



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



SMR Series

Submicronic Removal
Fluid Purification Systems



ENGINEERING YOUR SUCCESS.

SMR Series

Applications

The SMR Series is the smart purification solution for fluid flow in the 2-10 GPM (8 - 38 LPM) range. The SMR contains patented Balanced Charge Agglomeration (BCA™) technology, which maintains hydraulic and lubricating fluids in optimum condition while preventing/removing the build-up of sludge and varnish. The system is available in a PLC or simplified control version.

Balanced Charge Agglomeration (BCA™) technology does not remove water, however with the removal of thousands of sub-micron particles, the majority of sites where water can readily attach are mitigated. Water is more easily separated and removed, improving demulsibility.

- **Power Generation**

- Steam & Gas Turbine
- hydraulics & lubrication

- **Oil & Gas**

- Compressor/Turbine hydraulics & lubrication

- **Pulp & Paper**

- Lube oil
- Hydraulics

- **Manufacturing**

- Hydraulics
- Lubrication
- EDM
- Injection molders

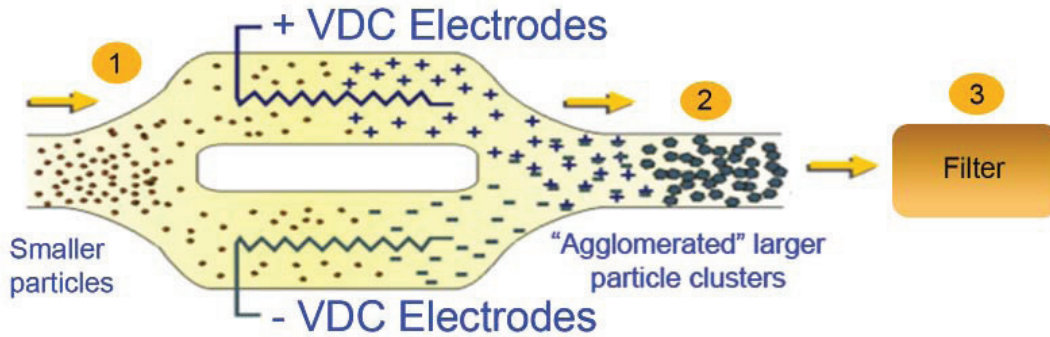
- **Others**

- Cooking oil
- Gear oil
- Fuels
- Bio fuels
- Steel
- Military



SMR Series

Balanced Charge Agglomeration (BCA™) - How the Technology Works



- 1** Particles are passed across high-voltage electrodes, inducing a charge on the particles (+) and (-) in separate paths.
- 2** Oppositely charged particles are mixed and are attracted to each other, forming larger particle clusters.
- 3** Particle clusters are more efficiently filtered.

Evaluation of the SMR Process - Actual Test Results

- Varnish is stripped from the hydraulic or lubrication system as fluid is processed through the SMR.
- The varnish is suspended in the hydraulic fluid as sub-micron particulate.
- BCA™ develops larger particles (see graphic above).
- The particulate is effectively removed from the hydraulic or lubrication fluid by high efficiency filters.



Result 1



Result 2



Result 3



Result 4



Result 5



Result 6



Result 7



Result 8



Result 9



Result 10

Results from a 10 month field trial

SMR Series

Features and Benefits

- Contaminant Removal to the Sub-Micron Level
- Prevention and Removal of Sludge and Varnish
- Removal of Oxidation Byproducts and Biological Contamination
- Removal of Ferrous and Non-Ferrous Contaminants

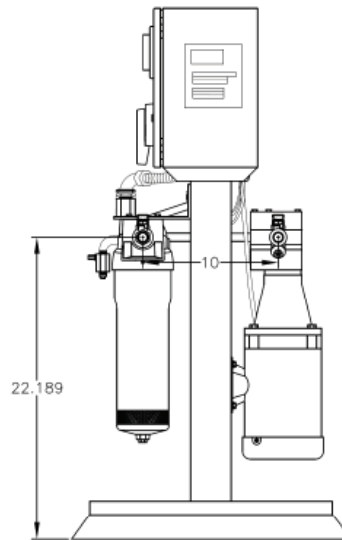
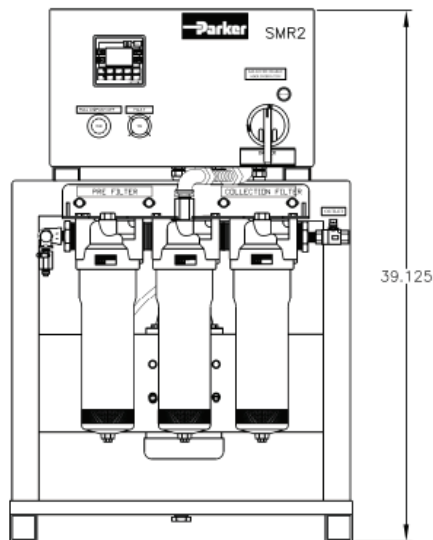
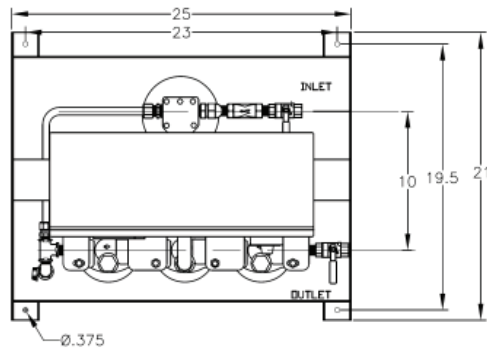
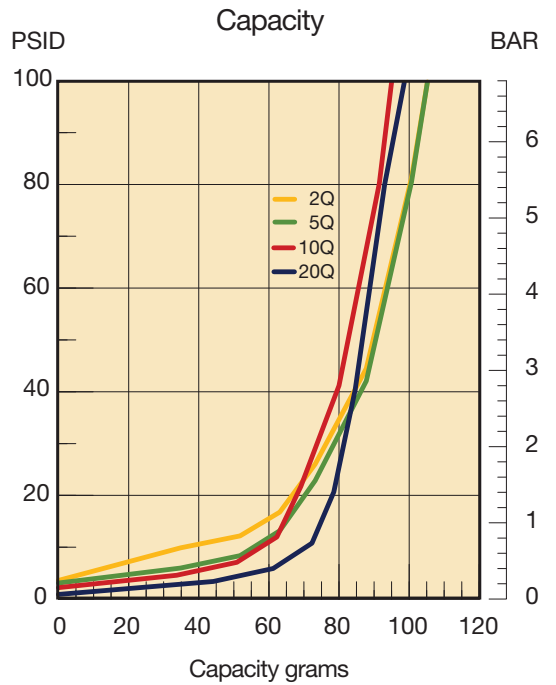
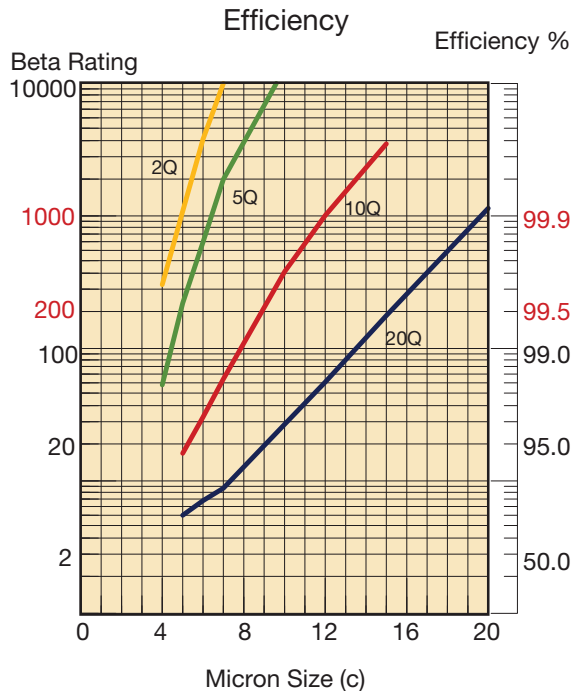
The Parker SMR Benefit

- Unmatched Fluid Purification & System Polishing
- Proven Varnish Removal
- PLC Control & Data Tracking
- OEM Approvals



SMR2

Element Performance



Dimensions are in inches.

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

SMR2

Specifications

Fluid

Viscosity: 1,020 SUS (220 cSt) maximum
Maximum Pressure: 50/80 PSI (operating/static)
Minimum Fluid Temperature: 65° F (18° C)
Maximum Fluid Temperature: 200° F (93° C)
Minimum Fluid Flash Point: >140° F (60° C)

Power

Customer Provided
Voltage: 110VAC/1Ph/60Hz, 230VAC/3Ph/60Hz, 460VAC/3Ph/60Hz
Phase: 1/3
Frequency 60Hz

Motor

Power: 0.5 HP
Voltage/Ph/Freq: 0-230/460/3/variable
RPM: 0 to 2000

Pump

Positive Displacement - Variable Frequency Drive (VFD)
Design Flow Rate: 0.5 - 2.5 GPM

Parameter Settings			
Parameter	Default	Minimum	Maximum
Flow	2 GPM [7.58 LPM]	0.5 GPM [1.9 LPM]	2.5 GPM [9.45 LPM]
Shutdown Pressure	70 psi [4.82 bar]	0 psi/bar	75 psi [5.17 bar]
Max Operating Pressure	50 psi [3.4 bar]	0 psi/bar	60 psi [4.13 bar]
Min Operating Pressure	0 psi [0.0 bar]	0 psi/bar	5 psi [0.34 bar]
Maximum Temperature	200° F [93.3°C]	35° F [1.6°C]	200° F [93.3°C]
Minimum Temperature	35° F [1.5°C]	35° F [1.6°C]	200° F [93.3°C]
Upstream Filter Delta-P	15 psi [1.0 bar]	5 psi [0.34 bar]	25 psi [1.7 bar]
Downstream Filter Delta-P	10 psi [0.67 bar]	5 psi [0.34 bar]	25 psi [1.7 bar]
Auto-Restart after power loss	OFF	n/a	n/a
Auto-Restart after temperature shutdown	OFF	n/a	n/a
US or Metric units	US		

SMR2

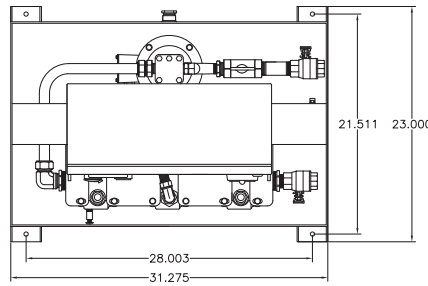
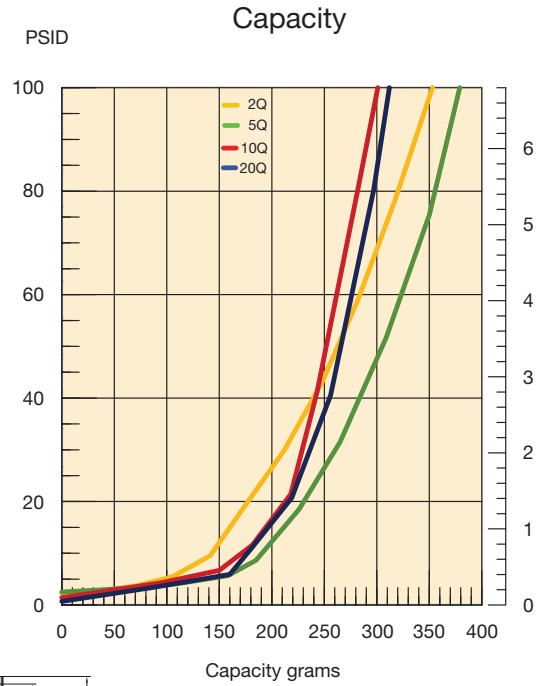
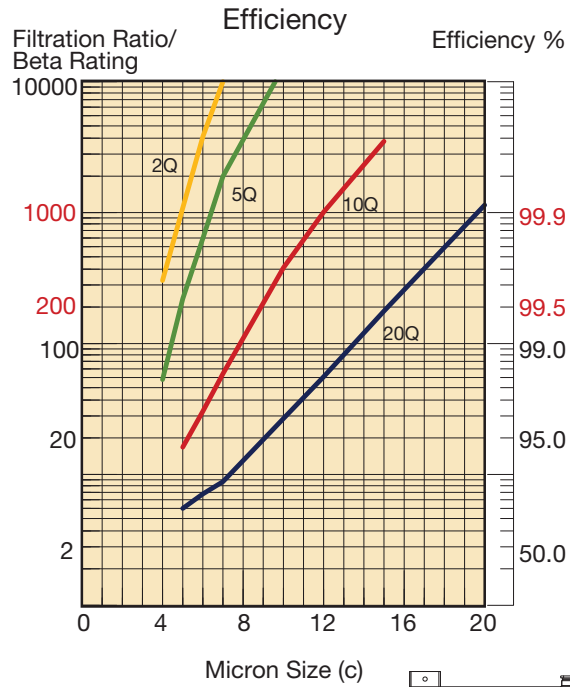
Parts List

Quantity	Parker Part #	Description
1	165-00002	Drive, AC, A/B .5 HP 240V 1 PH
	165-00001	Drive, AC, A/B .5 HP 480V 3 PH
	165-00011	Drive, Line Filter, .5 HP 120V & 240V 1 PH
	165-00014	Drive, Line Filter, .5 HP 460V 3 PH
1	270-00006	PLC/HMI
1	275-00007	Power Supply, H.V.
1	275-00002	Power Supply, A/B 24V 110-240V
1	275-00006	Power Supply, C/H 24V 380-480V
1	290-00001	Relay, H.V., A/B
1	245-00006	Light Module, A/B, Green
1	245-00005	Light Module, A/B, Yellow
1	250-00005	Motor, .5 HP, 230-380 STD
1	280-00014	Pump/Bypass, 2 GPM, STD
1	255-00016	O-Ring, vessel 1, 2 or 3
1	936623Q	5 Micron Filter, Upstream
1	936622Q	2 Micron Filter, Downstream
1	195-00003	Feedthru, H.V.
4	350-00001	Transducer, pressure



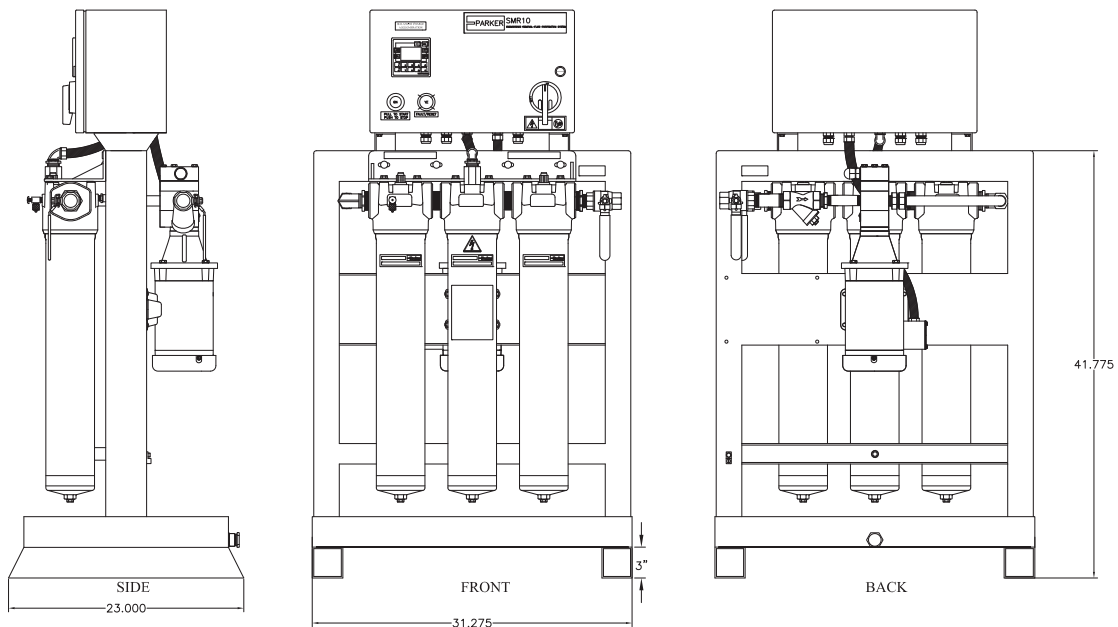
SMR10

Element Performance



Dimensions are in inches.

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



SMR10

Specifications

Fluid

Viscosity: 1,020 SUS (220 cSt) maximum
Maximum Pressure: 50/80 PSI (operating/static)
Minimum Fluid Temperature: 65° F (18° C)
Maximum Fluid Temperature: 200° F (93° C)
Minimum Fluid Flash Point: >140° F (60° C)

Power

Customer Provided
Voltage: 110VAC/1Ph/60Hz, 230VAC/3Ph/60Hz,
460VAC/3Ph/60Hz
Phase: 1/3
Frequency 60Hz

Motor

Power: 0.5 HP
Voltage/Ph/Freq: 0-230/460/3/variable
RPM: 0 to 2000

Pump

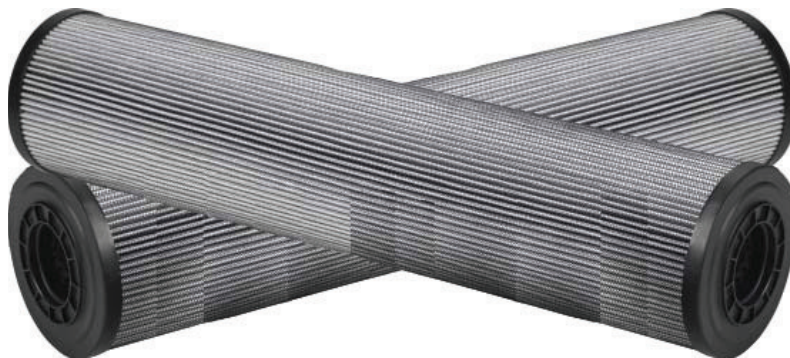
Positive Displacement - Variable Frequency Drive (VFD)
Design Flow Rate: 2.5 - 10 GPM

Parameter Settings			
Parameter	Default	Minimum	Maximum
Flow	10 GPM [37.9 LPM]	2.5 GPM [9.45 LPM]	10 GPM [37.85 LPM]
Shutdown Pressure	70 psi [4.82 bar]	0 psi/bar	75 psi [5.17 bar]
Max Operating Pressure	50 psi [3.4 bar]	0 psi/bar	60 psi [4.13 bar]
Min Operating Pressure	0 psi [0.0 bar]	0 psi/bar	5 psi [0.34 bar]
Maximum Temperature	200°F [93.3°C]	35°F [1.6°C]	200°F [93.3°C]
Minimum Temperature	35°F [1.5°C]	35°F [1.6°C]	200°F [93.3°C]
Upstream Filter Delta-P	15 psi [1.0 bar]	5 psi [0.34 bar]	25 psi [1.7 bar]
Downstream Filter Delta-P	10 psi [0.67 bar]	5 psi [0.34 bar]	25 psi [1.7 bar]
Auto-Restart after power loss	OFF	n/a	n/a
Auto-Restart after temperature shutdown	OFF	n/a	n/a
US or Metric units	US		

SMR10

Parts List

Quantity	Parker Part #	Description
1	165-00002	Drive, AC, A/B .5 HP 240V 1 PH
	165-00001	Drive, AC, A/B .5 HP 480V 3 PH
	165-00011	Drive, Line Filter, .5 HP 120V & 240V 1 PH
	165-00014	Drive, Line Filter, .5 HP 460V 3 PH
1	270-00006	PLC/HMI
1	275-00007	Power Supply, H.V.
1	275-00002	Power Supply, A/B 24V 110-240V
1	275-00006	Power Supply, C/H 24V 380-480V
1	290-00001	Relay, H.V., A/B
1	245-00006	Light Module, A/B, Green
1	245-00005	Light Module, A/B, Yellow
1	250-00005	Motor, .5 HP, 230-380 STD
1	280-00014	Pump/Bypass, 2 GPM, STD
1	255-00016	O-Ring, vessel 1, 2 or 3
1	933219Q	5 Micron Filter, Upstream
1	933218Q	2 Micron Filter, Downstream
1	195-00003	Feedthru, H.V.
4	350-00001	Transducer, pressure



SMR 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	BOX 9
SMR	2	460	20QE	V	M2	X	N08	MS

BOX 1: Basic Assembly	
Symbol	Description
SMR	Submicronic Filtration System

BOX 2: Flow Rate	
Symbol	Description
2	2 GPM (7.6 LPM)
10	10 GPM (38 LPM)

BOX 3: Power	
Symbol	Description
120	120VAC, 1Ph, 60Hz
230	230VAC, 3Ph, 60Hz
380	380VAC, 3Ph, 50Hz
460	460VAC, 3Ph, 60Hz
575	575VAC, 3Ph, 60Hz

BOX 4: Element Media ¹	
Symbol	Description
SMR2	
02QE	Ecoglass III, 2 micron
05QE	Ecoglass III, 5 micron
10QE	Ecoglass III, 10 micron
20QE	Ecoglass III, 20 micron
SMR10	
02Q	Microglass III, 2 micron
05Q	Microglass III, 5 micron
10Q	Microglass III, 10 micron
20Q	Microglass III, 20 micron

BOX 5: Seals	
Symbol	Description
V	Fluorocarbon (FKM)
E	Ethylene Propylene (EPR)

BOX 6: Indicator	
Symbol	Description
P	No Indicator
M2	Analog Visual Indicator

BOX 7: Bypass	
Symbol	Description
X	No Bypass

BOX 8: Ports	
Symbol	Description
SMR2	
N08	½" NPT threaded ports
SMR10	
N16	1" NPT threaded ports

BOX 9: Options	
Symbol	Description
SS	Stainless steel wetted parts
EXP	Explosion proof (Class 1, Div. 2, Gp. C & D)
MS	Moisture Sensor
PD ²	Particle Detector
PDM ²	Particle Detector with Moisture Sensor

Note:

1. Outlet polishing filter is always fitted with 02QE/02Q element.

2. icountPD not available when EXP option is selected.

Replacement Elements

Note: "CF" = Consult Factory

SMR2			SMR10		
Ecoglass III Media	Fluorocarbon	Ethylene Propylene	Microglass III Media	Fluorocarbon	Ethylene Propylene
02QE	936622Q	940848Q	02Q	933218Q	CF
05QE	936623Q	940847Q	05Q	933219Q	CF
10QE	936720Q	940846Q	10Q	933220Q	CF
20QE	936721Q	940845Q	20Q	933221Q	CF

Notes
