



12CS/50CS Series

Coreless Medium Pressure Filters



ENGINEERING YOUR SUCCESS.

12CS/50CS Series

Applications

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 Microglass filtration, without the environmental impact.

The new environmentally-friendly 12CS and 50CS hydraulic filters feature a reusable bowl and 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 elements as standard offerings. The element design also prevents filter operation if the proper element is not in place.

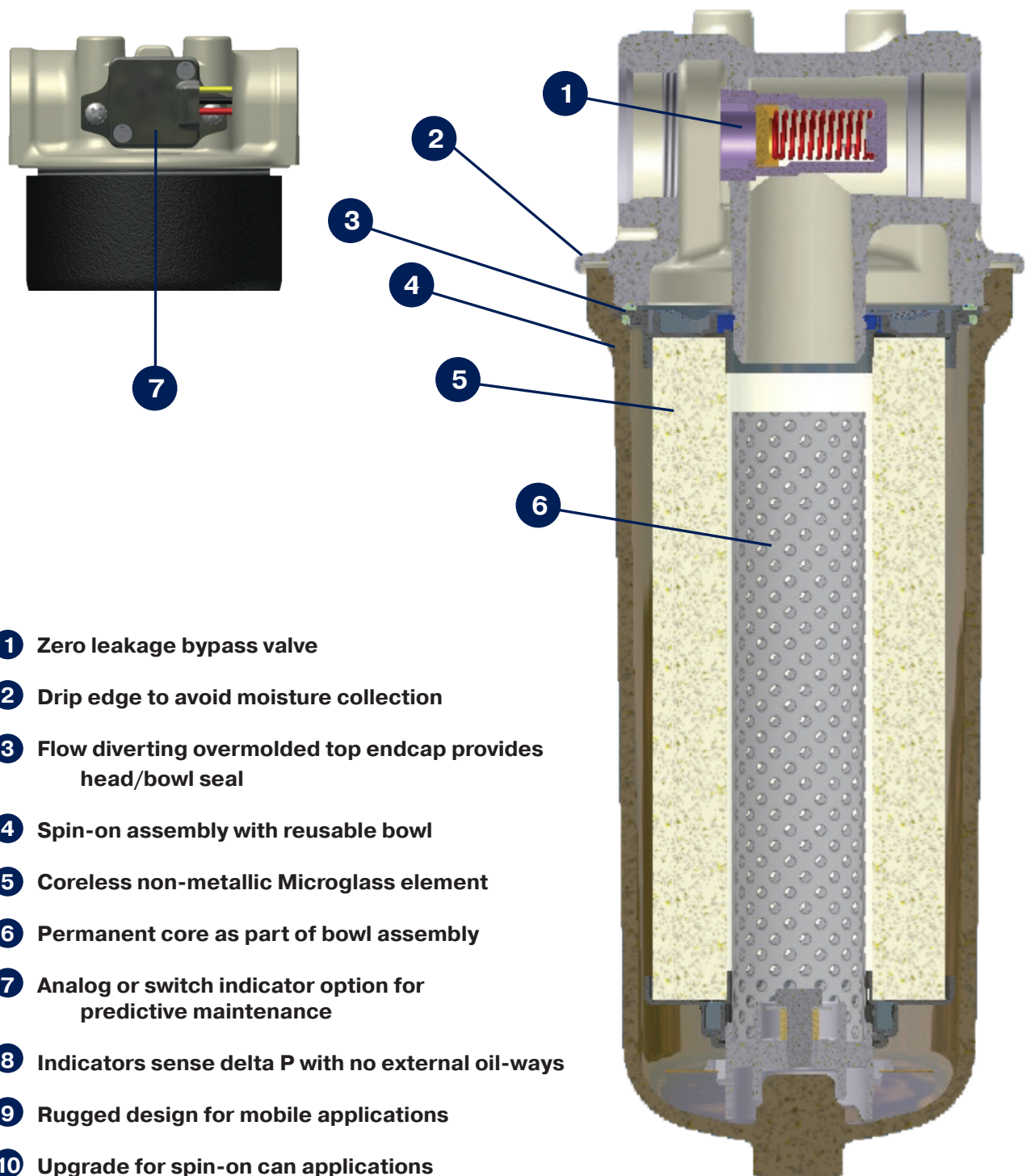
Typical Applications

- **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

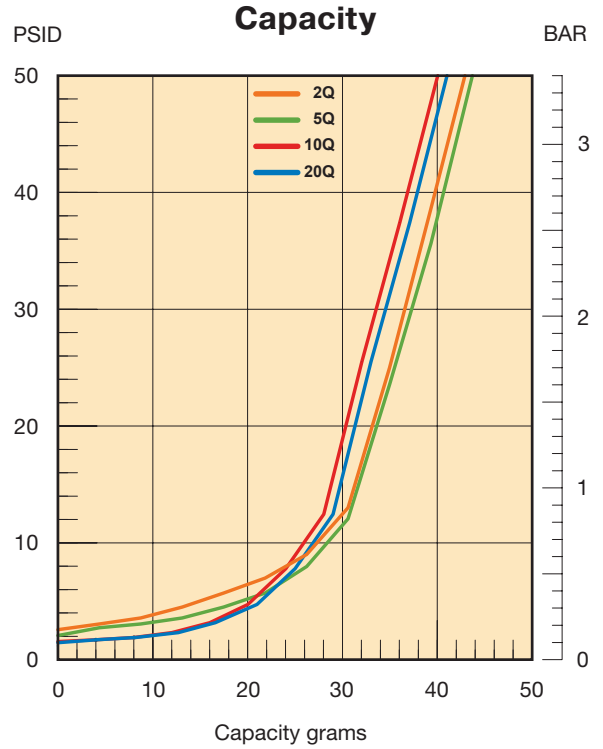
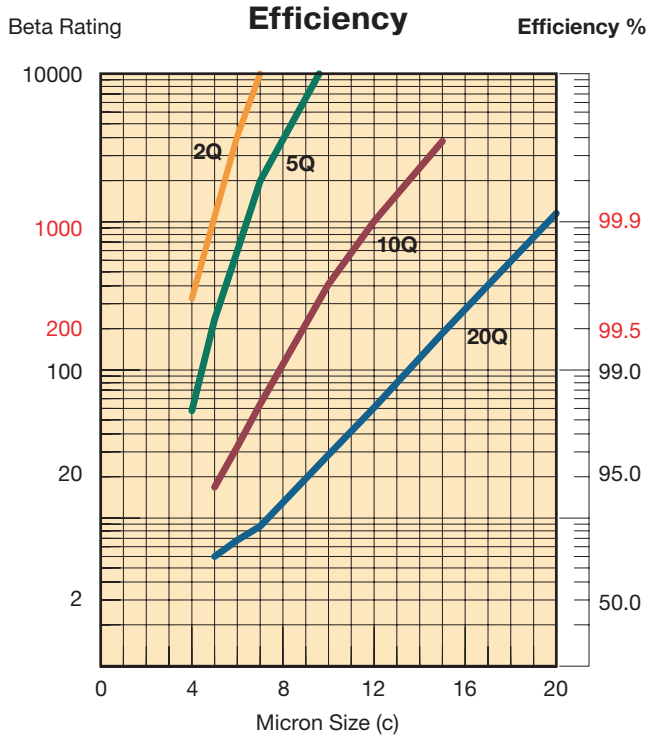
Features



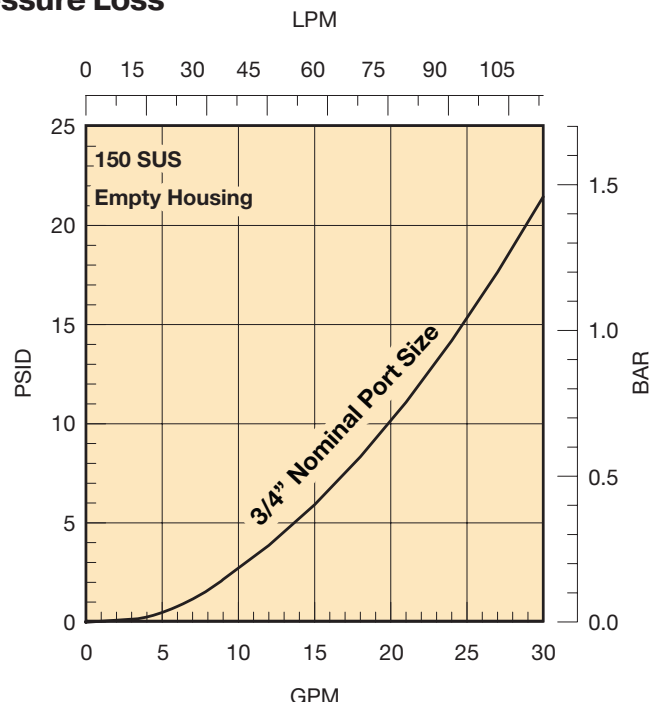
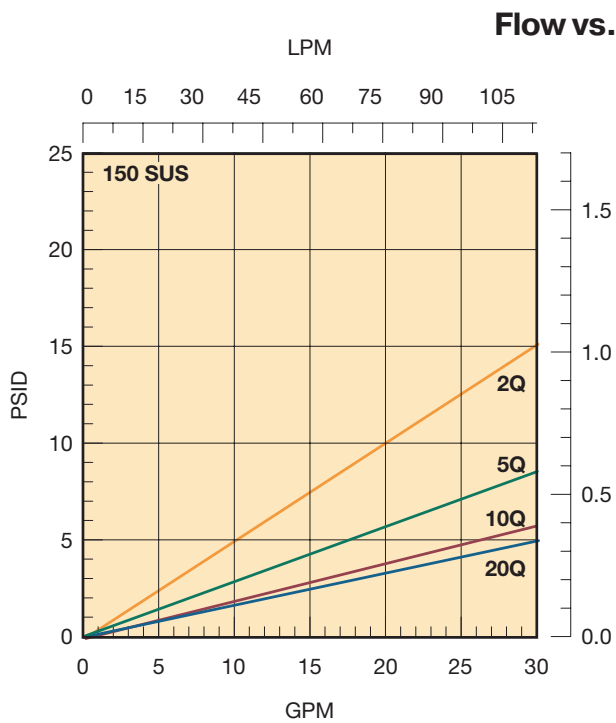
- 1 Zero leakage bypass valve
- 2 Drip edge to avoid moisture collection
- 3 Flow diverting overmolded top endcap provides head/bowl seal
- 4 Spin-on assembly with reusable bowl
- 5 Coreless non-metallic Microglass element
- 6 Permanent core as part of bowl assembly
- 7 Analog or switch indicator option 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 Series

Performance

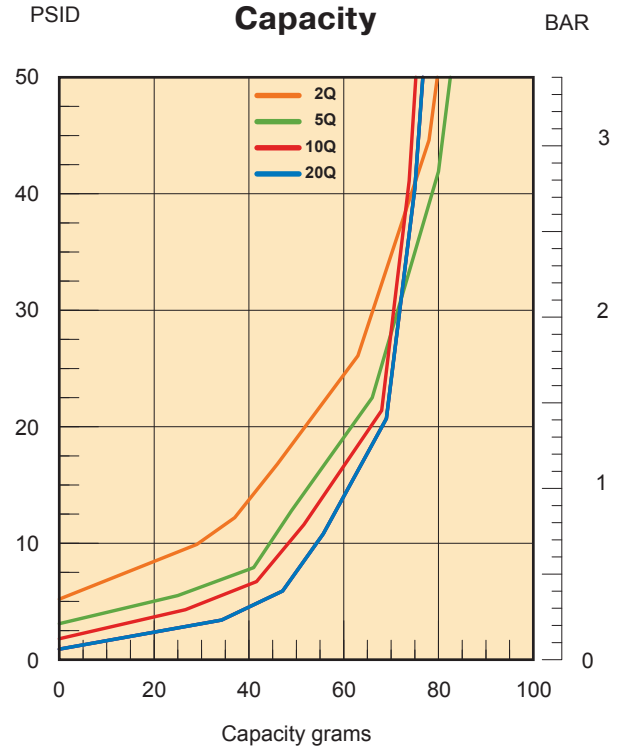
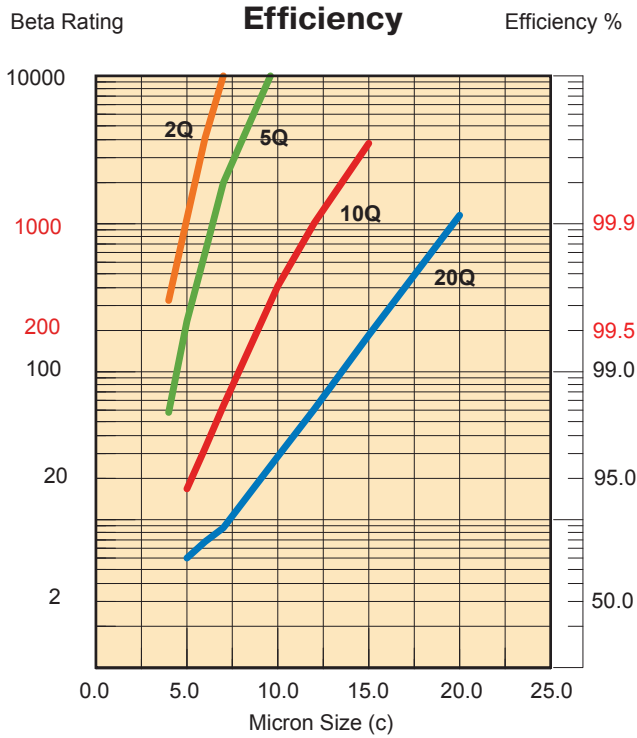


Results typical from Multi-pass tests run per test standard ISO 16889 @ 15 gpm to 50 psid terminal - 10 mg/L BUGL
Refer to Appendix for relationship to test standard ISO 4572.



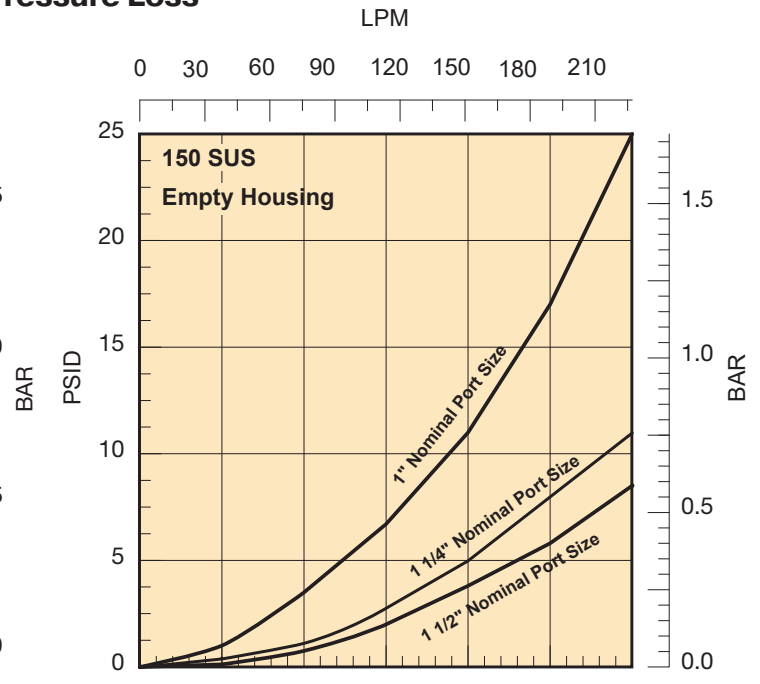
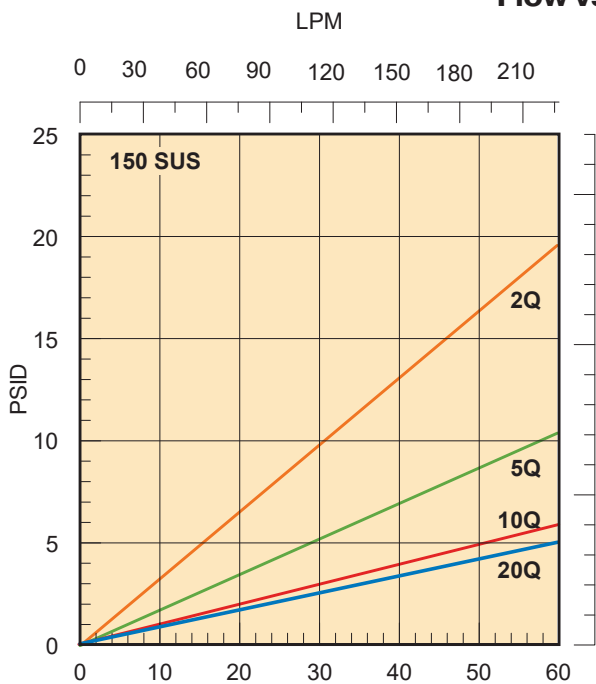
50CS Series

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 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:

Nitrile: -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:

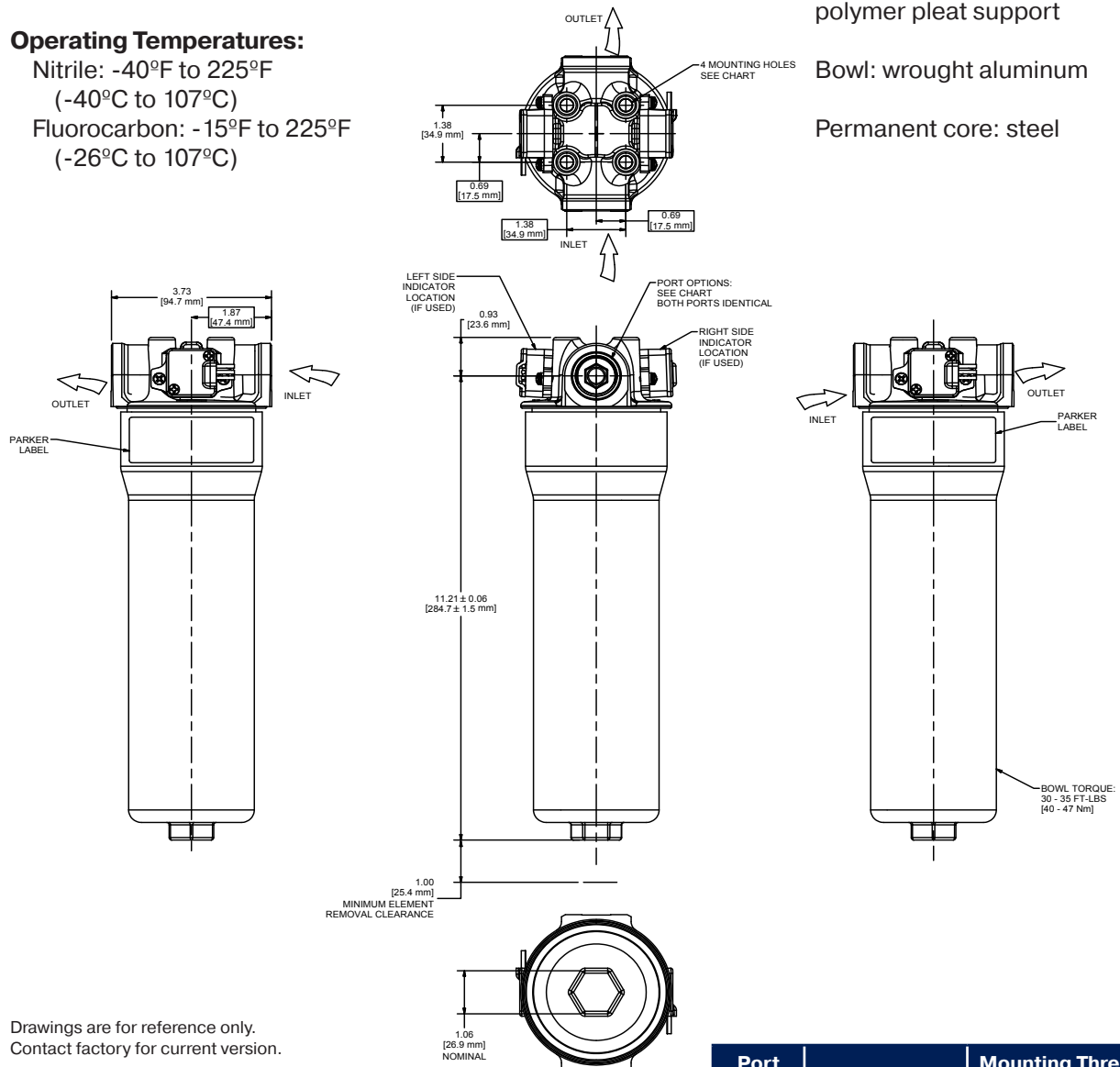
Head: cast aluminum

Bypass valve: nylon with
steel spring

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

Bowl: wrought aluminum

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
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500 psi (34.5 bar)

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1,000,000+ cycles: 0-400 psi

Design Safety Factor: 2.5:1

Operating Temperatures:

Nitrile: -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:

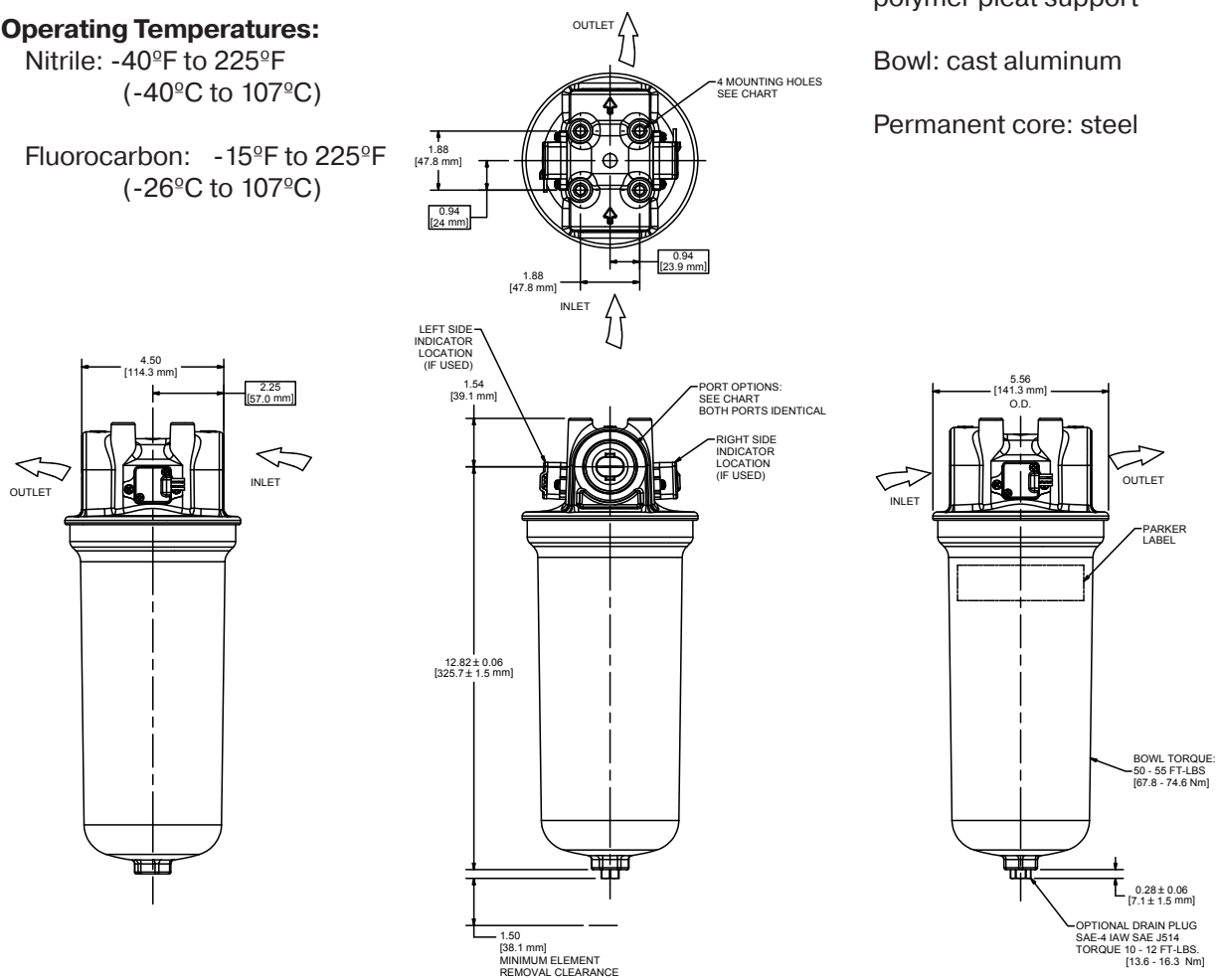
Head: cast aluminum

Bypass valve: nylon with
steel spring

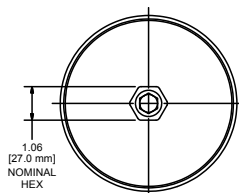
Filter element: reinforced
polymer end caps,
microglass media, and
polymer pleat support

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.

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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
- Maximum 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)

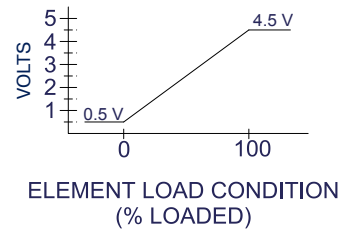
3. Visual Indicator

- Push to test
- Battery operated
- Visual LED (red = change element)

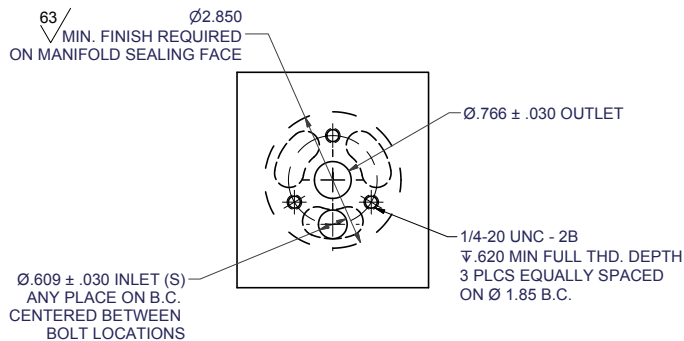


Electrical Switch or Analog Sensor

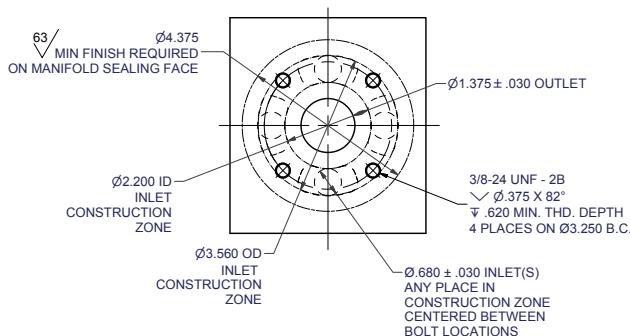
Visual Indicator



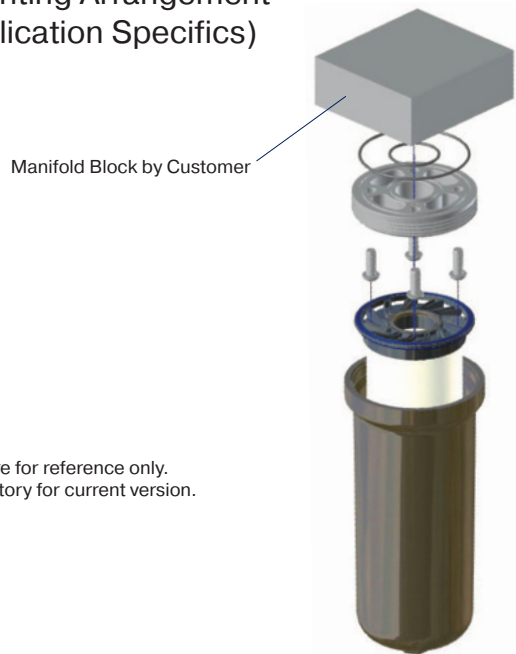
Suggested Manifold Mounting Arrangement (Consult Factory for Application Specifics)



12CS Adaptor Mounting Arrangement



50CS Adaptor Mounting Arrangement



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.

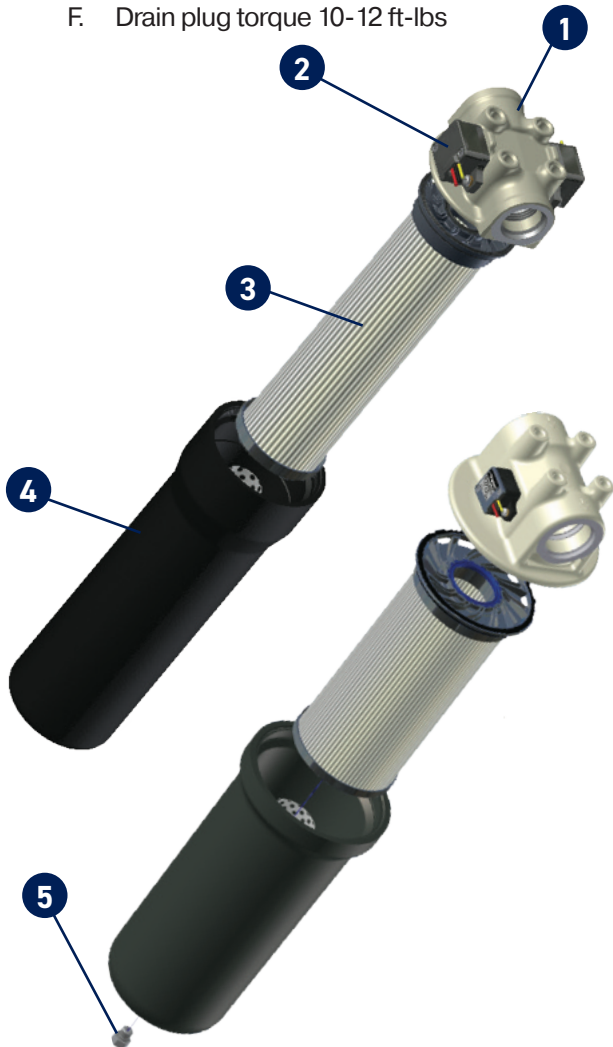
12CS/50CS Series

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 counterclockwise.
- 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.
 - 12CS-2 30-35 ft-lbs
 - 50CS-1 50-55 ft-lbs
- F. Drain plug torque 10-12 ft-lbs



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	942220	N/A
5	Drain Plug SAE-4		
	Nitrile	N/A	921088
	Fluorocarbon	N/A	928882
6	Bypass (not shown)		
	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 85	
	Bowl Assembly	see #4 above	

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Coreless Medium Pressure 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
12CS	2	10QE	B	N	K	S12	A

BOX 1: Filter Series	
Symbol	Description
12CS	15 GPM max.
50CS	50 GPM max.

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

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

BOX 4: Seal Material	
Symbol	Description
B	Nitrile
V	Fluorocarbon

BOX 5: Indicator	
Symbol	Description
N	No indicator
ML	Visual w/ push to test, left
M	Visual w/ push to test, right
EL	Electrical w/12" flying leads, left
E	Electrical w/12" flying leads, right
AL	Analog w/12" flying leads, left
A	Analog w/12" flying leads, right

BOX 6: Bypass	
Symbol	Description
G	25 PSID (1.7 bar)
K	50 PSID (3.5 bar)

BOX 7: Ports	
Symbol	Description
12CS	
S12	SAE-12 integral threads
N12	3/4" NPT integral threads
50CS	
S16	SAE-16 integral threads
N16	1" NPT integral threads
S20	SAE-20 integral threads
N20	1-1/4" NPT integral threads
S24	SAE-24 integral threads
N24	1-1/2" NPT integral threads

BOX 8: Options	
Symbol	Description
1	None
4	Drain port

- Filters include the element you select already installed.
- Drain port available on 50CS only.

Replacement Elements

Media	Filter Model (Nitrile Seals)		Filter Model (Fluorocarbon Seals)	
	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



Hydraulic & Fuel Filtration Division
www.parker.com/emhff

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