 'gene' in the system.

When going into reverse

Parker's EMDPF can be equipped with an optional reverse flow. This valve assembly is integrated in the element end cap and isolates the filter medium during reverse flow conditions.



A new design of the filter element allows integration of the bypass valve and element core as re-usable parts in the filter bowl. This results in cost reduction when integrating the high pressure filter in manifold type solutions. But it also reduces the waste when changing the filter element by over 50% as the element core is an integral part of the filter bowl.

The design of the EMDPF *iprotect*®, is unique, there is no need to re-install any re-usable parts as with some other filters in the market. This makes the product fool proof as there is no risk of forgetting to re-install re-usable parts.



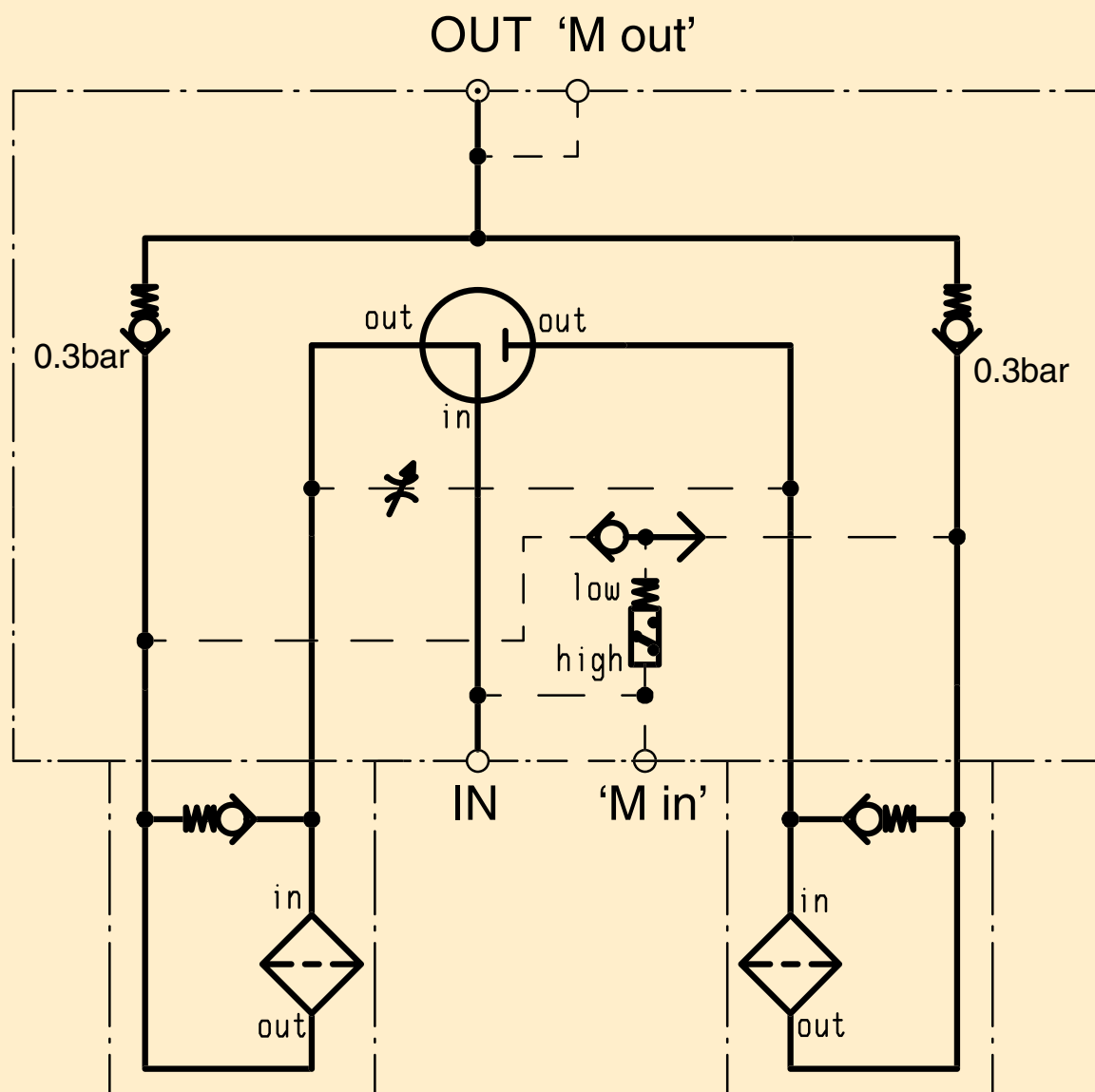
Replacing the filter element:

- Drain the filter housing using the plugged drain port.
- Thanks to the filter lock the element remains in the bowl.
- Pull out the old element. The re-usable element core and bypass valve are integral parts of the bowl.
- Filtration is from 'Out to In,' the element core is located in the clean oil side.
- Just drop the new element in the bowl.
- Screw the bowl, including element into the filter head.

EMDPF *iprotect*®

Circuit diagram

EMDPF *iprotect*®



Principle of Operation

The EMDPF *iprotect*® features a 3/2-way ball valve to control the main flow through the filter. This 3/2-way ball valve is manual operated.

To avoid excessive pressure peaks during the change-over process, Parker's EMDPF features an integrated equalizing line. Using a needle valve this equalizing line is opened before changing-over the main 3/2-way ball valve. After change-over this equalizing line needs to be closed.

Two one-way flow valves are integrated in the filter to avoid unwanted reverse flow of oil through the filter element.

Parker recommends applying a differential pressure indicator to obtain information about the condition of the filter element. A wide range of visual, electrical and electronic type indicators are available.

The differential pressure indicator is protected against excessive pressure peaks by using an integrated shutter valve in the sensing lines. Min and Mout are plugged measurement connection points.

Applying Innovation

EMDPF iprotect and the icount Condition Monitoring Family

EMDPF iprotect® and icount Particle Detection



For more information on the potential to be gained by combining Parker Filtration's Fluid Condition Monitoring equipment with EMDPF iprotect® technology, consult Parker Filtration.



Parker's worldwide experience in Fluid Condition Monitoring and Contamination Control

Parker's ability to provide engineered solutions is embedded in the modular product architecture when it comes to filtration and condition monitoring solutions.

Besides protecting the system against contamination by applying quality filtration, the importance of having real-time information about the system cleanliness level or oil condition is becoming more important.

Based on customized manifolds, unique opportunities are present to combine or integrate condition monitoring sensors with our filters.

icount Particle Detection

The icount PD Particle Detector from Parker represents the most up to date technology in particle detection. The robust design of

the housing allows operation in heavy duty environments.

The on-board laser based technology provides direct information about the fluid cleanliness level.

By implementing particle detection, important information about the system contamination trends can be obtained. Integrated LED or digital displays provide indication of low, medium and high contamination levels.

Moisture measurement

Moisture is the second largest source of contamination after solid type contamination. Both account for over 80% of failures of hydraulic systems.

High moisture levels accelerate the process of oil degradation, having direct negative impact on the fluid's performance. Hydraulic fluids are engineered to provide high performance lubrication, protection against corrosion and energy transfer. Oil degradation reduces the fluid life time and as a consequence, the life time of components when efficient lubrication is no longer provided.

By measuring the fluid's moisture level, adequate maintenance can be scheduled in time before system breakdowns or excessive wear & tear to system components occur.

The MS moisture sensor range can be integrated in customized manifold blocks.

The icount particle detector family can also be equipped with an optional moisture sensor.

EMDPF *i*protect®

Size 3

Specification EMDPF *i*protect®

Specification

Nominal flow 150 l/min

Pressure ratings

Maximum allowable working pressure 420 bar

Connections

Integrated in block

Connection style

Thread G1"

SAE-flange 1¼" SAE-6000M

'M in' / 'M out': G1¼"

Filter housing

EMDPF Head material: steel

Bowl material: steel

Seal material

Nitrile or Fluorelastomer

Operating temperature range

Seal material Nitrile : -40 °C to +100 °C

Seal material Fluorelastomer : -20 °C to +120 °C

Bypass valve & Indicator settings

Bypass Indicator

3.5 bar 2.5 bar

5.0 bar 3.5 bar

7.0 bar 5.0 bar

Blocked 5.0 bar

Filter element

Degree of filtration

Determined by multipass test in accordance with ISO16889

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 reusable metal inner core. Collapse pressure 25 bar (ISO 2941)

High collapse elements

To be used when bypass blocked option is selected

Collapse pressure 210 bar (ISO 2941)

Indicator options

Indicating differential pressure:

2.5 +/- 0.3 bar

3.5 +/- 0.3 bar

5.0 +/- 0.3 bar

Visual M3

Electrical T1

Electronic F1 (PNP)

Electronic F2 (NPN)

ATEX versions are available on request

Weights

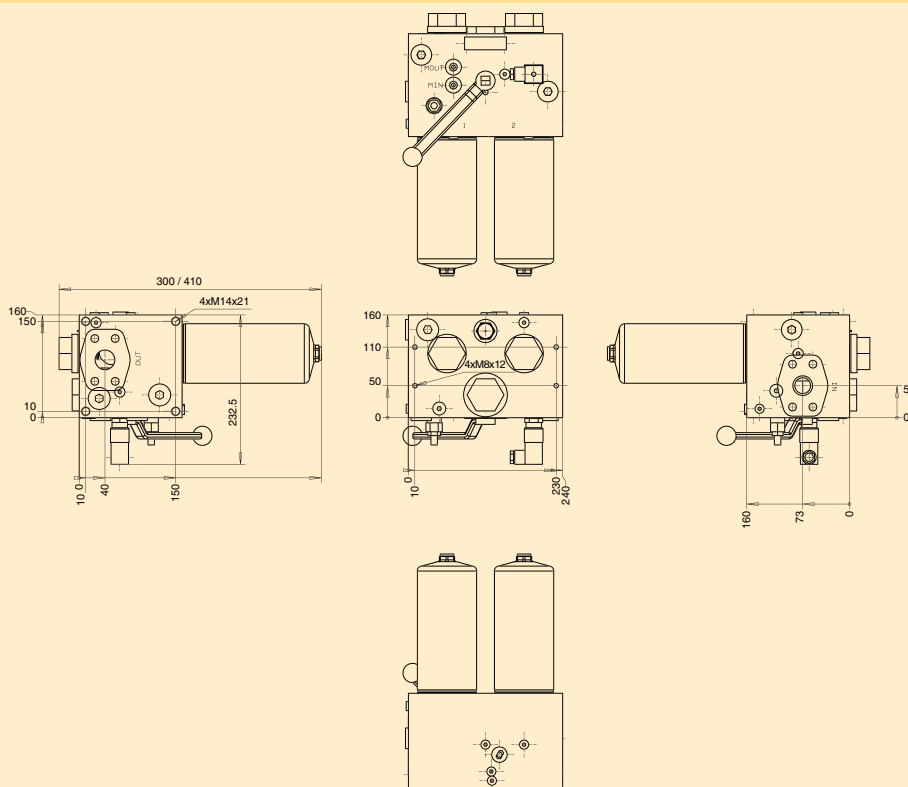
EMDPF Size 3 length 1: 55 kg

EMDPF Size 3 length 2: 57 kg

Fluid compatibility

- Hydraulic mineral oils H to class HLPD (DIN51524)
- Operating fluids DIN ISO 2943
- Lubrication fluids ISO6743, APJ, DIN 51517, ACEA, ASTM
- Vegetable oils
- 60/40 Water Glycols
- On request - Industrial grade phosphate esters
- Non aggressive synthetic oils
- Non aggressive bio-degradable oils (HETG, HEPG and HEES to VDMA 24568)

EMDPF *i*protect® - Size 3 Duplex



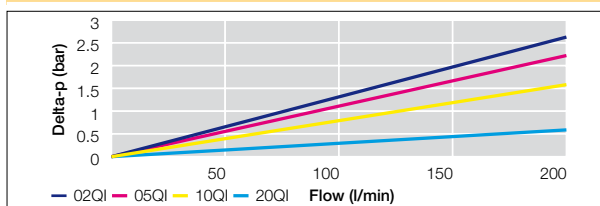
EMDPF *iprotect*® Size 3 Pressure Drop Curves

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

The total Δp = housing Δp_h + (element $\Delta p_e \times \text{working viscosity}/30$).

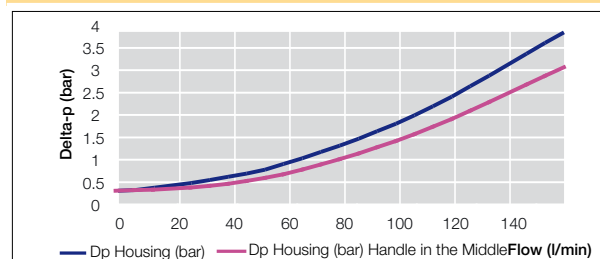
| Size 3 L1 | EMDPF Size 3 Length 1 Dp Elements (bar) | | | |
|--------------|---|------|------|------|
| Flow (l/min) | 02QI | 05QI | 10QI | 20QI |
| 0 | 0 | 0 | 0 | 0 |
| 50 | 0.65 | 0.43 | 0.26 | 0.16 |
| 100 | 1.29 | 0.87 | 0.53 | 0.32 |
| 150 | 1.94 | 1.30 | 0.79 | 0.47 |
| 200 | 2.58 | 1.73 | 1.05 | 0.63 |

EMDPF Size 3 Length 1 Filter Elements



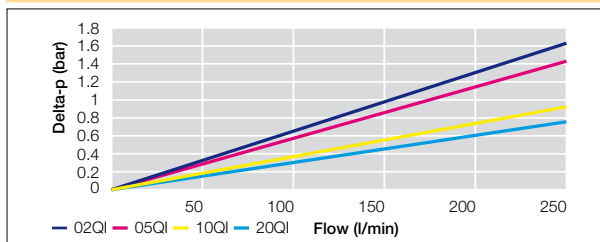
| Size 3 | Empty Housing (bar) | |
|--------------|---------------------|---------------------------------------|
| Flow (l/min) | Dp Housing (bar) | Dp Housing (bar) Handle in the Middle |
| 0 | 0 | 0 |
| 50 | 0,77 | 0,55 |
| 100 | 1,99 | 1,56 |
| 150 | 3,84 | 3,07 |

EMDPF Size 3 Empty Housing



| Size 3 L2 | EMDPF Size 3 Length 2 Dp Elements (bar) | | | |
|--------------|---|------|------|------|
| Flow (l/min) | 02QI | 05QI | 10QI | 20QI |
| 0 | 0 | 0 | 0 | 0 |
| 50 | 0.32 | 0.28 | 0.18 | 0.15 |
| 100 | 0.64 | 0.56 | 0.37 | 0.30 |
| 150 | 0.97 | 0.85 | 0.55 | 0.45 |
| 200 | 1.29 | 1.13 | 0.74 | 0.60 |
| 250 | 1.61 | 1.41 | 0.92 | 0.75 |

EMDPF Size 3 Length 2 Filter Elements



EMDPF *i*protect®

Size 4

Specification EMDPF *i*protect®

Specification

Nominal flow 300 l/min

Pressure ratings

Maximum allowable working pressure 420 bar

Connections

Integrated in block

Connection style

Thread G1½"

SAE-flange 1½" SAE-6000M

MIN/MOUT : G¾"

Filter housing

EMDPF Head material: steel

Bowl material: steel

Seal material

Nitrile or Fluorelastomer

Operating temperature range

Seal material Nitrile : -40 °C to +100 °C

Seal material Fluorelastomer : -20 °C to +120 °C

Bypass valve & Indicator settings

| Bypass | Indicator |
|---------|-----------|
| 3.5 bar | 2.5 bar |
| 5.0 bar | 3.5 bar |
| 7.0 bar | 5.0 bar |
| Blocked | 7.0 bar |

Filter element

Degree of filtration

Determined by multipass test in accordance with ISO16889

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 reusable metal inner core. Collapse pressure 25 bar (ISO 2941)

High collapse elements

To be used when bypass blocked option is selected

Collapse pressure 210 bar (ISO 2941)

Indicator options

Indicating differential pressure:

2.5 +/- 0.3 bar

3.5 +/- 0.3 bar

5.0 +/- 0.3 bar

Visual M3

Electrical T1

Electronic F1 (PNP)

Electronic F2 (NPN)

ATEX versions are available on request

Weights

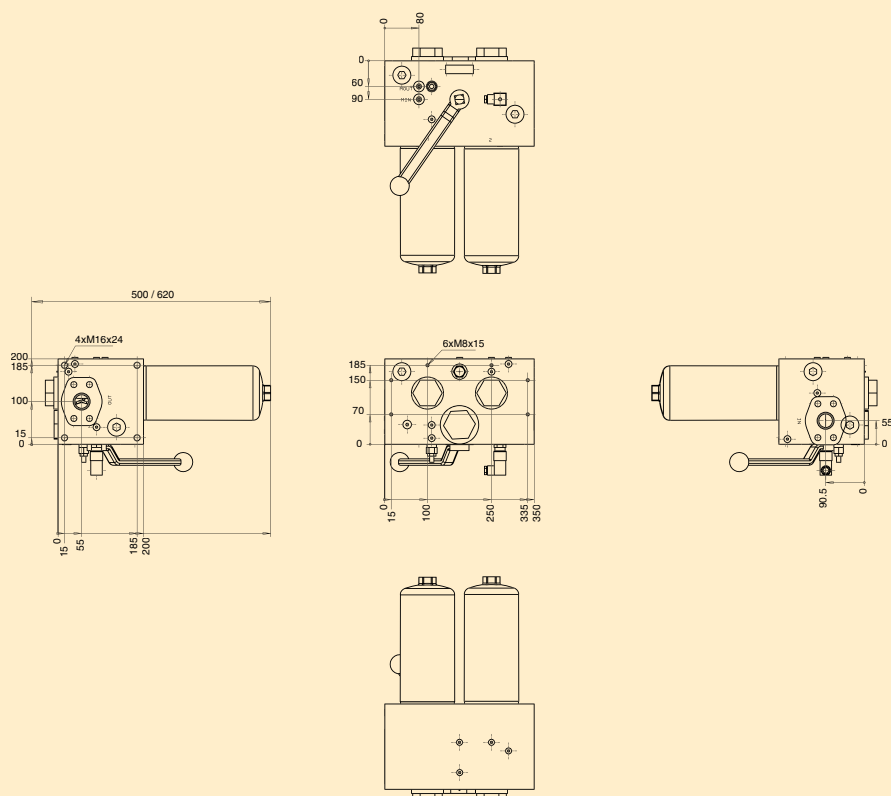
EMDPF Size 4 length 1: 111 kg

EMDPF Size 4 length 2: 116 kg

Fluid compatibility

- Hydraulic mineral oils H to class HLPD (DIN51524)
- Operating fluids DIN ISO 2943
- Lubrication fluids ISO6743, APJ, DIN 51517, ACEA, ASTM
- Vegetable oils
- 60/40 Water Glycols
- On request - Industrial grade phosphate esters
- Non aggressive synthetic oils
- Non aggressive bio-degradable oils (HETG, HEPG and HEES to VDMA 24568)

EMDPF *i*protect® - Size 4 Duplex



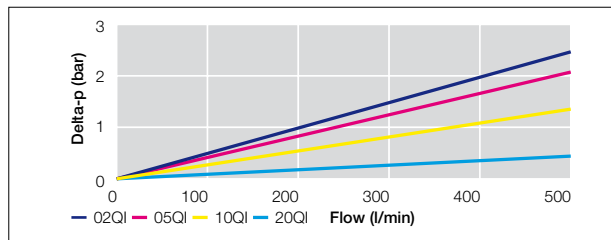
EMDPF *iprotect*® Size 4 Pressure Drop Curves

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

The total Δp = housing Δp_h + (element $\Delta p_e \times \text{working viscosity}/30$).

| Size 4 L1 | EMDPF Size 4 Length 1 Filter Elements | | | |
|--------------|---------------------------------------|------|------|------|
| Flow (l/min) | 02QI | 05QI | 10QI | 20QI |
| 0 | 0 | 0 | 0 | 0 |
| 100 | 0.48 | 0.4 | 0.26 | 0.2 |
| 200 | 0.96 | 0.8 | 0.52 | 0.4 |
| 300 | 1.44 | 1.2 | 0.78 | 0.6 |
| 400 | 1.92 | 1.6 | 1.04 | 0.8 |
| 500 | 2.4 | 2 | 1.3 | 1 |

EMDPF Size 4 Length 1 Filter Elements



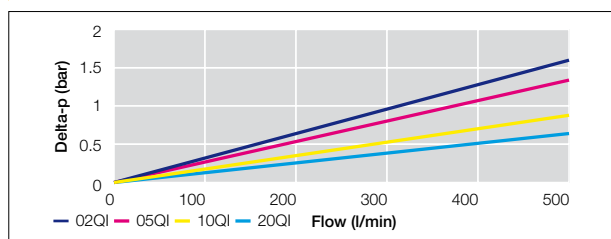
| Size 4 | EMDPF Size 4 Empty Housing (bar) | |
|--------------|----------------------------------|---------------------------------------|
| Flow (l/min) | Dp Housing (bar) | Dp Housing (bar) Handle in the Middle |
| 0 | 0 | 0 |
| 50 | 0,36 | 0,33 |
| 100 | 0,8 | 0,6 |
| 150 | 1,32 | 1,05 |
| 200 | 1,97 | 1,63 |
| 250 | 2,7 | 2,28 |
| 300 | 3,8 | 2,9 |

EMDPF Size 4 Empty Housing



| Size 4 L2 | EMDPF Size 4 Length 2 Filter Elements (bar) | | | |
|--------------|---|------|-------|-------|
| Flow (l/min) | 02QI | 05QI | 10QI | 20QI |
| 0 | 0 | 0 | 0 | 0 |
| 100 | 0.31 | 0.26 | 0.176 | 0.132 |
| 200 | 0.62 | 0.52 | 0.352 | 0.26 |
| 300 | 0.94 | 0.78 | 0.528 | 0.40 |
| 400 | 1.25 | 1.04 | 0.704 | 0.528 |
| 500 | 1.56 | 1.3 | 0.88 | 0.66 |

EMDPF Size 4 Length 2 Filter Elements



Indicator Options

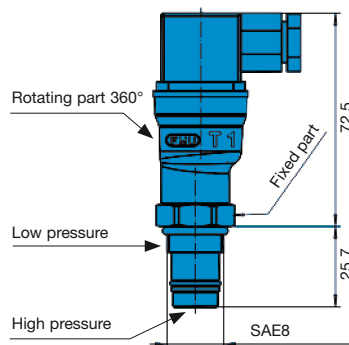
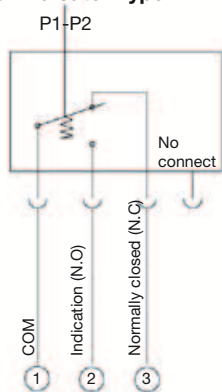
FMU Δp -Indicators and Pressure Indicators

FMUT Electrical

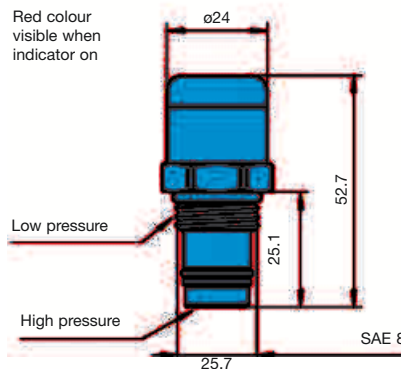
| Rated voltage | Non-inductive load (A) | | | | Inductive load (A) | | | | Inrush current (A) | |
|---------------|------------------------|------|-----------|------|--------------------|------|------------|------|--------------------|---------|
| | Resistive load | | Lamp load | | Inductive load | | Motor load | | | |
| | N.C. | N.O. | N.C. | N.O. | N.C. | N.O. | N.C. | N.O. | N.C. | N.O. |
| 125VAC | 5 | | 1.5 | 0.7 | 3 | | 2.5 | 1.3 | 20 max. | 10 max. |
| 250VAC | 3 | | 1.0 | 0.5 | 2 | | 1.5 | 0.8 | | |
| 8VDC | 5 | | 2 | | 5 | 4 | 3 | | | |
| 14VDC | 5 | | 2 | | 4 | 4 | 3 | | | |
| 30VDC | 4 | | 2 | | 3 | 3 | 3 | | | |
| 125VDC | 0.4 | | 0.05 | | 0.4 | 0.4 | 0.05 | | | |
| 250VDC | 0.2 | | 0.03 | | 0.2 | 0.2 | 0.03 | | | |

| | |
|----------------------|----------------|
| Enclosure class | IP65 |
| Electrical connector | DIN 43650 |
| Overvoltage category | II (EN61010-1) |

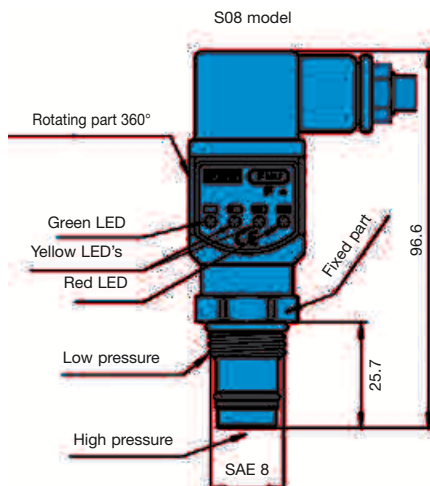
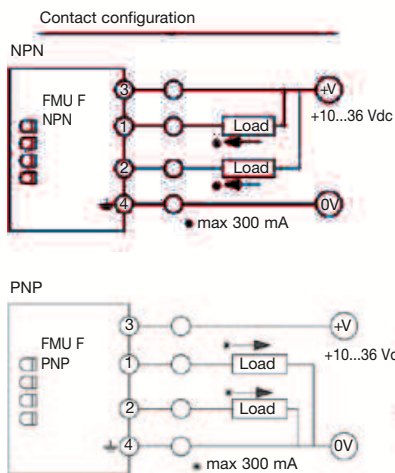
Contact configuration Electrical Indicator Type T1



FMUM3 Visual Auto Reset Operation



FMUF Electronic



Thermal lock-out (standard setting +20 °C)

- Indicator operates only when temperature is above setting.

| Ind. press. setting | LED status | | | | Output |
|---------------------|------------|----|----|---|----------|
| | G | Y1 | Y2 | R | |
| < 50 % | ⊗ | | | | - |
| 50 % | ⊗ | ⊗ | | | - |
| 75 % | ⊗ | ⊗ | ⊗ | | 2 active |
| 100 % | ⊗ | ⊗ | ⊗ | ⊗ | 1 active |

| | |
|----------------------|---|
| Enclosure class | IP65 |
| Electrical connector | DIN 43650, cable connection PG9 or optionally M12 4-pin |
| Input supply voltage | +10 to 36 Vdc |
| *Indication output | max. 300 mA/36 Vdc |
| Output type: | N.O. or N.C./NPN or PNP |

Note: Do not connect output terminals 1 or 2 directly (without load) to power supply terminals, because this will damage the equipment.

Filter media efficiency

| Degree of filtration | | | | | | Code | |
|--|----------|----------|-----------|-----------|------------|------------------------------|---------------------------------------|
| Average filtration beta ratio β (ISO 16889) / particle size μm [c] | | | | | | | |
| βx(c)=2 | βx(c)=10 | βx(c)=75 | βx(c)=100 | βx(c)=200 | βx(c)=1000 | | |
| % efficiency, based on the above beta ration (βx) | | | | | | Disposable Microglass III | Element with reverse flow valve |
| 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 | 02QIR |
| N/A | N/A | 4.5 | 5 | 6 | 7 | 05QI | 05QIR |
| N/A | 6 | 8.5 | 9 | 10 | 12 | 10QI | 10QIR |
| 6 | 11 | 17 | 18 | 20 | 22 | 20QI | 20QIR |

Ordering information. Standard part numbers

| Visual Indicators | Part Number | Setting (bar) | Electrical Indicators | Part Number | Setting (bar) | Switch Type | Additional |
|-------------------|-------------|---------------|-----------------------|-------------|---------------|-------------|-----------------------|
| | FMUM3MVMS08 | 5 | | FMUT1MVMS08 | 5 | NO/NC | |
| | | | | FMUF1MVMS08 | 5 | NO | Electronic 4 LED, PNP |
| | | | | FMUF2MVMS08 | 5 | NO | Electronic 4 LED, NPN |
| | | | | FMUF3MVMS08 | 5 | NC | Electronic 4 LED, PNP |
| | | | | FMUF4MVMS08 | 5 | NC | Electronic 4 LED, NPN |

Spare elements (Type QI only. Type QIR and QIH on request)

| | | | | | |
|---------------------------|---------|---------------------------|---------|---------------------------|---------|
| EMDPF Size 3 L1 2 micron | 944434Q | EMDPF Size 3 L2 10 micron | 944440Q | EMDPF Size 4 L2 2 micron | 944446Q |
| EMDPF Size 3 L1 5 micron | 944435Q | EMDPF Size 3 L2 20 micron | 944441Q | EMDPF Size 4 L2 5 micron | 944447Q |
| EMDPF Size 3 L1 10 micron | 944436Q | EMDPF Size 4 L1 2 micron | 944442Q | EMDPF Size 4 L2 10 micron | 944448Q |
| EMDPF Size 3 L1 20 micron | 944437Q | EMDPF Size 4 L1 5 micron | 944443Q | EMDPF Size 4 L2 20 micron | 944449Q |
| EMDPF Size 3 L2 2 micron | 944438Q | EMDPF Size 4 L1 10 micron | 944444Q | | |
| EMDPF Size 3 L2 5 micron | 944439Q | EMDPF Size 4 L1 20 micron | 944445Q | | |

EMDPF *iprotect*®

High Pressure Duplex Filter

Ordering Information

| | | | | | | | |
|---------------|----------|-------------|----------|----------|----------|------------|----------|
| Box 1 | Box 2 | Box 3 | Box 4 | Box 5 | Box 6 | Box 7 | Box 8 |
| EMDPF3 | 2 | 02QI | B | P | M | G16 | 1 |

| Box 1 | | Box 2 | |
|----------|---------------|---------------|----------|
| Capacity | | Filter Length | |
| Model | Code | | Code |
| Size 3 | EMDPF3 | Length 1 | 1 |
| Size 4 | EMDPF4 | 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 | | | | |
| | Media code | | | |
| <i>iprotect</i> ® Glassfibre element(*) | 02QI | 05QI | 10QI | 20QI |

* High collapse elements type QIH on request

| Box 4 | |
|----------------|----------|
| Seal Material | |
| | Code |
| Nitrile | B |
| Fluorelastomer | V |

| Box 5 | | Box 6 | | |
|---------------------------|-----------|----------------|-------------------|----------|
| Indicator | | Bypass Setting | | |
| | Code | | Indicator Setting | Code |
| Visual Indicator | M3 | 3.5 bar | 2.5 bar | K |
| Electrical Indicator | T1 | 5.0 bar | 3.5 bar | L |
| Electronic 4 LED, PNP, NO | F1 | 7.0 bar | 5.0 bar | M |
| Electronic 4 LED, NPN, NO | F2 | No bypass | 5.0 bar | M |
| Electronic 4 LED, PNP, NC | F3 | No bypass | No indicator | X |
| Electronic 4 LED, NPN, NC | F4 | | | |
| Plugged with Steel plug | P | | | |
| No indicator port | N | | | |

Important notes: When no bypass is selected Parker strongly advises the usage of high strength elements

Other versions like ATEX on request
All electrical indicators are CE-certified

| Box 7 | | |
|-------------------|--------------------------|------------|
| Filter Connection | | |
| | Connection type & size | Code |
| Size 3 | Thread 1" BSP | G16 |
| | SAE - flange 11/4" 6000M | H20 |
| Size 4 | Thread 11/4" BSP | G20 |
| | SAE - flange 11/2" 6000M | H24 |

| Box 8 | | |
|-----------|--|----------|
| Options | | |
| | | Code |
| Standard | | 1 |
| No Bypass | | 2 |

EADPF *iprotect*® Series

High Pressure Duplex Filters

Max. 320 l/min - 350 bar



Automatic duplex filters increase safety

New patented duplex filter technology offers continuous automated protection

The EADPF Series utilizes a unique patented element design named *iprotect*®. The ecological design reduces environmental impact over 50% typically and covers flow rates up to 320 l/min at 350 bar. This 'smart' element is integrated into a duplex head featuring a fully automatic change over. One or two differential pressure indicators are used to control the duplex filter. A unique aspect is that the system pressure is used for the pilot lines operating the flow control valves, isolating or putting the filter bowl with the clean element into service.



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 quality of filtration is protected.
- Rated at 350 bar for flows up to 320 l/min.
- Multiple bypass settings up to 7 bar or blocked with 210 bar rated high collapse element.
- EADPF duplex filters feature fully automatic element change-over.
- For more information contact Parker Filtration.



Important Information



WARNING-USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through their own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the applications are met.

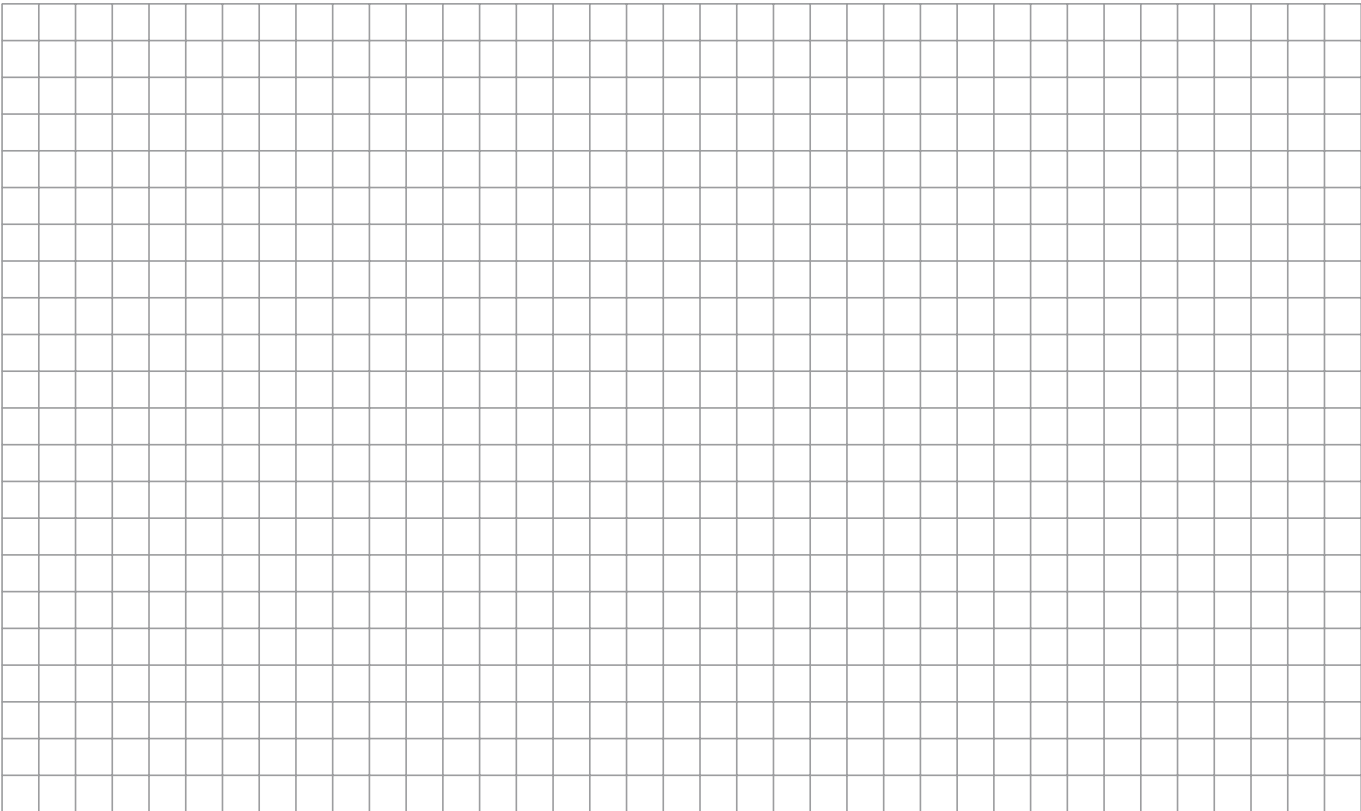
The user must analyse all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalogue and in any other materials provided from Parker or its subsidiaries or authorized distributors.

- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

The operation of the products described here in is subject to the operating and safety procedures details of which are available upon request.

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18/28/38P Series

High Pressure Filters

Max 700 l/min - 414 bar



The all-round high pressure filter solution

Robust housing for heavy duty applications

The 18/28/38P Series features a range of head and bowl sizes and connection options. Microglass III glassfibre media is standard. Maximum pressure 414 bar. Maximum flow 700 l/min. A globally proven filter with optimized sizing for a wide range of industrial applications.



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:

- Multiple bypass settings up to 7 bar.
- 18/28/38P features a range of head and bowl sizes and connection options.
- Microglass III glassfibre media is standard.
- Maximum pressure 414 bar. Maximum flow 700 l/min.
- A proven filter solution for 'heavy duty' hydraulic systems.

18/28/38P Series

High Pressure Filters

Features & Benefits

| Features | Advantages | Benefits |
|--|---|--|
| Fatigue tested to full pressure rating | Strong and robust housing for heavy duty applications | Reliable and continuous operation both in mobile and industrial applications |
| Several head sizes | Optimised sizing | Efficient filtration Covers wide flow range |
| Several connection options | Easy mounting | Global design, global acceptance Right filter for each application |
| Microglass III replacement elements | Multi-layered design produced high capacity and efficiency | Great performance value |
| | Wire support reduces pleat bunching, keeps performance consistent | Reliable performance throughout element life Reduces downtime, maximises element life |
| Visual, electrical and electronic indicators available | Check element condition at a glance | Optimises element life, prevents bypassing |
| | Right style for the application | Matches your system electrical connections |

Typical Applications

- Injection moulding
- Die casting
- Servo controls
- Machine tools
- Mobile equipment

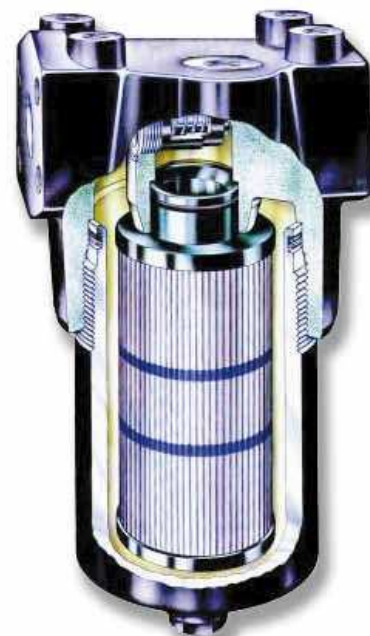
The Parker Filtration 18/28/38P Series High Pressure Filters

Parker Filtration engineered the 18/28/38P series of high pressure filters to satisfy demanding applications in the mobile and industrial markets throughout the world. With metric mounting and optional ISO 6149 ports, this new series is truly a global design.

Installed downstream of the pump, this new series with their wide range of high capacity Microglass III elements, offer excellent protection to system components.

Standard filters come complete with industry proven spool type bypass valve. For more critical applications such as servo or proportional controls, a no bypass high strength element combination ensures maximum protection.

The modular low hysteresis differential pressure indicator fitted to this series is unrivaled in its performance. Tests prove its accuracy and foolproof design to be a major advance in indicator technology.



Specification

Pressure ratings:

Maximum allowable operating pressure 414 bar.

Filter housing pressure pulse fatigue tested: 10⁶ pulses 0 - 414 bar.

Connections:

Inlet and outlet connections are threaded internally or flange faced.

| Connection style | Model | | |
|--------------------|-------|-----|----------------|
| | 18P | 28P | 38P |
| BSPF(G) | 3/4" | 1" | 1 1/4", 1 1/2" |
| SAE | 12 | 16 | 20, 24 |
| ISO 6149 | M27 | M33 | M42, M48 |
| Flange SAE 6000 | 3/4" | 1" | 1 1/4" |
| Flange SAE 6000-M* | 3/4" | 1" | 1 1/4" |

*6000-M is a SAE style with appropriate metric fixing threads.

Filter housing:

Head material cast iron (GSI).

Bowl material steel.

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 below gives bypass valve and corresponding indicator setting.

| Bypass | Indicator |
|---------|-----------|
| 3.5 bar | 2.5 bar |
| 7.0 bar | 5.0 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).

High collapse elements:

(To be used when no bypass function in filter housing).

Microglass III media supported with epoxy coated metal wire mesh on upstream and stainless steel on downstream, end cap material steel. Strong metal inner core. Collapse rating 210 bar (ISO 2941).

Indicator options:

Indicating differential pressure: 2.5 ± 0.3 bar or 5.0 ± 0.5 bar.

- visual M3.
- electrical T1.
- electronic F1(PNP).
- electronic F2(NPN).

For indicator details see catalogue section 6.

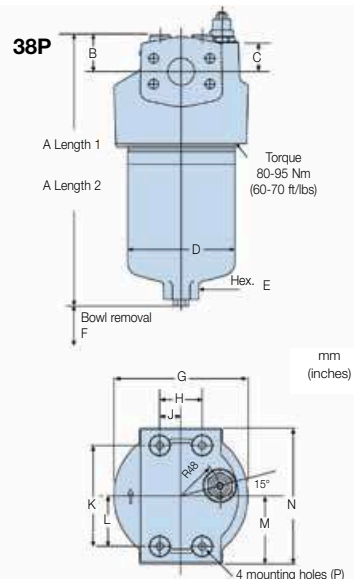
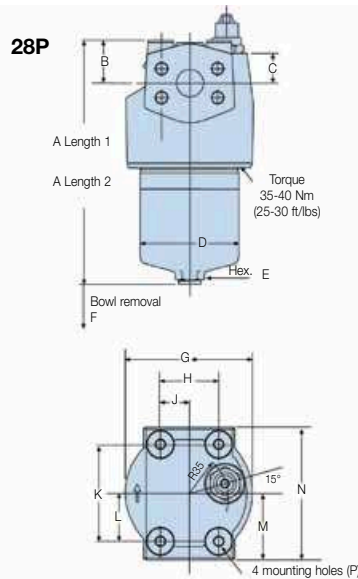
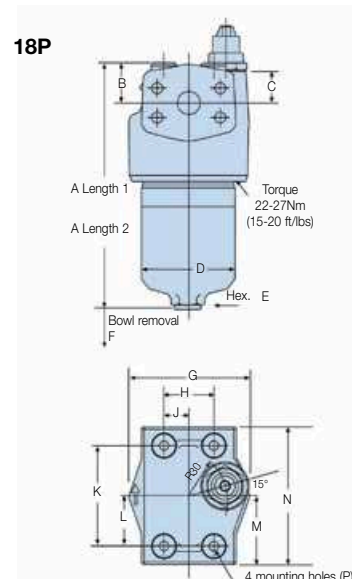
Weights (kg):

| Model | Length 1 | Length 2 |
|-------|----------|----------|
| 18P | 4.2 | 5.7 |
| 28P | 6.7 | 9.2 |
| 38P | 15.8 | 20.3 |

Fluid compatibility:

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

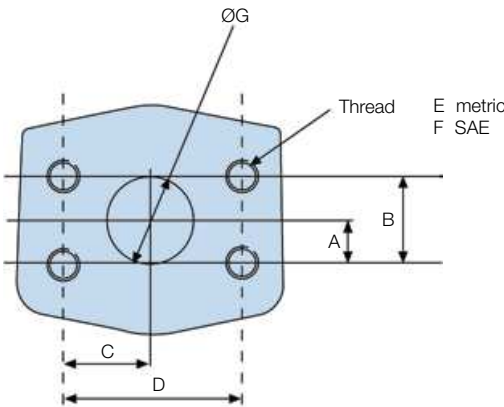
| Model | A | B | C | D | E (A/F) | F | G | H | J | K | L | M | N | P |
|-------|----------------|--------------|--------------|---------------|--------------|---------------|---------------|--------------|----------------|---------------|--------------|--------------|---------------|--------------------------|
| 18P-1 | 198 (7.79) | 32 (1.26) | 26 (1.02) | 75 (2.95) | 24 (0.94) | 100 (3.94) | 98 (3.86) | 40 (1.57) | 20 (0.79) | 80 (3.15) | 40 (1.57) | 55 (2.16) | 110 (4.33) | M8 x 1.25 x12 deep |
| 18P-2 | 293 (11.53) | | | | | | | | | | | | | |
| 28P-1 | 228 (8.97) | 40 (1.57) | 29 (1.14) | 93 (3.66) | 24 (0.94) | | 120 (4.72) | 55 (2.16) | 27.5 (1.07) | 90 (3.54) | 45 (1.77) | 62 (2.44) | 124 (4.88) | M10 x 1.5 x11 deep |
| 28P-2 | 337 (13.26) | | | | | | | | | | | | | |
| 38P-1 | 329 (12.95) | 44 (1.73) | 35 (1.38) | 128 (5.04) | 36 (1.42) | | 160 (6.30) | 50 (1.97) | 25 (0.98) | 120 (4.72) | 60 (2.36) | 81 (3.19) | 162 (6.38) | M10 x 1.5 x12 deep |
| 38P-2 | 448 (17.64) | | | | | | | | | | | | | |



18/28/38P Series

High Pressure Filters

Flange Face Details



| Model mm (inches) | A | B | C | D | E | F | G |
|----------------------|----------------|----------------|----------------|----------------|-------------------------|--------------------------|----------------|
| 18P (3/4") | 11.9 (0.47) | 23.8 (0.94) | 25.4 (1.00) | 50.8 (2.0) | M10 x 1.5-6H x 18 Deep | 3/8-16 UNC-2B x 18 deep | 19.0 (0.75) |
| 28P (1") | 14 (0.55) | 27.8 (1.09) | 28.0 (1.10) | 57.1 (2.25) | M12 x 1.75-6H x 20 Deep | 7/16-14 UNC-2B x 20 deep | 25.4 (1.0) |
| 38P (1 1/4") | 15.7 (0.62) | 31.7 (1.25) | 33.0 (1.30) | 66.7 (2.62) | M14 x 2-6H x 20 Deep | 1/2-13 UNC-2B x 20 deep | 31.8 (1.25) |

Pressure Drop Curves

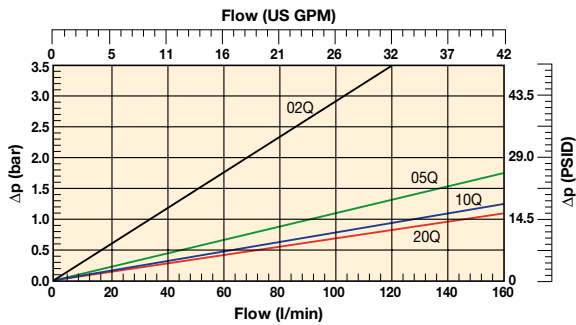
With 3.5 bar bypass the recommended initial pressure drop is max 1.2 bar.

With 7.0 bar bypass the recommended initial pressure drop is max 2.3 bar.

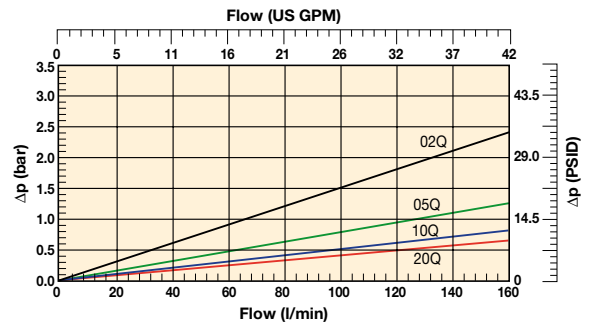
If the medium used has a viscosity different from 30 cSt, pressure drop over the filter can be estimated as follows:

The total Δp = housing Δp_h + (element $\Delta p_e \times \text{working viscosity}/30$).

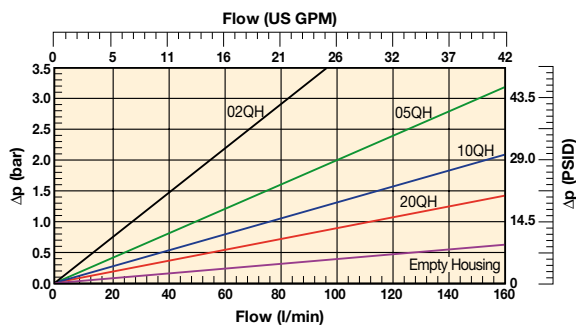
18P-1 Elements



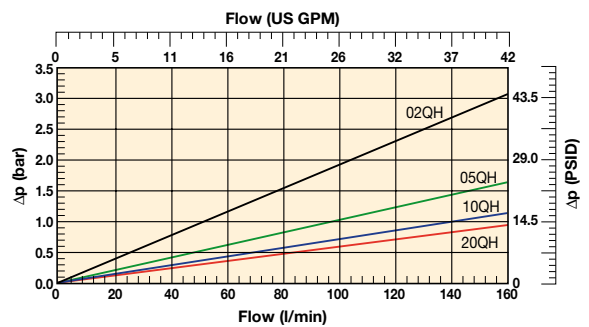
18P-2 Elements



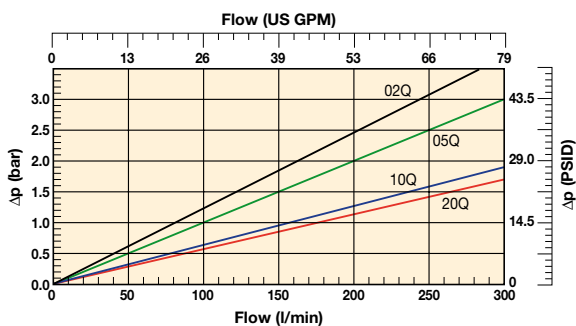
18P-1 Empty Housing and High Collapse



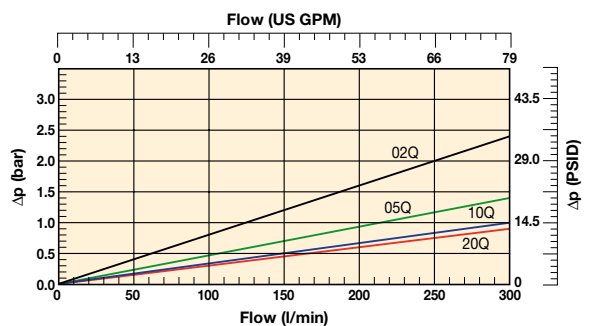
18P-2 High Collapse Elements



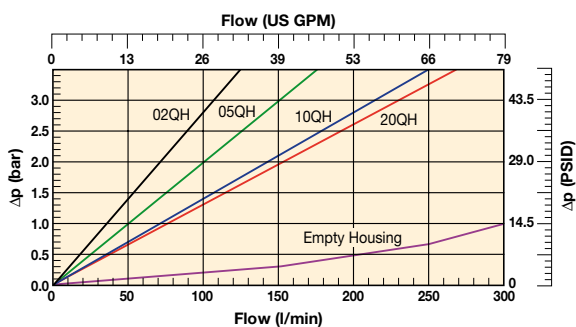
28P-1 Elements



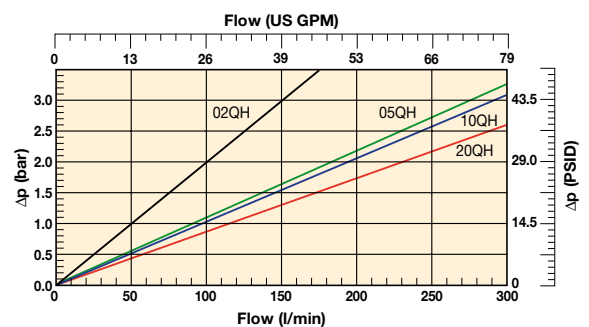
28P-2 Elements



28P-1 Empty Housing and High Collapse



28P-2 High Collapse Elements

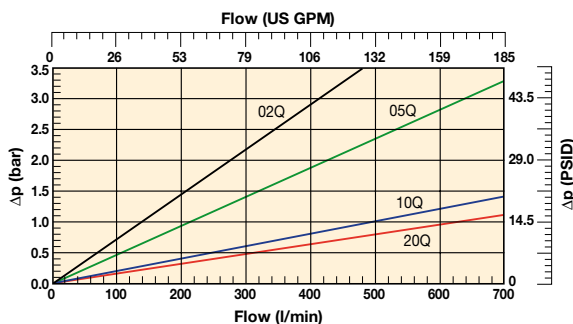


18/28/38P Series

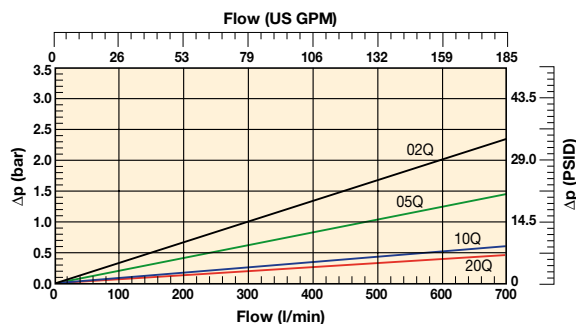
High Pressure Filters

Pressure Drop Curves (cont.)

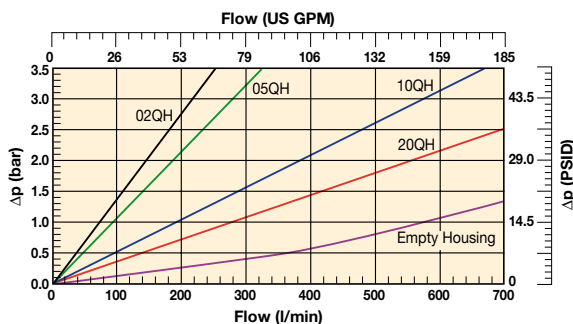
38P-1 Elements



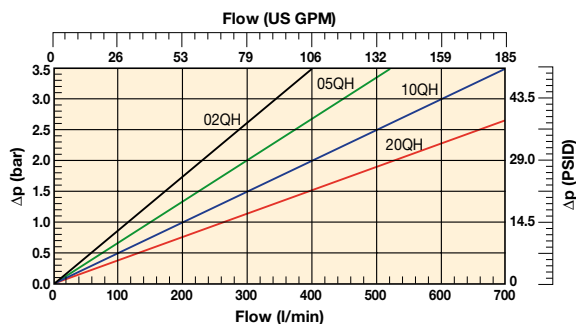
38P-2 Elements



38P-1 Empty Housing and High Collapse



38P-2 High Collapse Elements



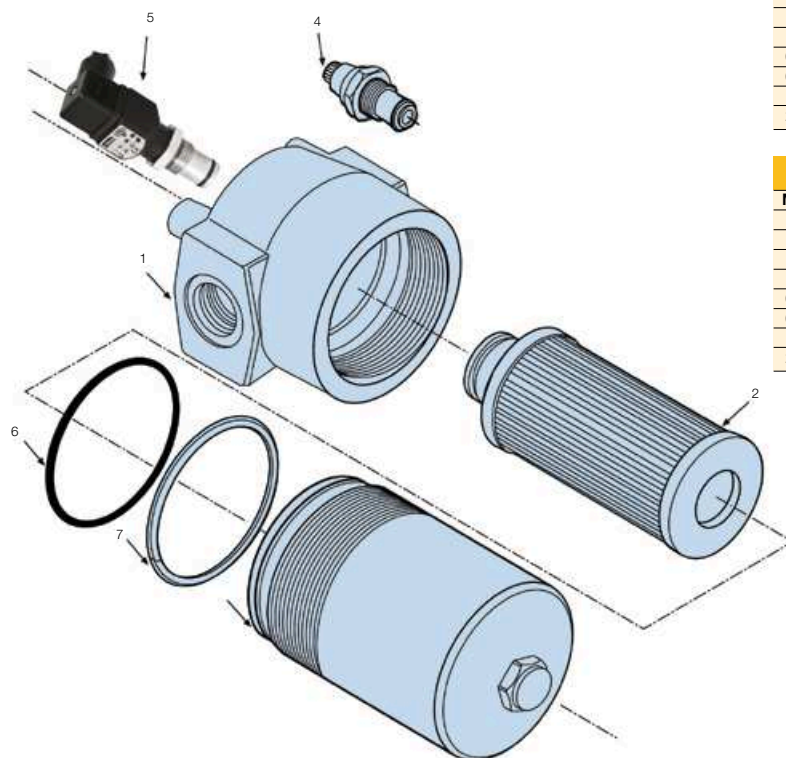
Element Service

- Stop the system's power unit.
- Relieve any system pressure in the filter line.
- Drain the filter bowl if drain port option is provided.
- Rotate the bowl clockwise (left) and remove.
- Remove element by pulling downward with a slight twisting motion and discard.
- Check bowl o-ring and anti-extrusion ring for damage and replace if necessary.
- Lubricate element o-ring with system fluid and locate element in filter head.
- Install bowl by rotating counter-clockwise (right) and tighten to specified torque.
 - 18P - 22-27 Nm (16-20 ft. lbs.)
 - 28P - 35-40 Nm (25-30 ft. lbs.)
 - 38P - 80-95 Nm (60-70 ft. lbs.)
- Confirm there are no leaks after powering the system.

Parts List

| Index | Description | Part number |
|-------|---|------------------------|
| 1 | Head Assembly | |
| 2 | Element | see table on next page |
| 3 | Bowl | |
| | Indicators | |
| 4 | M3 – Visual auto reset; 2.5 bar | FMUM3KVMU14H |
| | M3 – Visual auto reset; 5.0 bar | FMUM3MVMU14H |
| 5 | T1 – Electrical; 2.5 bar with DIN 43650 Connector | FMUT1KVMU14H |
| | T1 – Electrical; 5.0 bar with DIN 43650 Connector | FMUT1MVMU14H |
| | F1 – Electronic PNP; 2.5 bar with 4 LED | FMUF1KVMU14H |
| | F2 – Electronic NPN; 2.5 bar with 4 LED | FMUF2KVMU14H |
| | F1 – Electronic PNP; 5.0 bar with 4 LED | FMUF1MVMU14H |
| | F2 – Electronic NPN; 5.0 bar with 4 LED | FMUF2MVMU14H |
| 6 | Bowl Seal | |
| 7 | Bowl Anti-extrusion Ring | |
| | Seal Kits | |
| | Seal kit 18P (std) – Nitrile | S04350 |
| | Seal kit 18P (F3) – Fluoroelastomer | S04351 |
| | Seal kit 28P (std) – Nitrile | S04352 |
| | Seal kit 28P (F3) – Fluoroelastomer | S04353 |
| | Seal kit 38P (std) – Nitrile | S04354 |
| | Seal Kit 38P (F3) – Fluoroelastomer | S04355 |

Element Service (cont.)



Replacement element part numbers

| Elements with Nitrile seals | | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|--------|
| Model | 18P-1 | 18P-2 | 28P-1 | 28P-2 | 38P-1 | 38P-2 |
| 02Q | G04242 | G04250 | G04258 | G04266 | G04274 | G04282 |
| 05Q | G04243 | G04251 | G04259 | G04267 | G04275 | G04283 |
| 10Q | G04244 | G04252 | G04260 | G04268 | G04276 | G04284 |
| 20Q | G04245 | G04253 | G04261 | G04269 | G04277 | G04285 |
| 02QH | G04290 | G04298 | G04306 | G04314 | G04322 | G04330 |
| 05QH | G04291 | G04299 | G04307 | G04315 | G04323 | G04331 |
| 10QH | G04292 | G04300 | G04308 | G04316 | G04324 | G04332 |
| 20QH | G04293 | G04301 | G04309 | G04317 | G04325 | G04333 |

| Elements with Fluoroelastomer seals | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|
| Model | 18P-1 | 18P-2 | 28P-1 | 28P-2 | 38P-1 | 38P-2 |
| 02Q | G04246 | G04254 | G04262 | G04270 | G04278 | G04286 |
| 05Q | G04247 | G04255 | G04263 | G04271 | G04279 | G04287 |
| 10Q | G04248 | G04256 | G04264 | G04272 | G04280 | G04288 |
| 20Q | G04249 | G04257 | G04265 | G04273 | G04281 | G04289 |
| 02QH | G04294 | G04302 | G04310 | G04318 | G04326 | G04334 |
| 05QH | G04295 | G04303 | G04311 | G04319 | G04327 | G04335 |
| 10QH | G04296 | G04304 | G04312 | G04320 | G04328 | G04336 |
| 20QH | G04297 | G04305 | G04313 | G04321 | G04329 | G04337 |

Ordering Information

Standard products table

| Part number | Supersedes | Flow (l/min) | Model number | Element length | Media rating (μ) | Seals | Indicator | Bypass settings | Ports | Replacement elements |
|-----------------|-------------------------|--------------|--------------|----------------|------------------|---------|------------|-----------------|----------------------------------|----------------------|
| 18P110QBT1MG121 | 18P-1-10Q-TW6-98-B2B2-1 | 80 | 18P | Length 1 | 10 | Nitrile | Electrical | 7.0 bar | G ³ / ₄ " | G04244 |
| 18P110QBM3MG121 | 18P-1-10Q-M2-98-B2B2-1 | 80 | 18P | Length 1 | 10 | Nitrile | Visual | 7.0 bar | G ³ / ₄ " | G04244 |
| 18P120QBT1MG121 | 18P-1-20Q-TW6-98-B2B2-1 | 100 | 18P | Length 1 | 20 | Nitrile | Electrical | 7.0 bar | G ³ / ₄ " | G04245 |
| 18P120QBM3MG121 | 18P-1-20Q-M2-98-B2B2-1 | 100 | 18P | Length 1 | 20 | Nitrile | Visual | 7.0 bar | G ³ / ₄ " | G04245 |
| 18P210QBT1MG121 | 18P-2-10Q-TW6-98-B2B2-1 | 130 | 18P | Length 2 | 10 | Nitrile | Electrical | 7.0 bar | G ³ / ₄ " | G04252 |
| 18P210QBM3MG121 | 18P-2-10Q-M2-98-B2B2-1 | 130 | 18P | Length 2 | 10 | Nitrile | Visual | 7.0 bar | G ³ / ₄ " | G04252 |
| 18P220QBT1MG121 | 18P-2-20Q-TW6-98-B2B2-1 | 150 | 18P | Length 2 | 20 | Nitrile | Electrical | 7.0 bar | G ³ / ₄ " | G04253 |
| 18P220QBM3MG121 | 18P-2-20Q-M2-98-B2B2-1 | 150 | 18P | Length 2 | 20 | Nitrile | Visual | 7.0 bar | G ³ / ₄ " | G04253 |
| 28P110QBT1MG161 | 28P-1-10Q-TW6-98-C2C2-1 | 120 | 28P | Length 1 | 10 | Nitrile | Electrical | 7.0 bar | G1" | G04260 |
| 28P110QBM3MG161 | 28P-1-10Q-M2-98-C2C2-1 | 120 | 28P | Length 1 | 10 | Nitrile | Visual | 7.0 bar | G1" | G04260 |
| 28P120QBT1MG161 | 28P-1-20Q-TW6-98-C2C2-1 | 150 | 28P | Length 1 | 20 | Nitrile | Electrical | 7.0 bar | G1" | G04261 |
| 28P120QBM3MG161 | 28P-1-20Q-M2-98-C2C2-1 | 150 | 28P | Length 1 | 20 | Nitrile | Visual | 7.0 bar | G1" | G04261 |
| 28P210QBT1MG161 | 28P-2-10Q-TW6-98-C2C2-1 | 250 | 28P | Length 2 | 10 | Nitrile | Electrical | 7.0 bar | G1" | G04268 |
| 28P210QBM3MG161 | 28P-2-10Q-M2-98-C2C2-1 | 250 | 28P | Length 2 | 10 | Nitrile | Visual | 7.0 bar | G1" | G04268 |
| 38P110QBT1MG201 | 38P-1-10Q-TW6-98-D2D2-1 | 340 | 38P | Length 1 | 10 | Nitrile | Electrical | 7.0 bar | G1 ¹ / ₂ " | G04276 |
| 38P110QBM3MG201 | 38P-1-10Q-M2-98-D2D2-1 | 340 | 38P | Length 1 | 10 | Nitrile | Visual | 7.0 bar | G1 ¹ / ₂ " | G04276 |
| 38P120QBT1MG201 | 38P-1-20Q-TW6-98-D2D2-1 | 420 | 38P | Length 1 | 20 | Nitrile | Electrical | 7.0 bar | G1 ¹ / ₂ " | G04277 |
| 38P120QBM3MG201 | 38P-1-20Q-M2-98-D2D2-1 | 420 | 38P | Length 1 | 20 | Nitrile | Visual | 7.0 bar | G1 ¹ / ₂ " | G04277 |
| 38P210QBT1MG201 | 38P-2-10Q-TW6-98-D2D2-1 | 560 | 38P | Length 2 | 10 | Nitrile | Electrical | 7.0 bar | G1 ¹ / ₂ " | G04284 |
| 38P210QBM3MG201 | 38P-2-10Q-M2-98-D2D2-1 | 560 | 38P | Length 2 | 10 | Nitrile | Visual | 7.0 bar | G1 ¹ / ₂ " | G04284 |
| 38P220QBT1MG201 | 38P-2-20Q-TW6-98-D2D2-1 | 700 | 38P | Length 2 | 20 | Nitrile | Electrical | 7.0 bar | G1 ¹ / ₂ " | G04285 |
| 38P220QBM3MG201 | 38P-2-20Q-M2-98-D2D2-1 | 700 | 38P | Length 2 | 20 | Nitrile | Visual | 7.0 bar | G1 ¹ / ₂ " | G04285 |

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

18/28/38P Series

High Pressure Filters

Ordering Information (cont.)

Product configurator

| | | | | | | | |
|------------|----------|------------|----------|-----------|----------|------------|----------|
| Box 1 | Box 2 | Box 3 | Box 4 | Box 5 | Box 6 | Box 7 | Box 8 |
| 38P | 1 | 10Q | B | M3 | M | G20 | 1 |

Box 1

| Code | |
|--|------------|
| Model | Code |
| Small size high pressure filter, T-port | 18P |
| Medium size high pressure filter, T-port | 28P |
| Large size high pressure filter, T-port | 38P |

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 |

Box 3

| Degree of filtration | | | | |
|------------------------|-------------|-------------|-------------|-------------|
| Element media | Glass fibre | | | |
| | Media code | | | |
| Microglass III element | 02Q | 05Q | 10Q | 20Q |
| High collapse element | 02QH | 05QH | 10QH | 20QH |

Box 4

| Seal type | |
|-----------------|----------|
| Seal material | Code |
| Nitrile | B |
| Fluoroelastomer | V |

Box 5

| Indicator | |
|-----------------------------|-----------|
| | Code |
| No indicator port | N |
| Visual indicator | M3 |
| Electrical indicator | T1 |
| Plugged with steel plug | 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 and indicator settings | | |
|-------------------------------|--------------|----------|
| Bypass valve | Indicator | Code |
| 3.5 bar | 2.5 bar | K |
| 7.0 bar | 5.0 bar | M |
| No bypass | 5.0 bar | M |
| No bypass | No indicator | X |

+ Box 8: code 2
+ Box 8: code 2

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

Box 7

| Filter connection | |
|--------------------------|------------|
| Ports | Code |
| 18P: Thread G 3/4 | G12 |
| Thread SAE 12 | S12 |
| Thread M27, ISO 6149 | M27 |
| SAE flange 3/4" 6000-M | H12 |
| SAE flange 3/4" 6000 | F12 |
| 28P: Thread G 1 | G16 |
| Thread SAE 16 | S16 |
| Thread M33, ISO 6149 | M33 |
| SAE flange 1" 6000-M | H16 |
| SAE flange 1" 6000 | F16 |
| 38P: Thread G 1 1/4 | G20 |
| Thread G 1 1/2 | G24 |
| Thread SAE 20 | S20 |
| Thread SAE 24 | S24 |
| Thread M42, ISO 6149 | M42 |
| Thread M48, ISO 6149 | M48 |
| SAE flange 1 1/4" 6000-M | H20 |
| SAE flange 1 1/4" 6000 | F20 |

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.

Nominal flow (l/min) at viscosity 30 cSt

| Filter model | 02Q | 05Q | 10Q | 20Q |
|--------------|-----|-----|-----|-----|
| 18P-1 | 35 | 60 | 80 | 100 |
| 18P-2 | 70 | 110 | 130 | 150 |
| 28P-1 | 80 | 100 | 120 | 150 |
| 28P-2 | 140 | 200 | 250 | 300 |
| 38P-1 | 140 | 220 | 340 | 420 |
| 38P-2 | 320 | 440 | 560 | 700 |

18/28/38P Series Seal Kits

| Part Number | Description |
|---------------|------------------------------|
| S04350 | NITRILE SEAL KIT 18P |
| S04351 | FLUOROELASTOMER SEAL KIT 18P |
| S04352 | NITRILE SEAL KIT 28P |
| S04353 | FLUOROELASTOMER SEAL KIT 28P |
| S04354 | NITRILE SEAL KIT 38P |
| S04355 | FLUOROELASTOMER SEAL KIT 38P |

| Degree of filtration | | | | | | Code | |
|---|-----------------|-----------------|------------------|------------------|-------------------|------------------------------|--------------------------|
| Average filtration beta ratio β (ISO 16889) / particle size μm [c] | | | | | | | |
| $\beta_x(c)=2$ | $\beta_x(c)=10$ | $\beta_x(c)=75$ | $\beta_x(c)=100$ | $\beta_x(c)=200$ | $\beta_x(c)=1000$ | | |
| % efficiency, based on the above beta ratio (β_x) | | | | | | Disposable Microglass III | High collapse element |
| 50.0% | 90.0% | 98.7% | 99.0% | 99.5% | 99.9% | | |
| N/A | N/A | N/A | N/A | N/A | 4.5 | 02Q | 02QH |
| N/A | N/A | 4.5 | 5 | 6 | 7 | 05Q | 05QH |
| N/A | 6 | 8.5 | 9 | 10 | 12 | 10Q | 10QH |
| 6 | 11 | 17 | 18 | 20 | 22 | 20Q | 20QH |

Note 1: Part numbers featured with bold highlighted codes will ensure a 'standard' product selection.

Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.



70/70 Eco Series

High Pressure Filters

Max 450 l/min - 420 bar



**When flexibility
meets reducing
environmental
impact**

**A proven filter offering
reduced space and piping**

The 70/70 Eco Series features a range of head and bowl sizes and connection options. Microglass III glassfibre and Ecoglass III media is available. Maximum pressure 420 bar. Maximum flow 450 l/min. A proven, strong and robust filter for heavy duty applications.



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:

- 70/70 Eco features a range of head and bowl sizes and connection options.
- Microglass III glassfibre and Ecoglass III media is available.
- Maximum pressure 420 bar. Maximum flow 450 l/min.
- A proven filter offering high levels of system protection.

70/70 Eco Series

High Pressure Filters

Features & Benefits

| Features | Advantages | Benefits |
|--|---|--|
| Fatigue tested to full pressure rating | Strong and robust housing for heavy duty applications | Reliable and continuous operation both in mobile and industrial applications |
| Several head options and connection sizes | Easy mounting | Reduced space and piping Right filter for each application |
| Several bowl lengths | Optimised sizing | Efficient filtration |
| Microglass III replacement elements | Multi-layered design produced high capacity and efficiency | Great performance value |
| | Wire support reduces pleat bunching, keeps performance consistent | Reliable performance throughout element life Reduces downtime, maximises element life |
| 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 |
| Visual, electrical and electronic indicators available | Check element condition at a glance | Optimise element life, prevent bypassing |
| | Right style for the application | Matches your system electrical connections |

Typical Applications

- Forestry equipment
- Industrial power units
- Pulp and paper
- Port handling equipment
- Mining and quarrying equipment

The Parker Filtration 70/70 Eco Series High Pressure Filters.

High quality 420 bar in-line pressure filters designed to offer high levels of protection at flows up to 450 l/min.

Dirt sensitive systems can be protected with confidence using the 70 Series high pressure filters.

The 70 Series also available with environmentally friendly Ecoglass III elements.



Specification

Pressure ratings:

Maximum allowable operating pressure 420 bar (350 bar Length 4).
Filter housing pressure pulse fatigue tested: 10^6 pulses 0 - 414 bar.

Connections:

Threads G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$ (ISO 228/1).
or flanges 1 $\frac{1}{4}$ " SAE 3000-M, 1 $\frac{1}{2}$ " SAE 3000-M, 1 $\frac{1}{4}$ " SAE 6000-M, 1 $\frac{1}{2}$ " SAE 6000-M.

Filter housing:

Head material cast iron (GSI).
Bowl material steel. Max torque 40 Nm.

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:

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-adaptor.

Note: Ecoglass III contributes to ISO 14001 quality.

High collapse elements:

(To be used when no bypass function in filter housing).

Microglass III media supported with epoxy coated metal wire mesh on upstream and stainless steel on downstream, end cap material steel. Strong metal inner core. Collapse rating 210 bar (ISO 2941).

Indicator options:

Indicating differential pressure: 2.5 ± 0.3 bar or 7.0 ± 0.5 bar.
2.5 bar indicators to be used with 3.5 bar bypass valve and 7.0 bar indicators with no bypass function.

- visual M3.

- electrical T1.

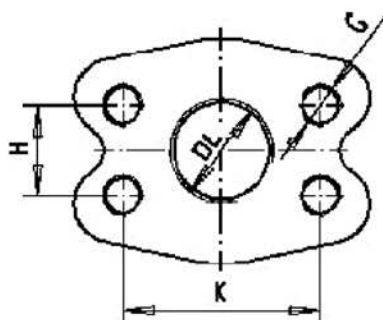
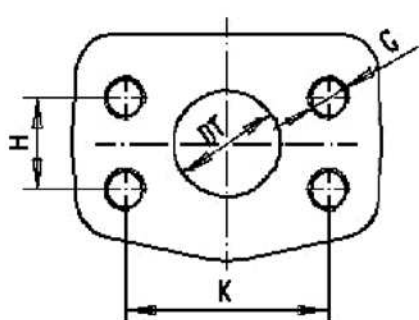
- electronic F1(PNP).

- 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.



SAE Flange Dimensions

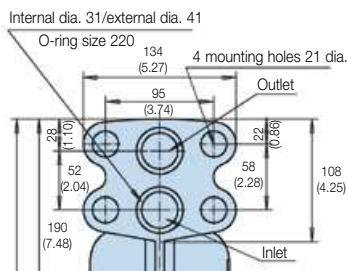
| Type | K | H | DL | DT | G |
|--------------------|------|------|--------|------|--------|
| 1.1/4 SAE 3000 psi | 58,7 | 30,2 | Ø 36 | 31,8 | M10-15 |
| 1.1/2 SAE 3000 psi | 69,9 | 35,7 | G1.1/4 | 38,1 | M12-18 |
| 1.1/4 SAE 6000 psi | 66,7 | 31,7 | Ø 30,3 | 31,8 | M14-19 |
| 1.1/4 SAE 6000 psi | 79,4 | 36,5 | G1.1/4 | 38,1 | M16-21 |

Spare Eco adaptors that are needed for use with or changing to Eco elements are as follows

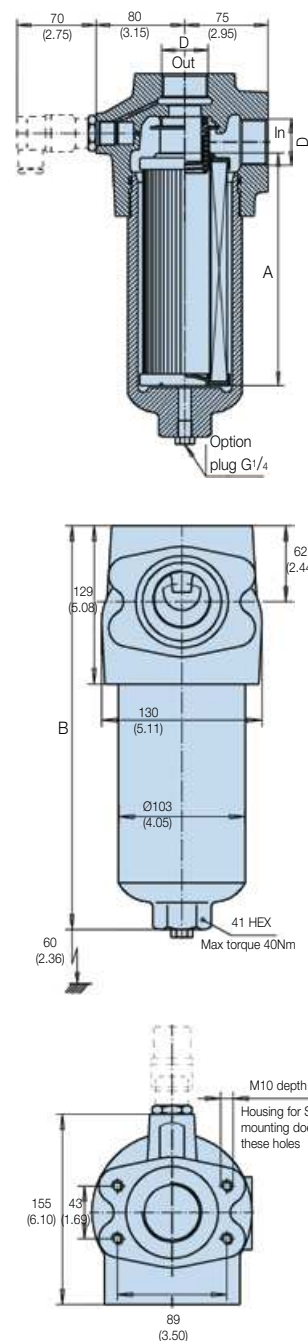
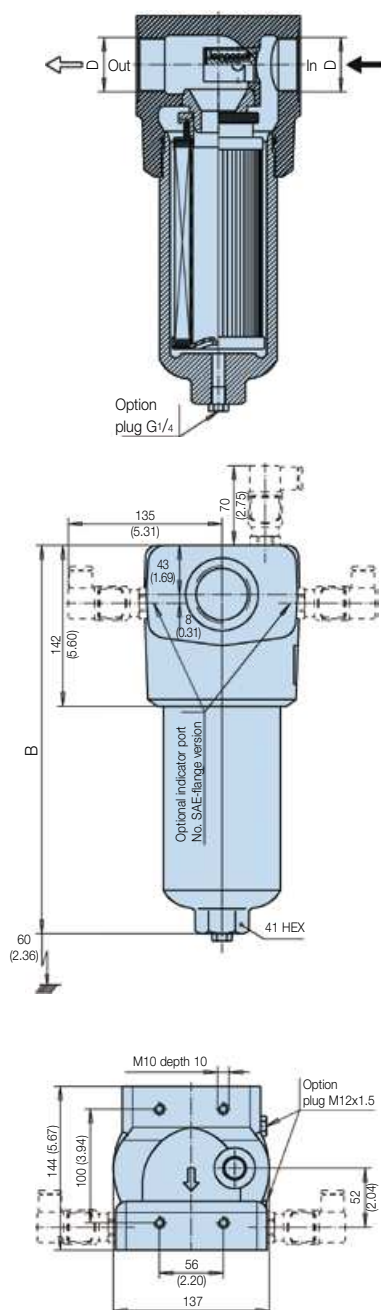
| Filter Type | Eco Adaptor | Part Number |
|-------------|-------------|-------------|
| 70-1 | FEA7005.B | 911042090 |
| 70-2 | FEA7006.B | 911042087 |
| 70-3 | FEA7007.B | 911042091 |
| 70-4 | FEA7008.B | 911042092 |

High Pressure Filters

70B



| Weights (kg) | | | |
|--------------|------|------|------|
| Type | 70T | 70L | 70B |
| Length 1 | 14 | 10.5 | 11.5 |
| Length 2 | 16.5 | 13 | 14 |
| Length 3 | 19 | 15.5 | 16.5 |
| Length 4 | 22 | 18.5 | 19.5 |



| Type | A | B 70T | B 70B | B 70L | Max working pressure | Port D |
|----------|-------------|-------------|-------------|-------------|-------------------------|--|
| Length 1 | 116 (4.57) | 249 (9.80) | 295 (11.61) | 235 (9.25) | 420 bar | G1, G1¼ or G1½ Flange 1½ SAE 3000-M Flange 1¼ SAE 3000-M Flange 1½ SAE 6000-M Flange 1¼ SAE 6000-M |
| Length 2 | 208 (8.19) | 342 (13.46) | 390 (15.35) | 330 (13.00) | | |
| Length 3 | 329 (12.95) | 462 (18.19) | 510 (20.08) | 450 (17.72) | | |
| Length 4 | 428 (16.85) | 562 (22.12) | 610 (24.01) | 550 (21.65) | 350 bar | |

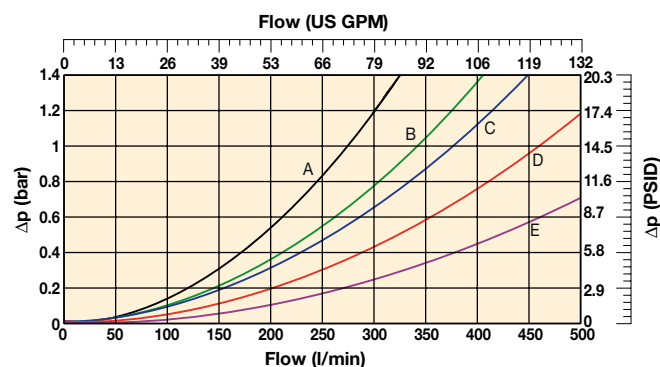
Pressure Drop Curves

With 3.5 bar bypass the recommended initial pressure drop is max 1.2 bar.

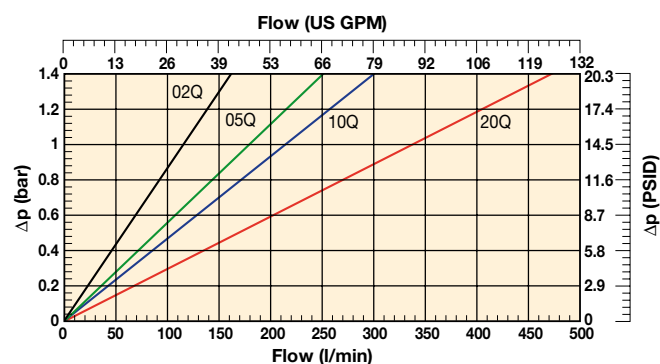
If the medium used has a viscosity different from 30 cSt, pressure drop over the filter can be estimated as follows:

The total Δp = housing Δp_h + (element $\Delta p_e \times \text{working viscosity}/30$).

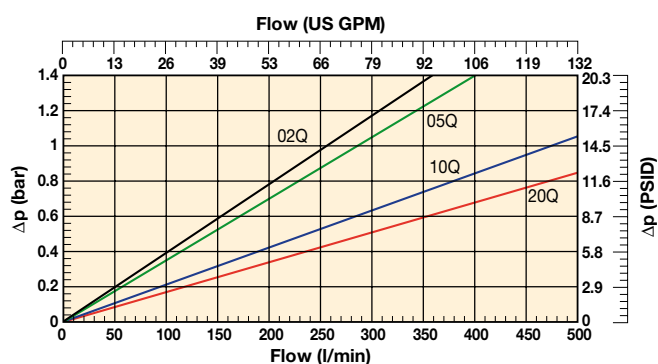
70 Series Empty Housing



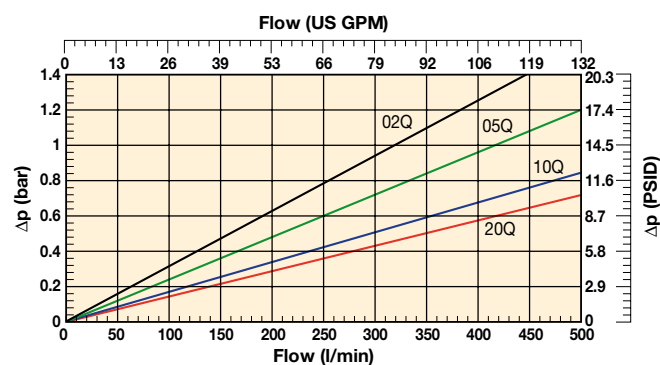
70-1 Elements with Microglass III



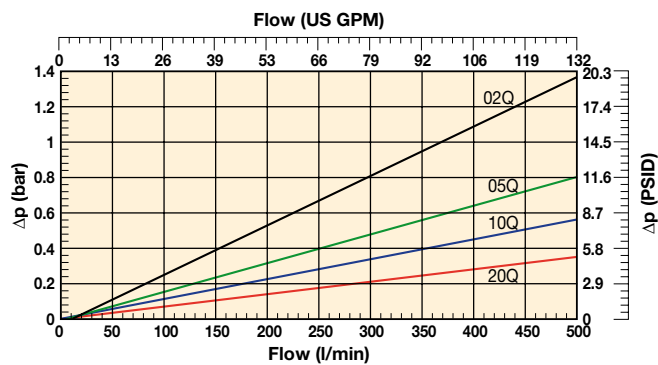
70-2 Elements with Microglass III



70-3 Elements with Microglass III



70-4 Elements with Microglass III

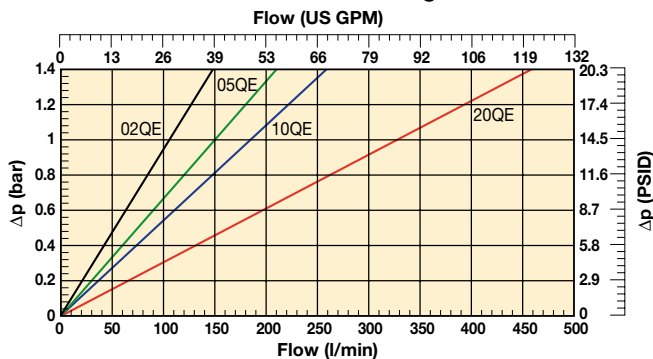


70/70 Eco Series

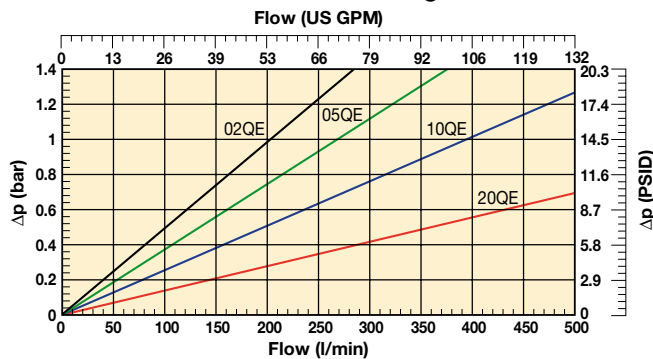
High Pressure Filters

Pressure Drop Curves (cont.)

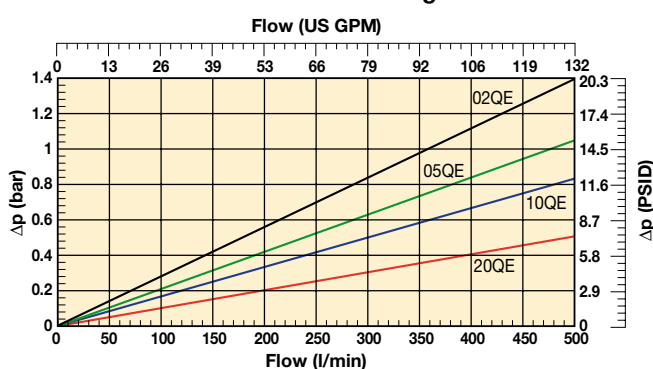
70-1 Elements with Ecoglass III



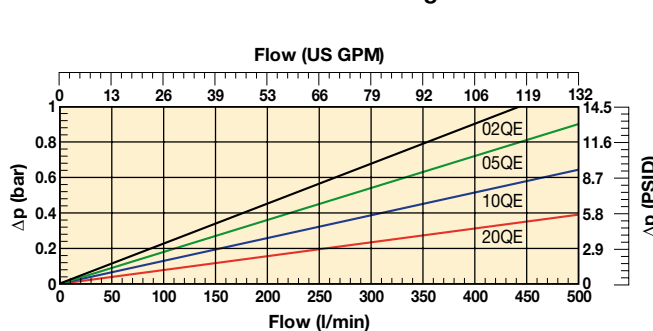
70-2 Elements with Ecoglass III



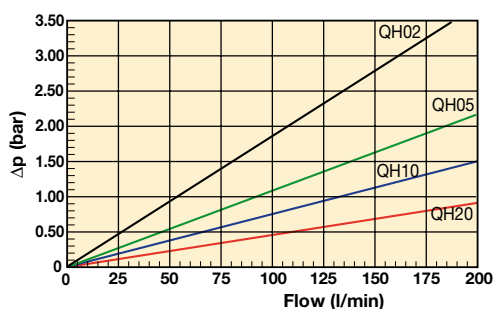
70-3 Elements with Ecoglass III



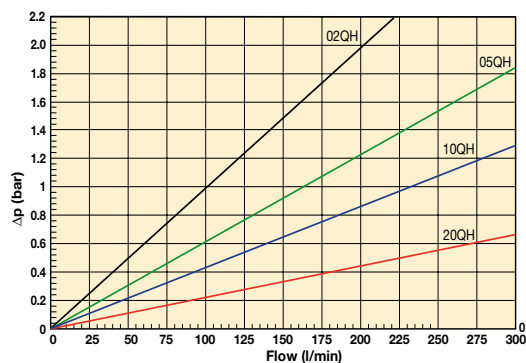
70-4 Elements with Ecoglass III



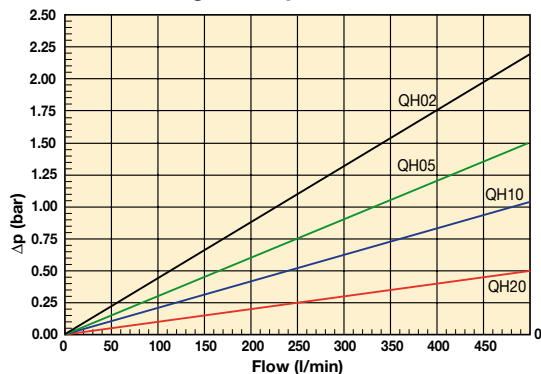
70-1 PRESSURE DROP CURVE
High Collapse FC7005



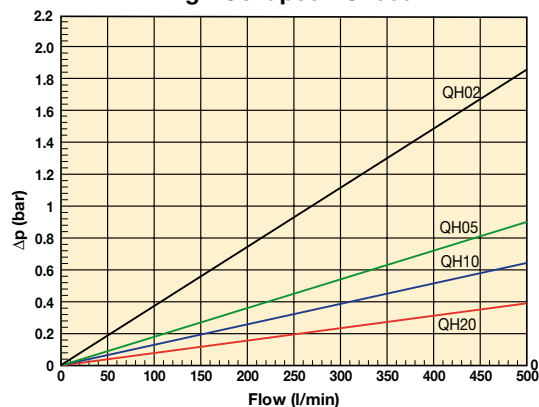
PRESSURE DROP CURVE
70-2 High Collapse FC7006



70-3 PRESSURE DROP CURVE
High Collapse FC7007



70-4 PRESSURE DROP CURVE
High Collapse FC7008



Ordering Information

Standard products table

| Part number | Supersedes | Flow (l/min) | Model number | Element length | Media rating (μ) | Seals | Indicator | Bypass settings | Ports | Replacement elements | Supersedes |
|-----------------|-----------------------|--------------|--------------|----------------|------------------|---------|-----------|-----------------|---------|----------------------|----------------|
| 70L110QBPKG161 | FF7005.Q010.BS35.GL16 | 150 | 70L | 1 | 10 | Nitrile | Plugged | 3.5 bar | G1" | 938773Q | FC7005.Q010.BK |
| 70L120QBPKG161 | FF7005.Q020.BS35.GL16 | 230 | 70L | 1 | 20 | Nitrile | Plugged | 3.5 bar | G1" | 938774Q | FC7005.Q020.BK |
| 70L210QBPKG201 | FF7006.Q010.BS35.GL20 | 280 | 70L | 2 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938777Q | FC7006.Q010.BK |
| 70L220QBPKG201 | FF7006.Q020.BS35.GL20 | 300 | 70L | 2 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938778Q | FC7006.Q020.BK |
| 70L310QBPKG241 | FF7007.Q010.BS35.GL24 | 400 | 70L | 3 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938781Q | FC7007.Q010.BK |
| 70L320QBPKG241 | FF7007.Q020.BS35.GL24 | 430 | 70L | 3 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938782Q | FC7007.Q020.BK |
| 70L410QBPKG241 | FF7008.Q010.BS35.GL24 | 430 | 70L | 4 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938785Q | FC7008.Q010.BK |
| 70L420QBPKG241 | FF7008.Q020.BS35.GL24 | 450 | 70L | 4 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938786Q | FC7008.Q020.BK |
| 70L110QEBPKG161 | FF7005.QE10.BS35.GL16 | 150 | 70L | 1 | 10 | Nitrile | Plugged | 3.5 bar | G1" | 938789Q | FC7005.QE10.BK |
| 70L120QEBPKG161 | FF7005.QE20.BS35.GL16 | 230 | 70L | 1 | 20 | Nitrile | Plugged | 3.5 bar | G1" | 938790Q | FC7005.QE20.BK |
| 70L210QEBPKG201 | FF7006.QE10.BS35.GL20 | 280 | 70L | 2 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938793Q | FC7006.QE10.BK |
| 70L220QEBPKG201 | FF7006.QE20.BS35.GL20 | 300 | 70L | 2 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938794Q | FC7006.QE20.BK |
| 70L310QEBPKG241 | FF7007.QE10.BS35.GL24 | 400 | 70L | 3 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938797Q | FC7007.QE10.BK |
| 70L320QEBPKG241 | FF7007.QE20.BS35.GL24 | 430 | 70L | 3 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938798Q | FC7007.QE20.BK |
| 70L410QEBPKG241 | FF7008.QE10.BS35.GL24 | 430 | 70L | 4 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938801Q | FC7008.QE10.BK |
| 70L420QEBPKG241 | FF7008.QE20.BS35.GL24 | 450 | 70L | 4 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938802Q | FC7008.QE20.BK |
| 70T110QBPKG161 | FF7005.Q010.BS35.GT16 | 150 | 70T | 1 | 10 | Nitrile | Plugged | 3.5 bar | G1" | 938773Q | FC7005.Q010.BK |
| 70T120QBPKG161 | FF7005.Q020.BS35.GT16 | 200 | 70T | 1 | 20 | Nitrile | Plugged | 3.5 bar | G1" | 938774Q | FC7005.Q020.BK |
| 70T210QBPKG201 | FF7006.Q010.BS35.GT20 | 260 | 70T | 2 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938777Q | FC7006.Q010.BK |
| 70T220QBPKG201 | FF7006.Q020.BS35.GT20 | 280 | 70T | 2 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938778Q | FC7006.Q020.BK |
| 70T310QBPKG241 | FF7007.Q010.BS35.GT24 | 360 | 70T | 3 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938781Q | FC7007.Q010.BK |
| 70T320QBPKG241 | FF7007.Q020.BS35.GT24 | 380 | 70T | 3 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938782Q | FC7007.Q020.BK |
| 70T410QBPKG241 | FF7008.Q010.BS35.GT24 | 360 | 70T | 4 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938785Q | FC7008.Q010.BK |
| 70T420QBPKG241 | FF7008.Q020.BS35.GT24 | 380 | 70T | 4 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938786Q | FC7008.Q020.BK |
| 70T110QEBPKG161 | FF7005.QE10.BS35.GT16 | 150 | 70T | 1 | 10 | Nitrile | Plugged | 3.5 bar | G1" | 938789Q | FC7005.QE10.BK |
| 70T120QEBPKG161 | FF7005.QE20.BS35.GT16 | 200 | 70T | 1 | 20 | Nitrile | Plugged | 3.5 bar | G1" | 938790Q | FC7005.QE20.BK |
| 70T210QEBPKG201 | FF7006.QE10.BS35.GT20 | 260 | 70T | 2 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938793Q | FC7006.QE10.BK |
| 70T220QEBPKG201 | FF7006.QE20.BS35.GT20 | 280 | 70T | 2 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938794Q | FC7006.QE20.BK |
| 70T310QEBPKG241 | FF7007.QE10.BS35.GT24 | 360 | 70T | 3 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938797Q | FC7007.QE10.BK |
| 70T320QEBPKG241 | FF7007.QE20.BS35.GT24 | 380 | 70T | 3 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938798Q | FC7007.QE20.BK |
| 70T410QEBPKG241 | FF7008.QE10.BS35.GT24 | 360 | 70T | 4 | 10 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938801Q | FC7008.QE10.BK |
| 70T420QEBPKG241 | FF7008.QE20.BS35.GT24 | 380 | 70T | 4 | 20 | Nitrile | Plugged | 3.5 bar | G1 1/2" | 938802Q | FC7008.QE20.BK |

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.

| 70/70 Eco Series Seal Kits | |
|----------------------------|------------------------------------|
| Part Number | Description |
| 911045021 | NITRILE SEAL KIT 70/70 Eco |
| 911045051 | FLUOROELASTOMER SEAL KIT 70/70 Eco |

70/70 Eco Series

High Pressure Filters

Ordering Information (cont.)

Product configurator

| | | | | | | | |
|------------|----------|------------|----------|-----------|----------|------------|----------|
| Box 1 | Box 2 | Box 3 | Box 4 | Box 5 | Box 6 | Box 7 | Box 8 |
| 70L | 3 | 10Q | B | M3 | K | G24 | 1 |

| Box 1 | Box 2 | Box 3 |
|--|---------------|----------------------|
| Code | Filter type | Degree of filtration |
| Model | Length | Glass fibre |
| High pressure filter with L-port | Length 1 | Media code |
| High pressure filter with T-port | Length 2 | 02Q |
| High pressure filter with side manifold mounting | Length 3 | 05Q |
| | Length 4 | 10Q |
| | | 20Q |
| | | 02QE |
| | | 05QE |
| | | 10QH |
| | | 20QH |

Note: When using Ecoglass III elements reusable Eco-adaptor is required. Consult Parker.

| Box 4 | Box 5 | Box 6 |
|----------------------|-----------------------------|-------------------------------|
| Seal type | Indicator | Bypass and indicator settings |
| Seal material | Code | Bypass valve |
| Nitrile | Plugged with steel plug | Indicator |
| Fluoroelastomer | Visual indicator | Code |
| | Electrical indicator | 3.5 bar |
| | Electronic 4 LED, PNP, N.O. | No bypass |
| | Electronic 4 LED, NPN, N.O. | 7.0 bar |
| | Electronic 4 LED, PNP, N.C. | No bypass |
| | Electronic 4 LED, NPN, N.C. | No indicator (P) |
| | | |

+ Box 8: code 2
+ Box 8: code 2

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

| Box 7 | Box 8 |
|--------------------------|---------------------------|
| Filter connection | Options |
| Connections | Options |
| Thread G 1 | Standard |
| Thread G 1 1/4 | No bypass |
| Thread G 1 1/2 | Drain port |
| SAE flange 1 1/4" 3000-M | 70T: side indicator ports |
| SAE flange 1 1/2" 3000-M | 70T: options 2 + 6 |
| SAE flange 1 1/4" 6000-M | |
| SAE flange 1 1/2" 6000-M | |
| Side manifold (70B only) | |

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

| Nominal flow (l/min) at viscosity 30 cSt | Replacement elements with nitrile seals |
|--|---|
| Filter length | Media |
| Length 1 | Length 1 |
| Length 2 | Length 2 |
| Length 3 | Length 3 |
| Length 4 | Length 4 |

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 |

| Degree of filtration | Code |
|--|-------------------------------------|
| Average filtration beta ratio β (ISO 16889) / particle size μm [c] | |
| $\beta_x(c)=2$ | $\beta_x(c)=100$ |
| $\beta_x(c)=10$ | $\beta_x(c)=200$ |
| $\beta_x(c)=75$ | $\beta_x(c)=1000$ |
| % efficiency, based on the above beta ratio (β_x) | |
| 50.0% | 90.0% |
| 98.7% | 99.0% |
| 99.0% | 99.5% |
| 99.9% | 99.9% |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |
| 6 | 11 |
| 17 | 18 |
| 20 | 22 |

Note 1: Part numbers featured with bold highlighted codes will ensure a 'standard' product selection.
Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.



22PD/32PD Series

High Pressure Duplex Filters

Max 260 l/min - 210 bar



A duplex design with a wide application capability

Designed to offer continuous operation during element change

The 22PD/32PD Series utilizes a duplex design with integrated balancing valve and vent ports. Microglass III glassfibre media is standard. Maximum pressure 210 bar. Maximum flow 260 l/min. A changeover valve operates on the upstream side of the filter, ensuring a contamination free system.



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:

- 22PD/32PD utilizes a duplex design with integrated balancing valve and vent ports.
- Microglass III glassfibre media is standard.
- Maximum pressure 210 bar. Maximum flow 260 l/min.
- Designed to offer continuous operation during element change.

22PD/32PD Series

High Pressure Duplex Filters

Features & Benefits

| Features | Advantages | Benefits |
|--|---|---|
| Duplex design | Element service possible during operation | Allows to keep machine running with full contamination protection |
| Integrated balancing valve | No external piping required | Safety and reliability |
| Vent ports | Purges all trapped air in filter | Get the maximum performance from the elements Prevents a "flabby" system |
| 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 and electronic indicators available | Check element condition at a glance | Optimises element life, prevents bypassing |
| | Right style for the application | Matches your system electrical connections |

Typical Applications

- Ship steering systems
- Continuous operation industrial systems
- High flow flushing systems

The Parker Filtration 22PD/32PD Series High Pressure Duplex Filters.

Specially designed to offer continuous operation, even during element change.

A changeover valve operates on the upstream side of the filter, ensuring a contamination free system.



Specification

Pressure ratings:

Maximum allowable operating pressure 210 bar.

Filter housing pressure pulse fatigue tested: 10^6 cycles 210 bar.

Connections:

Inlet and outlet connections are threaded.

| Connection style | Model | |
|-------------------|--------|--------|
| | 22PD | 32PD |
| BSPF(G) | 1" | 1 1/4" |
| Flange SAE 3000-M | 1 1/4" | 1 1/2" |

*3000-M is a SAE style with appropriate metric fixing threads.

Filter housing:

Head material cast iron (GSI).

Bowl material steel.

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:

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).

High collapse elements:

(to be used when no bypass function in filter housing).

Microglass III media supported with epoxy coated metal wire mesh on upstream and stainless steel on downstream, end cap material steel. Strong metal inner core. Collapse rating 210 bar (ISO 2941).

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.

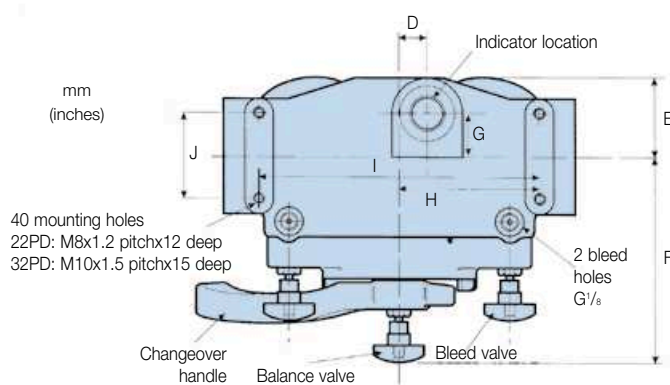
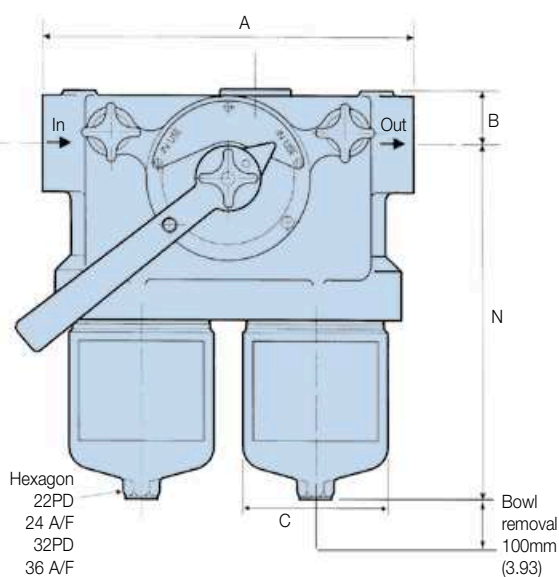
Weights (kg):

| Model | Length 1 | Length 2 |
|-------|----------|----------|
| 22PD | 22 | 27 |
| 32PD | 44 | 50 |

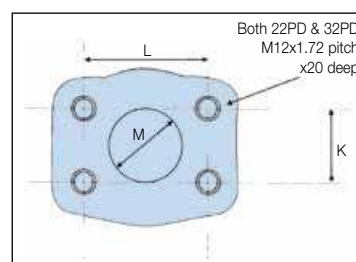
Fluid compatibility:

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

| Dimensions mm (inches) | | | | | | | | | | | | | |
|------------------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|
| Model | A | B | C | D | E | F | G | H | I | J | K | L | N |
| 22PD-1 | 240 | 35 | 92 | 18 | 55 | 150 | 32 | 96 | 192 | 60 | 30 | 59 | 30.75Ø |
| 22-PD-2 | (9.45) | (1.38) | (3.62) | (0.71) | (2.16) | (5.91) | (2.21) | (3.70) | (7.56) | (2.36) | (1.18) | (2.32) | 236 (9.29) |
| 32PD-1 | 306 | 42 | 130 | 20 | 78 | 170 | 33 | 120 | 240 | 75 | 36 | 70 | 38Ø |
| 32PD-2 | (12.05) | (1.65) | (5.12) | (0.79) | (3.07) | (6.69) | (2.28) | (4.72) | (9.45) | (2.95) | (1.42) | (2.75) | 437 (17.20) |



Flange face detail



22PD/32PD Series

High Pressure Duplex Filters

Pressure Drop Curves

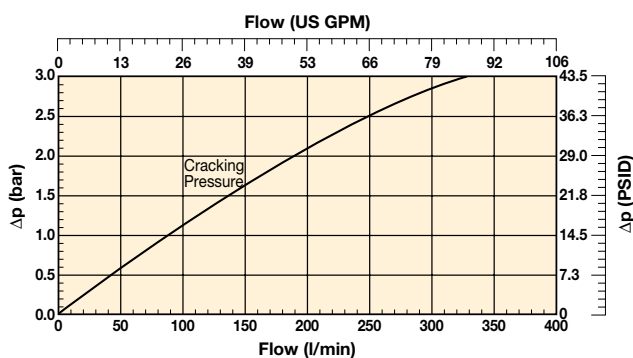
The recommended level of initial pressure drop is max. 1.2 bar.

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

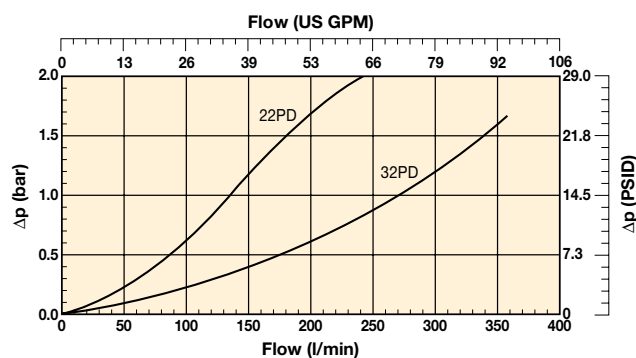
$$\Delta p = (\Delta p_{30} \times \text{viscosity of medium used}) / 30 \text{ cSt.}$$

The total Δp = housing Δp_h + (element $\Delta p_e \times \text{working viscosity}/30$).

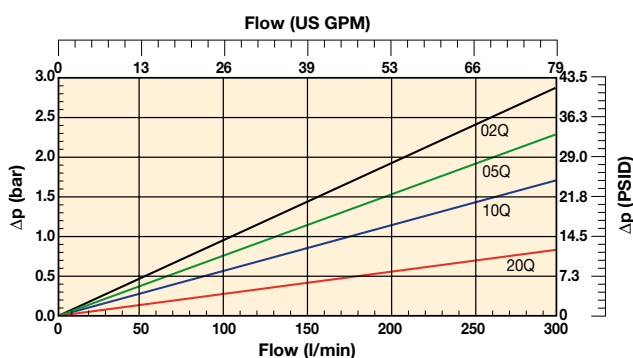
22PD/32PD Bypass Valve



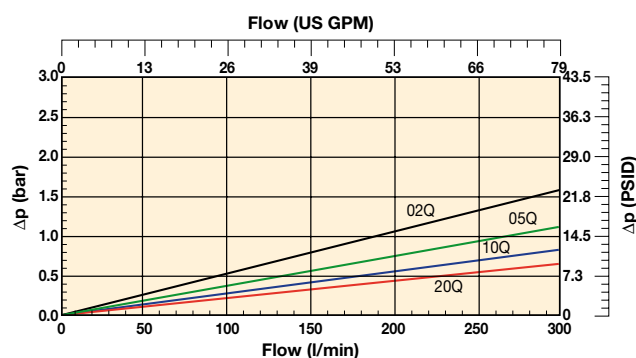
22PD/32PD Empty Housing



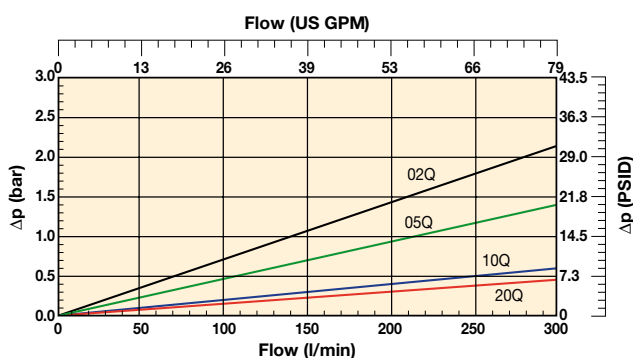
22PD-1 Elements



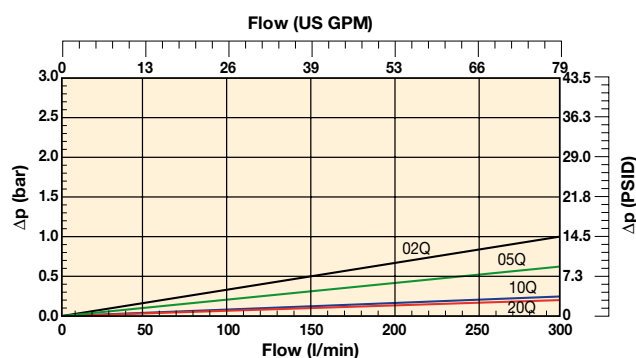
22PD-2 Elements



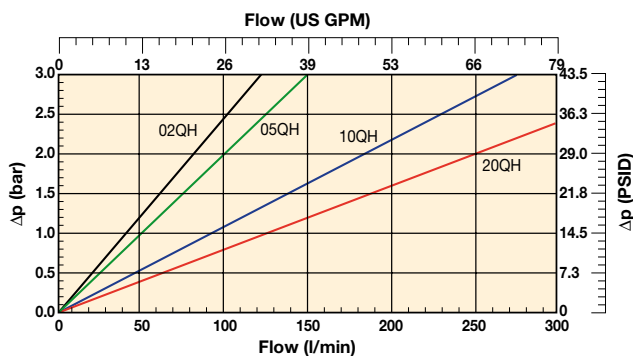
32PD-1 Elements



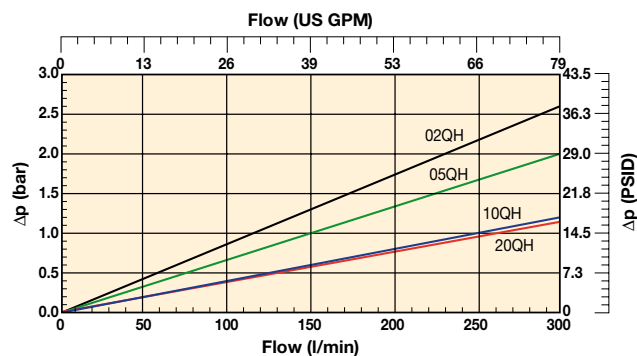
32PD-2 Elements



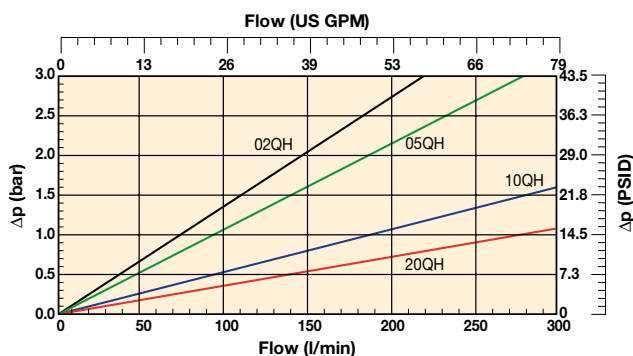
22PD-1 High Collapse Elements



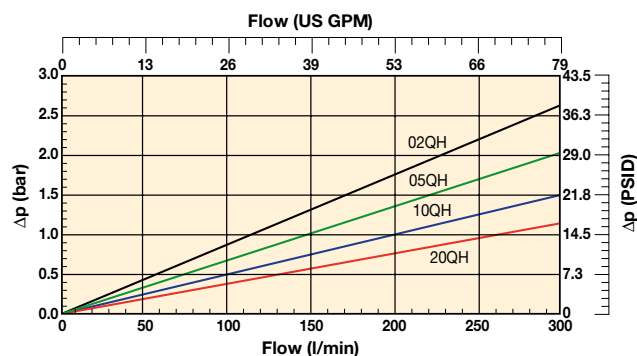
22PD-2 High Collapse Elements



32PD-1 High Collapse Elements



32PD-2 High Collapse Elements



Ordering Information

Standard products table

| Part number | Supersedes | Flow (l/min) | Model number | Element length | Media rating (μ) | Seals | Indicator | Bypass settings | Ports | Replacement elements |
|------------------|--------------------------|--------------|--------------|----------------|------------------------|---------|------------|-----------------|---------|----------------------|
| 22PD210QBM3KG161 | 0-22-PD-2-10Q-V-50-C-1 | 120 | 22PD | Length 2 | 10 | Nitrile | Visual | 3.5 bar | G1" | G01315Q |
| 22PD210QBT1KG161 | 0-22-PD-2-10Q-TW3-50-C-1 | 120 | 22PD | Length 2 | 10 | Nitrile | Electrical | 3.5 bar | G1" | G01315Q |
| 22PD220QBM3KG161 | 0-22-PD-2-20Q-V-50-C-1 | 140 | 22PD | Length 2 | 20 | Nitrile | Visual | 3.5 bar | G1" | G01938Q |
| 22PD220QBT1KG161 | 0-22-PD-2-20Q-TW3-50-C-1 | 140 | 22PD | Length 2 | 20 | Nitrile | Electrical | 3.5 bar | G1" | G01938Q |
| 32PD210QBM3KG201 | 0-32-PD-2-10Q-V-50-D-1 | 240 | 32PD | Length 2 | 10 | Nitrile | Visual | 3.5 bar | G1 1/4" | G01098Q |
| 32PD210QBT1KG201 | 0-32-PD-2-10Q-TW3-50-D-1 | 240 | 32PD | Length 2 | 10 | Nitrile | Electrical | 3.5 bar | G1 1/4" | G01098Q |
| 32PD220QBM3KG201 | 0-32-PD-2-20Q-V-50-D-1 | 260 | 32PD | Length 2 | 20 | Nitrile | Visual | 3.5 bar | G1 1/4" | G01954Q |
| 32PD220QBT1KG201 | 0-32-PD-2-20Q-TW3-50-D-1 | 260 | 32PD | Length 2 | 20 | Nitrile | Electrical | 3.5 bar | G1 1/4" | G01954Q |

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

22PD/32PD Series

High Pressure Duplex Filters

Ordering Information (cont.)

Product configurator

| | | | | | | | |
|-------------|----------|------------|----------|-----------|----------|------------|----------|
| Box 1 | Box 2 | Box 3 | Box 4 | Box 5 | Box 6 | Box 7 | Box 8 |
| 22PD | 2 | 10Q | B | M3 | K | G16 | 1 |

Box 1

| Code | |
|-----------------------------------|-------------|
| Model | Code |
| Small high pressure duplex filter | 22PD |
| Large high pressure duplex filter | 32PD |

Box 2

| Filter type | |
|-------------|----------|
| Length | Code |
| Length 1 | 1 |
| Length 2 | 2 |

Box 3

| Degree of filtration | | | | |
|------------------------|-------------|------|------------|------------|
| Element media | Glass fibre | | | |
| | Media code | | | |
| Microglass III element | 02Q | 05Q | 10Q | 20Q |
| High collapse element | 02QH | 05QH | 10QH | 20QH |

Box 4

| Seal type | |
|-----------------|----------|
| Seal material | Code |
| Nitrile | B |
| Fluoroelastomer | V |

Box 5

| Indicator | |
|-----------------------------|-----------|
| | Code |
| Visual indicator | M3 |
| Electrical indicator | T1 |
| Plugged with steel plug | P |
| No indicator port | N |
| 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 and indicator settings | | |
|-------------------------------|--------------|----------|
| Bypass valve | Indicator | Code |
| 3.5 bar | 2.5 bar | K |
| No bypass | 5.0 bar | M |
| No bypass | No indicator | X |

+ Box 8: code 2

+ Box 8: code 2

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

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 | 22PD-1 | 22PD-2 | 32PD-1 | 32PD-2 |
| 02Q | G01282Q | G01316Q | G01069Q | G01099Q |
| 05Q | G02721Q | G02724Q | G02567Q | G02727Q |
| 10Q | G01281Q | G01315Q | G01068Q | G01098Q |
| 20Q | G01930Q | G01938Q | G01946Q | G01954Q |
| 02QH | G01442Q | G01448Q | G01454Q | G01460Q |
| 05QH | G03737Q | G03738Q | G03739Q | G03740Q |
| 10QH | G01441Q | G01447Q | G01453Q | G01459Q |
| 20QH | G01932Q | G01940Q | G01948Q | G01956Q |

| Nominal flow (l/min) at viscosity 30 cSt | | | | |
|--|-----|-----|-----|-----|
| Filter model | 02Q | 05Q | 10Q | 20Q |
| 22PD-1 | 70 | 80 | 100 | 120 |
| 22PD-2 | 100 | 110 | 120 | 140 |
| 32PD-1 | 100 | 150 | 210 | 230 |
| 32PD-2 | 180 | 210 | 240 | 260 |

| Seal kits | | |
|--------------|---------|-----------------|
| Filter model | Nitrile | Fluoroelastomer |
| 22PD | S04233 | S04234 |
| 32PD | S03520 | S03522 |

| Replacement elements with fluoroelastomer seals | | | | |
|---|---------|---------|---------|---------|
| Media | 22PD-1 | 22PD-2 | 32PD-1 | 32PD-2 |
| 02Q | G01302Q | G01336Q | G01089Q | G01119Q |
| 05Q | G02723Q | G02726Q | G02569Q | G02729Q |
| 10Q | G01301Q | G01335Q | G01088Q | G01118Q |
| 20Q | G01934Q | G01942Q | G01950Q | G01958Q |
| 02QH | G01446Q | G01452Q | G01458Q | G01464Q |
| 05QH | G04235Q | G04236Q | G04237Q | G04238Q |
| 10QH | G01445Q | G01451Q | G01457Q | G01463Q |
| 20QH | G01935Q | G01943Q | G01951Q | G01959Q |

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 |

| Degree of filtration | | | | | | Code | |
|---|-----------------|-----------------|------------------|------------------|-------------------|------------------------------|--------------------------|
| Average filtration beta ratio β (ISO 16889) / particle size μm [c] | | | | | | | |
| $\beta_x(c)=2$ | $\beta_x(c)=10$ | $\beta_x(c)=75$ | $\beta_x(c)=100$ | $\beta_x(c)=200$ | $\beta_x(c)=1000$ | | |
| % efficiency, based on the above beta ratio (β_x) | | | | | | Disposable Microglass III | High collapse element |
| 50.0% | 90.0% | 98.7% | 99.0% | 99.5% | 99.9% | | |
| N/A | N/A | N/A | N/A | N/A | 4.5 | 02Q | 02QH |
| N/A | N/A | 4.5 | 5 | 6 | 7 | 05Q | 05QH |
| N/A | 6 | 8.5 | 9 | 10 | 12 | 10Q | 10QH |
| 6 | 11 | 17 | 18 | 20 | 22 | 20Q | 20QH |

Note 1: Part numbers featured with bold highlighted codes will ensure a 'standard' product selection.

Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.

