

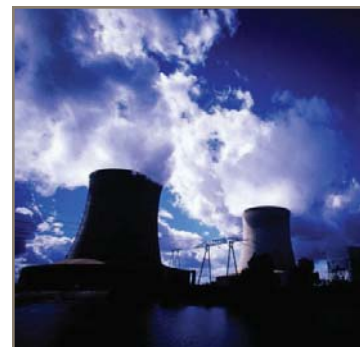


aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Hydraulic and Lube Filtration Products

Catalog 2300-14



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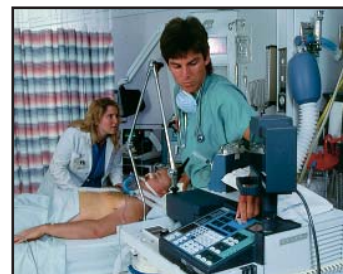
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Introduction

Parker Hannifin is comprised of eight global groups: Aerospace, Climate & Industrial Controls, Fluid Connectors, Seal, Hydraulics, Filtration, Automation and Instrumentation.

The Filtration Group consists of ten technical sales and service locations: Finite Filter, Hydraulic Filter Division North America, Hydraulic Filter Division Europe (two locations), Process Filter, Finn Filter, Racor, Parker Hannifin Brazil and Parker Hannifin Korea.

Customer Support Information

Technical Support You Can Count On

Parker's technical resources assure you of the right filtration technologies, advanced designs, consistent manufacturing and a network of helpful, specialized professionals trained to support your team.

We listen to you; then we design the right filtration solution. Parker holds over 150 patents on innovative filtration products, including filtration membranes, differential pressure indicators, cartridge bypass valves and spin-in elements.

Parker Filtration makes the technological investments needed to assure the highest quality products. Examples are modern clean rooms, sophisticated testing equipment, CAD/CAM engineering, and CNC integrated equipment that is helping us design tomorrow's filtration products today.

Quality Is Top Priority

Parker Filtration has had a total quality management system in place for years, as well as a Director of Corporate Quality for all of Parker. This structure helps us continually meet our customers' expectations for the highest technical standards, reliable supply and responsive service. From the Group President on down, "Quality" at Parker means more than making a product the right way. Quality permeates our whole organization so that every employee thinks about what he or she does and what is expected by our customers.

"Always Available"



Customer Service

Parker Filtration distributors provide local stock and technical design help including 24-hour emergency service. They are further supported by our "ever ready" manufacturing teams.



So if you need more technical literature or applications support please call us toll free at 1-800-253-1258 or at our 24 hour corporate help line at **1-800-C-PARKER**.

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[illegible]



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12AT/50AT Series

Spin-On Filters



ENGINEERING YOUR SUCCESS.

12AT/50AT Series

Spin-On Filters

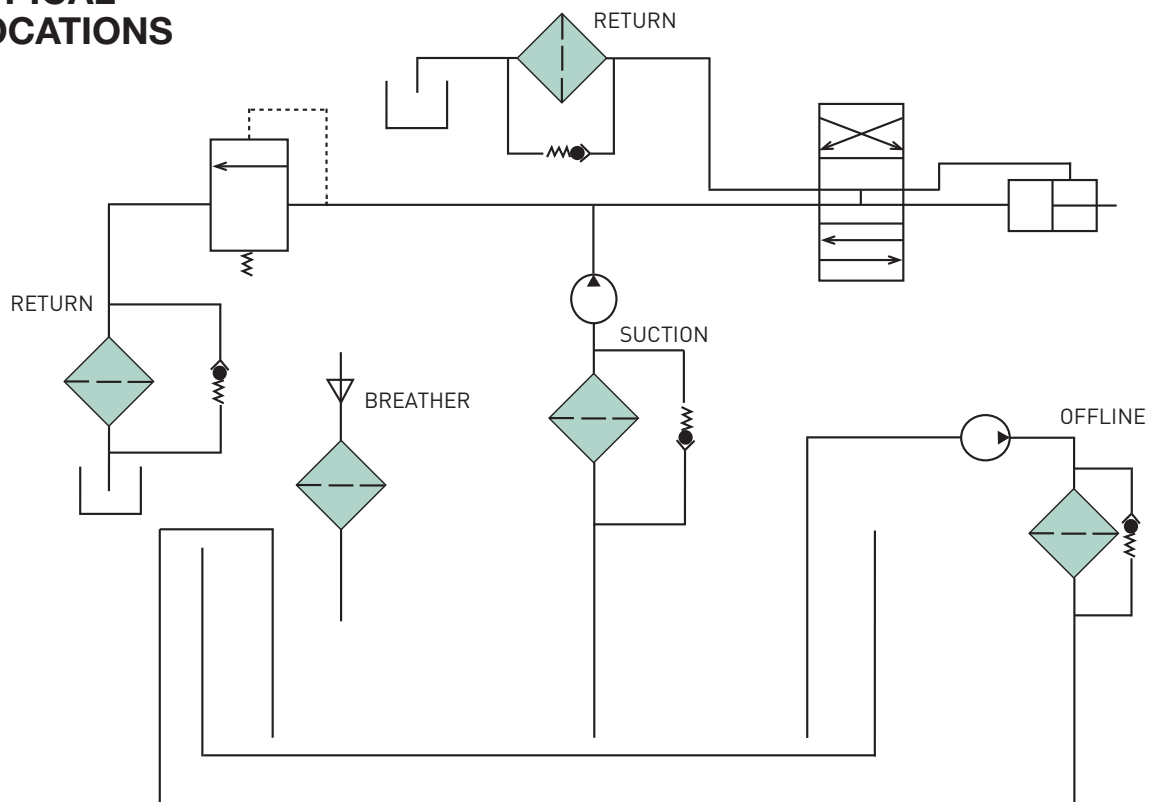
Applications for Spin-On Filters

- Mobile Equipment
- Hydrostatic Drives
- Industrial Power Units
- Reservoir Breathers

Often, economic conditions dictate what type of filter is used on a piece of equipment. When costs are tight, you need a filter that is inexpensive, yet uncompromising in performance and quality. Parker's spin-on filters fit that need. They are built to fit demanding design parameters in today's mobile and industrial equipment. No compromising.



TYPICAL LOCATIONS



12AT/50AT Series

Spin-On Filters

Typical Element Performance: 12AT

Media Code	Filter Media	Beta Ratios	Particle Size/Efficiency
25C	Cellulose	$B_{25}=2$	25 / 50%
10C	Cellulose	$B_{10}=2$	10 / 50%
03C	Cellulose	$B_3=2$	3 / 50%
20B	Microglass	$B_{20}=75$	20 / 98.7%
10B	Microglass	$B_{10}=75$	10 / 98.7%

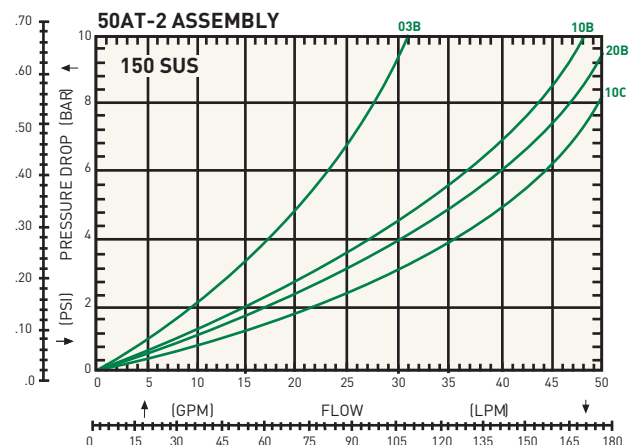
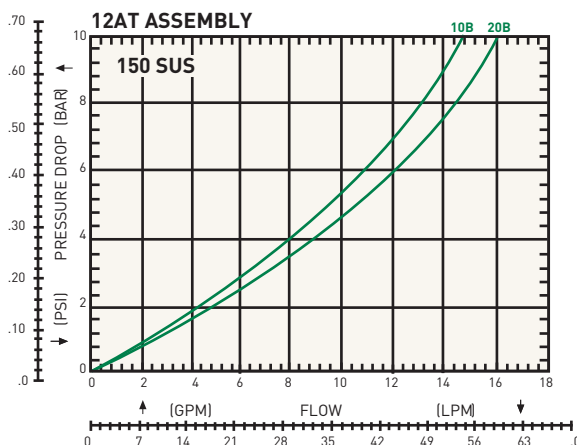
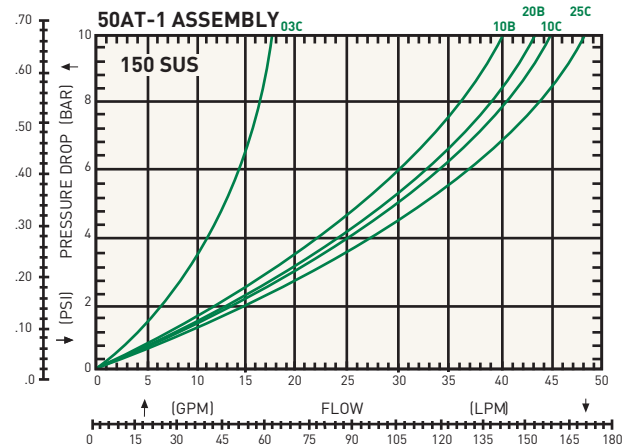
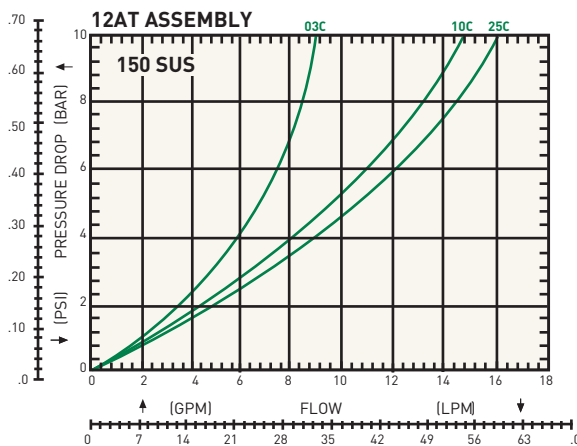
Actual results are dependent on system flow rates, fluid viscosities, and other parameters.

Typical Element Performance: 50AT

Media Code	Filter Media	Beta Ratios	Particle Size/Efficiency
25C	Cellulose	$B_{25}=2$	25 / 50%
10C	Cellulose	$B_{10}=2$	10 / 50%
03C	Cellulose	$B_3=2$	3 / 50%
20B	Microglass	$B_{20}=75$	20 / 98.7%
10B	Microglass	$B_{10}=75$	10 / 98.7%
10C-2	Cellulose	$B_{10}=2$	10 / 50%
20B-2	Microglass	$B_{20}=75$	20 / 98.7%
10B-2	Microglass	$B_{10}=75$	10 / 98.7%
03B-2	Microglass	$B_3=75$	3 / 98.7%

Actual results are dependent on system flow rates, fluid viscosities, and other parameters.

Beta Rating	Efficiency at (X) Particle Size
$B_x = 2$	50.0%
$B_x = 20$	95.0%
$B_x = 75$	98.7%
$B_x = 200$	99.5%
$B_x = 1000$	99.99%



Spin-On Filters

Installation and Specification Data Model 12AT

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 150 psi (10.3 bar)

Design Safety Factor: 2.5:1

Operating Temperatures:

-40°F to 225°F (-40°C to 107°C)

Element Collapse Rating:

100 psid minimum

Element Condition Indicators:

Gauge: Color coded 15/25 psi

Gauge: Color coded vacuum

Pressure Switch: Normally open

20 +/- 2 psi

5 Amps @ 24 VDC

Vacuum Switch: Normally open

5" +/- 1" Hg

1.0 Amp @ 120 VAC

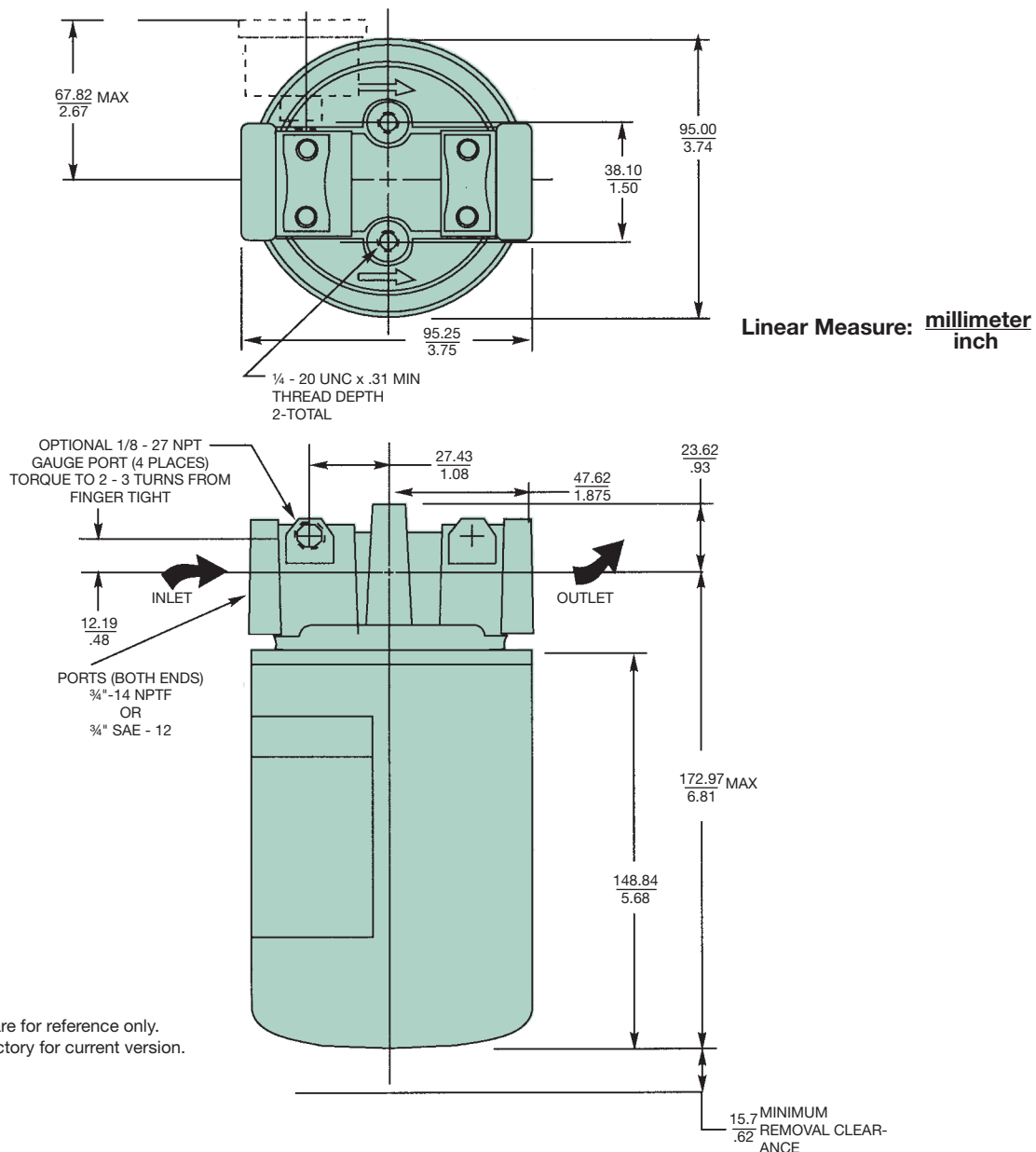
Filter Material:

Head: Aluminum

Cannister: Low Carbon Steel

Shipping Weights (approximate):

1.6 lbs.



Drawings are for reference only.
Contact factory for current version.

12AT/50AT Series

Spin-On Filters

Reservoir Breather Assemblies 12AT and 50AT

Sizing

Select the proper size cannister for the maximum rate of reservoir draw down or air exchange rate. As a rule of thumb, clean pressure drop should be limited to 0.18 psid (5" H₂O).

A pipe flange, weld collar, etc. may be used to connect the cannister adapter kit to the reservoir. Make sure that air is not able to leak around the adapter. When mounting on the side of the reservoir, make sure the installation is above the surface of the fluid.

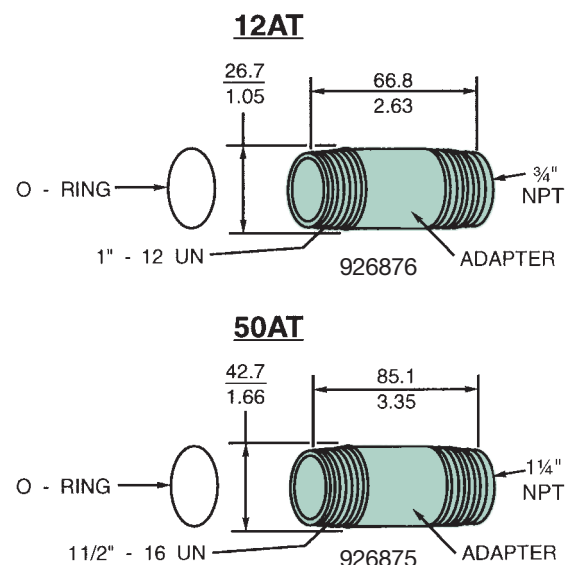
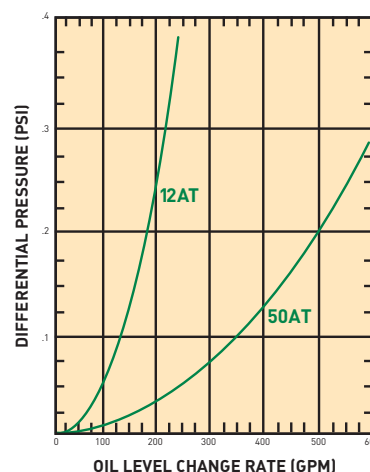
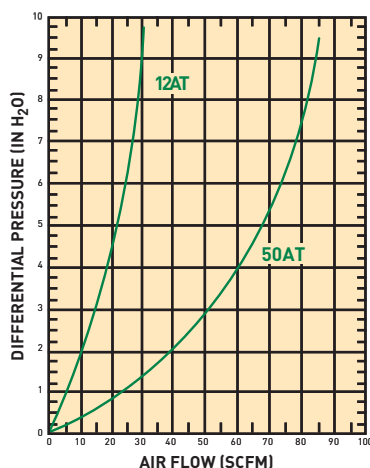
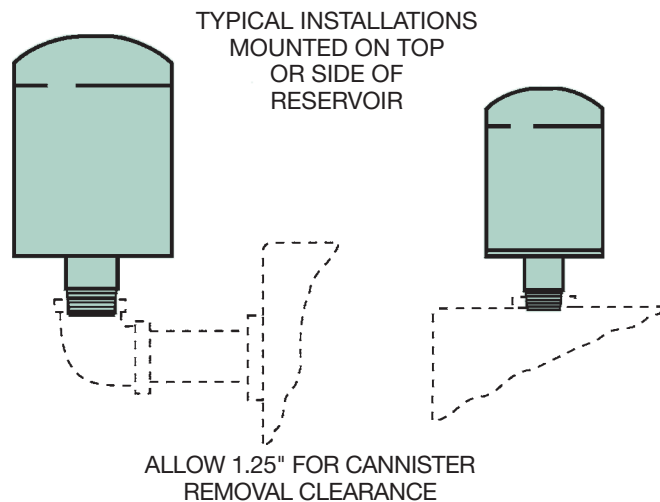
Recommended cannister change out is after 500 hours of operation. More frequent replacement may be required when operated in heavily contaminated areas such as grinding operations, primary metal mills, and on mobile equipment. Under such conditions, increase replacement frequency to every 250 hours.

Model	Air Rating*	Element	Adapter Kit
12AT-03C	1 micron	926543	926876
12AT-10C	2 micron	921999	926876
12AT-25C	5 micron	925023	926876
50AT-03C	1 micron	926541	926875
50AT-10C	2 micron	926169	926875
50AT-25C	5 micron	926170	926875

* 99% Removal efficiency for particles larger than the stated size in air.

Graphs are for 03C cannisters only. Total pressure drop across cannister, adapter, and pipe may be found by adding pressure drops below:

- + 1.5% for each inch of 12AT adapter or 3/4" pipe used.
- + 3.0% for each 3/4" elbow used.
- + 1.0% for each inch of 50AT adapter or 1-1/4" pipe used.
- + 2.0% for each 1-1/4" elbow used.



12AT/50AT Series

Spin-On Filters

Filter Service

Filter cannisters need to be replaced when the pressure gauge reads the filter bypass setting. For example, if a 12AT filter has a 25 psi bypass valve, it needs to be replaced when the pressure gauge reads 25 psi. If no indicator of any kind is used, replace the cannister after the first 50 hours of operation, and every 250 hours thereafter. More frequent replacement could be required depending on operating conditions.

When servicing a 12AT or 50AT filter, use the following procedure:

- Shut down the main system and release pressure in the filter line.
- Unthread the cannister and discard it along with the accompanying seal. A strap wrench may be required.
- Apply a small amount of lubricant to the new cannister seal.
- Install the new cannister and hand tighten 3/8 to 1/2 turn after gasket makes contact with head.

Accessory Parts List

Description	12AT	50AT
Gauge - 15 psi	936911	936911
Gauge - 25 psi	936912	936912
Pressure switch-25 psi	926923	926923
Vacuum switch	926949	926949
Breather adapter kit	926876	926875
Vacuum gauge	936909	936909

Replacement Cannisters

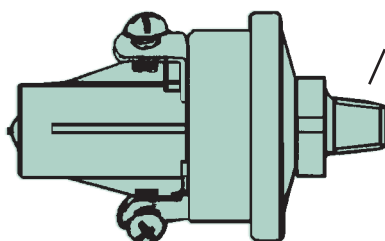
Media	12AT	50AT	50AT-2
25C	925023	926170	N/A
10C	921999	926169	927736
03C	926543	926541	N/A
20B	928764	928767	929446
10B	928763	928766	929445
03B	N/A	934200	932073



Indicator Gauge (15 PSI)

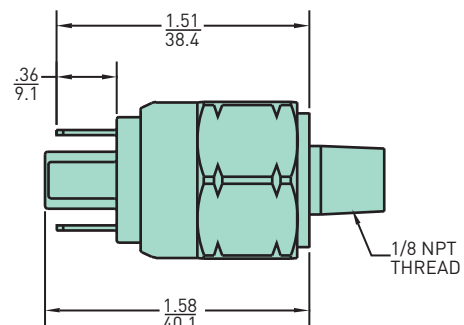


Indicator Gauge (25 PSI)



Vacuum Switch

1/8-27 NPTF



Pressure Switch

Linear Measure = $\frac{\text{inches}}{\text{mm}}$

12AT/50AT Series

Spin-On Filters

How To Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
	50AT	2	10C	N	25	DD	N

BOX 1: Seals	
Symbol	Description
None	Buna

BOX 2: Basic Assembly	
Symbol	Description
12AT	Spin-on (¾" nom.)
50AT	Spin-on (1¼" nom.)

BOX 3: Length	
Symbol	Description
None	Single length cannister
2	Double length cannister (50AT only)

BOX 4: Cannister Media	
Symbol	Description
25C*	Cellulose
10C	Cellulose
03C*	Cellulose
20B	Microglass
10B	Microglass
03B **	Microglass
* Not available in 50AT-2	
** Not available in 12AT	

BOX 5: Indicator Symbol	
Symbol	Description
N	None

BOX 6: Bypass Setting	
Symbol	Description
25	25 psid
15	15 psid
3	3 psid
X	No bypass

BOX 7: Ports	
Symbol	Description
12AT	
BB	3/4" NPTF
MM	SAE-12
50AT	
DD	1-1/4" NPTF
OO	SAE-20

BOX 8: Gauge Port Location	
Symbol	Description
N	None
H	Inlet and outlet, both sides (all ports drilled and tapped)

NOTE: Gauges must be ordered separately.

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.



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PT Series

Tank Top Filters



ENGINEERING YOUR SUCCESS.



PT Series

Applications

Together we can...

Preserve the environment.
Minimize waste and promote energy efficiency.

Achieve worldwide filtration solutions.
Build global confidence.

Redefine new limits.
Forge ahead with advanced technology.

Keep contamination under control.
Reduce maintenance costs.

Enhance total system reliability.
Focus on customer satisfaction.

Reach optimum potential.
Drill to greater depths.

...engineer your success.



The new PT series filter is available in two diameters and three lengths for flow ranges from 5-50 gpm. The PT2 and PT4 filter cartridges utilize Microglass media in 2, 5, 10 and 20 microns for the industry's best particle removal efficiency and retention.

This unique design simply threads into a ported weld ring or flange, which can be bolted to a metal reservoir.

The disposable filter cartridge is a single-piece construction, which incorporates the nylon cover and integral 25 psi bypass valve. The flow path is inside-out and requires no special tools for service.

This concept assures minimal installation costs with the least space requirements for return line applications.

Typical Applications

- **Turf Maintenance**
- **Material Handling**
- **Aerial Lifts**
- **Fan Drive**

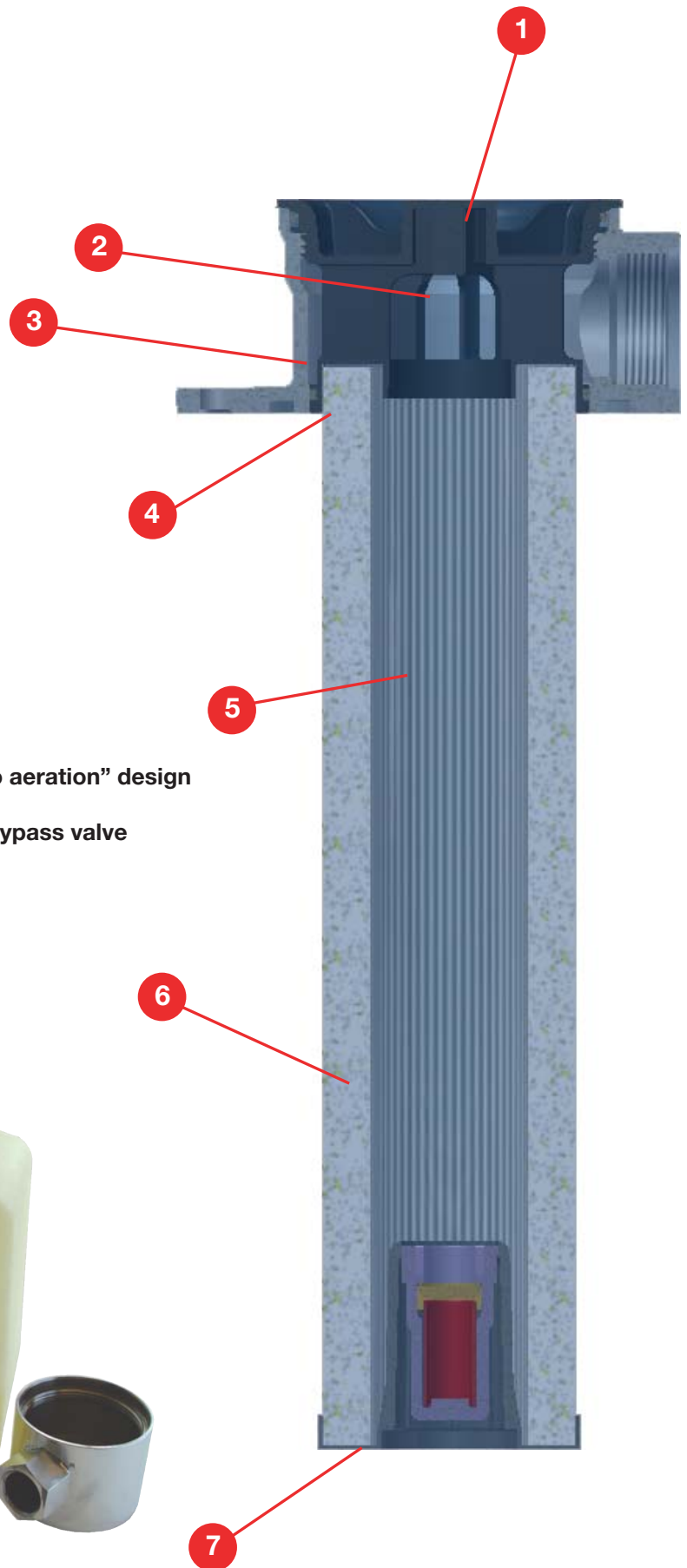


The PT Series filter combines high efficiency Microglass filtration with low cost installation featured in a new patented element design.

PT Series

Features

- 1 Easy element assembly removal
- 2 Unique high flow top end cap
- 3 Lightweight cast aluminum head
- 4 Patented filter element assembly
- 5 Bowl-less, inside-out flow
- 6 Downstream element support with “no aeration” design
- 7 Solid bottom endcap with integrated bypass valve
- 8 Low profile tank top design



PT Series

Patented Filter Element

Premium original equipment
performance every time

Tank Top, Bowl-Less Design

Reduces weight

Significant cost savings over filters
with bowls

Bottom Endcap Integrated Bypass Valve

New bypass valve with every
element change

Insures reliable performance

Inside-Out Element Flow Path

Contamination contained
within the element

No system contamination during
element servicing

No Aeration Design

Oil cascades down the
perforated outer support core

No system aeration

High Flow, Low Pressure Drop Top Endcap Design

Long element life

Lower maintenance costs

Premium Microglass Media

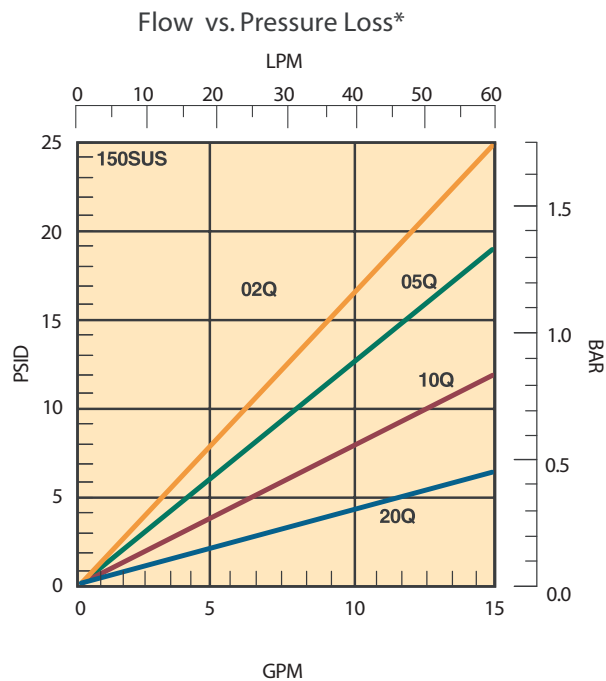
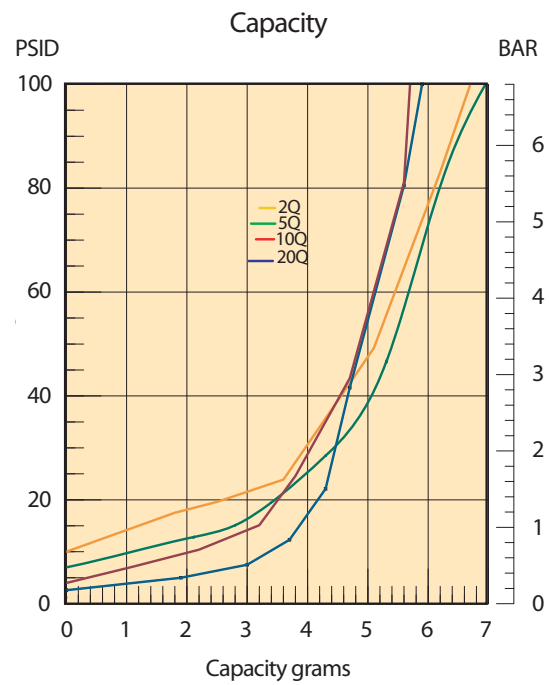
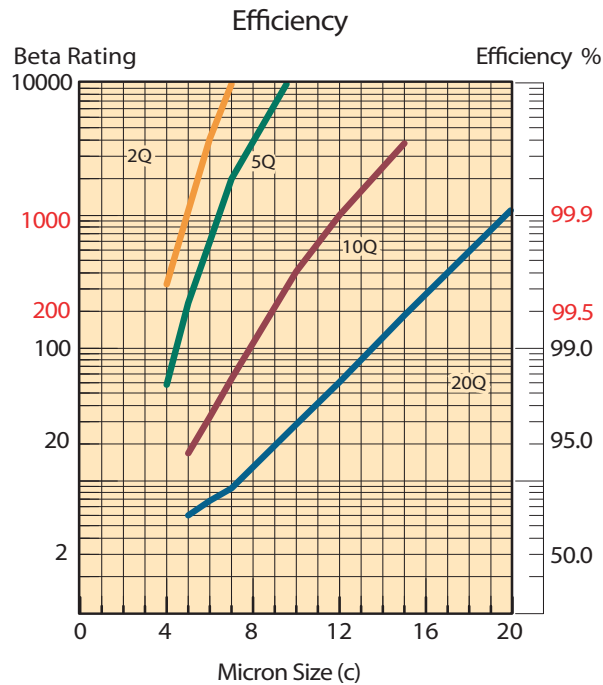
Superior dirt holding
capacity and efficiency

Less maintenance and downtime



PT Series

PT2-1 Element Performance

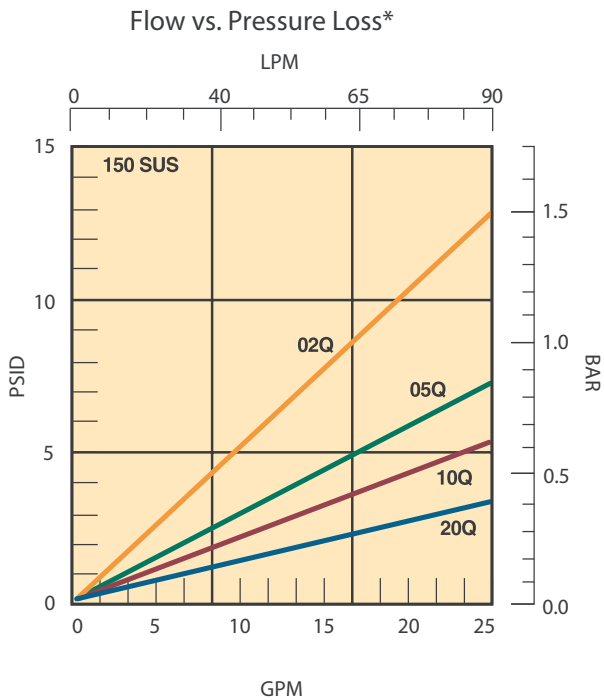
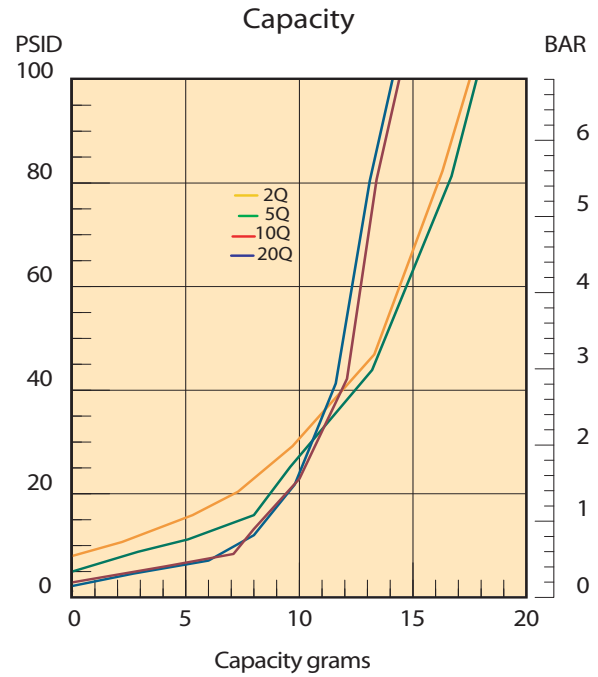
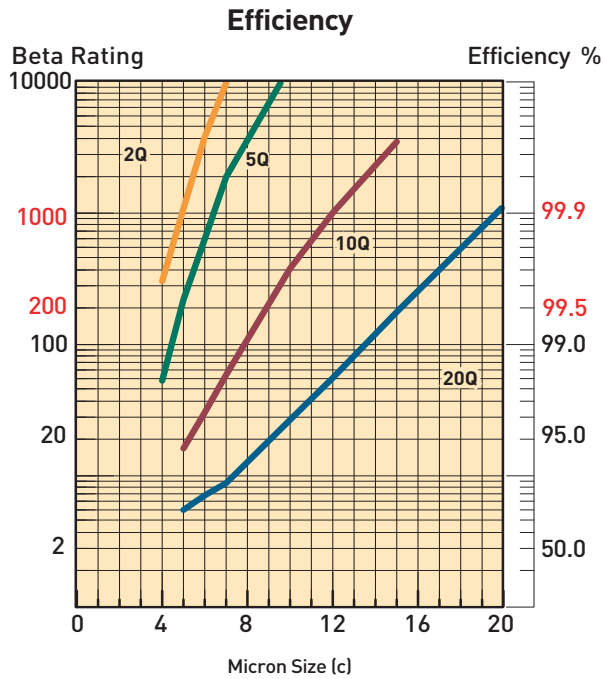


Results typical from Multi-pass tests run per test standard ISO 16889 @ 10 gpm to 100 psid terminal - 10 mg/L BUGL. Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

*Note: Pressure drop calculations are based on SAE-12 porting.

PT Series

PT2-2 Element Performance

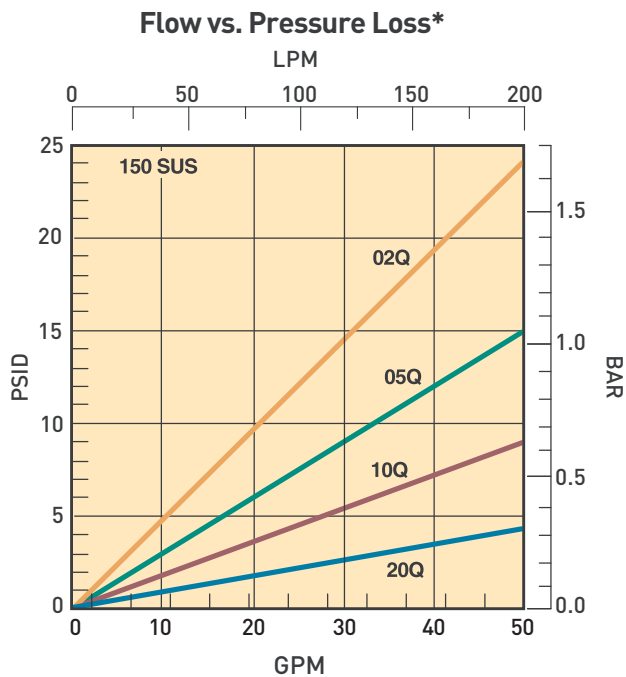
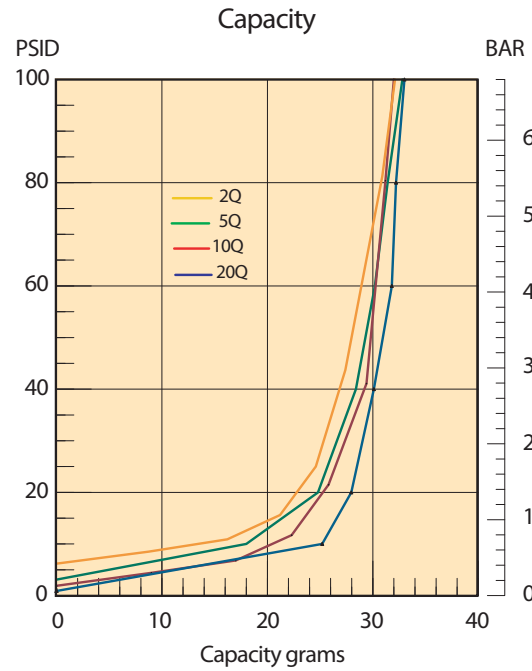
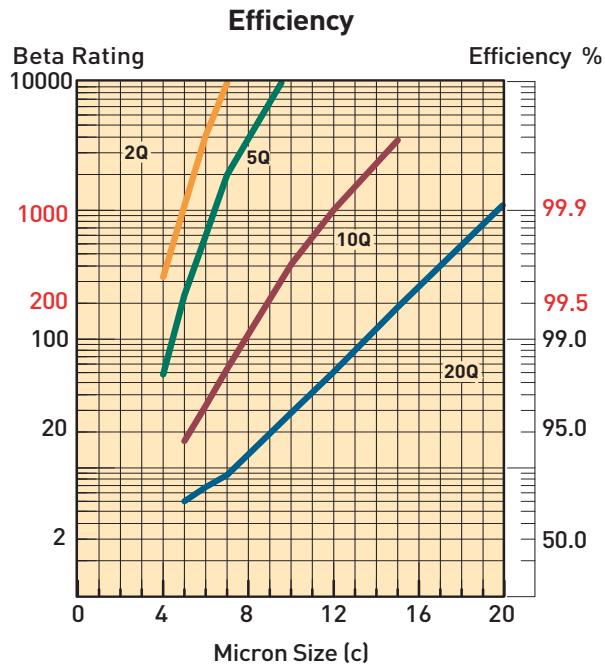


Results typical from Multi-pass tests run per test standard ISO 16889 @ 15 gpm to 100 psid terminal - 10 mg/L BUGL. Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

*Note: Pressure drop calculations are based on SAE-12 porting.

PT Series

PT4-1 Element Performance

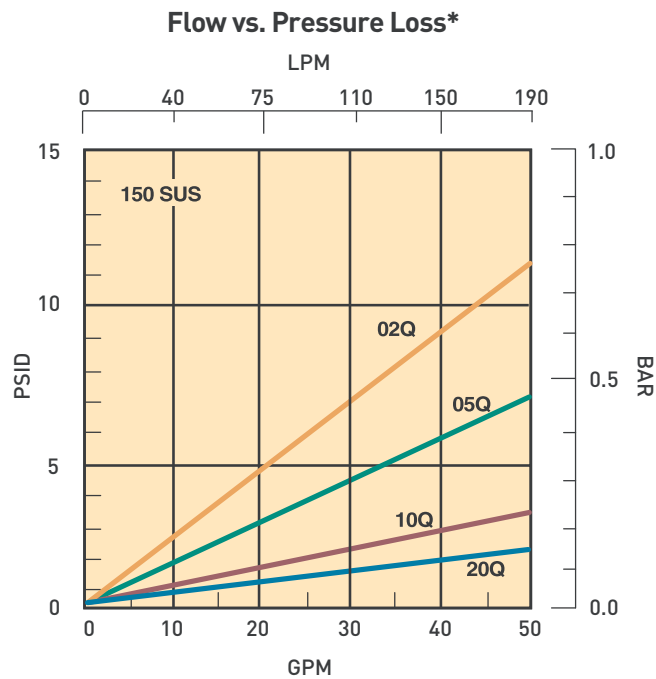
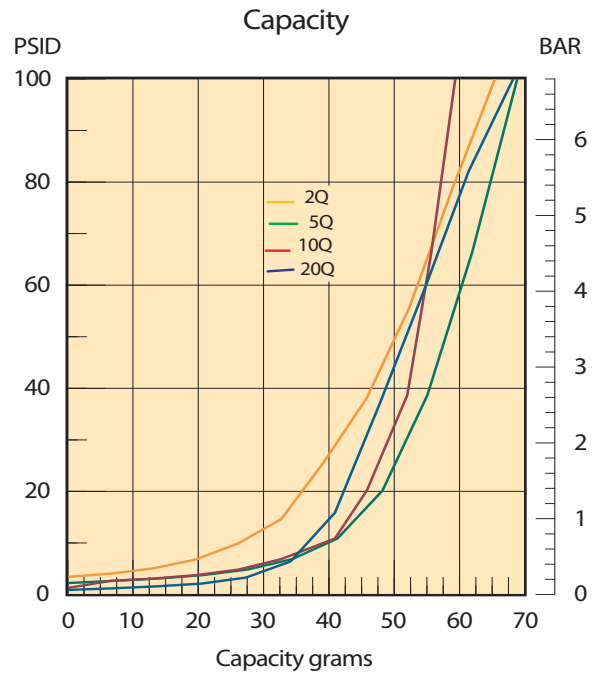
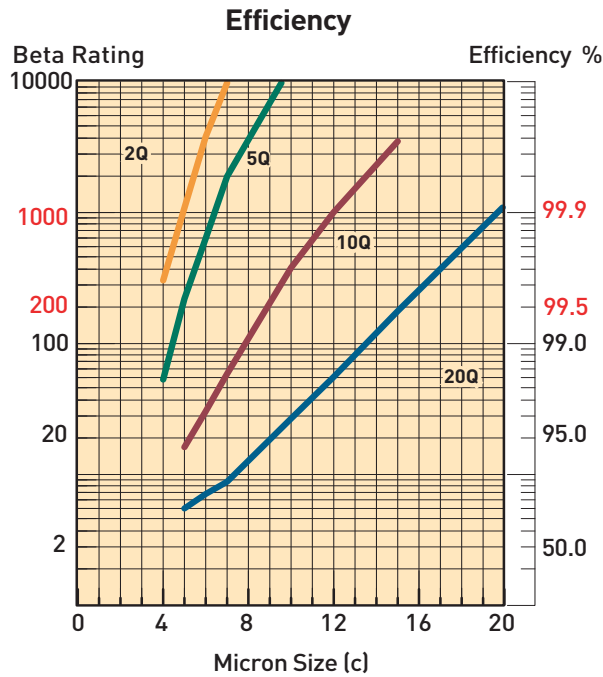


Results typical from Multi-pass tests run per test standard ISO 16889 @ 15 gpm to 100 psid terminal - 10 mg/L BUGL. Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

*Note: Pressure drop calculations are based on SAE-16 porting.

PT Series

PT4-2 Element Performance

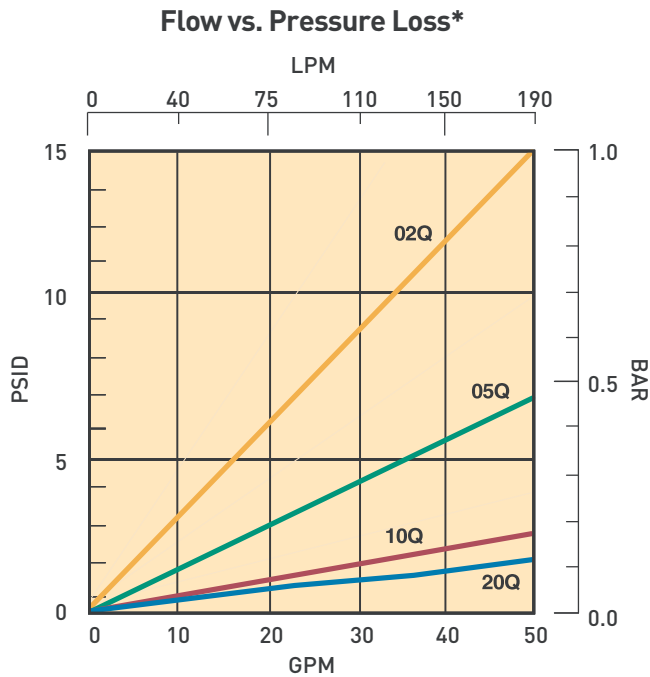
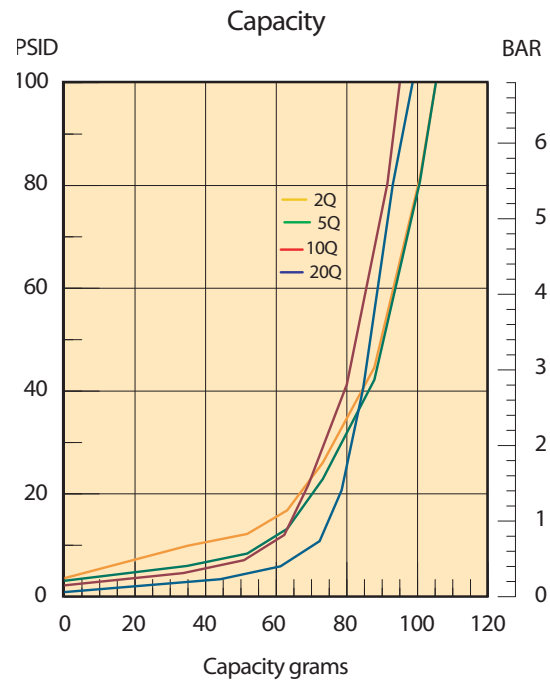
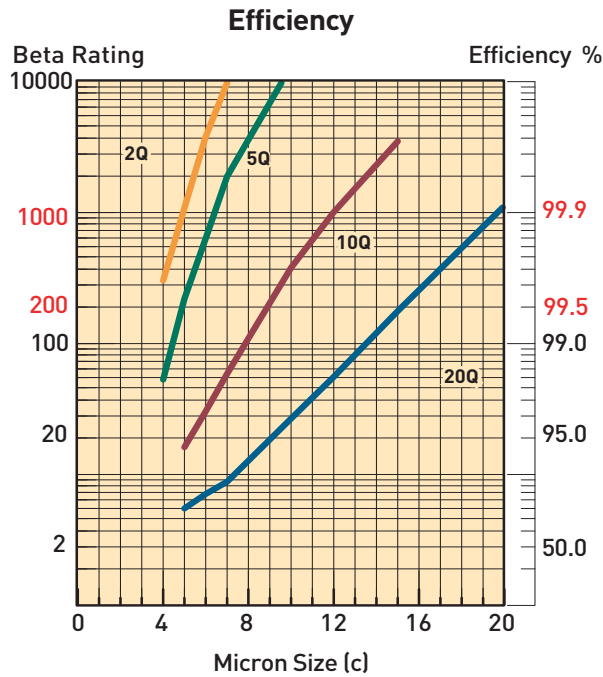


Results typical from Multi-pass tests run per test standard ISO 16889 @ 30 gpm to 100 psid terminal - 10 mg/L BUGL. Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

*Note: Pressure drop calculations are based on SAE-16 porting.

PT Series

PT4-3 Element Performance



Results typical from Multi-pass tests run per test standard ISO 16889 @ 45 gpm to 100 psid terminal - 10 mg/L BUGL. Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

*Note: Pressure drop calculations are based on SAE-16 porting.

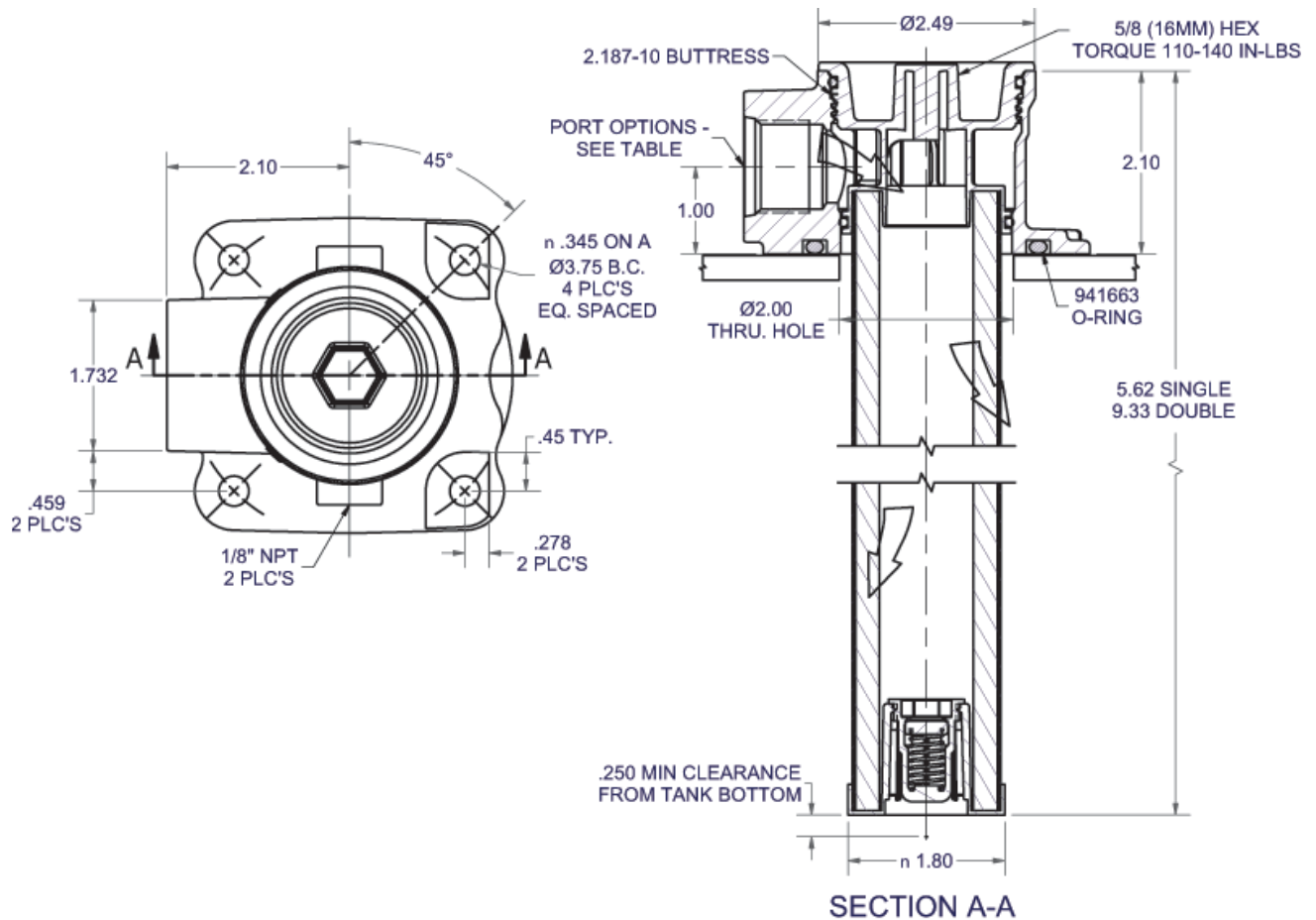
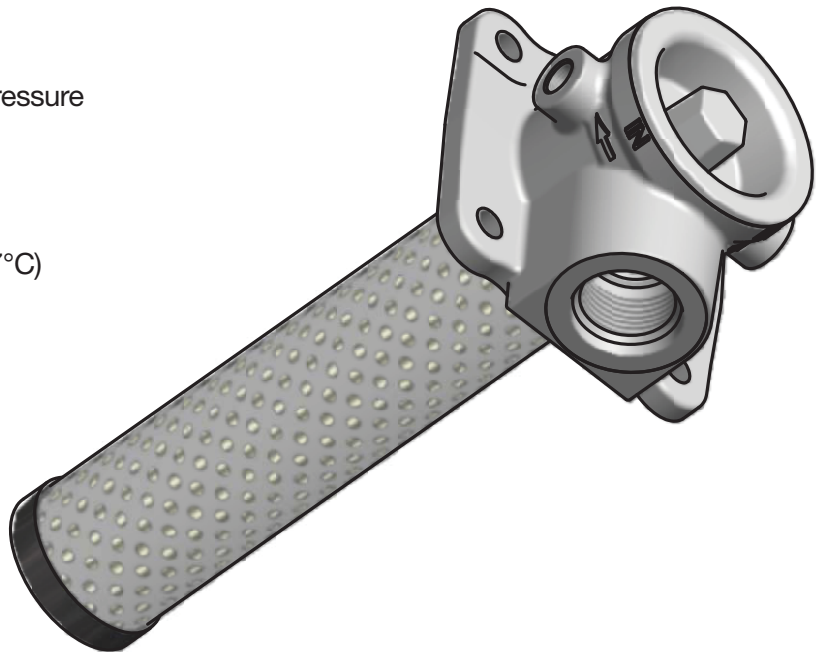
Specifications - PT2

Maximum Allowable Operating Pressure (MAOP): 150 psi (10.3 bar)

Element Burst Rating: 150 psid

Operating Temperatures:
Buna: -40°F (-40°C) to 225°F (107°C)

Materials:
Tank Flange: aluminum
Endcaps: nylon



PT Series

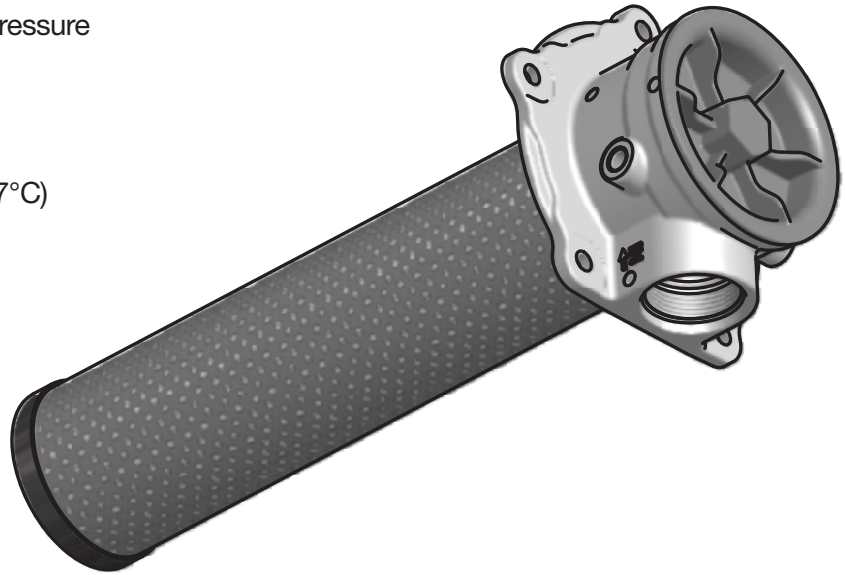
Specifications - PT4

Maximum Allowable Operating Pressure (MAOP): 150 psi (10.3 bar)

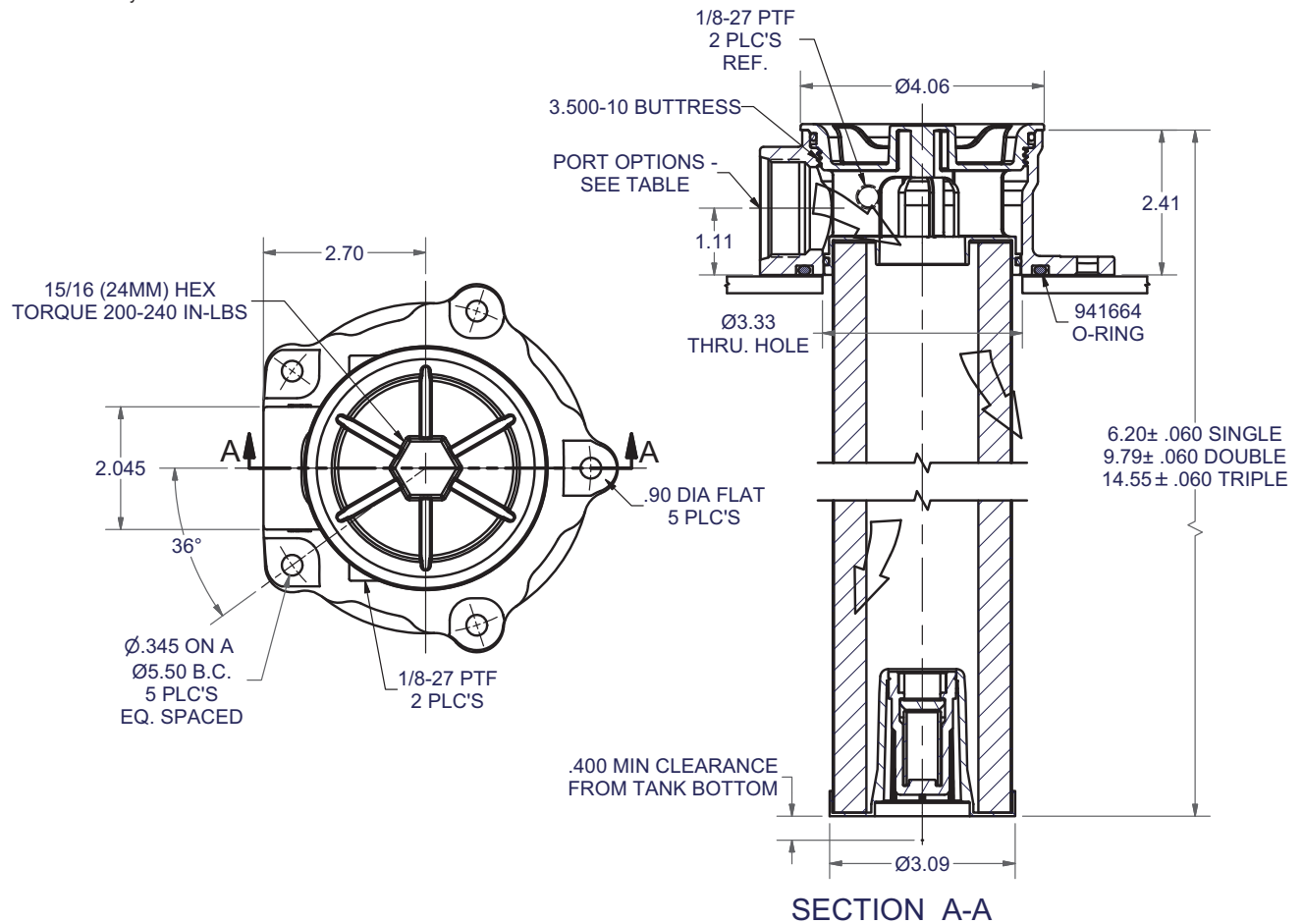
Element Burst Rating: 150 psid

Operating Temperatures:
Buna: -40°F (-40°C) to 225°F (107°C)

Materials:
Tank Flange: aluminum
Endcaps: nylon



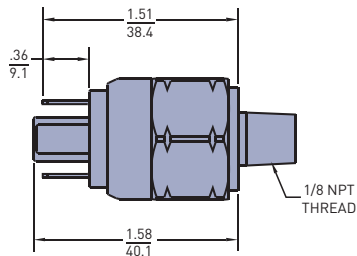
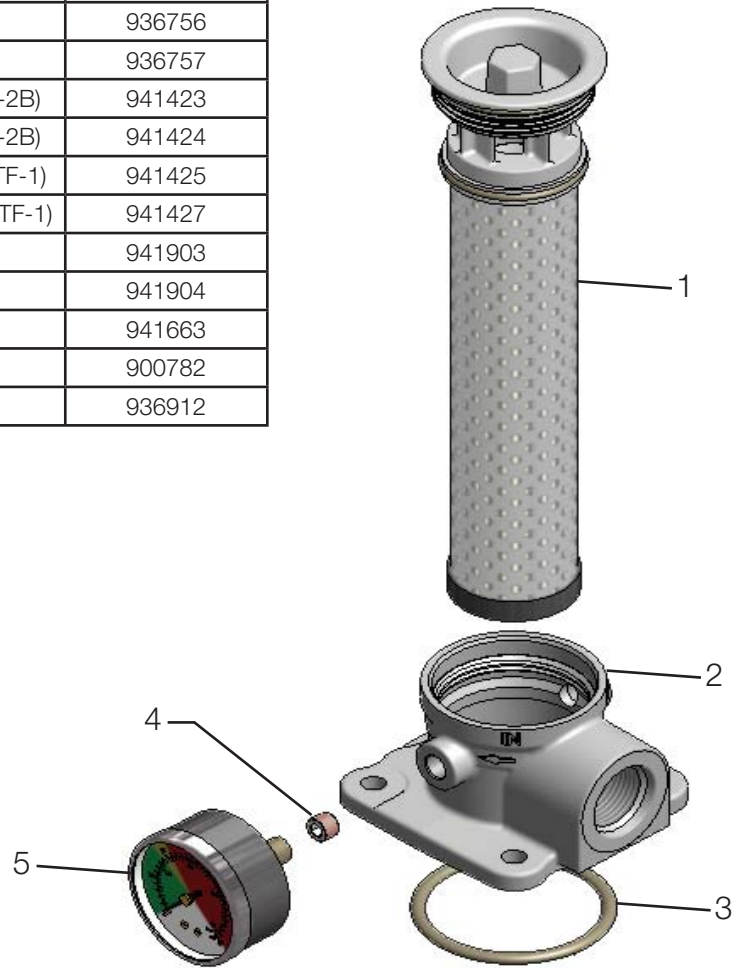
Drawings are for reference only.
Contact factory for current version.



PT Series

PT2 Parts List

INDEX	PART DESCRIPTION	PART NUMBER
1	PT2-1-02Q-25 psid bypass	936750
	PT2-1-05Q-25 psid bypass	936751
	PT2-1-10Q-25 psid bypass	936752
	PT2-1-20Q-25 psid bypass	936753
	PT2-2-02Q-25 psid bypass	936754
	PT2-2-05Q-25 psid bypass	936755
	PT2-2-10Q-25 psid bypass	936756
	PT2-2-20Q-25 psid bypass	936757
2	PT2 DIE CAST SAE-12 (1.062-12 UN-2B)	941423
	PT2 DIE CAST SAE-16 (1.312-12 UN-2B)	941424
	PT2 DIE CAST 3/4" NPT (.750-14 NPTF-1)	941425
	PT2 DIE CAST 1" NPT (1.000-11.5 NPTF-1)	941427
	PT2 DIE CAST G3/4" BSPF	941903
	PT2 DIE CAST G1" BSPF	941904
3	O-RING	941663
4	1/8-27 PIPE PLUG	900782
5	1/8-27 PRESSURE GAUGE	936912



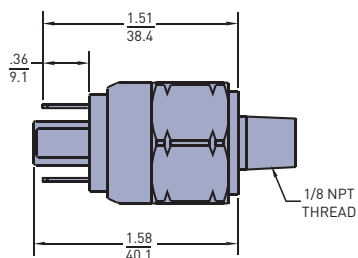
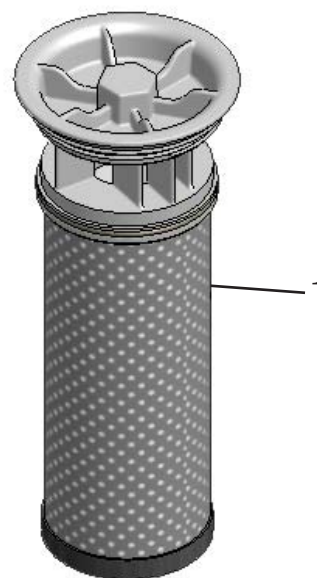
Linear measure = $\frac{\text{inches}}{\text{mm}}$

Pressure Switch (926923)

PT Series

PT4 Parts List

INDEX	PART DESCRIPTION	PART NUMBER
1	PT4-1-02Q-25 psid bypass	936742
	PT4-1-05Q-25 psid bypass	936743
	PT4-1-10Q-25 psid bypass	936744
	PT4-1-20Q-25 psid bypass	936745
	PT4-2-02Q-25 psid bypass	936746
	PT4-2-05Q-25 psid bypass	936747
	PT4-2-10Q-25 psid bypass	936748
	PT4-2-20Q-25 psid bypass	936749
	PT4-3-02Q-25 psid bypass	936876
	PT4-3-05Q-25 psid bypass	936877
	PT4-3-10Q-25 psid bypass	936878
	PT4-3-20Q-25 psid bypass	936879
2	PT4 DIE CAST SAE-16 (1.312-12 UN-2B)	941417
	PT4 DIE CAST SAE-20 (1.625-12 UN-2B)	941448
	PT4 DIE CAST 1" NPT (1.000-11.5 NPTF-1)	941449
	PT4 DIE CAST 1 1/4" NPT (1.250-11.5 NPTF-1)	941450
	PT4 DIE CAST G1" BSPF	941905
	PT4 DIE CAST G1 1/4" BSPF	941906
3	O-RING	941664
4	1/8-27 PIPE PLUG	900782
5	1/8-27 PRESSURE GAUGE	936912



Linear measure = $\frac{\text{inches}}{\text{mm}}$

Pressure Switch (926923)

PT Series

How to Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
PT2	1	10Q	B	G	G	S16	1

BOX 1: Filter Series¹

Symbol	Description
PT2	Tank top filter
PT4	Tank top filter

BOX 2: Element Length

Symbol	Description
1	Single
2	Double
3	Triple (Avail. on PT4 only)

Consult factory for additional element lengths

BOX 3: Media Code

Symbol	Description
02Q	Microglass III, 2 micron
05Q	Microglass III, 5 micron
10Q	Microglass III, 10 micron
20Q	Microglass III, 20 micron

BOX 4: Seals

Symbol	Description
B	Nitrile (NBR)
V	Fluorocarbon (FKM)

BOX 5: Indicator

Symbol	Description
P	Port plugged
G	Pressure Gauge, 25 psi
S	Pressure Switch

BOX 6: Bypass

Symbol	Pressure Setting
G	25 PSI (1.7 bar)

BOX 7: Ports

Symbol	Description
PT2	
G12	G $\frac{3}{4}$ " BSPP
G16	G1" BSPP
N12	$\frac{3}{4}$ " NPT
N16	1" NPT
S12	SAE-12
S16	SAE-16
PT4	
G16	G1" BSPP
G20	G1 $\frac{1}{4}$ " BSPP
N16	1" NPT
N20	1 $\frac{1}{4}$ " NPT
S16	SAE-16
S20	SAE-20

BOX 8: Options

Symbol	Description
1	None
W ²	Steel weld ring

Notes:

1. The filters include the element you select already installed.
2. When "W" is selected in Box 8, the PT2 port options are "N12" and "S12"; the PT4 port options are "N16" and "S16".

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.





aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



KLT and KLS Series

Tank Top Return Line Filters



ENGINEERING YOUR SUCCESS.

KLT/KLS Series

Tank Top Return Line Filters

Applications for KLT and KLS Filters

- Mobile Equipment
- Construction, Refuse
- Industrial Power Units
- Machine Tool
- Oil Field

Parker's new KLS /KLT Tank Top Return Line Filters are ideally suited for Mobile and Industrial high to medium flow return applications, from 30 to 120 GPM. This cost-effective, in-tank filter series provides maximum flow and dirt holding capacity for longer filter element life in a simple, easy-to-install-and-service assembly.



The generous element size with extensive media area ensures continuous filtration during cold start up conditions. The inside-to-out flow path with closed bottom provides additional assurance that all contaminants remain captured during element service removal.

The filters have a pressure rating of 150 psi static, a temperature range of -40°F to 225°F, and are available in a wide range of high-efficiency Microglass III media in 2, 5, 10 and 20 micron for all system cleanliness requirements. Bypass valves are built into the element to ensure further performance integrity. A new bypass is provided with each element change.

This rugged design meets the needs for the demanding applications in mobile off-highway and on-highway applications for construction equipment, logging, refuse vehicles, mining, oil and gas recovery, marine, and industrial power units.

Feature	Advantage	Benefit
• Tank top mounted filter	• Saves space and reduces mounting hardware	• Lower cost, easy to integrate • KLS model directly retrofits competitive housing
• Two-piece head and element construction perforated with metal outer wrap	• No bowl required • Provides excellent flow diffusing, eliminating aeration	• Reduced cost and assembly weight • Improved performance
• High efficiency Microglass media maximizing filtration area	• Combines high particle capture efficiency with high dirt holding capacity and lower ΔP	• Cleaner fluids, longer lasting with fewer service intervals • Continuous filtration for cold start ups • Lower operating costs
• Element design includes integral disposable bypass valve with closed bottom end cap	• New bypass with each element change • Ensures captured contaminants are removed with each element change	• Ensures reliable bypass performance • No leakage • Cleaner fluids reduce risk for contamination during service
• Magnetic prefiltration	• Removes large ferrous contaminants	• Extends element life • Visual indication of component wear
• Fill and gauge ports	• Add fluid through high performance filter media • Gauge ports allow for added instrumentation	• Initial fluid integrity extends system component life • Monitor element life

KLT/KLS Series

Specifications

Pressure Ratings:

Maximum Allowable Operating Pressure

(MAOP): 150 psi (10.3 bar)

Operating Temperatures:

-40°F (-40°C) to 225°F (107°C)

Element Burst Rating:

150 psid (10.3 bar)

Filtration Rating:

2, 5, 10 & 20 Microns at Beta > 200

Element Condition Indicators:

Gauge: 0-60 psi color coded
Switch: SPDT 5A @ 24 VDC and 250 VAC

Materials:

Head & Cover: Cast Aluminum Alloy

Bypass Valve: Nylon

Filter Media: Microglass III

Element End Caps: Nylon

Weights (approximate):

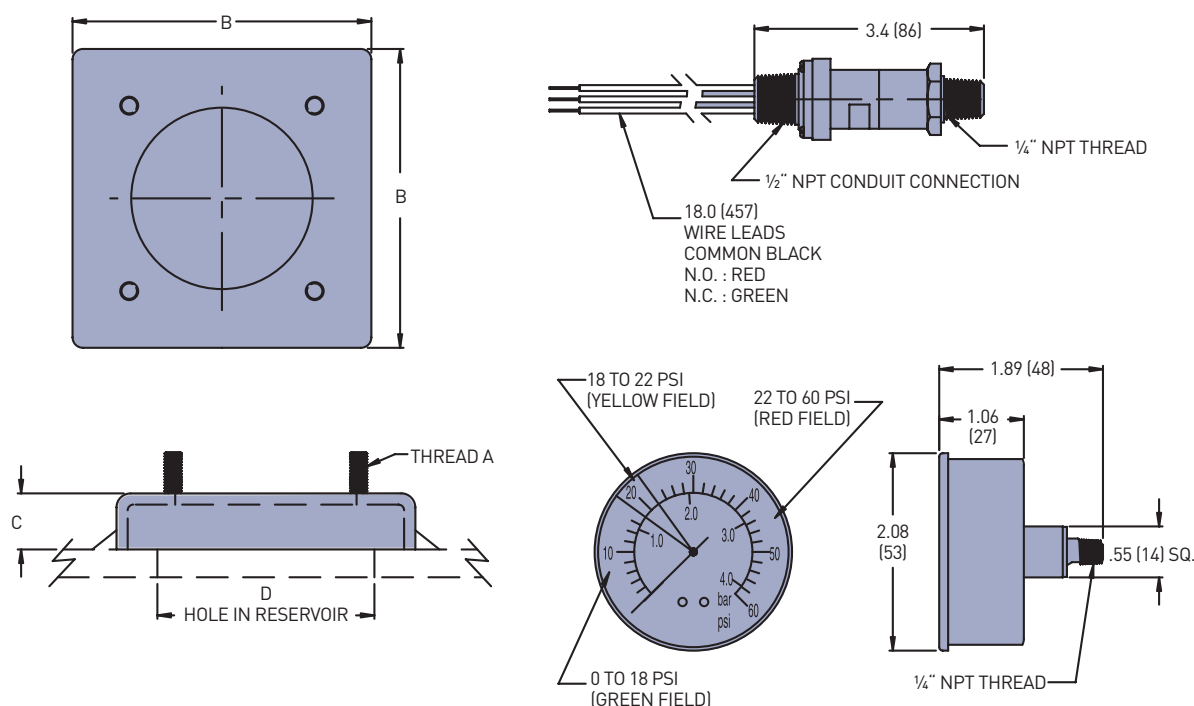
KLT-23 lbs. (1.36 kg)

KLT-44 lbs. (1.81 kg)

KLT(S)-78 lbs. (3.63 kg)

KLT(S)-810 lbs. (4.54 kg)

KLT Weld Plate Drawings



Linear Measure: inch (mm)

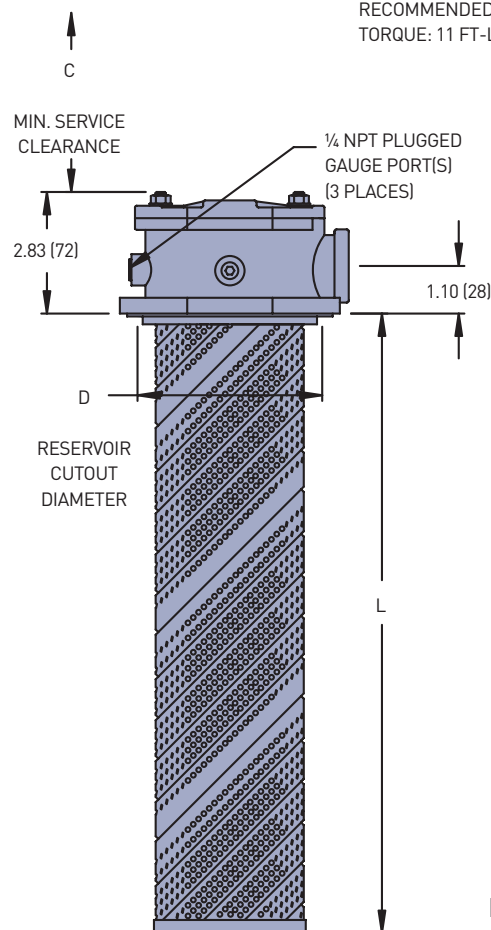
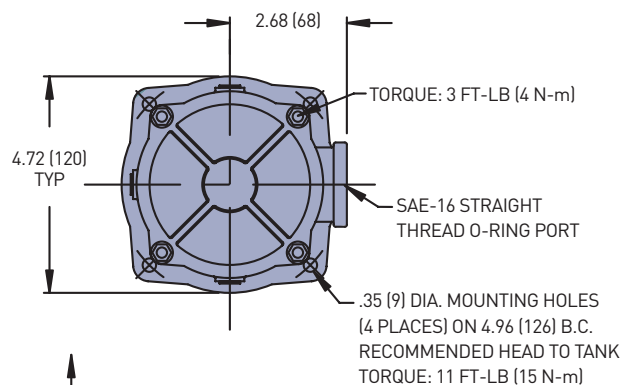
Dimension	KLT Filter Model	
	KLT-2/KLT-4	KLT-7/KLT-8
A	5/16-18 UNC-2A	3/8-16 UNC-2A
B	5.33 (135)	7.15 (182)
C	1.00 (25)	1.00 (25)
D	4.50/3.75 (114/95)	6.25/5.50 (159/140)

Drawings are for reference only.
Contact factory for current version.

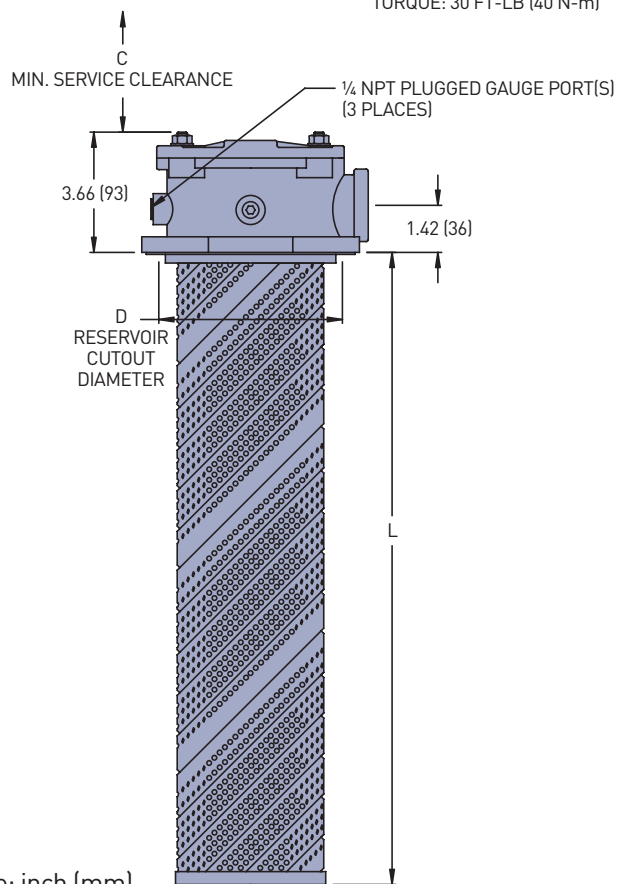
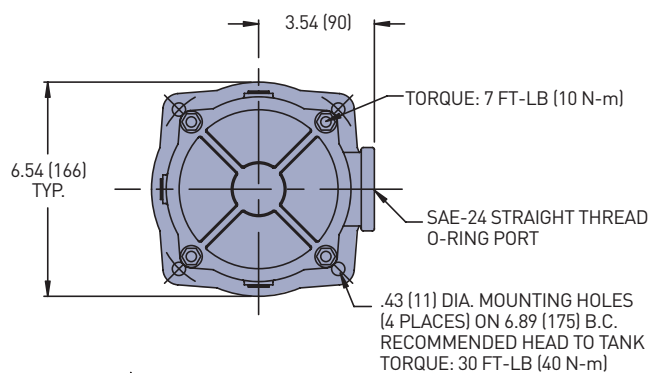
KLT Series

Dimensional Drawings

KLT 2 / KLT 4



KLT 7 / KLT 8



Linear Measure: inch (mm)

Drawings are for reference only.
Contact factory for current version.

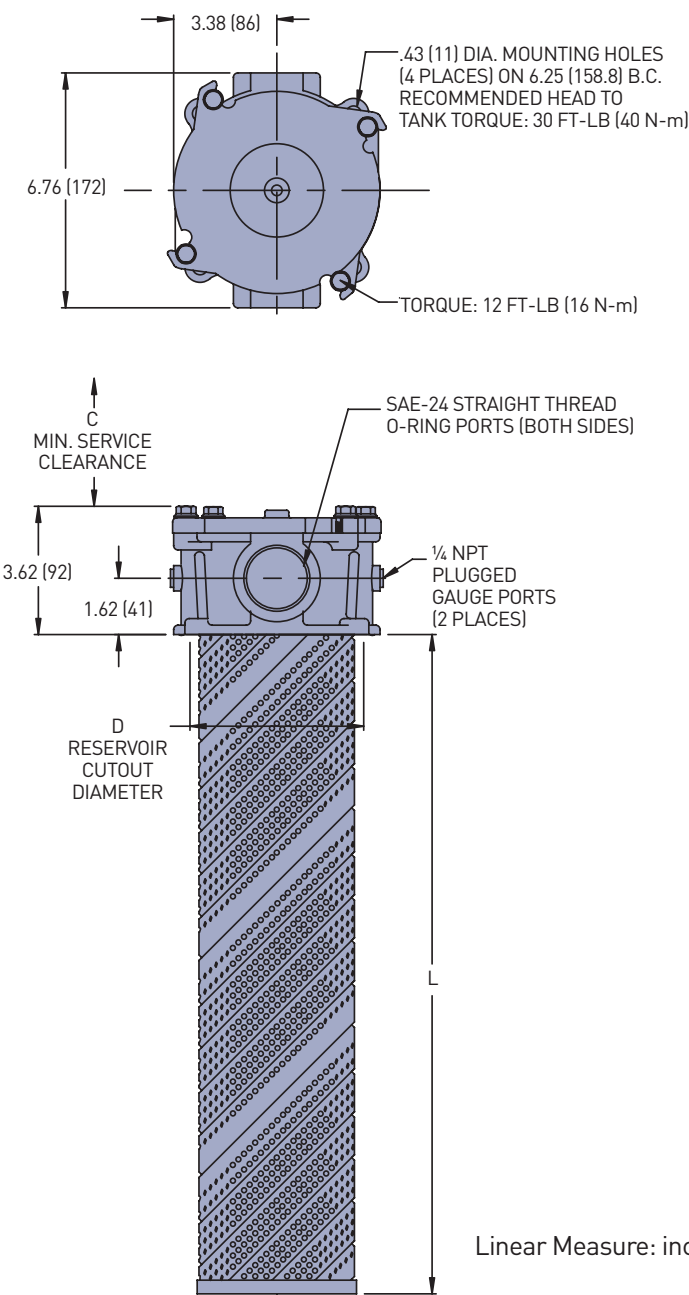
Dimensions	KLT Filter Model	
	KLT-2	KLT-4
C	5.75 (146)	9.50 (241)
L	4.16 (106)	7.75 (197)
D	3.6 (93) 3.56 (90)	

Dimensions	KLT Filter Model	
	KLT-7	KLT-8
C	13.00 (330)	19.25 (489)
L	11.46 (291)	17.70 (450)
D	5.36 (136) 5.26 (133)	

KLS Series

Dimensional Drawing

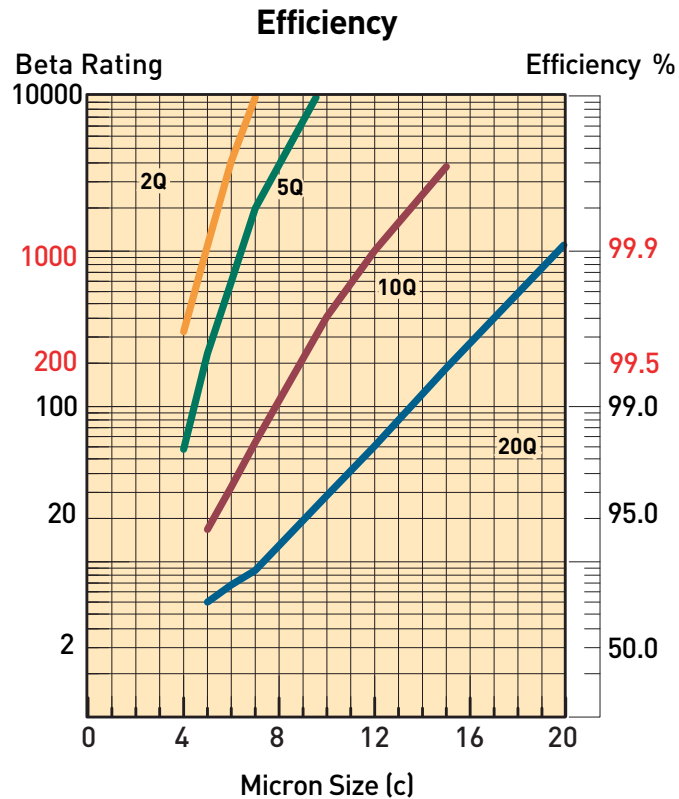
KLS 7 / KLS 8



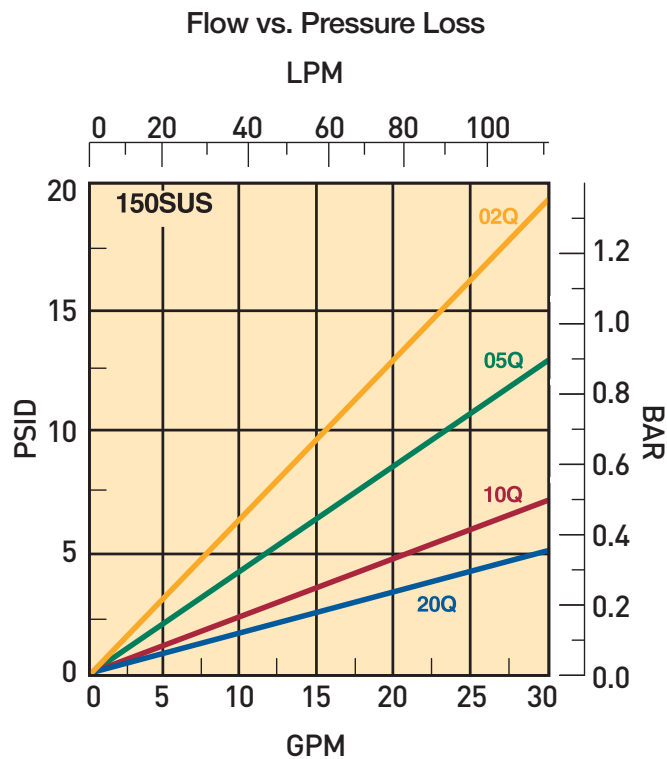
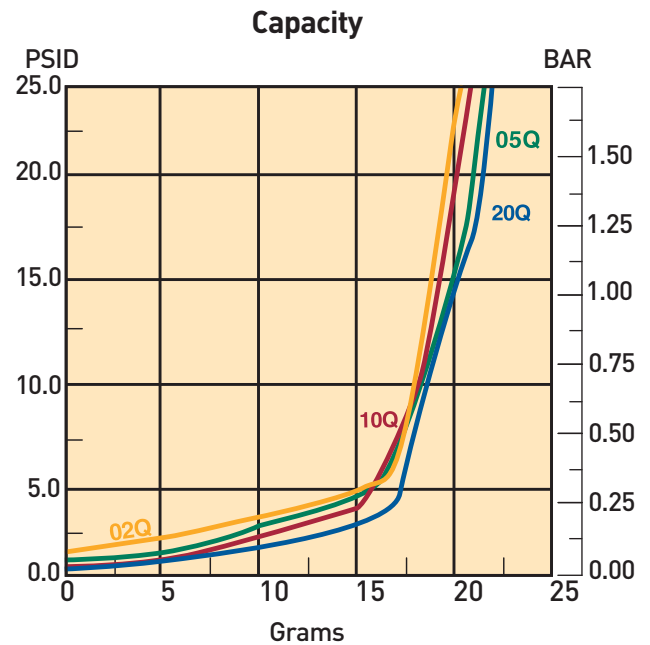
Dimensions	KLS Filter Model	
	KLS-7	KLS-8
C	13.00 (330)	19.25 (489)
L	11.46 (291)	17.70 (450)
D	5.00 (127) 4.80 (122)	

KLT Series

KLT-2 Element Performance

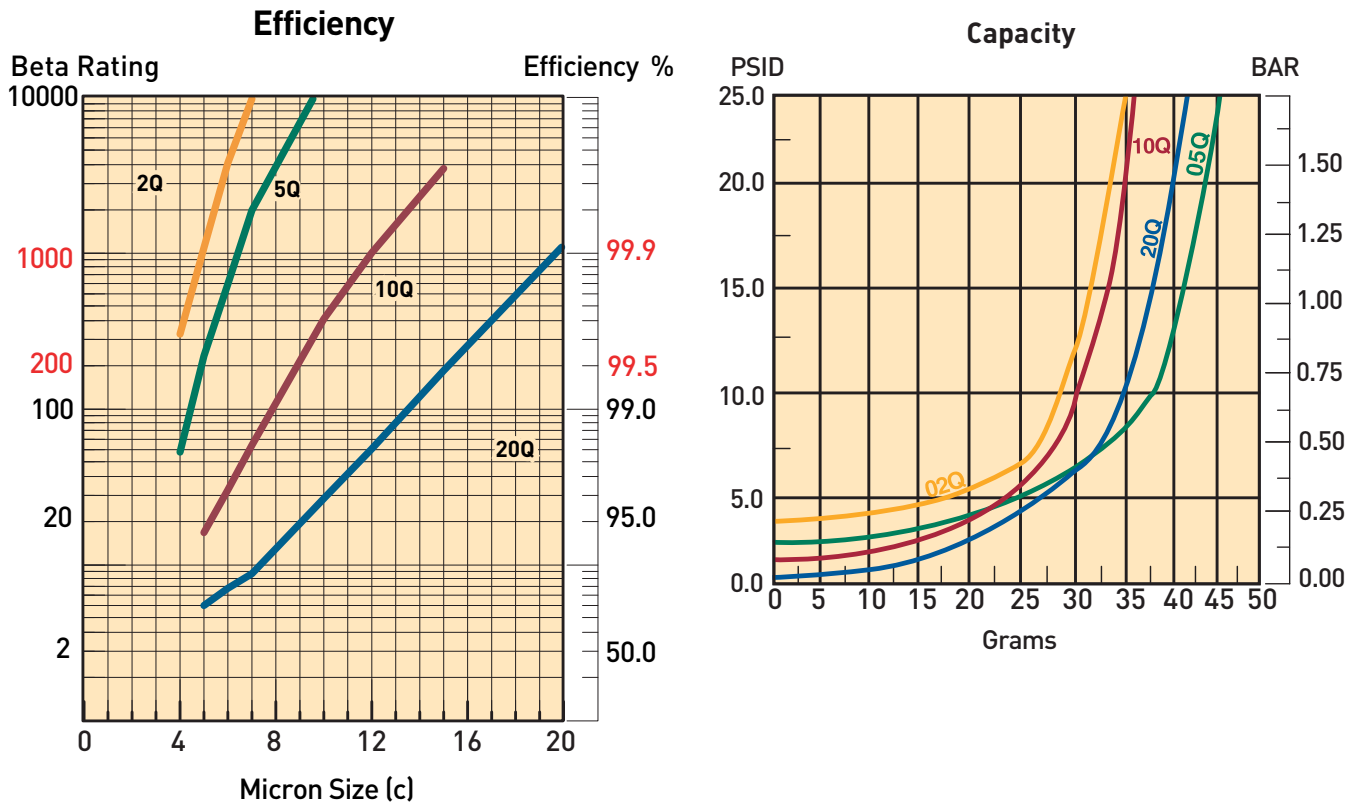


Multipass tests run @ 15 gpm to 25 psid terminal - 10 mg/L BUGL

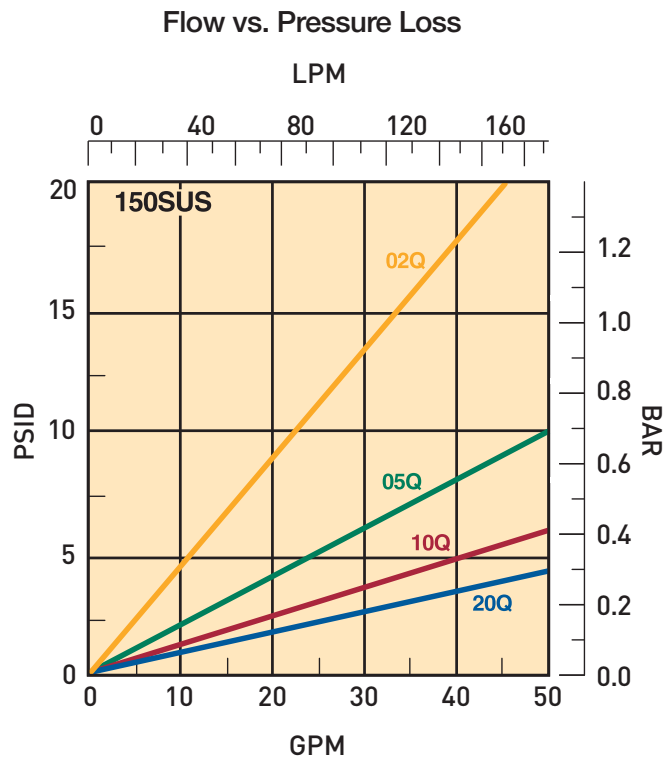


KLT Series

KLT-4 Element Performance

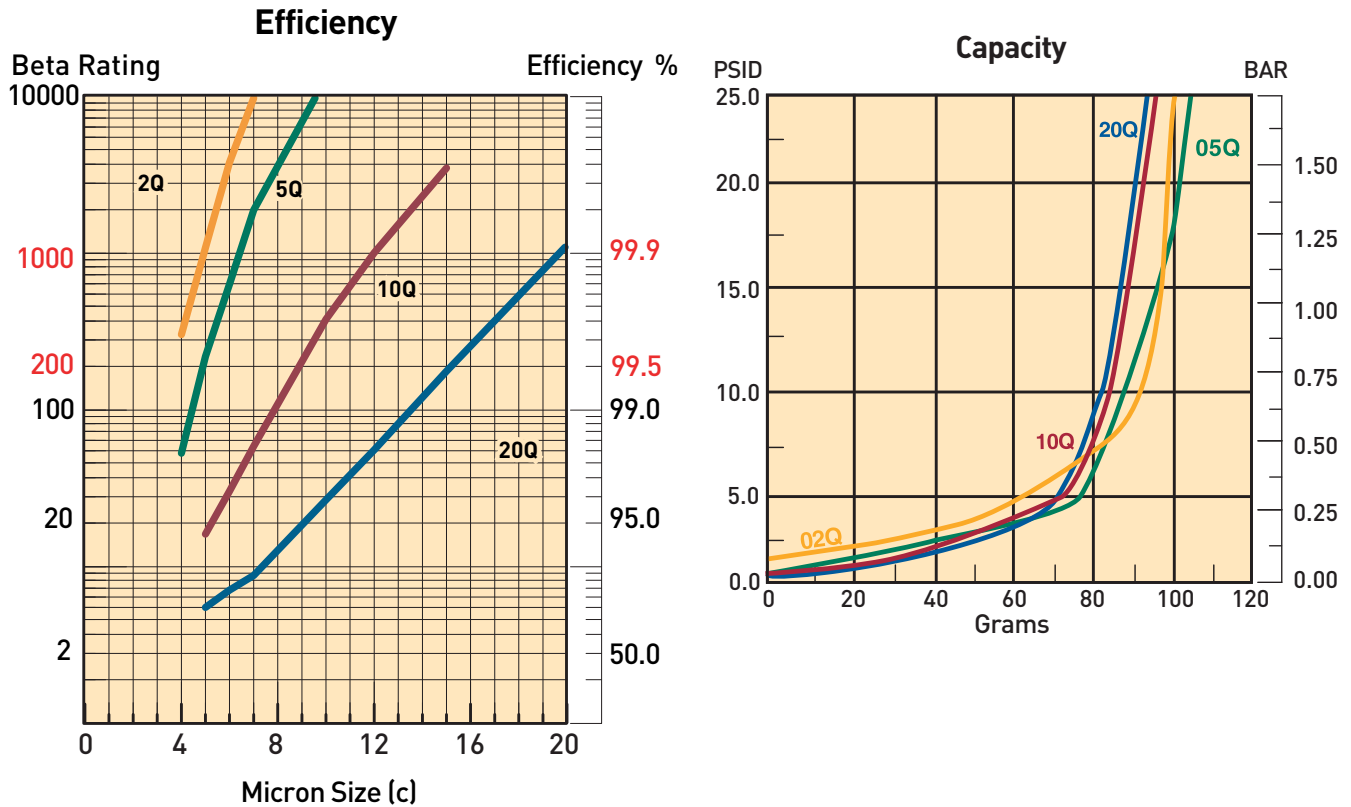


Multipass tests run @ 30 gpm to 25 psid terminal - 10 mg/L BUGL

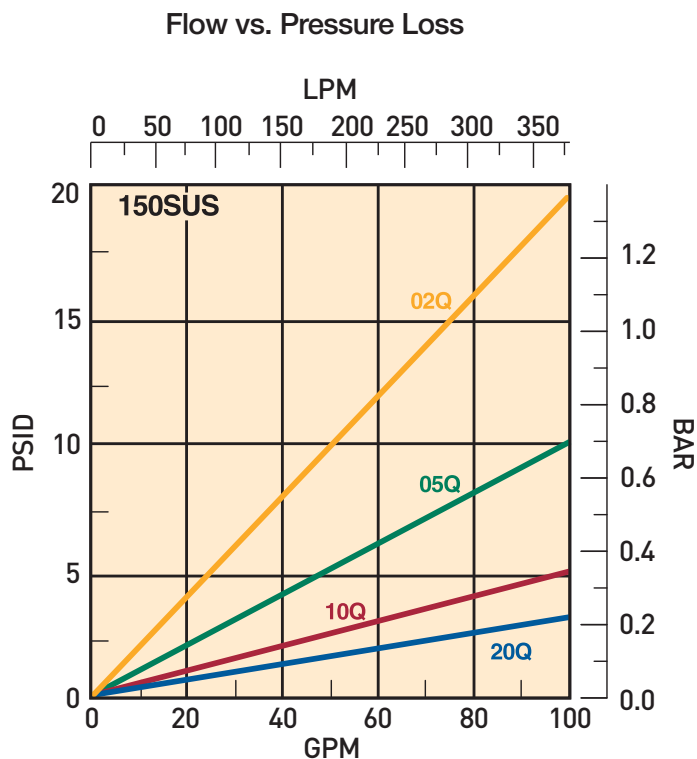


KLT/KLS Series

KLT/KLS-7 Element Performance

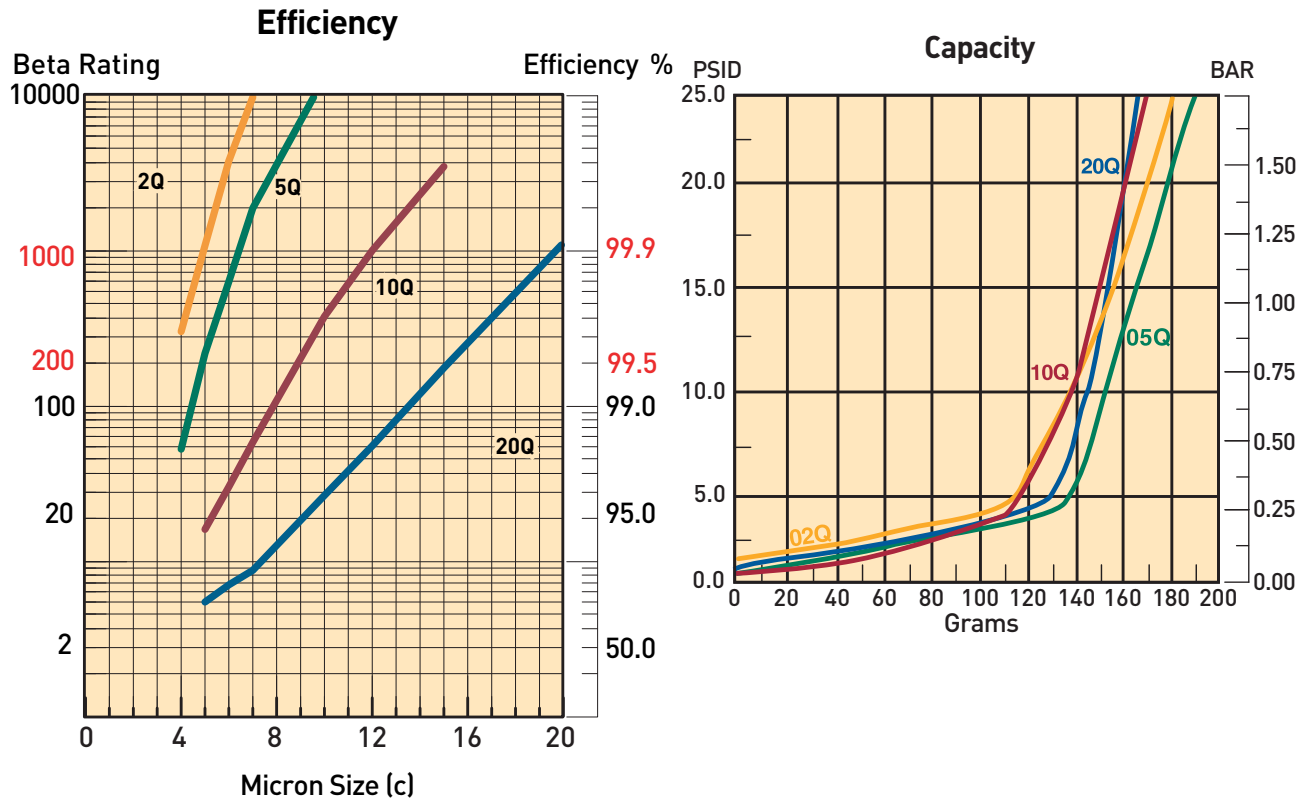


Multipass tests run @ 50 gpm to 25 psid terminal - 10 mg/L BUGL

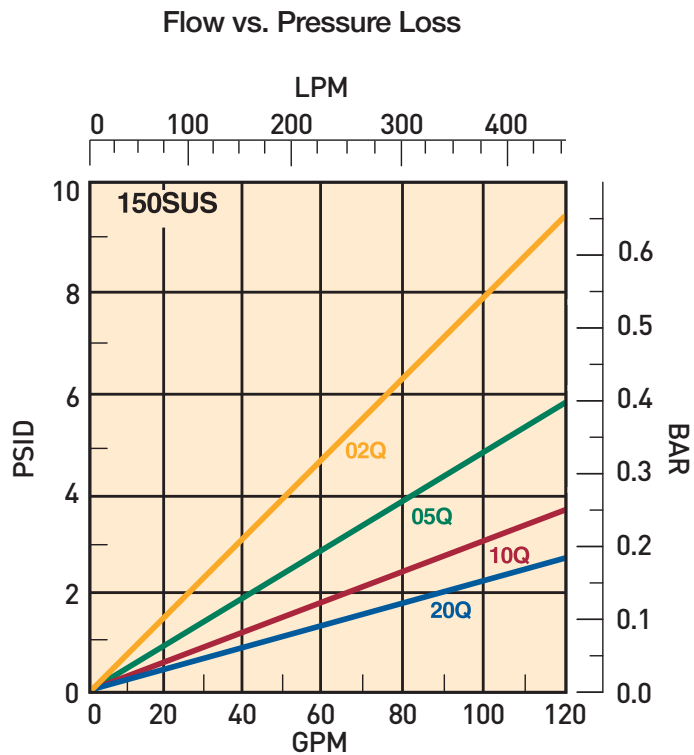


KLT/KLS Series

KLT/KLS-8 Element Performance



Multipass tests run @ 70 gpm to 25 psid terminal - 10 mg/L BUGL



KLT and KLS Series

Operating and Maintenance Instructions

A. Mounting

1. Standard mounting.
 - a. Cut proper size hole in the top of the reservoir.
 - b. Drill holes for studs within the proper bolt circle.
 - c. Set the filter into the cutout hole and secure with proper size bolts, nuts and lock washers.
 - d. Torque nuts in accordance with drawing.
2. Mounting procedure using weld plate.
 - a. Rough cut proper size hole in the top of reservoir.
 - b. Weld the weld plate concentric to the rough cut hole.
 - c. Mount the filter onto the studs and secure with nuts and lock washers.
 - d. Torque nuts in accordance with drawing.
3. Utilize proper fittings.

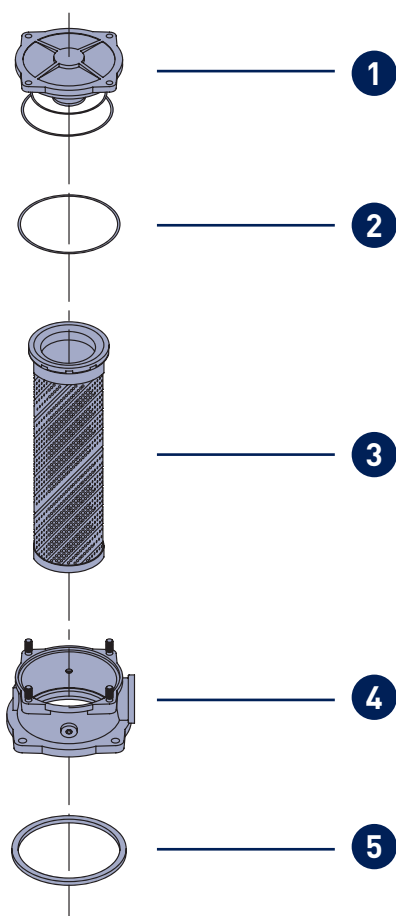
B. Start-Up

1. Check for and eliminate leaks upon system start-up.
2. Check differential pressure indicator, if installed, to monitor element condition.

C. Service

1. An element must be serviced when the indicator indicates service is required.

NOTE: If the filter is not equipped with an indicator, the element should be serviced according to machine manufacturer's instructions.



Parts List

Index	Description	Part Number	Quantity
1	Cover Assembly (Includes Cover o-ring)		
	KLT2/KLT4	937049	1
	KLT7/KLT8	937047	1
	KLS7/KLS8	937048	1
2	Cover o-ring		
	KLT2/KLT4, Nitrile	N72239	1
	KLT2/KLT4, FKM	V72239	1
	KLT7/KLT8, Nitrile	N72251	1
	KLT7/KLT8, FKM	V72251	1
	KLS7/KLS8, Nitrile	N72251	1
	KLS7/KLS8, FKM	V72251	1
3	Element (see How to Order page)		
4	Filter Head (Includes gauge plugs & studs)		
	KLT2/KLT4	5841216	1
	KLT7/KLT8	5841224	1
	KLS7/KLS8	937318	1
5	Tank Gasket		
	KLT2/KLT4	108x98x5.5B	1
	KLT7/KLT8	152x136x6B	1
	KLS7/KLS8	937318	1
Not Shown	Weld Plate		
	KLT2/KLT4	300041	1
	KLT7/KLT8	300042	1
Not Shown	Pressure Switch	NS-1C-19R/EL	1
Not Shown	Pressure Gauge	936913	1

C.F. = Consult Factory

D. Servicing Dirty Element

1. Shut system down to assure that there is NO PRESSURE OR FLOW into the filter housing.
2. Remove the filter cover.
3. Remove and discard the contaminated element cartridge.

E. Before Installing a New Element Cartridge

1. Clean the magnetic core with a lint-free cloth.
2. Check all seals and replace if necessary.

F. To Install a New Element Cartridge

1. Lubricate all seals.
2. Mount new filter cartridge.
3. Re-install the cover.
4. Torque the cover nuts per drawing.

Perform procedures B1 and B2 to ensure no leaks are present.

KLT and KLS Series

How to Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
KLT	7	10Q	B	P	G	S24	1

BOX 1: Filter Series	
Symbol	Description
KLT	Single port return-line filter
KLS	Dual port return-line filter (-7 and -8 models only)

BOX 2: Filter Model	
Symbol	Description
2	30 GPM (115 l/m nominal flow)
4	50 GPM (190 l/m nominal flow)
7	100 GPM (380 l/m nominal flow)
8	120 GPM (455 l/m nominal flow)

BOX 3: Media Code	
Symbol	Description
02Q	Microglass III, 2 micron
05Q	Microglass III, 5 micron
10Q	Microglass III, 10 micron
20Q	Microglass III, 20 micron
WR	Water Removal

BOX 4: Seals	
Symbol	Description
B	Nitrile (NBR)
V	Fluorocarbon
*NOTE: Nitrile tank gasket always supplied.	

BOX 5: Indicator	
Symbol	Description
P	No indicator; plugged pressure port(s)
G	Pressure gauge, 0-60 psig
S	Pressure switch

BOX 6: Bypass	
Symbol	Pressure Setting
G	25 psid (1.7 bar)

BOX 7: Ports	
Symbol	Description
	KLT-2/4
S16	SAE-16 (1 5/16"-12)
	KLT-7/8
S24	SAE-24 (1 7/8"-12)
	KLS-7/8
S24	2 x SAE-24 (1 7/8"-12)
N24	2 x 1 1/2-NPT

BOX 8: Options	
Symbol	Description
1	None
TP	Weld plate (KLT only)

Replacement Elements

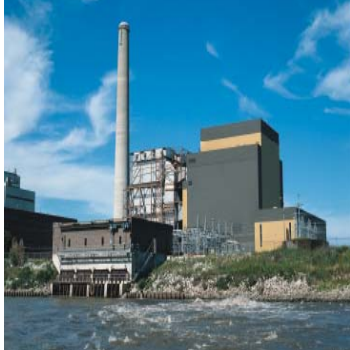
Element Code	Nitrile				Fluorocarbon			
	2	4	7	8	2	4	7	8
20Q	936967Q	936971Q	936975Q	936979Q	937269Q	937273Q	937277Q	937281Q
10Q	936966Q	936970Q	936974Q	936978Q	937268Q	937272Q	937276Q	937280Q
05Q	936965Q	936969Q	936973Q	936977Q	937267Q	937271Q	937275Q	937279Q
02Q	936964Q	936968Q	936972Q	936976Q	937266Q	937270Q	937274Q	937278Q
WR	937258	937259	937260	937261	C.F.	C.F.	C.F.	C.F.

C.F. = Consult Factory

Global products as identified are offered worldwide through all Parker locations and utilize a common ordering code.



[illegible]



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Moduflow™ *Plus* Series

Low Pressure Filters



ENGINEERING YOUR SUCCESS.

Moduflow™ *Plus* Series

Applications

- Power Unit Fabrication
- Off-line Filter Loops
- Mobile Equipment

The Moduflow filter is widely considered the most versatile filter available on the market.

The patented end cap minimizes turbulence and pressure loss through the filter, improving system performance.

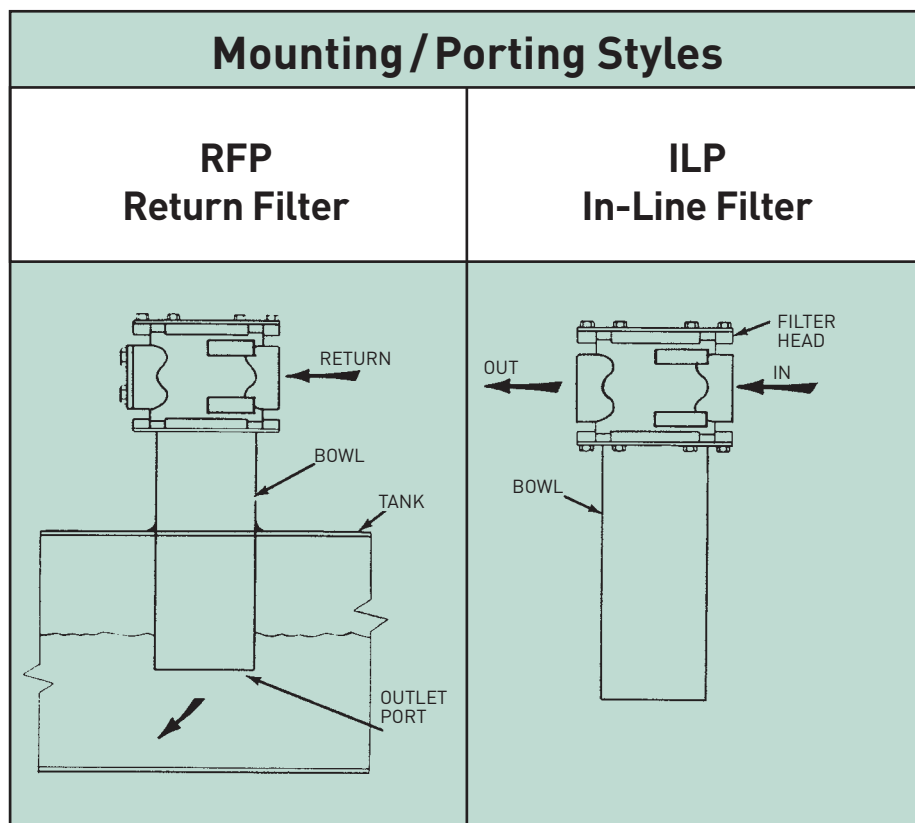
The newly designed closed bottom elements for the RFP and ILP models insures all contamination remains trapped within the element as the filter is serviced.

A wide variety of visual and electrical indicators allows you to know exactly when the element needs to be serviced. There is even a “no element” indicator that can sense when there is not an element installed in the filter.

From top to bottom, the Moduflow filter series provides the high level of filtration and long term dependability so vital to today's hydraulic systems.



Parker's new patented Moduflow element was designed with built-in diverter and bypass valve, to meet your application needs.



Moduflow™ *Plus* Series

Features

Flanges

- NPT or SAE 3/4" to 2"
- Lightweight aluminum

Cover

- Slotted for quick release
- Lightweight aluminum

Indicators

- Visual or electrical
- Mounted on either side
- Standard "no element" indication

Bowl

- Single or double length
- Durable steel construction

Bypass

(not visible)

- Integral 35 psi bypass replaced with every element change

Element

(not visible)

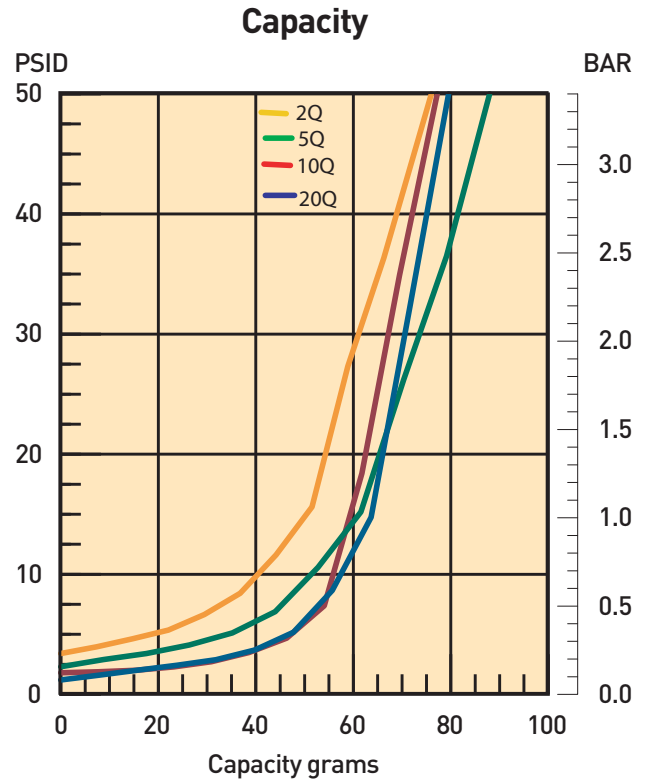
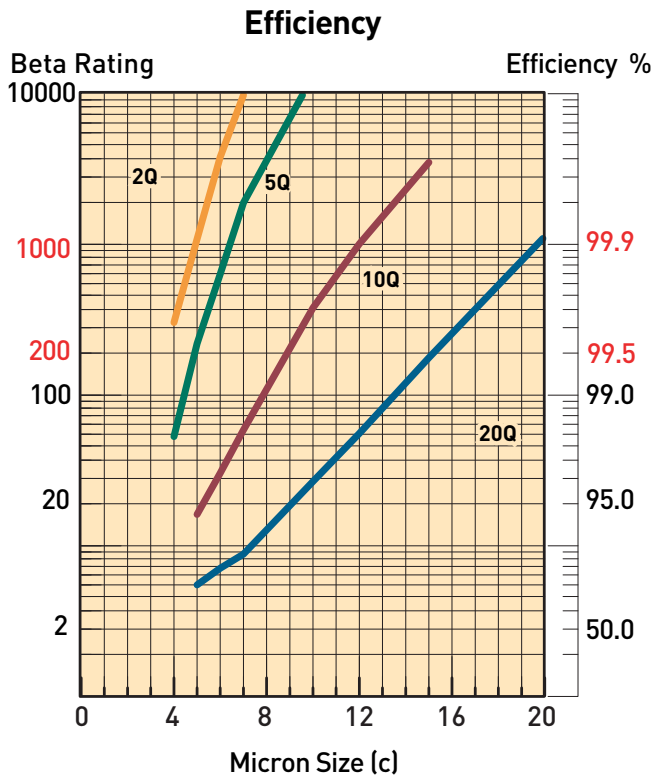
- Available in high performance Microglass III media
- Single or double length



Feature	Advantage	Benefit
• Top access element service	• Oil remains in housing • Quicker elements change	• No Spills • Reduced maintenance costs
• Slotted cover	• Quick release cover • Cap screws remain in housing	• Reduced maintenance costs • No loose parts to lose
• Closed bottom elements	• Removes all contaminant during element service	• No downtime contamination from servicing
• Visual or electrical indicators	• Know exactly when to service elements	• Helps prevent bypass condition • No premature disposal
• Flange face ports	• Flexible mounting (3/4" to 2")	• Easy plumbing to your system

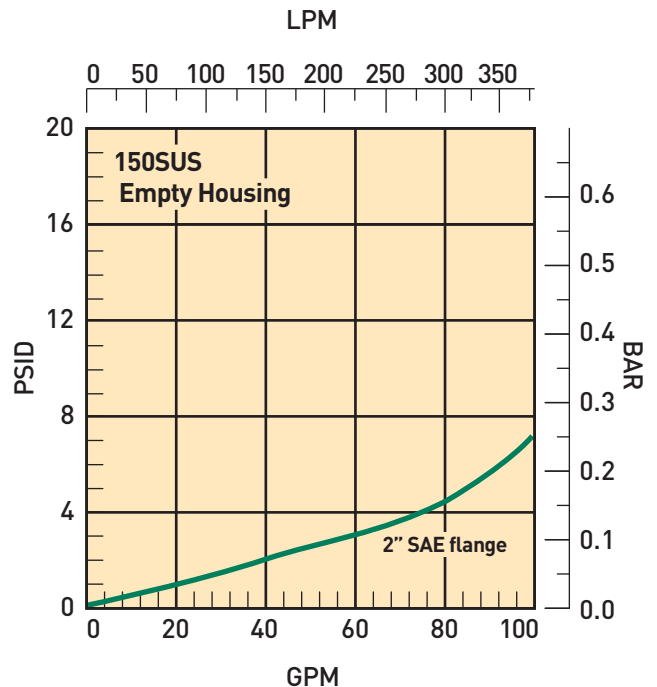
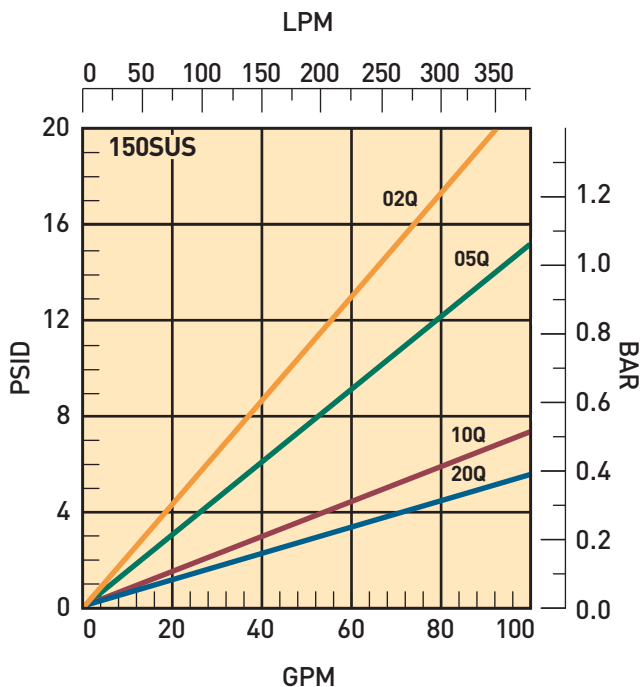
Moduflow™ *Plus* Series

RFP-1 and ILP-1 Element Performance



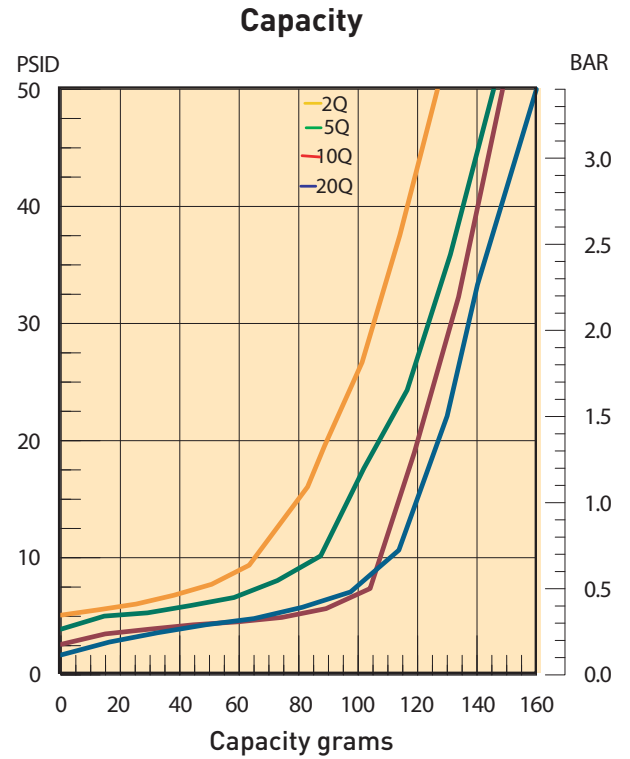
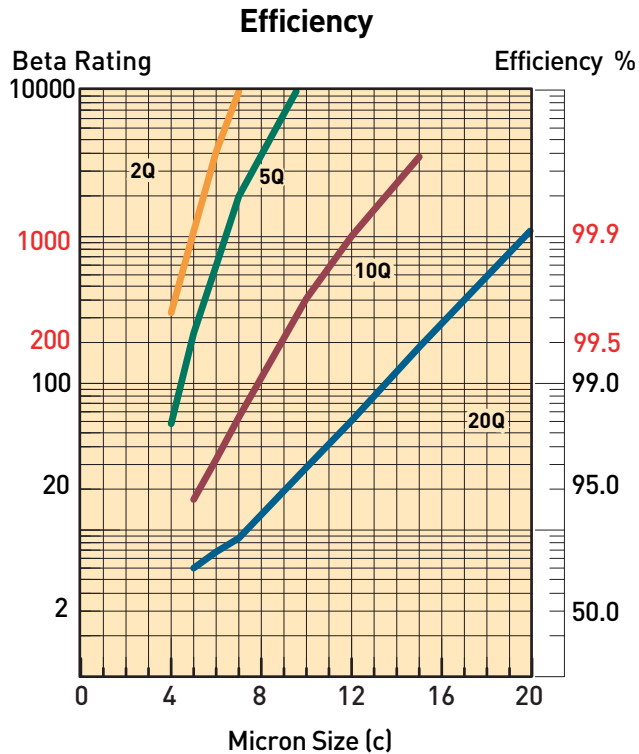
Multipass tests run @ 40 gpm to 50 psid terminal - 5mg/L BUGL

Flow vs. Pressure Loss

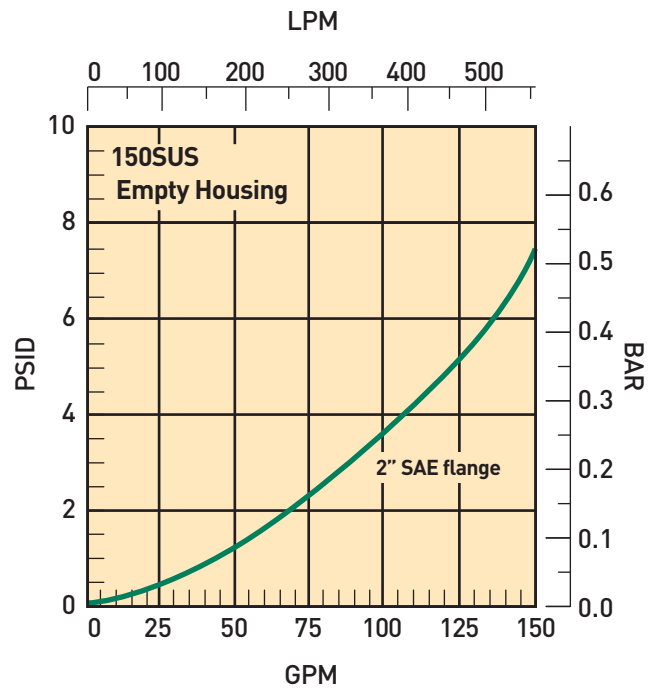
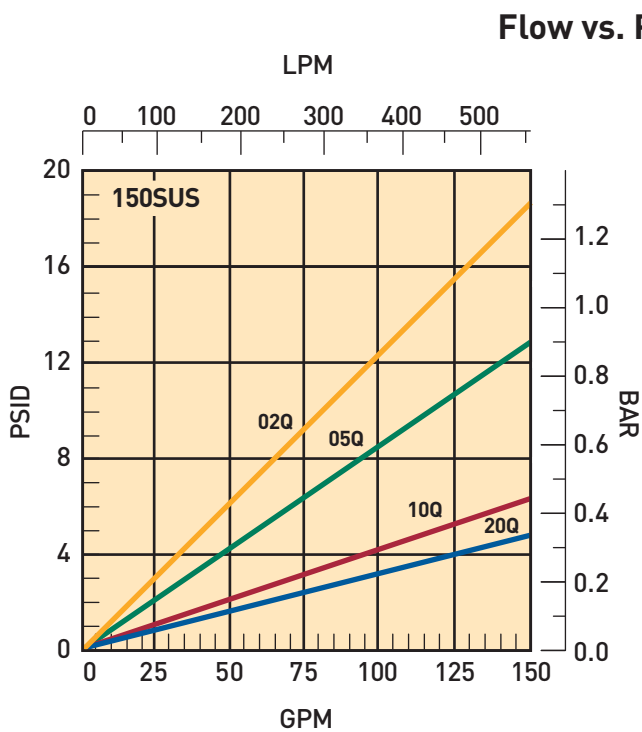


Moduflow™ *Plus* Series

RFP-2 and ILP-2 Element Performance



Multipass tests run @ 80 gpm to 50 psid terminal - 5mg/L BUGL



Moduflow™ *Plus* Series

Specifications: RFP, ILP

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 200 psi (13.8 bar)
Design Safety Factor: 2:1
Rated Fatigue Pressure: 150 psi (10.3 bar)

Element Burst Rating: 70 psid (4.8 bar)

Filter Materials:

Head, Cover, Flanges: die cast aluminum
Bowl: steel

Operating Temperatures:

Nitrile: -40°F to 225°F (-40°C to 107°C)
Fluorocarbon: -15°F to 275°F (-26°C to 135°C)

Weight (approximate):

Single: 20 lbs. (9.1 kg)
Double: 25 lbs. (11.3 kg)

Indicators:

Visual (optional)
Electrical (optional) 15A @ 250VAC / .5A @ 125 VDC
Electrical ("D" option) 5A @ 250VAC / 3A @ 28 VDC

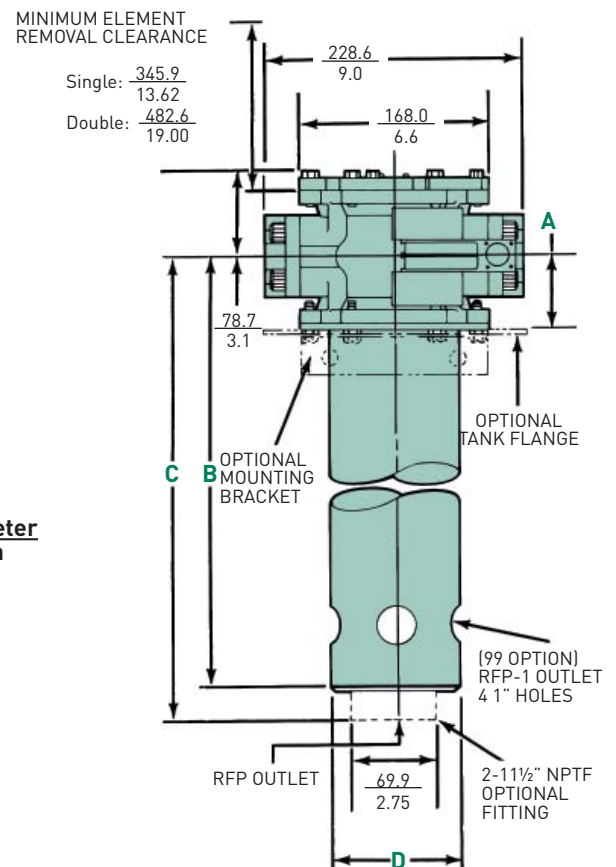
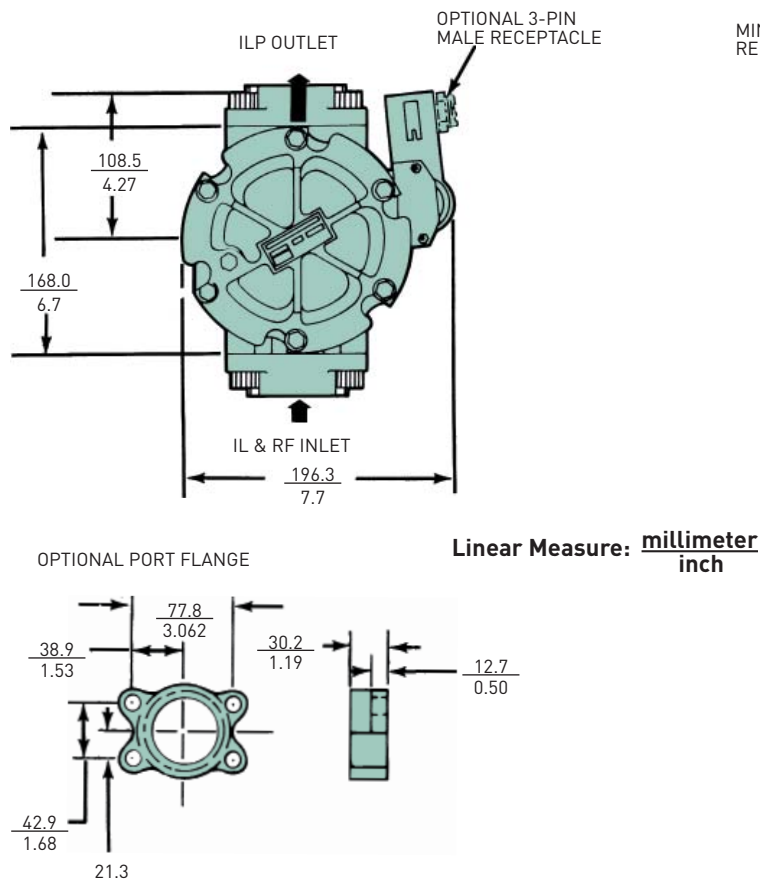
Color Coding:

White (normally closed)
Red (normally open)
Black (common)

Dimensions: $\frac{\text{mm}}{\text{inch}}$

Model	A	B	C	D
RFP-1 without optional 2" fitting	$\frac{65.0}{2.56}$	$\frac{330.2}{13.0}$	—	$\frac{110.0}{4.3}$
ILP-1	$\frac{65.0}{2.56}$	$\frac{330.2}{13.0}$	N/A	$\frac{110.0}{4.3}$
RFP-1 with optional 2" fitting	$\frac{68.3}{2.69}$	—	$\frac{383.4}{15.07}$	$\frac{114.0}{4.5}$
RFP-2	$\frac{68.3}{2.69}$	$\frac{617.5}{24.31}$	$\frac{623.8}{24.56}$	$\frac{114.0}{4.5}$
ILP-2	$\frac{68.3}{2.69}$	$\frac{617.5}{24.31}$	N/A	$\frac{114.0}{4.5}$

Drawings are for reference only.
Contact factory for current version.



Moduflow™ Plus Series

Specifications: DILP

Drawings are for reference only.
Contact factory for current version.

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 200 psi (13.8 bar)
Design Safety Factor: 2:1
Rated Fatigue Pressure: 150 psi (10.3 bar)

Element Burst Rating: 70 psid (4.8 bar)

Filter Materials:

Diverter Valve Assembly: die cast aluminum
Check Valve Assembly: die cast aluminum
Filter Assembly: see IL2 specifications

Operating Temperatures:

Nitrile: -40°F to 225°F (-40°C to 107°C)
Fluorocarbon: -15°F to 275°F (-26°C to 135°C)

Weight (approximate):

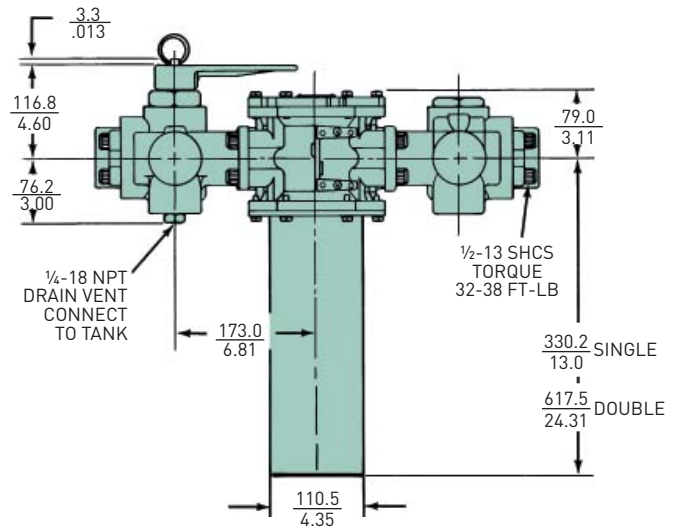
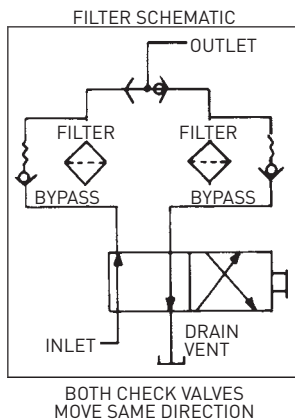
Single: 55 lbs. (24.9 kg) / Double: 65 lbs. (29.5 kg)

Indicators:

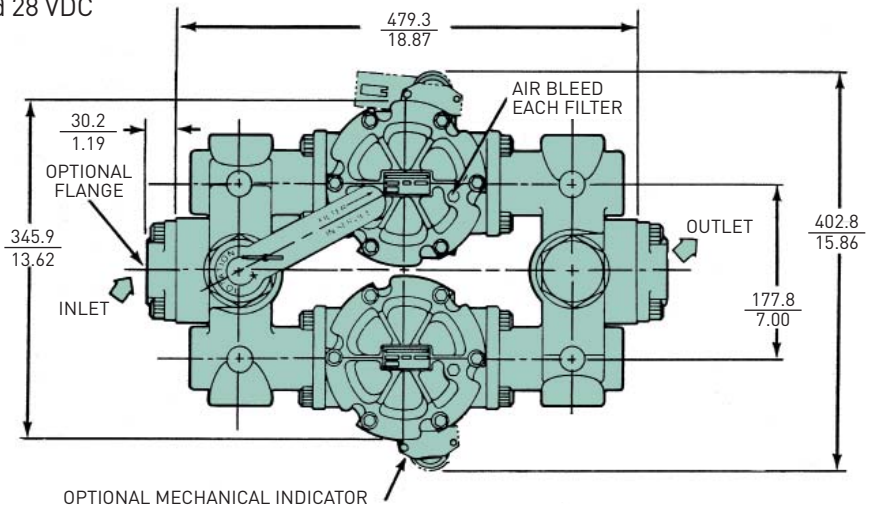
Visual (optional)
Electrical (optional) 15A @ 250VAC / .5A @ 125 VDC
Electrical ("D" option) 5A @ 250VAC / 3A @ 28 VDC

Color Coding:

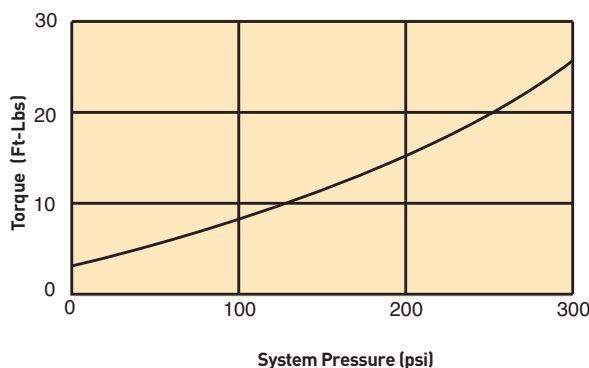
White (normally closed)
Red (normally open)
Black (common)



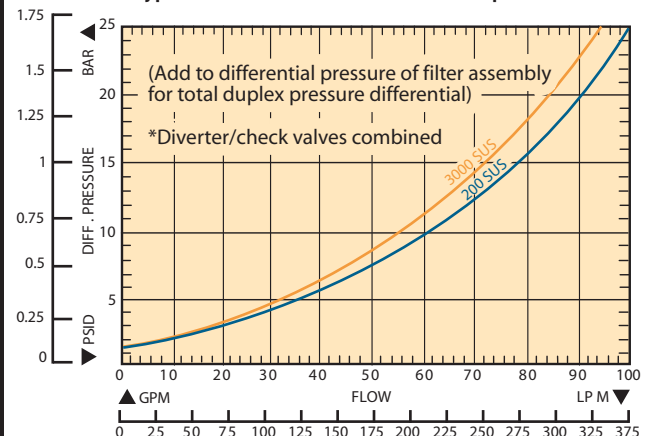
Linear Measure: millimeter
inch



Approximate handle torque required for changeover.



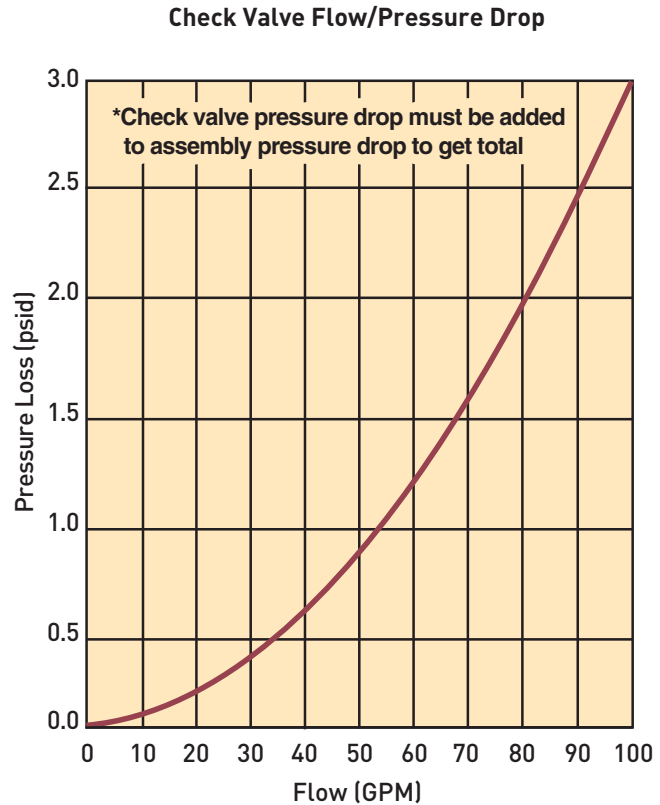
Typical Flow/Pressure Curves For Duplex Valves



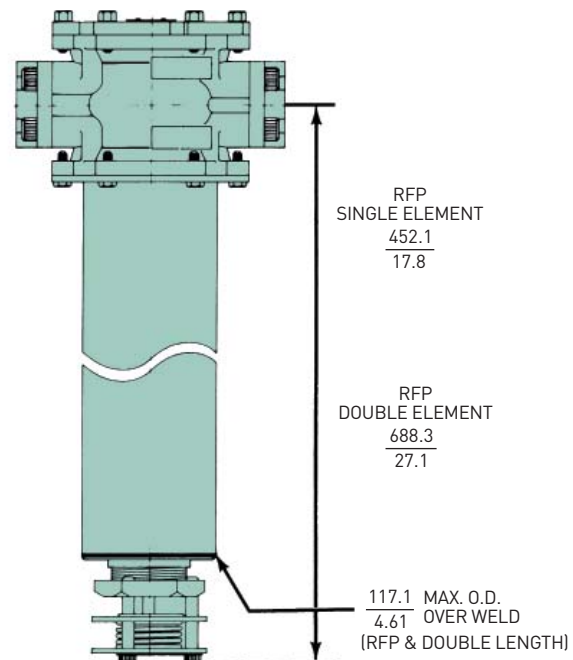
Moduflow™ *Plus* Series

Specifications

For return line applications (RFP), the fluid returning to the reservoir holds the check valve open. When the system is shut down, the check valve closes automatically.



Linear Measure: millimeter
inch



Drawings are for reference only.
Contact factory for current version.

Moduflow™ *Plus* Series

Specifications

Lower Cost than many single unit filters.

Moduflow™ Manifold Extended Filter Range

Use Model MM Manifold to handle return line flows up to 130 gpm.

- Rated static pressure: 300 psi
- Typical burst pressure: 900 psi
- Easily mounted on ModuFlow™

High Flows At Low Cost

The model MM manifold is designed to extend the flow range of ModuFlow™ Filters when operating with 10 Micron and finer filter media. When mounted to a pair of RFP-2 or ILP-2 filters, this manifold will allow flows up to 130 gpm in return lines (15 fps velocity).

Note: The Model MM manifold is not applicable to suction lines due to its pressure drop characteristics.

When used with two ModuFlow™ filters, the total cost is often less than a single unit filter rated for 130 gpm flow. Tank-top mounted (Model RFP) filters will require only one manifold on the filter inlet pports. In-line mounted (Model ILPav) filters will require two manifolds, one on the inlet and one on the outlet ports.

Multiple Uses

Although designed for manifold ModuFlow™ filters, the Model MM can be used in a variety of applications which require:

- Splitting flow between components

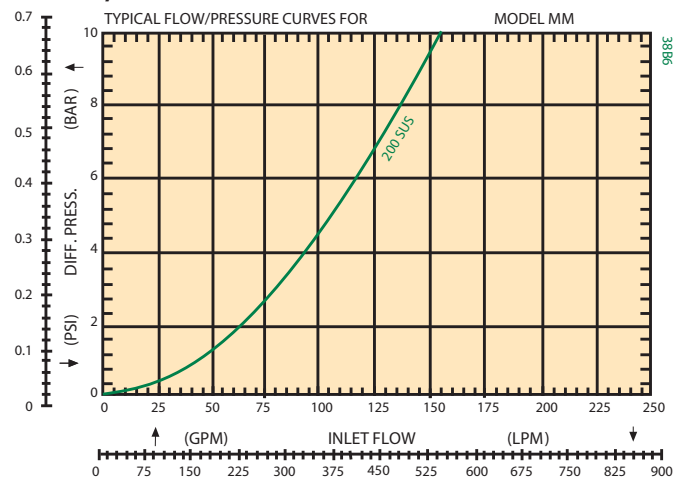
Such applications are frequently encountered on mobile equipment, machine tools, and large lubricating systems. In such applications, use of a manifold can often reduce total piping and installation costs.

Proven Reliability

The rugged design of the Model MM manifold has been proven in demanding mobil equipment applications. At the factory, we have cycle tested the Model MM through the full range of rated flow and pressure to insure reliable service.

Parker Filter Division maintains the same high standards in delivery, quality, and service. Considering this, plus features, flexibility, price, and performance, the Model MM manifold is a valuable addition to your fluid power component list.

FLOW/PRESSURE CURVE



Moduflow™ *Plus* Series

Specifications

MANIFOLD SPECIFICATIONS

Rated Static Pressure, maximum:
20.7 bar (300 psi)

Typical Burst Pressure:
62.1 bar (900 psi)

Operating Temperature (Buna seals):
+121°C to -40°C (+250°F to 40°F)

Housing Material:

ANSI 356-T6 cast aluminum

Approximate Shipping Weight:
3.6 kg (8 lbs)

Porting: See Options Below

Order Screws and O-Rings Separately:

Inlet & outlet screws (12 required):

Order P/N 900228

Outlet port o-rings (2 required):

Nitrite: Order P/N N72228

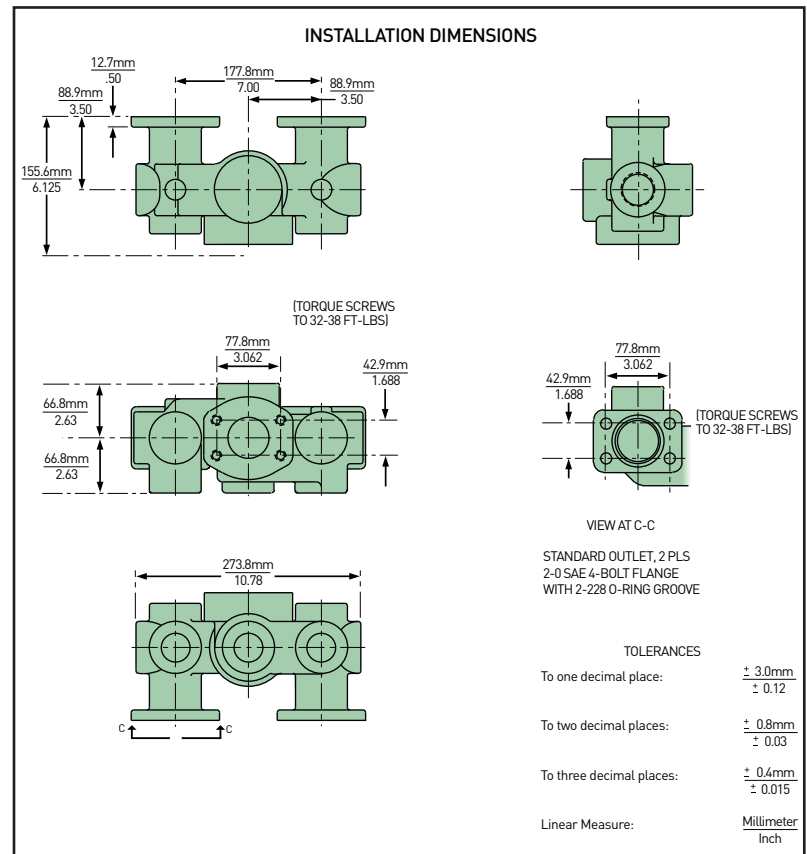
Fluorocarbon: Order P/N V92228

HOW TO ORDER MANIFOLDS:

Part Number	Description
926466	Moduflow Manifold

- * Tank-top mounted RFP filters will require one manifold on filter inlets: in-line mounted ILP filters will require two manifolds on both inlets and outlets.

Drawings are for reference only.
Contact factory for current version.

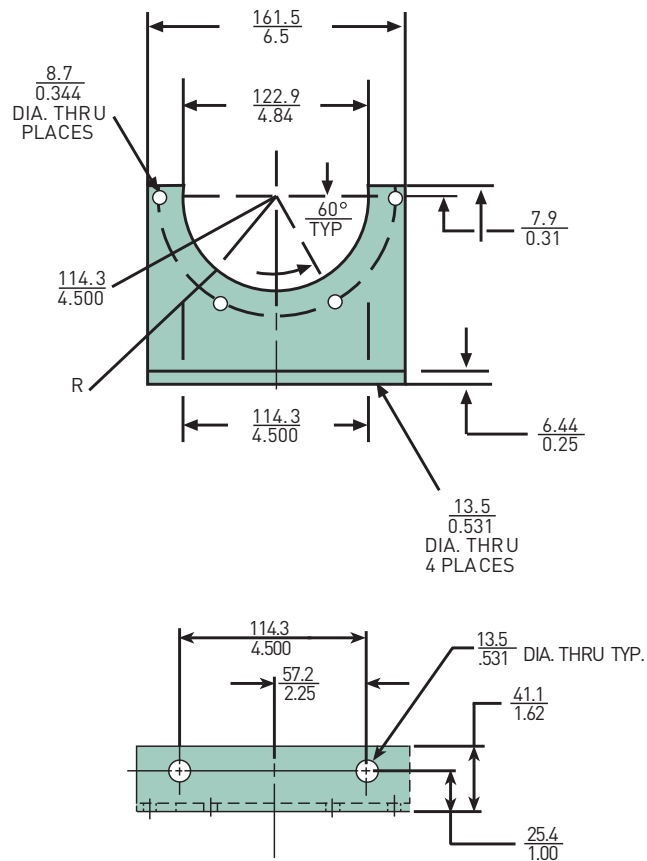


Moduflow™ *Plus* Series

Accessories

Linear Measure: millimeter
inch

OPTIONAL MOUNTING BRACKET (924904)

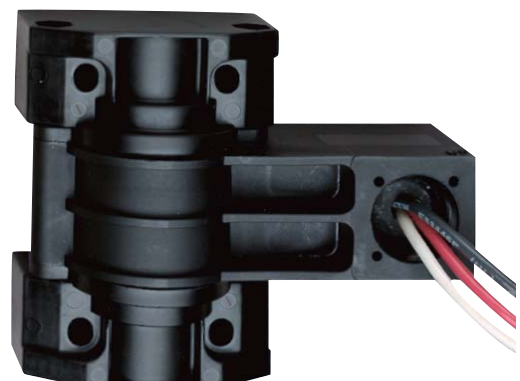


"M" OPTION-VISUAL INDICATOR,
NO ELEMENT WARNING



Drawings are for reference only.
Contact factory for current version.

"E" OPTION-ELECTRICAL INDICATOR



Moduflow™ *Plus* Series

Parts List

Flange Kits (flange, 4 bolts, o-ring)

Size	Code	Part Number	
		Buna	Fluorocarbon
¾ inch NPTF	YB	924788	926013
1 inch NPTF	YC	924787	926012
1¼ inch NPTF	YD	924912	926004
1½ inch NPTF	YE	924786	926011
2 inch NPTF	YF	924785	926010
SAE - 12	YM	924784	926009
SAE - 16	YN	924783	926008
SAE - 20	YO	924913	926005
SAE - 24	YP	924782	926007
BLANK FLANGE	—	924781	926006

RFP/ILP/ DILP Replacement Elements

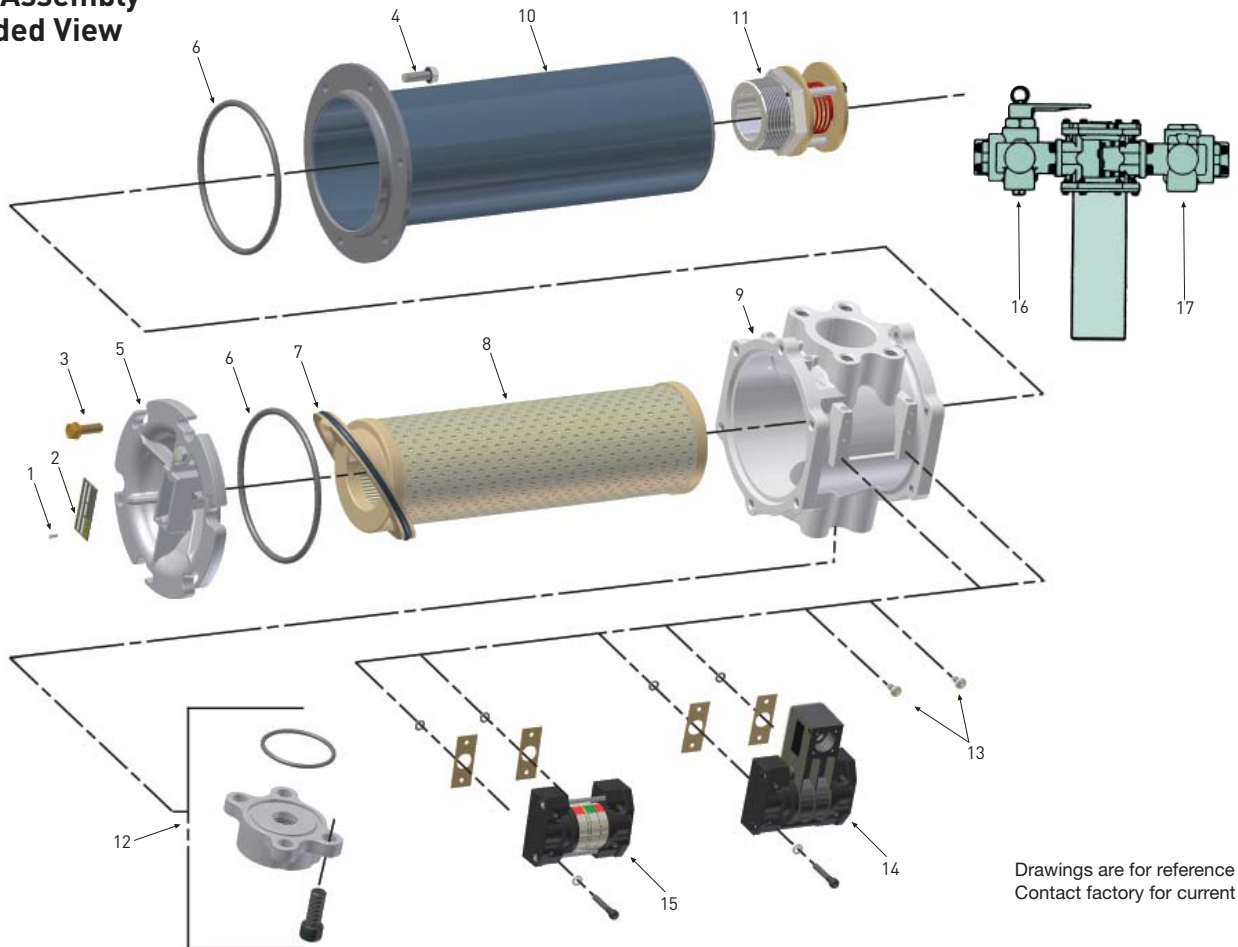
Media	Nitrile Seals				Fluorocarbon Seals			
	New Single	Replaces Old Single	New Double	Replaces Old Double	New Single	Replaces Old Single	New Double	Replaces Old Double
02Q	937393Q	932686Q	937397Q	932692Q	937401Q	932689Q	937405Q	932695Q
05Q	937394Q	932687Q	937398Q	932693Q	937402Q	932690Q	937406Q	932696Q
10Q	937395Q	932688Q	937399Q	932694Q	937403Q	932691Q	937407Q	932697Q
20Q	937396Q	933116Q	937400Q	933117Q	937404Q	933118Q	937408Q	933119Q
WR	940733		940734		940735		940736	

Moduflow™ Plus Series

Parts List

Index	Description	Part No.	Quantity	Index	Description	Part No.	Quantity
1	Screws, Nameplate.....	900028	2	11	Check Valve Assy.	925120	1
2	Name Plate, Unstamped.....	920928	1	12	Flange Kits.....	Refer to Table	1
3	Cover Screws, 5/16-18 UNC x 1"...	926633	6		O-Ring	V72228	1
4	Bowl Screws, 5/16-18 UNC x 1"...	926633	6	13	Plug Kit, Fastener, self-sealing, o-ring seal included with fastener	925974	2
5	Cover, Without nameplate	924634	1	14	Indicator Electrical		Optional
6	O-Ring, cover				35 psid.....	926643	
	Nitrile.....	N72350	2		35 psid, 3-pin male receptacle	926753	
	Fluorocarbon.....	V72350	2		Gasket	926126	2
					O-Ring	V72010	2
7	Element Seal			15	Indicator Visual		Optional
	Nitrile.....	937410	1		35 psid 4-band.....	926748	
	Fluorocarbon.....	937411	1		Bracket, Inline mounting.....	924904	Optional
8	Element.....	Refer to Table	1		Indicator Kit, Remote mount....	924894	Optional
9	Head, Machined only.....		1	16	Changeover Valve Assy., Duplex	926758	Optional
	2" SAE Flange	925972	1	17	Check Valve Assy., Duplex.....	926757	Optional
	1½" SAE Flange	926146	1				
	1½" NPTF	925949	1	Not Shown	Drain Plug, SAE-24 for RFP model		
10	Bowl, Select desired model		1		Nitrile.....	909992	1
	ILP-1.....	925916			Fluorocarbon.....	928363	1
	ILP-2.....	924816		Not Shown	O-Ring between tank and bowl	N72265	1
	RFP-1.....	937626					
	RFP-1 with 2 inch NPTF fitting...	924676					
	RFP-2.....	937627					
	RFP-2 with 2 inch NPTF fitting...	924818					

Filter Assembly Exploded View



Drawings are for reference only.
Contact factory for current version.

Moduflow™ Plus Series

How to Order

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
ILP	1	10Q	B	MP	35	Y9Y9	1

BOX 1: Filter Series Symbol		Description
RFP		Return-line filter, inlet on side outlet on bottom
ILP		In-line filter
DILP		In-line duplex

BOX 2: Element Length Symbol		Description
1		Single
2		Double

BOX 3: Media Code Symbol		Description
02Q		Microglass III, 2 micron
05Q		Microglass III, 5 micron
10Q		Microglass III, 10 micron
20Q		Microglass III, 20 micron
WR		Water Removal

BOX 4: Seals Symbol		Description
B		Nitrile
E		EPR
V		Fluorocarbon

BOX 5: Indicator Symbol		Description
P		Pressure ports drilled & plugged only; no indicator
M		Visual indicator w/"no element" warning
E		Electrical indicator only
D		Electrical indicator only, 3-pin male receptacle

Note: First letter of indicator code = left side of filter head when looking into inlet with bowl down; second letter = right side of filter head when looking into inlet with bowl down.

BOX 6: Bypass Setting		Description
35		35 psid

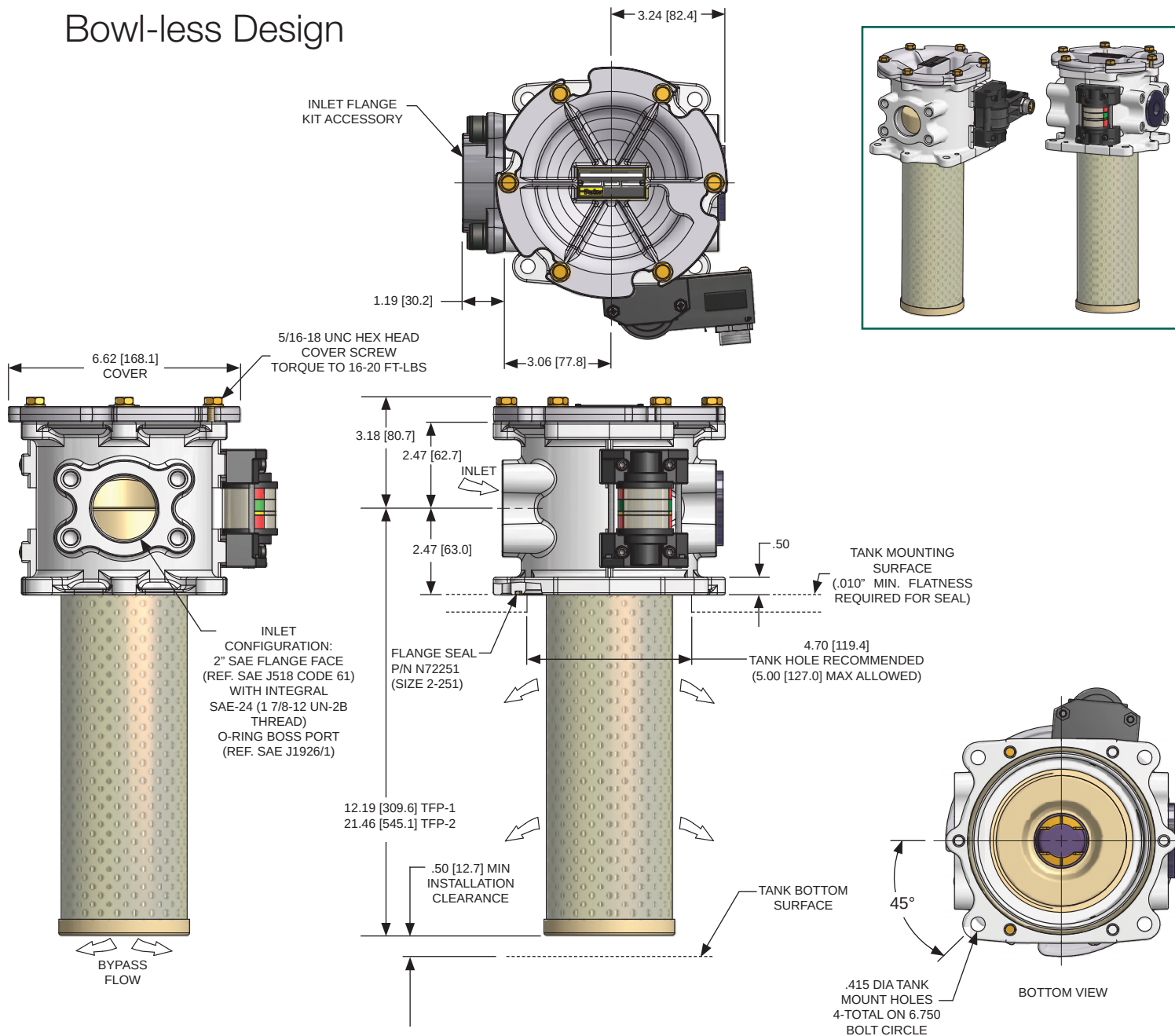
BOX 7: Port Options			
Filter Model	Inlet Symbol/Description		Outlet Symbol/Description
RFP	Y9	2" flange face	99 No fitting
	P9	SAE-24 integral threads	F9 2" NPTF
			F8 External check valve
ILP	Y9	2" flange face	Y9 2" flange face
	P9	SAE-24 integral threads	P9 SAE-24 integral threads
			E9 1½ NPTF integral threads
DILP	Y9	2" flange face	Y9 2" flange face

- 1) First pair of symbols denotes inlet for all filter styles; second pair of symbols denotes outlet.
- 2) Four symbols required: two for inlet, two for outlet.
- 3) Unused ports in filters come plugged with a blank flange.
- 4) See Flange Kits table for port flange options. Flange Kits are ordered separately.

BOX 8: Options		Description
1		None

Moduflow™ *Plus* TFP Series

Bowl-less Design



Features

- Shorter port-to-port distance.
- Direct tank mount capability eliminates need for adaptor flanges and bowl.
- Standard head incorporates 2" SAE flange face with integral SAE-24 port configuration.
- Filter head and element 2-piece construction requires no filter bowl.
- Patented element design with integral bypass valve and inside to out flow path.

Advantages

- Provides a smaller footprint and reduced weight.
- Aluminum die cast head reduces weight and direct tank mount flange reduces installation time and cost.
- Enables one common head to be used.
- Simplifies ordering model code.
- Reduces assembly cost by 25%.
- Ensures all contaminants remain captured during service.
- New bypass valve with each element ensures operation reliability.

Moduflow™ *Plus* TFP Series

How to Order

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
TFP	1	10Q	B	MP	35	C32	1

BOX 1: Series	
Symbol	Description
TFP	Return-line filter
TFPW	Return-line filter anodized for HWHC fluid

Box 2: Element Length	
Symbol	Description
1	Single
2	Double

Box 3: Media Code	
Symbol	Description
02Q	Microglass III, 2 micron
05Q	Microglass III, 5 micron
10Q	Microglass III, 10 micron
20Q	Microglass III, 20 micron
WR	Water Removal

BOX 4: Seals	
Symbol	Description
B	Nitrile
E	EPR
V	Fluorocarbon

BOX 5: Indicator	
Symbol	Description
P	Pressure ports drilled & plugged only; no indicator
M	Visual indicator w/"no element" warning
E	Electrical indicator only
D	Electrical indicator only, 3-pin male receptacle
Note: Two letters are required for the indicator code (e.g. "MP")	

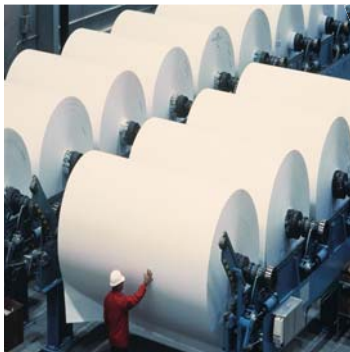
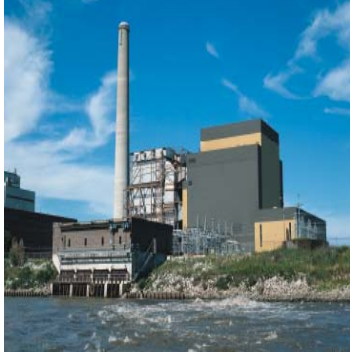
BOX 6: Bypass	
Symbol	Description
35	35 (2.4 bar) psid

BOX 8: Ports	
Symbol	Description
C32	2" SAE flange face/SAE-24 combination inlet port

BOX 8: Options	
Symbol	Description
1	None

Replacement Elements

Media	TFP-1			Media	TFP-2		
	Nitrile	Fluorocarbon	Ethylene Propylene		Nitrile	Fluorocarbon	Ethylene Propylene
02Q	937393Q	937401Q	937671Q	02Q	937397Q	937405Q	937675Q
05Q	937394Q	937402Q	937672Q	05Q	937398Q	937406Q	937676Q
10Q	937395Q	937403Q	937673Q	10Q	937399Q	937407Q	937677Q
20Q	937396Q	937404Q	937674Q	20Q	937400Q	937408Q	937678Q
WR	940733	940735	N/A	WR	940734	940736	N/A



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



RF7 Series

Low Pressure Filters



ENGINEERING YOUR SUCCESS.

RF7 Series

Applications

- Mobile equipment
- Power unit fabricators
- Off-line filter loops

The Parker RF7 filter is designed for those applications where dependable, yet economical, return line system protection is required. The in-tank mounting design makes the RF7 ideally suited for use by power unit fabricators and mobile equipment manufacturers...or anyone who views equipment space at a premium, but not at the expense of performance.



Element Condition Indicator

- True pressure differential
- Know, at a glance, when to change the filter element
- Gauge also available

Two-Piece Construction (Head/Tube)

- Easy in-tank mounting

Diffuser Tube

- Disperses return flow below reservoir fluid level
- Prevents fluid aeration
- Closed bottom provides for even fluid dispersal
- Prevents objects from falling into the reservoir during element servicing

Vent

- For variable displacement pump applications

Bypass Valves

- Virtually zero leakage
- Multiple valves for high flow



Cartridge/Element Handle

- Easy to remove entire assembly for servicing

Bypass Filter Screen

- Prevents gross contamination from passing through the filter — even during bypass



Cover Lock-Band with "T" Handle

- Easy access for servicing
- No loose parts to remove and handle
- No special tools required for removal

RF7 Series

Element Features

Inside each Parker Filter... a quality Parker Element

The important item in a filter assembly is the element. It has to capture and hold contaminants that can damage or stop a machine...while at the same time allowing the required flow of clean fluid so the machine can function properly.

There are many ways to design and build an element, and it's easy to produce a low cost element. However, cost is not a good selection criteria... especially when the risk is loss of critical performance.

For instance, consider wire mesh reinforcement. Not all filter elements have it. It's used in Parker elements to keep the pleats from collapsing or bunching.

If pleats bunch, the effective surface area of the element is reduced, excessive pressure drop develops, and the filter assembly may go into the bypass mode. This condition wastes energy and allows unfiltered fluid flow back into the system, effectively shortening filter life.

Gasket Ring Seal

- Positive sealing for optimum element efficiency

Protective Perforated Cylinder

- Necessary for inside-to-outside flow
- Prevents media "blow out"

Wire Reinforced Media (Not Visible)

- Prevents pleat bunching
- Helps prevent media migration
- Maintains media efficiency



Engineered Element Design

- The right combination of pleat depth and number of pleats means lower pressure losses (longer life)
- Dirt holding capability is maximized for less frequent element change-out

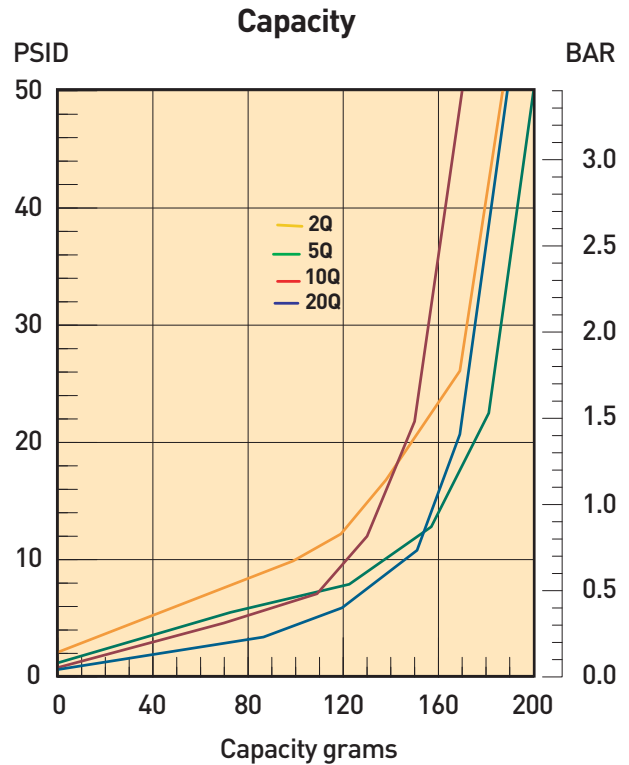
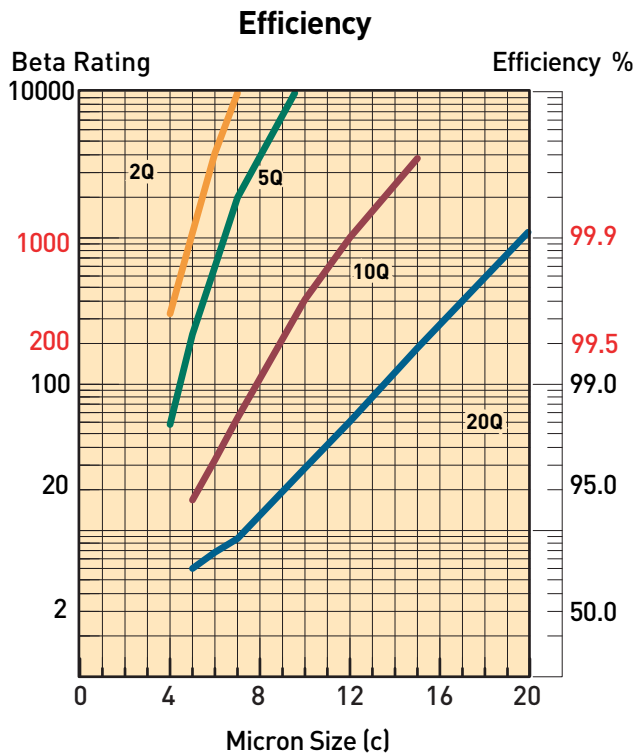
Elements for Every Application

- Standard Microglass III media for long life and excellent system protection
- Economical cellulose elements also available

Features	Advantage	Benefits
• Tank mounted design.	• Saves space and reduces hardware requirements.	• Easy to integrate into system design.
• Cover fill port.	• Allows 100% filtration of all new system oil.	• Eliminates contamination before it can cause problems.
• High flow capacity.	• One filter may handle all return line flows.	• Cost savings in filters and hardware.
• Broad range of filter media available – including water removal.	• Choose the proper medium for system parameters.	• Cost savings by avoiding both "over" and "under" filtration.
• Inside-to-outside flow through element with a closed bottom end cap.	• All contamination is trapped inside of element assembly.	• Contamination is not reintroduced into the system during replacement.
• Wire reinforced Microglass III elements.	• Rugged construction stands up to abuse of cyclic flows without performance loss. • Wire support reduces pleat bunching, keeps pressure drop consistent.	• The reliable filtration provided assures equipment protection, reduces downtime, maximizes element life, and allows the hydraulic system to operate properly.
• Multipass tested elements (per ANSI/NFPA T3.10.8.8 R1-1990 modified for fine filtration).	• Filter performance backed by recognized and accepted laboratory test standards.	• Filters you select have consistent performance levels.
• Complete element performance data disclosure.	• All pertinent information is provided in an easy-to-compare format.	• Provides an easy guide to proper filter selection.

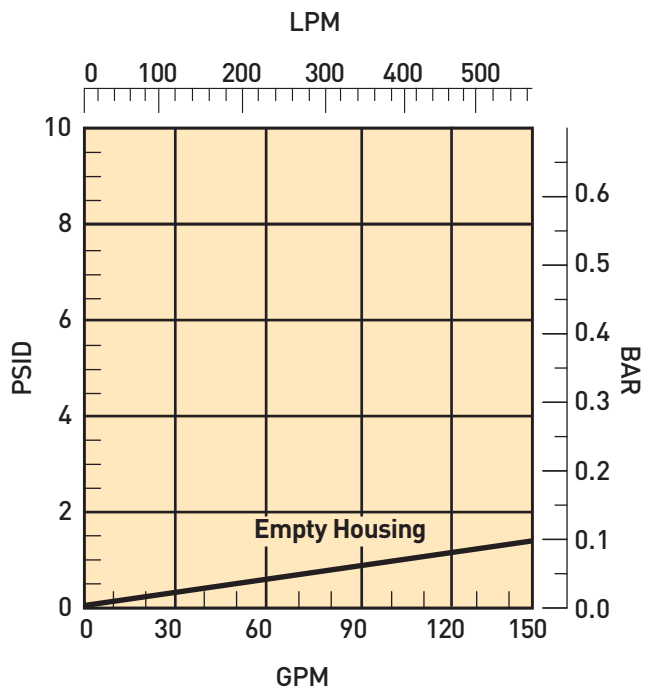
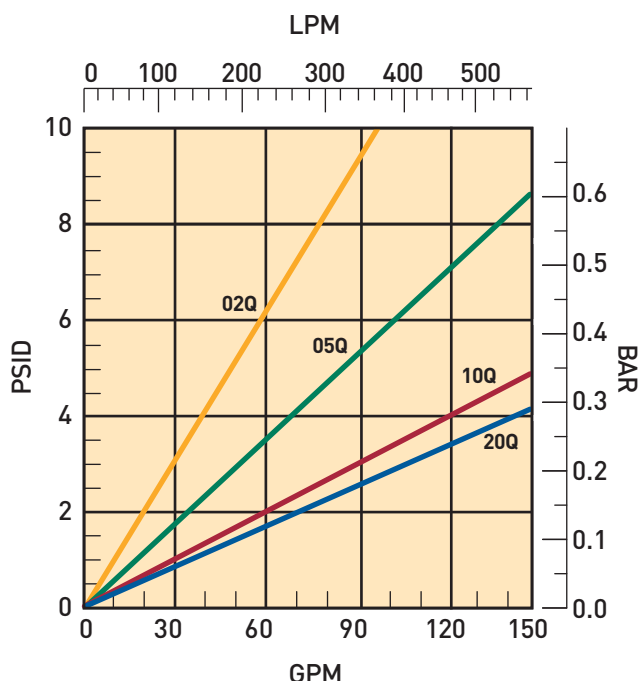
RF7 Series

RF7-1 Element Performance



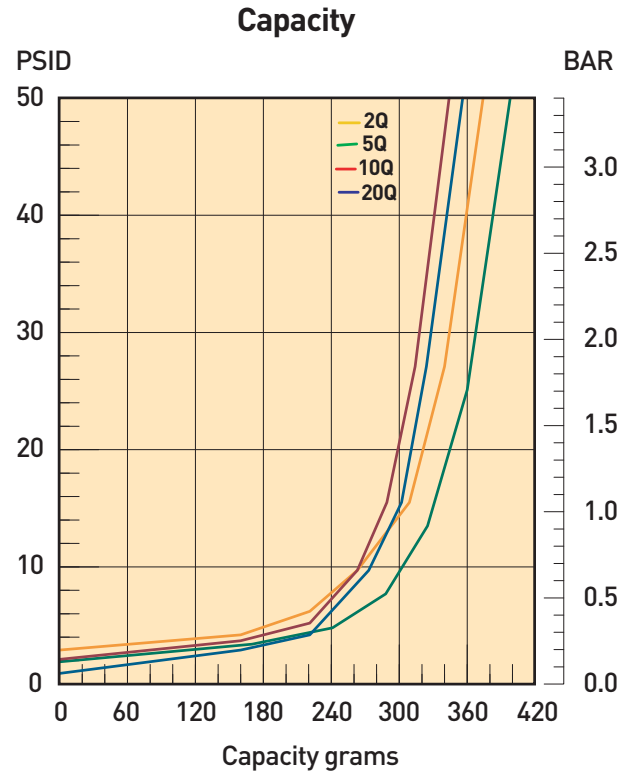
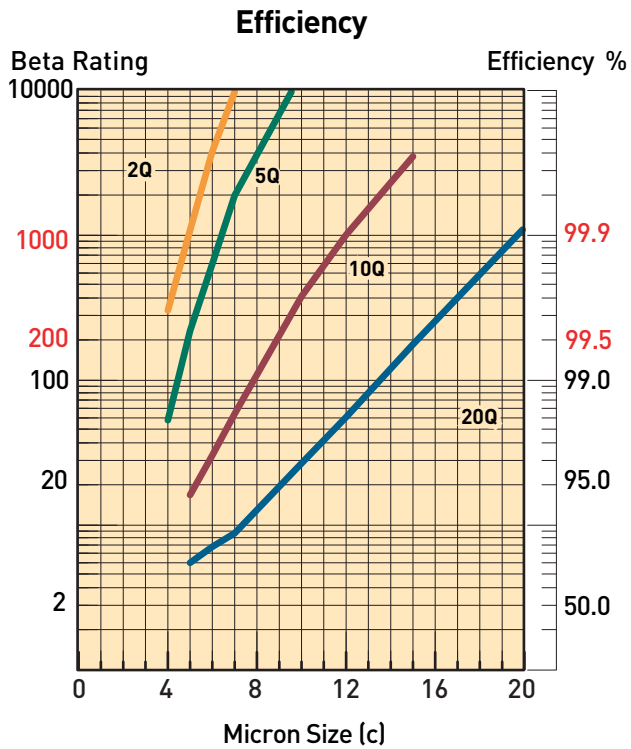
Results typical from Multi-pass tests run per test standard ISO 16889 @ 50 gpm to 50 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



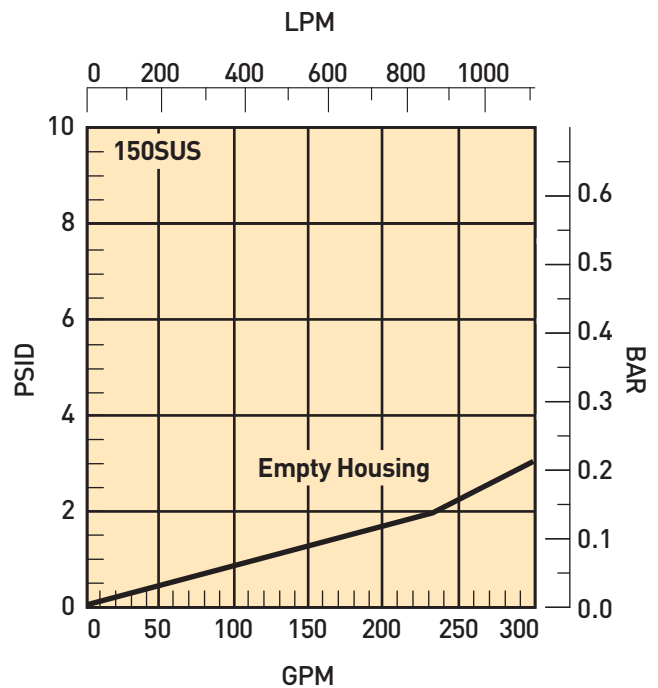
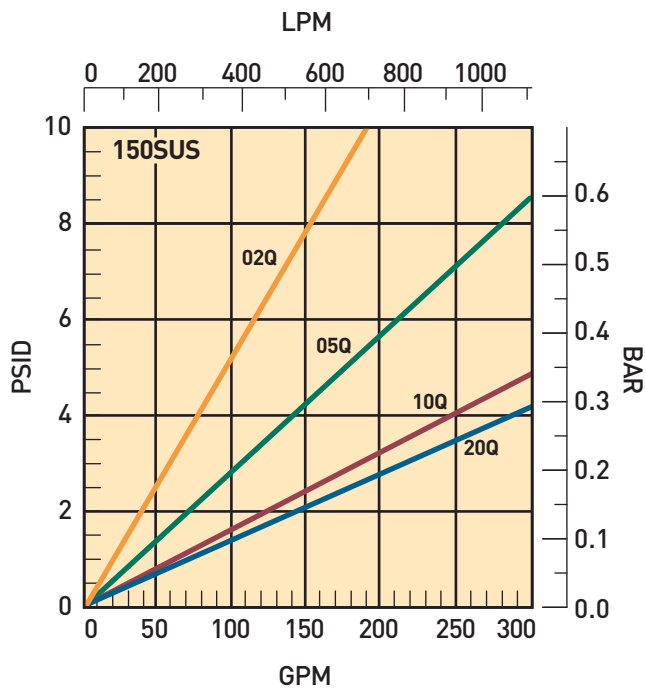
RF7 Series

RF7-2 Element Performance



Results typical from Multi-pass tests run per test standard ISO 16889 @ 80 gpm to 50 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



RF7 Series

Specifications

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 150 psi (10.3 bar)

Design Safety Factor: 3:1

Element Burst Rating:

50 psid (3.4 bar) minimum.

Materials:

Cast Aluminum Head & Cover
Steel Diffuser Tube
Steel Clamp

Operating Temperatures:

Nitrile; -40°F to 225°F
(-40°C to 107°C)

Fluorocarbon; -15°F to 275°F
(-26°C to 135°C)

Weight (approximate):

RF7-1 34 lbs. (15.4 kg)

RF7-2 42 lbs. (19 kg)

Indicators:

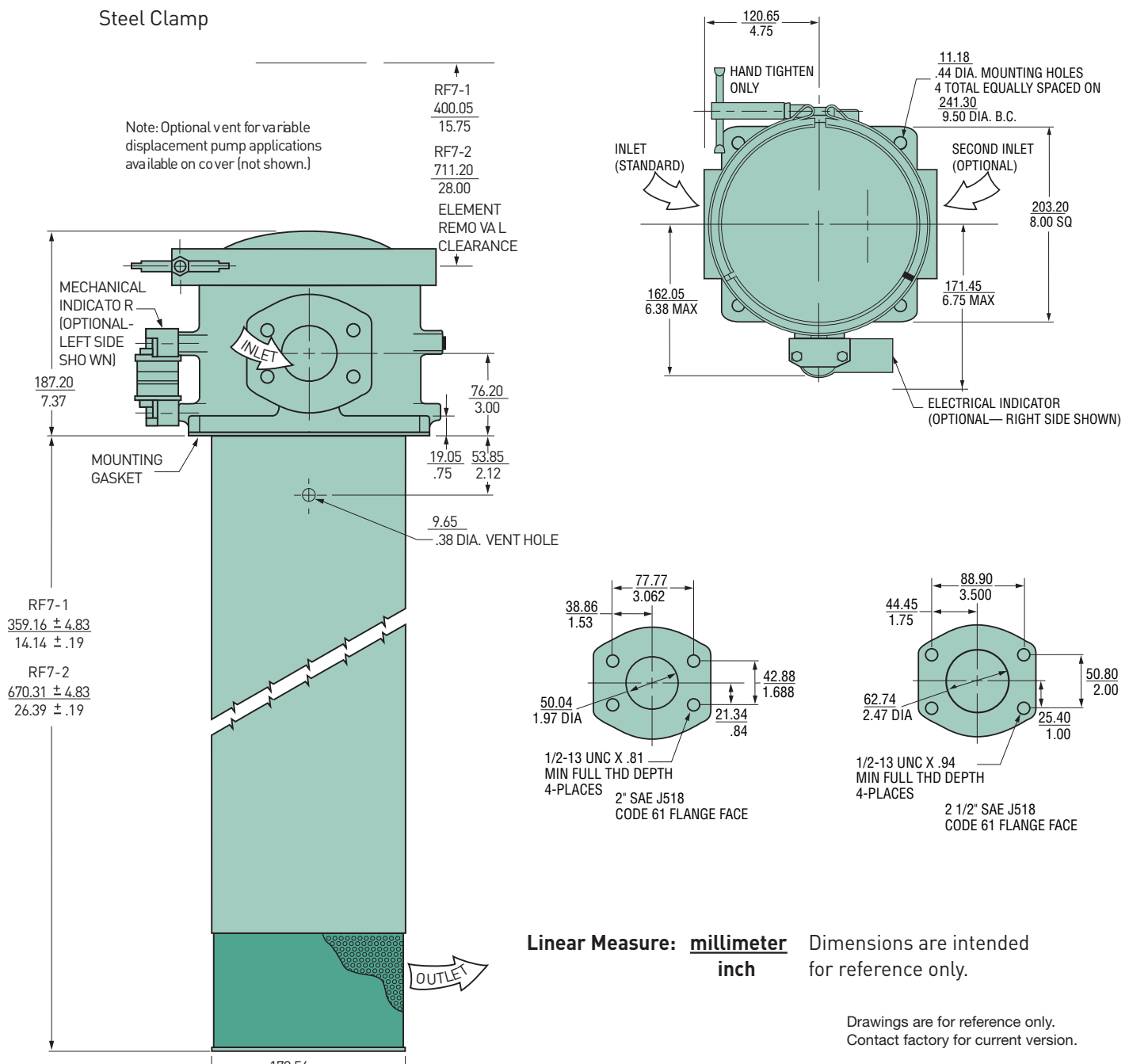
Visual system pressure type
(gauge or pressure switch).

Visual pressure differential type.

Electrical pressure differential type.

15A @ 250 VAC

.5A @ 125 VDC



RF7 Series

Specifications

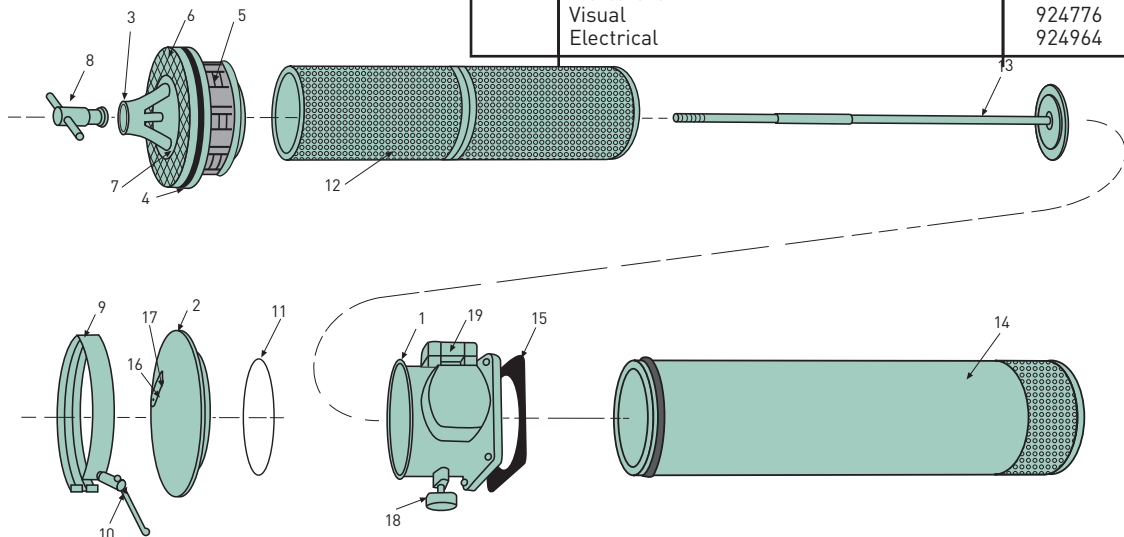
Filter Service

When servicing an RF7 filter, use the following procedure:

- A. Stop all flow to the filter.
- B. Loosen the clamp handle counterclockwise and remove the clamp assembly.
- C. Remove the filter cover by lifting upward.
- D. Pull the entire cartridge assembly out by grabbing onto the "T" handle.
- E. Unscrew the "T" handle from the bypass assembly (with mesh screen) and remove the bypass assembly.
- F. Lift the element over the exposed rod assembly and discard.
- G. Place a new element over the rod and seat on the bottom.
- H. Re-attach the bypass assembly to the top of the element.
- I. Replace the "T" handle and hand-tighten.
- J. Firmly place the entire cartridge assembly back into the filter housing.
- K. Set the cover back on the housing, reattach the clamp assembly and hand tighten the handle.

Parts List

Index	Description	Part Number	
1	Head - Single Inlet	RF7-1	RF7-2
	2" SAE Flange Face w/gage ports	932549	932549
	2 1/2" SAE Flange Face w/gage ports	932483	932483
	2" SAE Flange Face w/indicator	932484	932484
	2 1/2" SAE Flange Face w/indicator	932485	932485
	Head - Double Inlets		
	2" SAE Flange Face w/gage ports	932550	932550
	2 1/2" SAE Flange Face w/gage ports	932551	932551
	2" SAE Flange Face w/indicator	932552	932552
	2 1/2" SAE Flange Face w/indicator	932553	932553
2	Cover	932288	932288
3	Bypass Mount	932521	932521
4	Lipseal		
	Nitrile	932415	932415
	Fluorocarbon	932488	932488
5	Bypass Valve (6)	930507	930507
6	Screen	932416	932416
7	Screen Retaining Ring	932417	932417
8	"T" Handle Assembly	903889	903889
9	Clamp	909876	909876
10	Clamp Handle	926768	926768
11	Cover O-Ring		
	Nitrile	N72263	N72263
	Fluorocarbon	V72263	V72263
12	Element (See model code page)		
13	Cartridge Rod Assembly	933067	932418
14	Diffuser Tube Assembly	933064	932419
15	Gasket		
	Nitrile	932420	932420
	Fluorocarbon	932489	932489
16	Nameplate	920928	920928
17	Drivescrew (2)	900028	900028
18	Pressure Gauge	936912	936912
19	Indicators		
	Visual	924776	924776
	Electrical	924964	924964



RF7 Series

How to Order

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
	RF7	2	10Q	MP	25	y999	1

BOX 1: Seals Symbol	Description
None	Nitrile
F3	Fluorocarbon

BOX 2: Basic Assembly Symbol	Description
RF7	In-tank return filter

BOX 3: Length Symbol	Description
1	Single length
2	Double length

BOX 5: Indicator(s) Symbol (2 Required)	(See Note A) Description
P	Gauge, port plugged
G	Gauge, color coded
S	Pressure switch
M	Visual indicator
E	Electrical indicator
Note A: (First letter of indicator code = left side of filter head when looking into inlet with bowl down; second letter = right side of filter head when looking into inlet with bowl down.)	

BOX 7: Ports Symbol	Description
<u>Inlet</u>	<u>Side</u>
Y9	2" SAE flange face (Standard)
Z9	2½" SAE flange face (Standard)
2Y9	Two Inlets, 180° apart (Optional)
2Z9	Two Inlets, 180° apart (Optional)
<u>Outlet</u>	
99	No fitting

BOX 4: Media Code Symbol	Description
20Q	Microglass III
10Q	Microglass III
05Q	Microglass III
02Q	Microglass III
10C	Cellulose
WR	Water Removal

BOX 6: Bypass Setting Symbol	Description
25	25 psid

BOX 8: Modifications Symbol	Description
1	None

Replacement Elements

Media	Single Length		Double Length	
	Nitrile	Fluorocarbon	Nitrile	Fluorocarbon
20Q	933800Q	933808Q	933812Q	933156Q
10Q	933802Q	933809Q	933814Q	933155Q
05Q	933804Q	933810Q	933816Q	933153Q
02Q	933806Q	933811Q	933818Q	933152Q
10C	908648	923551	932498	932503
WR	928563	933853	932501	932506

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



BGT Series

Low Pressure Filters



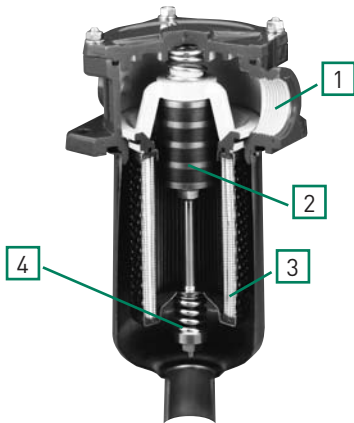
ENGINEERING YOUR SUCCESS.

BGT Series

Applications

- Flows to 640 GPM
- 3 Micron Absolute to 120 Micron Absolute
- Disposable or Recleanable Elements
- Visual and Electrical Indicators
- Microglass elements
- Magnetic prefiltration
- Full flow bypass valve
- No internal leakage paths
- Inside-to-out flow thru element
- Complete contaminant removal during element service
- LEIF® element (600 and 1000 Series only)

BGT Tank Mounted Return Flow Filters



BGT Filters feature Parker's exclusive Magnetic Prefiltration core which collects ferromagnetic particles from fluid upstream of the filter element. This feature alone could save hundreds of dollars a year by protecting costly equipment from increased wear and malfunction by assuring that the fluid is as pure as possible when it leaves the filter. Even during bypass due to cold start up, ferris contaminant is collected by the magnetic core, a feature of importance on any fluid power system.

Take a close look and compare Parker features with any other filter.

1. Fluid flows through the inlet port into an enlarged area which reduces fluid velocity. Inlet flow does not impinge on the element.

2. Filtration begins with magnetic prefiltration of ferromagnetic particles in the full fluid flow upstream of the element, not downstream or in the reservoir. Built-in or system generated ferromagnetic wear debris (even particles smaller than the element rating) are collected by the high strength (3.0K Gauss) magnetic column. This results in extended element and oil life and reduced maintenance and downtime, which reduces overall operating cost.

3. Fluid passes through the element in an inside-to-outside direction, collecting particles inside the filter cartridge. This eliminates reinjection of contaminant during element change. Clean fluid then returns to the reservoir through the diffuser which prevents fluid aeration.

Normal return line filters, that flow outside-to-inside, allow contaminated fluid to drain back into the reservoir when the element is serviced.

4. Simplified bypass design and location prevents flushing previously collected contaminant back into the system. Since the element serves as the valve there is no troublesome separate valve to remove when changing elements. Magnetic filtration occurs even during bypass. All potential leakage paths are o-ring sealed to eliminate bypass leakage that occurs in loose fitting valve assemblies.

BGT Filters are available with disposable

Specifications

Housing Data:

Material:

Head – Aluminum Alloy
Diffusor – Steel
Internals – Carbon Steel and Aluminum
Seals – Nitrile (Standard), Fluorocarbon

Pressure Rating:

Static – 150 psi (10.3 bar)

Temperature Range:

Operating -40°F to +250°F
(-40°C to +120°C)

elements of several contamination class levels for use in all common fluids.

Optional accessories include visual and electric warning indicators that assure proper element service.

BGT Series

How To Size Tank Top Filters

Element Pressure Drop Factor:

Multiply the actual flow rate times the applicable ΔP factor to determine the pressure drop with a fluid viscosity of 140 SSU. Correct for other viscosities by applying the following formula: Flow rate (GPM) x filter factor x (new viscosity in SSU/140 SSU).

Flow/Pressure Drop Data

Fluid Conditions: Viscosity-140 SSU Sp. Gr. - 0.88

Media Code	600	Size Code 1000	2000
02Q (L)	.082	.0493	.0246
05Q (L)	.031	.0187	.0091
10Q (L)	.022	.0129	.0066
20Q (L)	.014	.0088	.0044

Example:

Element Size Code = 600

Element Media Code = 10

Filter Factor = .022 (From chart)

Flow = 160 GPM

Viscosity = 160 SSU

Formula:

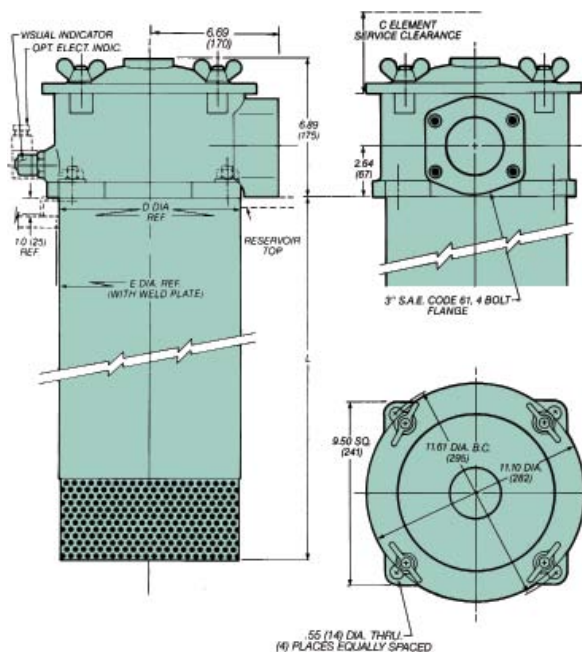
160 GPM x .022 x (160 SSU/140 SSU) = 4.0 PSID

Element Data

Media Type	Absolute Rating	Multipass Test Results To ISO 4572 (Time Weighted Averages)						
		B ₃	B ₆	B ₁₀	B ₁₂	B ₂₀	B ₂₅	B ₃₆
Microglass III	3	≥100	800	2000	>5000	∞	∞	∞
Microglass III	6	8	≥100	1000	2000	>5000	∞	∞
Microglass III	10	6	22	≥100	≥200	>5000	∞	∞
Microglass III	20	—	2	8	20	≥100	≥200	>5000

Dimensions

BGT-13, BGT-15, BGT-17



Drawings are for reference only.
Contact factory for current version.

Return Line Filter - Series 4

Dimensions inches (mm)	BGT Filter Model		
	13	15	17
C	18.0 (457)	27.0 (686)	48.0 (1219)
L	16.75 (425)	25.20 (640)	47.25 (1200)
D	9.49/9.47 (241/240.5)		
E	10.25/9.70 (260/246)		

BGT Series

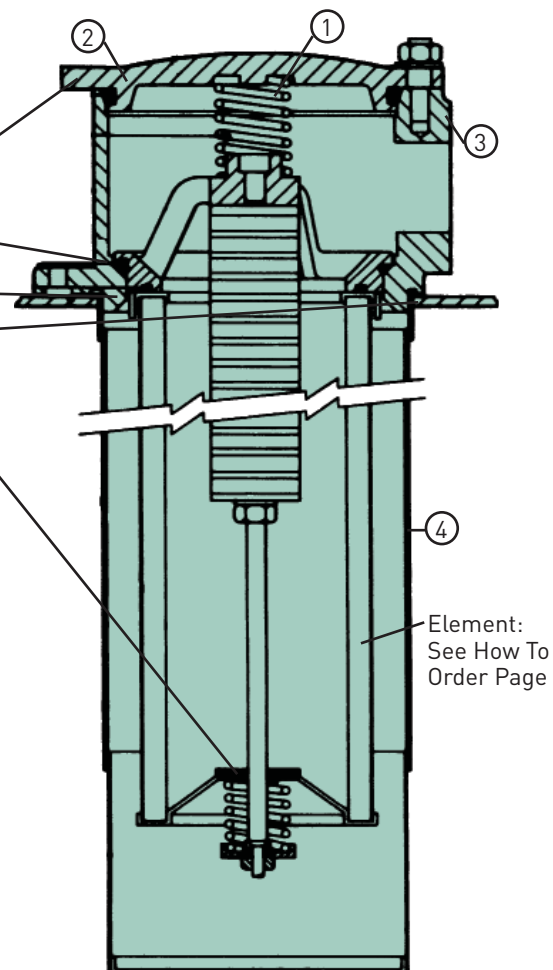
Parts List

Parts Breakdown BGT Series

Seals	
Part Number	Description
BGT 13, 15 or 17	
R-8875	Cover O-ring
SOR-90	Insert O-ring
SOR-85	Bypass Seals
R9875	Tank Gasket
SOR-115	Element O-Ring
Nitrile or Fluorocarbon	Material*

*Please specify seal material suffix when ordering
Fluorocarbon seals: "-V"

Bypass Assembly	
13, 15 or 17	Pressure
6903184	Blocked
4903020	4.5 PSID
4903004	12 PSID
4903008	22 PSID



Item	Description	Material	Part Numbers		
			BGT-13	BGT-15	BGT-17
1	Top Spring	Steel	48371205		
2	Cover	Die Cast Aluminum	84.22.064.06 (5842206)		
3	Head	Die Cast Aluminum	5841032		
4	Diffusor	Steel	2110084	2110085	21100086

BGT Series

Operating And Maintenance Instructions Parker Model BGT Tank Top Filters

A. Mounting

1. Standard mounting.
 - a. Cut proper size hole in the top of the reservoir.
 - b. Drill holes for studs within the proper bolt circle.
 - c. Set the filter into the cutout hole and secure with proper size bolts, nuts and lock washers.
2. Utilize proper fittings.

B. Start-Up

1. Check for and eliminate leaks upon system start-up.
2. Check differential pressure indicator, if installed, to monitor element condition.

C. Service

1. An element must be serviced when the indicator indicates service is required.

NOTE: If the filter is not equipped with an indicator, the element should be serviced according to machine manufacturer's instructions.

D. Servicing Dirty Elements

1. Shut system down to assure that there is NO PRESSURE OR FLOW into the filter housing.
2. Remove the filter cover.
3. Remove the filter insert (bridge which holds the element in place).
4. Remove the bypass spring assembly or non-bypass plate from the stud.
5. Remove the contaminated cartridge with a twisting motion.
6.
 - a. Discard the disposable element cartridge.
 - b. Wash cleanable or mesh elements in a non-caustic solvent. Compressed air can be used to facilitate cleaning. Use care to prevent damage to the element during cleaning.

NOTE: Elements finer than 150 microns (100 mesh) may require special ultrasonic cleaning. Consult factory for recommendations.

E. Before Installing A New Element Cartridge

1. Clean the magnetic core with a lint-free cloth.
2. Check all seals and replace if necessary.

F. To Install A New Or Cleaned Element Cartridge

1. Lubricate all seals.
2. Mount new or cleaned Parker filter cartridge.

NOTE: For ease of mounting, hold the cartridge away from the magnetic core until the stud is through the hole in the bottom of the element. Then slide it up to securely seat it to the top of the bridge.

3. Install the bypass spring assembly or non-bypass plate, and tighten until snug.

NOTE: Older versions may have a cotter pin/castellated nut retained bypass spring. In these cases, the nut should be turned down the shaft until the cross drilled hole is visible in the base of a castellation and the cotter pin inserted and ends flared to lock the bypass assembly in place.

4. Re-install the insert into the filter housing, making sure that the top- spring is secure.
 5. Re-install the cover. Torque the cover nuts to 22 ft./lbs.
- Follow procedures B.1 and B.2.

BGT Series

How to Order

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
BGT	13	10QL	B	V	E	F48	1

BOX 1: Basic Assembly Symbol	Description
BGT	Return Filter

BOX 2: Housing Length Symbol	Description
13	4-600 L/min Return Filter (160 gpm)
15	4-1000 L/min Return Filter (265 gpm)
17	4-2000 L/min Return Filter (530 gpm)

BOX 3: Element Media Symbol	Description
02QL	BTG13, 4-600 L/min Leif® Microglass III Element
05QL	Leif® Microglass III Element
10QL	Leif® Microglass III Element
20QL	Leif® Microglass III Element
02QL	BTG15, 4-1000 L/min Leif® Microglass III Element
05QL	Leif® Microglass III Element
10QL	Leif® Microglass III Element
20QL	Leif® Microglass III Element
02Q	BTG17, 4-2000 L/min Microglass III Element
05Q	Microglass III Element
10Q	Microglass III Element
20Q	Microglass III Element

BOX 4: Seals Symbol	Description
B	Nitrile

BOX 5: Indicator Symbol	Description
P	Plugged Indicator Port
V	Visual Differential Indicator
E	Electrical Differential Indicator

BOX 6: Bypass Symbol	Description
E	22 PSID Bypass (1,5 bar)

BOX 7: Ports Symbol	Description
F48	3" SAE Flange, Code 61

BOX 8: Options Symbol	Description
1	No Options

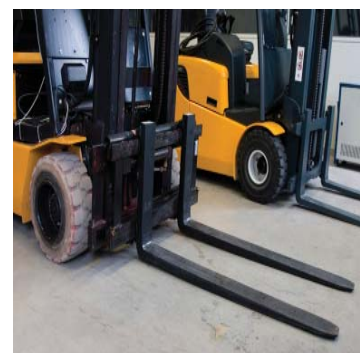


aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



12CS/50CS Series

Coreless Medium Pressure Filters



ENGINEERING YOUR SUCCESS.

12CS/50CS Series

Applications

Together we can...

Preserve the environment.
Minimize waste and promote energy efficiency.

Achieve worldwide filtration solutions.
Build global confidence.

Redefine new limits.
Forge ahead with advanced technology.

Keep contamination under control.
Reduce maintenance costs.

Enhance total system reliability.
Focus on customer satisfaction.

Reach optimum potential.
Drill to greater depths.

...engineer your success.

Parker engineers have developed an innovative alternative to the age old spin-on style can. This new design provides all of the benefits of high efficiency, long life Ecoglass III filtration, without the environmental impact.

The new environmentally-friendly 12CS and 50CS hydraulic filters feature a reusable bowl and a patented filter element constructed of reinforced polymer end caps, microglass media, and polymer pleat support. The element core is permanently attached as part of the filter bowl. When replaced, the element reduces costs, eliminates hot drain requirements, can be easily incinerated, and is better-suited for most landfills.

The 500 psi filters are rated up to 50 gpm, with premium Ecoglass III elements as standard offerings. The patented element design also prevents filter operation if the proper element is not in place.

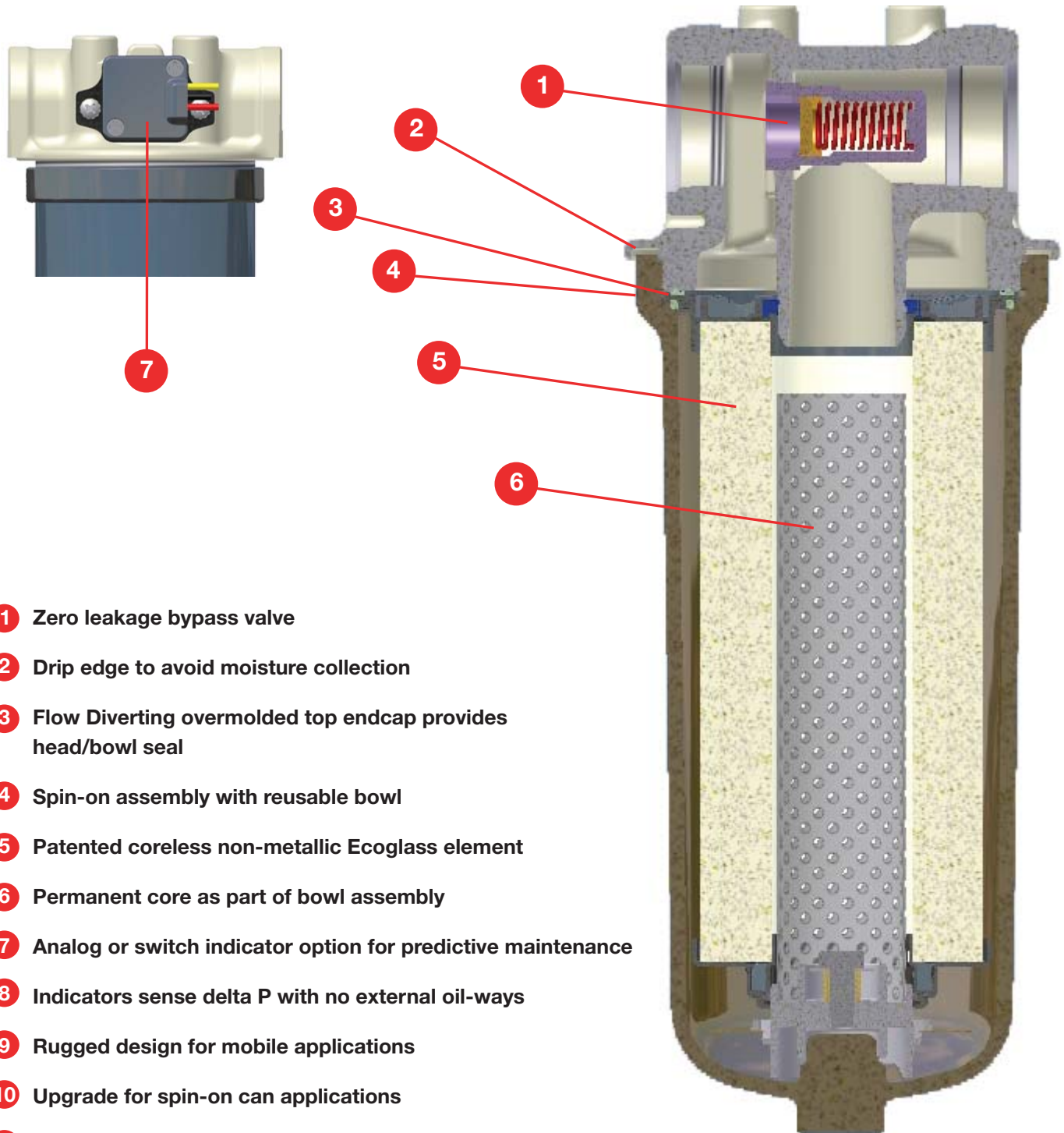
Typical Applications

- **Mobile Ag**
- **Mobile Construction**
- **Material Handlers**
- **Aerial Lifts**
- **Pilot Lines**
- **Charge Pump Hydrostatic Drives**
- **Industrial Power Units**
- **Machine Tools**
- **Joy Stick Controls**



12CS/50CS Series

Features



- 1 Zero leakage bypass valve
- 2 Drip edge to avoid moisture collection
- 3 Flow Diverting overmolded top endcap provides head/bowl seal
- 4 Spin-on assembly with reusable bowl
- 5 Patented coreless non-metallic Ecoglass element
- 6 Permanent core as part of bowl assembly
- 7 Analog or switch indicator option for predictive maintenance
- 8 Indicators sense delta P with no external oil-ways
- 9 Rugged design for mobile applications
- 10 Upgrade for spin-on can applications
- 11 Low cost manifold mount option available

12CS/50CS Series

The Smart Alternative to Spin-on Cans!

Patented Filter Element
Provides head-to-bowl seal

Cannot operate without
an element installed

Coreless Ecoglass Elements
Reduces disposal costs and
environmental impact

Ease-of-Service, environmentally
friendly

**Spin-on Assembly with
Reusable Bowl**
Improved, cost effective design

Easy to maintain

500 PSI Operating Pressure
Withstands pressure surges

Application versatility

**Option for Differential
Pressure Sensing including
an Analog 0-5V Output**
For predictive maintenance

No external oil-ways



WASTE.

NOT.

500,000,000+
spin-on cans disposed
of each year in North
American landfills.

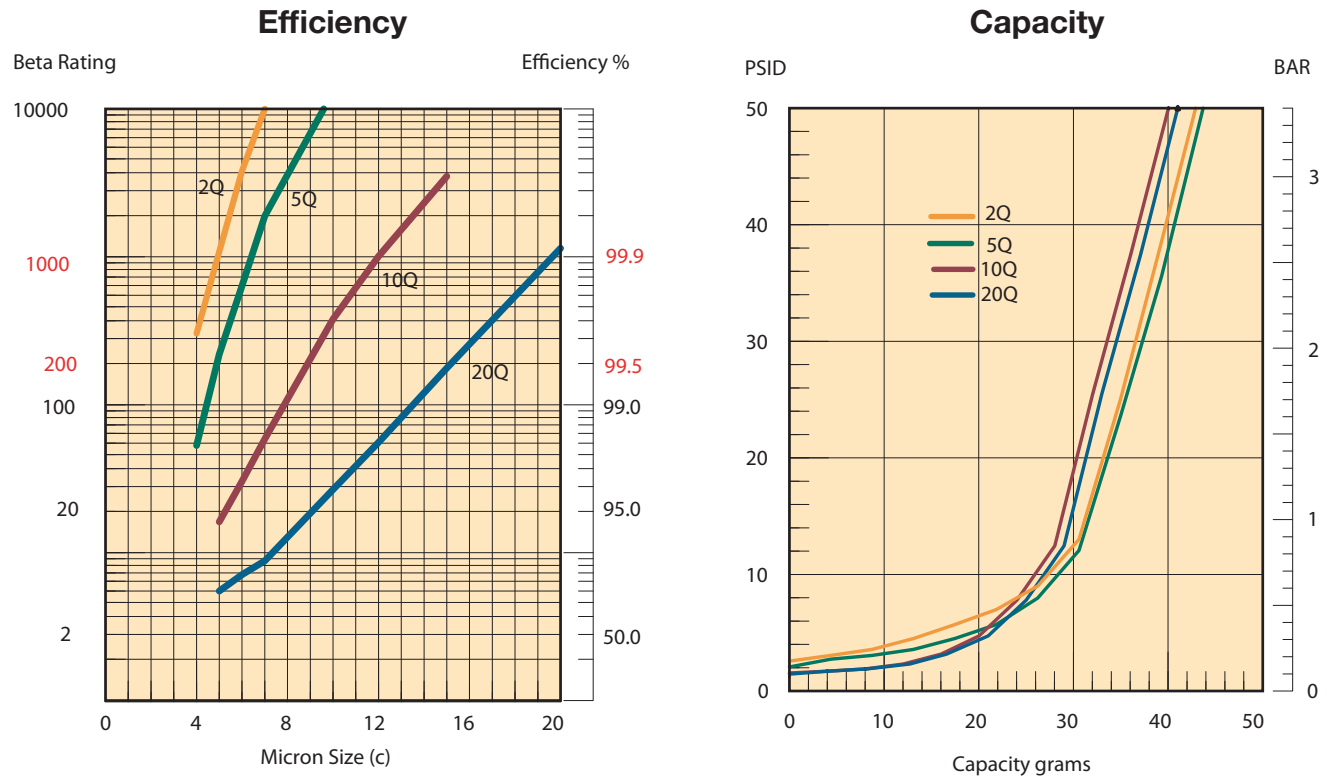
30,000,000
gallons of discarded
residual waste oil.

250,000
tons of scrap metal.
Expensive disposal costs.

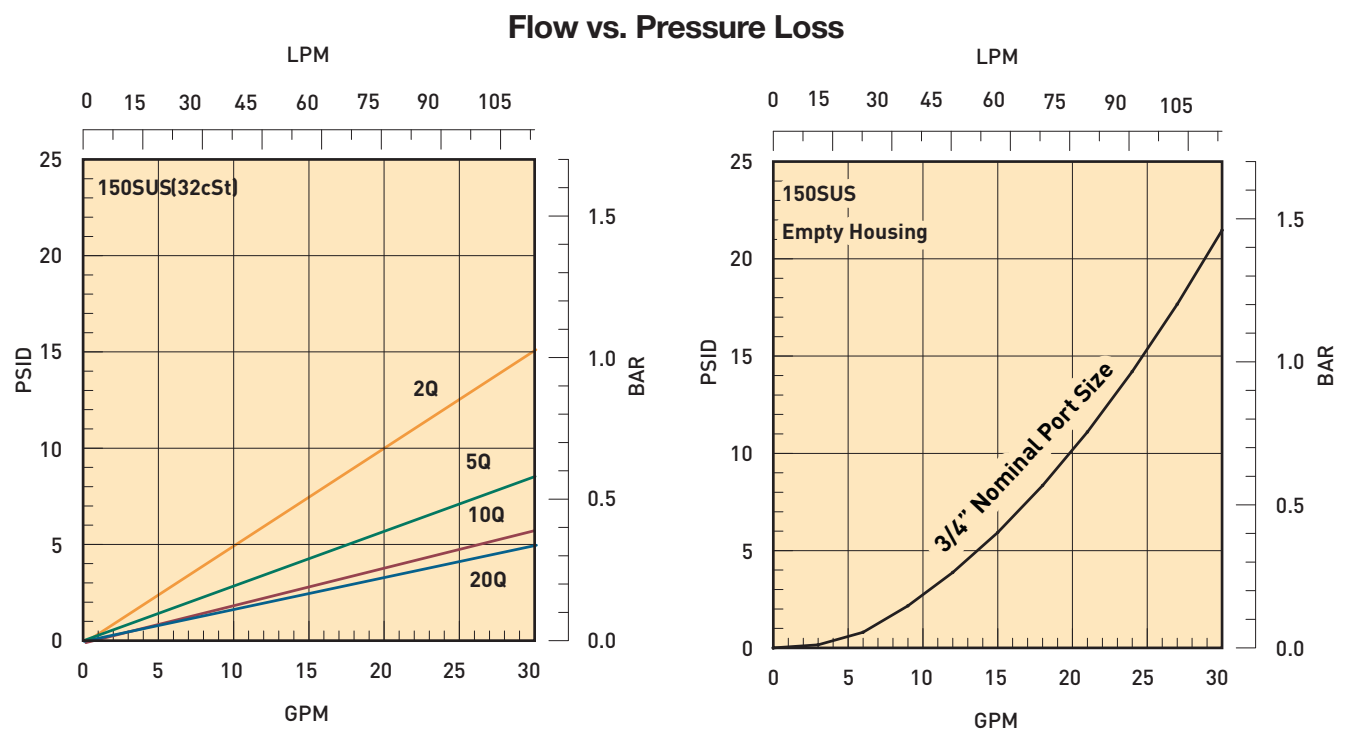
Parker
Ecoglass III

12CS Series

Performance

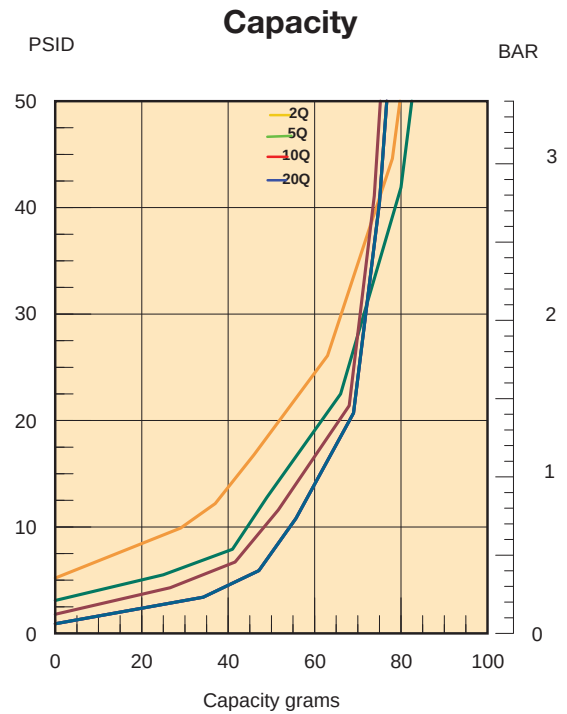
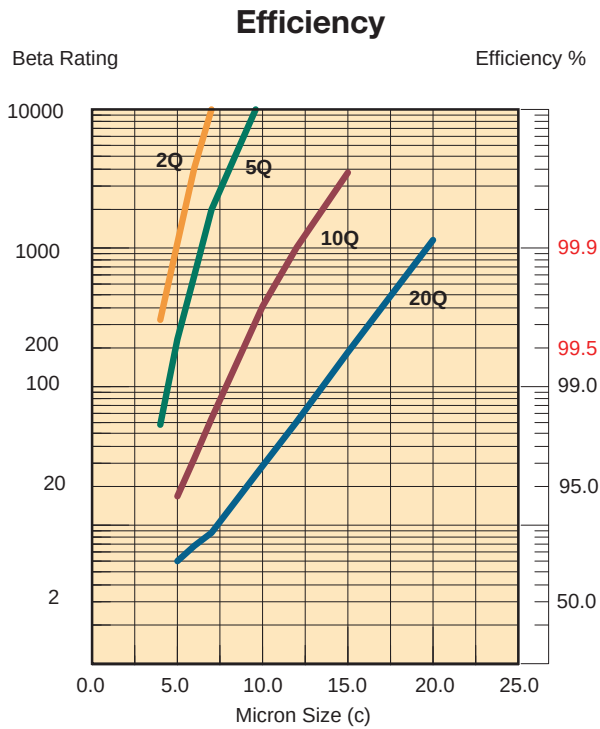


Results typical from Multi-pass tests run per test standard ISO 16889 @ 15 gpm to 50 psid terminal - 10 mg/L BUGL Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.



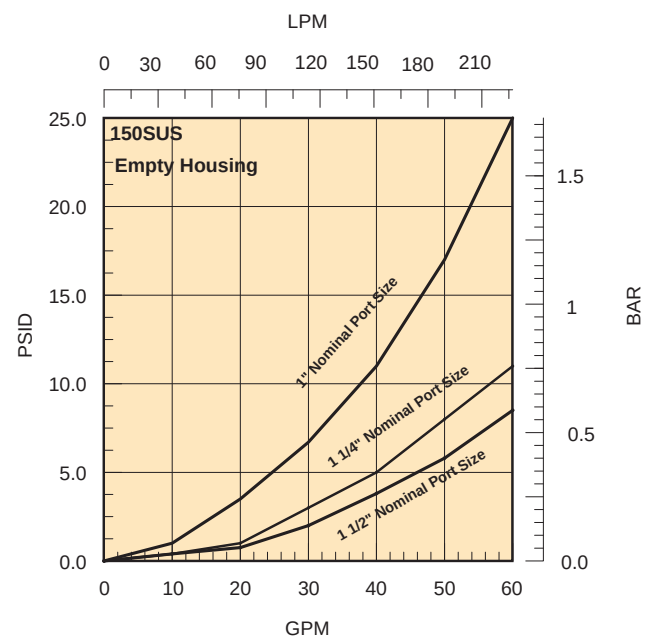
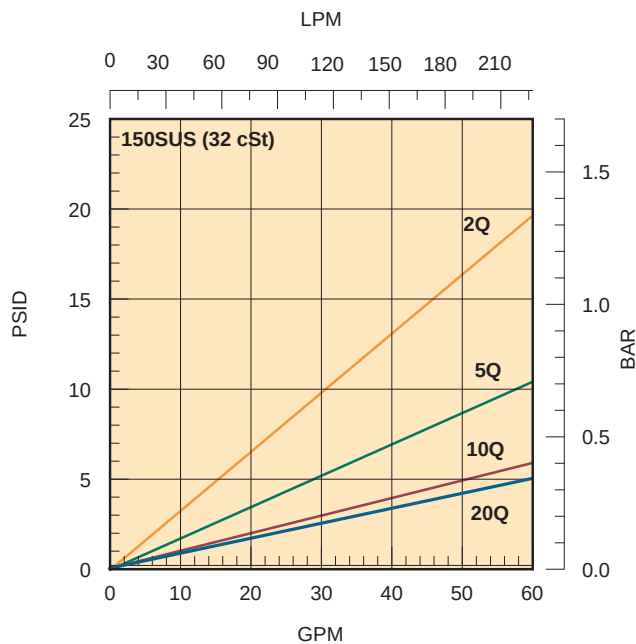
50CS Series

Performance



Results typical from Multi-pass tests run per test standard ISO 16889 @ 30 gpm to 50 psid terminal - 10 mg/L BUGL.
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



12CS Series

Specifications

Pressure Ratings:

Maximum Allowable
Operating Pressure (MAOP):
500 psi (34.5 bar)

Fatigue: 400 psi (27.6 bar)
1,000,000+ cycles: 0-400 psi

Design Safety Factor: 2.5:1

Operating Temperatures:

Buna: -40°F to 225°F
(-40°C to 107°C)

Fluorocarbon: -15°F to 225°F
(-26°C to 107°C)

Element Collapse Rating:

150 psid (10.3 bar)

Weights (approximate):

12CS-2.....3 lbs. (1.4 kg)

Materials:

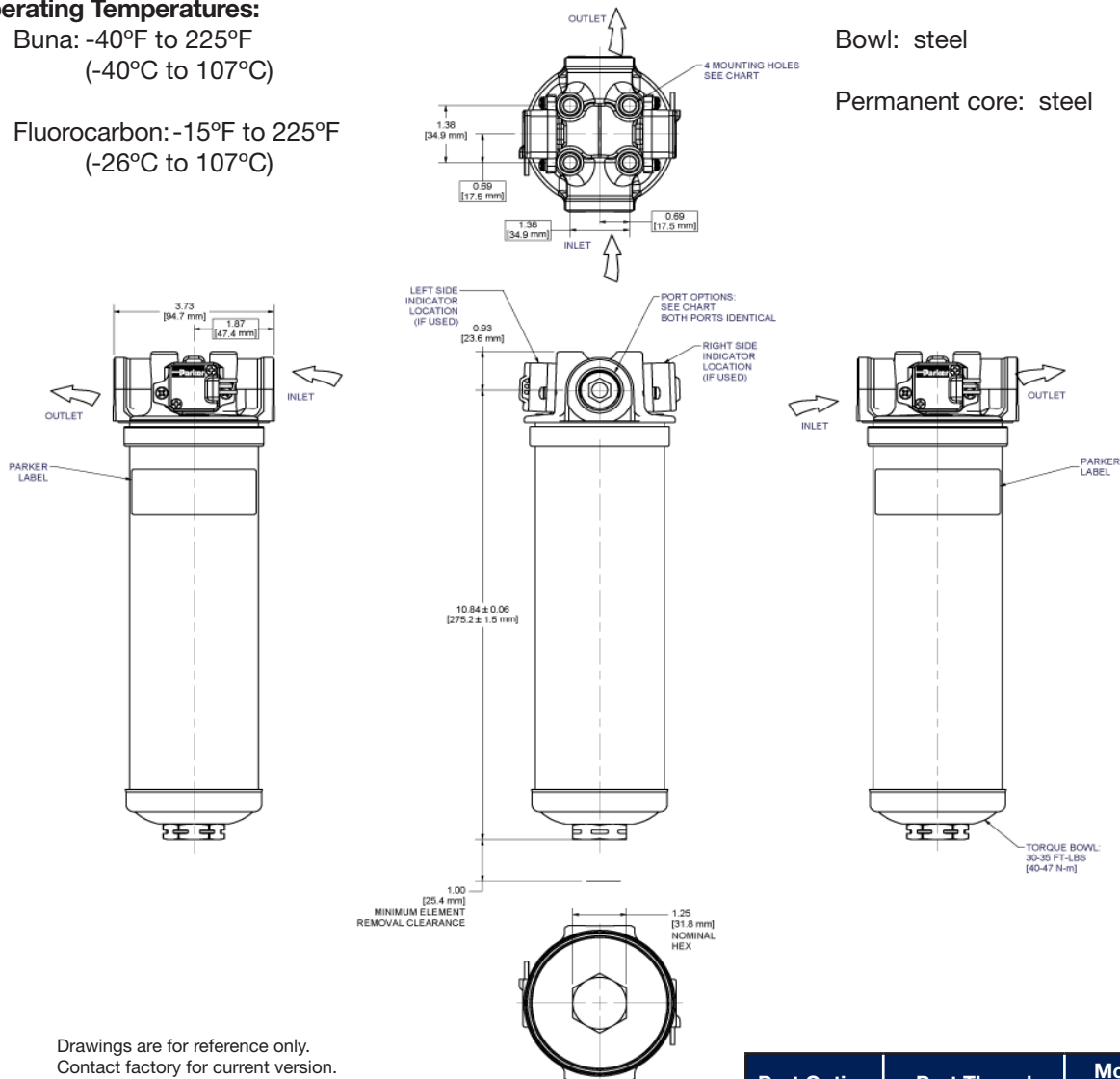
Head: cast aluminum

Bypass valve: nylon with
steel spring

Filter element: reinforced
polymer end caps,
microglass media, and
polymer pleat support

Bowl: steel

Permanent core: steel



Drawings are for reference only.
Contact factory for current version.

Port Option	Port Thread	Mounting Thread Configuration
S12	1-1/16"-12 UN-2B	3/8" x 16 x 5/8"
N12	3/4"-14 NPTF-1	3/8" x 16 x 5/8"
G12	G3/4" BSPP	3/8" x 16 x 5/8"

50CS Series

Specifications

Pressure Ratings:

Maximum Allowable
Operating Pressure (MAOP):
500 psi (34.5 bar)

Fatigue: 400 psi (27.6 bar)
1,000,000 cycles: 0-400 psi

Design Safety Factor: 2.5:1

Operating Temperatures:

Buna: -40°F to 225°F
(-40°C to 107°C)

Fluorocarbon: -15°F to 225°F
(-26°C to 107°C)

Element Collapse Rating:

150 psid (10.3 bar)

Weights (approximate):

50CS-1.....6 lbs. (2.7 kg)

Materials:

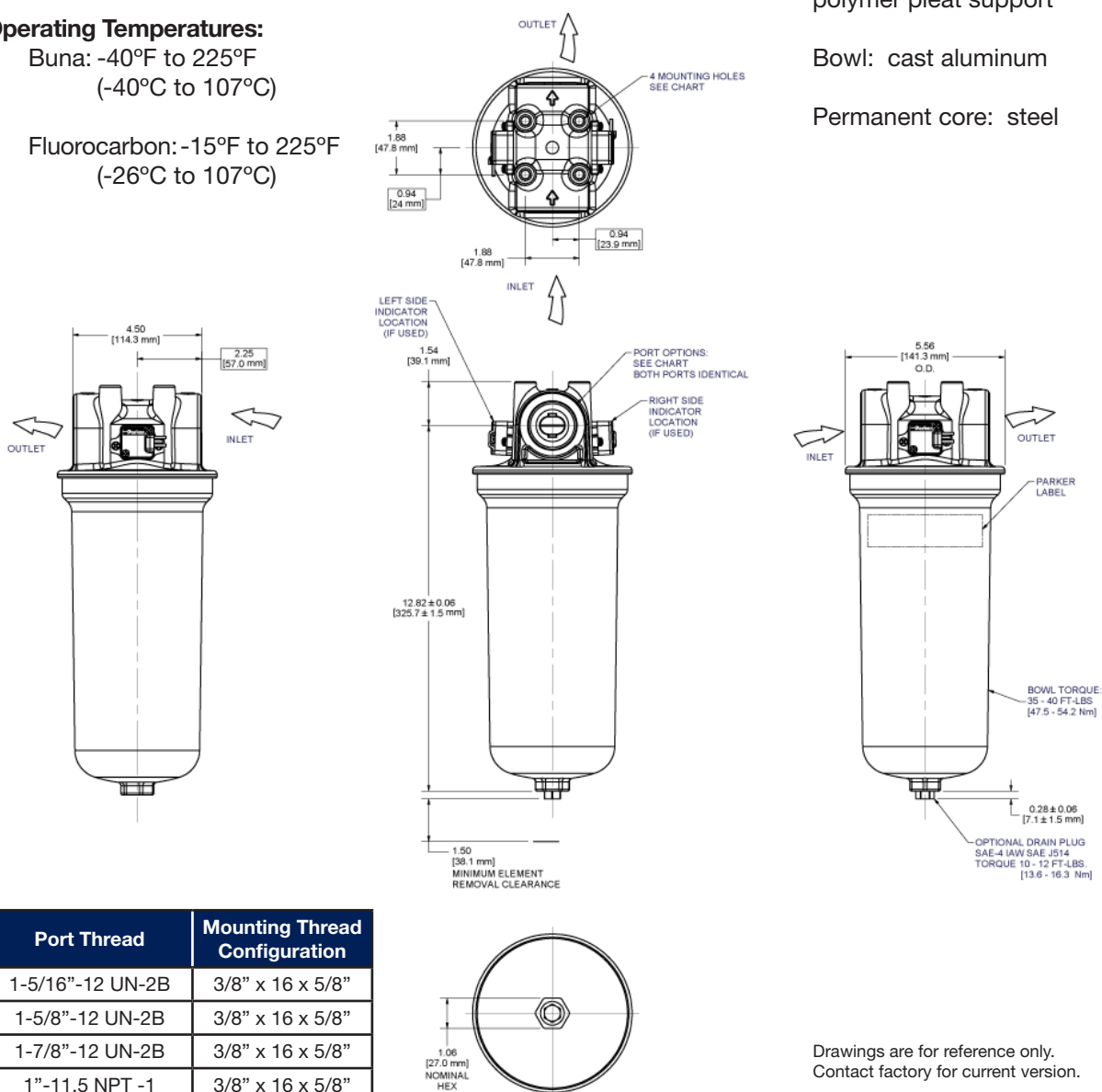
Head: cast aluminum

Bypass valve: nylon with
steel spring

Filter element: reinforced
polymer end caps,
microglass media, and
polymer pleat support

Bowl: cast aluminum

Permanent core: steel



Port Option	Port Thread	Mounting Thread Configuration
S16	1-5/16"-12 UN-2B	3/8" x 16 x 5/8"
S20	1-5/8"-12 UN-2B	3/8" x 16 x 5/8"
S24	1-7/8"-12 UN-2B	3/8" x 16 x 5/8"
N16	1"-11.5 NPT -1	3/8" x 16 x 5/8"
N20	1-1/4"-11.5 NPTF-1	3/8" x 16 x 5/8"
N24	1-1/2"-11.5 NPTF-1	3/8" x 16 x 5/8"
G20	G1-1/4" BSPP	M10 x 1.5 x 16

Drawings are for reference only.
Contact factory for current version.

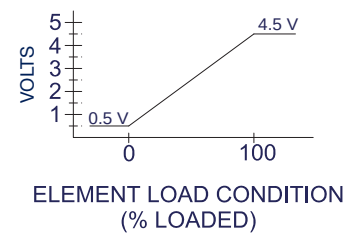
12CS/50CS Series

Element Condition Indicators

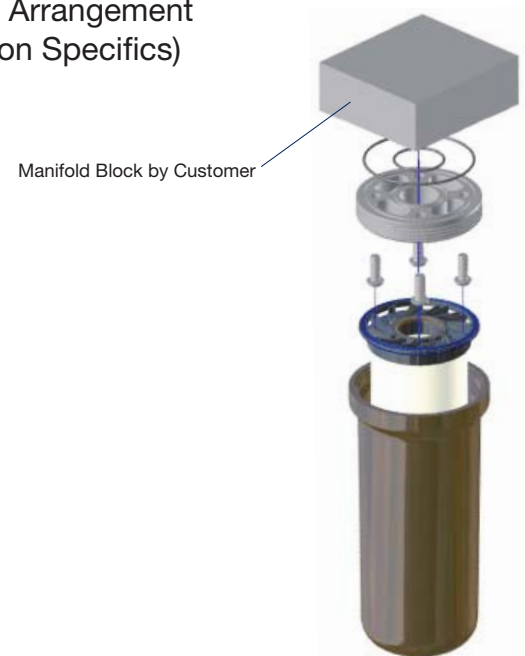
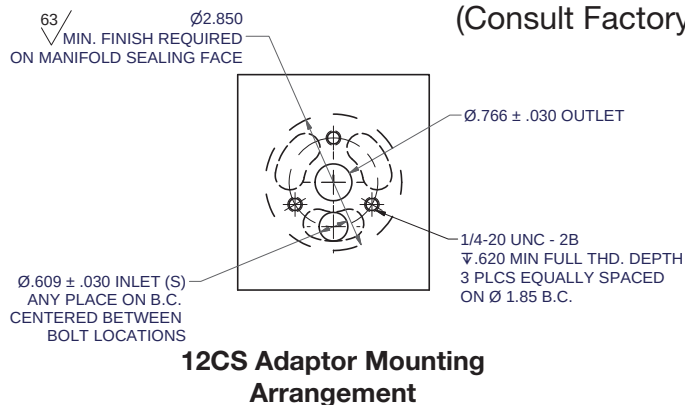
1. Electrical Switch
 - Connector: 12" wire leads, 18 Gauge
 - Yellow (NC), black (NO), Red (C)
 - Maximum switching voltage: 30V (DC/AC)
 - Maximum switching current 0.2A
 - Maximum carry current: 0.5A
 - Approvals: CE, IP68
2. Analog Sensor
 - Supply voltage: 4.5 to 5.5 VDC
 - Main output current: 1 mA
 - Output voltage: Ratiometric (see graph)
 - Approvals: CE, IP68
 - Connector: 12" wire leads, 18 Gauge
 - Yellow (analog out)
 - Black (OV)
 - Red (supply +5 V)



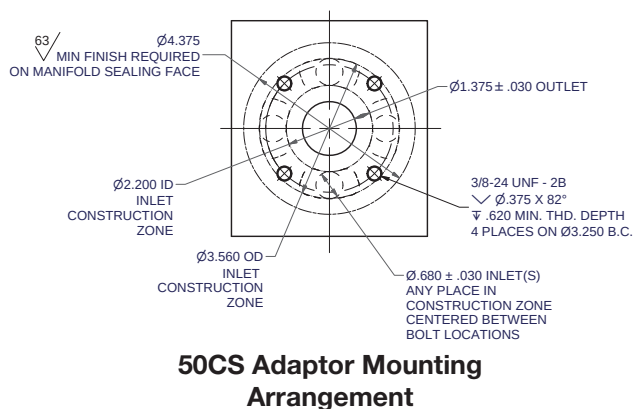
Electrical Switch
or Analog Sensor



Suggested Manifold Mounting Arrangement (Consult Factory for Application Specifics)



Drawings are for reference only.
Contact factory for current version.



Manifold Adaptor Kits*				
Media	02QE	05QE	10QE	20QE
12CS	942204	942205	942206	942207
50CS	942208	942209	942210	942211

* Kit includes O-rings, adaptor, mounting screws, element and bowl.

12CS/50CS Series

Service Instructions

Filter element should be replaced as indicated by filter indicator or at specified service intervals recommended by the OEM.

Replacement element procedure

- A. Shut down system and release pressure in the filter line.
- B. Loosen bowl and remove rotating counter clockwise.
- C. Remove dirty element from filter head and discard.
- D. Lubricate element seals on clean element and install on filter head element locator.
- E. Install reusable bowl onto element and filter head. Tighten to specified torque.



Parts List

Index	Description	12CS	50CS
1	Head Assembly (50 PSI electrical switch indicator ready)		
	SAE-12	942249	N/A
	3/4" NPT	942250	N/A
	G3/4" BSPP	942251	N/A
	SAE-16	N/A	942259
	SAE-20	N/A	942260
	SAE-24	N/A	942261
	1" NPT	N/A	942262
	1 1/4" NPT	N/A	942263
	1 1/2" NPT	N/A	942264
	G1 1/4" BSPP	N/A	942265
2	Indicator		
	Electrical	941814	941814
	Analog	941802	941802
	Mounting Screws	941944	941944
3	Element (see chart on next page)		
4	Bowl Assembly		
	Single - no drain	N/A	942011
	Single - w/ drain	N/A	942012
	Double - no drain	937599	N/A
5	Drain Plug SAE-4		
	Nitrile	N/A	921088
	Fluorocarbon	N/A	928882
6	Bypass		
	50 psid	928981	933424
7	Manifold Adaptor Kit (see drawing on previous page)		
	O-Ring (I.D.)	V92020	V72135
	O-Ring (O.D.)	V92038	V72155
	Manifold Adaptor	941811	941986
	Mounting Screws	975689	942174
	Element	see chart on page 11	
	Bowl Assembly	see #4 above	

12CS/50CS Series

How to Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
12CS	2	10QE	B	N	K	S12	1

BOX 1: Filter Series	
Symbol	Description
12CS	20 GPM nominal
50CS	40 GPM nominal

BOX 2: Element Length	
Symbol	Description
1	Single (50CS model only)
2	Double (12CS model only)

BOX 3: Media Code	
Symbol	Description
02QE	Ecoglass III, 2 micron
05QE	Ecoglass III, 5 micron
10QE	Ecoglass III, 10 micron
20QE	Ecoglass III, 20 micron

BOX 4: Seals	
Symbol	Description
B	Nitrile (NBR)
V	Fluorocarbon (FKM)

BOX 5: Indicator	
Symbol	Description
N	None
E ¹	Electrical w/12" flying leads, right
EL	Electrical w/12" flying leads, left
A ¹	Analog w/12" flying leads, right
AL	Analog w/12" flying leads, left

BOX 6: Bypass	
Symbol	Pressure Setting
K	50 PSI (3.5 bar)

BOX 7: Ports	
Symbol	Description
12CS	
S12	SAE-12 integral threads
N12	¾" NPT integral threads
G12	G¾" BSPP (ISO 228)
50CS	
S16	SAE-16
S20	SAE-20
S24	SAE-24
N16	1" NPT
N20	1¼" NPT
N24	1½" NPT
G20	G1¼" BSPP (ISO 228)

BOX 8: Options	
Symbol	Description
1	None
4	Drain port on bowl (50CS only)

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.

Notes:

1. Consult factory.

Global products as identified are offered worldwide through all Parker locations and utilize a common ordering code.



Replacement Elements (Ecoglass)

	Filter Model (Nitrile Seals)		Filter Model (Fluorocarbon Seals)	
Media	12CS-2	50CS-1	12CS-2	50CS-1
02QE	940765Q	940816Q	937619Q	940881Q
05QE	940764Q	940817Q	937618Q	940882Q
10QE	940763Q	940818Q	937617Q	940883Q
20QE	940762Q	940819Q	937622Q	940884Q

[illegible]



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



IL8 Series

Medium Pressure Filters



ENGINEERING YOUR SUCCESS.

IL8 Series

Applications

Applications for IL8 series filters

- Lube oil systems
- Power generation plants
- Test stands
- Primary metal equipment
- Pulp & paper equipment
- Offshore drilling and oil patch
- Flushing skids

IL8 series filters are excellent choices for your demanding applications whether you require simplex, duplex or quadplex assemblies.

Wherever high flow or high capacity filters are required, the IL8 series can be applied with confidence.

Filter housings have a simple yet critical job... securely contain the filter element with positive internal sealing.

The IL8 series filter housings are the result of careful engineering. High grade materials are used to provide strength at critical stress points.

The cover and base are anodized aluminum, the handle is nickel plated ductile iron and the bowl is rugged carbon steel. The result is a reliable high performance filter for an array of applications.

Cover

- Handle protects indicators from damage
- Easy on, easy off, for fast service

Air Bleed

- Helps protect bearings and other sensitive components from trapped air

Fill Port

- Prefilter the fluid, before it gets into the machine's system
- Purge air while filling

Indicators

- You can tell element condition at a glance
- Both visual and electrical available

Bowl

- Rugged cold drawn steel—excellent fatigue resistance
- Three sizes for any application: Single (8"), Double (16"), and Triple (39")

Ports

- SAE straight thread or flange face

Drain Port (not visible)

- Clean and easy servicing
- Lets you drain bowl of fluid—before element changes

Bypass Valve (not visible)

- Soft seat design for zero internal leakage
- Located in cover assembly



IL8 Series

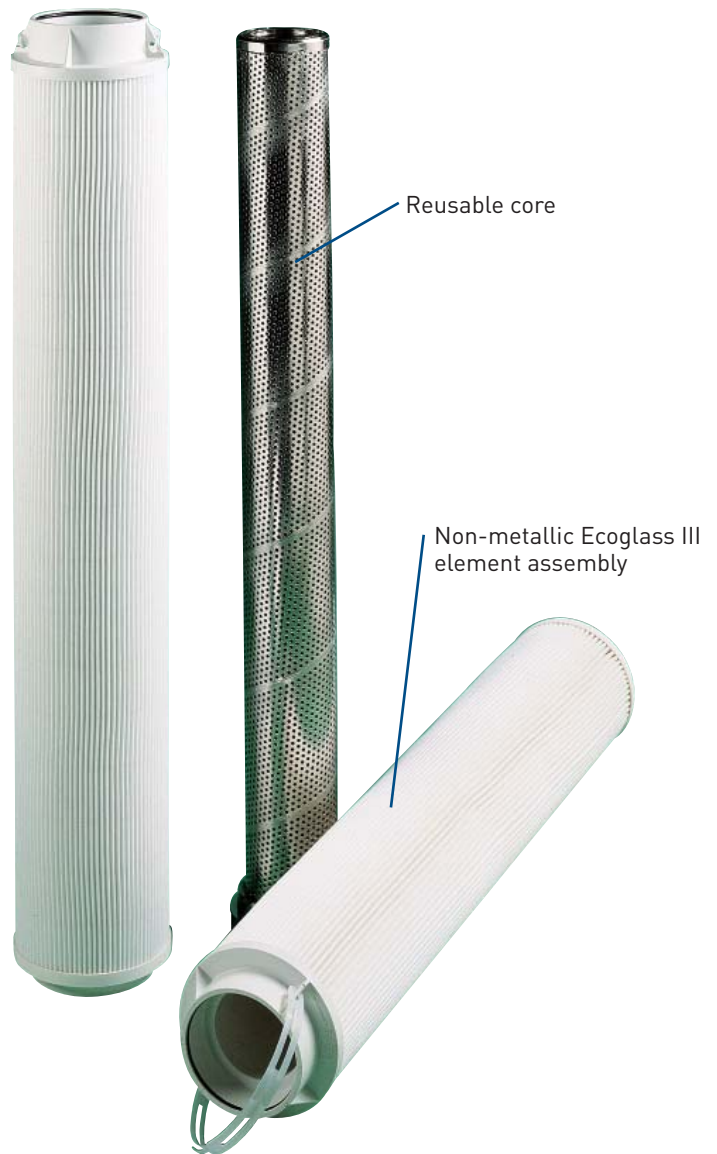
Element Features

Ecoglass III Replacement Elements

Ecoglass III represents the merging of high performance filtration technology with environmentally conscious engineering. The Ecoglass III line of replacement elements feature 100% non-metallic construction. The design reduces solid waste and minimizes disposal costs for industry. The non-metallic construction means lightweight elements (60% less weight) for easier servicing.

The Ecoglass III elements utilize the same proprietary media design as our Microglass III line of replacement elements.

With Ecoglass III, a reusable core is installed into the filter housing and remains in service throughout the life of the assembly.



Microglass III Replacement Elements

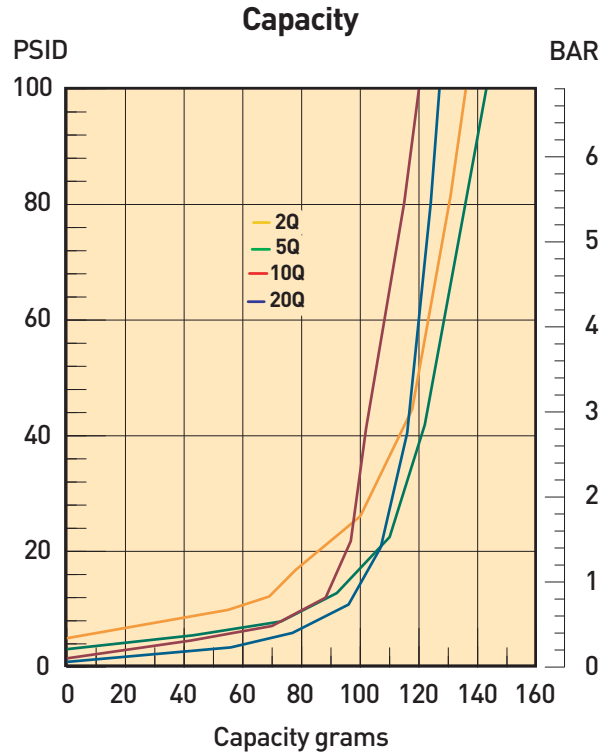
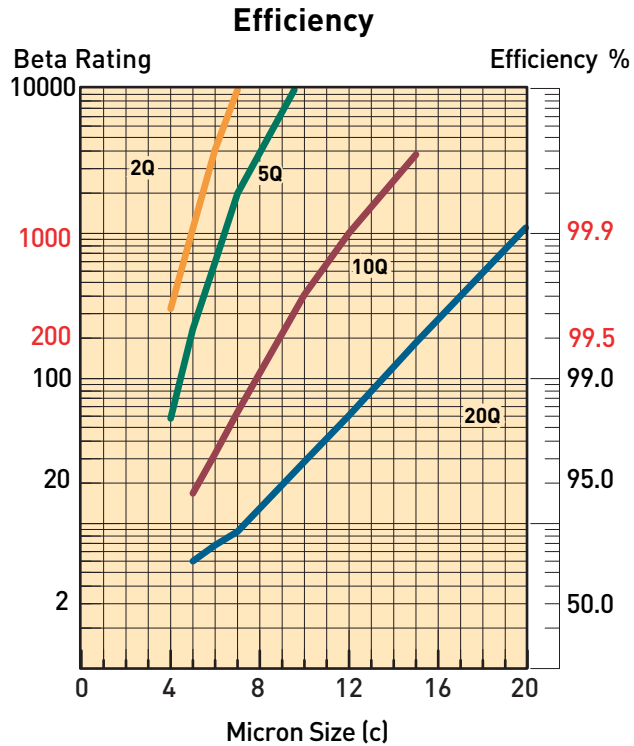
Microglass III represents a leap forward in the performance obtainable in hydraulic and lube filter elements.

The unique multi-layer design combines high efficiencies with exceptional dirt holding capacities for performance that is unequalled in the industry today. This performance is further enhanced in the IL8 series with the introduction of the deep pleat design. The deep pleat element design increases the amount of media in the element and therefore capacity.

With Microglass III you do not have to make a compromise between efficiency and capacity, you can have both.

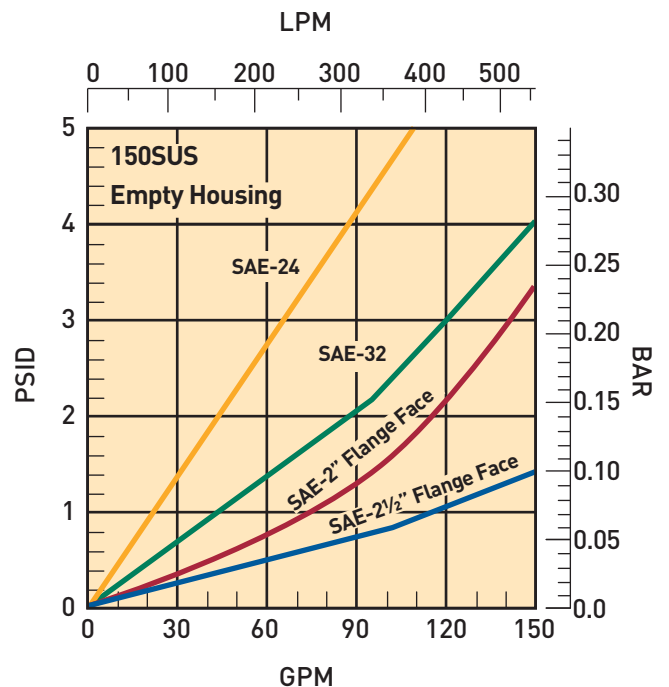
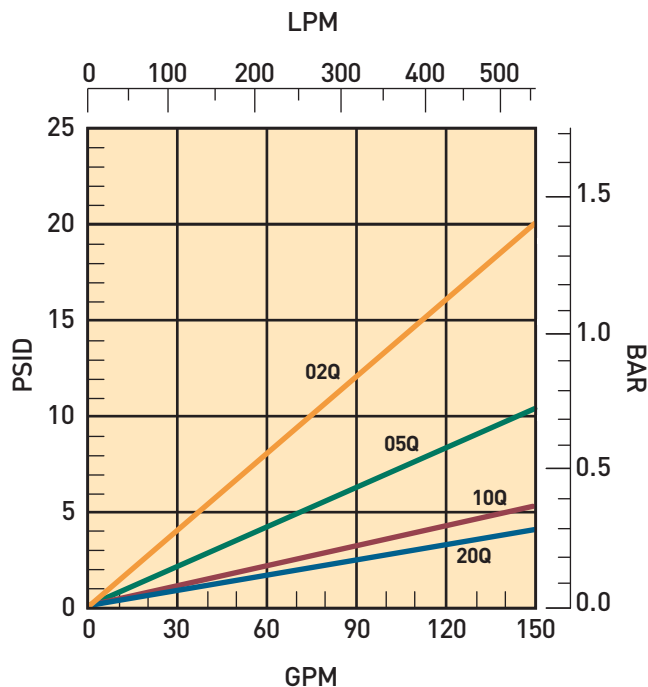
IL8 Series

IL8-1 Element Performance



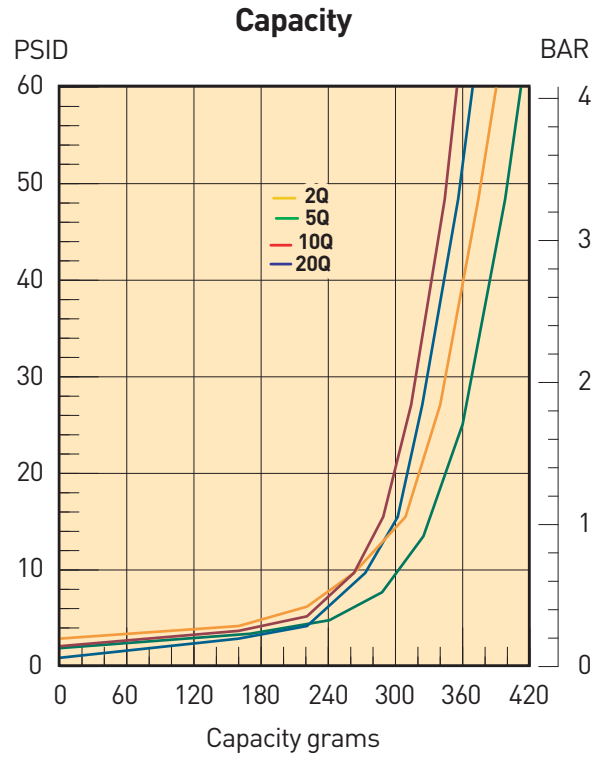
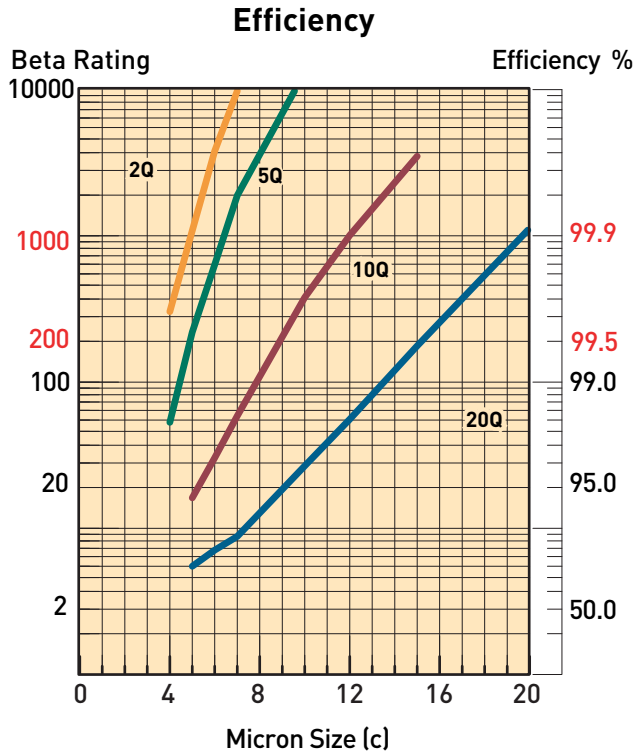
Results typical from Multi-pass tests run per test standard ISO 16889 @ 40 gpm to 60 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



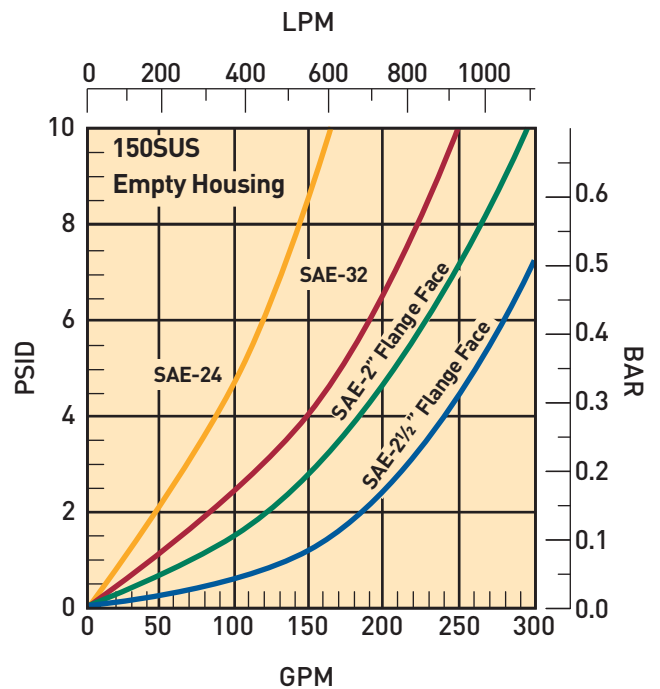
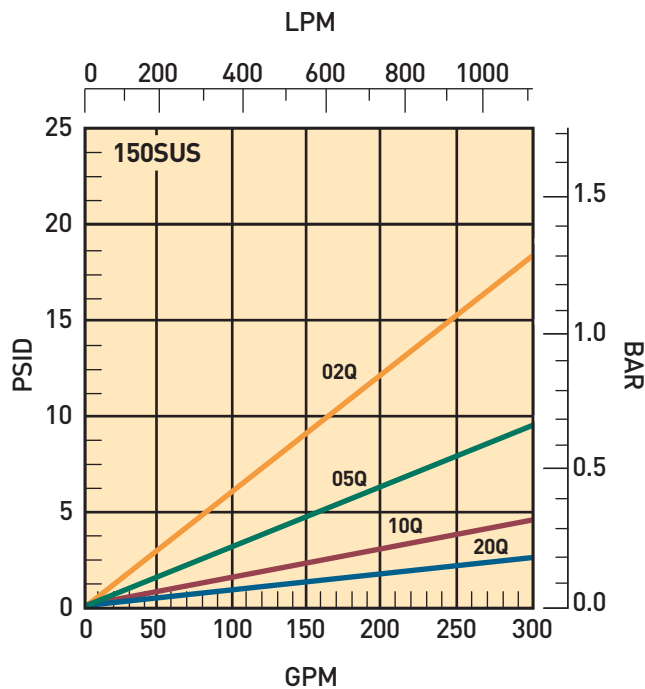
IL8 Series

IL8-2 Element Performance



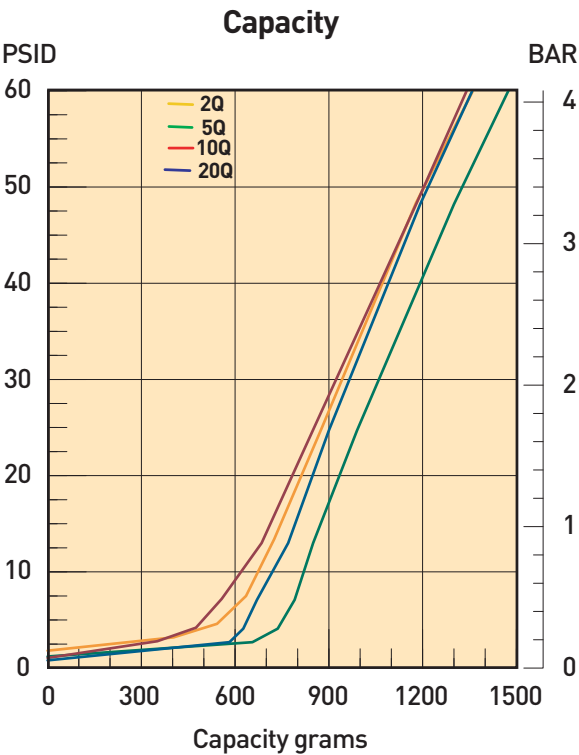
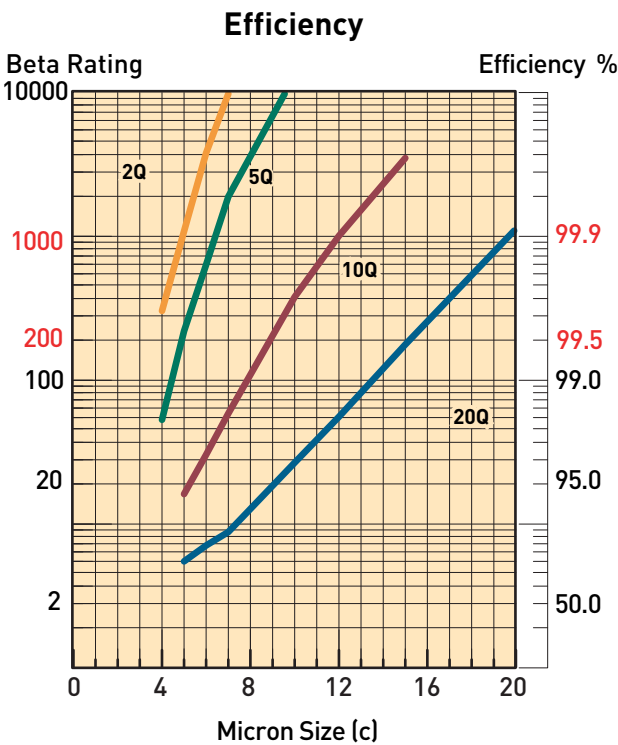
Results typical from Multi-pass tests run per test standard ISO 16889 @ 50 gpm to 60 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss

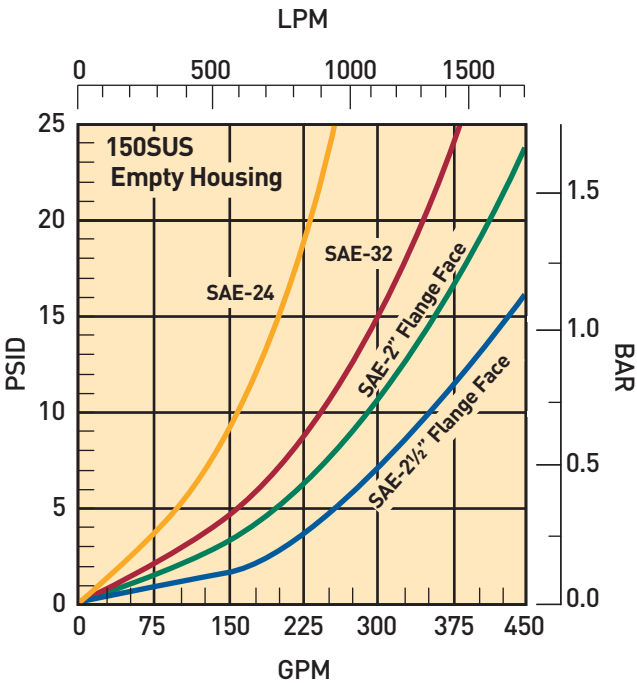
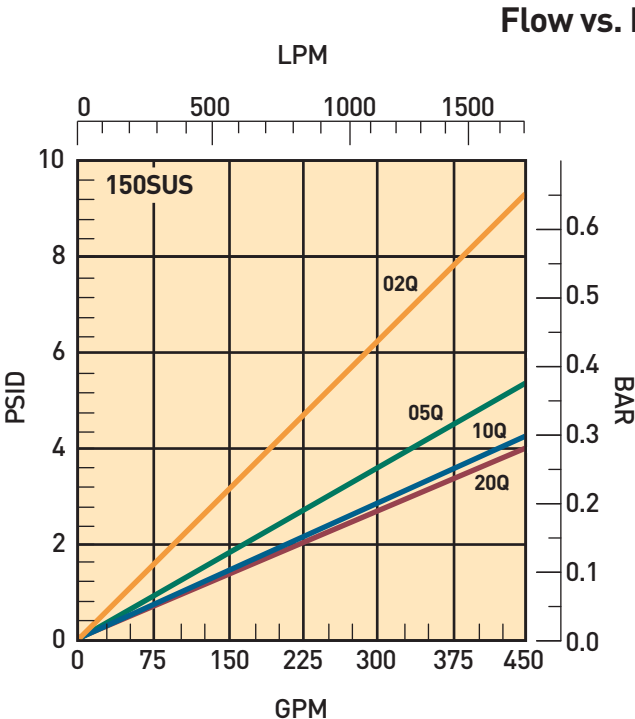


IL8 Series

IL8-3 Element Performance



Capacity grams 0 300 600 900 1200 1500 0 500 1000 1500 0 500 1000 1500 0 500 1000 1500
PSID Efficiency % BAR
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.



IL8 Series

Specifications: IL8/LL8

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 500psi (34.5 bar)
 Rated Fatigue Pressure: 330psi (22.8 bar)
 Design Safety Factor: 3:1

Operating Temperatures:

Buna: -40°F (-40°C) to 225°F (107°C)
 Fluorocarbon: -15°F (-26°C) to 275°F (135°C)

Element Collapse Rating:

150 psid (10.3 bar)

Element Condition Indicators:

Visual (optional)

Electrical -heavy duty (optional)

SPDT .25 amps (resistive) MAX 5
 watts 12 to 28 VDC & 110 to 175 VAC

Note: Product of switching voltage and current
 must not exceed wattage rating

Color Coding:

White (common)

Black (normally open)

Blue (normally closed)

Materials:

Bowl: low carbon steel

Cover: anodized aluminum

Handle: nickel plated ductile iron

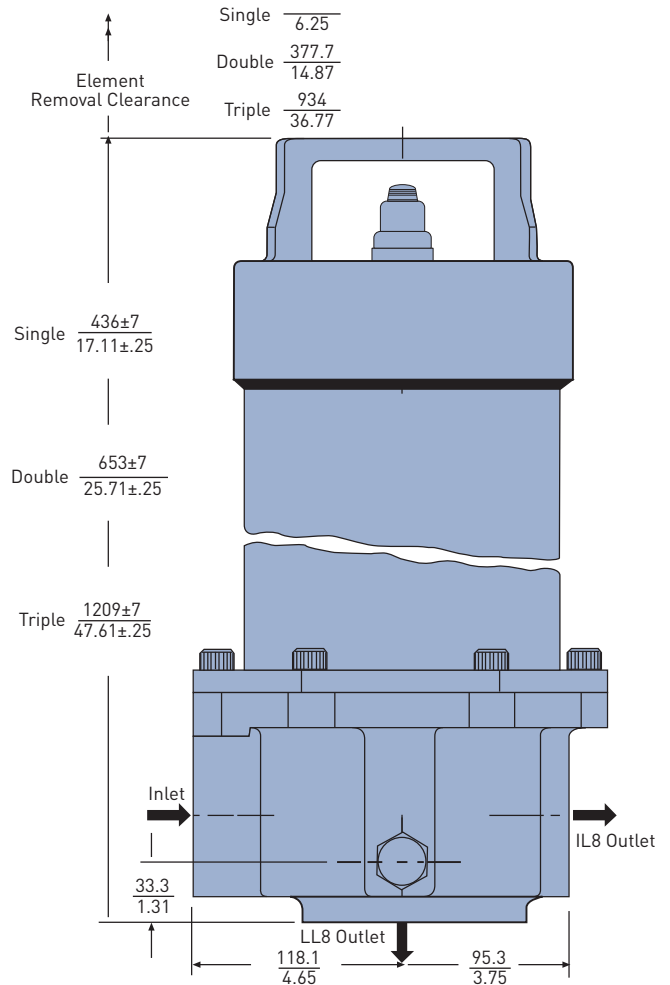
Base: anodized aluminum

Shipping Weights (approximate):

Single: 40 lbs. (18.1 kg)

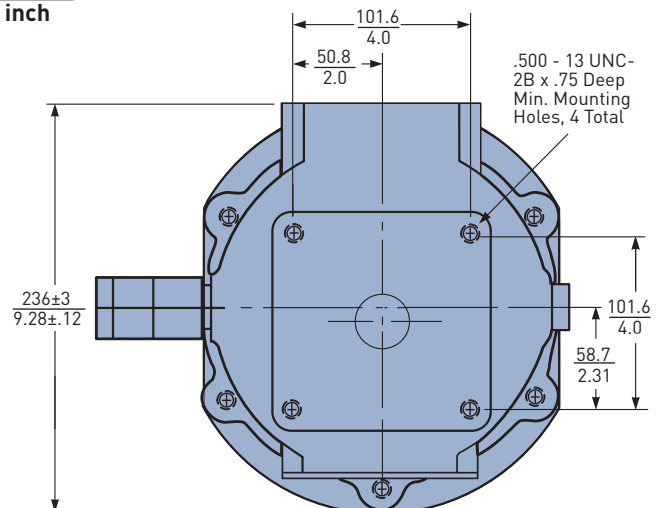
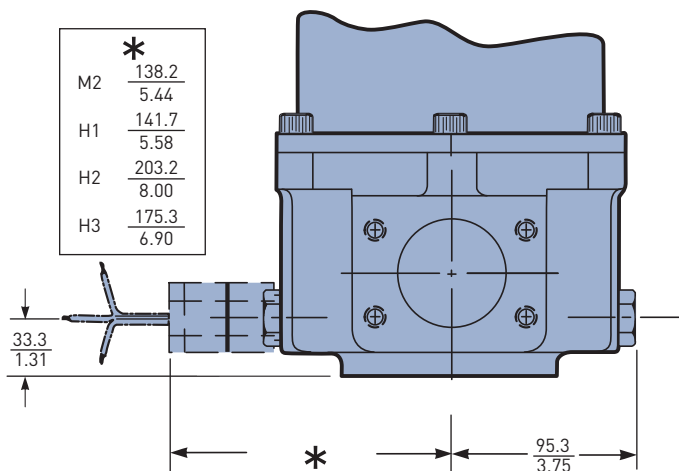
Double: 50 lbs. (22.7 kg)

Triple: 75 lbs. (34 kg)



Drawings are for reference only.
 Contact factory for current version.

Linear Measure: millimeter
inch



IL8 Series

Specifications: HDIL8/HQIL8

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 400psi (27.6 bar)
 Rated Fatigue Pressure: 330psi (22.8 bar)
 Design Safety Factor: 2.5:1

Operating Temperatures:

-15°F (-26°C) to 200°F (93°C)

Element Collapse Rating:

150 psid (10.3 bar)

Materials:

Changeover valve: steel
 Bowl: low carbon steel
 Cover: anodized aluminum
 Cover handle: nickel plated ductile iron
 Base: steel

Element Condition Indicators:

Visual (optional)

Electrical-heavy duty (optional)

SPDT .25 amps (resistive) MAX 5 watts

12 to 28 VDC & 110 to 175 VAC

Note: Product of switching voltage and current must not exceed wattage rating

Color Coding:

White (common)

Black (normally open)

Blue (normally closed)

Shipping Weights (approximate):

HDIL8-2 320 lbs. (145 kg)

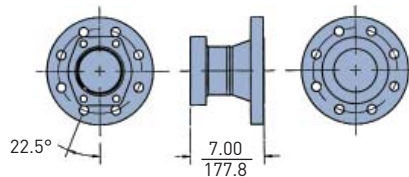
HDIL8-3 375 lbs. (170 kg)

HQIL8-2 525 lbs. (238 kg)

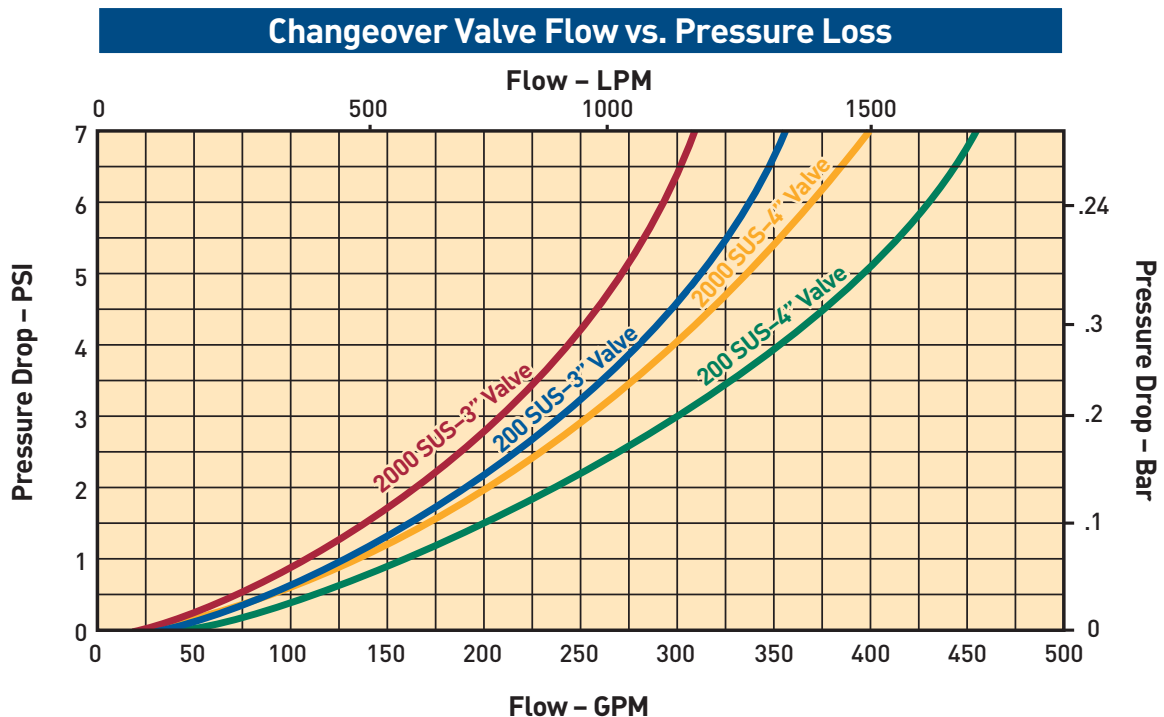
HQIL8-3 650 lbs. (295 kg)

Ansi Flange Adapter

End, Side View



Linear Measure: millimeter
inch

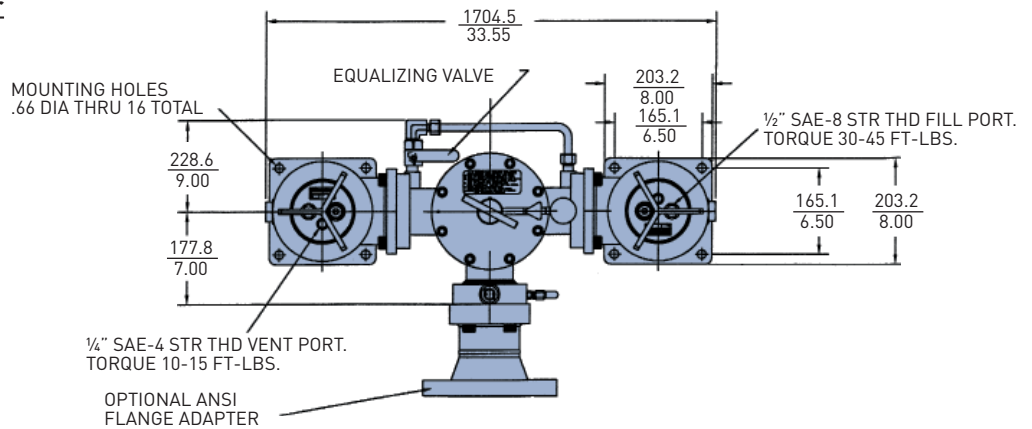


IL8 Series

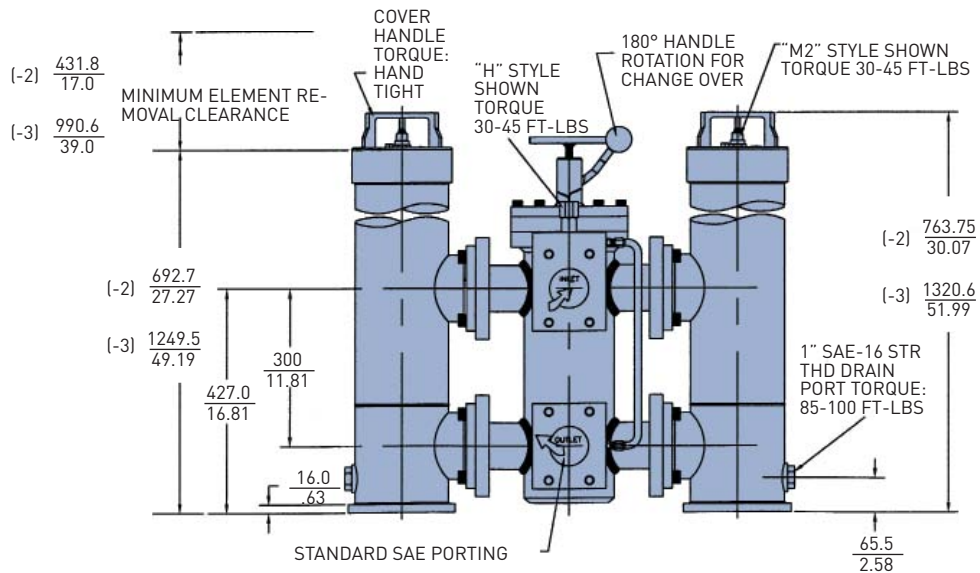
Specifications: HDIL8/HQIL8

Linear Measure: millimeter
inch

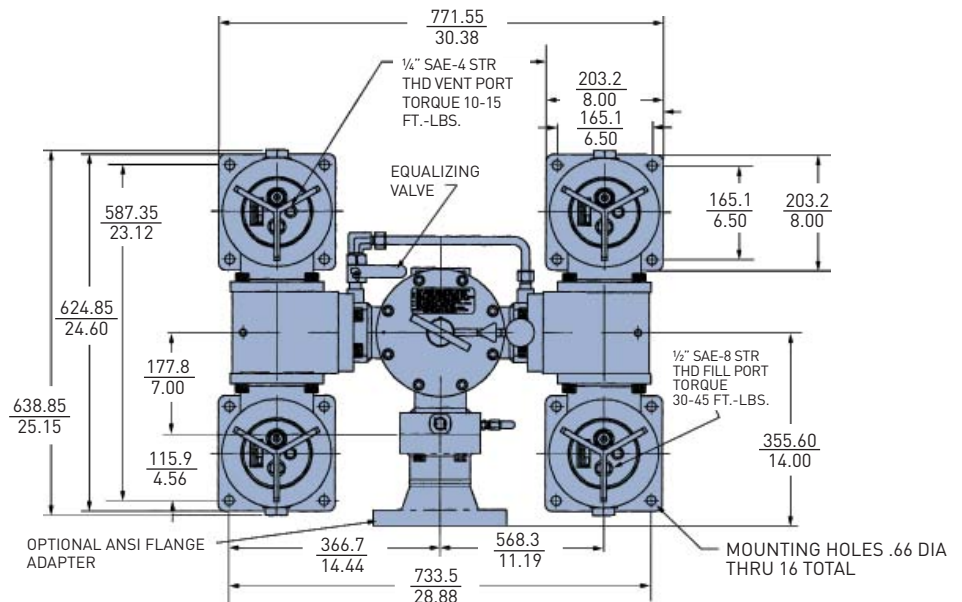
HDIL8 Top View



HDIL8/HQIL8 Side View



HQIL8 Top View



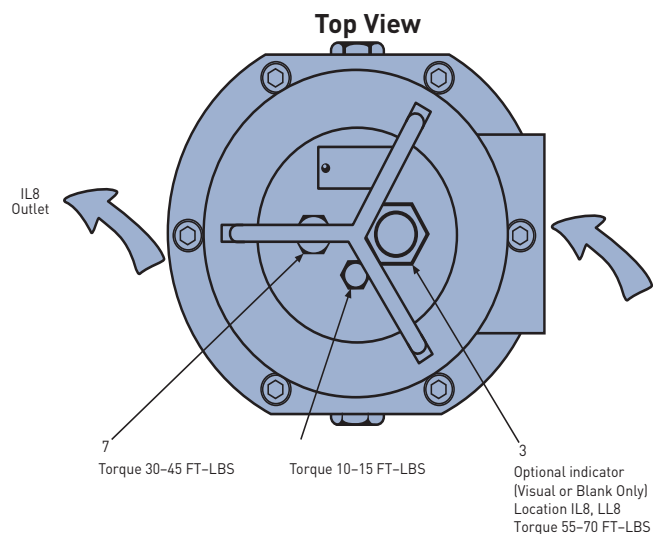
Drawings are for reference only.
Contact factory for current version.

IL8 Series

Element Servicing Instructions: IL8

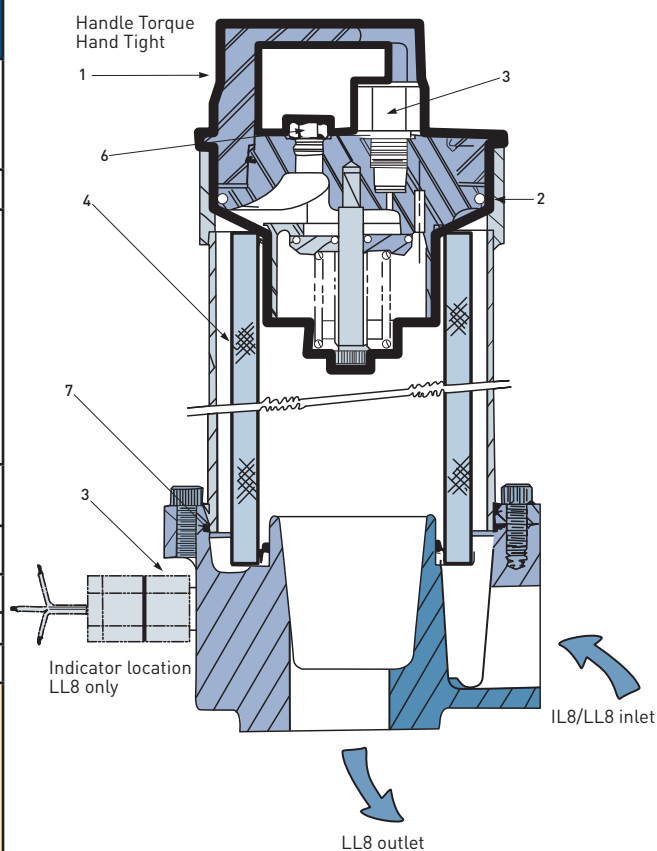
When servicing the IL8/LL8 filter, use the following procedure:

1. Stop the system's power unit.
2. Relieve pressure in the filter line. Drain fluid from housing if desired.
3. Rotate cover handle counter-clock wise. Carefully lift and remove the cover.
4. Remove element from the housing. Discard all disposable elements as they are not cleanable. With Ecoglass III elements the permanent core will remain in the housing.
5. Place new element in housing, centering it on the element locator in the bottom of bowl.
6. Inspect cover o-ring and replace if necessary.
7. Install cover, rotate clockwise and hand tighten.



Parts List

Index	Description	Nitrile P/N	Fluorocarbon P/N
1	Cover Assembly 25 psi bypass w/indicator port 50 psi bypass w/indicator port No bypass w/indicator port	928887 928889 928891	928888 928890 928892
2	Cover o-ring	N72257	V72257
3	Indicators P option-indicator port plug M 225 PSI M 250 PSI H25 PSI H50 PSI H 225 PSI H 250 PSI H 325 PSI H 350 PSI	N/A N/A N/A N/A N/A N/A N/A N/A N/A	925515 932026 932027 933053 932905 933141 933142 934164 934165
4	Elements (See chart on model code page)		
not shown	Bleed (vent) Plug, SAE 4	931357	931358
6	Fill Plug, SAE 8	908822	928628
not shown	Drain Port Plug, SAE 10	925513	928883
7	Base O-ring	N72262	V72262
NOTE:	Flange Kits (optional)		
	1 1/2" NPTF (w/2" flange face only)	924786	926011
	2" NPTF (w/2" flange face only)	924785	926010
	SAE-24 (w/2" flange face only)	924782	926007
	2 1/2" socket weld (w/2 1/2" flange face only)	929313	929346
	SAE-32 (w/2 1/2" flange face only)	929314	929347
	2 1/2" NPTF (w/2 1/2" flange face only)	929315	929348



Drawings are for reference only.
Contact factory for current version.

IL8 Series

Element Servicing Instructions: HDIL8/HQIL8

The system does not need to be shut down to service the elements.

1. Red arrow on operating handle points to on-duty chamber(s).
2. Open off-duty vent plug(s). Do not thread out completely.
3. Open the pressure equalizing (fill line) valve slowly to admit fluid to the off-duty chamber(s).
4. When fluid is discharged from the off-duty vent plug(s), close and tighten.
5. Turn the "T" handle, on the center valve section, counter-clockwise 5 turns.
6. Depress the operating handle to unseat the seal shoes, then rotate 180° and return handle upward into the opposite slot.
7. Turn the "T" handle fully clockwise and hand tighten only. This will seat the shoes.
8. Close the pressure equalizing valve.
9. Red arrow now points to the new on-duty chamber(s).
10. Open the new off-duty vent plug(s).
11. Remove the new off-duty chamber cover(s) by rotating counter-clockwise.
12. Remove the new off-duty drain plugs and drain chambers to desired level.
13. Follow steps 3 - 7 on opposite page.
14. Close and tighten the vent plug(s).

Warning: You should not rotate the handle until you equalize the pressure.

Parts List

Index	Description	HDIL8		HQIL8	
		Nitrile	Fluorocarbon	Nitrile	Fluorocarbon
1	Cover Assembly 25psi bypass w/indicator port 50psi bypass w/indicator port No bypass w/indicator port	928887	928888	928887	928888
		928889	928890	928889	928890
		928891	928892	928891	928892
2	Cover O-ring	N72257	V72257	N72257	V72257
3	Indicators P option-indicator port plug M2 25psi M2 50psi H 25psi H 50psi H2 25psi H2 50psi H3 25psi H3 50psi	N/A	925515	N/A	925515
		N/A	932026	N/A	932026
		N/A	932027	N/A	932027
		N/A	933053	N/A	933053
		N/A	932905	N/A	932905
		N/A	933141	N/A	933141
		N/A	933142	N/A	933142
		N/A	934164	N/A	934164
		N/A	934165	N/A	934165
4	Elements (see chart on model code page)				
5	Bleed (vent) Plug SAE-4	931357	931358	931357	931358
6	Fill Plug SAE-8	908822	928628	908822	928628
7	Drain Plug SAE-16	925353	928364	925353	928364
8	Transfer Valve SAE 4" SAE 3"	933824	936123	933824	936123
		933825	936122	933825	936122
9	Housing Assembly Double length Triple length	933832	933832	933832	933832
		933831	933831	933831	933831
10	5/8"-11 x 3" SHCS	933928	933928	933928	933928
11	5/8" Lock Washer	933879	933879	933879	933879
12	Adapter Block Kit (block, 3 o-rings, 12 bolts)	N/A	N/A	N/A	933833
13	Flange Adapter Kit (flange, o-ring, 4 bolts) 3" SAE 300 lb. flange 4" SAE 300 lb. flange				
		934170	934171	934170	934171
		934172	934173	934172	934173
14	Seal Kit Transfer Valve	Consult factory		Consult factory	
15	Seal Kit Housing Assembly	Consult factory		Consult factory	
16	Equalizing Valve	Consult factory		Consult factory	



IL8 Series

How to Order

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
	HDIL8	2	R	20QE	HM2	25	QQ	1

BOX 1: SEALS Symbols	Description
None	Nitrile
F3	Fluorocarbon

BOX 2: Basic Assembly Symbols	Description
IL8	In-line
LL8	90° angle porting
HDIL8	Duplex
HQIL8	Quadplex

BOX 3: Basic Assembly Symbols	Description
1	Single length
2	Double length
3	Triple length

BOX 4: Core Symbols	Description
None*	Disposable core
R	Reusable core
*Single length only	

BOX 5: Element Media Symbols	Description
20QE	Ecoglass III
10QE	Ecoglass III
05QE	Ecoglass III
02QE	Ecoglass III
20Q	Microglass III
10Q	Microglass III
05Q	Microglass III
02Q	Microglass III

Note: Microglass III elements only available in single length, and must utilize.

BOX 6: Indicators Symbol	Description
P	Port plugged
M2	Visual auto reset
H	Electrical w/ conduit connection
H2	Electrical w/ DIN 43650 connector
H3	Electrical w/ 3-pin ANSI/B 93.55M connector
E	Electrical/Visual (w/ 1/2" NPT conduit connection and wire leads)

Note: Two symbols required, first is for housing, the second is for the cover(s). Electrical indicators only available on the housing

BOX 7: Bypass & Indicator Setting Symbols	Description
25	25 psid
50	50 psid
XX	No indicator and blocked bypass

BOX 8: Ports Symbols	Description
	IL8/LL8
PP	SAE-24 straight thread
RR	SAE-32 straight thread
YY	SAE 2" flange face
ZZ*	SAE 2-1/2" flange face
* Note: IL8 outlet port requires minimum width SAE J518 code 61 flange.	
	HDIL8/HQIL8
WW	3" SAE flange face (code 61)
QQ	4" SAE flange face (code 61)

BOX 9: Option Symbols	Description
1	None
11	Blocked bypass

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.

Replacement Elements

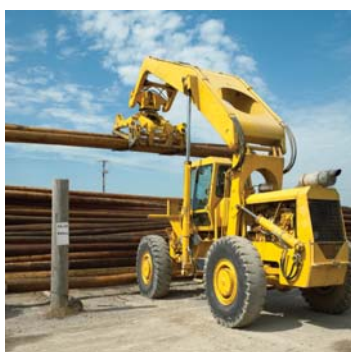
Microglass III (Fluorocarbon)				Ecoglass III (Fluorocarbon)			
Media	Single	Double	Triple	Media	Single	Double	Triple
20Q	929099Q	933047Q	932875Q	20QE	N/A	933837Q	933736Q
10Q	927661Q	933046Q	932874Q	10QE	N/A	933836Q	933735Q
05Q	927861Q	933045Q	932873Q	05QE	N/A	933835Q	933612Q
02Q	927663Q	933044Q	932872Q	02QE	N/A	933834Q	933734Q
WR	929103	929109	932006	Reuseable Core	N/A	933838	933636

Global products as identified are offered worldwide through all Parker locations and utilize a common ordering code.



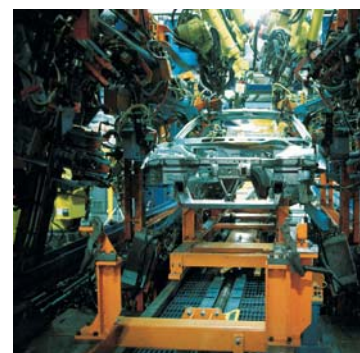


aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



15/40/80CN Series

Coreless Medium Pressure Filters



ENGINEERING YOUR SUCCESS.

15/40/80CN Series

Applications

- Compressor Lube Oil
- Off-line Filter Loops
- Machine Tools
(Automotive Standard)
- Hydrostatic Drive
Charge Pumps
- Mobile Equipment
- Pilot Lines For Servo Controls
- Oil Patch Drilling Equipment
- Injection Molding

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

The “CN” series fills this gap, and now with the newly increased fatigue rating from 550 to 800 psi, the applications are expanded.

Ecoglass III Replacement Elements

Ecoglass III represents the merging of high performance filtration technology with environmentally conscious engineering. The Ecoglass III line of replacement elements feature 100% non-metallic construction. The design reduces solid waste and minimizes disposal costs for industry. The non-metallic construction means lightweight elements (60% less weight) for easier servicing.

The Ecoglass III elements utilize the same proprietary media design as our Microglass III line of replacement elements.

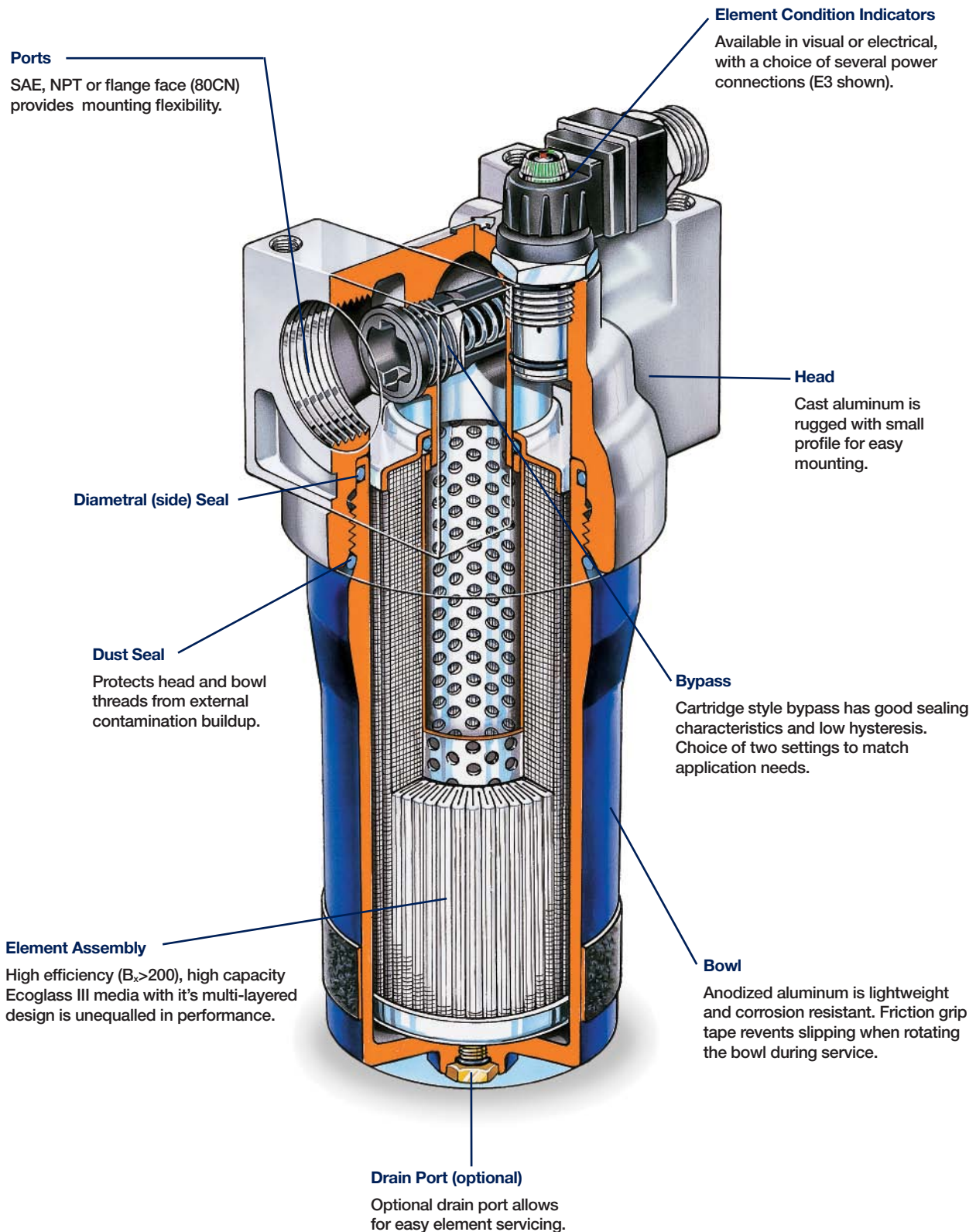
With Ecoglass III, a reusable core is installed into the filter housing and remains in service throughout the life of the assembly.



Features	Advantages	Benefits
• 800 psi fatigue rating (eight times that of a spin-on)	• Ability to provide reliable service under tough cyclic operating conditions • Can be utilized in applications where high pressure filters may have been only option	• Reduced downtime due to premature filter failures • Reduced costs, better “fit” for the application
• Diametral (side) seal between head and bowl	• Proven reliability in cyclic applications • Reduced importance of bowl torque	• No downtime, no leaks • Performs with “real world” service
• Dust Seal	• Prevents contamination from building up on bowl / head threads	• Easier service, no galling
• Cast aluminum head	• Low profile, lightweight and durable	• Less weight, smaller envelop and cleaner appearance
• Standard Ecoglass III elements	• Multi-layered design produced high capacity and efficiency • Reduces pleat bunching, keeps performance consistent	• Great performance value • Reliable performance throughout element life • Reduces downtime, maximizes element life
• Complete performance data disclosure	• All pertinent information is provided in an easy-to-compare format	• No hidden deficiencies • Easy selection of proper filtration
• Visual, electrical or electrical/visual indicators available	• Check element condition at a glance • Right style for the application	• Optimize element life, prevent bypassing • Matches your system electrical connections

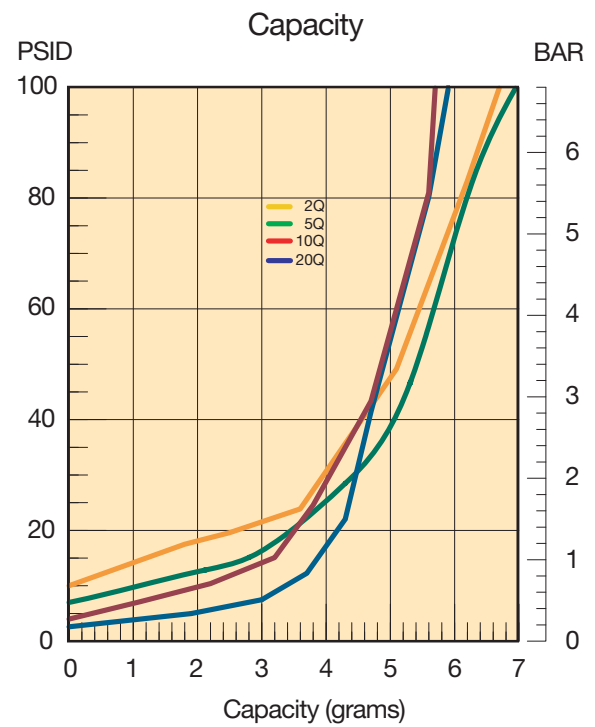
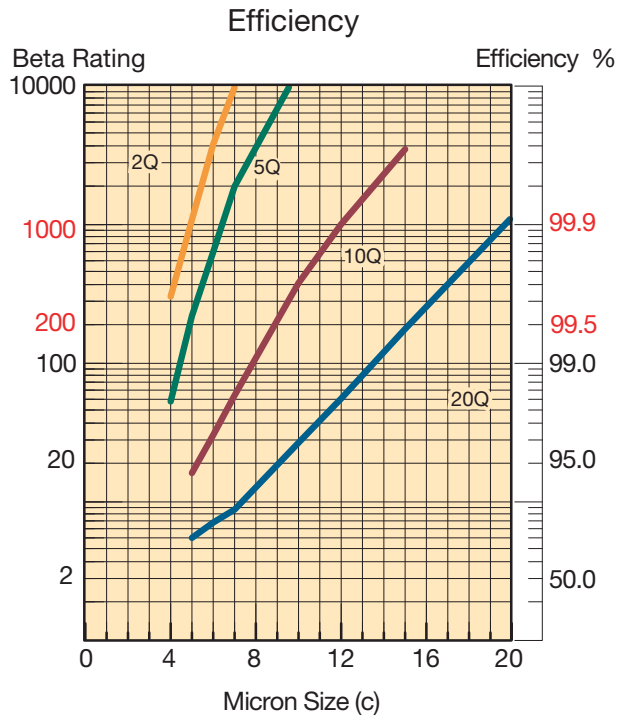
15/40/80CN Series

Features



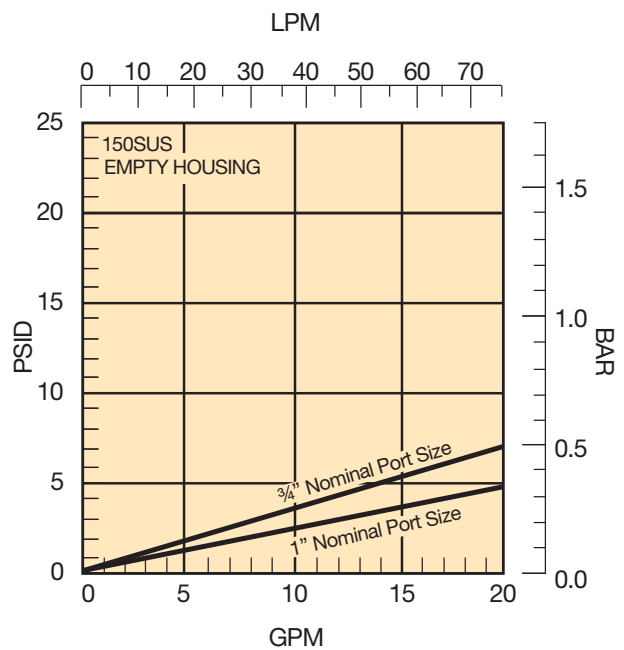
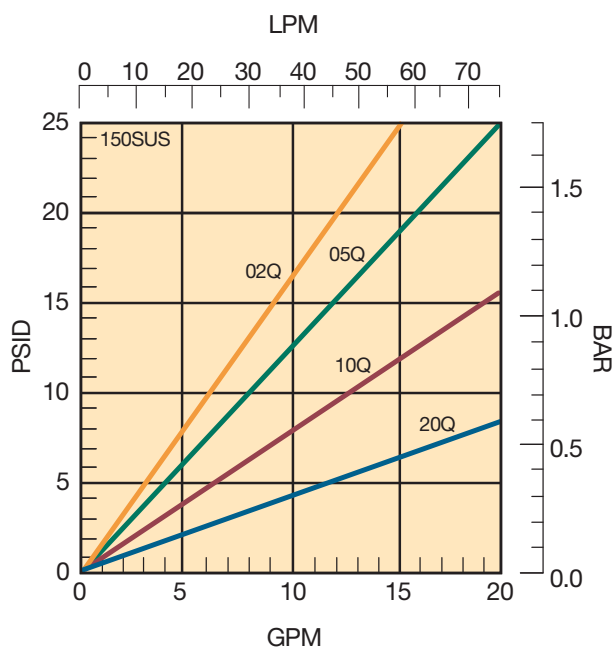
15CN Series

15CN-1 Element Performance



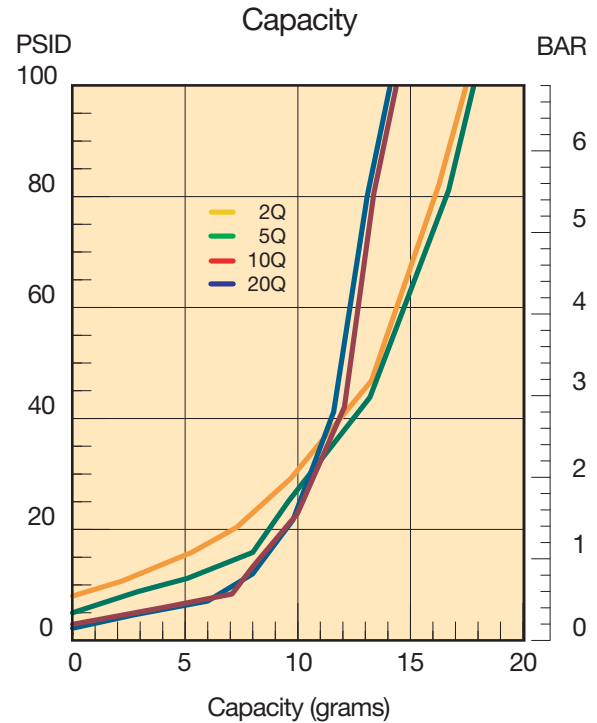
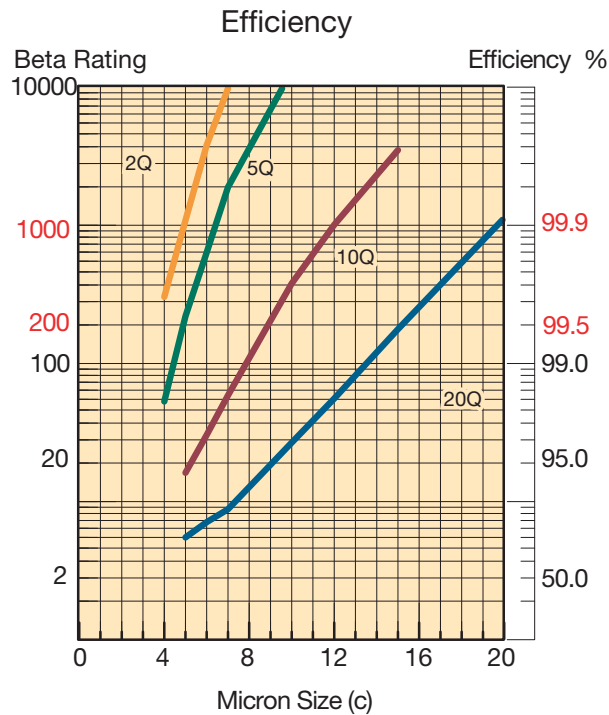
Results typical from Multi-pass tests run per test standard ISO 16889 @ 10 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



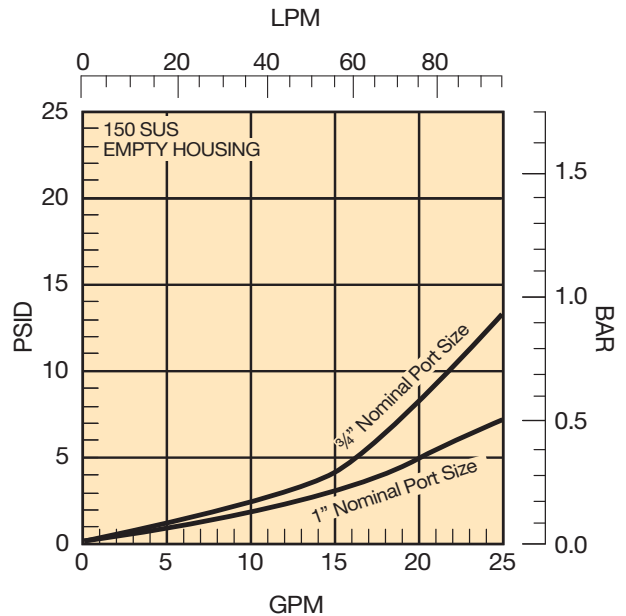
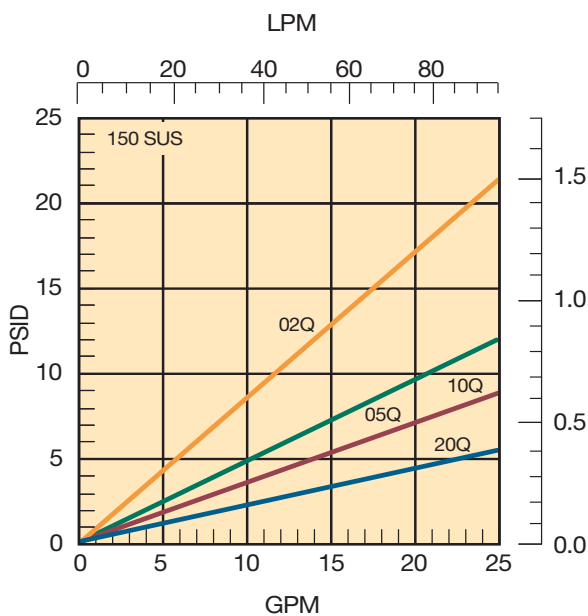
15CN Series

15CN-2 Element Performance



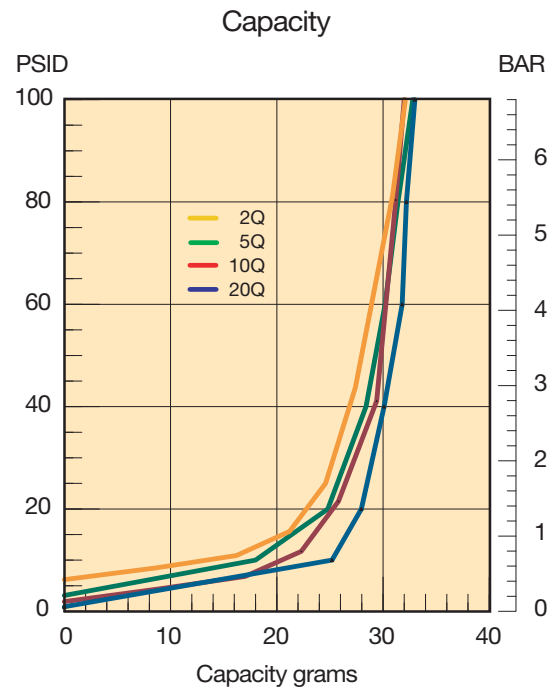
Results typical from Multi-pass tests run per test standard ISO 16889 @ 15 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



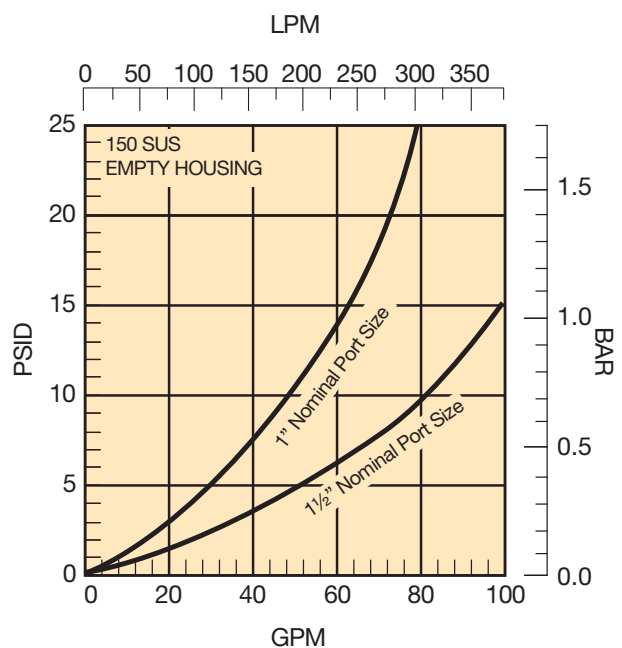
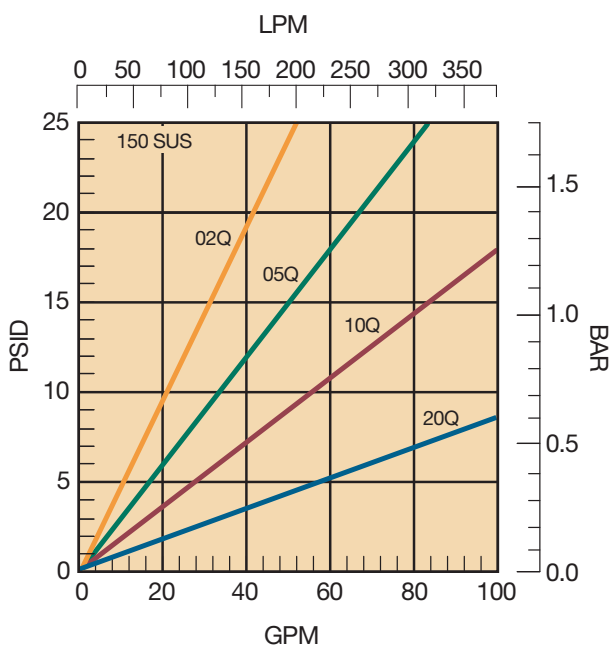
40CN Series

40CN-1 Element Performance



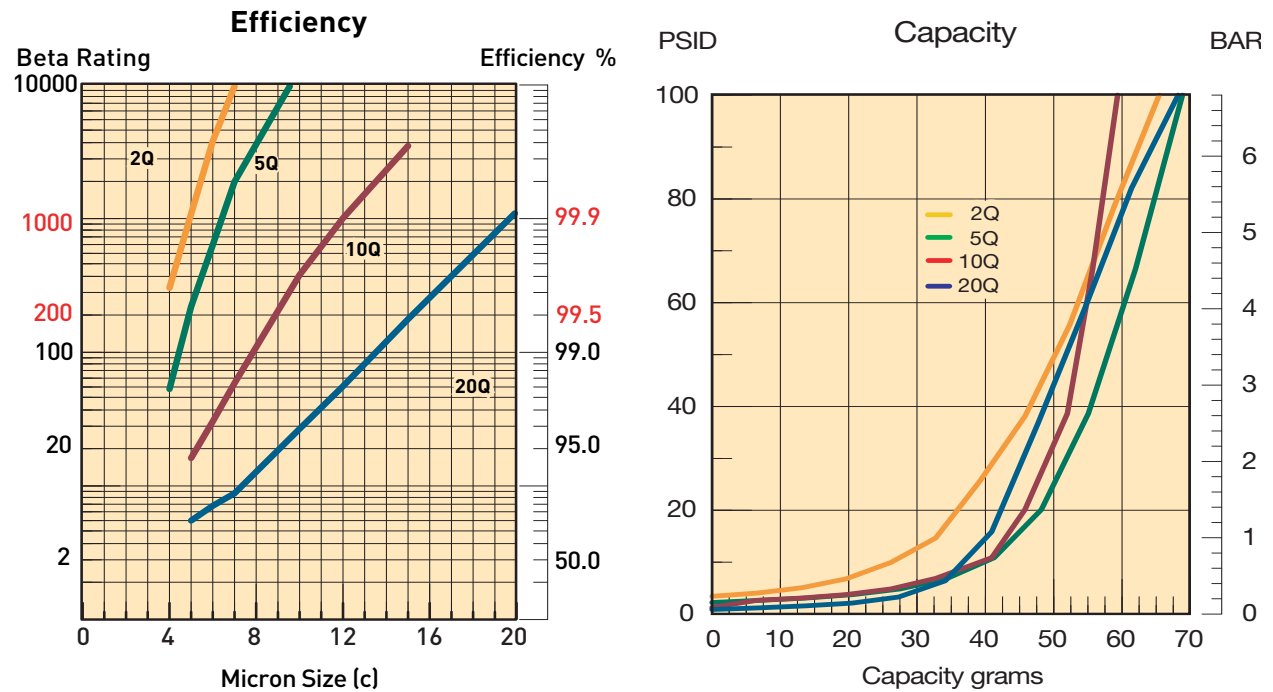
Results typical from Multi-pass tests run per test standard ISO 16889 @ 15 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



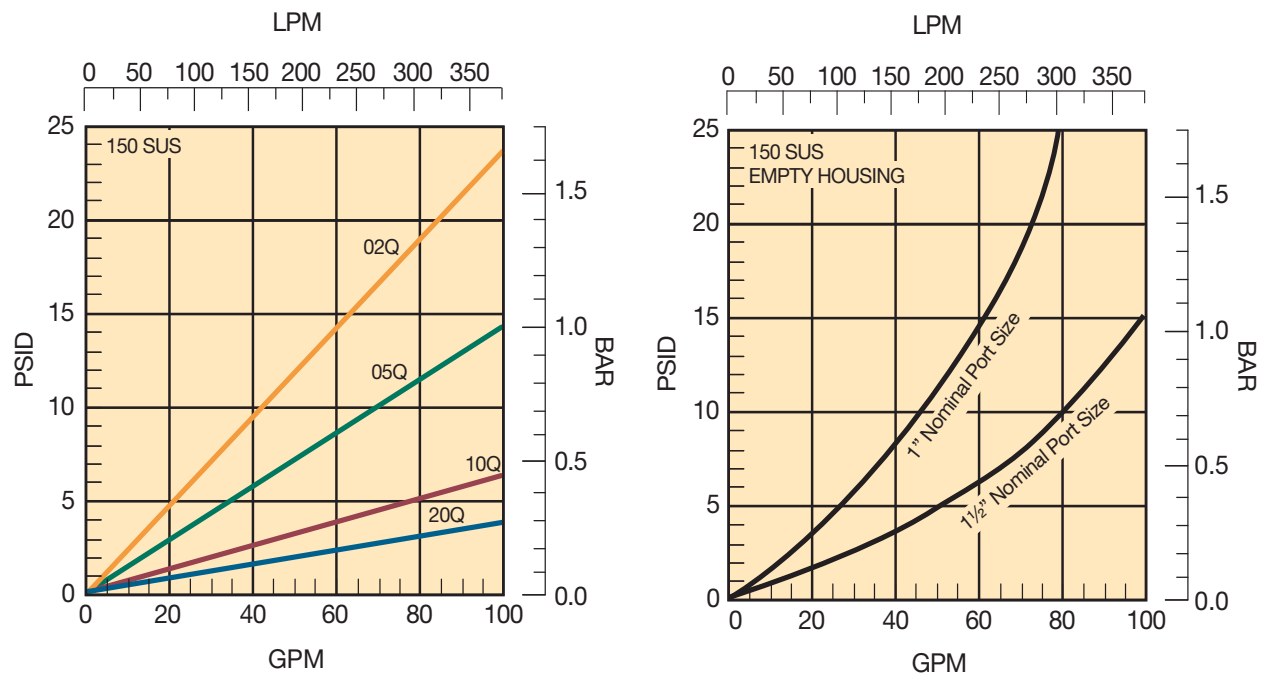
40CN Series

40CN-2 Element Performance



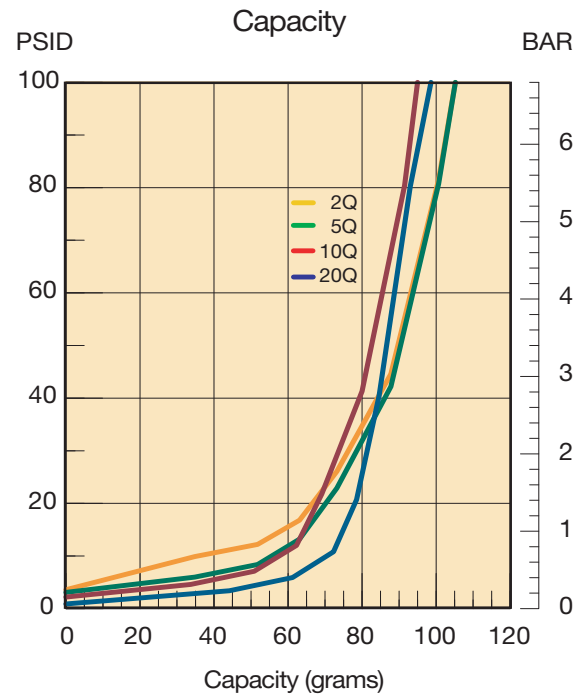
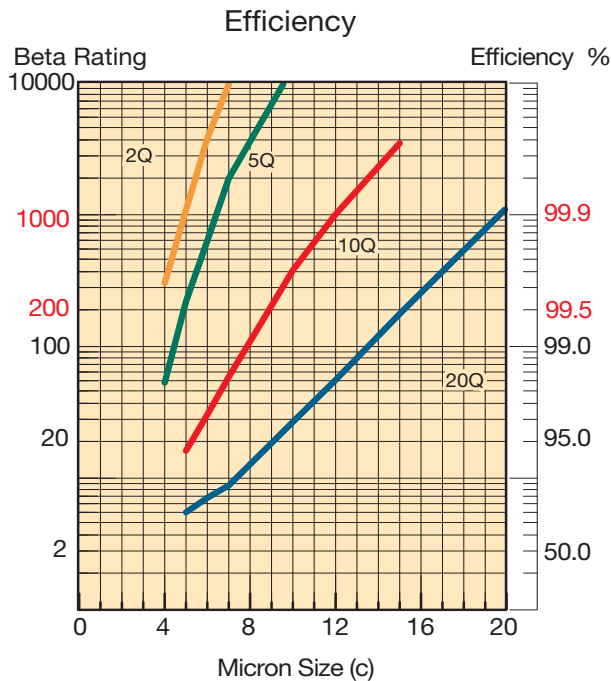
Results typical from Multi-pass tests run per test standard ISO 16889 @ 30 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



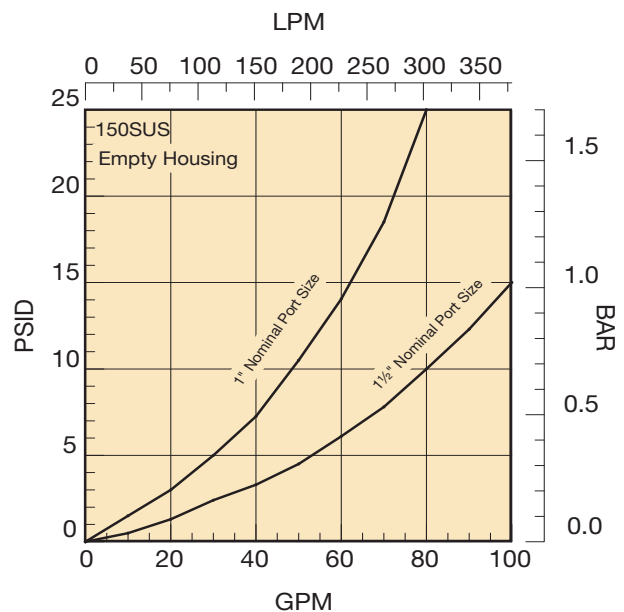
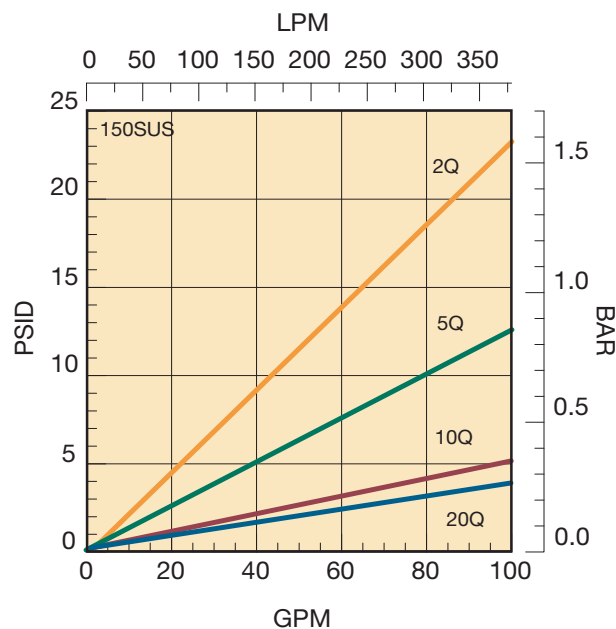
40CN Series

40CN-3 Element Performance



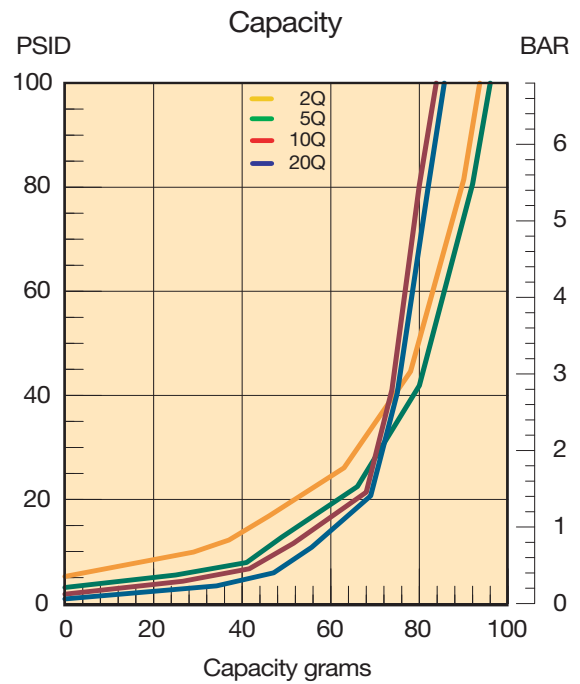
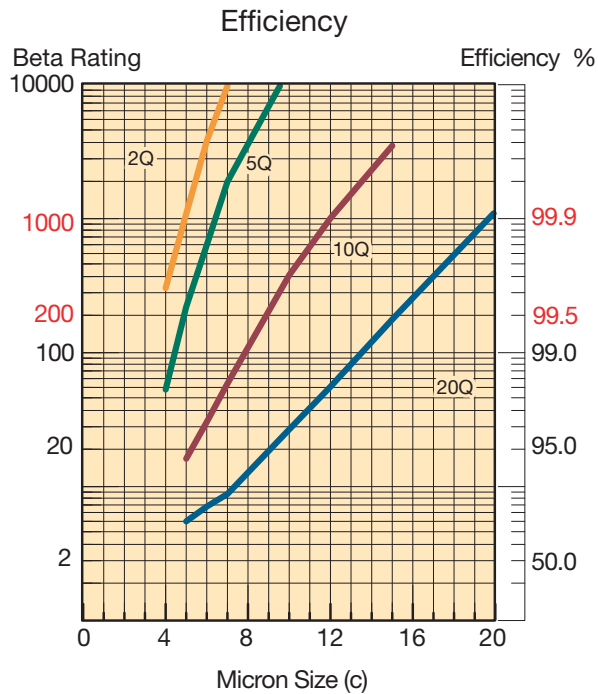
Results typical from Multi-pass tests run per test standard ISO 16889 @ 45 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



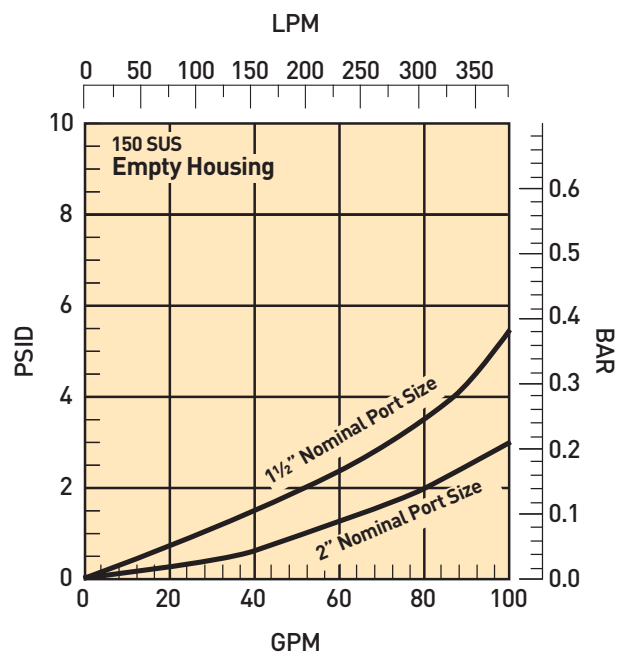
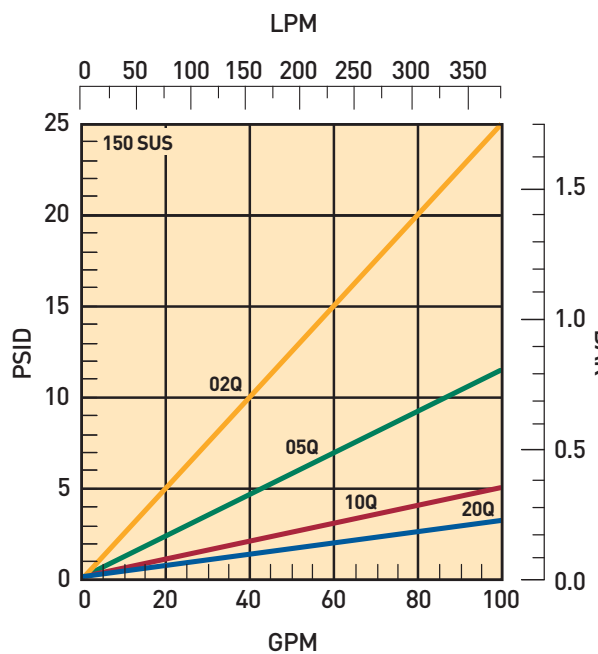
80CN Series

80CN-1 Element Performance



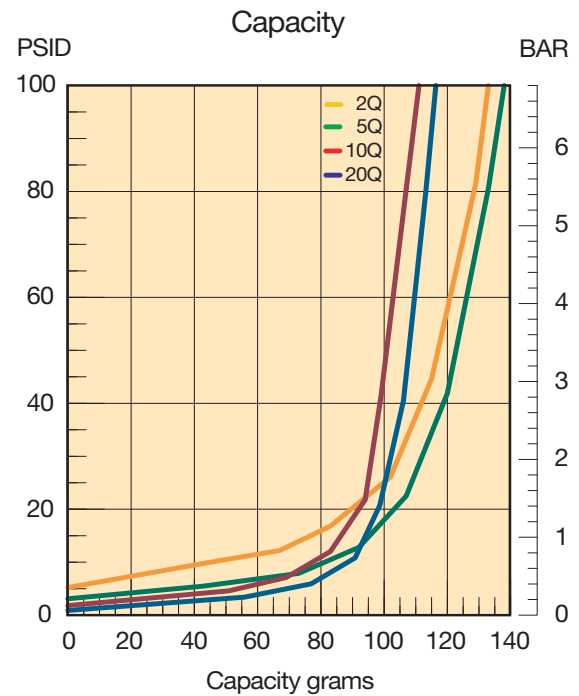
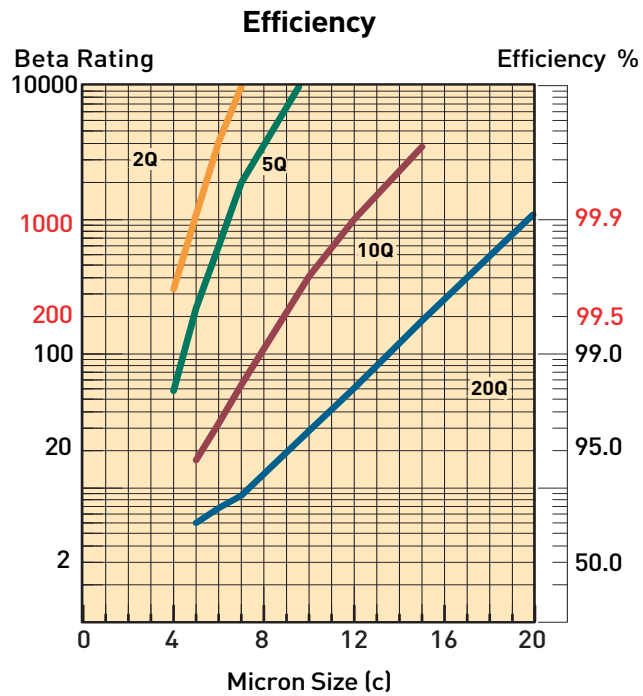
Results typical from Multi-pass tests run per test standard ISO 16889 @ 45 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



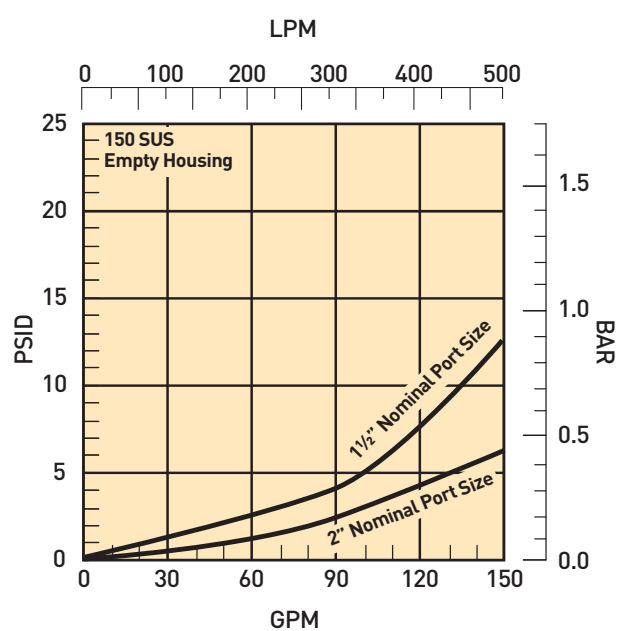
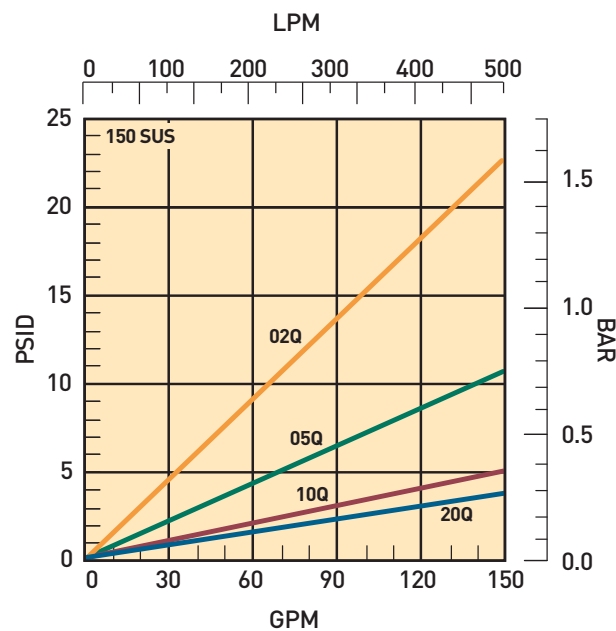
80CN Series

80CN-2 Element Performance



Results typical from Multi-pass tests run per test standard ISO 16889 @ 70 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



15/40/80CN Series

Specifications

Maximum Allowable Operating Pressure (MAOP):

1000 psi (69 bar)

Rated Fatigue Pressure:

800 psi (55.2 bar)

Design Safety Factor: 2.5:1

Operating Temperatures:

Nitrile: -40°F (-40°C) to 225°F (107°C)

Fluorocarbon: -15°F (-26°C) to 250°F (121°C)

Element Collapse Rating:

Standard: 150 psi (10.3 bar)

Drawings are for reference only.
Contact factory for current version.

Materials:

Head and Bowl: Aluminum

Indicators: Alum. body, plastic connectors

Bypass: Nylon

Weights (approximate):

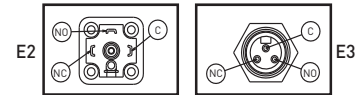
Model	Single length	Double length
15CN	2.5 lb. (1.13 kg)	3.5 lb. (1.6 kg)
40CN	4.5 lb. (2.00 kg)	5.5 lb. (2.49 kg)
80CN	12.4 lb. (5.62 kg)	15.2 lb. (6.89 kg)

Element Condition Indicators:

Visual 360° green/red auto reset

Electrical/Visual

5A @ 240VAC, 3A @ 28VDC



Electrical-Heavy Duty

.25A(resistive) MAX 5 watts

12 to 28 VDC & 110 to 175 VAC

Color code:

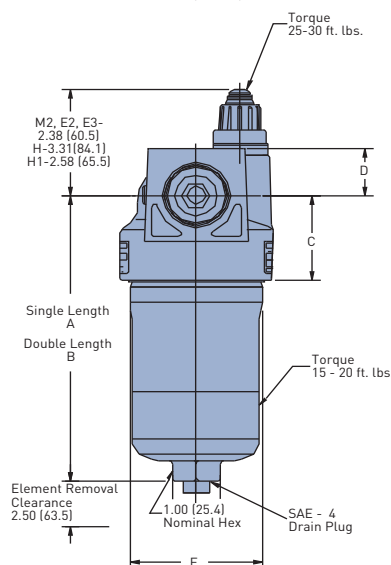
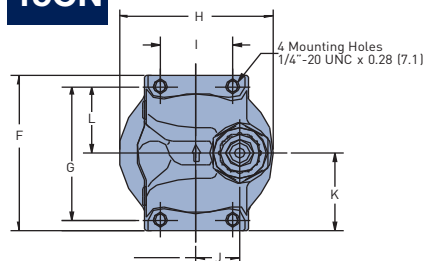
White (common)

Black (normally open)

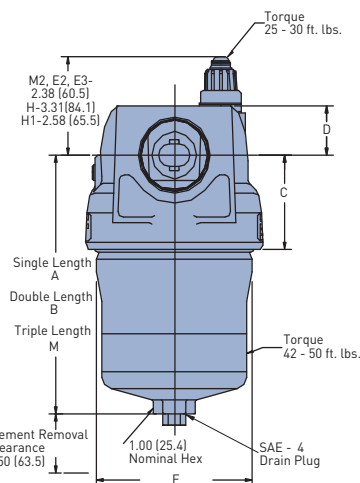
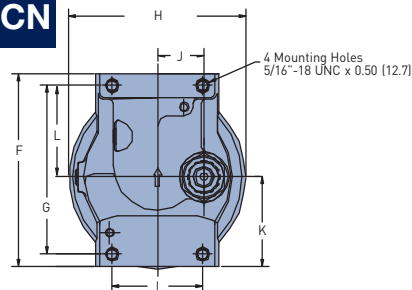
Blue (normally closed)

Dimensions are in (mm)	A	B	C	D	E	F	G	H	I	J	K	L	M
15CN	6.17 (156.6)	9.87 (250.7)	1.83 (46.5)	1.09 (25.4)	2.80 (71.1)	3.38 (85.9)	2.88 (73.2)	3.25 (82.6)	1.50 (88.1)	.90 (22.9)	1.69 (42.9)	1.44 (36.6)	NA
40CN	6.73 (170.8)	10.33 (262.4)	2.44 (62.0)	1.28 (32.6)	4.22 (107.2)	5.00 (127.0)	4.37 (111.0)	4.80 (121.9)	2.44 (62.0)	1.25 (31.8)	2.32 (58.8)	2.37 (60.2)	15.07 (382.8)
80CN	11.06 (280.9)	15.81 (401.6)	3.06 (77.7)	1.95 (49.5)	4.91 (124.8)	6.25 (158.7)	3.25 (82.6)	5.96 (151.4)	4.00 (101.6)	1.62 (41.1)	3.12 (79.4)	1.63 (41.3)	NA

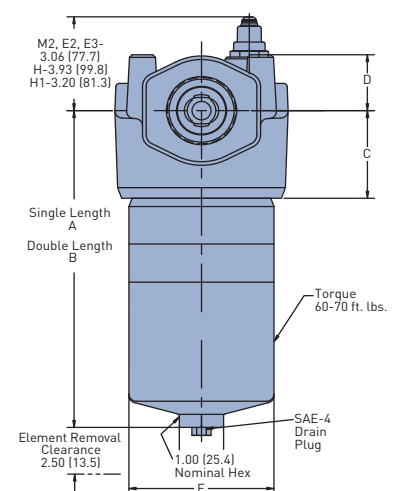
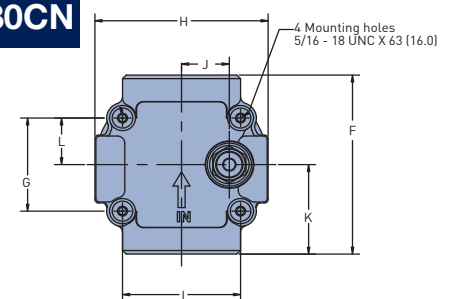
15CN



40CN



80CN



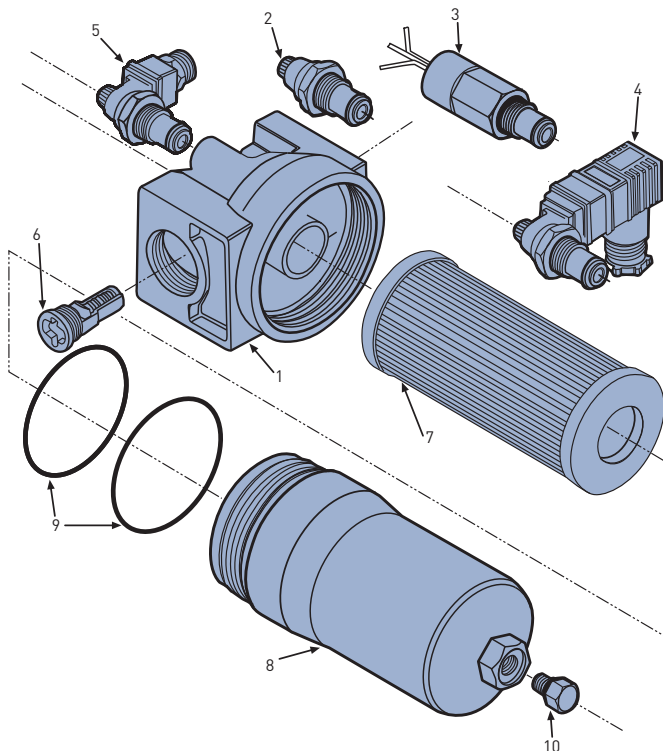
15/40/80CN Series

Element Service Instructions

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

Parts List

Index	Description	15CN	40CN	80CN
1	Head			
	3/4" NPT bypass/ indicator ready	933865	N/A	N/A
	3/4" NPT no bypass/ no indicator	933877	N/A	N/A
	3/4" NPT no bypass/ indicator ready	933869	N/A	N/A
	3/4" NPT no indicator/ bypass ready	933873	N/A	N/A
	SAE-12 bypass/ indicator ready	933863	N/A	N/A
	SAE-12 no bypass/ no indicator	933875	N/A	N/A
	SAE-12 no bypass/ indicator ready	933867	N/A	N/A
	SAE-12 no indicator/ bypass ready	933871	N/A	N/A
	1" NPT bypass/ indicator ready	933864	932950	N/A
	1" NPT no bypass/ no indicator	933876	932986	N/A
	1" NPT no bypass/ indicator ready	933868	932962	N/A
	1" NPT no indicator/ bypass ready	933872	932974	N/A
	SAE-16 bypass/ indicator ready	933862	932947	N/A
	SAE-16 no bypass/ no indicator	933874	932983	N/A
	SAE-16 no bypass/ indicator ready	933866	932959	N/A
	SAE-16 no indicator/ bypass ready	933870	932971	N/A
	1 1/2" NPT bypass/ indicator ready	N/A	932948	934012
	1 1/2" NPT no bypass/ no indicator	N/A	932984	934018
	1 1/2" NPT no bypass/ indicator ready	N/A	932960	934016
	1 1/2" NPT no indicator/ bypass ready	N/A	932972	934014
	SAE-24 bypass/ indicator ready	N/A	932945	934027
	SAE-24 no bypass/ no indicator	N/A	932981	934033
	SAE-24 no bypass/ indicator ready	N/A	932957	934031
	SAE-24 no indicator/ bypass ready	N/A	932969	934029
	2" NPT bypass/ indicator ready	N/A	N/A	934020
	2" NPT no bypass/ no indicator	N/A	N/A	934026
	2" NPT no bypass/ indicator ready	N/A	N/A	934024
	2" NPT no indicator/ bypass ready	N/A	N/A	934022
	SAE-32 bypass/ indicator ready	N/A	N/A	934035
	SAE-32 no bypass/ no indicator	N/A	N/A	934042
	SAE-32 no bypass/ indicator ready	N/A	N/A	934040
	SAE-32 no indicator/ bypass ready	N/A	N/A	934037
	Flange face, SAE 2" bypass/indicator ready	N/A	N/A	934103
	Flange face, SAE 2" no bypass/no indicator	N/A	N/A	934109
	Flange face, SAE 2" no bypass/indicator ready	N/A	N/A	934107
	Flange face, SAE 2" no indicator/bypass ready	N/A	N/A	934105
	Indicators			
2	M2-Visual auto reset/ 25 psi	932026	932026	932026
	M2-Visual auto reset/ 50 psi	932027	932027	932027
3	H-Electrical/ 25 psi w/ 1/2" conduit connection	933053	933053	933053
	H-Electrical/ 50 psi w/ 1/2" conduit connection	932905	932905	932905
	H1-Electrical/ 25 psi w/ wire leads	933054	933054	933054
	H1-Electrical/ 50 psi w/ wire leads	932906	932906	932906
	Not Shown:			
	E-Electrical/Visual 25 psi w/ wire leads	929610	929610	929610
	E-Electrical/Visual 50 psi w/ wire leads	929587	929587	929587
4	E2-Electrical/Visual 25 psi w/ DIN connection	931153	931153	931153
	E2-Electrical/Visual 50 psi w/ DIN connection	929599	929599	929599
5	E3-Electrical/Visual 25 psi w/ 3-pin connection	932773	932773	932773
	E3-Electrical/Visual 50 psi w/ 3-pin connection	929596	929596	929596
6	Bypass Valve			
	25 psid assembly	928979	930507	933628
	50 psid assembly	928981	933424	933630
	Not Shown:			
	No bypass plug	935744	927719	934174
	Element (see model code page)			
8	Bowl			
	Single length	936758	936760	936763
	Double length	936759	936761	936764
	Triple length	-	936762	-
9	Bowl and Dust Seal			
	Buna N (Nitrile)	N72142	N72239	N72244
	Fluorocarbon	V72142	V72239	V72244
10	Drain Plug - SAE-4			
	Buna N (Nitrile)	921088	921088	921088
	Fluorocarbon	928882	928882	928882



15/40/80 CN Series

How to Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
40CN	1	10QE	B	M2	K	N24	4

BOX 1: Filter Series	
Symbol	Description
15CN	In line Filter
40CN	In line Filter
80CN	In line Filter

BOX 2: Element Length	
Symbol	Description
1	Single
2	Double
3	Triple (40CN only)

BOX 3: Media Code	
Symbol	Description
02QE	Ecoglass III, 2 micron
05QE	Ecoglass III, 5 micron
10QE	Ecoglass III, 10 micron
20QE	Ecoglass III, 20 micron

BOX 4: Seals	
Symbol	Description
B	Nitrile (NBR)
E	Ethylene propylene (EPR)
V	Fluorocarbon (FKM)

BOX 5: Indicator	
Symbol	Description
M2	Visual Automatic Reset
H	Electrical indicator with ½"-14 NPT connection and 12" leads
E	Electrical/Visual with ½" NPT conduit connection and wire leads
E2	Electrical/ Visual (DIN43650 Hirschman style connection)
E3	Electrical/Visual (ANSI B.9355M 3-pin Brad Harrison style connection)
P	Plugged indicator port

BOX 6: Bypass	
Symbol	Pressure Setting
G	25 PSI (1.7 bar)
K	50 PSI (3.5 bar)

BOX 7: Ports	
Symbol	Description
15CN	
N12	¾" NPT
N16	1" NPT
S12	SAE-12 straight thread
S16	SAE-16 straight thread
40CN	
N16	1" NPT
N24	1½" NPT
S16	SAE-16 straight thread
S24	SAE-24 straight thread
80CN	
N24	1½" NPT
N32	2" NPT
S24	SAE-24 straight thread
S32	SAE-32 straight thread
Y32	Flange face, SAE-2", Code 61

BOX 8: Options	
Symbol	Description
4	Standard drain port on bowl
21	No bypass and drain port

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.

Replacement Elements (Ecoglass)

MEDIA	15CN-1	15CN-2	40CN-1	40CN-2	40CN-3	80CN-1	80CN-2
20QE	936701Q	936705Q	936709Q	936712Q	936721Q	936715Q	936719Q
10QE	936700Q	936704Q	936708Q	936601Q	936720Q	936602Q	936718Q
05QE	936699Q	936703Q	936707Q	936711Q	936623Q	936714Q	936717Q
02QE	936698Q	936702Q	936706Q	936710Q	936622Q	936713Q	936716Q

Global products as identified are offered worldwide through all Parker locations and utilize a common ordering code.



[illegible]



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



MPD Series

Medium Pressure Filters



ENGINEERING YOUR SUCCESS.

MPD Series

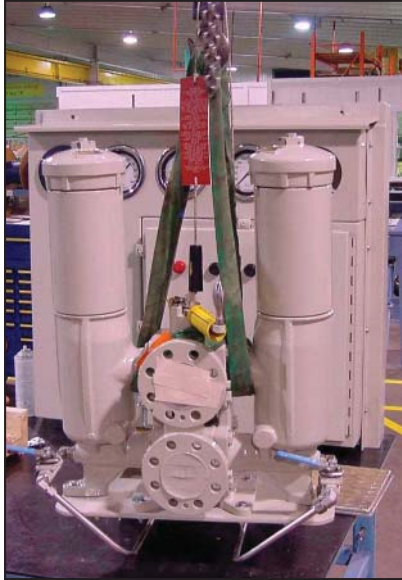
Applications

- Circulating Lube Oil Systems
- Power Generation Control Systems
- Steel Mill Control Systems
- Pulp & Paper Control Systems
- Test Stands
- Automotive Stamping Presses
- Offshore & Land Based Oilfield Applications

MPD series filters are an outstanding choice for today's demanding hydraulic control and circulating oil systems. The MPD's innovative modular design, rugged ductile iron construction and coreless element technology, combined with many other features, provide solutions across a broad range of industrial applications.

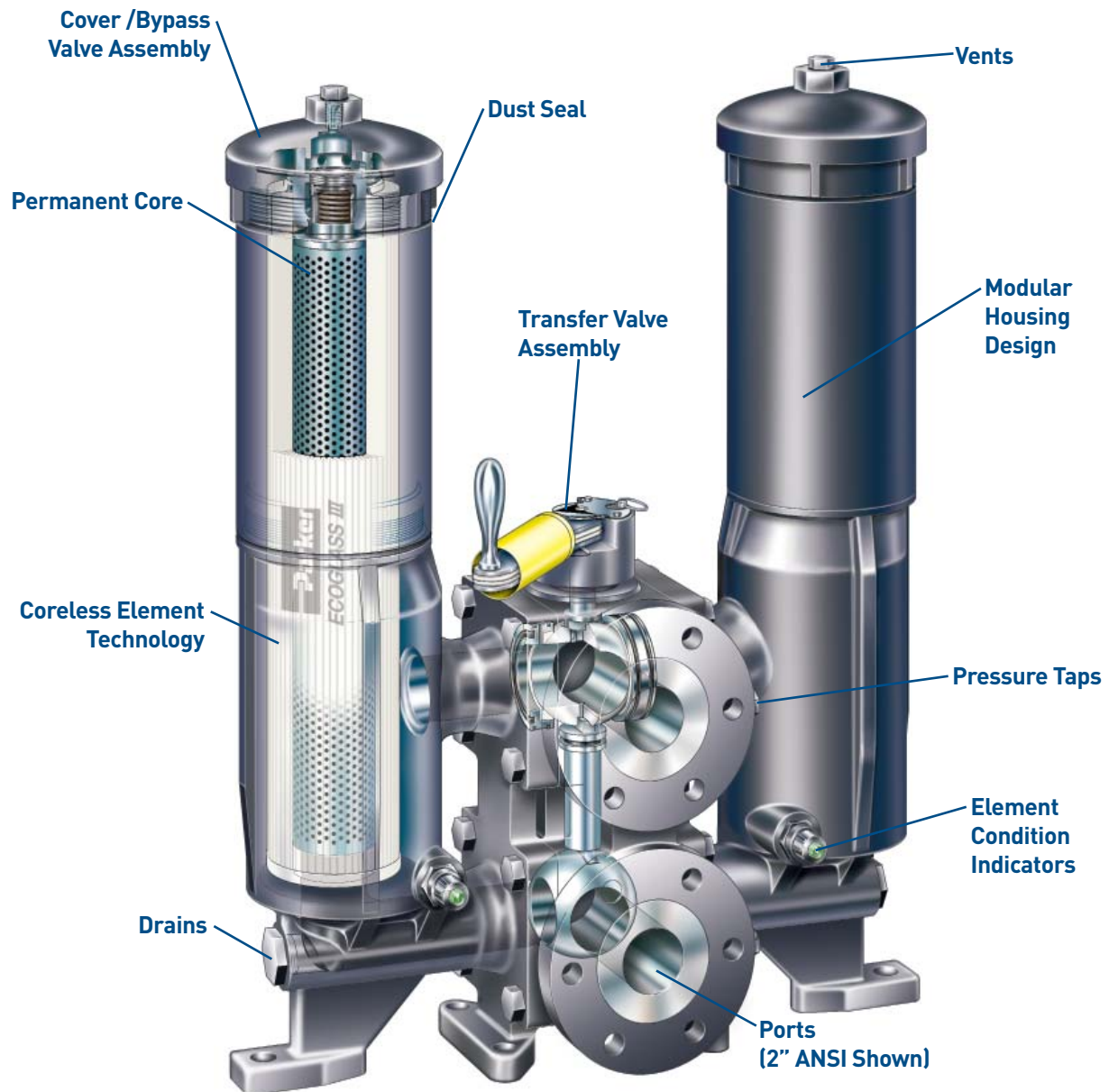
The Modular design provides user flexibility for simplex or duplex applications. Incorporating side chambers as simplex filters along with duplex installations provide common elements across the circuit design.

Construction features like full ported transfer valve with neutral center flow capability offer tremendous benefit in cold start conditions. Standard features like pressure sensing taps, vents, drains and internal pressure equalization make this product incomparable in industry.



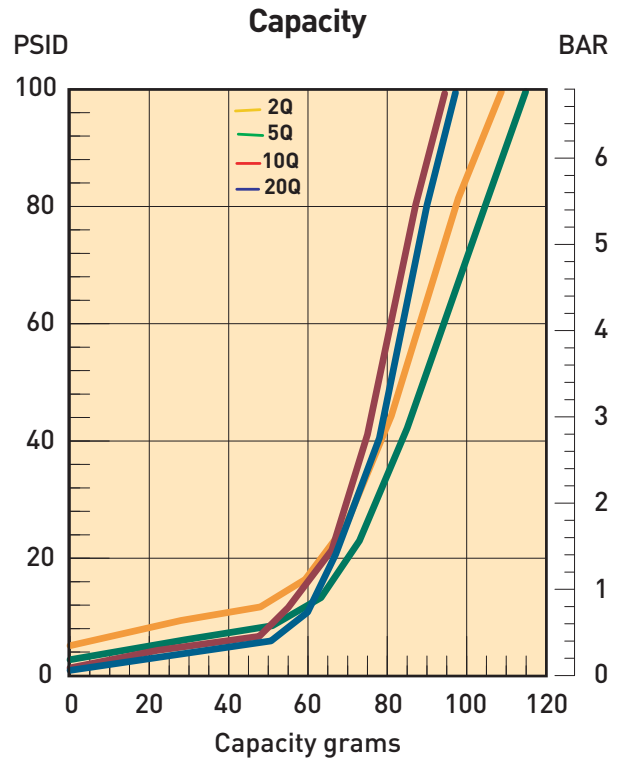
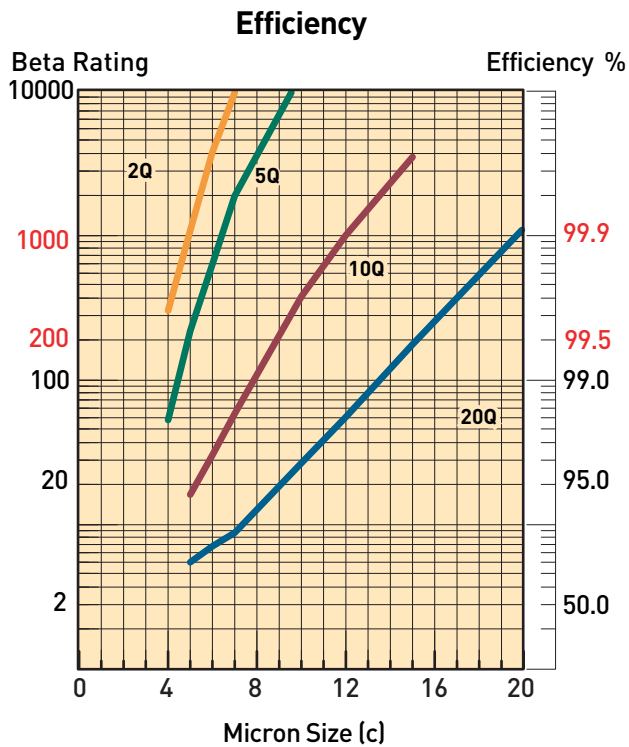
MPD Series

Features



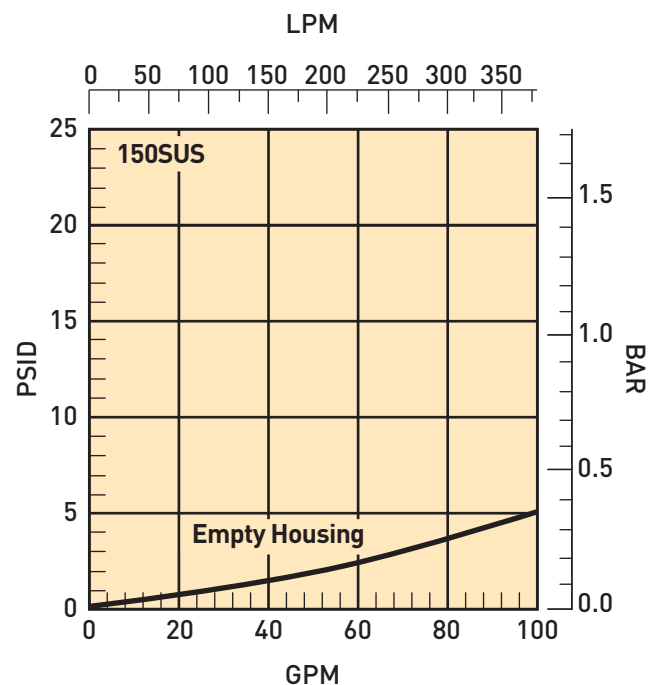
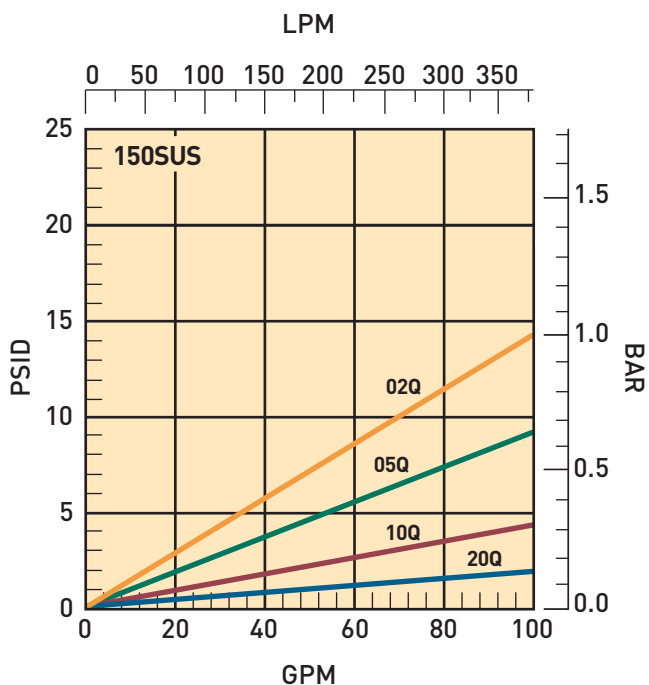
MPD Series

MPD-1 Element Performance



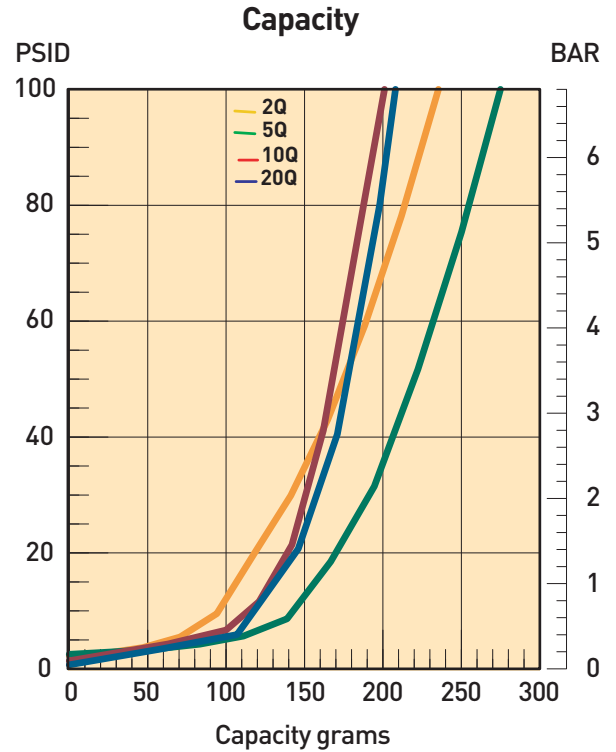
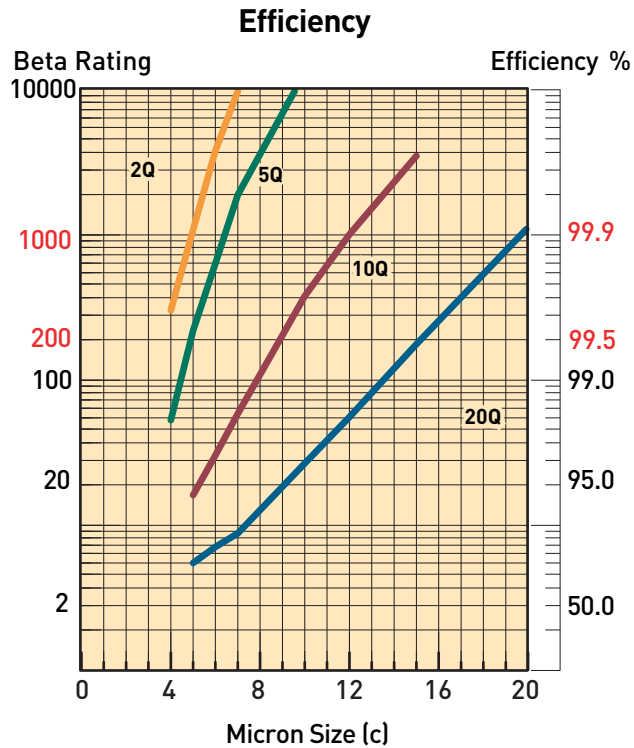
Results typical from Multi-pass tests run per test standard ISO 16889 @ 50 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



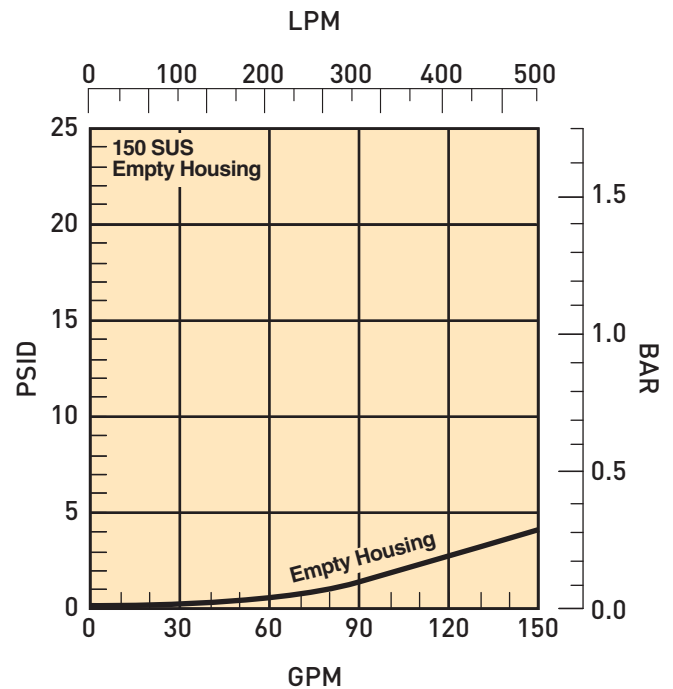
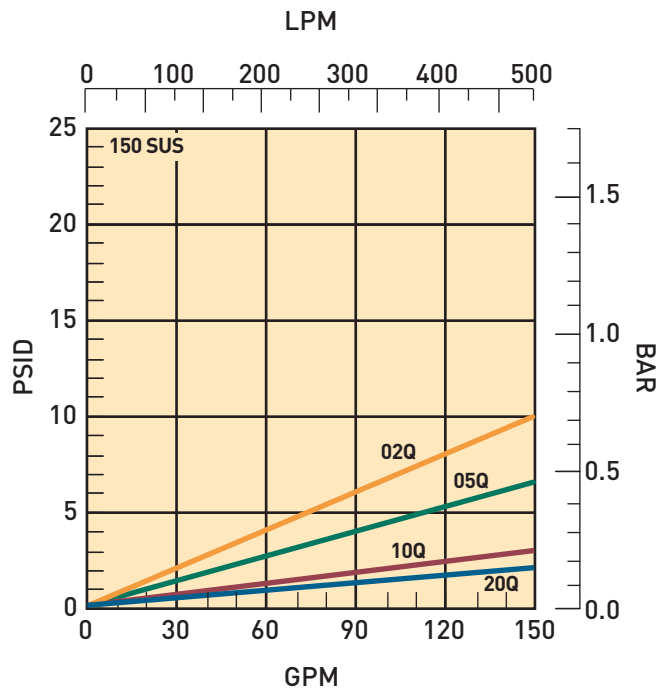
MPD Series

MPD-2 Element Performance



Results typical from Multi-pass tests run per test standard ISO 16889 @ 80 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



MPD Series

Replacement Elements

Ecoglass III represents the merging of high performance filtration technology with environmentally conscious engineering. The Ecoglass III line of replacement elements features 100% non-metallic construction.

The design reduces solid waste and minimizes disposal costs for industry. The non-metallic construction means lightweight elements (60% less weight) for easier servicing.

The Ecoglass III elements utilize the same proprietary media design as our Microglass III line of replacement elements.

With Ecoglass III, a reusable core is installed into the filter housing and remains in service throughout the life of the assembly.



Microglass III Replacement Elements

Microglass III represents a leap forward in the performance obtainable in hydraulic and lube filter elements.

The unique multi-layer design combines high efficiencies with exceptional dirt holding capacities for performance that is unequalled in the industry today. This performance is further enhanced in the MPD series with the introduction of the deep pleat design. The deep pleat element design increases the amount of media in the element and therefore increases capacity.

With Microglass III, you do not have to make a compromise between efficiency and capacity; you can have both.

Feature	Advantage	Benefit
• Modular design filter	• Use a simplex or duplex	• Reduced installation due to common elements • Application flexibility
• Top access cover	• Remove element from top • Lighter than removing entire bowl	• No oil mess
• Visual and electrical indicators	• Know exactly when to service elements	• Keeps system clean
• Drain port	• Drain all oil from assembly prior to servicing	• Eliminates cross contamination
• Vent port	• Purges all trapped air in filter	• Get the maximum performance from elements • Prevents a "spongy" system
• Multipass tested elements (per ANSI/NFPA T3.10.8.8 R1-1990)	• Element performance backed by recognized test standards	• Elements selected will have consistent performance levels
• Option of Ecoglass III or Microglass III elements	• Multi-layer media • Coreless as standard • HF4 as option	• High capacity with high efficiency • No performance loss from pleat bunching
• Equalizing valve & manifold	• No external plumbing	• Safety & reliability
• Upstream & downstream sensing ports	• Add additional instrumentation	• Product flexibility

MPD Series

Specifications

Specifications: MPD Series

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP):

3000 psi (206.9 bar) SAE port — MPDH only

1200 psi (81.6 bar) SAE port;

500 psi (34 bar) ANSI port

Rated Fatigue Pressure:

3000 psi (206.9 bar) SAE port — MPDH only

1200 psi (81.6 bar) SAE port;

500 psi (34 bar) ANSI port

Design Safety Factor: 3:1

*Consult factory for higher operating pressures

Operating Temperatures:

-15°F (-26°C) to 160°F (71°C)

*Consult factory for temperatures outside specified range

Element Collapse Rating:

Standard: 150 psid (10.3 bar)

High collapse Microglass only:

1200 psid (81.6 bar) (SAE);

500 psid (34 bar) (ANSI)

Materials:

Transfer Valve: Ductile Iron

Side Chamber: Ductile Iron

Side Chamber Extension: Steel

Cover: Ductile Iron (MPD), Carbon Steel (MPDH)

Equalizing Valve and Manifolds: Steel

Shipping Weights (approximate):

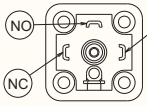
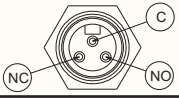
MPD-1: 215 lbs. (98 kg)

MPD-2: 285 lbs. (129 kg)

Element Condition Indicators:

Type M2 Series: Visual, auto-resetting with a red indication at the designated differential pressure. In the clean condition, indication is green.

Type E Series: Electrical/Visual, auto-resetting with a red indication at the designated differential pressure. In the clean condition, indication is green. Rated 5 Amps at 125/250 VAC; 5 Amps resistive, 3 amps inductive (sea level) at 28 VDC; SPDT.

'E' SERIES ELECTRICAL INDICATOR CONNECTOR CHART		
CONNECTOR	MODEL CODING	WIRING / MALE CONNECTOR
DIN 43650 3 POLE + EARTH DIN 50005 PLUG PIN CODE	E2	
3 PIN ANSI/B93.55M (DIMENSIONS ONLY)	E3	

Type H Series: Heavy duty electrical/no visual, rated 0.25 Amps resistive, 12 to 28 VDC and .25 Amps resistive, 110-175 VAC; 5 watts; SPDT.

'H' SERIES ELECTRICAL INDICATOR CONNECTOR CHART		
CONNECTOR	MODEL CODING	WIRING / MALE CONNECTOR
1/2"-14 NPT CONDUIT ADAPTER W/24" WIRE LEADS (FOR ALL LIGHT TO HEAVY CONDUIT USES)	H	BLACK (NO), BLUE (NC), AND WHITE (C)
NONE: 12" WIRE LEADS ONLY	H1	BLACK (NO), BLUE (NC) AND WHITE (C)

No indicator P option: plugged indicator port.

Contact factory for other available indicator options & types.

Element Servicing Instructions: MPD

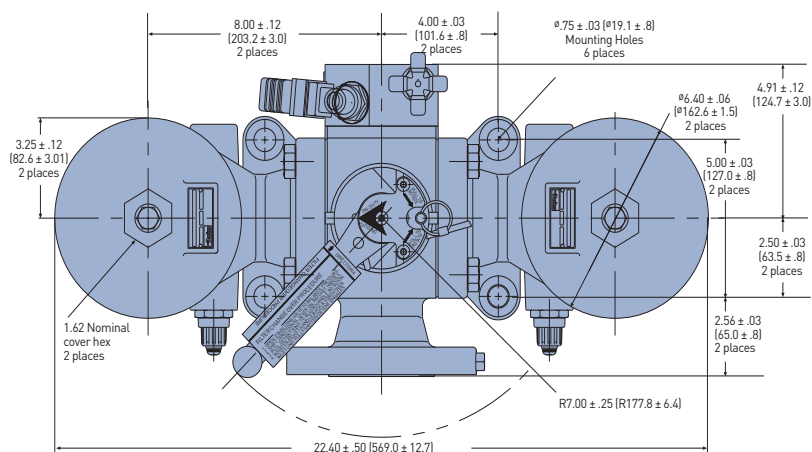
The system does not need to be shut down to service elements; however, pressure must be equalized at both side chambers of the duplex filter before performing transfer valve changeover.

1. Black flow arrow on top of the transfer valve points to the on-duty chamber.
2. Open the equalizing valve (counter-clockwise) to balance pressure at the side chambers.
3. Shift directional lever on the ratchet handle to switch the ratchet direction.
4. Pull detent ring up to disengage the locking pin and allow handle to rotate.
5. Rotate ratchet handle back and forth over the inlet port until the transfer valve is fully shifted and the detent locking pin engages.
6. Slack flow arrow now points to the new on-duty side chamber.
7. Close equalizing valve (clockwise) to isolate the side chambers.
8. Loosen new off-duty vent plug (counter-clockwise) approximately 2 turns. Do not thread out complete.
9. Remove drain plug (counter-clockwise) from new off-duty chamber to lower oil level.
10. Remove new off-duty chamber cover by rotating (counter-clockwise) until unthreaded then lift from chamber.
11. Pull element out from chamber. Discard used disposable elements as they are not cleanable. With Ecoglass elements the permanent core will remain in the chamber.
12. Install new element by centering it on the element locator in the bottom of the chamber and pushing down into place. For Ecoglass elements slide all the way down onto the permanent core.
13. Inspect cover o-rings and replace if necessary.
14. Install cover onto the chamber by rotating clockwise and tightening to 90-100 ft.-lbs.
15. Install and tighten drain plug (clockwise) to 60-70 ft.-lbs.
16. Open equalizing valve (counter-clockwise) to purge air from the new off-duty chamber.
17. When oil flows from the vent close the equalizing valve (clockwise).
18. Tighten new off-duty vent plug (clockwise) to 15-20 ft.-lbs.

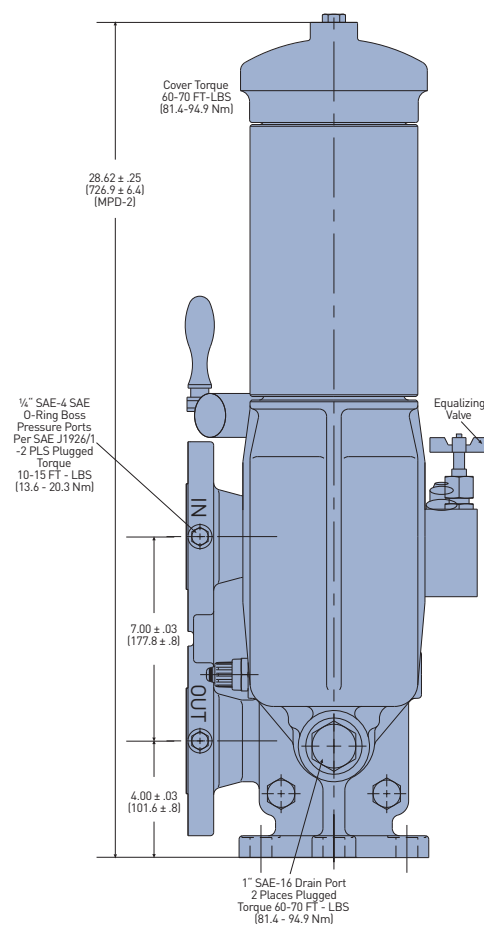
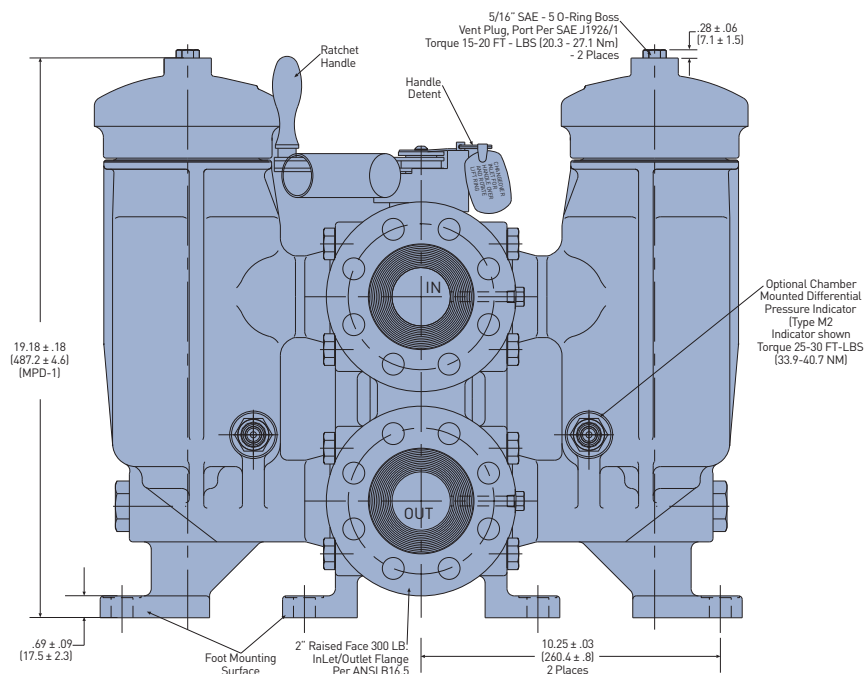
MPD Series

Specifications

ANSI Dimensional Drawing



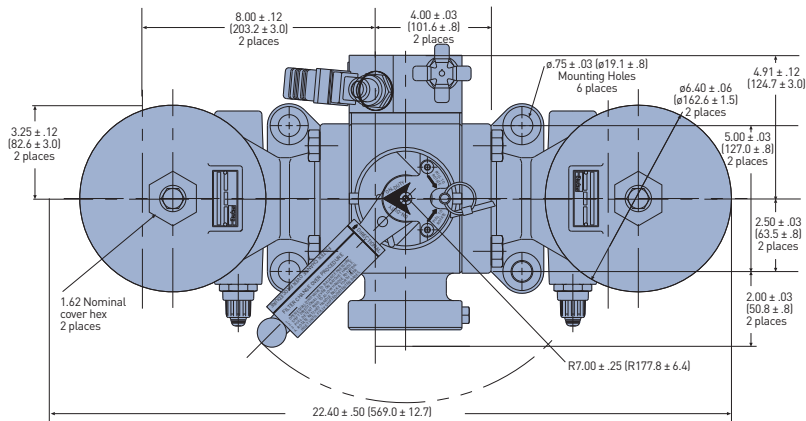
Linear Measure: inch [millimeter]



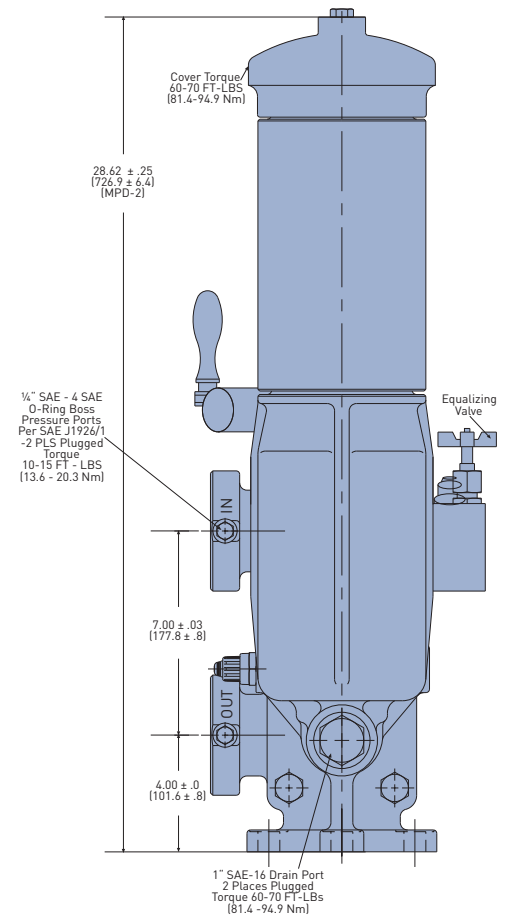
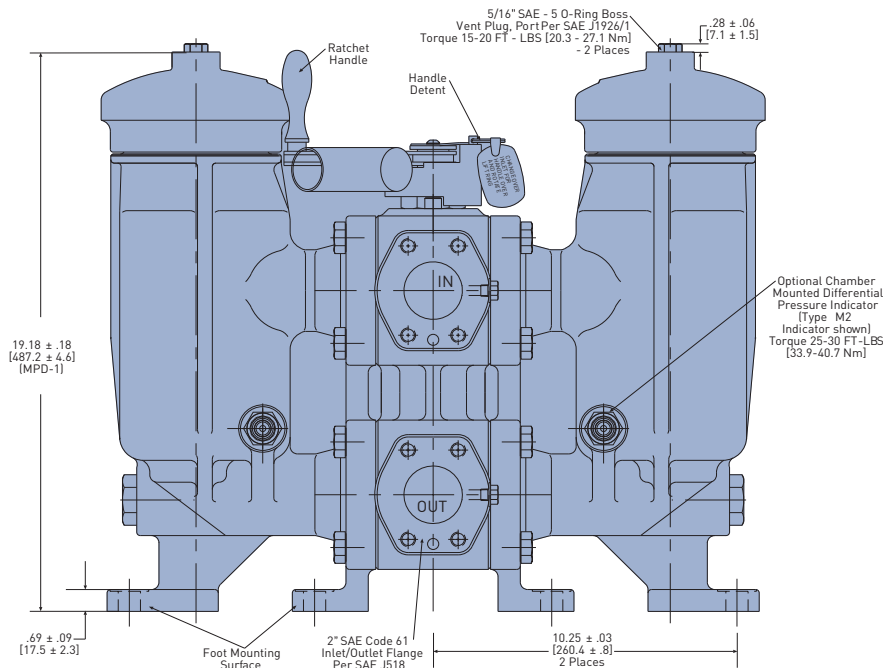
Drawings are for reference only.
Contact factory for current version.

Specifications

SAE Dimensional Drawing



Linear Measure: inch [millimeter]



Drawings are for reference only.
Contact factory for current version.

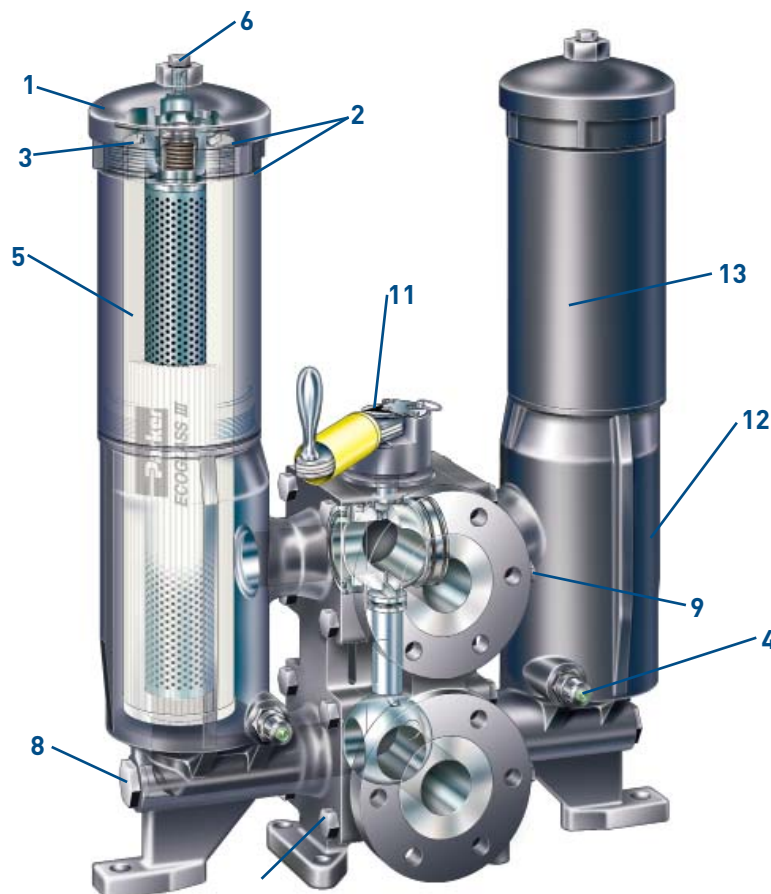
MPD Series

Parts List

Index	Description	Element Type		Index	Description	Element Type	
		Ecoglass	Microglass			Ecoglass	Microglass
1	Cover Assembly w/ 25psi bypass w/ 50psi bypass w/ no bypass	936964 935965 935966	936964 935965 935966	6	Vent Plug	935466	935466
2	Cover (O-ring & Dust Seal)	V72247	V72247	7**	Vent Plug O-ring	V93905	V93905
3	Cover Backup Ring	935419	935419	8	Drain Plug w/ O-ring	928364	928364
4	Indicator P option-indicator port plug M2 25psi M2 50psi E2 25psi E2 50psi E3 25psi E3 50psi H 25psi H 50psi H1 25psi H1 50psi	925515 932026 932027 931153 929599 932773 929596 933053 932905 933054 932906	925515 932026 932027 931153 929599 932773 929596 933053 932905 933054 932906	9	Pressure Tap Plug w/ O-ring	928882	928882
5	Element	(see chart on model code page)		10**	Equalizing Valve	928118	928118
				11	Transfer Valve Assembly ANSI 2" w/ indicator port SAE 2" w/ indicator port	935968 935969	935968 935969
				12	Housing Assembly right side w/ indicator port right side w/o Indicator port left side w/ indicator port left side w/o Indicator port	935970 935974 935971 935974	935972 935975 935973 935975
				13	Housing Extension (MPD-2)	935489	935489
				14	5/8" - 11x1 1/4" HHCS	922812	922812
				15**	Seal Kit-Transfer Valve	Consult Factory	
				16**	Seal Kit-Housing Assembly	Consult Factory	

* Consult factory for MPD components

** Not Shown



MPD Series

How to Order

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
	MPD	1	10QE	NE2	25	B2	1

BOX 1: Seals	
Symbol	Description
None	Nitrile
F3	Fluorocarbon

BOX 2: Model Number	
Symbol	Description
MPD	Duplex filter
MPDH	High pressure, 3000 psi duplex filter

BOX 3: Element Length	
Symbol	Description
1	Single
2	Double

BOX 4: Element Media	
Symbol	Description
20QE	Ecoglass III
10QE	Ecoglass III
05QE	Ecoglass III
02QE	Ecoglass III

BOX 5: Indicators	
Symbol	Description
M2	Visual/Auto reset
H	Electrical (w/1/2" npt conduit connection and wire pads)
H1	Electrical (w/12" leads only)
E2	Electrical (DIN 43650 Hirschman style connection)
E3	Electrical (ANSI/B93.55M 3-Pin Brad Harrison style connection)
P	Indicator port plugged
N	No side chamber indicator port
Note: Two (2) symbols required. First symbol denotes side chamber indicator mounted on inlet side. Second symbol denotes indicator on equalizing valve manifold.	

BOX 6: Bypass	
Symbol	Pressure Setting
25	25 PSI (1.7 bar) setting
50	50 PSI (3.5 bar) setting
If "no bypass" option (-11) and an indicator is selected, above symbols (25,50) denote indicator setting	

BOX 7: Ports	
Symbol	Description
B2*	2" 300 lb RF ANSI Flange (500 psi)
Y9	2" SAE 4 Bolt Code 61 Flange Face
Note: * Only available for MPD.	

BOX 8: Options	
Symbol	Description
1	None
11	No Bypass

Please note the bold options reflect standard options with a reduced lead-time of (8) weeks or less. Consult factory on all other lead-time options.

Ecoglass III Replacement Elements (Fluorocarbon)

Media	MPD-1	MPD-2
20QE	935519Q	935521Q
10QE	935518Q	935520Q
05QE	935517Q	935458Q
02QE	935516Q	935488Q

HF4 Replacement Elements (Fluorocarbon)

Media	Element Collapse Rating	Single Length	Double Length
3 Micron	150 psi	HF41L3VQ	HF42L3VQ
3 Micron	2000 psi	HF41H3VQ	HF42H3VQ
5 Micron	150 psi	HF41L5VQ	HF42L5VQ
5 Micron	2000 psi	HF41H5VQ	HF42H5VQ
10 Micron	150 psi	HF41L10VQ	HF42L10VQ
10 Micron	2000 psi	HF41H10VQ	HF42H10VQ
20 Micron	150 psi	HF41L20VQ	HF42L20VQ
20 Micron	2000 psi	HF41H20VQ	HF42H20VQ

[illegible]



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



15P/30P Series

High Pressure Filters



ENGINEERING YOUR SUCCESS.

15P/30P Series

Applications

- 15P/30P Series filters
- Saw mills
- Aircraft ground support equipment
- Asphalt pavers
- Hydraulic fan drives
- Power steering circuits
- Waste trucks
- Cement trucks
- Servo control protection
- Logging equipment

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 Hydraulic Filter Division. We are committed to designing and building the best filters available to industry.

Indicators

Both visual auto reset style and dual indicator visual/electrical style available to suit your application. Patented design resists false signaling due to vibration.

Straight Thread Ports

SAE straight thread for positive sealing

Bowl Construction

Formed of high grade 6061 T6 aluminum.

Powder painted, corrosion resistant finish.

Knurled for easier ripping when removing and re-assembling.

Bypass Valve (not visible)

May be blocked for critical applications

Hex (not visible)

Hex formed at base of bowl for easy removal

Bowl Configurations

Single and double length bowls available to cover a wide range of flows.

30P available in a duplex version.

Drain Port (not visible)

Clean and easy servicing

Lets you drain bowl before element changes



15P/30P Series

Element Features

Quality elements make the difference

The important item in a filter assembly is the element. It must capture and retain contaminants that can damage system components. At the same time it must allow flow to pass as freely as possible to perform its function.

There are many ways to design and build an element, and it's easy to produce a low cost element. However, cost is not the only selection criteria, especially when the risk is loss of critical machine performance.

For instance, wire mesh reinforcement. Not all filter elements have it. It's used in Parker elements to keep the pleats from bunching or collapsing. If pleats bunch, the effective surface area of the element is reduced, excessive pressure drop develops, and the filter assembly may go into premature bypass mode.

There are many other features that are included standard with every quality Parker element. The table below outlines several.

O-Ring Seal

Positive sealing for optimum element efficiency

Wire Reinforced Media

Prevents pleat bunching
Helps prevent media migration
Maintains media efficiency

Engineered Element Design

The right combination of pleat depth and number of pleats means lower pressure losses (longer life)

Dirt holding capacity is maximized for less frequent element change-out



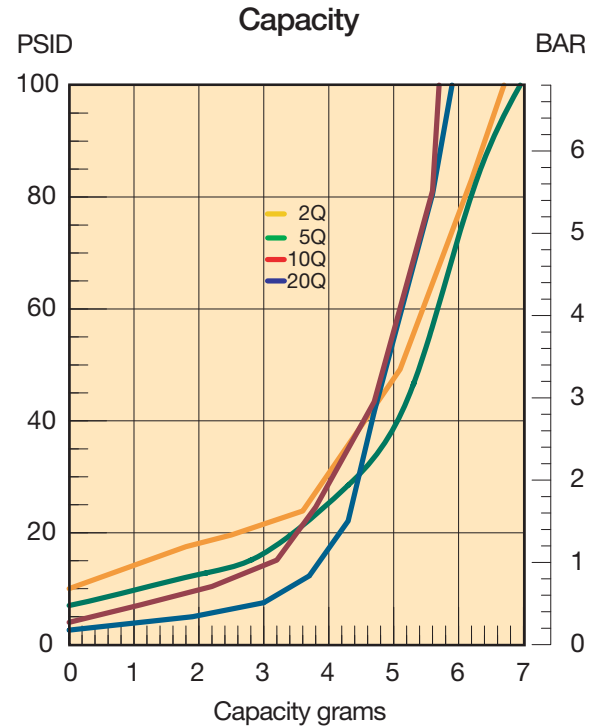
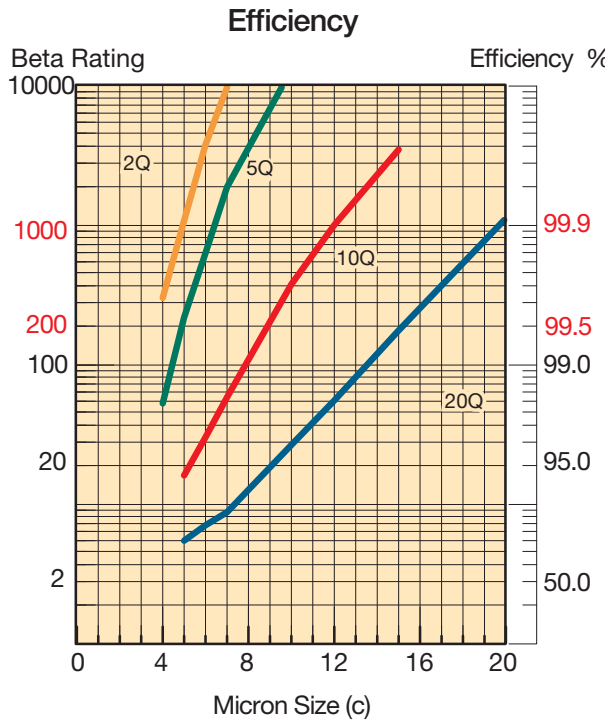
Elements for Every Application

Standard Microglass III media for long life and excellent system protection

Feature	Advantage	Benefit
Wire reinforced Microglass III elements	Rugged construction, stands up to abuse of cyclic flows without performance loss Wire support reduces pleat bunching, keeps pressure drops consistent	The reliable filtration provided assures equipment protection, reduces downtime, maximizes element life, and allows the hydraulic system to operate properly
Multipass tested elements (per ANSI/NFPA T3.10.8.8 R1-1990)	Filter performance backed by recognized and accepted laboratory test standards	Filters you select have known performance levels
Complete element performance data disclosure	All pertinent information is provided in an easy-to-compare format	Provides an easy guide to proper filter selection

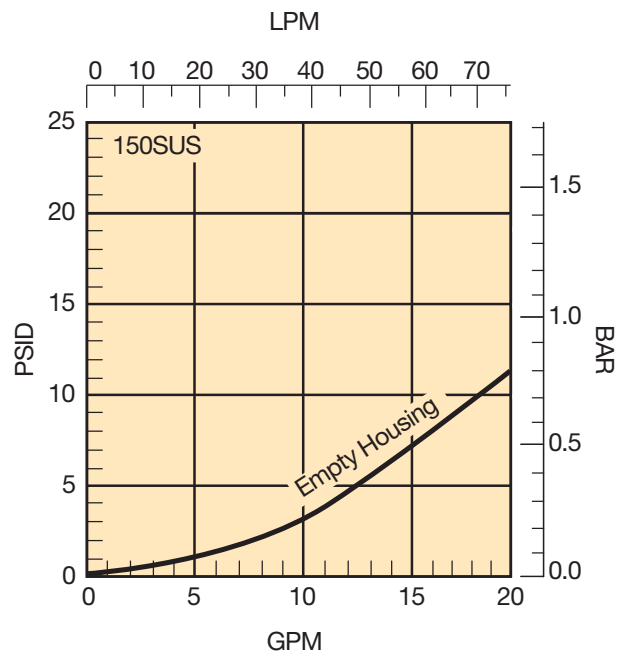
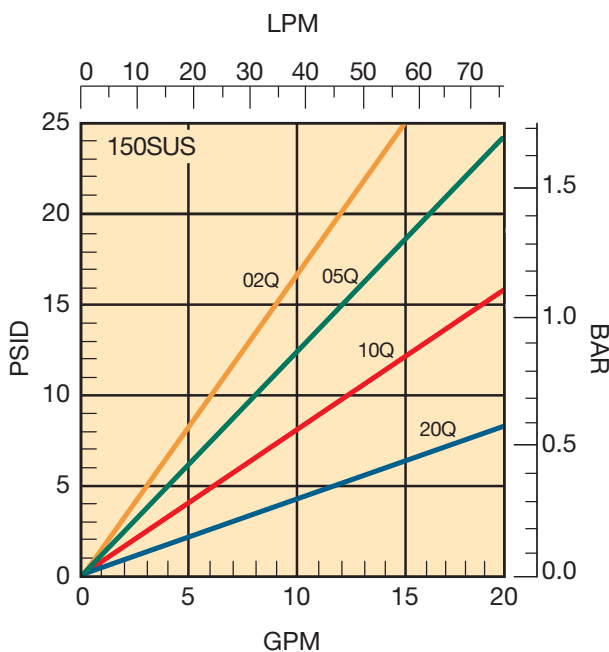
15P Series

15P-1 Element Performance



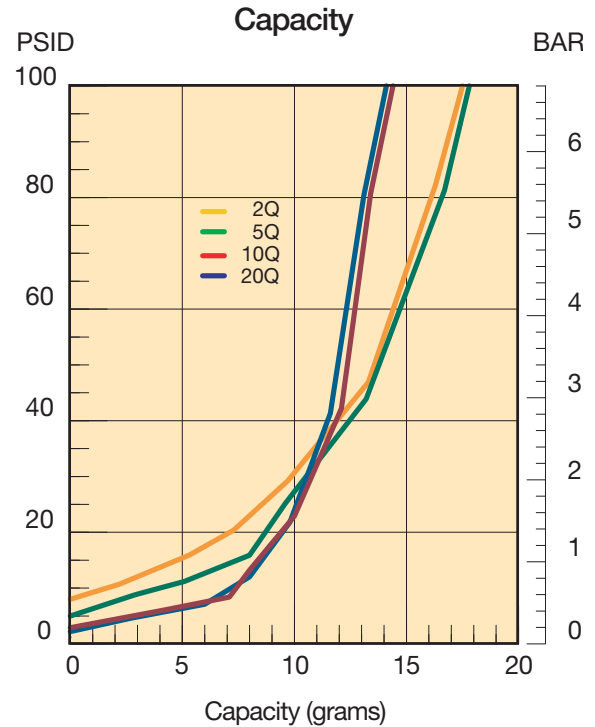
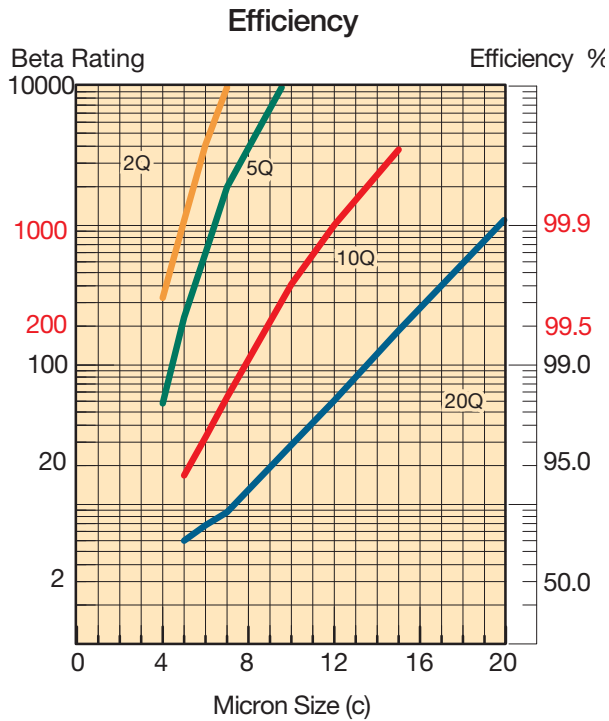
Results typical from Multi-pass tests run per test standard ISO 16889 @ 10 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



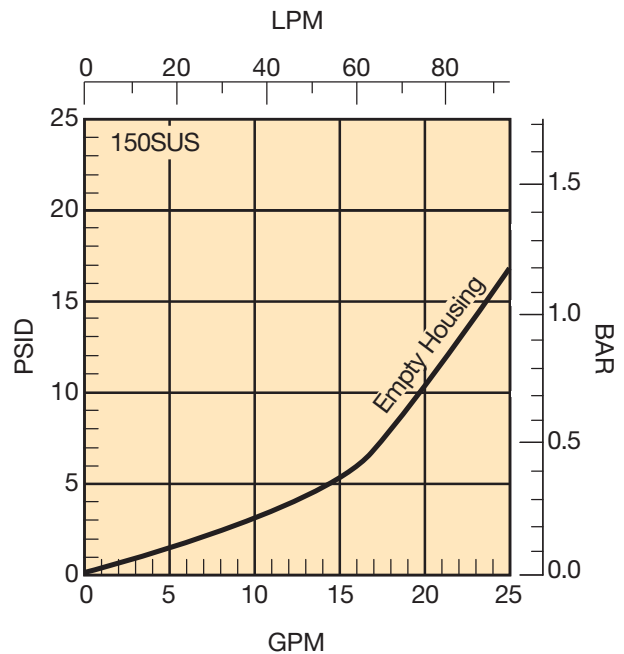
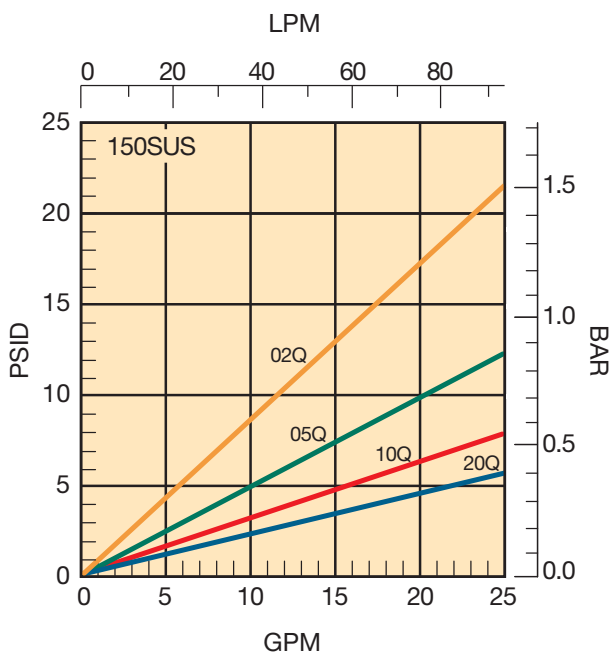
15P Series

15P-2 Element Performance



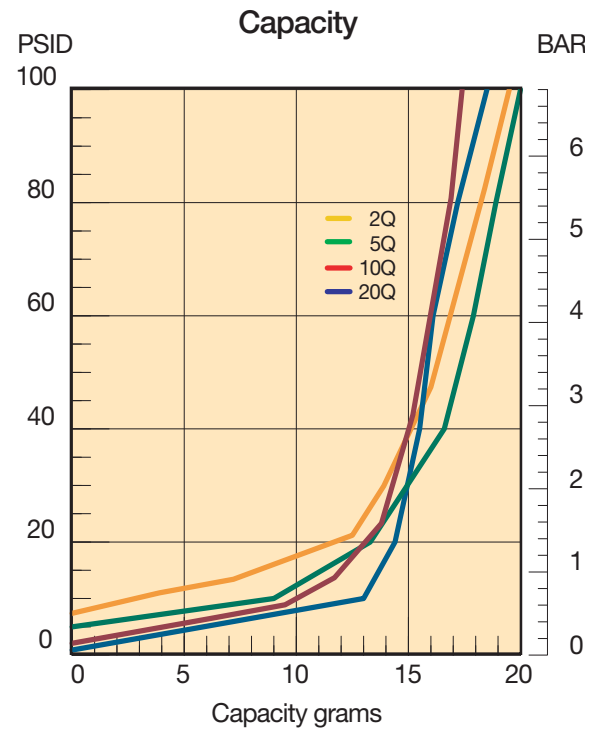
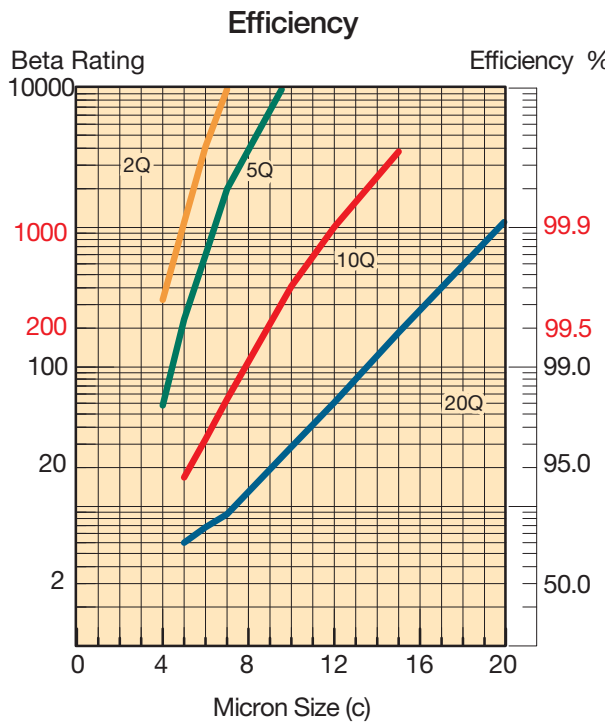
Results typical from Multi-pass tests run per test standard ISO 16889 @ 15 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



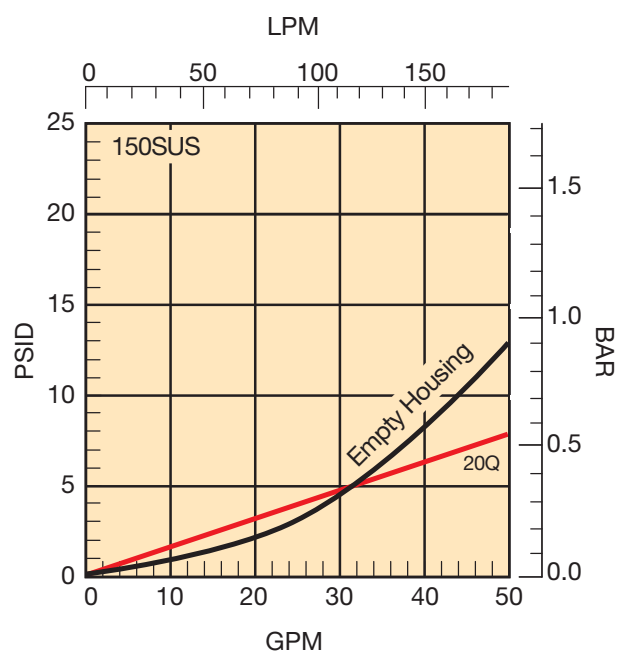
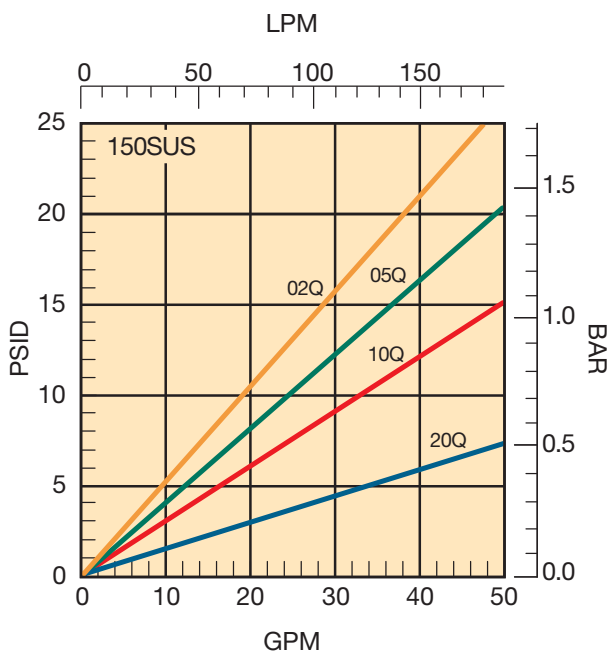
30P Series

30P-1 Element Performance



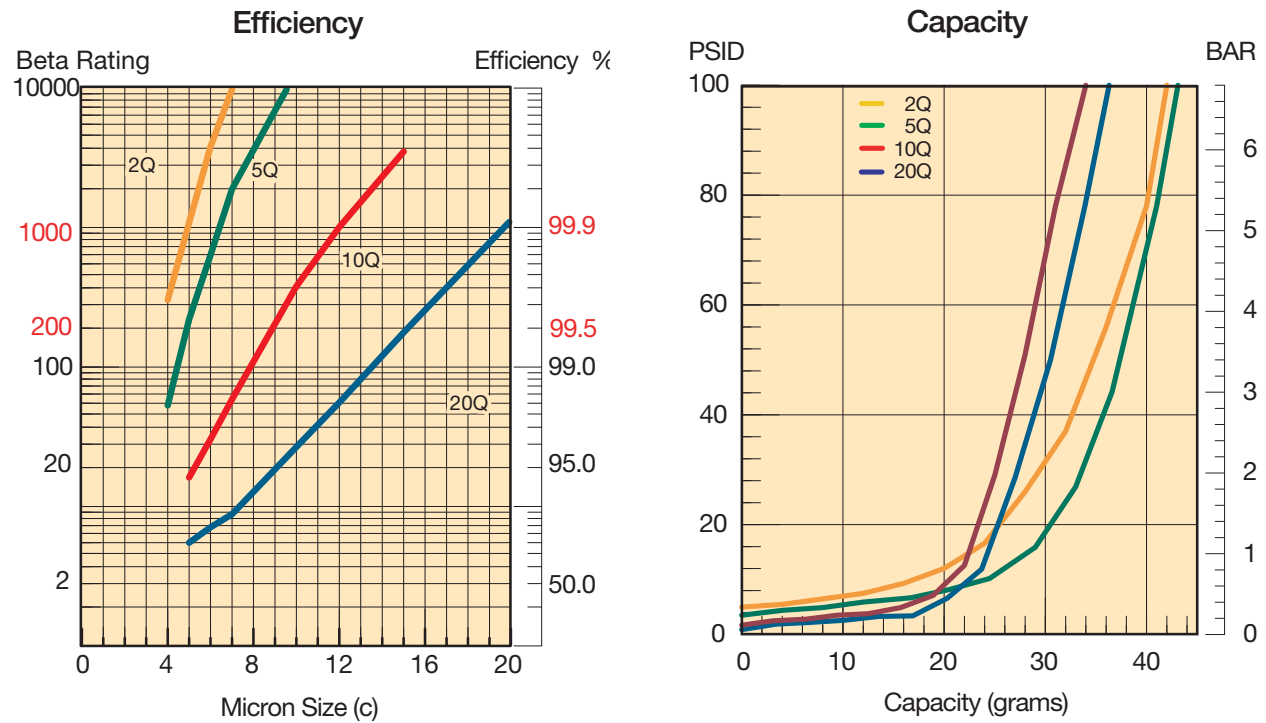
Results typical from Multi-pass tests run per test standard ISO 16889 @ 20 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



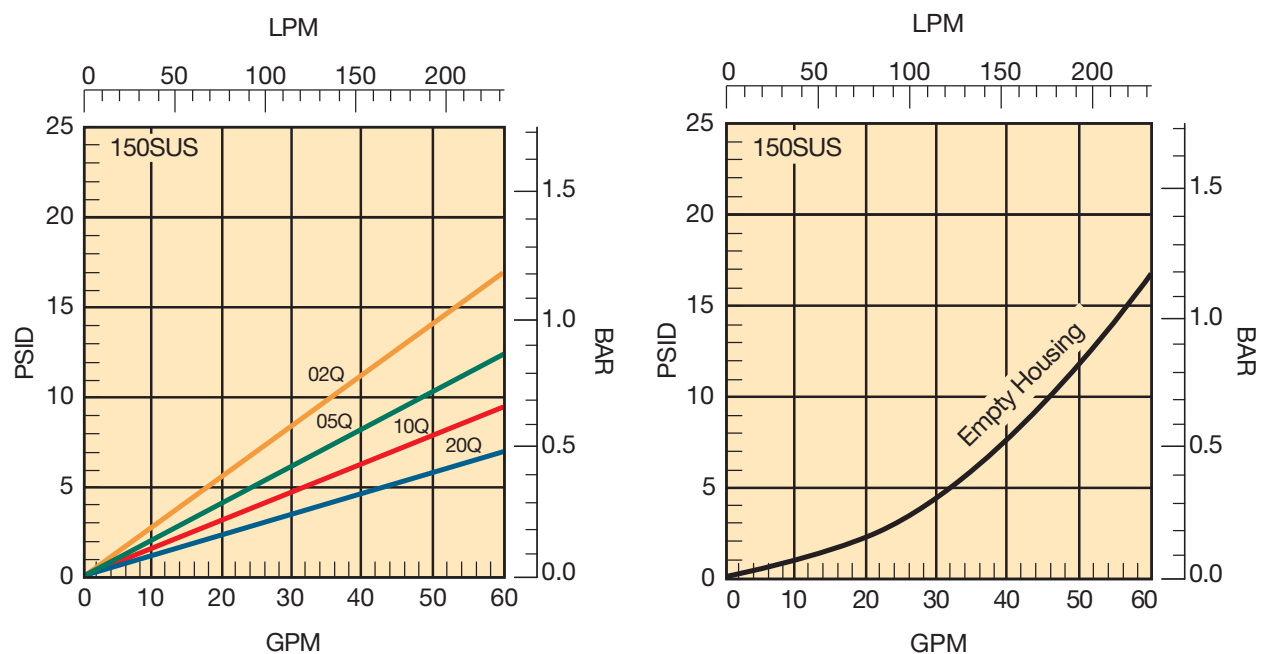
30P Series

30P-2 Element Performance



Results typical from Multi-pass tests run per test standard ISO 16889 @ 30 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



15P Series

Specifications

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 3000 psi (206.9 bar)

Rated Fatigue Pressure: 2000 psi (138 bar)

Design Safety Factor: 3:1

Operating Temperatures:

Buna: -40°F (-40°C) to 225°F (107°C)

Fluorocarbon: -15°F (-26°C) to 275°F (135°C)

Element Collapse Rating:

Standard- 350 psid (24.1 bar)

"H" Option- 2000 psid (138 bar)

"X" Option- 3000 psid (206.9 bar)

Materials:

Bowl: impacted aluminum (anodized 6061-T6)

Head: extruded aluminum (anodized 6061-T6)

Bypass: nylon

Element Condition Indicators:

Visual (optional) 360° green/ red

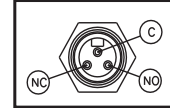
Electrical/ Visual (optional)

5A @ 240VAC, 3A @ 28VDC

Electrical-heavy duty (optional)

.25A (resistive) MAX 5 watts

12 to 28 VDC & 110 to 175 VAC



E3

Color Coding:

White (common)

Black (normally open)

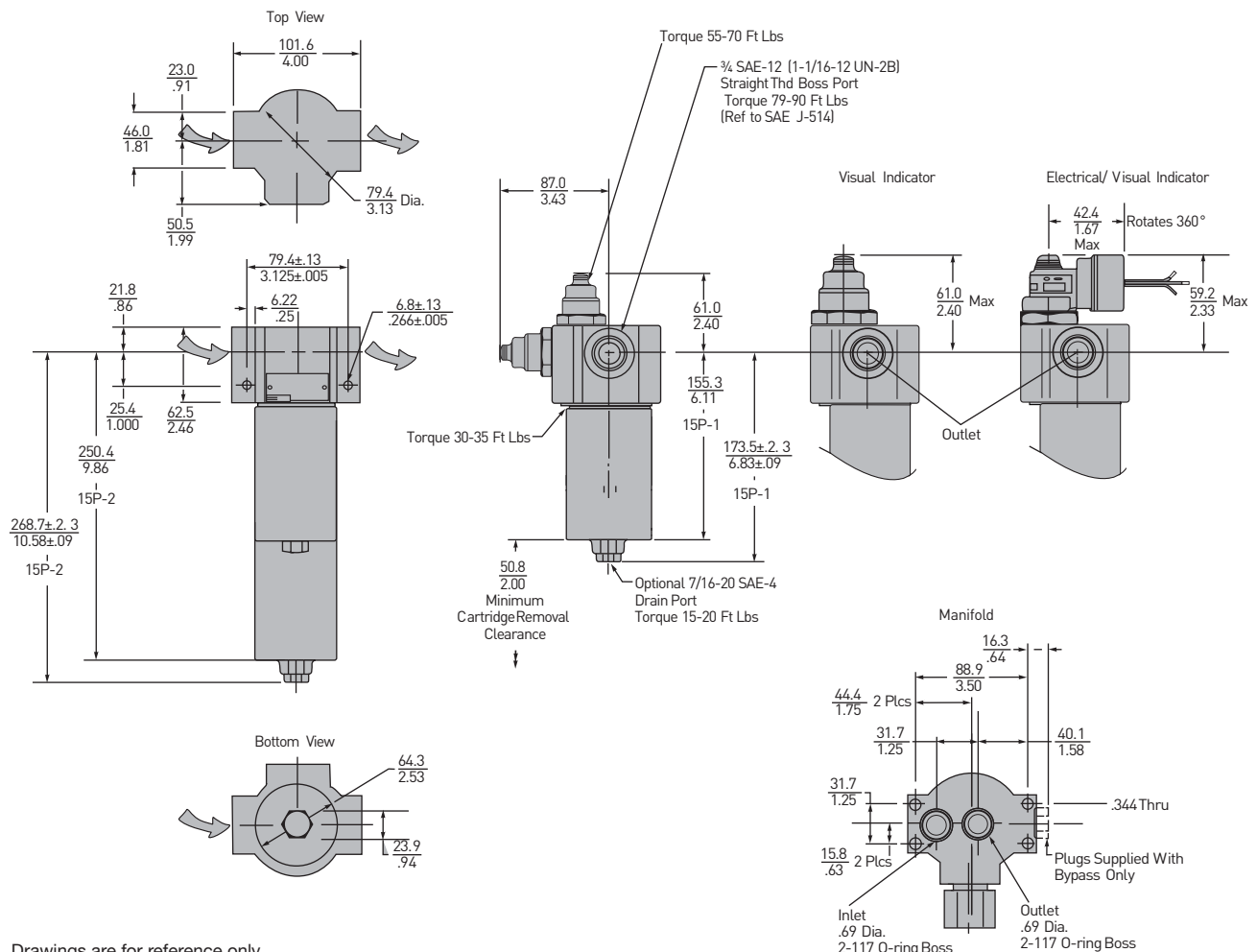
Blue (normally closed)

Weights (approximate):

15P-1 3.5 lb. (1.6 kg.)

15P-2 4.6 lb. (2.1 kg.)

Linear Measure: millimeter
inch



Drawings are for reference only.
Contact factory for current version.

30P/30PD Series

Specifications

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 3000 psi (206.9 bar)

Rated Fatigue Pressure: 2000 psi (138 bar)

Design Safety Factor: 3:1

Operating Temperatures:

Buna: -40°F (-40°C) to 225°F (107°C)

Fluorocarbon: -15°F (-26°C) to 275°F (135°C)

Element Collapse Rating:

Standard- 350 psid (24.1 bar)

"H" Option- 2000 psid (138 bar)

"X" Option- 3000 psid (206.9 bar)

Materials:

Bowl: impacted aluminum (anodized 6061-T6)

Head: extruded aluminum (anodized 6061-T6)

Bypass: Nylon

Element Condition Indicators:

Visual (optional) 360° green/ red

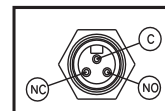
Electrical/ Visual (optional)

5A @ 240VAC, 3A @ 28VDC

Electrical-heavy duty (optional)

.25A (resistive) MAX 5 watts

12 to 28 VDC & 110 to 175 VAC



E3

Color Coding:

White (common)

Black (normally open)

Blue (normally closed)

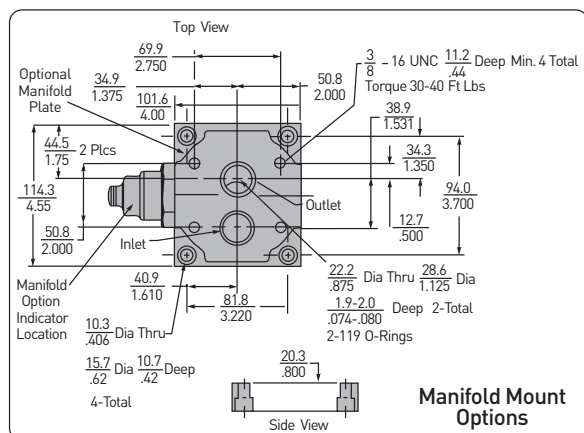
Weights (approximate):

30P-1 6.4 lb. (2.9 kg.)

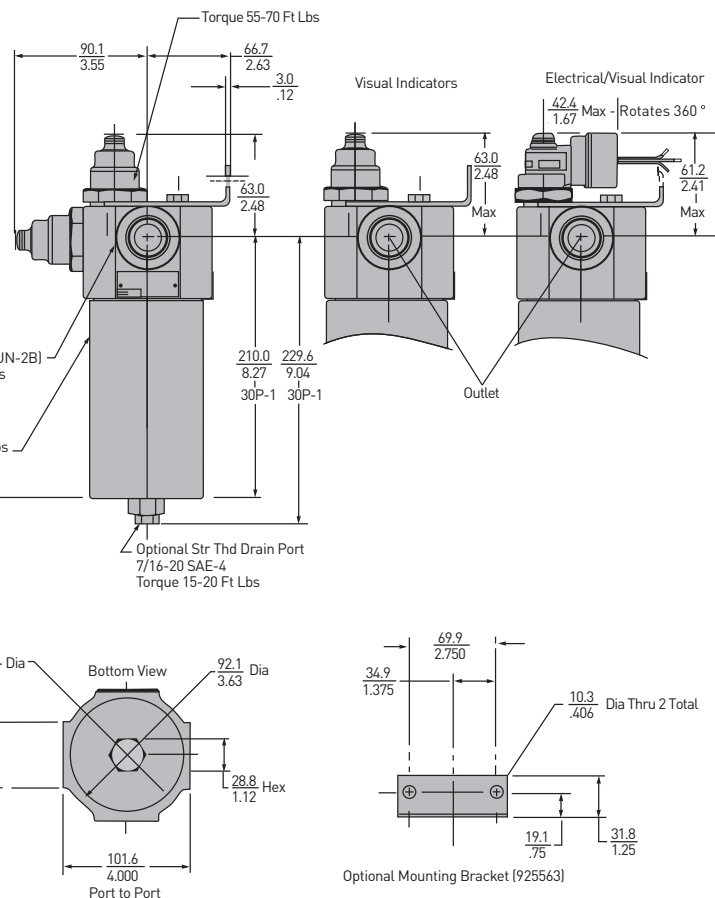
30PD-1 36 lb. (16.3 kg.)

30P-2 8.7 lb. (3.9 kg.)

30PD-2 40 lb. (18.1 kg.)



Linear Measure: millimeter
inch



Drawings are for reference only.
Contact factory for current version.

30P Duplex Filter

The Parker 30PD duplex pressure filter provides uninterrupted filtration for equipment that cannot be shut down for servicing.

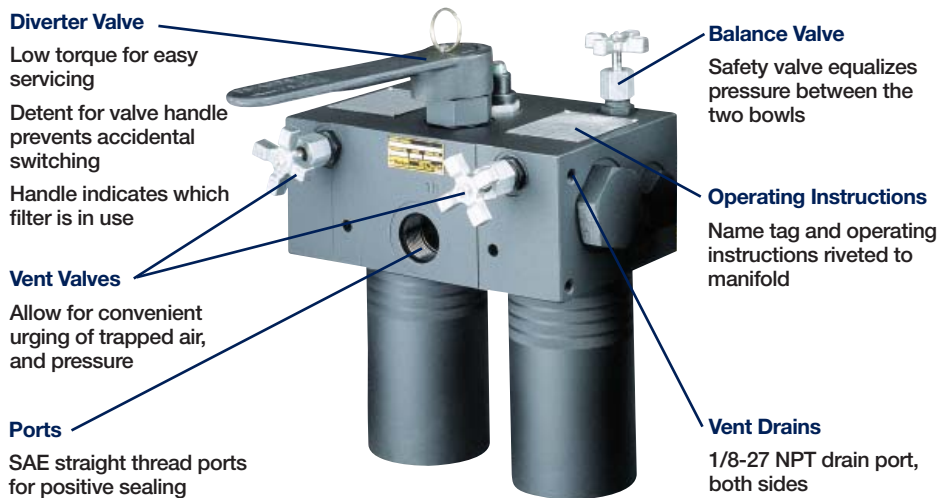
The 30PD allows you to simply switch the diverter valve and service the element while the other side is in service.

Pressure balancing valves and check valves are all neatly assembled in a compact manifold head that makes operation safe, smooth and easy.

Vent valves are also included to insure that all air is purged during service so that maximum system performance is achieved.

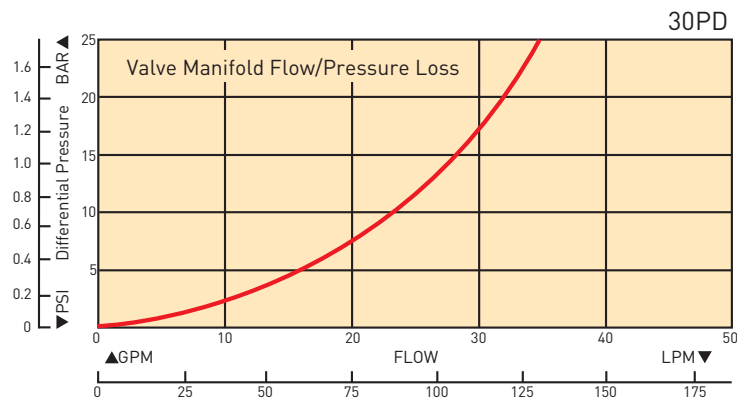
The Parker 30PD makes use of industry proven components. Elements are multi-pass tested in accordance with ANSI/NFPA T3.10.8.8 R1 -1990. Bowls and head are subjected to rigorous fatigue testing to insure a trouble free service life.

Drawings are for reference only.
Contact factory for current version.



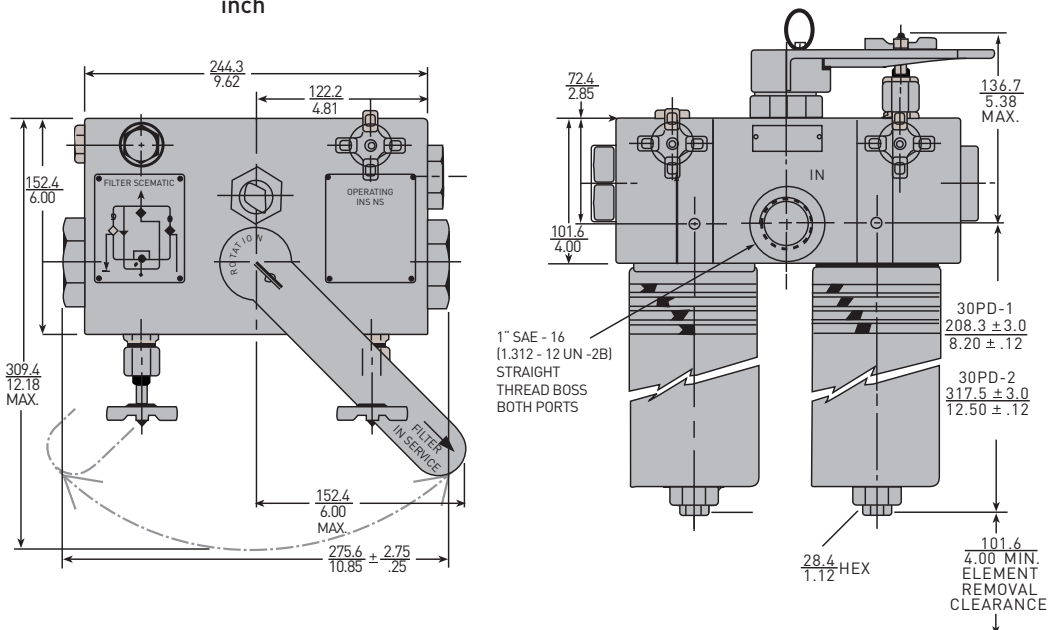
30PD Empty Housing Flow vs Pressure Loss

To obtain total filter assembly pressure loss, add empty housing loss to the pressure loss of selected element on 30P element performance pages.



Installation Dimensions

Linear Measure: millimeter
inch



15P/30P Series

Parts List

Index	Description	15P	30P
1	Head In-line Porting Bypass w/top indicator port No bypass w/top indicator port Bypass w/side indicator port No bypass w/side indicator port Manifold Porting Bypass w/indicator port No bypass w/ indicator port	931520 931519 931522 931521 931135 931523	933956 933956 933955 933955 933954 933954
2	Bypass Valve Assembly 50 psid (in-line model only) No bypass	928981 935744*	925127 925209
3	Elements (see chart on model code page)		
4	Bowl O-Ring Nitrile Fluorocarbon	N92138 V92138	N92151 V92151
5	Bowl Single without drain Single with drain Double without drain Double with drain	937547 937549 937548 937550	937551 937553 937552 937554
6	Drain Plug, SAE-4 W/nitrile o-ring W/fluorocarbon o-ring	921088 928882	921088 928882
7	Nameplate (unstamped)	920928	920928
8	Drive Screws	903393	903393
9	Mounting Spacer Tube (not shown)	925650	N/A
10	Mounting Bracket Kit	N/A	925563
11	Blank Indicator Kit	925515	925515
12	Indicators (fluorocarbon seals) Visual auto reset H option (1/2" conduit connection) E2 option (DIN 43650 connection) E3 option (3 pin ANSI/B93.55M connection)	932027 932905 929599 929596	932027 932905 929599 929596
13	Manifold Mounting Kit Manifold O-Rings (2 required) Nitrile Fluorocarbon	N/A N92117 V92117	925562 N92119 V92119

Note: consult factory for EPR part numbers

*Not for manifold-style head

Element Servicing

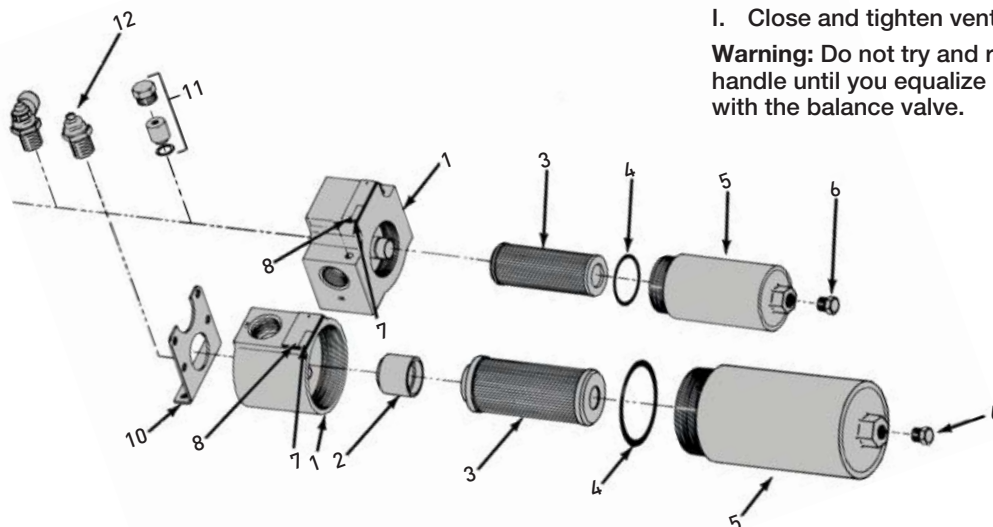
15P/30P

- Stop the system's power unit.
- Relieve any pressure in the filter line and drain filter bowl if drain port is provided.
- Loosen and remove bowl.
- Remove element from housing.
- Place new, clean element in housing, centering it on the element locator.
- Inspect the bowl o-ring and replace if necessary.
- Install bowl and tighten to specified torque.

30PD

- Arrow on diverter handle points to the on-duty chamber.
- Open off-duty vent valve (vent port should be plumbed back to reservoir).
- Open balance valve slowly to admit fluid into off duty chamber.
- When fluid is discharged from vent port, close and tighten.
- Pull up on detent pin and rotate diverter approximately 90° until detent relocates in seat.
- Close and tighten balance valve.
- Open new off-duty vent valve to relieve pressure.
- Follow steps C-G from 15P/30P instructions above.
- Close and tighten vent valve.

Warning: Do not try and rotate handle until you equalize pressure with the balance valve.



15P/30P Series

How to Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
30P	1	10Q	E	M2	K	S16	4

BOX 1: Filter Series	
Symbol	Description
15P	Pressure filter
30P	Pressure filter
30PD	Duplex style 30P

BOX 2: Element Length	
Symbol	Description
1	Single
2	Double

BOX 3: Media Code	
Symbol	Description
10C	Cellulose (30P, 30PD only)
02Q*	Microglass III, 2 micron
05Q	Microglass III, 5 micron
10Q*	Microglass III, 10 micron
20Q	Microglass III, 20 micron

Note: For high collapse rated (2000 psid) elements, add "H" behind Q. For Microglass media only. *For 3000 psid collapse rated elements, add "X" behind Q.

BOX 4: Seals	
Symbol	Description
B	Nitrile (NBR)
E	Ethylene propylene (EPR)
V	Fluorocarbon (FKM)

BOX 5: Indicator	
Symbol	Description
P	Port plugged
M2	Visual auto reset
H	Electrical indicator, w/1/2"-14 NPT connection and 12" leads
E	Electrical/visual w/ 1/2" NPT conduit connection and wire leads
E2	Electrical/visual (DIN 43650 Hirschman style connection)
E3	Electrical/visual (ANSI/ B.9355M 3-pin Brad Harrison style connection)

Note: For side mount indicators, place a "S" after indicator symbol. Not available on 30PD model.

BOX 6: Bypass	
Symbol	Pressure Setting
K	50 PSI (3.5 bar)

BOX 7: Ports	
Symbol	Description
	15P
S12	SAE-12
X	3/4"-manifold porting
	30P
S16	SAE-16
X	1"-manifold porting
	30PD
S16	SAE-16

Note: Customer supplies subplate adaptor, or purchases optional Parker subplate.

BOX 8: Options	
Symbol	Description
1	None
2	No bypass
4	SAE-4 drain port on bowl
21	No bypass and drain port

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.

Replacement Elements (Fluorocarbon Seals)

Media	15P-1	15P-2	30P/30PD-1	30P/30PD-2
20Q	930369Q	930370Q	933135Q	933136Q
10Q	932612Q	932618Q	932624Q	932630Q
05Q	932611Q	932617Q	932623Q	932629Q
02Q	932610Q	932616Q	932622Q	932628Q
20QH	934983Q	930544Q	NA	NA
I0QH	932615Q	932621Q	932627Q	932633Q
05QH	932614Q	932620Q	932626Q	932632Q
02QH	932613Q	932619Q	932625Q	932631Q
I0QX	933577Q	933579Q	933581Q	933583Q
02QX	933576Q	933578Q	933580Q	933582Q

Global products as identified are offered worldwide through all Parker locations and utilize a common ordering code.





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pneumatics
process control
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50P Series

High Pressure Filters



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50P Series

Applications

Applications for 50P series filters

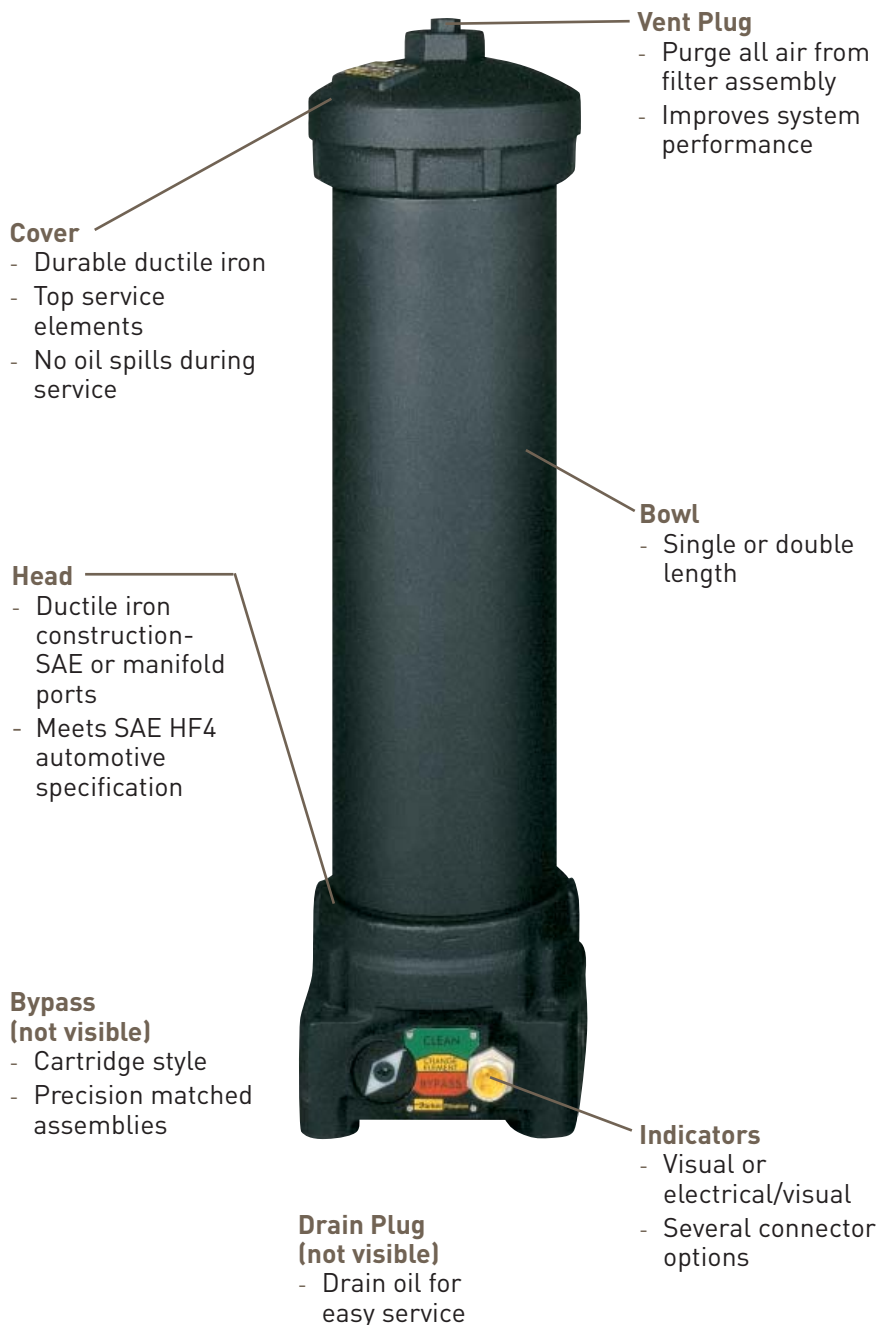
- Automotive specified equipment
- Hydrostatic transmission circuits
- Servo and proportional controls
- Offshore drilling rigs
- Mining equipment
- Power units

The design objective for all Parker filters is to achieve a sensible balance between cost and performance. We use state of the art technology to arrive at innovative yet practical designs. Designs which are cost effective for OEM's and users alike.

The 50P series allows you to customize each filter to closely match your needs. Choose the options which best fit your application. No need to waste money on features you don't need.

The 50P series filters are base mounted, which provides several possible advantages. The bowl up mounting makes servicing the elements quick and easy. Simply remove the top cover to access the element. A drain port is provided to allow oil be removed from filter prior to element servicing. This design reduces the possibility of oil spillage and injury to maintenance personnel.

The 50P series has optional manifold porting for space saving design that reduces the number of fittings and potential leak points. The porting is also designed to match the installation of many other manufacturers. Most important, the 50P series meets the SAE HF4 automotive standard.



50P Series

Features

O-Ring Seal

- Positive sealing for optimum element efficiency

Plastic End Caps

- Excellent corrosion protection
- Laser marked for clear long lasting identification



Microglass III Media

- Multi-layer for high capacity and high efficiency
- Four different micron sizes available
- Wire reinforced to prevent pleat bunching

Spiral Support Cylinders (Not Visible)

- High strength consistent support
- Continuous length eliminates leak points and increases surface area

Meets SAE HF4 specification for automotive uses

Feature	Advantage	Benefit
• Base mounted filter	• No brackets required for installation	• Reduced installation costs
• Top access cover	• Remove element from top • Lighter then removing entire bowl	• No oil mess
• Visual and electrical indicators	• Know exactly when to service elements	
• Drain port	• Drain all oil from assembly prior to servicing	• Eliminates cross contamination
• Vent port	• Purges all trapped air in filter	• Get the maximum performance from elements • Prevents a "spongy" system
• Multipass tested elements (per ANSI/NFPA T3.10.8.8 R1-1990)	• Element performance backed by recognized test standards	• Elements selected will have consistent performance levels
• Microglass III elements	• Multi-layer media • Wire reinforced pleats	• High capacity with high efficiency • No performance loss from pleat bunching

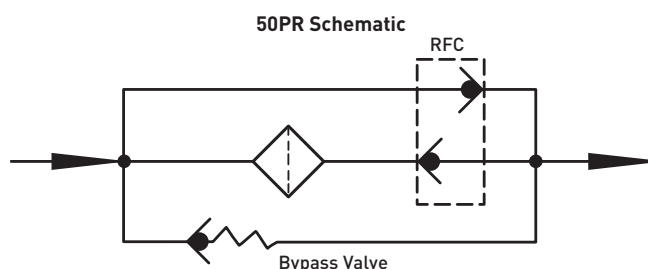
50P Series

50PR Reverse Flow Filter

The 50PR was designed specifically for hydrostatic transmission loops because of its capability to handle reverse flow.

Closed circuit HSTs frequently reverse direction causing flow to reverse in the fluid lines. Pressure filters installed between pump and motor must be able to handle reverse flow without having contaminant washed off of the elements and back into the system. To prevent such an occurrence, the filters require the use of internal check valves to direct the flow through the element in one direction and around the element in the other. Parker's internal check valve design minimizes additional pressure loss and eliminates the cost associated with external valves and fittings. Also the internal design keeps the envelope dimensions of the filter to a minimum as can be seen on the installation drawing.

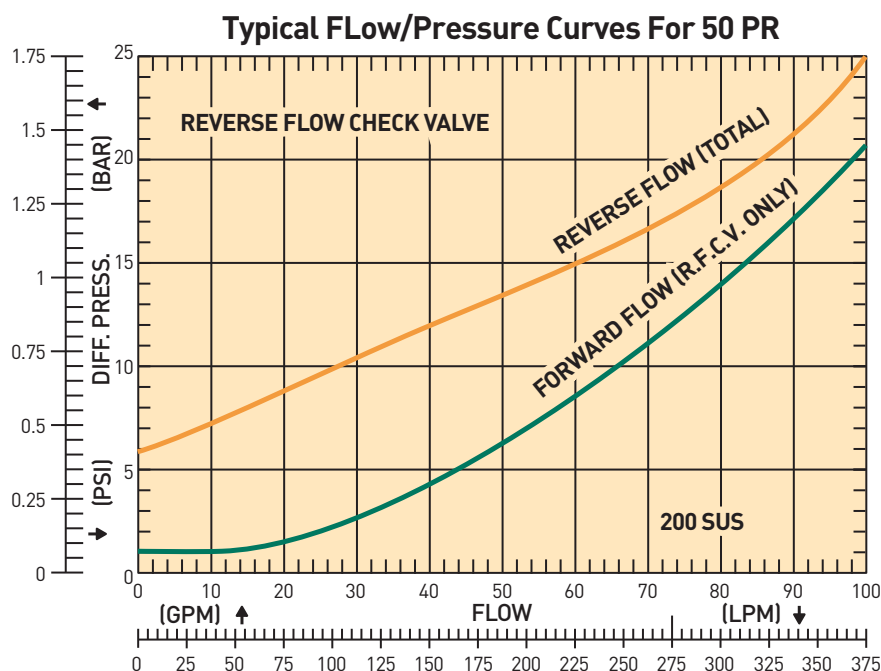
Sizing 50PR Filter Assemblies



To accurately determine the total pressure loss that will be seen when used in your system, the following steps should be taken.

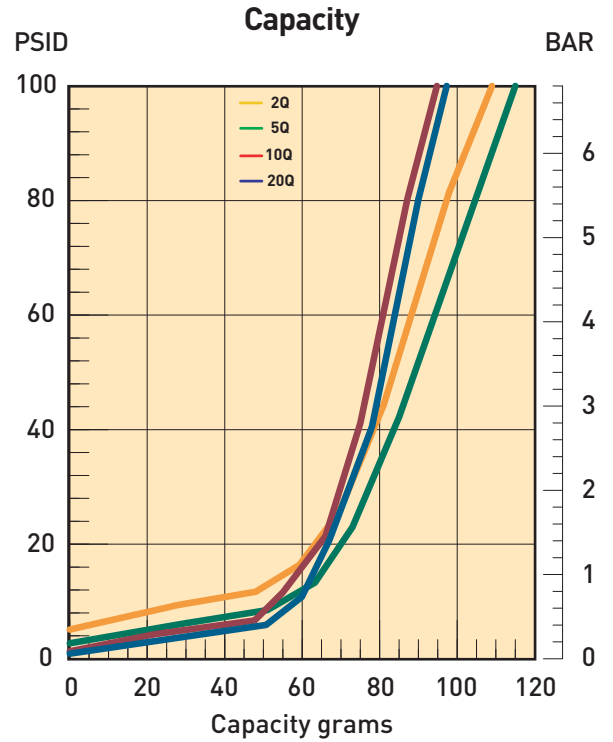
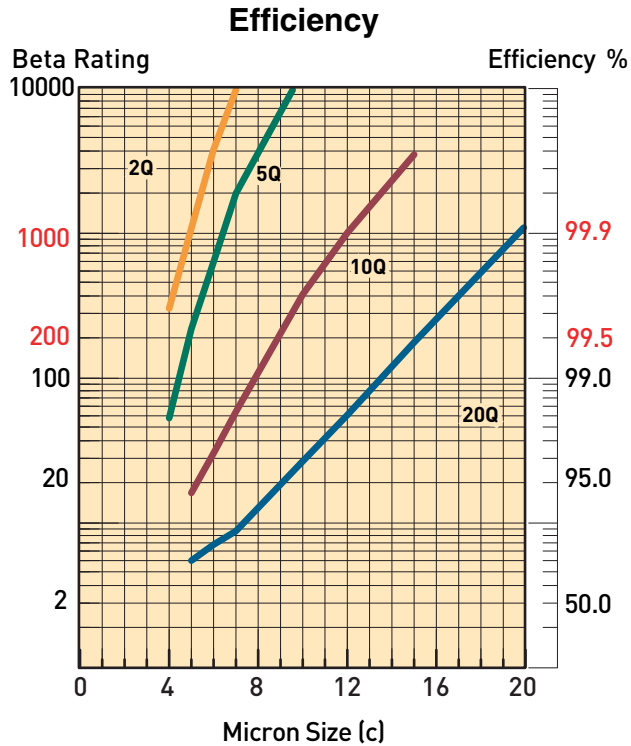
1. Examine the "Flow vs. Pressure" curve below. Find the pressure drop for the maximum system flow on the forward flow curve. Record this value as "housing with check valve pressure loss."
2. Examine the appropriate pressure loss curve for the media and bowl length combination. These curves are found in the Element Performance Data section.
3. Find the pressure drop for the maximum flow rate through the filter and record this value as "element pressure loss."
4. Find the empty housing pressure drop for the maximum flow rate through the filter and record this value as "empty housing pressure loss."
5. Add the values obtained in steps 1 and 3, then subtract out the value from step 4. The resultant pressure loss should not exceed 1/3 of the bypass valve or indicator you intend to select. If this ratio exceeds 1/3, then a double length housing or other media grade may need to be considered.

Contact the Hydraulic Filter Division if there is any doubt as to the total pressure loss you have calculated.



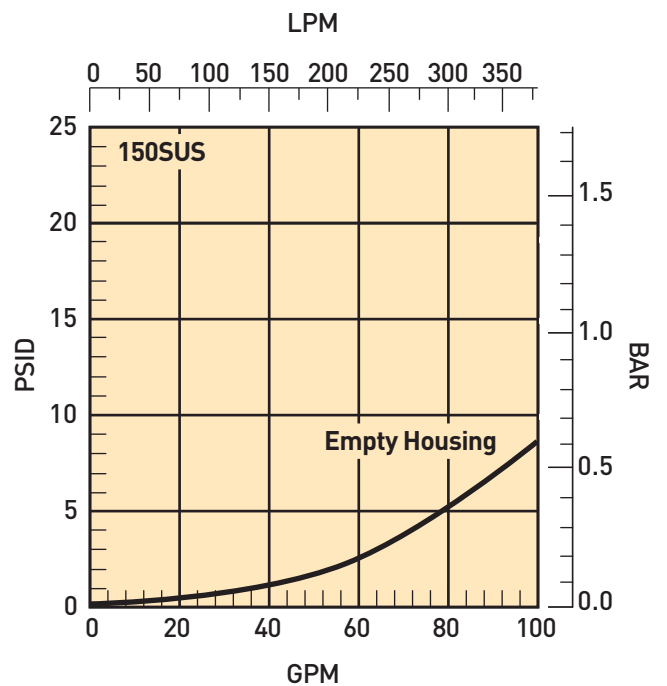
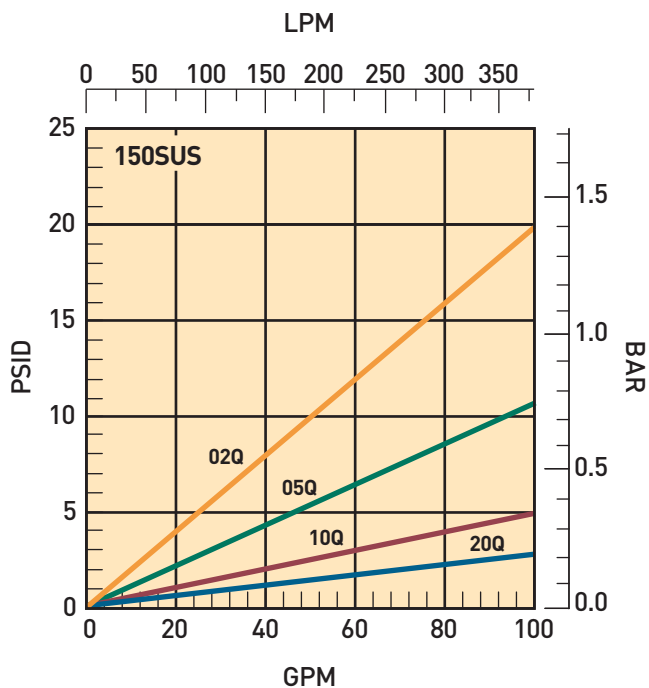
50P Series

50P-1 Element Performance



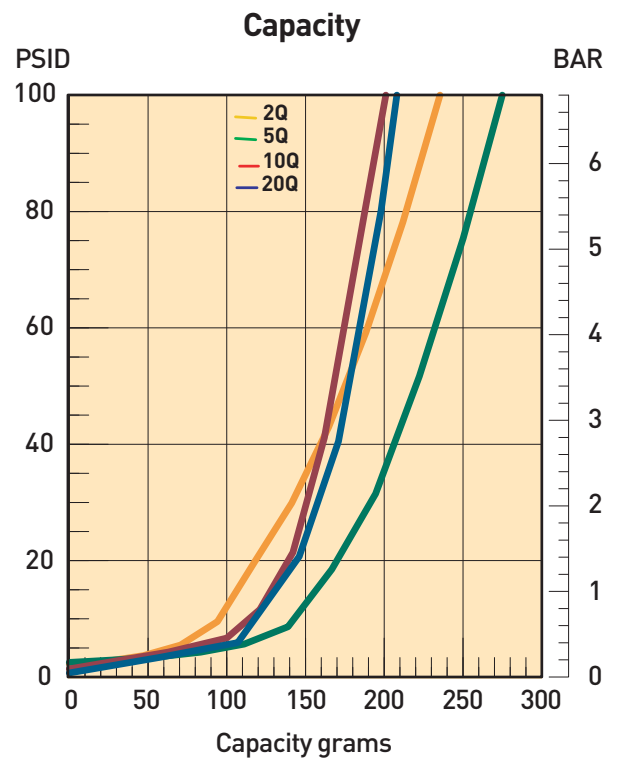
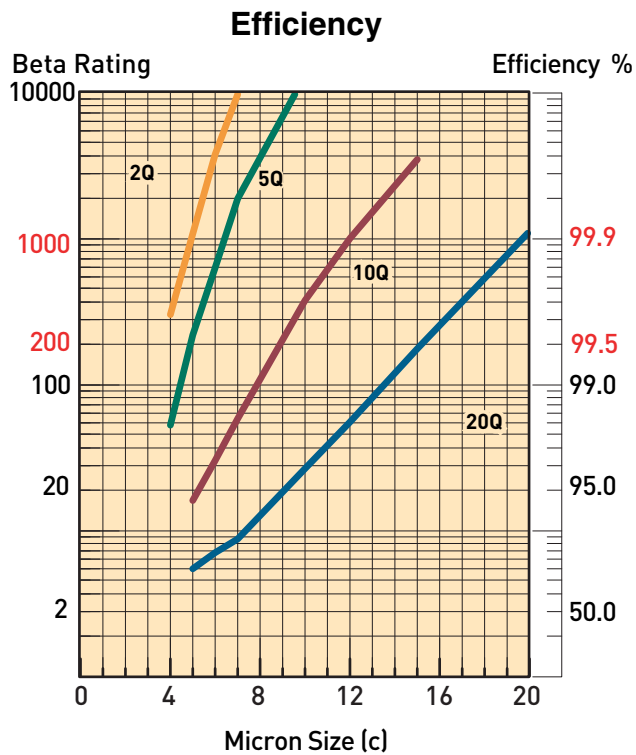
Results typical from Multi-pass tests run per test standard ISO 16889 @ 50 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



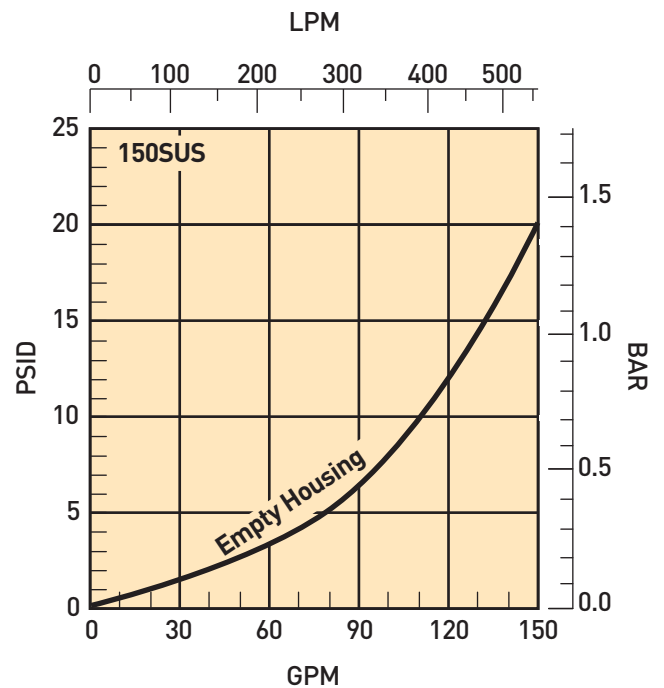
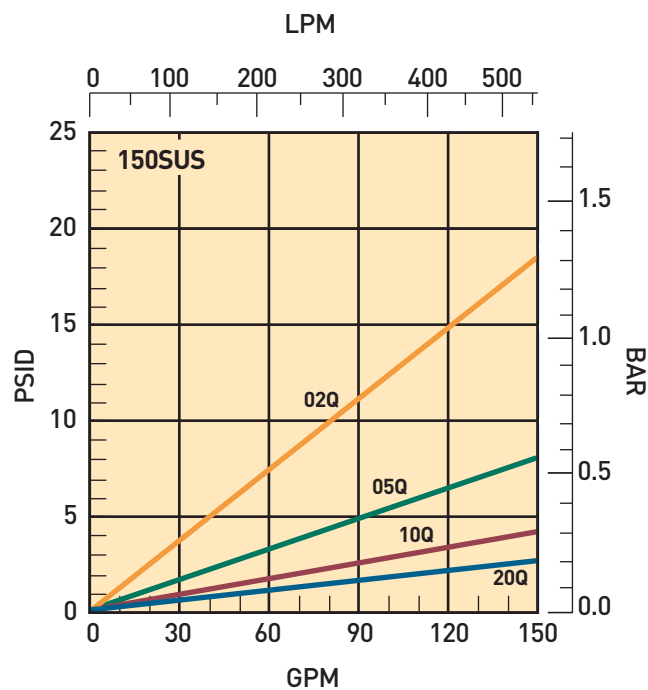
50P Series

50P-2 Element Performance



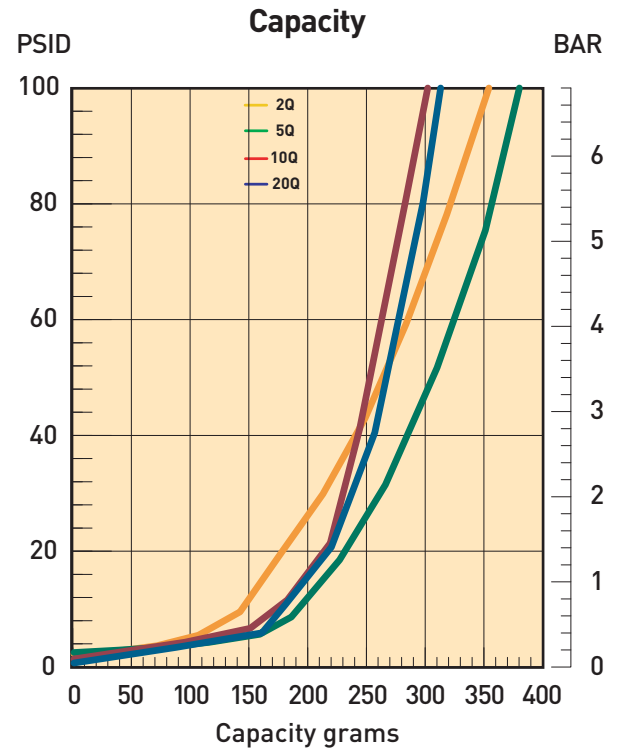
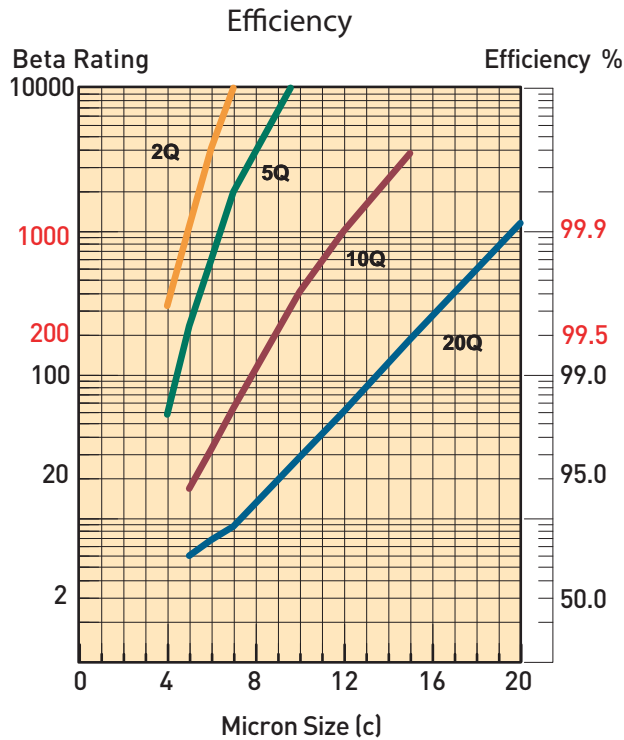
Results typical from Multi-pass tests run per test standard ISO 16889 @ 80 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



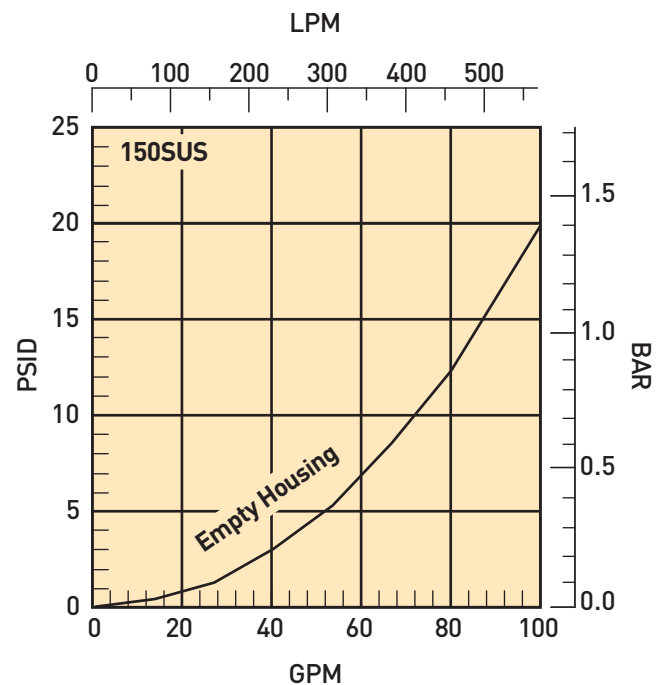
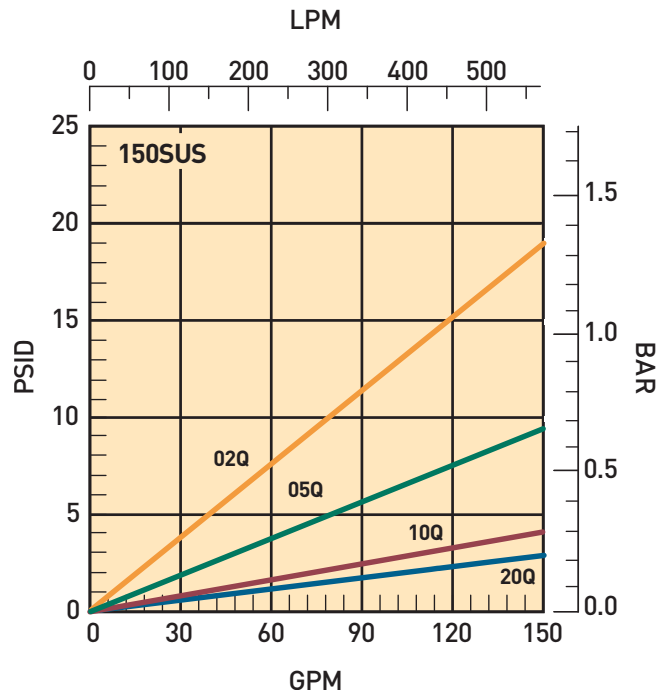
50P Series

50P-3 Element Performance



Results typical from Multi-pass tests run per test standard ISO 16889 @ 80 gpm to 100 psid terminal - 10 mg/L BUGL
Refer to Appendix on pages 265-266 for relationship to test standard ISO 4572.

Flow vs. Pressure Loss



50P Series

Specifications

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 5000 psi (344.8 bar)
 Rated Fatigue Pressure: 3500 psi (241.4 bar)
 Design Safety Factor: 3:1

Element Collapse Rating:

150 psid (10.2 bar) standard
 2000 psid (138 bar) high collapse "H" option

Operating Temperatures:

Buna: -40°F (-40°C) to 225°F (107°C)
 Fluorocarbon: -15°F (-26°C) to 275°F (135°C)

Filter Materials:

Head (base) and Cover: ductile iron
 Bowl: seamless steel tube

Indicators:

Visual 3 band (clean, change element, bypass)

Electrical: visual as above plus electrical switch with wire leads or connection as selected.

5A @ 240VAC

3A @ 28VDC

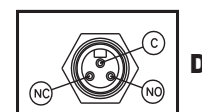
SPDT

Color Coding:

White (normally closed)

Red (normally open)

Black (common)



Shipping Weights (approximate):

50P-1: 56 lb. (25.4 kg)

50P-2: 77 lb. (34.9 kg)

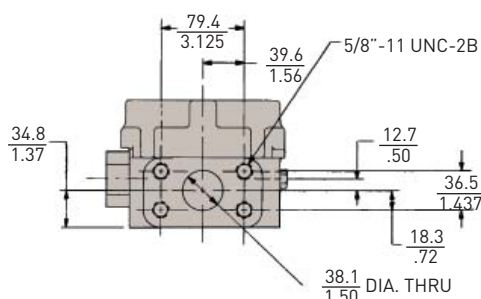
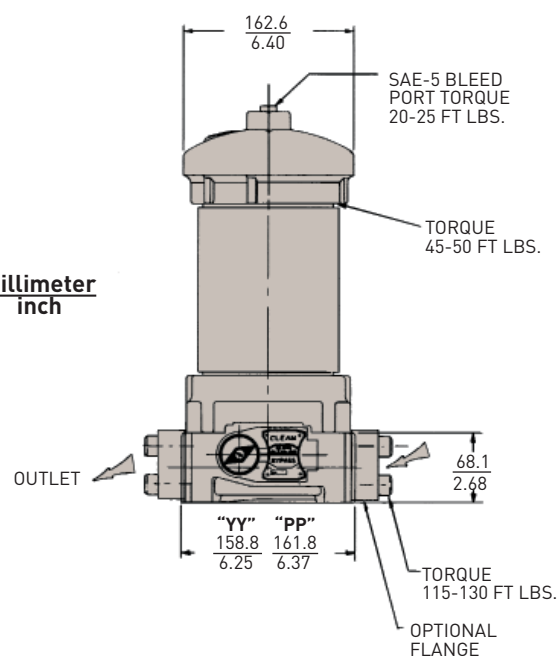
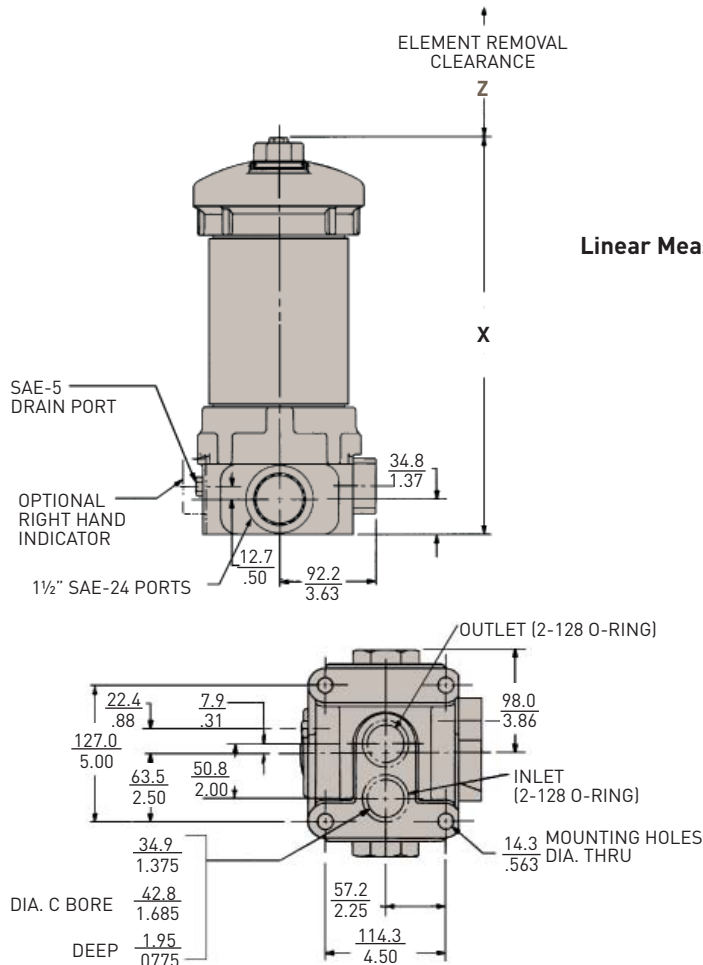
50P-3: 95 lbs. (43.0 kg)

50PR-1: 59 lb. (26.8 kg)

50PR-2: 80 lb. (36.3 kg)

Dimensions= mm/inches	50P-1	50PR-1	50P-2	50PR-2	50P-3
X	<u>387.1</u> 15.24	<u>404.6</u> 15.93	<u>622.8</u> 24.52	<u>640.3</u> 25.21	<u>850.4</u> 33.48
Z	<u>254.0</u> 10.00	<u>254.0</u> 10.00	<u>508.0</u> 20.00	<u>508.0</u> 20.00	<u>760.2</u> 30.00

Drawings are for reference only.
 Contact factory for current version.



Parts List and Service Instructions

Index	Description	Part Number 50P/PR
1	Head Assembly	Consult Factory
2	Bowl	Consult Factory
3	Cover	926655
4	Cover O-Ring Buna Fluorocarbon	N92246 V92246
5	Vent Plug Buna O-ring Fluorocarbon O-ring	935466 N93905 V93905
6	Element	See model code page
7	Drain Plug Buna O-ring Fluorocarbon O-ring	928364 N93905 V93905
8	Bypass Valve (50PR valve is not serviceable) 50 psi No bypass, 50 psi indicator 90 psi No bypass, 90 psi indicator Indicator Kits Mechanical (left side) Mechanical (right side) Electrical (wire leads) Electrical (3-pin Brad Harrison style) Electrical (DIN 43650 connection) O-Ring, Manifold Port Buna Fluorocarbon	 924189 924192 927399 930683 931916 931924 925337 926482 929362 N92128 V92128

Element Service Instructions

- A. Stop the system's power unit.
- B. Relieve any pressure in the filter or line.
- C. If desired, oil can be drained from filter housing by removing the drain port plug located in the head.
- D. Rotate the cover counterclockwise and remove.
- E. Remove element from housing.
- F. Place new, clean element into housing centering element over locator.
- G. Inspect cover o-ring and replace if necessary
- H. Apply cover to filter and tighten to 45-50 ft. lbs.
- I. Replace drain plug and tighten 20-25 ft. lbs.



50P Series

How to Order

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
F3	50P	1	10Q	DL	90	PP	1

BOX 1: Seals	
Symbol	Description
None	Buna
F3	Fluorocarbon
E8	EPR

BOX 2: Basic Assembly	
Symbol	Description
50P	5000 PSI (MAOP)
50PR*	Reverse flow hydrostatic version
*Note: Not available in triple length. Must select "1" or "2" in BOX 3	

BOX 3: Length	
Symbol	Description
1	Single
2	Double
3	Triple

BOX 4: Element Media	
Symbol	Description
20Q	Microglass III
10Q	Microglass III
05Q	Microglass III
02Q	Microglass III
Note: For high collapse 2000 psid rated elements, add "H" behind Q.	

BOX 5: Indicators	
Symbol	Description
P	Port plugged
PL	Port plugged, left side
M	Visual indicator
ML	Visual indicator, left side
E	Electrical indicator with wire leads and conduit connection
EL	Electrical indicator with wire leads and conduit connection, left side
D	Electrical indicator w/ ANSI/B.93.55M 3-pin Brad Harrison style connection
DL	Electrical indicator w/ ANSI/B.93.55M 3-pin Brad Harrison style connection, left side
Note: Left side is on viewer's left when looking into inlet port.	

BOX 6: Bypass and Indicator Setting	
Symbol	Pressure Setting
35	35 psid
50	50 psid
90	90 psid

BOX 7: Ports	
Symbol	Description
PP	SAE-24 straight thread
YY	SAE 1½" flange face (J518)
XX	1⅜" manifold ports on bottom of head

BOX 8: Options	
Symbol	Description
1	None
11	Blocked bypass

50P/50PR Replacement Elements (Fluorocarbon)

Standard Collapse				High Collapse			
Media	Single	Double	Triple	Media	Single	Double	Triple
20Q	931018Q	931020Q	933489Q	20QH	930438Q	931490Q	936449Q
10Q	932670Q	932679Q	933488Q	10QH	932676Q	932685Q	936448Q
05Q	932669Q	932678Q	933487Q	05QH	932675Q	932684Q	936447Q
02Q	932668Q	932677Q	933486Q	02QH	932674Q	932683Q	936446Q

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.



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100P Series

High Pressure Filters



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100P Series

Applications

Features/Applications for High Pressure Hydraulic Filters 100P Series

- Pressures to 6,000 PSI
- Flows to 265 GPM
- Microglass Elements 3 to 20 Micron
- 1½" and 2" Ports - SAE O-Ring or Code 62 Flange
- Reverse Flow Option

Specifications:

Flow Rating: 265 GPM

Operating Pressure: 6000 PSI

Proof Pressure: 9000 PSI

Burst Pressure: 12,000 PSI

Fatigue Pressure:

0-4000-0 PSI @ 3,000,000 cycles

Bypass Setting: 100 PSID

Fluid Temperature: -40°F to +212°F

Construction:

Head and Cap: Nodular Iron

Bowl: Seamless Steel Tube

Indicators: Brass

Elements: Consult Factory

Weight:

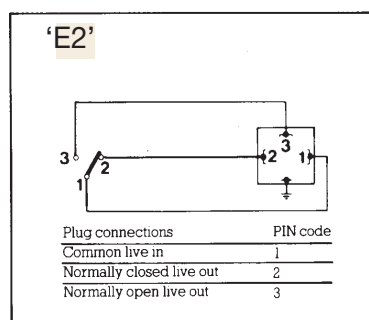
Length 1 -84 Lbs.

Length 2 -104 Lbs.

Electrical Ratings:

Hirschman Connector without Lamps:

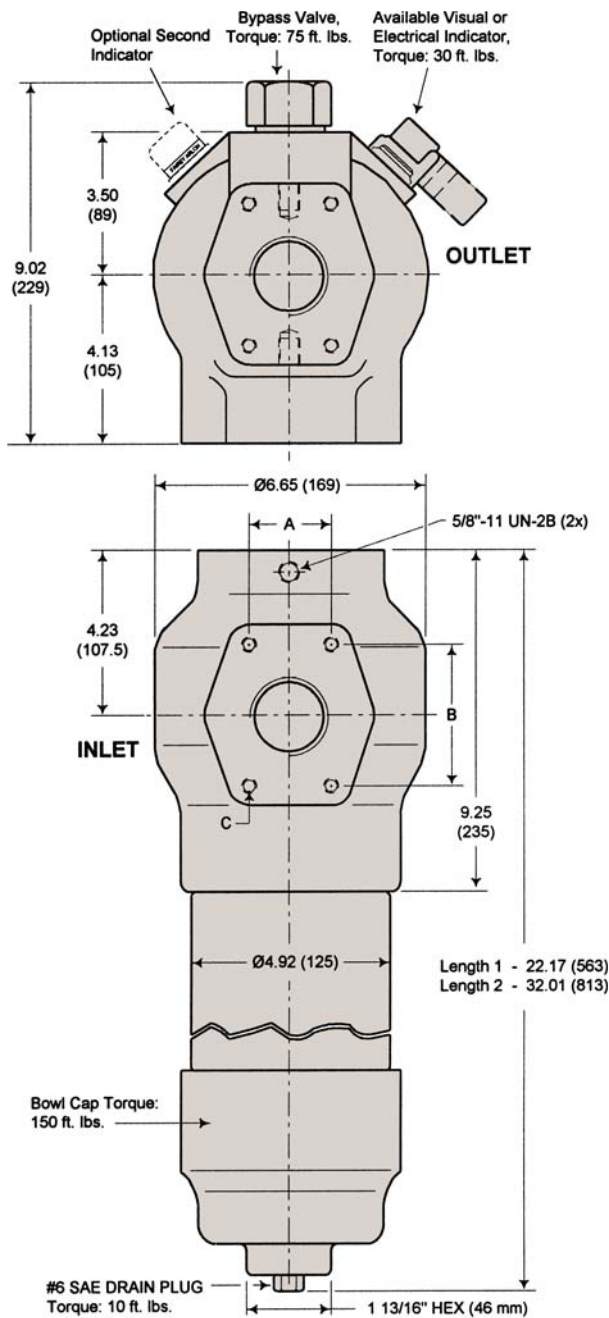
- E2 - 110 VAC, .5 Amp Ind., 2 Amp Res.
- 250 VAC, .5 Amp Ind., 2 Amp Res.
- 28 VDC, 1 Amp Ind., 2 Amp Res.



100P Series

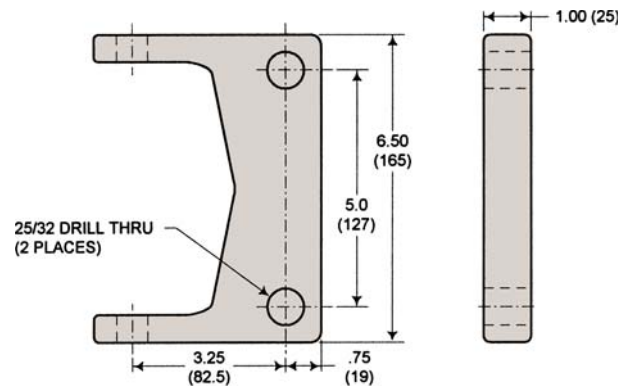
Specifications

Dimensions Inches (mm)



Element Removal Clearance: Length 1 - 13.30
Length 2 - 23.10

Optional Mounting Bracket



Port	Dimensions		
	A	B	C
F	1.437" 36.5mm	3.125" 79.4mm	5/8"-11 X 1.4"
T	1.750" 44.5mm	3.812" 96.8mm	3/4"-10 X 1.4"

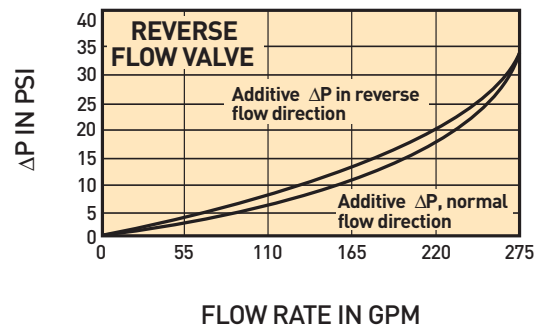
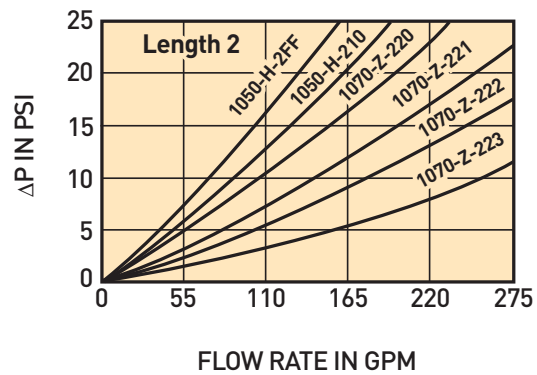
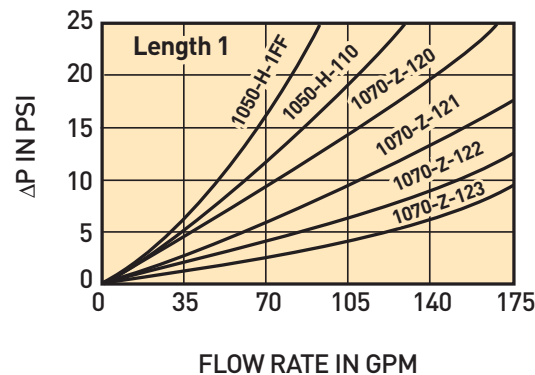
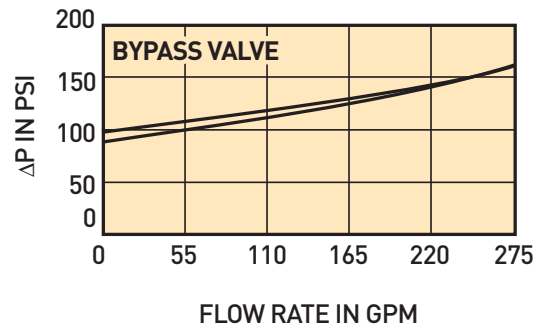
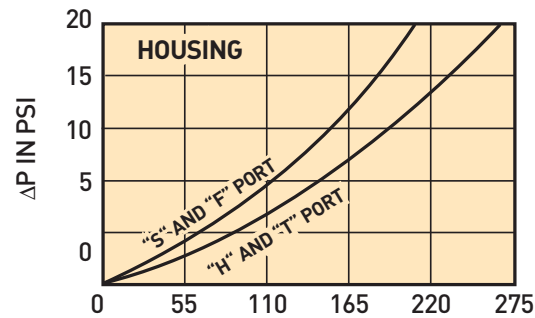
Drawings are for reference only.
Contact factory for current version.

100P Series

Element Performance

Flow/Pressure Drop Data

Fluid Conditions: Viscosity 140 SSU and Sp. Gr. 0.88



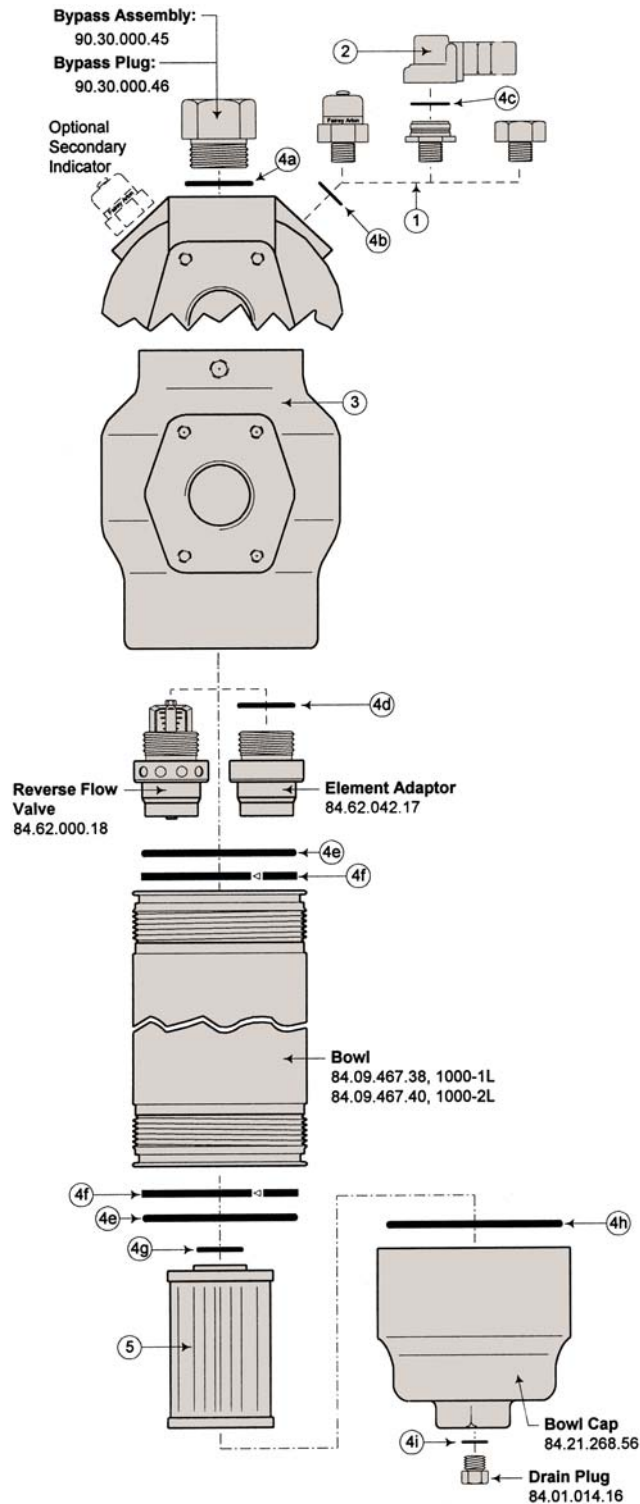
Multipass Test Results to ISO 4572 (Time Weighted Average)

Media Code	Filtration Rating						
	$\beta_x \geq 100$	β_3	β_6	β_{10}	β_{12}	β_{20}	β_{25}
02Q	3	≥ 100 99.0	> 300 99.67	> 1500 99.93	> 2000 99.95	> 5000 99.98	INF
05Q	6	12 91.7	≥ 100 99.0	> 1000 99.9	> 2000 99.95	> 5000 99.98	INF
10Q	10	8 87.5	22 95.4	≥ 100 99.0	≥ 200 99.5	> 5000 99.98	INF
20Q	20	—	2 50.0	8 87.5	20 95.0	≥ 100 99.0	> 200 99.5

Element Beta ratio β_x
Element efficiency in percent*

100P Series

Parts List



Drawings are for reference only.
Contact factory for current version.

1 Indicators		
Visual	Electrical Sub-Assy	Indicator Plug
6N50-2A	90.34.000.24	84.01.066.30

2 Electrical Actuator Assembly		
Hirschmann Connector		
Code	Part Number	Voltages Available
E2	FF3468	28 VDC, 250 VAC Max.

3 Head	
Description	Part Number
1000-F, 1-1/2" SAE 6000 PSI Flange, Code 62	84.69.268.20
1000-T, 2" SAE 6000 PSI Flange, Code 62	84.69.268.22

4 Seals			
Description		Buna-N	Viton
a	Bypass Assy/Plug Seal*	N93924	V93924
b	Indicator to Head Seal*	N72019	V72019
c	Actuator Dust Seal	N72021	
d	Adaptor to Head Seal*	81.10.150.15	81.10.152.15
e	Head/Bowl/Cap Seal*	N92346	V92346
f	Head to Bowl Back-Up Ring	FF3142	
g	Element Seal	N72141	V72141
h	Bowl Cap Seal*	81.10.150.86	81.10.152.86
i	Drain Plug Seal*	N93906	V93906

5 Element Kit†				
Disposable All Fluids				
Length	3 µm abs.	6 µm abs.	10 µm abs.	20 µm abs.
1	939060Q	939061Q	939062Q	939063Q
2	939064Q	939065Q	939066Q	939067Q
High Collapse Disposable (3000 psid)				
Length	3 µm absolute		15 µm absolute	
1	940737Q		940738Q	
2	940741Q		940742Q	

*Included in Seal Kit: **936063**, Nitrile **936064**, Fluorocarbon

†Included in Element Kit

‡To specify seal material, add the following suffix to the part number:

A Nitrile H Fluorocarbon

Options (Not Shown)	
Part Number	Description
402904	Mounting Bracket, Includes (2) 5/8"-11 x 1-1/4" Hex Flange Bolts

100P Series

How to Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
100P	2	10Q	B	M2	M	F32	1

BOX 1: Filter Series	
Symbol	Description
100P	High Pressure filter

BOX 2: Element Length	
Symbol	Description
2	Double

BOX 3: Media Code	
Symbol	Description
	Standard Element
02Q	Microglass III, 2 micron
05Q	Microglass III, 5 micron
10Q	Microglass III, 10 micron
20Q	Microglass III, 20 micron
	High Collapse Element
02QX	Microglass III, 2 micron
10QX	Microglass III, 10 micron

BOX 4: Seals	
Symbol	Description
B	Nitrile
V	Fluorocarbon

BOX 5: Indicator	
Symbol	Description
M2	Visual differential ²
E2	Electrical differential ²

BOX 6: Bypass	
Symbol	Pressure Setting
M	100 PSID (7.0 bar)
X	No bypass ³

BOX 7: Ports	
Symbol	Description
F24	1-1/2" SAE flange, Code 62
F32	2" SAE flange, Code 62

BOX 8: Options	
Symbol	Description
1	None
3	Reverse flow valve (RFV)
TP	Mounting bracket (including bolts)
3TP	RFV & mounting bracket (including bolts)

Notes:

1. Filters include the element you select already installed.
2. Indicator setting is 73 psid (5,0 bar).
3. When the no bypass option is selected, a high collapse element must also be selected.



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Applications

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Preserve the environment.
Minimize waste and promote energy efficiency.

Achieve worldwide filtration solutions.
Build global confidence.

Redefine new limits.
Forge ahead with advanced technology.

Keep contamination under control.
Reduce maintenance costs.

Enhance total system reliability.
Focus on customer satisfaction.

Reach optimum potential.
Drill to greater depths.

...engineer your success.

Parker engineers have developed what soon will be the industry standard in high pressure hydraulic filtration. The new 7,000 psi WPF series incorporates many advanced features designed for one reason: to improve your bottom line.



Typical Applications

- Aircraft Ground Support
- Injection Molding
- Mining
- Mobile Ag
- Mobile Construction
- Oil & Gas Exploration
- Power Generation
- Primary Metals
- Refuse Trucks



There is no better high pressure filter available today for durability and performance. The reduction of your operating costs is our primary concern, and we are committed to contributing towards your success.



WPF Series

Features



- 1 High strength ductile iron filter head with integral indicator port
- 2 Steel bowl with standard drain port
- 3 Proprietary element endcap assembly includes bypass and reverse flow valves
- 4 Patented deformable tangs secure element in bowl
- 5 Coreless element assembly
- 6 Re-usable element support core

WPF Series

SurgeGuard Elements

Ecoglass design
Non-metallic construction

Environmentally friendly.
Reduced disposal costs due to
minimum mass and oil retention

Proprietary
SurgeGuard protection
System protection
from back-flow

Component performance
integrity with improved flow fatigue
resistance

Integrated bypass & reverse flow
valve technology
Every element serviced provides
new bypass &
reverse flow valve assembly

Reliable, high performance, quick
response design

Low mass, low ΔP
reverse flow valve
Ideal for closed-loop
applications

Greater design and
service flexibility

Patented
deformable tangs
Automatic element
locate and removal

Easy, fast, safe, clean

Element removal
clearance
Benchmarked best-in-class
against major competitors

Ease-of-service.
Machine design flexibility

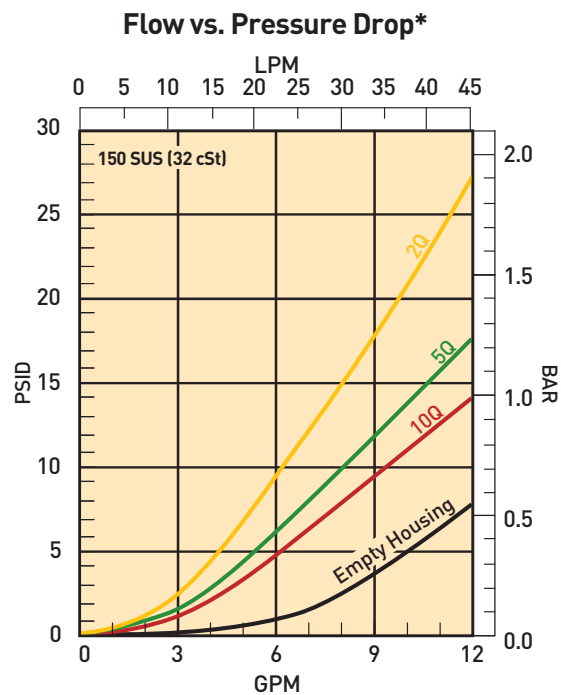
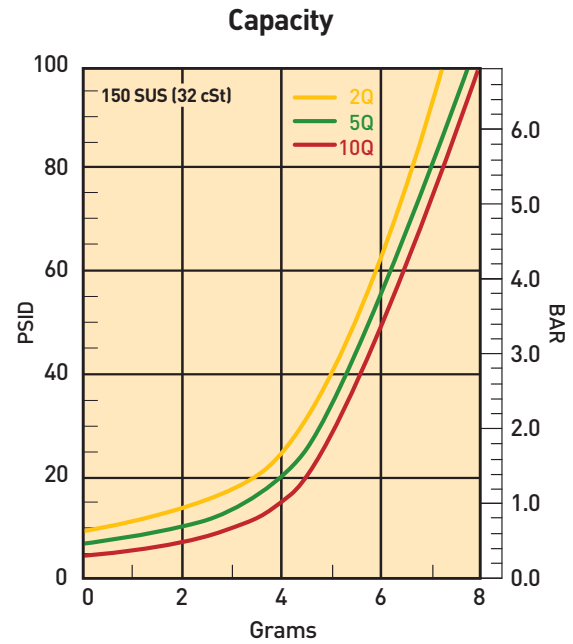
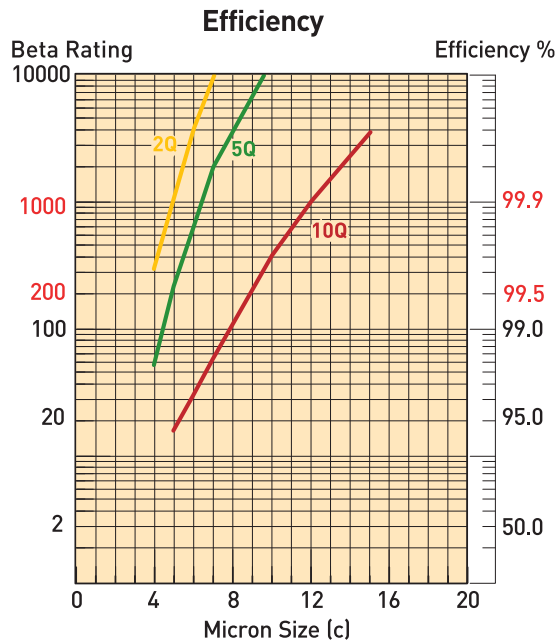
Patented valves
with low hysteresis
Zero leakage
and low friction

Optimum performance



WPF Series

WPF1 Element Performance



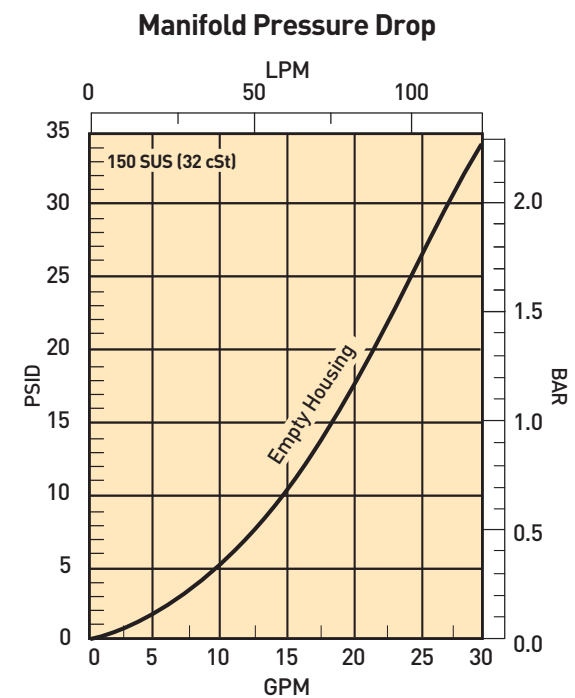
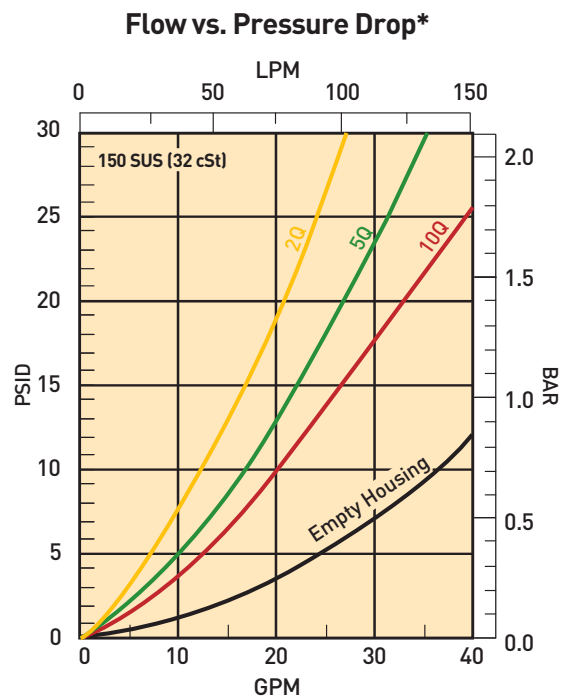
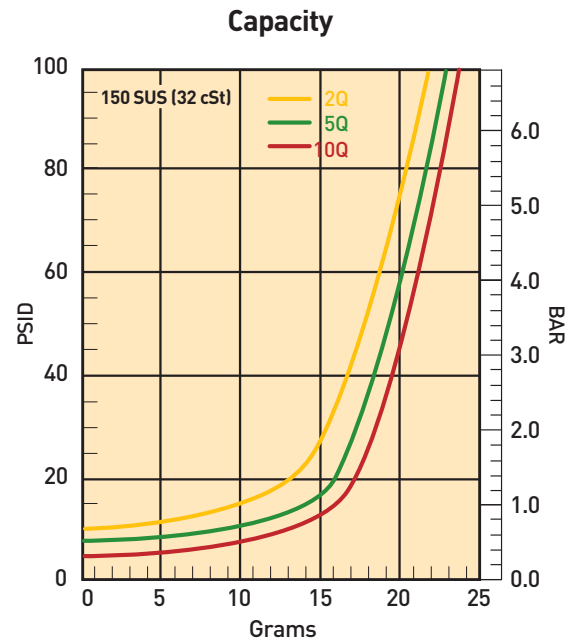
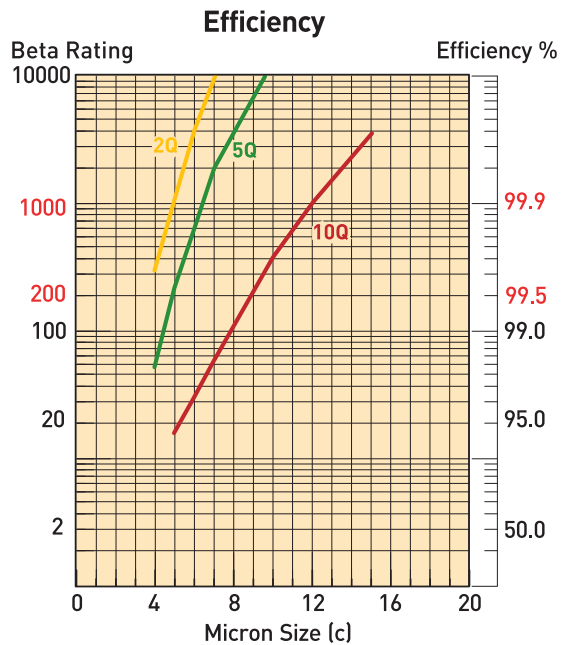
*High Collapse Correction Factor:
 "QH" Elements (2000 psid) = 1.4 times reported loss

Results typical from Multi-pass tests run per test standard ISO 16889 @ 10 gpm to 50 psid terminal - 10 mg/L BUGL.

Note: During reverse flow, ΔP is 20 psid at max. flow.

WPF Series

WPF2 Element Performance



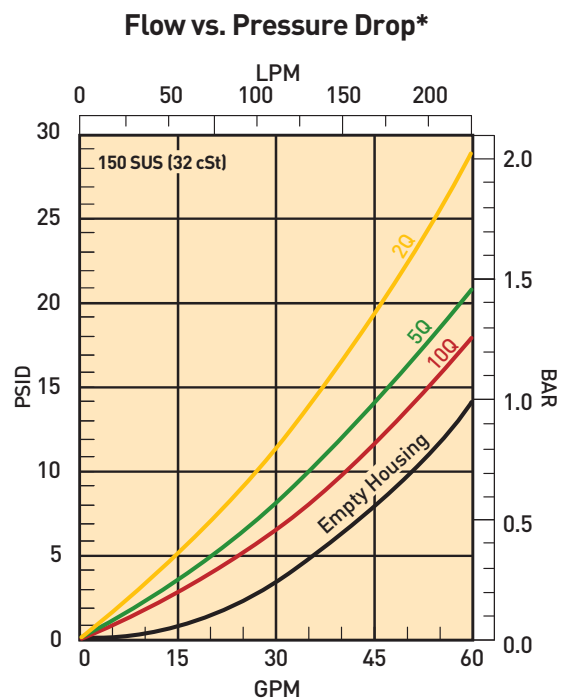
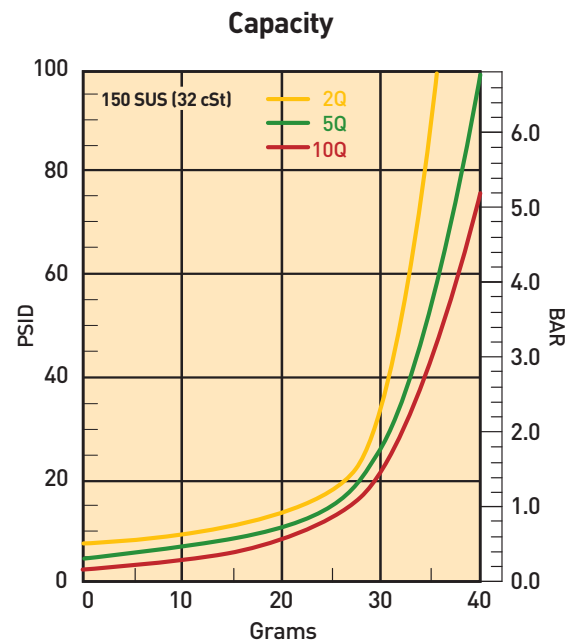
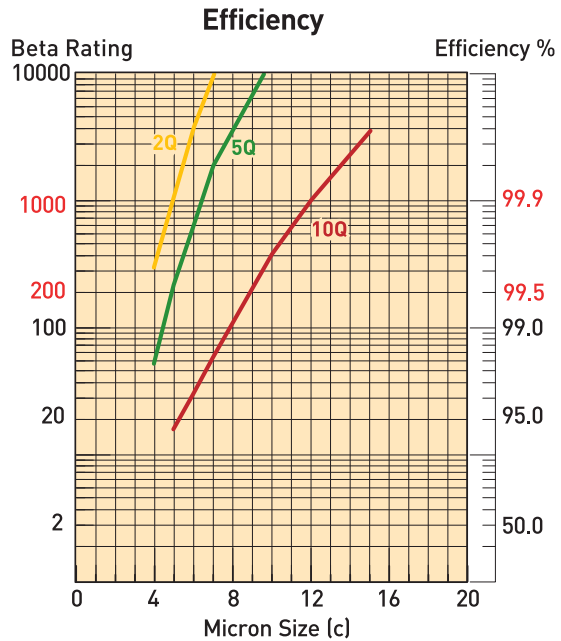
*High Collapse Correction Factor:
 "QH" Elements (2000 psid) = 1.4 times reported loss

Results typical from Multi-pass tests run per test standard ISO 16889 @ 25 gpm to 50 psid terminal - 10 mg/L BUGL.

Note: During reverse flow, ΔP is 20 psid at max. flow.

WPF Series

WPF3 Element Performance



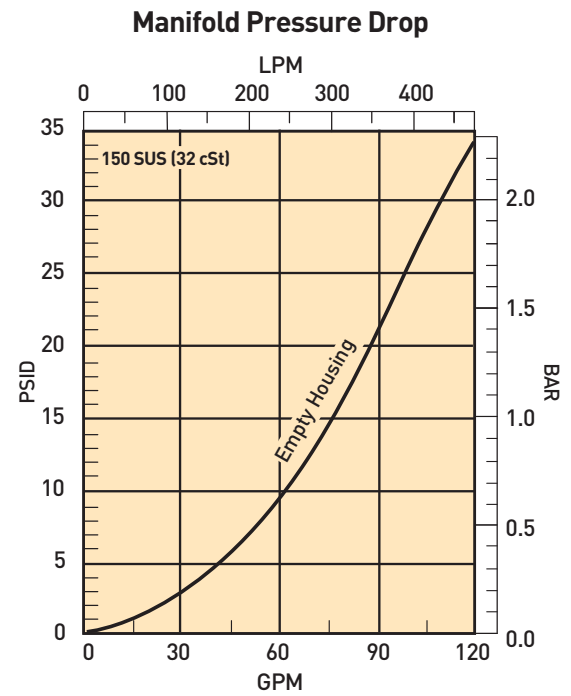
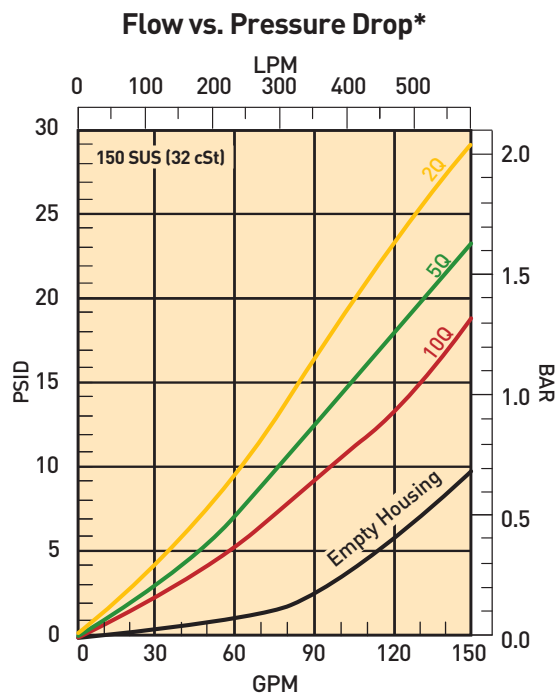
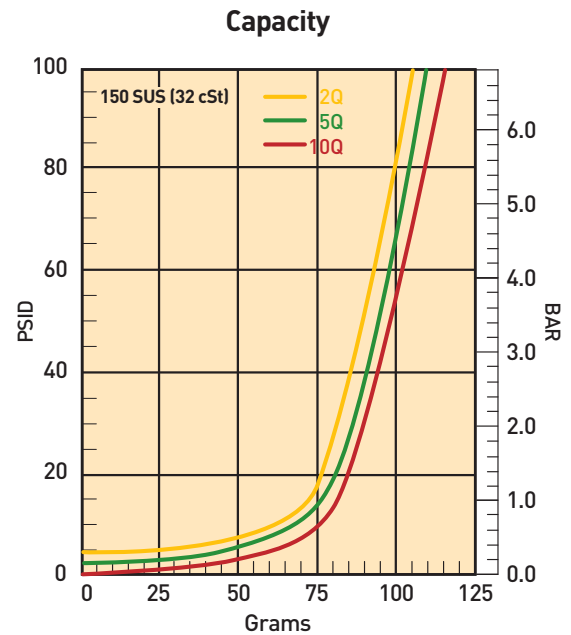
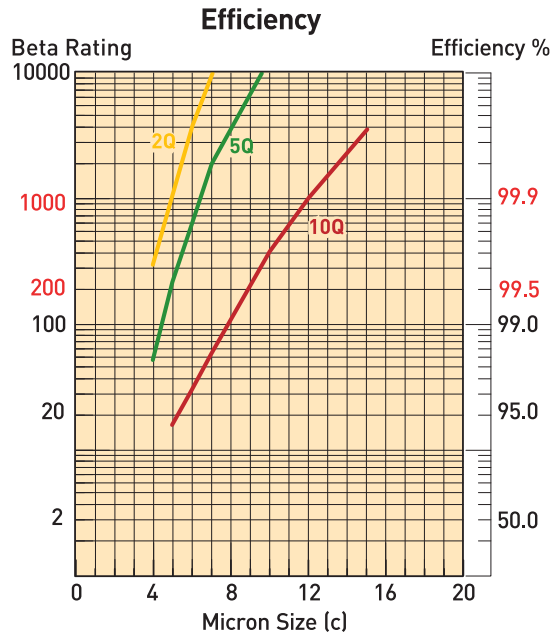
*High Collapse Correction Factor:
 "QH" Elements (2000 psid) = 1.4 times reported loss

Results typical from Multi-pass tests run per test standard ISO 16889 @ 45 gpm to 50 psid terminal - 10 mg/L BUGL.

Note: During reverse flow, ΔP is 20 psid at max. flow.

WPF Series

WPF4 Element Performance



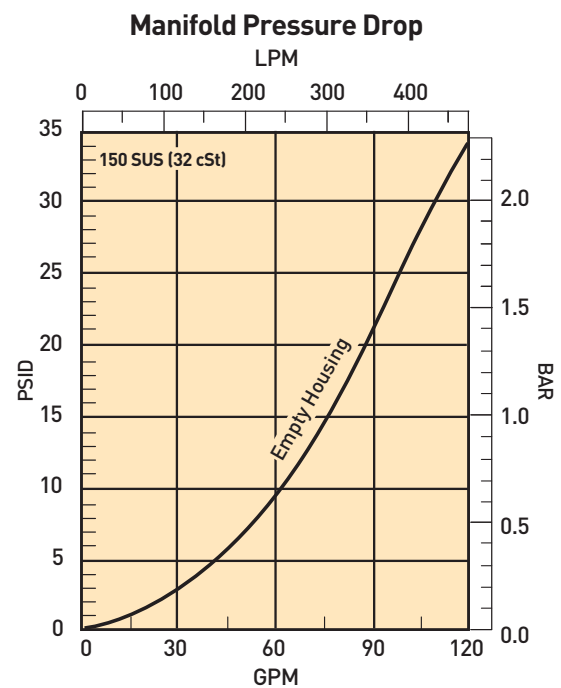
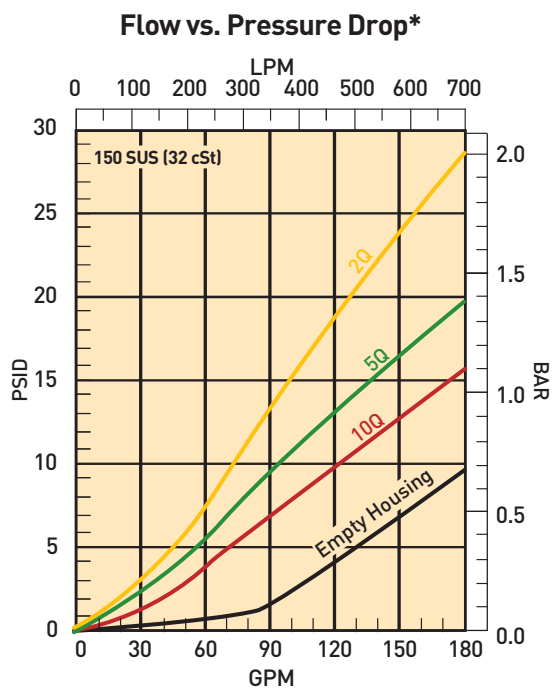
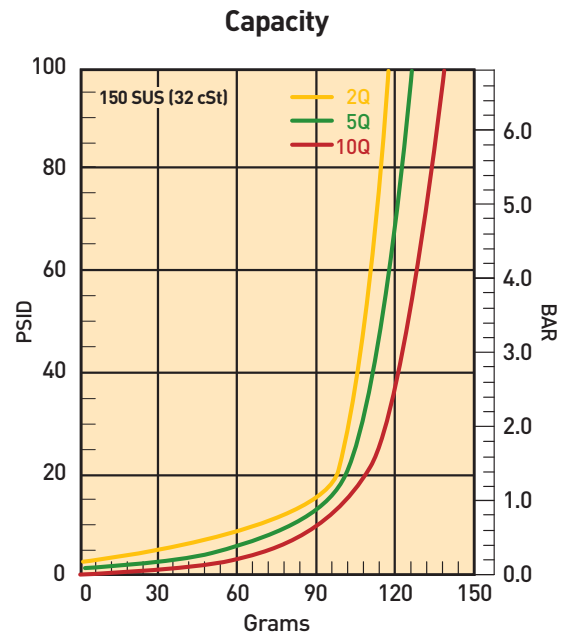
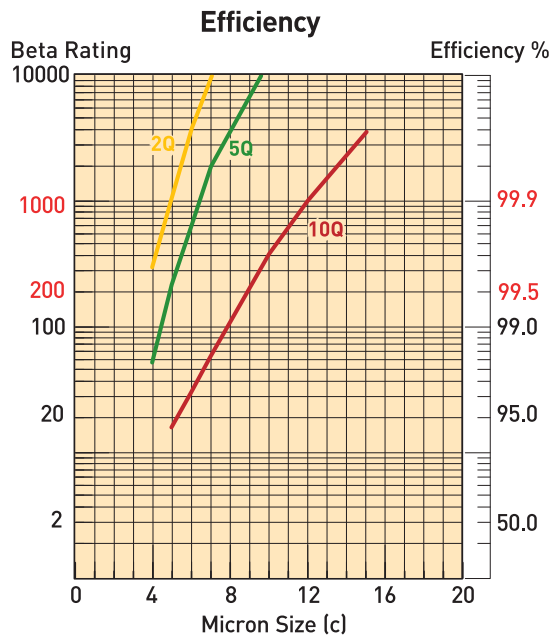
*High Collapse Correction Factor:
 "QH" Elements (2000 psid) = 1.4 times reported loss

Results typical from Multi-pass tests run per test standard ISO 16889 @ 90 gpm to 50 psid terminal - 10 mg/L BUGL.

Note: During reverse flow, ΔP is 20 psid at max. flow.

WPF Series

WPF5 Element Performance



*High Collapse Correction Factor:
 "QH" Elements (2000 psid) = 1.4 times reported loss

Results typical from Multi-pass tests run per test standard ISO 16889 @ 100 gpm to 50 psid terminal - 10 mg/L BUGL.

Note: During reverse flow, ΔP is 20 psid at max. flow.

WPF Series

Specifications

Maximum Allowable Operating Pressure (MAOP):

7000 psi (483 bar)

Rated Fatigue Pressure:

6000 psi (414 bar)

Design Safety Factor: 3:1

Operating Temperatures:

-15°F (-26°C) to 250°F (135°C)

Element Collapse Rating:

Standard: 300 psi (21 bar)

High Collapse: 2000 psi (138 bar)

Materials:

Head: SG Iron

Bowl: Steel

Indicator: Stainless Steel
with Plastic Connectors

Weights:

WPF1

9 lbs. (4.1 kg)

WPF2 13 lbs. (5.9 kg)

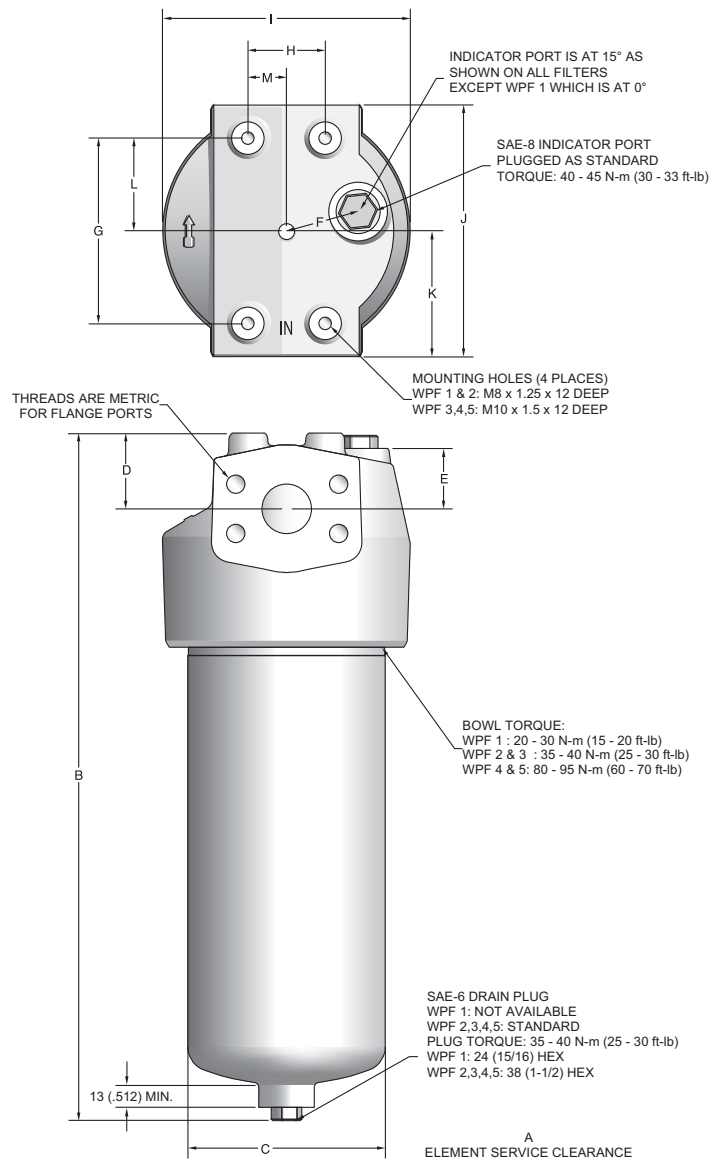
WPF3 21 lbs. (9.5 kg)

WPF4 45 lbs. (20.4 kg)

WPF5 67 lbs. (30.4 kg)

Drawings are for reference only.
Contact factory for current version.

T-Port



T-PORT DIMENSIONS mm (inch)

Filter Model	A	B	C	D	E	F	G	H	I	J	K	L	M
WPF1	70 (2.76)	180 (7.09)	69.5 (2.74)	23 (.91)	15 (.59)	27 (1.06)	60 (2.36)	30 (1.18)	90 (3.54)	92 (3.62)	46 (1.81)	30 (1.18)	15 (.59)
WPF2	79 (3.11)	293 (11.53)	75 (2.95)	32 (1.26)	26 (1.02)	30 (1.18)	80 (3.15)	40 (1.57)	98 (3.86)	110 (4.33)	55 (2.17)	40 (1.57)	20 (.78)
WPF3	88 (3.47)	345 (13.58)	93 (3.66)	40 (1.57)	29 (1.14)	35 (1.38)	90 (3.54)	55 (2.17)	120 (4.72)	126 (4.96)	63 (2.48)	45 (1.77)	27.5 (1.08)
WPF4	100 (3.94)	445 (17.52)	128 (5.04)	49 (1.93)	39 (1.54)	48 (1.89)	120 (4.72)	50 (1.97)	160 (6.30)	163 (6.42)	81.5 (3.21)	60 (2.36)	25 (.98)
WPF5	100 (3.94)	561 (22.09)	128 (5.04)	61 (2.40)	51 (2.01)	48 (1.89)	140 (5.51)	80 (3.15)	160 (6.30)	183 (7.20)	91.5 (3.60)	70 (2.76)	40 (1.57)

WPF Series

Specifications

Maximum Allowable Operating Pressure (MAOP):

7000 psi (483 bar)

Rated Fatigue Pressure:

6000 psi (414 bar)

Design Safety Factor: 3:1

Operating Temperatures:

-15°F (-26°C) to 250°F (135°C)

Element Collapse Rating:

Standard: 300 psi (21 bar)

High Collapse: 2000 psi (138 bar)

Materials:

Head: SG Iron

Bowl: Steel

Indicator: Stainless Steel
with Plastic Connectors

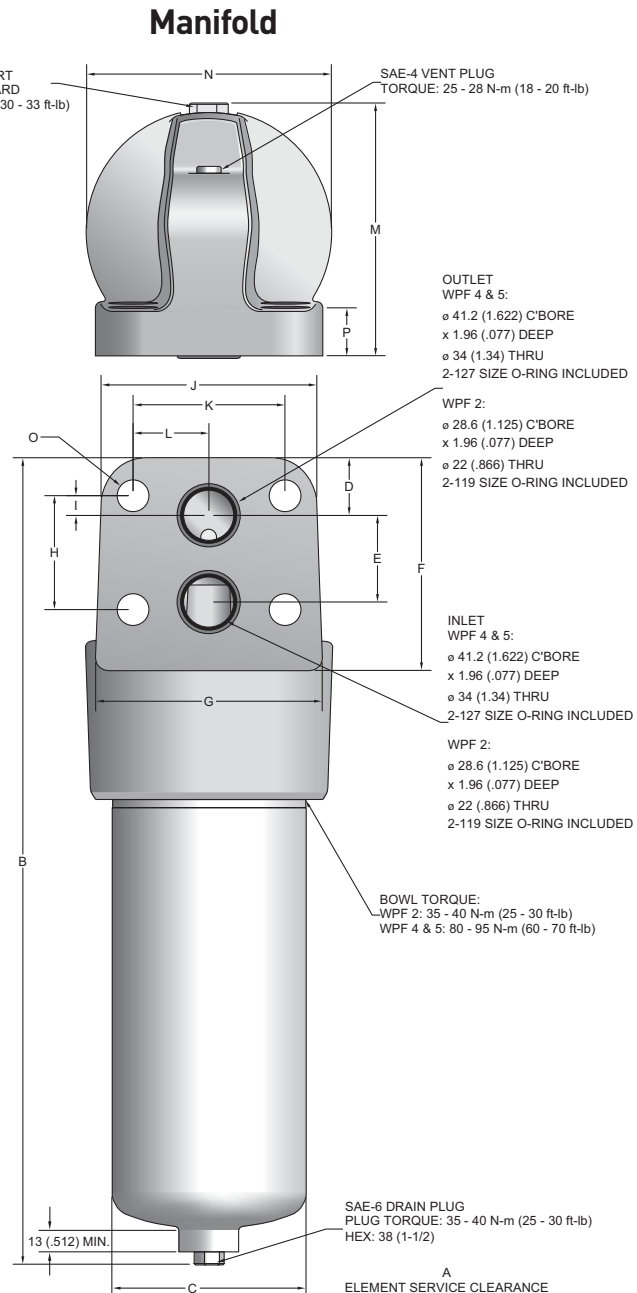
Weights:

WPF2 18 lbs. (8.2 kg)

WPF4 63 lbs. (28.6 kg)

WPF5 70 lbs. (31.7 kg)

Drawings are for reference only.
Contact factory for current version.

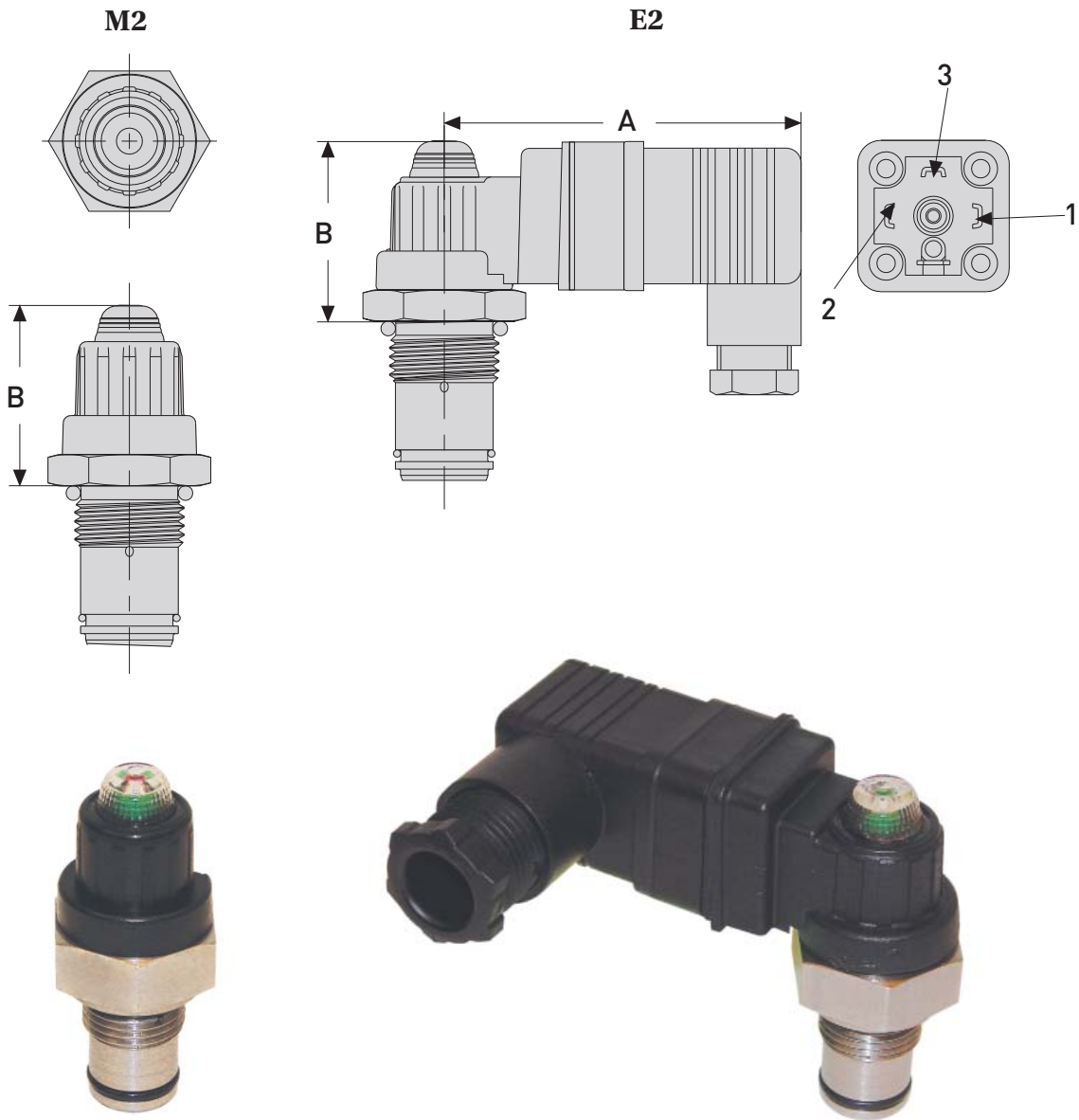


MANIFOLD DIMENSIONS mm (inch)

Filter Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
WPF2	79 (3.11)	343(13.50)	75 (2.95)	24 (.94)	39 (1.53)	95 (3.74)	116 (4.57)	50 (1.97)	6 (.24)	110 (4.33)	80 (3.15)	40 (1.57)	110 (4.33)	121 (4.76)	17 (.67)	30 (1.18)
WPF4	100 (3.94)	532 (20.94)	128 (5.04)	38 (1.50)	57 (2.24)	140 (5.51)	150 (5.91)	75 (2.95)	13 (.51)	142 (5.59)	100 (3.94)	50 (1.97)	166.5 (6.56)	161 (6.34)	21 (.83)	31.7 (1.25)
WPF5	100 (3.94)	627 (24.69)	128 (5.04)	38 (1.50)	57 (2.24)	140 (5.51)	150 (5.91)	75 (2.95)	13 (.51)	142 (5.59)	100 (3.94)	50 (1.97)	166.5 (6.56)	161 (6.34)	21 (.83)	31.7 (1.25)

WPF Series

Indicator Specifications



Torque: 30-33 ft-lb (40-45 N-m)
Indicator setting: 50 psid

INDICATOR DIMENSIONS mm (inch)

Option	Description	Connection/Power	Wiring	"A"	"B"
M2	Visual Auto Reset	N/A	N/A	N/A	49 (1.73)
E2	Electrical - Visual	Din 43650 3 Pole +Earth 5A@125/250 VAC, 3A@28VDC	Pin 1 - Common Pin 2 - Normally Closed Pin 3 - Normally Open	73.7 (2.90)	54 (2.13)

WPF Series

Service & Maintenance Instructions

1 Stop system power and vent captive pressure.

2 Drain filter assembly.

3 Remove bowl and element assembly.

4 Push down to squeeze tangs and lift element.

5 Twist to remove core.

6 Retain reusable core.

7 Discard used element.

8 Insert reusable core into new element until it snaps.

9 Push element assembly into bowl, snap tangs.

10 Inspect o-ring and anti-extrusion ring.

11 Install bowl with new element.

12 Torque bowl, vent and drain plugs.

13 Power up and inspect.

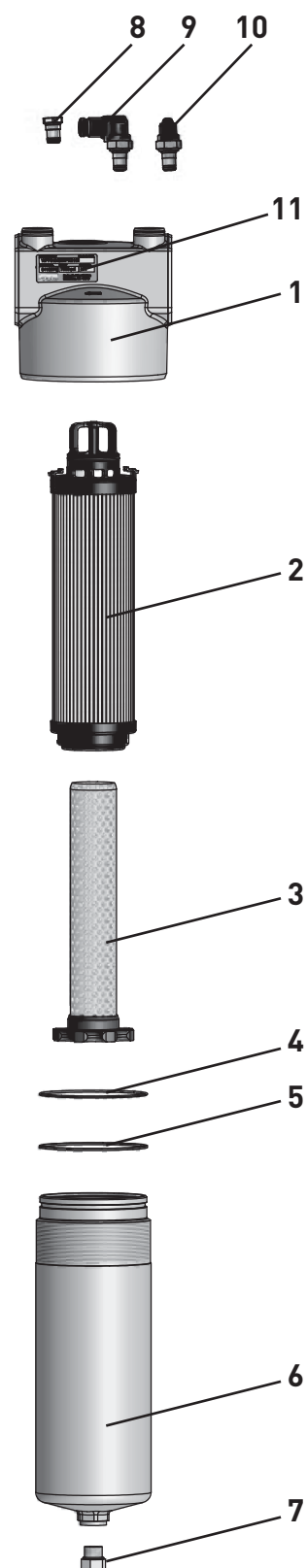


WPF Series

Parts List

T-Port

Index	Part Description	Part Number
1	WPF1 Head SAE-8	940986
	WPF2 Head 3/4" Flange	940989
	WPF2 Head SAE-12	940988
	WPF3 Head 1" Flange	940992
	WPF3 Head SAE-16	940991
	WPF4 Head 1-1/4" Flange	940923
	WPF4 Head SAE-20	940924
	WPF5 Head 1-1/2" Flange	940773
	WPF5 Head SAE-24	940921
2	Element	See chart on page 158
3	WPF1 Reusable Core	941175
	WPF2 Reusable Core	941176
	WPF3 Reusable Core	941177
	WPF4 Reusable Core	941178
	WPF5 Reusable Core	941179
4	WPF1 Bowl O-ring	V92141
	WPF2 Bowl O-ring	V92144
	WPF3 Bowl O-ring	V92042
	WPF4 Bowl O-ring	V92157
	WPF5 Bowl O-ring	V92157
5	WPF1 Anti-extrusion Ring	941185
	WPF2 Anti-extrusion Ring	934798
	WPF3 Anti-extrusion Ring	941186
	WPF4 Anti-extrusion Ring	941187
	WPF5 Anti-extrusion Ring	941187
6	WPF1 Bowl	941153
	WPF2 Bowl	941154
	WPF3 Bowl	941155
	WPF4 Bowl	941156
	WPF5 Bowl	941157
7	Drain Plug	934320
8	Indicator Plug	941172
9	Electrical Indicator	941173
10	Visual Indicator	941174
11	Name Plate	920928
Not Shown	Drive Screw (2 required)	900028

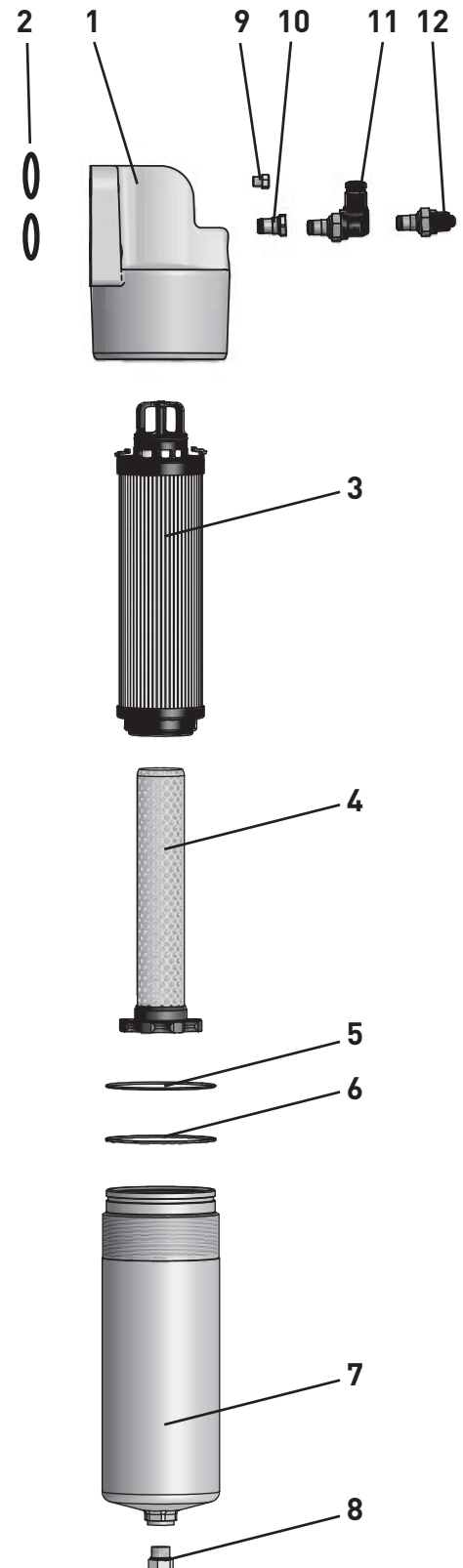


WPF Series

Parts List

Manifold

Index	Part Description	Part Number
1	WPF2 Manifold Mount Head	941273
	WPF4 Manifold Mount Head	940982
	WPF5 Manifold Mount Head	940982
2	WPF2 Manifold Mount O-rings (2 req'd)	V92119
	WPF4 Manifold Mount O-rings (2 req'd)	V92127
	WPF5 Manifold Mount O-rings (2 req'd)	V92127
3	Element See chart on page 158	
4	WPF2 Reusable Core	941176
	WPF4 Reusable Core	941178
	WPF5 Reusable Core	941179
5	WPF2 Bowl O-ring	V92144
	WPF4 Bowl O-ring	V92157
	WPF5 Bowl O-ring	V92157
6	WPF2 Anti-extrusion Ring	934798
	WPF4 Anti-extrusion Ring	941187
	WPF5 Anti-extrusion Ring	941187
7	WPF2 Bowl	941154
	WPF4 Bowl	941156
	WPF5 Bowl	941157
8	Drain Plug	934320
9	Vent Plug	928882
10	WPF Indicator Plug	941172
11	Electrical Indicator	941173
12	Visual Indicator	941174
Not Shown	Name Plate	920928
Not Shown	Drive Screw (2 required)	900028



WPF Series

How to Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
WPF	2	10QE	V	M2	K	S12	1

BOX 1: Filter Series	
Symbol	Description
WPF	High Pressure Filter

BOX 2: Model	
Symbol	Description
1	1/2" Nominal ports
2	3/4" Nominal ports
3	1" Nominal ports
4	1 1/4" Nominal ports
5	1 1/2" Nominal ports

BOX 3: Media Code	
Symbol	Description
02QE	Ecoglass III (bypass only)
05QE	Ecoglass III (bypass only)
10QE	Ecoglass III (bypass only)
	High Collapse
02QH	Microglass III (no bypass only)
10QH	Microglass III (no bypass only)

BOX 4: Seals	
Symbol	Description
B	Nitrile (NBR)
E	Ethylene Propylene
V	Fluorocarbon (FKM)

BOX 5: Indicator	
Symbol	Description
P	Plugged indicator port
M2	Visual Automatic Reset
E2	Electrical/ Visual (DIN43650 style connection)
Note: When the "M2" or "E2" option is selected, the indicator port is plugged and the indicator is shipped as a loose part.	

BOX 6: Bypass	
Symbol	Description
K	50 PSID (3.5 bar)
X	No Bypass and No Indicator (port plugged)
Note: When an indicator and no bypass ("2" in Box 8) is selected, the indicator setting is 50 psid (3.5 bar).	

Please note the bolded options reflect standard options with a reduced lead-time. Consult factory on all other lead-time options.

BOX 7: Ports	
Symbol	Description
	WPF1
S08	SAE-8 Ports
	WPF2
S12	SAE-12 Ports
Y12	3/4" SAE Code 62 Flange face
X12	Manifold
	WPF3
S16	SAE-16 Ports
Y16	1" SAE Code 62 Flange face
	WPF4
S20	SAE-20 Ports
Y20	1 1/4" SAE Code 62 Flange face
X20	Manifold
	WPF5
S24	SAE-24 Ports
Y24	1 1/2" SAE Code 62 Flange face
X24	Manifold

BOX 8: Options	
Symbol	Description
1	With Bypass (for use with standard element only)
2	No Bypass (for use with high collapse element only)

Replacement Elements:

	Media	WPF1	WPF2	WPF3	WPF4	WPF5
Standard Collapse (300 psid/21 bar)	Ecoglass III, 02QE	941029Q	941032Q	941035Q	941038Q	941041Q
	Ecoglass III, 05QE	941030Q	941033Q	941036Q	941039Q	941042Q
	Ecoglass III, 10QE	941031Q	941034Q	941037Q	941040Q	941043Q
High Collapse (2000 psid/138 bar)	Microglass III, 02QH	941044Q	941046Q	941048Q	941050Q	941052Q
	Microglass III, 10QH	941045Q	941047Q	941049Q	941051Q	941053Q

Global products as identified are offered worldwide through all Parker locations and utilize a common ordering code.





aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



12S Series

High Pressure Filters



ENGINEERING YOUR SUCCESS.

12S Series

Applications

- Offshore – High pressure and aggressive environment
- DI Water – Water fogging
- Food Processing – Caustic washdown (poultry, etc.)
- Test Stands – High pressure

Feature	Advantage	Benefit
Lightweight	Ease of service and installation	Reduced installation cost
Porting	Flexibility	Reduction in piping and use of adaptors
Multipass tested elements (per ANSI/NFPA T3.10.8.8 R1-1990)	Filter performance backed by recognized and accepted laboratory test standards	Filters you select have known performance levels
Optional visual and electrical indicators	Know exactly when to service elements	Keeps system clean
Drain port	Drain all oil from assembly prior to servicing	Eliminates cross contamination
Optional upstream & downstream sensing ports	Add additional instrumentation	Product flexibility
High strength Microglass III elements	2000 psid collapse strength Multi-layer media Wire reinforced pleats	High capacity with high efficiency No performance loss from pleat bunching
100% pressure tested	Quality	Reliability

12S Series

Specifications

12SMP (10,000 psi)

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 10,000 psi (690 bar)
Proof: 15,000 psi (1035 bar)

Operating Temperatures:

Fluorocarbon (FKM) -15°F (-26°C) to 275°F (-135°C)
Ethylene Propylene (EPR) -40°F (-40°C) to 225°F (-107°C)
Perfluoroelastomer (FFKM) 5°F (-15°C) to 536°F (280°C)*

* Consult factory when requesting this seal. A special element may be required to withstand operating temperature.

Element Collapsing Rate:

High Collapse "H" option: 2,000 psi (138 bar)

Materials:

Head: Stainless Steel 316L
Bowl: Stainless Steel 316L

Weight (approximate):

Model	Single Length	Double Length
12SMP	14 lbs. (6.35 kg.)	17 lbs. (7.71 kg.)

12SHP (20,000 psi)

Pressure Ratings:

Maximum Allowable Operating Pressure (MAOP): 20,000 psi (1,380 bar)
Proof: 30,000 psi (2,070 bar)

Operating Temperatures:

Fluorocarbon (FKM) -15°F (-26°C) to 275°F (-135°C)
Ethylene Propylene (EPR) -40°F (-40°C) to 225°F (-107°C)
Perfluoroelastomer (FFKM) 5°F (-15°C) to 536°F (-280°C)*

* Consult factory when requesting this seal. A special element may be required to withstand operating temperature.

Element Collapsing Rate:

High Collapse "H" option: 2,000 psi (138 bar)

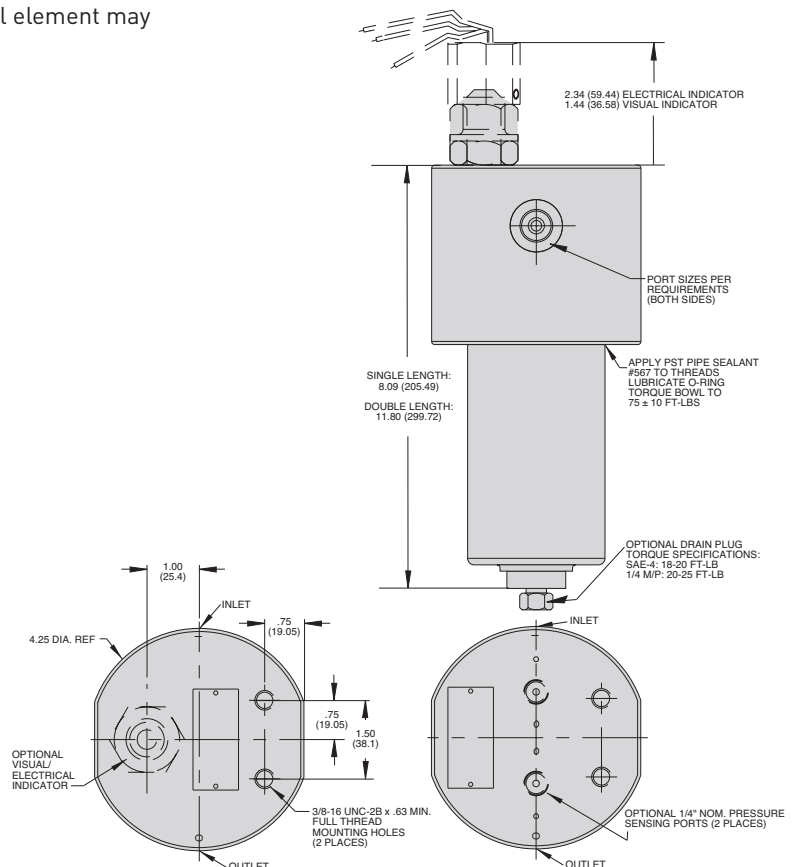
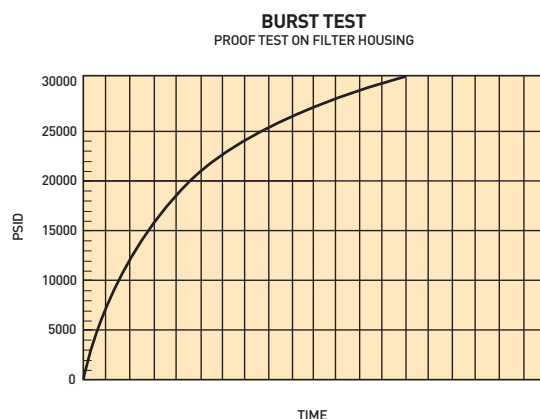
Materials:

Head: Stainless Steel 17-4
Bowl: Stainless Steel 17-4

Weight (approximate):

Model	Single Length	Double Length
12SHP	14 lbs. (6.35 kg.)	17 lbs. (7.71 kg.)

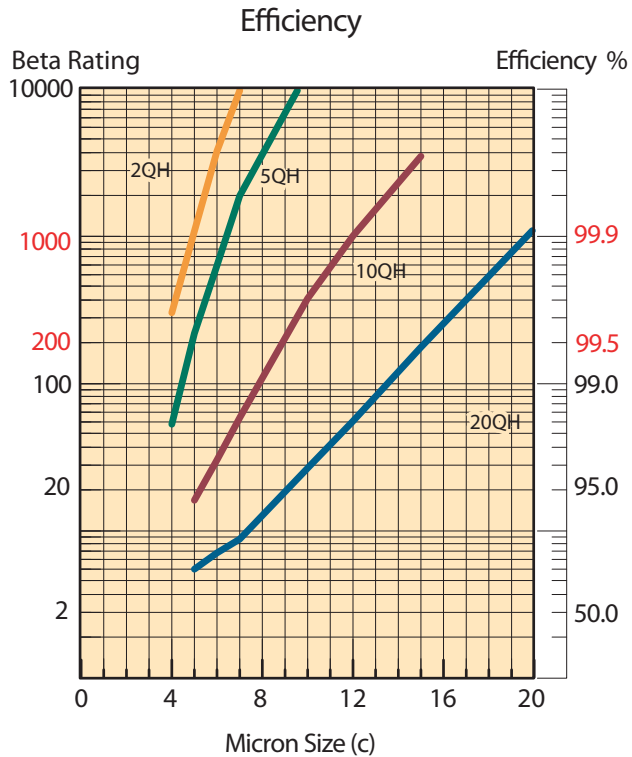
Dimensions



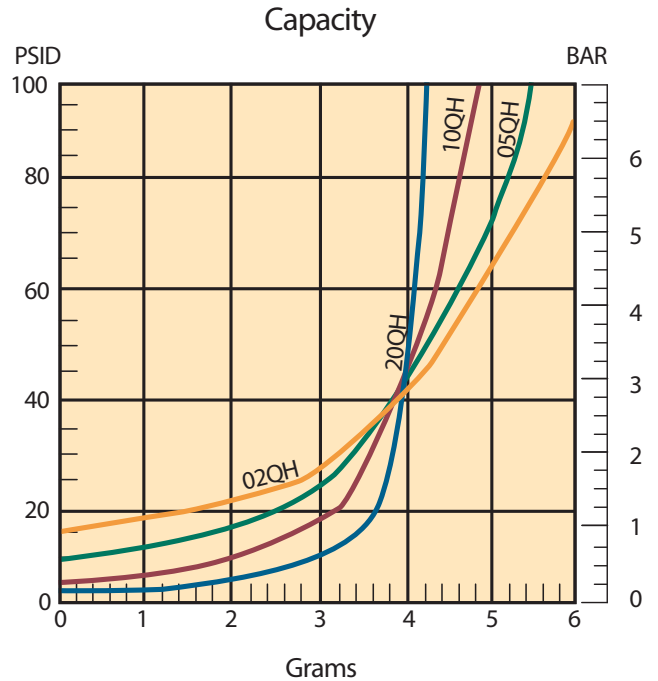
Drawings are for reference only.
Contact factory for current version.

12S Series

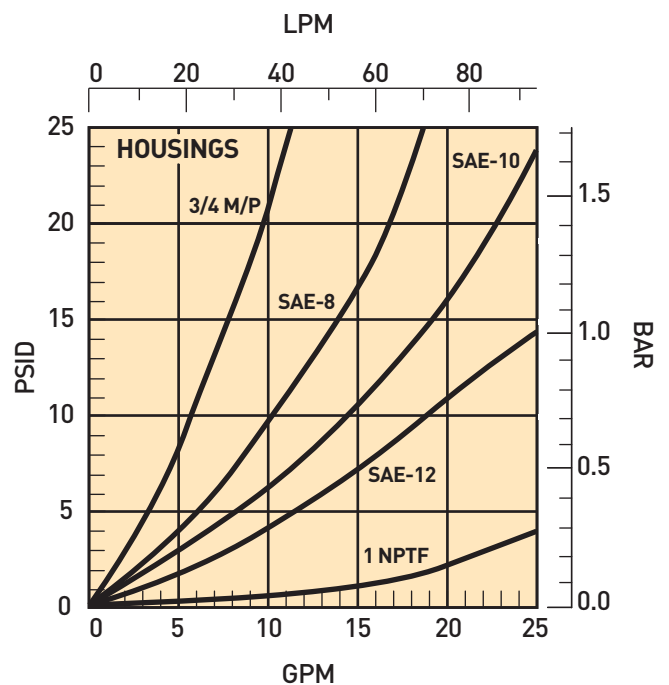
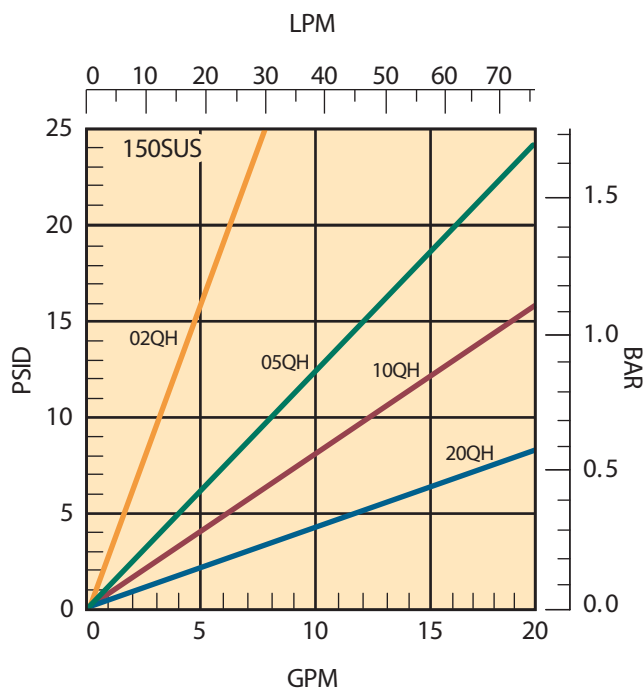
12S-1 Element Performance



Multipass tests run @ 10 gpm to 100 psid terminal - 5mg/L BUGL

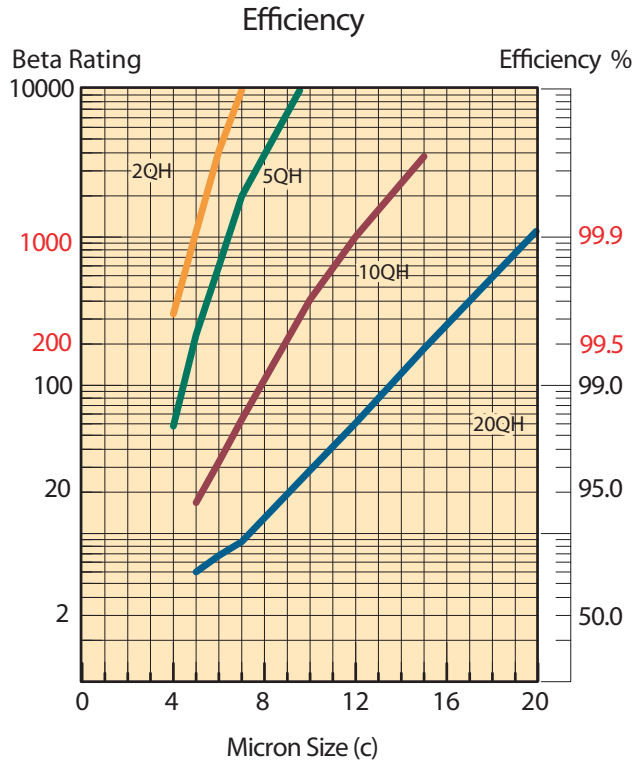


Flow vs. Pressure Loss

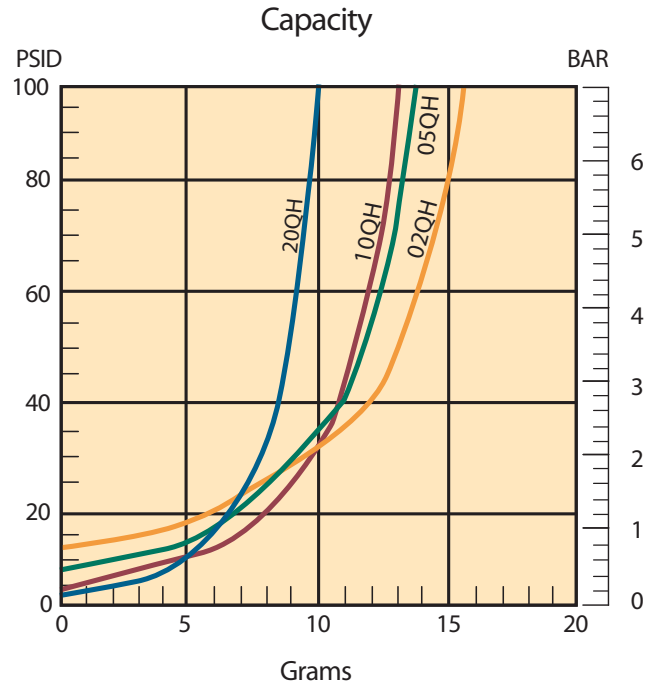


12S Series

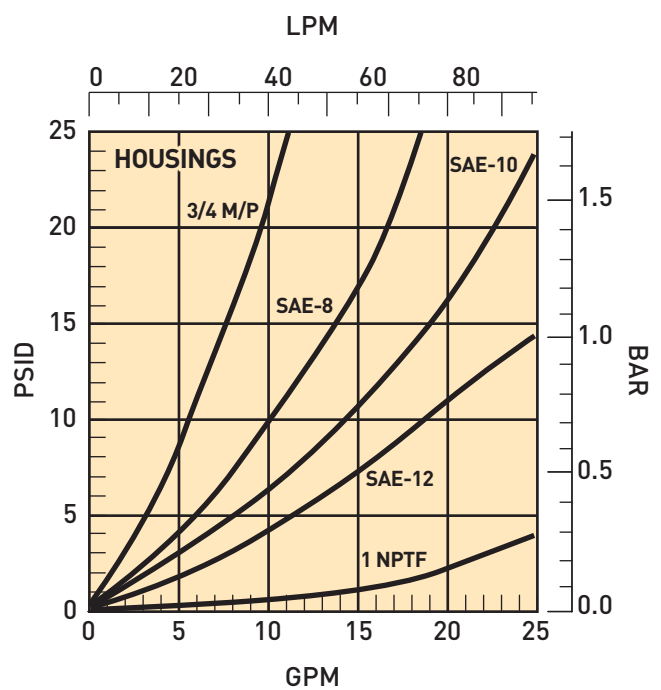
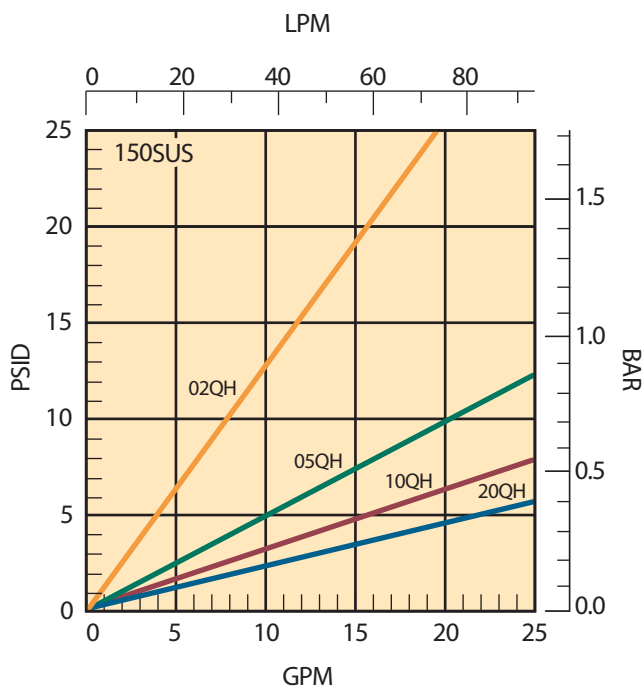
12S-2 Element Performance



Multipass tests run @ 15 gpm to 100 psid terminal - 5mg/L BUGL



Flow vs. Pressure Loss



12S Series

How to Order

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
12SHP	1	10QH	V	SP	HP	10	11

BOX 1: Basic Assembly	
Symbol	Description
12SMP	10,000 psi MAOP (316 S.S.)
12SHP	20,000 psi MAOP (17-4 S.S.)

BOX 2: Length	
Symbol	Description
1	Single
2	Double

BOX 3: Element Media	
Symbol	Description
20QH	20µm Microglass III, 2000 psid collapse
10QH	10µm Microglass III, 2000 psid collapse
05QH	5µm Microglass III, 2000 psid collapse
02QH	2µm Microglass III, 2000 psid collapse

BOX 4: Seals	
Symbol	Description
V	Fluorocarbon (FKM)
E ¹	Ethylene Propylene (EPR)
P	Perfluorocarbon (FFKM)
Note:	1.Recomended for DI Water applications

BOX 5: Indicator	
Symbol	Description
N	No Indicator, no pressure port
SP ¹	1/4" pressure ports only
4L35 ²	Visual manual reset, 50 psid setting
5T35 ²	Electrical (DIN 43650-A/ISO 4400), 50 psid setting
Note:	1.Pressure ports will match port type selected in BOX 6 2.Available for operating pressure <10,000 psi only

BOX 6: Port Type ¹	
Symbol	Description
S ²	SAE O-ring port
N ³	NPTF port
MP	Medium pressure Autoclave (M/P) type port
HP	High pressure Autoclave (H/P) type port
Notes:	1. For other options, please contact HFD 2. Available for operating pressure <6,000 psi only 3. Available for operating pressure <10,000 psi only

BOX 7: Port Size	
Symbol	Description (Port Type Options)
4	1/4" Nominal (N, MP)
6	3/8" Nominal (N, MP)
8	1/2" Nominal (N)
10	9/16" Nominal (MP, HP)
12	3/4" Nominal (S,N)
16	1" Nominal (S,N)

BOX 8: Options	
Symbol	Description
1	Bypass (60 psid)
11	No Bypass (standard)
19 ¹	Bypass with 1/4" drian port
21 ¹	No bypass with 1/4" drain port
Note:	1.Drain port will be SAE or M/P Autoclave plug as required. Plug is included.

REPLACEMENT ELEMENTS

	Media	Microglass III (Fluorocarbon)		Microglass III (Ethylene Propylene -EPR)	
		Single	Double	12SMP-1 / 12SHP-1	12SMP-2 / 12SHP-2
No-Bypass	20QH	403400	403404	403485	403488
	10QH	403399	403403	403484	403487
	05QH	403398	403402	403483	403486
	02QH	403397	403401	403482	403417
Bypass	20QH	937442	937446	937474	937478
	10QH	937441	937445	937473	937477
	05QH	937440	937444	937472	937476
	02QH	937439	937443	937471	937475