

How To Select The Filter Cartridge

- 1 Specify the level of final filtration required, within the range of 75 micron to 0.22 micron.
- 2 Select the filter system using the Final Filter Selection Table below.

Note: The recommendations are based on the assumption that the initial liquid feed is relatively dirty. If the feed has been prefiltered to about 10 micron, the first stage of filtration may be omitted.

How To Select The Filter Housing

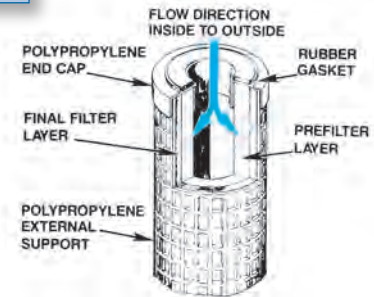
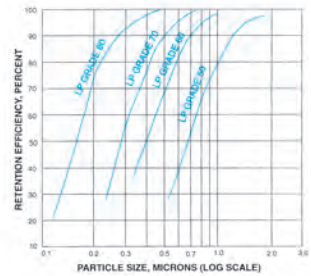
- 1 Determine the number of LP Filter Cartridge stages and Grade of filter at each stage, using the Final Filter Selection Table below.
- 2 Use the flow chart (next page) to determine the sizes of housings required based on the grade of filter cartridge and the liquid flow rate.
- 3 Select the housings of the correct size which are constructed of materials suitable for the application.

Retention Efficiency Ratings

LP Depth Filter Cartridges Grade 80% Capture Rating

10	75 micron
20	25 micron
30	10 micron
50	1 micron
60	0.6 micron
70	0.4 micron
80	0.22 micron

Retention efficiency v. particle size for the four finer grades of LP depth filters



Cross Section of LP-200-50 and LP-200-95 cartridges. Construction of LP-100-12 and LP-100-25 cartridges is similar, but without end caps and gaskets.

Table 1 Final Filter LP Depth Cartridge

If the Final Filtration Requirement is:	Use This LP Cartridge System		
	1st Stage	2nd Stage	3rd Stage
75 micron	LP Grade 10	---	---
25 micron	LP Grade 20	---	---
10 micron	LP Grade 10	LP Grade 30	---
1 micron	LP Grade 20	LP Grade 50	---
0.6 micron	LP Grade 10	LP Grade 30	LP Grade 60
0.4 micron	LP Grade 20	LP Grade 50	LP Grade 70
0.22 micron	LP Grade 20	LP Grade 50	LP Grade 80

Notes:

1 For a liquid with viscosity higher than the viscosity of water (1 centipoise), divide the flow rates in the above table by the viscosity of the liquid in centipoises. Example: for liquid with 10 centipoise viscosity, flow rate with C-0395 housing, Grade 20 cartridges at 10 psi drop will be $132/10 = 13.2$ GPM.

Flow Rates of Filter with LP Cartridges

Filter Housing Model	Number of Cartridges	Cartridge Length & Designation	Initial Pressure Drop	Water Flow Rate, Gallons per Minute LP Cartridges						
				Grade 10	Grade 20	Grade 30	Grade 50	Grade 60	Grade 70	Grade 80
33S6, 33G 58P	1	2 1/2" LP-100-12	5 psi	3.5	3.5	3.0	0.75	0.60	0.30	0.07
			10 psi	4.3	4.2	3.9	0.95	0.80	0.37	0.10
45S6 45G	1	7" LP-100-25	5 psi	5.0	5.0	4.3	1.1	0.90	0.45	0.11
			10 psi	6.2	6.2	5.4	1.4	1.2	0.60	0.15
53/18	1	5" LP-200-18	5 psi	6	6	6	3.2	1.3	0.6	0.5
			10 psi	11	11	11	6	2.5	1.0	0.9
27/50 53/50, 54/50	1	10" LP-200-50	5 psi	12	12	12	6.4	2.5	1.2	1.0
			10 psi	22	22	22	12	5	2.0	1.7
			5 psi	24	24	24	13	5	2.4	2.0
53/95, 27/95	1 3	LP-200-95	10 psi	44	44	44	24	10	4.0	3.4

Chemical and Solvent Compatibility			
Liquid	LP Cartridge	Liquid	LP Cartridge
Acetic Acid (Glacial)	NR	Hydrochloric Acid (35%)	R
Acetic Acid (5%)	R	Hydrofluoric Acid	NR
Acetone	R	Hydrogen Peroxide	NR
Acetonitrile	R	N-Methyl Pyrrolidone (NMP)	R
Alcohols	R	Methyl Ethyl Ketone (MEK)	R
Ammonia, Liquid or Gas	R (1)	Methyl Isobutyl Ketone (MIBK)	R
Amyl Acetate	N	Methylene Chloride	NR
Ammonium Hydroxide (6N)	R	Metal Etch (H ₃ PO ₄ /HAC/HNO ₃)	N
B.O.E. (NH ₄ F/HF)	NR	Nitric Acid (30%)	R
Butyl Acetate	N	Nitrobenzene	R
Carbon Tetrachloride	NR	Pentane	NR
Chlorine, Liquid or Gas	NR	Perchloroethylene	NR
Chloroform	NR	Phenol	NR
Cyclohexane	NR	Plating Solutions	R
Dimethyl Acetamide(DMAC)	R	Phosphoric Acid (50%)	R
Dimethyl Formamide(DMF)	R	Silicone Oils	R
Dimethyl Sulfoxide (DMSO)	R	Sodium Hydroxide	
Esters	NR	Below 20%	R
Ethanolamine	R	20-45%	R
Ethyl Acetate	R	Above 45%	NR
Ethylene Diamine	R	Steam	NR
Ethylene Glycol	R	Sulfuric Acid (50%)	R
Ethylene Oxide	R	Toluene	NR
Formaldehyde (37%)	R	Trichloroethane	NR
Freon TF	NR	Trichloroethylene	NR
Freon TMC	NR	Water to 180°F (82°C)	R
Hexane	NR	Xylene	NR

Notes:

1 Grades 10, 20, 30 large diameters only.

In LP200-□ sizes only.

R - Recommended

NR - Not Recommended

N - No data available; consult factory

Chemical Compatibility:

The above compatibility data is for the filter cartridges only, at an operating temperature of 70°F (21°C). The filter housing is not necessarily compatible with the same chemicals and solvents.

Food Grade Applications:

All LP Filter Cartridges are constructed entirely of materials which are in compliance with FDA regulations for food contact surfaces. All stainless steel liquid filter in this bulletin comply with FDA regulations for food contact applications.



Miniature Model 58P Housing

Has a nylon head, nylon internals, and a clear nylon bowl. The Model 58P Housing accepts a single LP cartridge, and may be used to filter water, mildly acidic, or caustic solutions.

Model 53 Housings

Are all-polypropylene, designed for a single LP-200 filter cartridge. Polypropylene construction provides excellent resistance to non-oxidizing acids, such as HCL in any concentration, sulfuric to 70% concentration, brines, hydrocarbon liquids, alcohols and concentrated caustic.

The Model 53 Housings may be used with certain ketones and chlorinated solvents. Please see page 105 or contact the Technical Services Dept. for specific recommendations.



54/50



Models
53/18, 53/50,
and 53/95 (shown)



Model
58P

Ordering Information					
Model	58P	53/18	53/50	53/95	54/50
Port Size (NPT)	1/4"	3/8"	3/4"	3/4"	3/4"
Material of Construction					
Head	Nylon	Polypropylene	Polypropylene	Polypropylene	Polypropylene
Bowl	Nylon	Polypropylene	Polypropylene	Polypropylene	SAN
Internals	Nylon	—	—	—	—
Seals	EPR	EPR	EPR	EPR	EPR
Max. Temperature	150°F (66°C)	125°F (52°C)	125°F (52°C)	125°F (52°C)	125°F (52°C)
Max. Pressure (1)	125 psig	125 psig	125 psig	125 psig	60 psi
Max. Differential Press. (2)	60 psi	60 psi	60 psi	60 psi	60 psi
Shipping Weight	1 lb. (0.5 kg)	3 lbs. (1.3 kg)	4 lbs. (1.8 kg)	6 lbs. (2.7 kg)	4 lbs. (1.8 kg)
Dimensions	2.7"D x 6.1"L (6.9cm x 15cm)	4.4"D x 6.6"L (11cm x 17cm)	5.0"D x 12"L (13cm x 30cm)	5.0"D x 22"L (13cm x 56cm)	5.0"D x 12"L (13cm x 30cm)

Ordering Information					
For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time					
Model	58P	53/18	53/50	53/95	54/50
LP Filter Cartridges, Depth Filters (3)	LP-100-12-□	LP-200-18-□	LP-200-50-□	LP-200-95-□	LP-200-50-□
Number of Cartridges required	—	1	1	1	1

Notes:

1 Maximum pressure ratings are for temperatures to 125°F (52°C). Please consult the Technical Services Dept. for maximum pressure ratings at elevated temperatures.

2 Inside-out flow, LP filter cartridges.

3 To order filter cartridges, indicate grade by putting appropriate grade number after size designation. For example, to obtain 0.22 micron depth filter cartridges for the model 53/18, order LP-200-18-80.



Model 27 Housings

Model 27 housings are constructed of 316 stainless steel. These models have 1" NPT ports and are rated to 800 psig. The model 27 housings hold a single LP-200 filter cartridge, available in a 10" or 20" length.



**Models
27/50, 27/95**

Principal Specifications

Model	27/50	27/95
Port Size (NPT) (1)	1"	1"
Material of Construction		
Head	316 SS	316 SS
Seals	Viton	Viton
Max. Temperature (2)	180°F (82°C)	180°F (82°C)
Max. Pressure	800 psig	800 psig
Max. Differential Press. (3)	60 psi	60 psi
Shipping Weight	16 lb. (7.3 kg)	20 lb. (9 kg)
Dimensions	4.0"D X 16"L (10cm X 41cm)	4.0"D X 27"L (10cm X 69cm)

Ordering Information

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Model	27/50	27/95
LP Filter Cartridges Depth Filters (4)	LP-200-50-□	LP-200-95-□
Number of Cartridges Required	1	1

Notes:

- Adaptors are available which convert threaded ports to sanitary type clamp connections.
- Limited by maximum temperature of LP Filter Cartridges.
- Inside-out flow, LP filter cartridge.
- To order filter cartridges, indicate grade by putting appropriate grade number after size designation. For example, to obtain 0.22 micron depth filter cartridges for the model 27/50, order LP-200-50-80.

Model 33S6 and 45S6 Filters

All-stainless steel with 1/2" NPT inlet and outlet ports. Both filters are also available with clear Pyrex® glass bowl (100 psig rating) with breakage-protection external plastic shield.



Models 33S6 and 45S6

Liquid Filters

Principal Specifications				
Model	33S6	33G	45S6	45G
Port Size (NPT) (1)	1/2"	1/2"	1/2"	1/2"
Material of Construction				
Head	316SS	316SS	316SS	316SS
Bowl	316SS	Pyrex	316SS	Pyrex
Internals	316SS	316SS	316SS	316SS
Seals	Viton	Viton	Viton	Viton
Max. Temperature (2)	180°F (82°C)	160°F (71°C)	180°F (82°C)	160°F (71°C)
Max. Pressure (3)	425 psig	100 psig	250 psig	100 psig
Max. Differential Press. (4)	60 psi	60 psi	60 psi	60 psi
Shipping Weight	3 lb. (1.3 kg)	3 lb. (1.3 kg)	5 lb. (2.3 kg)	5 lb. (2.3 kg)
Dimensions	2.6"D x 4.8"L (7cm x 12cm)	2.6"D x 4.5"L (7cm x 11cm)	2.6"D x 9.0"L (7cm x 23cm)	2.6"D x 9.3"L (7cm x 23cm)

Ordering Information				
For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time				
Model	33S6	33G	45S6	45G
LP Filter Cartridges, Depth Filters (5)	LP-100-12-□	LP-100-12-□	LP-100-25-□	LP-100-25-□
Number of Cartridges required	1	1	1	1

Notes:

- 1 Adaptors are available which convert threaded ports to sanitary type clamp connections.
- 2 Limited by maximum temperature of LP Filter Cartridges.
- 3 Maximum pressure ratings are for temperatures to 200°F (93°C). Please consult the Technical Services Dept. for maximum pressure ratings at elevated temperatures.
- 4 Inside-out flow, LP filter cartridges.
- 5 To order filter cartridges, indicate grade by putting appropriate grade number after size designation. For example, to obtain 0.22 micron depth filter cartridges for the model 33S6, order LP-200-12-80.

Adaptor Ordering Information:

P/N 73803 1" NPT x 1"
Sanitary
P/N 73804 1 1/2" NPT x 1 1/2" Sanitary
P/N 73805 2" NPT c 2"
Sanitary



Filter samples to on-line liquid analyzers

Prevent cross-contamination of samples

Pressure ratings up to 125 psig

Temperature to 275°F (135°C)

Completely disposable, constructed of recyclable plastics



Model
9933-05



Model
9922-11

Disposable Filter Units

Balston Microfibre® Disposable Filter Unit (DFU) consists of a Microfibre Filter Cartridge permanently bonded into a sealed plastic holder with 125 psig pressure rating. The economical DFU offers all the advantages of Microfibre Filter Cartridges for high efficiency liquid filtrations, combined with the convenience of complete disposability. The 1/4" O.D. ports permit pressure-tight connections using standard compression fittings. Slip-on 1/4" tubing or plastic barbs may be used for low pressure applications.

The housings are available in two different materials of construction: clear nylon or corrosion-resistant (opaque) PVDF. The nylon DFU's are designated with the prefix 9933, and the PVDF DFU's are designated with the prefix 9922.

Model 9922-05

The Model 99XX-05 DFU's are the smallest DFU's available. They have an internal volume of less than 12 ml. the DFU's may be used in low flow liquid applications or sampling systems which require short retention times.

Model 9933-11

The Model 99XX-11 DFU's are similar in construction to the Model 99XX-05 DFU's, but they have approximately twice the solids holding capacity. The 99XX-11 DFU's may be used in higher flow liquid applications or in sampling applications where longer retention times are acceptable.

Retention Efficiency Ratings

DFU Grade	98% retention particle size
DQ	25 micron
CQ	8 micron
BQ	2 micron
AQ	0.9 micron
AAQ	0.3 micron

Flow Rates								
DFU Model	Volume of Housing		Initial Pressure Drop	Water Flow Rate, Gallons per Hour				
	Gallons	Liters		Grade DQ, DX	Grade CQ, CX	Grade BQ, BX	Grade AQ	Grade AAQ
9922-05 4433-05 9933-05	0.003	0.01	1 psi	12	10	3	1.5	0.4
9922-11 9933-11			5 psi	30	25	15	7.3	1.9
9922-11 9933-11			1 psi	18	15	5	2.5	0.6
9922-11 9933-11	0.005	0.02	5 psi	45	37	26	12	3.1

Notes:

1 At 0 psig

2 At 110°F (43°C)

Installation Information:

Please contact the Technical Services Department for manufacturers of compression and brass fittings.

To Pressure Pipe or Tubing:

Connector 1/4" tubing to 1/4"NPT female
P/N 11970 (1 per pkg)

Connector 1/4" tubing to 1/4" tubing

P/N 11971 (1 per pkg)

To Low Pressure Plastic Tubing:

Tubing with 1/4" ID may be slipped over the DFU and fittings and held with tubing clamps. Parker supplies plastic barbs to connect the DFU to smaller diameter plastic tubing. The connection is suitable for pressures to 50 psig.

DFU to 1/16" ID tubing
P/N 14000 (bag of 20 barbs)

DFU to 1/8" ID tubing
P/N 14001 (bag of 20 barbs)

Liquid Filters

Principal Specifications					
Model	9922-05	9933-05	4433-05	9922-11	9933-11
Inlet and Outlet Ports	1/4" Tubing	1/4" Tubing	1 st Tier/Barb 1/4"Tubing 2 nd Tier/Barb 3/8"Tubing	1/4" Tubing	1/4" Tubing
Construction Material	PVDF	Nylon	Nylon	PVDF	Nylon
Max. Temperature (1)	275°F (135°C)	230°F (110°C)	230°F (110°C)	275°F (135°C)	230°F (110°C)
Max. Pressure (2)	125 psig	125 psig	125 psig	125 psig	125 psig
Dimensions	1.0"D x 3.25"L (2.5cm x 6cm)	1.0"D x 3.25"L (2.5cm x 6cm)	1.0"D x 3.43"L (2.5cm x 8.72cm)	1.4"D x 4.6"L (3.6cm x 12cm)	1.4"D x 4.6"L (3.6cm x 12cm)

Ordering Information					
For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time					
Model	9922-05	9933-05	4433-05	9922-11	9933-11
Box of 10 DFUs	9922-05-□	9933-05-□	4433-05-□	9922-11-□	9933-11-□
Grades supplied	DQ, CQ, BQ, AQ, AAQ	DQ, CQ, BQ, AQ, AAQ	DQ, CQ, BQ, AQ, AAQ	DQ, CQ, BQ, AQ, AAQ	DQ, CQ, BQ, AQ, AAQ

Chemical Compatibility	
Models 9922-05, 9922-11	Models 9933-05, 9933-11, 4433-05
<p>Suitable: Water or steam to 275°F (135°C); concentrated nitric, sulfuric, and hydrochloric acids; chlorine (gas or liquid); sodium hypochlorite, ethylene oxide (gas or liquid); Freons; ammonia (gas, liquid, or aqueous solutions); hydrogen peroxide (all concentrations); bromine (dry and aqueous solutions); all chlorinated solvents except methylene chloride; all aromatic and aliphatic solvents; all alcohols and glycols; aniline; phenol.</p> <p>Limited Use: Acetone, MEK, dioxane, furfural, methylene chloride.</p> <p>Unsuitable: Water above 275°F (135°C), THF, DMF, ethylene diamine, chlorosulfonic acid, ethanolamine, pyridine, sulfur trioxide.</p>	<p>Suitable: Water to 158°F (70°C); benzene, toluene, other aromatic hydrocarbons; hydrocarbon solvents and fuels, perchloroethylene; trichloroethylene, nitric acid (to 10%); sulfuric acid (to 40%); hydrochloric acid (to 10%); most salt solutions; sodium and potassium hydroxide (to 50%).</p> <p>Limited Use: Water at 176°F (80°C); acetone; MEK, acetaldehyde; ammonia (to 25%).</p> <p>Unsuitable: Water above 158°F (70°C). alcohols; glycols, phenol; aniline; DMF; concentrated acids; chlorine.</p>

- Remove contaminants to 5 micron
- Prevent fixture discoloration
- Materials comply with USFDA regulations
- Constructed of non-corrosive materials
- Ideal for drinking water systems
- Inexpensive replacement filter cartridges
- Transparent bowl for visual monitoring



**Model
57-501**

Balston Water Filter

The Balston 57-501 Series water filters provide economical, efficient liquid filtration in a one-step filter. These filters are designed to fit most 3/4" water supply lines and are available in three different efficiency ranges.

Retention Efficiency Ratings

Model	Retention efficiency Nominal µm rating	Water Flow Rate	
		5 psi	10 psi
57-501-C	80 (course grade)	15 GPM	30 GPM
57-501-M	30 (medium grade)	10 GPM	20 GPM
57-501-F	5 (fine grade)	8 GPM	16 GPM

Principal Specifications

Model	Materials of construction			Max. Press. (1)	Max. Temp.	Port Size	Shipping Weight	Dimensions
	Head	Bowl	Cartridge					
57-501-C	Polypro.	SAN	Polypro.	150 psi	125°F (52°C)	3/4" NPT	3.5 lbs.	5.5"D x 17"L (14cm x 43cm)
57-501-M	Polypro.	SAN	Polypro.	150 psi	125°F (52°C)	3/4" NPT	3.5 lbs.	5.5"D x 17"L (14cm x 43cm)
57-501-F	Polypro.	SAN	Polypro.	150 psi	125°F (52°C)	3/4" NPT	3.5 lbs.	5.5"D x 17"L (14cm x 43cm)

Notes:

1 Maximum pressure at 70°F (21°C)

Ordering Information

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Model	Replacement Filter Cartridges	
	Box of 3	Box of 10
57-501-C (Course grade)	WF-3/200-50-C	WF-200-50-C
57-501-M (Medium grade)	WF-3/200-50-M	WF-200-50-M
57-501-F (Fine grade)	WF-3/200-50-F	WF-200-50-F
Mounting Bracket Kit	P/N 11057	



Clean In Place (CIP) Steam Filtration



Room Humidification



Steam Filtration to Sterilizers and Autoclaves

Balston Filters for Steam Sterilization Systems

Steam Filters

Eliminate instrument staining,
spotting, and rusting

Reduced contamination of sterilizer
interiors

Reduced maintenance



Balston Steam Filters

The 23R Steam Filter contains a patented Microfibre® Filter Cartridge in a rugged stainless steel housing designed especially for steam service. Included as standard items with the 23R Steam Filter are a stainless steel condensate drain and a high quality bleeder valve. The unit, as received, is complete and ready for installation.