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.

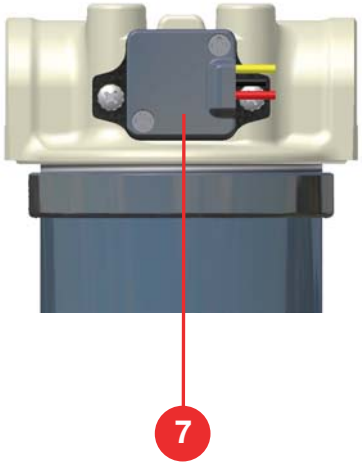
The 500 psi filters are rated up to 50 gpm, with premium Ecoglass III elements as standard offerings. The patented element design also prevents filter operation if the proper element is not in place.

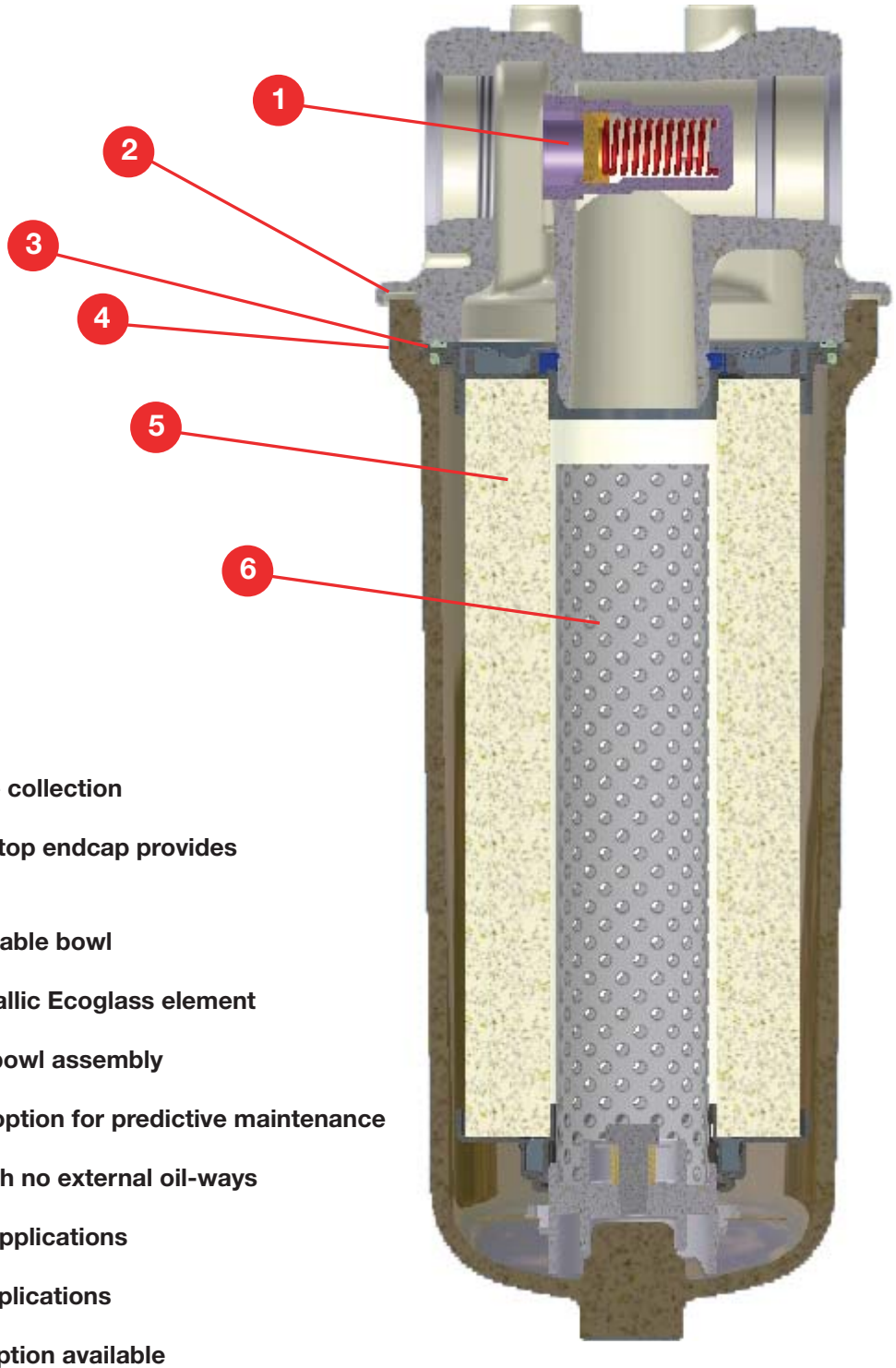
Typical Applications

- **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

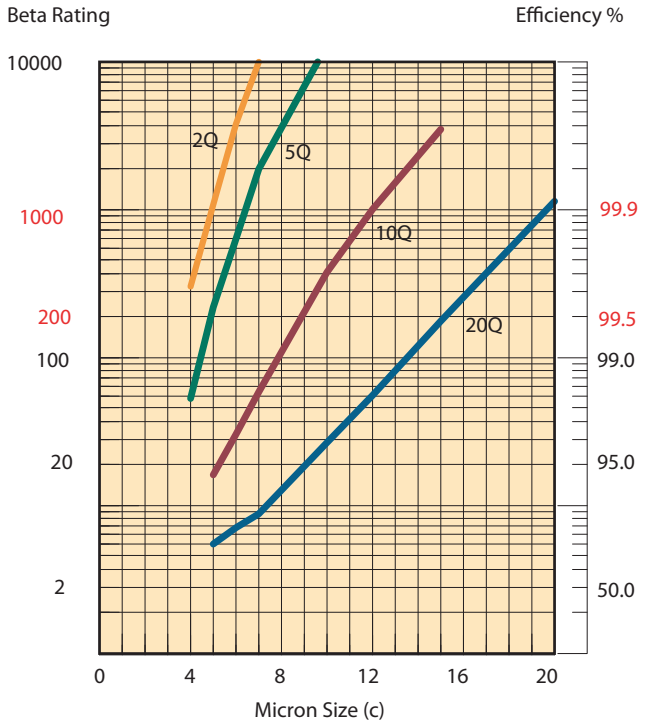
Option for Differential Pressure Sensing including an Analog 0-5V Output
For predictive maintenance

No external oil-ways

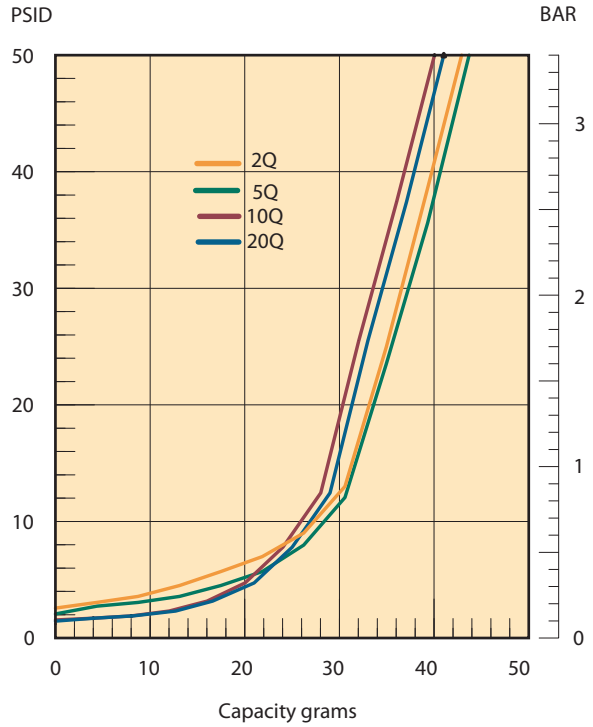
12CS Series

Performance

Efficiency

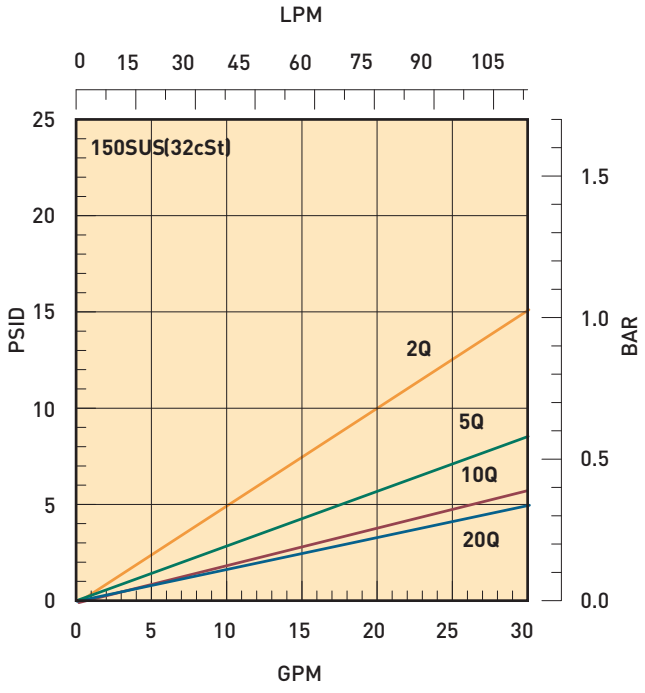


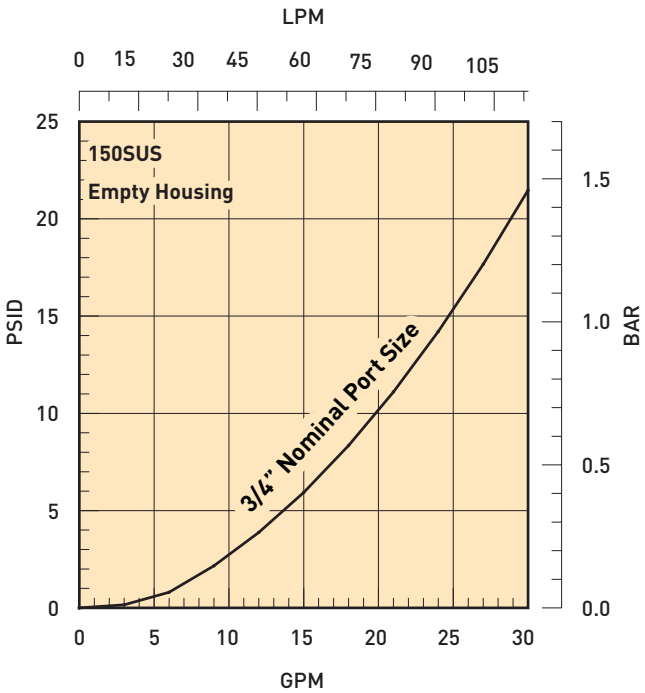
Capacity



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.

Flow vs. Pressure Loss

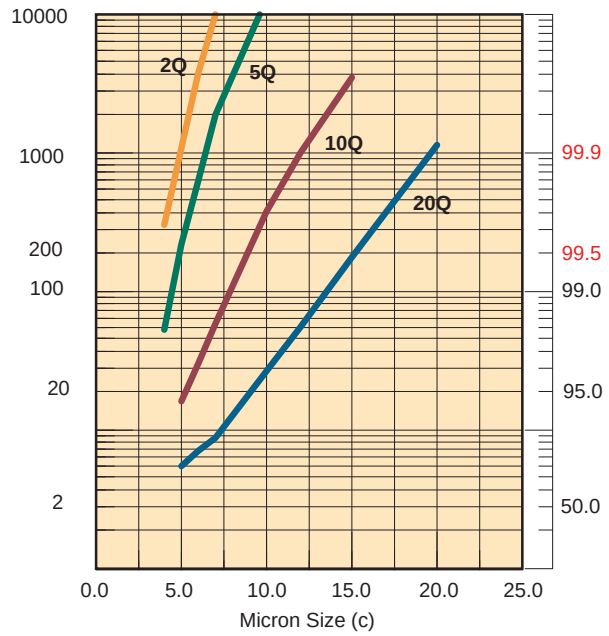




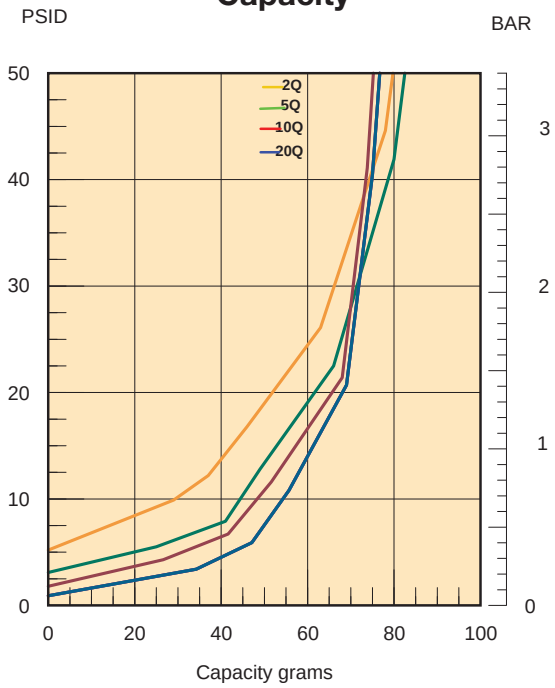
50CS Series

Performance

Efficiency

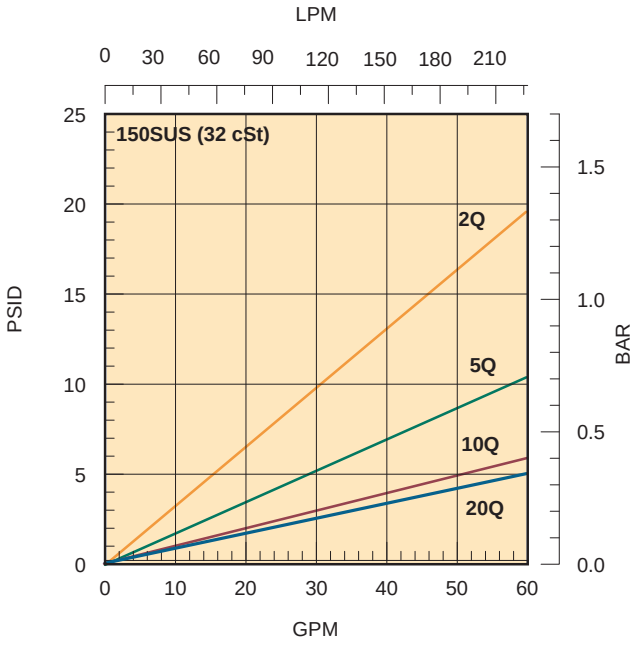


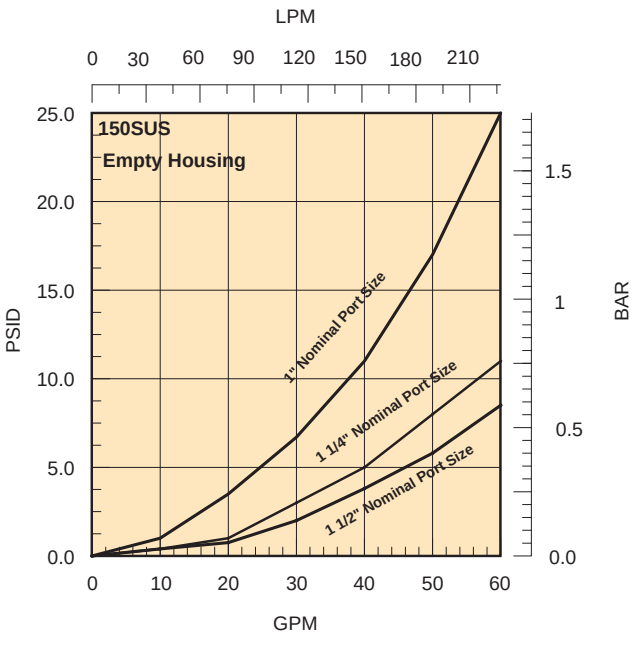
Capacity



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: -40ºF to 225ºF (-40ºC to 107ºC)

Fluorocarbon: -15ºF to 225ºF (-26ºC to 107ºC)

Element Collapse Rating:

150 psid (10.3 bar)

Weights (approximate):

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

Materials:

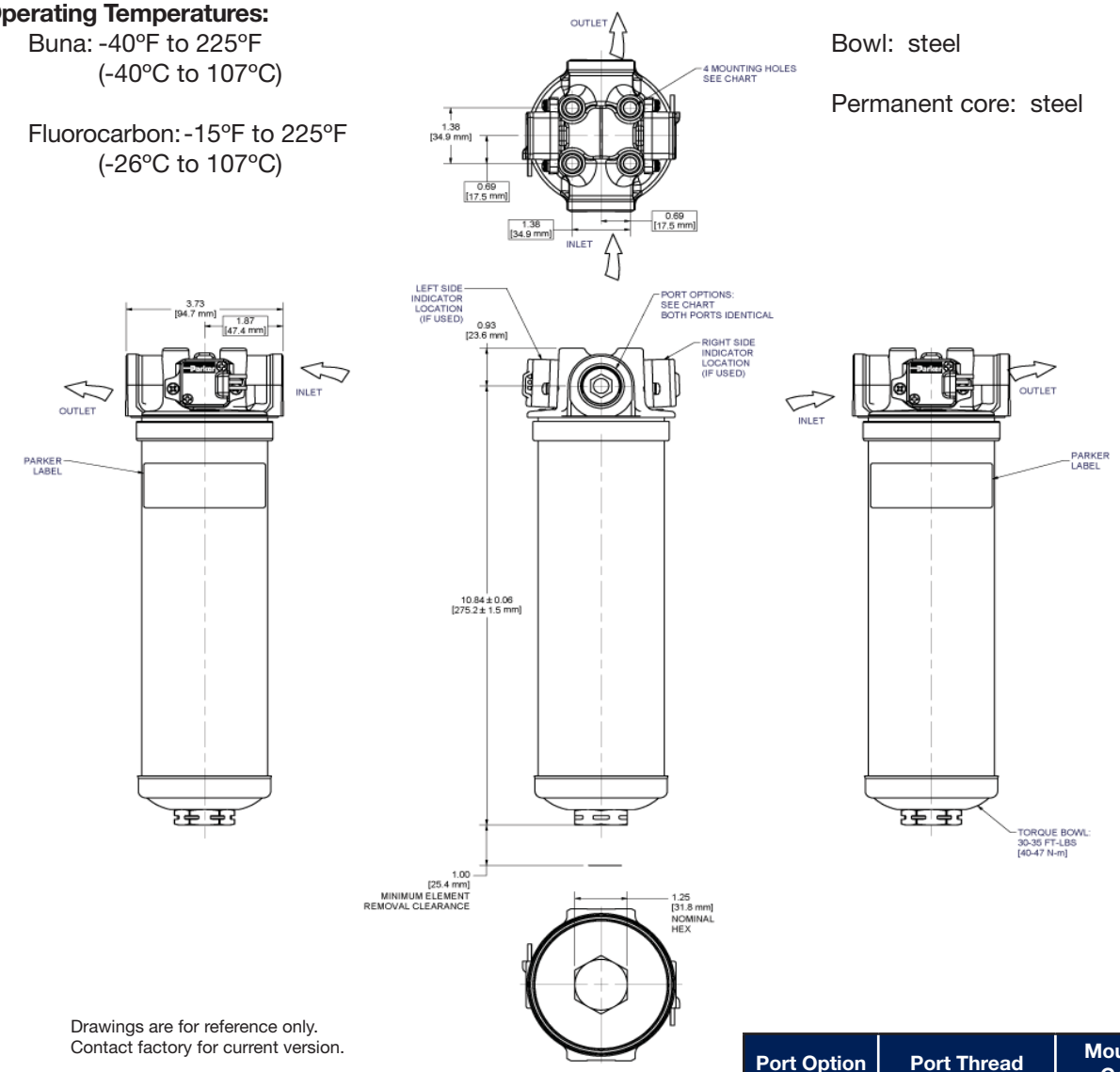
Head: cast aluminum

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:

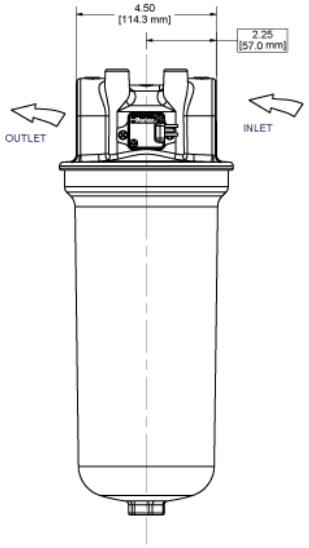
Head: cast aluminum

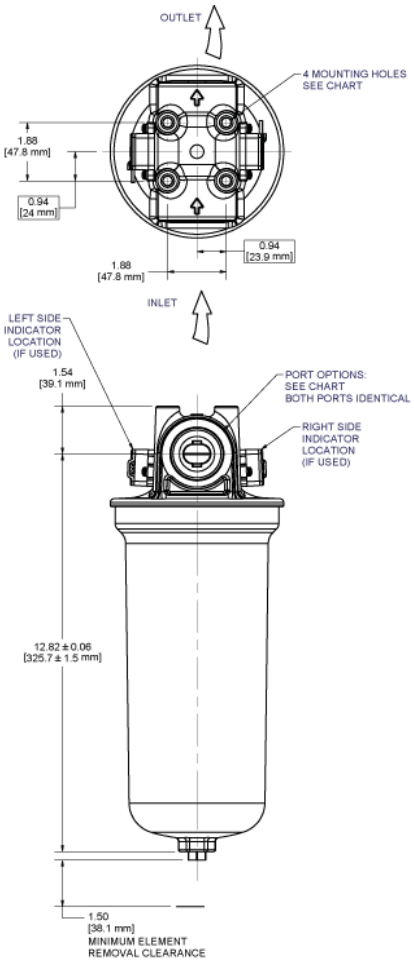
Bypass valve: nylon with steel spring

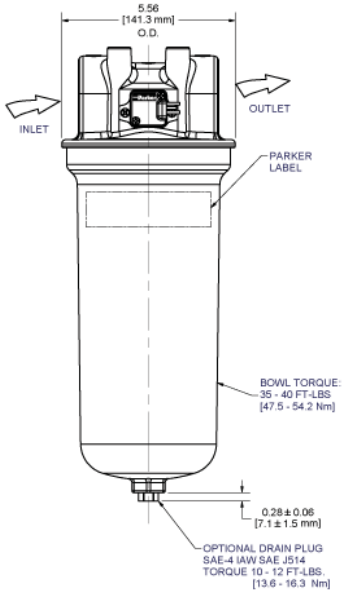
Filter element: reinforced polymer end caps, microglass media, and polymer pleat support

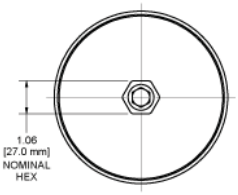
Bowl: cast aluminum

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.

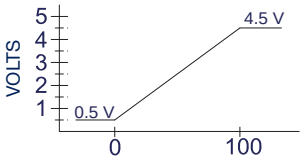
12CS/50CS Series

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

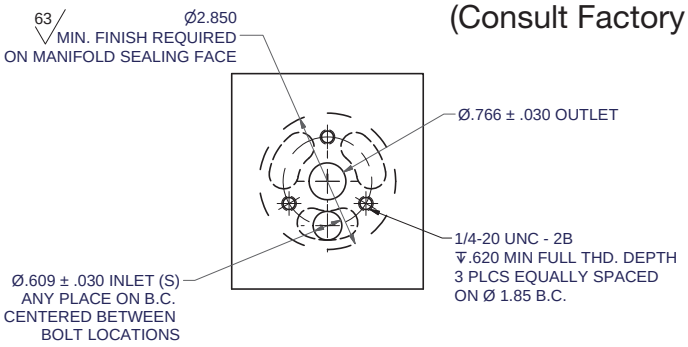
2. Analog Sensor
   - Supply voltage: 4.5 to 5.5 VDC
   - Main output current: 1 mA
   - Output voltage: Ratiometric (see graph)
   - Approvals: CE, IP68
   - Connector: 12” wire leads, 18 Gauge
     Yellow (analog out)
     Black (OV)
     Red (supply +5 V)

Electrical Switch
or Analog Sensor



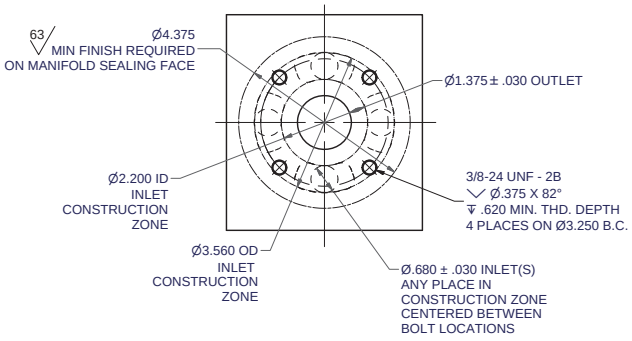
ELEMENT LOAD CONDITION
(% LOADED)

Suggested Manifold Mounting Arrangement
(Consult Factory for Application Specifics)

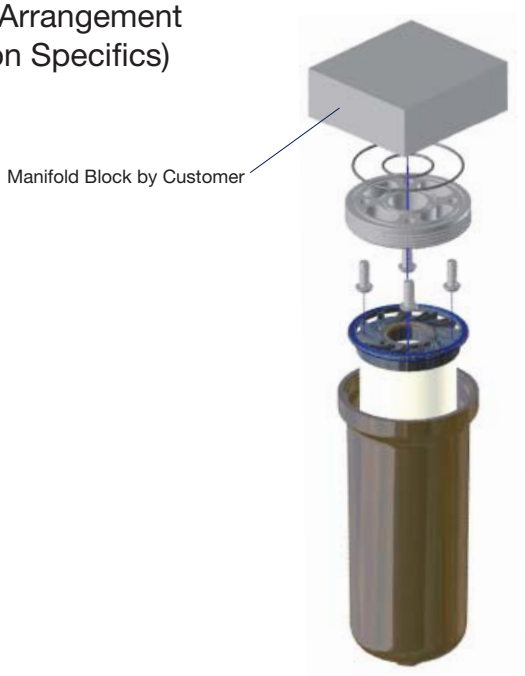


12CS Adaptor Mounting Arrangement

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



50CS Adaptor Mounting Arrangement



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 reuseable 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

Notes