



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...

**P**reserve the environment.  
Minimize waste and promote energy efficiency.

**A**chieve worldwide filtration solutions.  
Build global confidence.

**R**edefine new limits.  
Forge ahead with advanced technology.

**K**eep contamination under control.  
Reduce maintenance costs.

**E**nhance total system reliability.  
Focus on customer satisfaction.

**R**each 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.

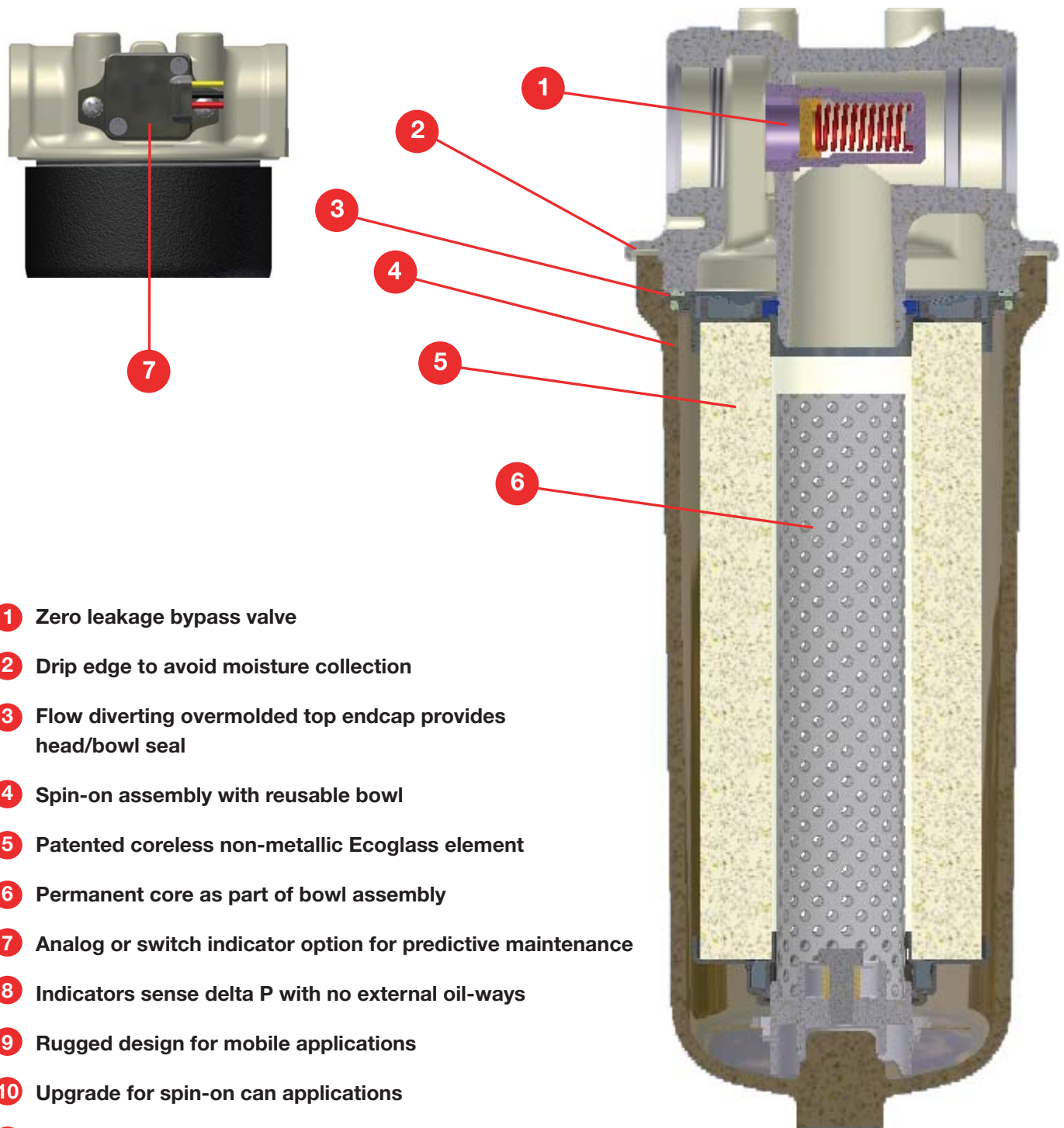
### Typical Applications

- **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.**

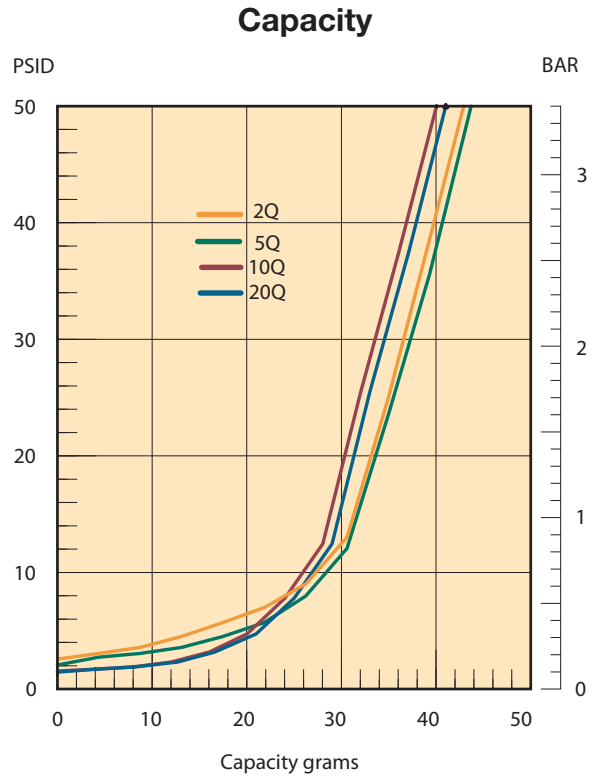
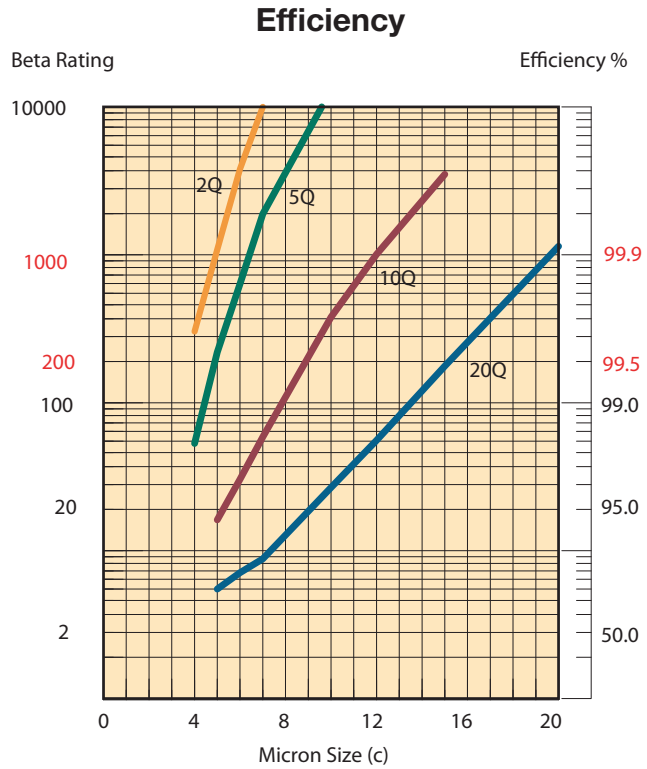
**500,000,000+**  
spin-on cans disposed  
of each year in North  
American landfills.

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

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

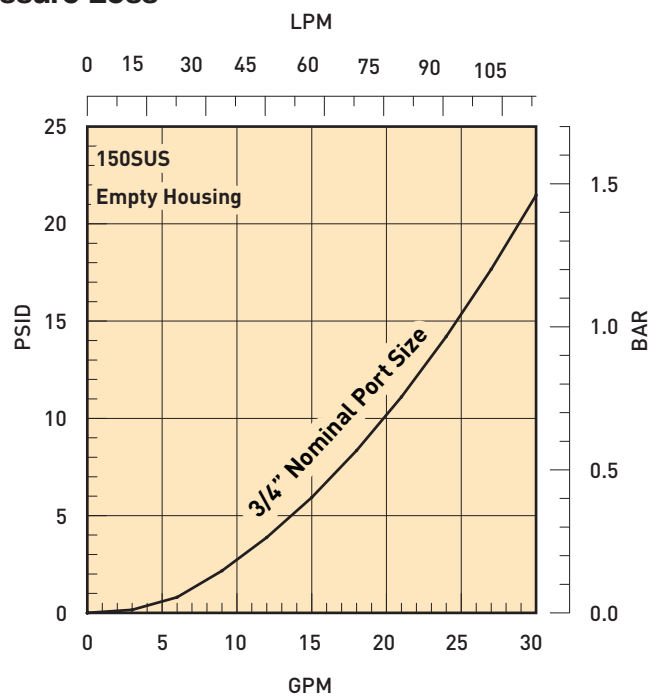
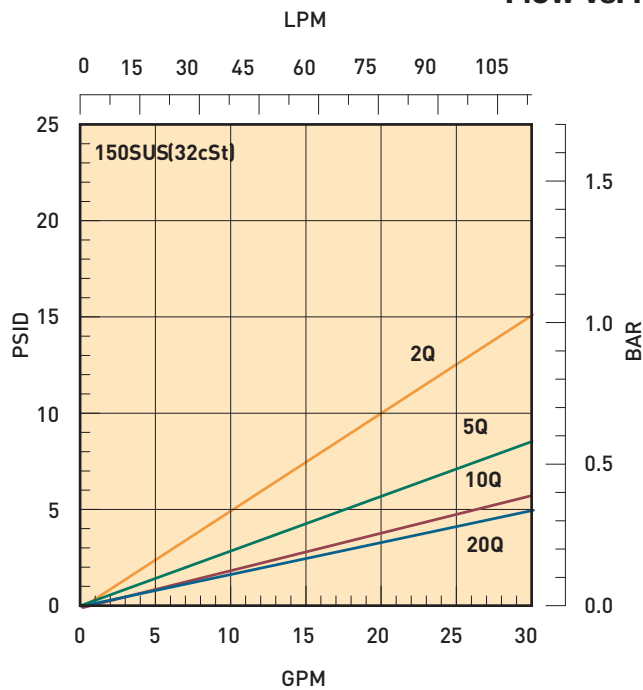
# 12CS Series

## Performance



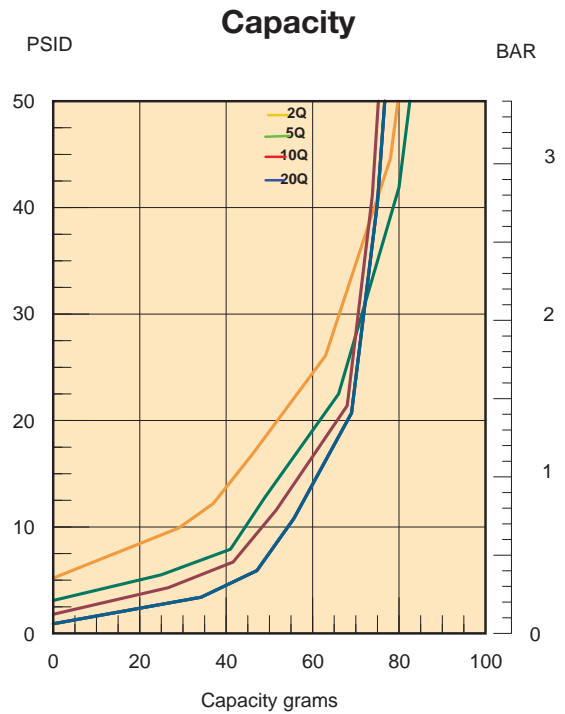
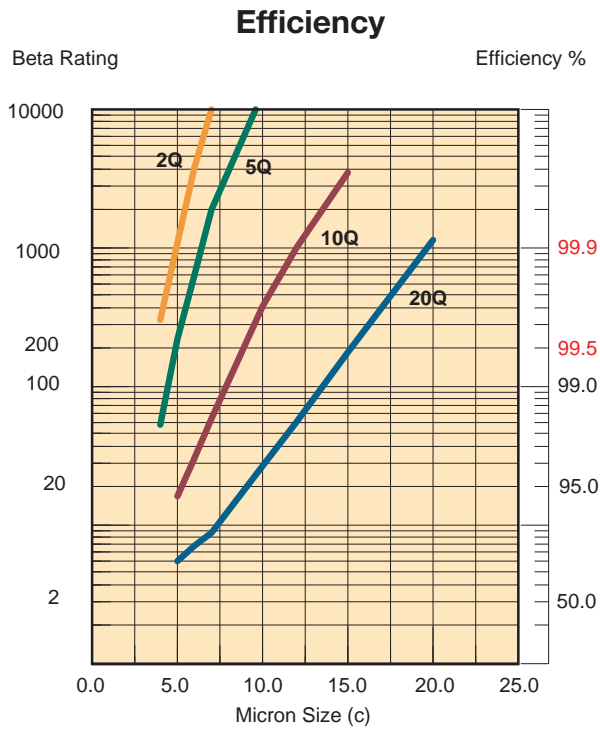
Results typical from Multi-pass tests run per test standard ISO 16889 @ 15 gpm to 50 psid terminal - 10 mg/L BUGL Refer to Appendix on pages 264-265 for relationship to test standard ISO 4572.

### Flow vs. Pressure Loss



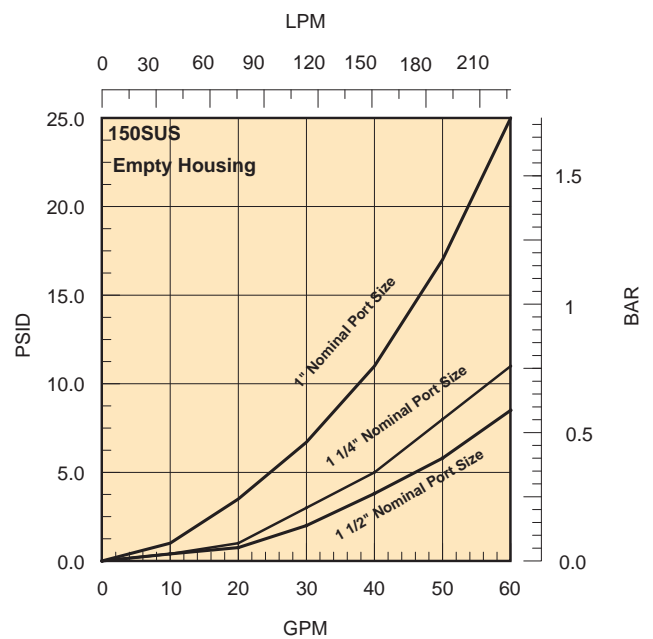
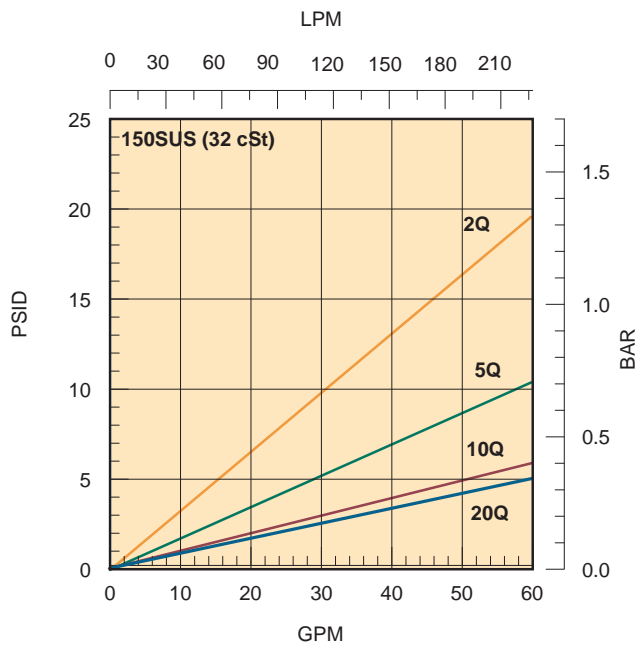
# 50CS Series

## 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 264-265 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:

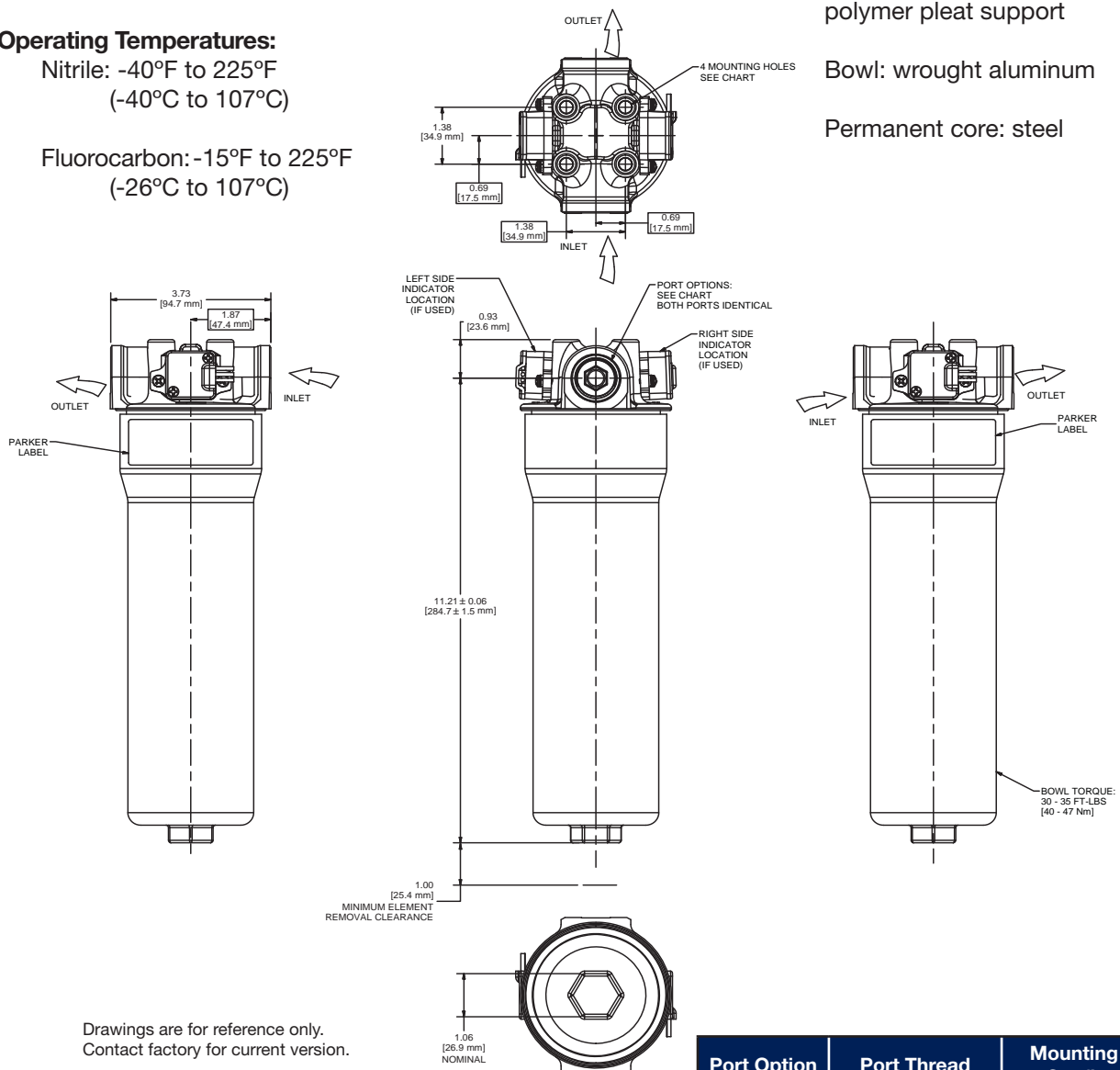
Head: cast aluminum

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  
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):

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

### Materials:

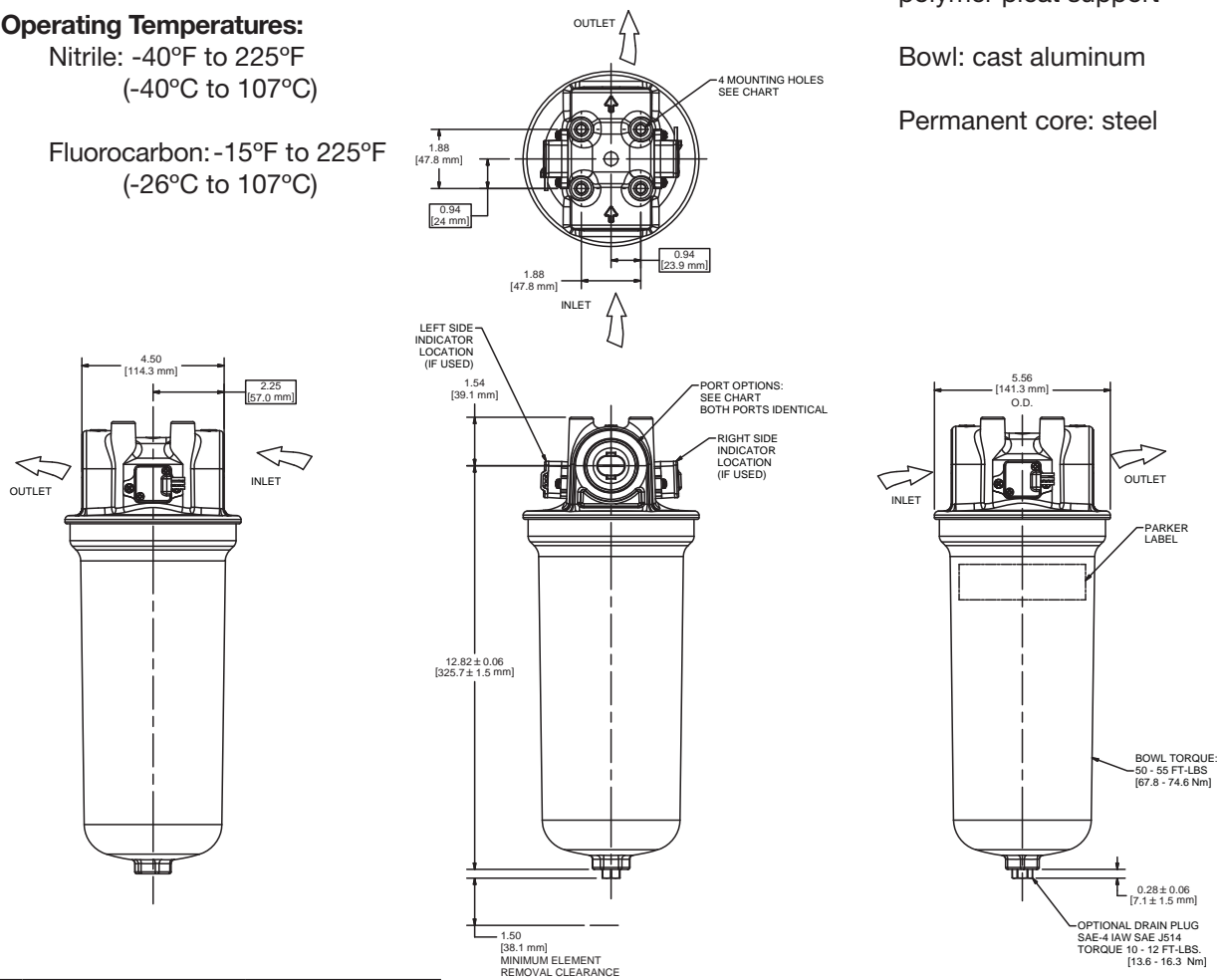
Head: cast aluminum

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" BSP	M10 x 1.5 x 16

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



# 12CS/50CS Series

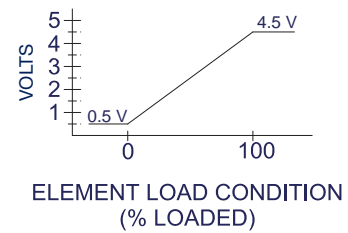
## Element Condition Indicators

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)
  
3. Visual Indicator
  - Push to test
  - Battery operated
  - Visual LED

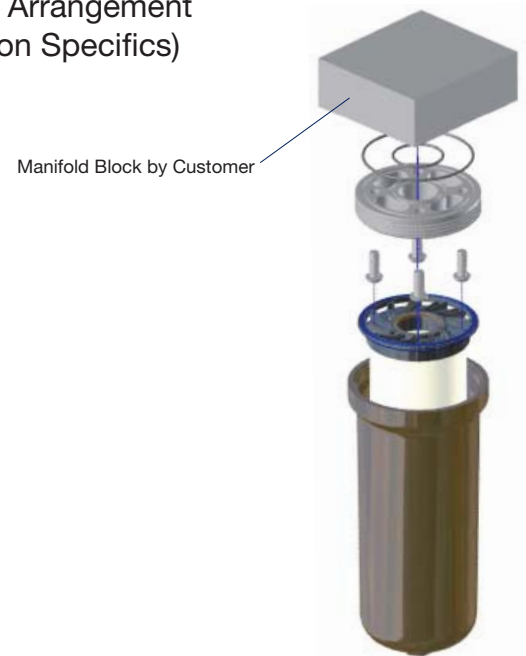
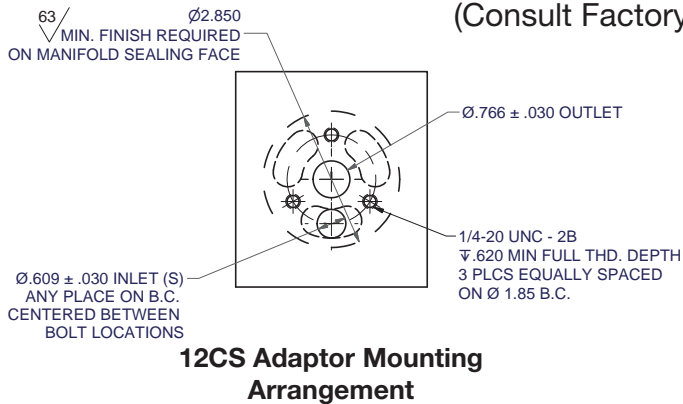


Electrical Switch  
or Analog Sensor

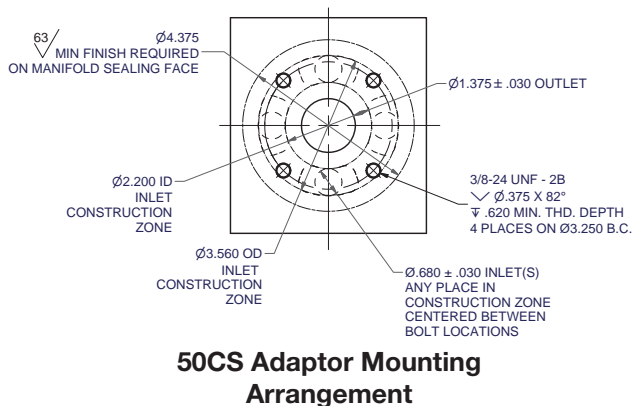
Visual Indicator



### 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
<b>1</b>	<b>Head Assembly</b> (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
<b>2</b>	<b>Indicator</b>		
	Electrical	941814	941814
	Analog	941802	941802
	Mounting Screws	941944	941944
<b>3</b>	<b>Element</b> (see chart on next page)		
<b>4</b>	<b>Bowl Assembly</b>		
	Single - no drain	N/A	942011
	Single - w/ drain	N/A	942012
	Double - no drain	942220	N/A
<b>5</b>	<b>Drain Plug SAE-4</b>		
	Nitrile	N/A	921088
	Fluorocarbon	N/A	928882
<b>6</b>	<b>Bypass (not shown)</b>		
	50 psid	928981	933424
<b>7</b>	<b>Manifold Adaptor Kit</b> (see drawing on previous page)		
	<b>O-Ring (I.D.)</b>	V92020	V72135
	<b>O-Ring (O.D.)</b>	V92038	V72155
	<b>Manifold Adaptor</b>	941811	941986
	<b>Mounting Screws</b>	975689	942174
	<b>Element</b>	see chart on page 85	
	<b>Bowl Assembly</b>	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
M <sup>1</sup>	Visual indicator w/push to test, right
ML	Visual indicator w/push to test, left
E <sup>1</sup>	Electrical w/12" flying leads, right
EL	Electrical w/12" flying leads, left
A <sup>1</sup>	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)

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