50P Series

High Pressure Filters

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 techno1ogy 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.

Vent Plug
- Purge all air from filter assembly
- Improves system performance

Cover
- Durable ductile iron
- Top service elements
- No oil spills during service

Bowl
- Single or double length

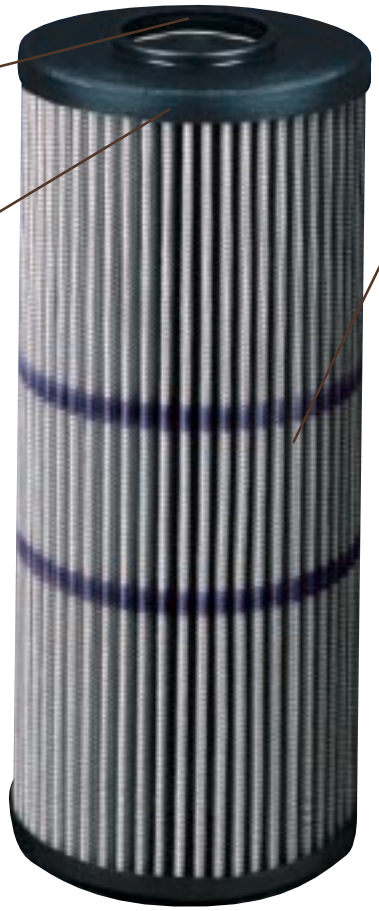
Head
- Ductile iron construction
- SAE or manifold ports
- Meets SAE HF4 automotive specification

Bypass (not visible)
- Cartridge style
- Precision matched assemblies

Indicators
- Visual or electrical/visual
- Several connector options

Drain Plug (not visible)
- Drain oil for easy service

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 specificaton 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

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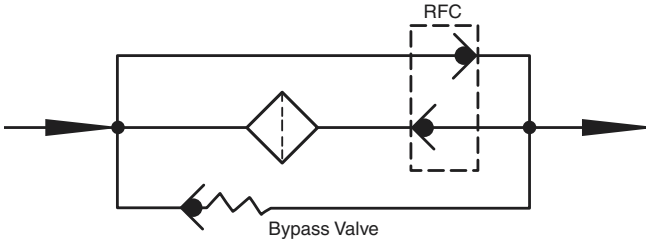
Hydraulic Filter Division
Metamora, OH

Model 50PR Reverse Flow Filter

The 50PR was designed specifically for hydrostatic transmission loops because of it's 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.

50PR Schematic



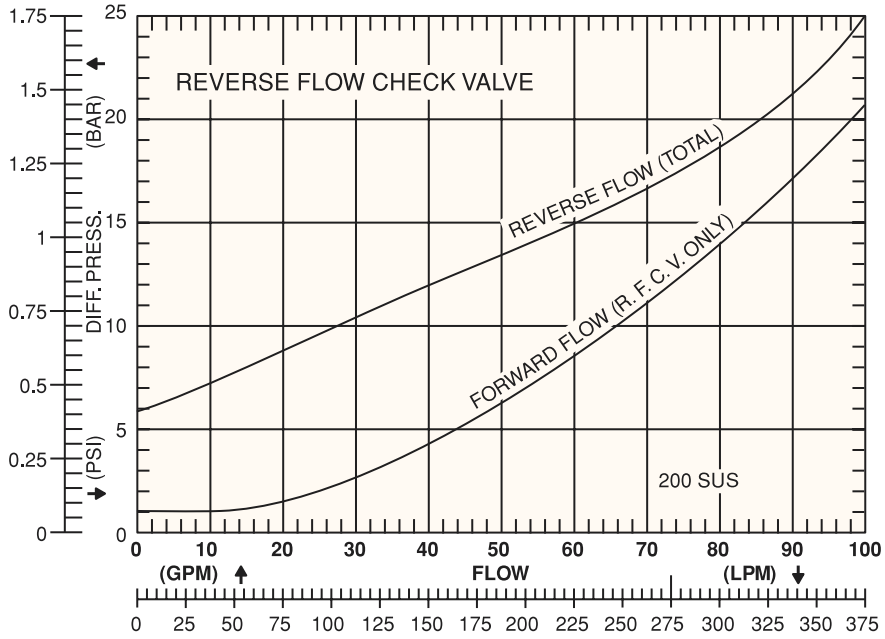
Sizing 50PR Filter Assemblies

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.

Typical Flow/Pressure Curves For 50 PR



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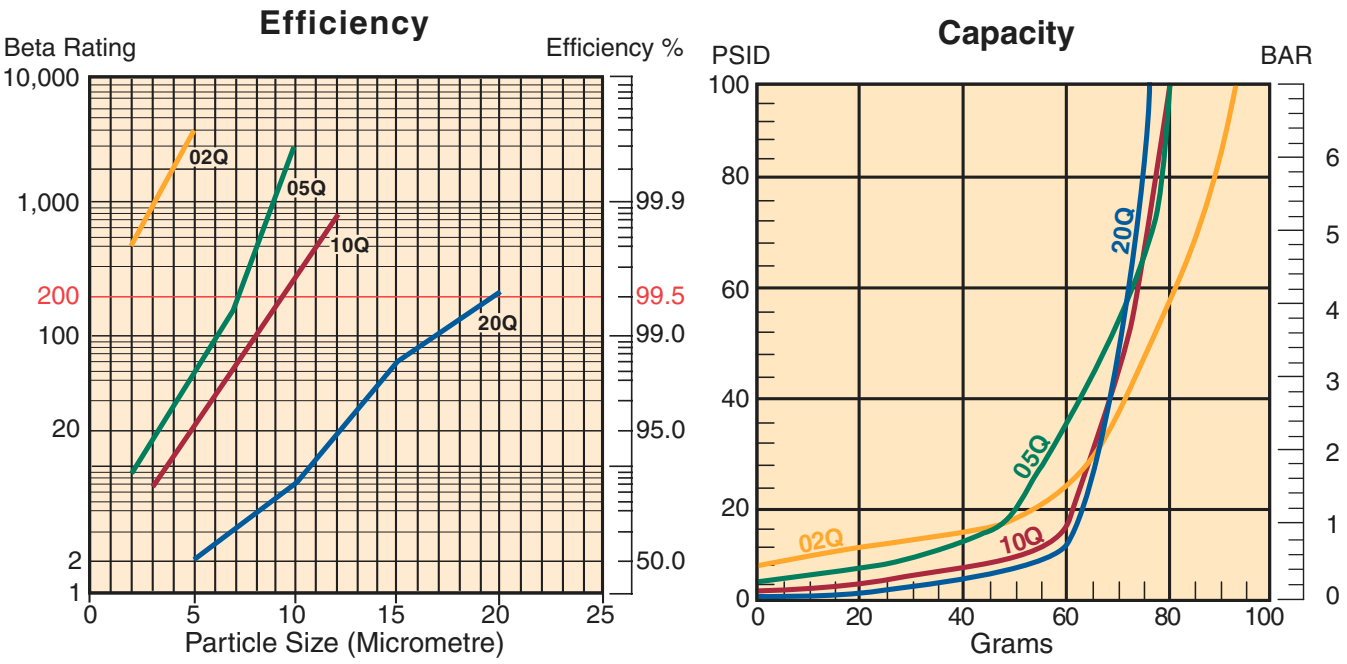
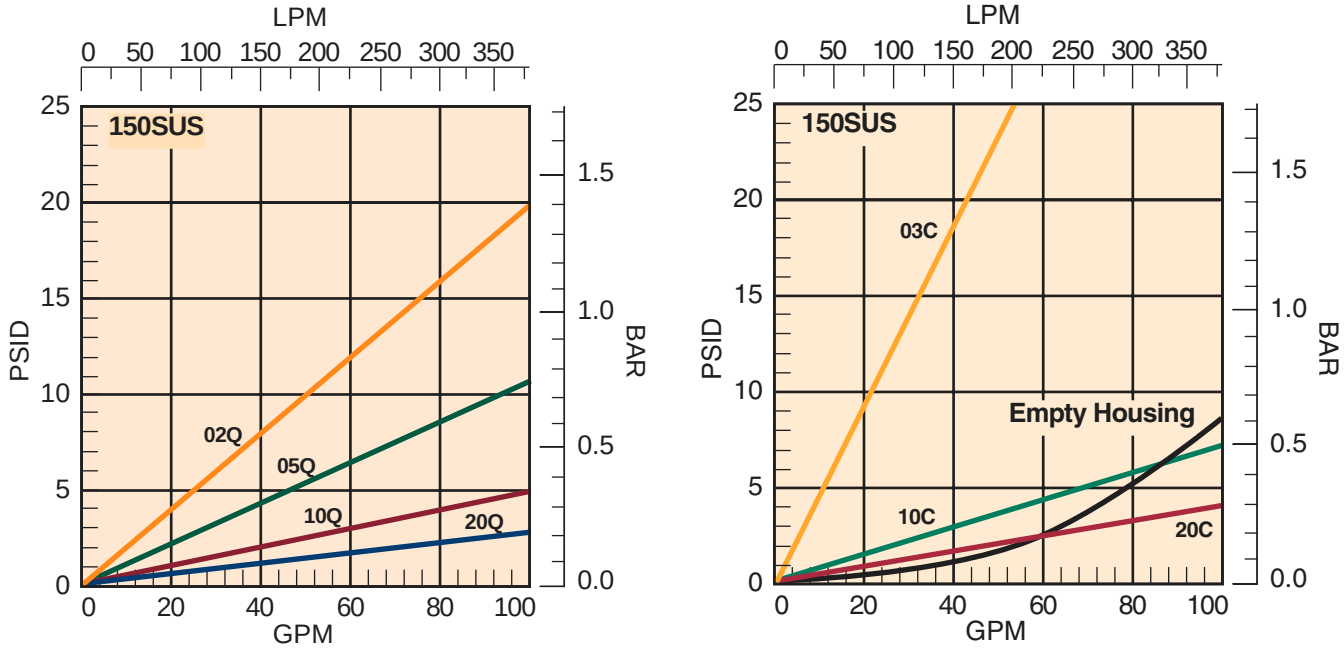
50P-1 Element Performance



Multipass tests run @ 50 gpm to 100 psid terminal - 5mg/L BUGL

Flow vs. Pressure Loss



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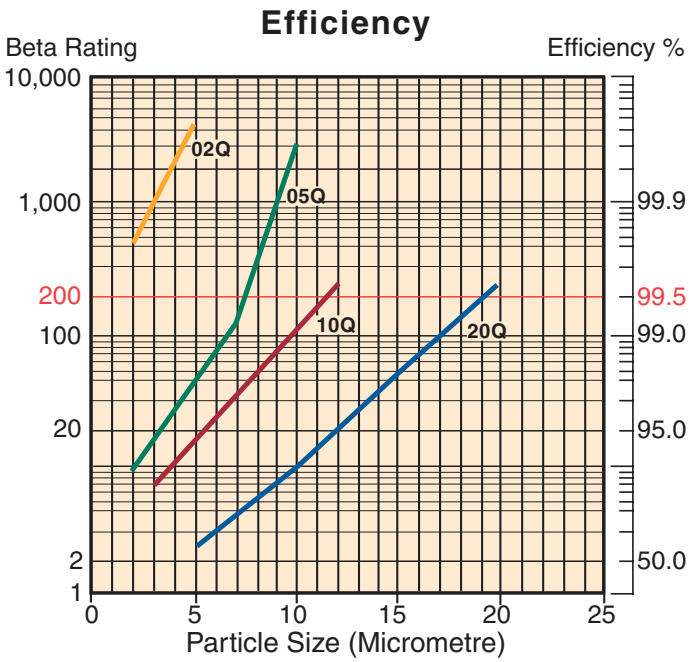
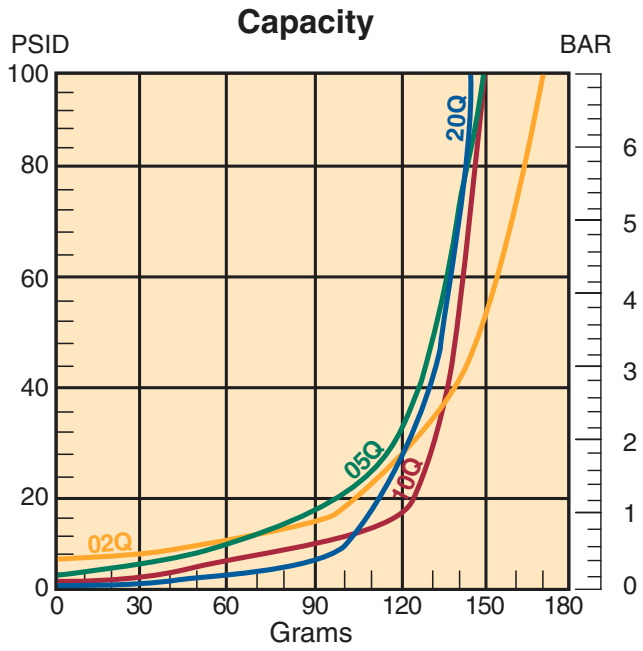
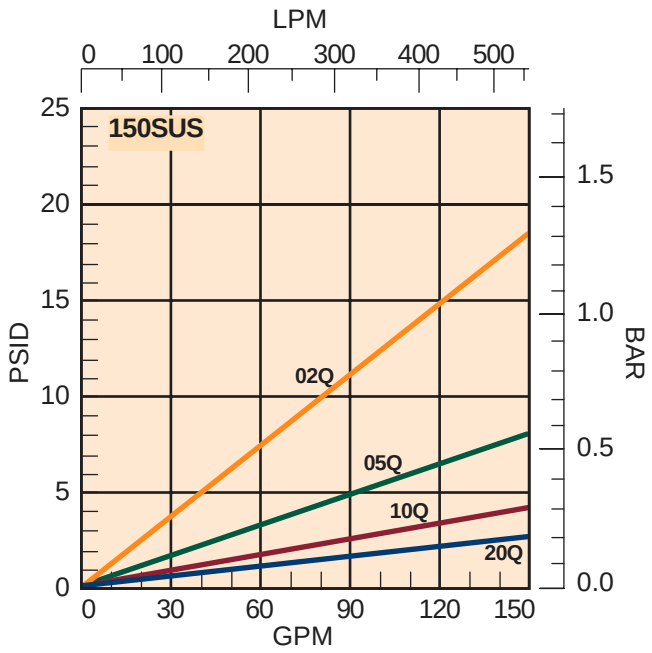
50P-2 Element Performance

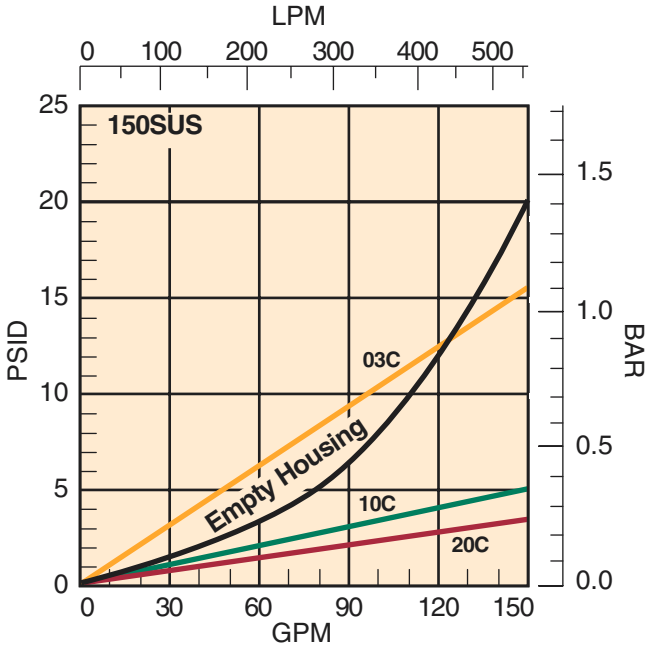




Multipass tests run @ 100 gpm to 100 psid terminal - 5mg/L BUGL

Flow vs. Pressure Loss





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Specifications: 50P/50PR

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

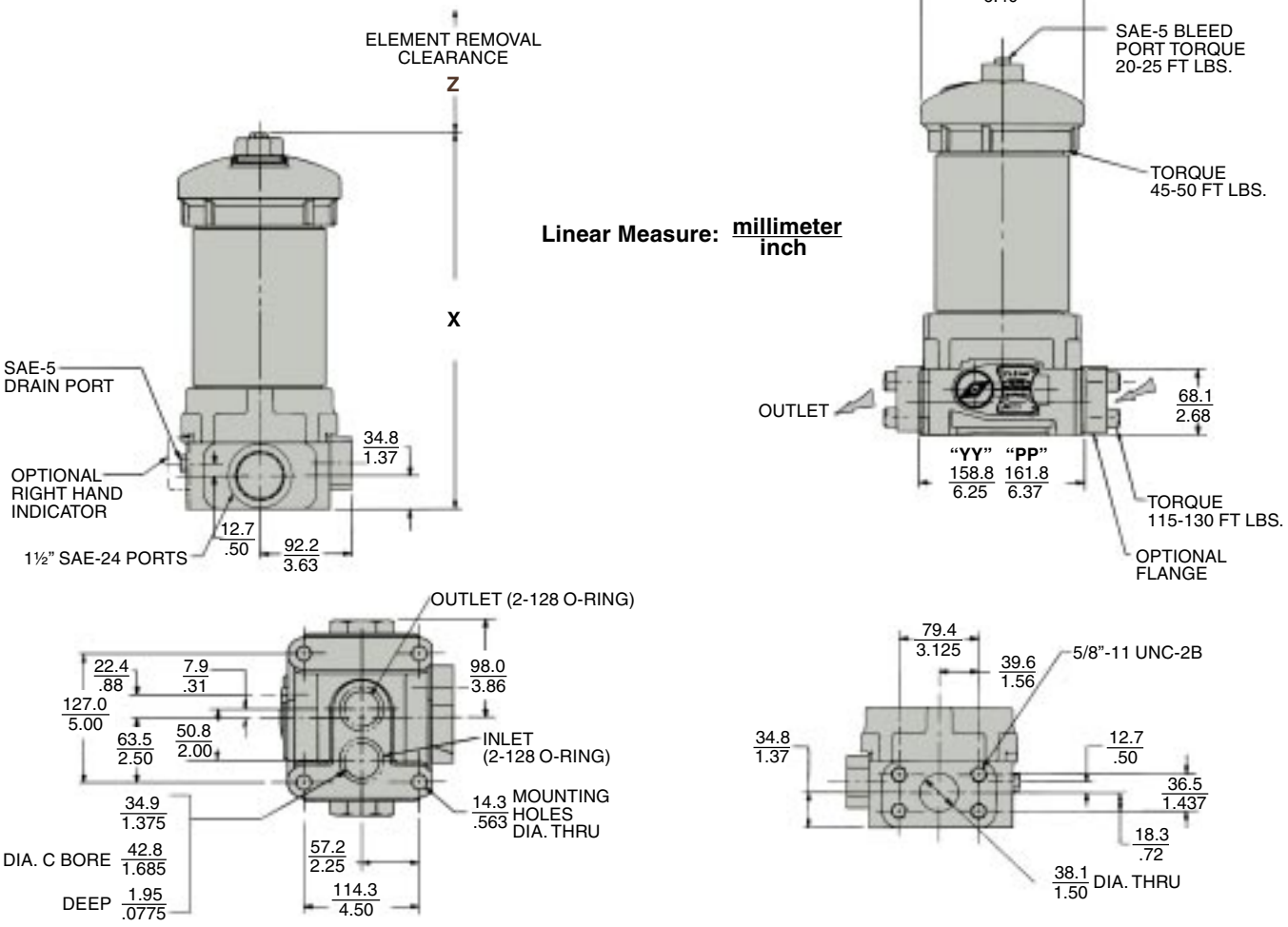
Indicators:
Visual 3 band (clean, change element, bypass)
Electrical: visual as above plus electrical switch with wire leads or connection as selected.
5A @ 240VAC
3A @ 28VDC
SPDT

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)
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
X	387.1 / 15.24	404.6 / 15.93	622.8 / 24.52	640.3 / 25.21
Z	254.0 / 10.00	254.0 / 10.00	508.0 / 20.00	508.0 / 20.00

Linear Measure: millimeter / inch



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Parts List

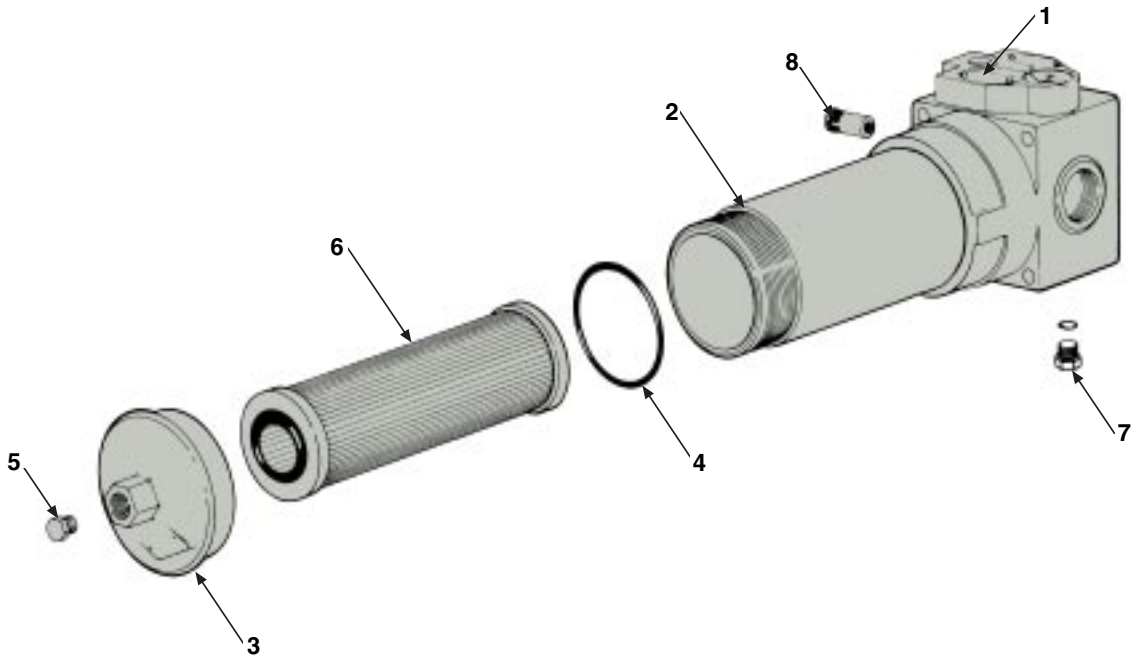
Index	Description	Part Number 50P/PR
1	**Head Assembly**	Consult Factory
2	**Bowl**	Consult Factory
3	**Cover**	926655
4	**Cover O-Ring** Buna Fluorocarbon	 N92246 V92246
5	**Vent Plug** Buna Fluorocarbon	 N93905 V93905
6	**Element**	See model code page
7	**Drain Plug** Buna Fluorocarbon	 N93905 V93905
8	**Bypass Valve** (50PR valve is not serviceable) 35 psi No bypass, 35 psi indicator 50 psi No bypass, 50 psi indicator 90 psi **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 **Flange Kits** (flange, o-ring, 4 bolts) 1½" NPT - Buna 1½" NPT - Fluorocarbon 1½" SAE-24 - Buna 1½" SAE-24 - Fluorocarbon 1½" Socket weld - Buna 1½" Socket weld - Fluorocarbon	 925879 925880 924189 924192 927399 931916 931924 925337 926482 929362 N92128 V92128 926073 926076 926074 926077 926075 926078

Note: Consult factory for EPR compatible part numbers

Element Service Instructions

When servicing the 50P filter, use the following procedure.

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 counter-clockwise 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.



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
F3	50P	1	10Q	EL	50	PP	1	Design number assigned by Parker

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

BOX 3: Length

Symbol	Description
1	***Single***
2	***Double***

BOX 4: Element Media

Symbol	Description
20C	Cellulose
10C	Cellulose
03C	Cellulose
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

BOX 9: Design Number

Applied to filter assembly by Parker Filter Division. Use the full filter model code, including the design number when ordering replacement parts, elements and cartridges.

50P/50PR Replacement Elements (Fluorocarbon)

Standard Collapse			High Collapse		
Media	**Single**	**Double**	**Media**	**Single**	**Double**
20Q	***931018Q***	***931020Q***	20QH	930438Q	931490Q
10Q	***932670Q***	***932679Q***	10QH	932676Q	932685Q
05Q	***932669Q***	***932678Q***	05QH	932675Q	932684Q
02Q	***932668Q***	***932677Q***	02QH	932674Q	932683Q
20C	925773	925793			
10C	925520	925792			
03C	925772	925791			

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

Notes

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