BALSTON®

Balston Sample Filters

Remove liquids and solids from gas samples

Remove solids and gas bubbles from liquid samples

Coalesce and separate two liquid phases

Filter solids and liquids from gases with 99.999% efficiency at 0.01 µm

Temperature resistance to 900°F (482°C)

Low pressure drop

Long life between filter element changes

Balston Sample Filters Protect Sensitive Analyzers

Balston Gas and Liquid Sample Analyzer Filters protect analyzers from sample impurities by removing solids and liquids from gases with 99.999% efficiency at 0.01 micron. Balston Sample Filters offer liquid filtration to 1 micron or lower. Composed of borosilicate glass microfibers with a resin binder, Balston sample filters are inert to most any gas or liquid.

To satisfy the extremely wide range of requirements for analyzer sample filters, Parker Hannifin Corporation supplies a complete line of filter housings in stainless steel, polypropylene, and other corrosion resistant materials, as well as a choice of high efficiency filter elements which are inert to most all liquids and gases.

Parker

N E W

from Parker Balston!
Energy Saving Filter Cartridges!

New and improved with the same filter performance you have come to expect from Balston cartridges, the new XE-Cartridges will reduce your annual operating costs!

What is creating the operating cost?

For every 2 psi of differential pressure in a compressed air system, the drive energy on the compressor is increased by 1%.
By minimizing differential pressure drop through compressed air filters, less drive energy on the compressor is realized and thus lower energy costs.

What is the savings solution?

The new XE-Cartridges from Parker Balston exhibit a 2+ psi pressure drop improvement over the current X cartridge. This produces a cost savings of $27.00 to $240.00 per year per installed filter cartridge depending on the number of work shifts.*

How do I order them?

For your next order of filter cartridge replacements be sure to order the NEW XE-Cartridges! Just simply add an “E” for energy savings to the end of the part number! See example below.

Current Part #	New Part #
100-18-DX	100-18-DXE

Now is the time to outfit your entire facility with the NEW Parker Balston XE-Cartridge!

If you have any questions please feel free to call us at

800-343-4048 and ask for Technical Services Department.

*based on $0.07 Kwh as a national average electrical cost. Savings are more significant in higher cost regions!

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Filtration and Separation Division
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Table 1 Filter Cartridge Description

LP Cartridges:	Designed to filter liquids with high solids contents. Have an integral prefilter and an external support structure (flow direction is inside-to-outside).
X-Type Cartridges:	Used for solids and relatively large amounts of suspended liquids in gases. Provide excellent chemical resistance, temperature resistance to 300°F (150°C), and good mechanical handling properties. These cartridges have thick walls for improved coalescing efficiency. Should be used whenever permitted by housing internal volume. Fluorocarbon Resin Binder.
Q-Type Cartridges:	Used for solids and trace amounts of liquids in gases. Similar to X-Type cartridges in chemical and temperature resistance. Fluorocarbon Resin Binder.
H-Type Cartridges:	Recommended for oxygen service or when X-Type or Q-Type are unsuitable. H-Type cartridges have temperature resistance to 1000°F (538°C) in dry gas, 100°F (38°C) in liquid . Quartz construction,
Sintered Stainless Steel Cartridges:	Designed for applications having heavy loading of solid contaminants. These cartridges are also suitable for removing heavy, viscous liquids from gases and as prefilters to high efficiency final filters. Constructed of 316 stainless steel with molded viton end seals.
CI Cartridges:	Used to remove trace quantities of oil vapor. Activated carbon sandwiched between two layers of microfiber filter media absorbs oil vapor. Must be prefiltered with Grade DX and Grade BX.

Table 2
Retention Efficiency of Filter Cartridges for Gas and Liquid Sample Filtration

	Gas Filtration at 0.01 µm
Microfibre Filter Cartridges	
Grades DXE, DQ, DH	93%
Grades BXE, BQ, BH	99.99%
Grade AQ	99.9999+%
Grade AAQ	99.9999+%
	Liquid and Gas Filtration at Indicated Micron Size
Sintered SS Cartridges	
Grade 5M	5 µm Nominal
Grade 10M	10 µm Nominal
Grade 20M	20 µm Nominal
Grade 40M	40 µm Nominal
Grade 70M	70 µm Nominal
Grade 00M	100 µm Nominal
	Liquid Filtration
Microfibre Filter Cartridges (98% retention)	
Grades DXE, DQ, DH	25 µm
Grades BXE, BQ, BH	2 µm
Grade AQ	0.9 µm
Grade AAQ	0.3 µm
LP Cartridges (80% retention)	
Grade 10	75 µm
Grade 20	25 µm
Grade 30	10 µm
Grade 50	1 µm

Filter Cartridge Description

Parker Hannifin supplies filter cartridges in three different designs: LP Cartridges, Sintered Stainless Steel Cartridges, and Microfibre Filter Cartridges (X, H, or Q-type). See Table 1 for descriptions:

How To Select The Filter Cartridge

1 When selecting a cartridge, do not overspecify. Select the coarsest grade which will adequately protect the instrument. Coarser grade filters provide lower pressure drop and longer life than finer grades.

2 When selecting X, Q, or H type cartridges, a D or B positioned before the cartridge type will determine the retention efficiency (see chart to the left). For LP and Sintered Stainless Steel Cartridges, the numerical Grade value indicates retention efficiency (see Table 2).

3 Refer to the chemical compatibility chart on page 29 to confirm compatibility of the filter cartridge material with the sample composition.

How To Select The Filter Housing

1 Select a filter housing in the material appropriate for your application. Please refer to the Application Index on page 29, and the appropriate data sheet.

2 Select a filter housing with a port size equal to the line size where the filter is to be located. If the line size at the filter has not yet been selected, determine the gas flow rate and pressure at the point where the filter will be located, and refer to the appropriate flow chart on pages 30 and 31 of this bulletin. Flow rates for liquids are located on page 30 and flow rates for air and gas sample filters are located on pages 31 and 32.

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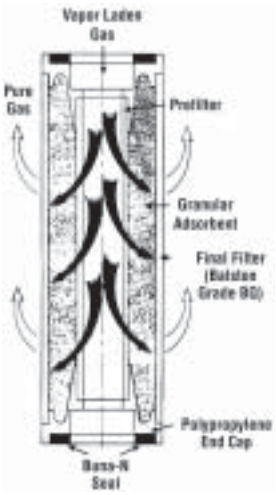
Vapor Adsorption Cartridges



Notes:

1 In DAU 9933-05-107 and DAU 9933-11-107, color indicator turns violet when adsorbent is spent.

2 Maximum operating temperature is 180°F.

Type CI Vapor Adsorption Cartridges contain a bed of adsorbent granules in the annular space between two Microfibre Filter Tubes, with permanently bonded end caps. Utilizing a wide choice of adsorbents, the Type CI cartridges selectively remove vapors from air and other gases. Flow direction is inside-to-outside through the cartridge, and the outer Microfibre Filter cartridge serves as an integral final filter to prevent carryover of adsorbent particles.

For low flow applications, Disposable Adsorption Units (DAU) provide a means of utilizing the same choice of adsorbents used in the Type CI cartridges in a completely disposable package (please refer to page 34).

Because the absorbed vapor remains trapped in the solid bed, the Type CI cartridge has a fixed upper limit of total weight of vapor which can be captured. It is usually not feasible to regenerate the cartridge when it has reached its adsorption limit. Type CI cartridges should be used only when small quantities of vapor are to be removed.

Adsorbents used in Type CI Cartridges

Adsorbent	Grade No.	Use For
Carbon	000	Compressor oil vapors, C_5 and heavier hydrocarbons, aromatics, oxygenated hydrocarbons, chlorinated organics, freons, carbon disulfide.
Molecular Sieve 13X	103	Most C_4 and lighter hydrocarbons, etylene, propylene, acetylene, ethylene Type oxide, ammonia, mercaptans, sulfur hexafluoride, triethylamine, and smaller amines.
Mixed Sodium and cium Hydroxides	107	all acidic gasses, including sulfur trioxide, sulfur dioxide, nitrogen dioxide, Calcarbon dioxide, hydrogen sulfide, hydrogen chloride, phosphorus trichloride, boron triflouride.

Considerations in Using Adsorbent Cartridges

The following factors should be considered when selecting a vapor adsorbent cartridge:

1 Solid adsorbents are effective only for vapors. Since liquids will damage or inactivate most solid adsorbents, the Type CI cartridge or DAU must be preceded by an efficient coalescing filter. Recommendations for prefilters are given on page 27.

2 In contrast with Microfibre Filters, which operate at their initial efficiency throughout their life, adsorbent cartridges have a limited holding capacity. When the adsorption capacity is reached, no further adsorption occurs. The limiting capacity, or “breakthrough” point, is not sharply defined, and the exit vapor concentration will increase rapidly as saturation is approached. To avoid unwanted vapor contaminants downstream, it is necessary to change the adsorbent cartridge will before it has reached its ultimate adsorption capacity.

3 Adsorption is reversible, if operating conditions change, a vapor may desorb rather than adsorb. For example, if a temporary surge in vapor impurity concentration causes a relatively high concentration to be absorbed on the solid, a subsequent decrease in inlet vapor composition will result in desorption of vapor from the solid to the gas stream.

4 The efficiency of a given adsorbent for a given vapor depends upon the specific operating conditions. Therefore, again in contrast to filtration, it is not possible to assign a single efficiency rating to an adsorbent. While it is not possible to predict or guarantee an adsorption efficiency for any specific set of conditions, it is possible to enhance the conditions beneficial to adsorption and avoid conditions which interfere with adsorption. Conditions which aid adsorption are: low temperature, high pressure, low flow rate, and absence of competing vapors (particularly water vapor).

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Remove solids and liquids from gas samples

Remove solids from liquid samples

Filtration efficiencies from 5 to 100 micron

316L stainless steel construction

Long life, cleanable filter cartridges

Temperature resistance to 400°F

Up to 200 psid (differential pressure)

Advantages

The Balston Stainless Steel Sintered Metal Filter is suitable for applications which require a durable, low maintenance reusable stainless steel filter. The filter cartridge is constructed of 316 stainless steel with two molded Viton gaskets. It may be installed in select Balston filter housings which are designed to accommodate an 050-11, 100-12, and 100-25 size filter cartridge. The Balston Stainless Steel Sintered Metal Filters may be used in liquid or gas service, to filter particulate sized from 5 micron to 100 micron, depending on the grade of the filter used.

The Balston Stainless Steel Sintered Metal Filter has excellent chemical resistance characteristics.

Installation of the Balston Stainless Steel Sintered Metal Filter is straightforward and requires approximately 2-3 minutes. First, remove the filter bowl from the filter housing into which the filter will be installed. Next, place the molded Viton gaskets on to the ends of the cartridge. For 050-11 elements, make sure the shoulder of the gasket fits snugly onto the outer diameter of the cartridge. Finally, holding the gaskets in place on the cartridge, slide the cartridge on the support core or tie rod of the housing, and reassemble the filter housing.

Check the filter housing for leaks after reassembling.

The Balston Stainless Steel Metal Filter Cartridge should be removed from service and cleaned annually, or when the pressure drop across the filter is significant enough to adversely affect the user's application.

The cartridge may be cleaned by backflushing or ultrasonic methods. After cleaning, visually inspect the filter cartridge to confirm it's integrity for continued service.

Applications

Samples with heavy loading of solid contaminants

Removal of heavy, viscous liquids from gas samples

Prefilters to final high efficiency filters

Ideal for sample lines that are periodically backflushed

High temperature applications

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Flow Rates (SCFM)

Flow Rates, SCFM, at 2 psi drop at indicated line pressure, psig

Filter Housing Model	Filter Size	Filter Cartridge Grade	Max Porosity (Micron)	2 psig	20 psig	40 psig	60 psig	80 psig	100 psig	125 psig	160 psig	200 psig	250 psig	300 psig	500 psig
95, 85, 91 Series	050-11	05M	5	0.8	1.6	2.6	3.6	4.4	5.4	6.6	7.8	10	12	15	24
		10M	10	1.2	2.4	3.9	5.4	6.6	8.1	9.9	12	15	19	22	36
		20M	20	1.6	3.2	5.2	7.2	8.8	11	13	16	20	25	30	48
		40M	40	2.4	4.8	7.8	11	13	16	20	23	31	37	44	73
		70M	70	3.4	6.8	11	15	19	23	28	33	43	53	63	103
		00M	100	4.4	8.8	14	20	24	30	36	43	56	68	81	133
31S6, 33S6, 31G,33G, 37/12	100-12	05M	5	2.4	5.2	8.0	11	14	17	21	24	32	39	47	76
		10M	10	3.6	7.8	12	17	21	26	31	37	48	69	70	114
		20M	20	4.8	10	16	22	28	34	41	49	64	78	93	152
		40M	40	7.2	16	24	33	42	51	62	73	95	118	140	229
		70M	70	10	22	34	47	60	72	88	104	135	167	198	324
		00M	100	13	29	44	61	77	94	113	134	175	216	256	419
41S6, 45S6 41G, 45G 37/25	100-25	05M	5	3.4	7.2	11	16	20	24	29	34	45	55	66	108
		10M	10	5.1	11	17	23	30	36	44	52	68	83	99	161
		20M	20	6.8	14	23	31	40	48	58	69	90	111	132	215
		40M	40	10	22	34	47	59	72	88	103	135	166	197	323
		70M	70	14	31	48	66	84	102	124	146	191	235	280	457
		00M	100	19	40	63	86	109	132	161	189	248	305	362	592

Specifications

Balston Sintered Metal Filter

Filter Efficiency	5 micron to 100 micron (nominal) in gas and liquid
Materials of Construction	316L Stainless Steel Cartridge, Viton Gasket
Maximum Temperature	400°F
Maximum Pressure Drop	200 psid (14 bar)
Dimensions (including gaskets)	
050-11 size	.75"D x 2.28"L
100-12 size	1.21"D x 2.48"L
100-25 size	1.21"D x 6.98"L
Shipping Weight	0.5 lb. (0.2 kg)

Ordering Information for assistance, call 800-343-4048. 8am to 5pm Eastern Time.

	050-11 Size	100-12 Size	100-25 Size
Sintered Metal Filter	050-11-( )	100-12-( )	100-25-( )
Replacement Viton Gaskets	A05-0045	A05-0046	A05-0047
Example: 100-12-40M			

Sintered Stainless Steel Cartridges

Filter Housing Model	Filter Size	Filter Cartridge Grade	Water Flow Rate in GPH at 1 PSI pressure drop
95, 85, 91	050-11	05M	11
		10M	26
		20M	30
		40M	35
		70M	38
		00M	38
31S6, 33S6 31G, 33G 37/12	100-12	05M	26
		10M	62
		20M	71
		40M	82
		70M	93
		00M	93
41S6, 45S6 41G, 45G 37/25	100-25	05M	61
		10M	111
		20M	128
		40M	148
		70M	154
		00M	154

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Chemical and Temperature Resistance of Filter Cartridges (For Temperatures Up To 75°F/24°C)*

Chemical or Solvent	X-Type or Q-Type with Fluorocarbon Resin Binder	H-Type With Quartz Construction	LP Cartridge With Polypropylene Support
Cold Water	Excellent	Fair	Excellent
Hot Water (to 180°F/82°C)	Excellent	Not Recommended	Excellent
Steam (to 20 psig)	Excellent	Not Recommended	Not Recommended
Acids, except Hydrofluoric:			
Dilute concentrations	Excellent	Excellent	Excellent
Intermediate concentrations	Excellent	Excellent	Good
Concentrated, except phosphoric	Good-Fair	Excellent	Not Recommended
Concentrated phosphoric acid	Not Recommended	Not Recommended	Not Recommended
Hydrofluoric Acid	Not Recommended	Not Recommended	Not Recommended
Caustic, below 45%	Excellent	Not Recommended	Fair
Caustic, above 45%	Fair	Not Recommended	Not Recommended
Chlorine, liquid or gas	Excellent	Excellent	Not Recommended
Ammonia, liquid or gas	Not Recommended	Not Recommended	Fair
Ethylene Oxide, liquid or gas	Not Recommended	Not Recommended	See Pack 5
Aromatic Hydrocarbons	Excellent	Excellent	Good
All other Hydrocarbons	Excellent	Excellent	Excellent
Ketones	Not Recommended	Excellent	Fair
Alcohols	Excellent	Excellent	Excellent
Freons	Excellent	Excellent	Not Recommended
Phenol	Excellent	Excellent	Not Recommended
Chlorinated Solvents	Excellent	Excellent	Fair
Ethylene Diamine	Excellent	Excellent	Not Recommended
Ethanolamine	Not Recommended	Excellent	Not Recommended
Other Amines	Good-Fair	Excellent	Not Recommended
Polar Solvents, including:			
DMF, DMAC, NMP, DMSO	Not Recommended	Excellent	Not Recommended
Maximum Operating Temperature	300°F (150°C)	1000°F (538°F)	180°F (82°C)

*Consult factory for compatibility at elevated temperatures

Application Index

Operating Requirement	Filter Cartridge Type	Stainless Steel, Monel, or Aluminum Housing	Plastic Housing
Severe Operating Conditions			
Pressure 250 to 5000 psig	All	91S6, 97S6, 95M, 85, 37/12, 37/25, 27/35 27/80, 95S6, 95A, 48S6, 49S6, 105S6, 47S6	N/A
Temperature 300°F (150°C) to 600°F (315°C)	H, M	Any stainless steel or Monel housing with Viton seals	N/A
Temperature 600°F (315°C) to 900°F (480°C)	H, M	30/12, 30/25	N/A
Exceptional Chemical Resistance	See chart above	95M/Monel	9922-❑-❑, 8822❑-❑/PVDF, 95T/Teflon, 90/Polypropylene
NACE Compliance	All	95S6, 85, 37/12, 37/25, 27/35, 27/80	NA
FUNCTIONAL REQUIREMENTS			
Separate liquids from gases	XE, Q	All housings except 97S6, 30/12, 30/25, 48S6, 49S6, 47S6	8822-11, 8833-11, 95T
Separate two liquid phases	XE, LP	All housings except 97S6, 30/12, 30/25, 48S6, 49S6, 47S6	8822-11, 8833-11, 95T
Remove gas bubbles from liquids	XE, Q	All housings except 97S6, 30/12, 30/25, 48S6, 49S6, 47S6	8822-11, 95T
Quantitative measurement of solids in gases	H, Q	30/12, 30/25	N/A
Slipstream or Bypass Filtration	XE, Q, LP, M	All housings except 97S6, 30/12, 30/25	8822-11, 95T, 53/18, 53/50
Filter liquids with high solids content	LP, M	All housings	All housings
Filter gas or liquid samples to analyzers	XE, Q, LP, M	All housings	9933-05, 9922-05, 90

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Flow Rates For Liquid Filters

Filter Housing Model	Volume of Housing Gallons	Volume of Housing Liters	Initial Pressure Drop	Water Flow Rate, Gallons Per Hour Q or X Cartridges DQ, DX	Q or X Cartridges BQ, BX	LP Cartridges Grade 10	Grade 20	Grade 30	Grade 50
Stainless Steel, Monel and Teflon Housings									
105S6			1 psi	7	2	——	——	——	——
			5 psi	24	10	——	——	——	——
48S6			1 psi	14	4	——	——	——	——
			5 psi	51	21	——	——	——	——
95M, 95S6, 95T, 95A 91S6, 47S6 85	0.005 .009 0.015	0.02 0.036 0.06	1 psi	18	5	——	——	——	——
			5 psi	64	26	——	——	——	——
31S6	0.026	0.098	1 psi	54	13	——	——	——	——
31G			5 psi	129	56	——	——	——	——
49S6			1 psi	57	14	——	——	——	——
			5 psi	135	60	——	——	——	——
33S6 33G 37/12	0.042	0.16	1 psi	63	16	50	50	40	10
			5 psi	150	66	210	210	180	45
41S6	0.051	0.19	1 psi	95	30	——	——	——	——
41G			5 psi	260	121	——	——	——	——
37/25 45S6 45G	0.111	0.42	1 psi	109	35	75	75	60	15
			5 psi	300	140	300	300	260	65
27/35	0.394	1.49	1 psi	325	90	——	——	——	——
			5 psi	875	400	——	——	——	——
C-0150	0.911	3.45	1 psi	——	——	210	210	210	80
			5 psi	——	——	720	720	720	390
27/80	0.750	2.84	1 psi	390	170	——	——	——	——
			5 psi	990	610	——	——	——	——
15/80S6 (2)			1 psi	1650	720	——	——	——	——
			5 psi	4000	2500	——	——	——	——
C-0195	1.37	5.20	1 psi	——	——	420	420	420	160
			5 psi	——	——	1440	1440	1440	780
Plastic Housings									
9922-05	0.003	0.01	1psi	12	3	——	——	——	——
9933-05			5 psi	30	15	——	——	——	——
8822-11, 8833-11	0.005	0.02	1 psi	18	5	——	——	——	——
9922-11, 9933-11			5 psi	45	26	——	——	——	——
90			1 psi	23	10	——	——	——	——
			5 psi	46	36	——	——	——	——
7700-12	0.034	0.13	1 psi	——	——	50	50	40	10
58P			5 psi	——	——	210	210	180	45
53/18	0.185	0.70	1 psi	——	——	100	100	100	40
			5 psi	——	——	360	360	360	190
53/50	0.346	1.31	1 psi	——	——	210	210	210	80
54/50			5 psi	——	——	720	720	720	390
53/95	0.661	2.50	1 psi	——	——	420	420	420	160
			5 psi	——	——	1440	1440	1440	780

Notes: 1 For liquids 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 Model 53/50 housing, Grade 50 filter cartridges at 5 psi drop will be 390/10=39 GPH.
2 Flow rates for Model 15/80S6 are estimated.

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Flow Rates for Air and Gas Filters

Filter \Housing Model	Volume of Housing (ml)	Filter Tube Grade	Flow Rate (CFM) at 10" Water Press. Drop. 0 psig	(1) Flow Rates, SCFM, at 2 PSI Drop at Indicated Line Pressure, PSIG Refer to Product Specification Charts for Maximum Pressure Rating of Each Housing																						
				2 psig	20 psig	40 psig	60 psig	80 psig	100 psig	125 psig	150 psig	200 psig	250 psig	300 psig	500 psig	750 psig	1000 psig	1500 psig	2000 psig	2500 psig	3000 psig	3500 psig	4000 psig	4500 psig	5000 psig
9922-05 4433-05 9900-05 9933-05	11.33	DQ	0.2	1.2	2.5	3.9	5.4	6.8	8.3	10.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		BQ	0.1	0.8	1.6	2.6	3.5	4.5	5.4	6.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		DAU	N/A	0.5	1.2	---	2.6	3.3	4.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8833-11 9922-11 9933-11	19.82	DXE	0.4	1.8	3.6	6	8	10	12	14.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		BXE	0.2	0.9	1.8	3	4	5	6	7.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		DAU	N/A	0.7	1.7	---	3.7	4.3	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
97S6	11.33	DQ	0.7	3	7	10	14	18	22	27	32	41	51	60	99	147	195	290	386	482	578	674	770	886	962	
		BQ	0.2	0.9	1.8	3	4	5	6	7	9	11	14	16	26	39	52	77	103	128	154	179	205	230	256	
95A, 95M 95S6, 95T 91S6, 47S6	19.82	DQ	1.5	3.9	8	13	18	22	27	33	39	51	62	74	121	180	239	357	470	590	710	830	940	1060	1180	
	BQ	0.3	1.5	3	5	7	8	10	12	14	19	23	27	45	67	88	132	180	220	260	310	350	390	440		
48S6		DQ	N/A	2.5	10	16	23	28	33	40	47	61	75	89	145	210	280	420	560	700	840	980	1120	1260	1400	
		BQ	N/A	2	5	8	9	10	11	13	16	20	25	29	46	70	90	130	180	220	260	300	340	380	420	
85	59.47	DXE	2.2	5.9	12	19.5	26	32	41	50	58	76	92	111	182	270	360	540	710	890	1065	1245	1420	1600	1770	
		BXE	0.4	2.2	4.6	7.7	10	12	15	18	22	28	34	41	68	113	134	200	265	325	400	475	530	590	660	
90		DQ, DXE	3.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
		BQ, BXE	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
31S6, 31G	93.45	DQ, DXE	2.6	10	22	35	48	61	74	90	107	140	172	205	---	---	---	---	---	---	---	---	---	---	---	
		BQ, BXE	0.45	2	6	9	12	16	20	24	29	37	46	54	---	---	---	---	---	---	---	---	---	---	---	
30/12, 33S6	158.58	DXE	3.0	12	26	40	55	70	85	103	122	159	196	233	381	567	752	1122	1493	1863	2234	2600	2970	---	---	
33G, 37/12		BXE	0.5	3	7	10	14	18	22	27	32	41	51	60	99	147	195	291	387	483	579	695	770	---	---	
49S6		DQ	N/A	13	28	45	61	78	94	115	135	177	218	259	423	629	834	1245	---	---	---	---	---	---	---	
		BQ	N/A	6	13	21	28	35	43	53	62	81	100	119	194	288	383	571	---	---	---	---	---	---	---	
41S6, 41G	220.87	DQ, DXE	6.6	15	32	50	69	87	106	129	152	199	245	291	---	---	---	---	---	---	---	---	---	---	---	
		BQ, DXE	1.1	7	15	24	32	41	50	61	72	93	115	139	---	---	---	---	---	---	---	---	---	---	---	
30/25 45S6, 45G 37/25	419.09	DQ, DXE	7.5	17	36	57	78	99	120	146	172	225	277	329	538	800	1062	1585	2108	2631	3156	3680	4200	---	---	
		BQ, BXE	1.3	8	17	26	36	45	55	67	79	103	127	151	247	367	487	727	976	1207	1447	1690	1930	---	---	
27/35	1500.80	DXE	13.3	40	83	130	178	225	273	332	392	510	629	748	1220	1820	2410	3600	4780	5970	7160	8340	9530	10720	11900	
26/35		BXE	3.3	19	39	62	84	107	129	157	185	241	297	353	578	858	1140	1700	2260	2820	3380	3940	4500	5060	5630	
27/80	2860.02	DXE	20.0	43	90	142	193	245	297	362	426	555	684	814	1330	1980	2625	3900	---	---	---	---	---	---	---	
		BXE	5.8	28	59	93	127	161	195	237	280	365	449	534	873	1300	1722	2540	---	---	---	---	---	---	---	
15/80S6	4700	DXE	20.0	160	333	525	717	908	1100	1340	1580	2060	2540	3020	4940	---	---	---	---	---	---	---	---	---	---	
		BXE	5.8	45	94	148	202	256	310	378	445	580	715	850	1390	---	---	---	---	---	---	---	---	---	---	

NA = DATA NOT AVAILABLE

1 For line pressures above 150 PSIG, consult factory for total system pressure drop at operating conditions

Parker Hannifin Corporation
Filtration and Separation Division
Haverhill,tel:(86)21-56303616 56906381
www.parker.com/balston

Stainless steel construction

Pressure to 5000 psig

Temperature to 900°F (482°C)

Ideal end use filter

Model 97S6

Miniature 316 stainless steel filter with 1/4" NPT in-line ports, and 5000 psig rating. Since it does not have a drain port, the Model 97S6 is used as an end-of-the-line compressed gas filter when little or no liquid is expected, or as a cylinder gas filter.

Models 30/12 and 30/25

Designed specifically for quantitative measurement of solids in gases to 900°F (482°C), the filter cartridge and element retainer disc in the Model 30 housings may be weighed as a unit (see notes below).

Model 97S6

Model 30/12 and 30/25

Principal Specifications

Model	97S6	30/12	30/25
Inlet and Outlet Ports	1/4" NPT	1/2" NPT	1/2" NPT
Drain Port	None	None	None
Materials of Construction			
Head	316SS	303SS	303SS
Bowl	316SS	304SS	304SS
Internals	316SS	303SS	303SS
Seals	Viton	Carbon Fiber	Carbon Fiber
Maximum Temperature	400°F (204°C)	900°F (482°C) (2)	900°F (482°C)(2)
Maximum Pressure	5000 psig (1)	100 psig (3)	100 psig (3)
Shipping Weight	0.75 lbs. (0.3 kg)	2 lbs. (0.9 kg)	3 lbs. (1.4 kg)
Dimensions	1.25"D X 3.1"L (3.2cm X 7.9cm)	1.9"D X 4.4"L (4.8cm X 11.2cm)	1.9"D X 8.6"L (4.8cm X 22cm)

Notes:

1 Maximum pressure ratings are for temperatures to 200°F (93°C). Please consult factory for maximum pressure ratings at elevated temperatures.

2 15 psi pressure rating is for temperature to 900°F (482°C).

3 100 psig at 450°F (241°C).

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

Filter Housing Model	97S6	30/12	30/25
Support Core, Required for Liquid Filtration	Included	N/A	N/A
Filter Cartridges	050-05-❑	100-12-❑	100-25-❑
Important Notes:	X-type cartridges are not available for the Model 97S6. For high temperature quantitative measurement applications order 100-12-DH/BH-F896 for use with the 30/12 or 100-25-DH/BH-F896 for use with the 30/25.		

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Prevent cross-contamination of samples

Pressure ratings up to 125 psig

Temperature to 275°F (135°C)

Completely disposable, constructed of recyclable plastics

Model
99XX-05

Model
4433-05

Model
9922-11

Model
8833-11

Models 9922-05, 9933-05, 4433-05 and 9900-05

The 99XX-05 models are the smallest Disposable Filter Units with 11.7 ml internal volume. These models are used in low flow gas or liquid sampling applications, such as liquids to specific-ion analyzers or gases to personal samplers. The model 9900-05-BK has a color indicating feature, which turns the cartridge red when saturated with oil. The model 4433-05 has 1/4" and 3/8" Barb Connections molded into the inlet/outlet ports.

Models 9922-11 and 9933-11

Models 9922-11 and 9933-11 are used for applications similar to the smaller DFUs (Models 9922-05 and 9933-05) which require greater solids holding capacity and can tolerate the increased retention time.

Model 8833-11

These Disposable Filter Units are used as continuous coalescing filters with a third port serving as the drain, slip-stream, or by-pass port.

Chemical Compatibility, Model 9922-05, 9922-11

Suitable: Water or steam to 200°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.
Limited Use: Acetone, MEK, dioxane, furfural, methylene chloride.
Unsuitable: Water above 200°F (135°C), THF, DMF, ethylene diamine, chlorosulfonic acid, ethanolamine, pyridine, sulfur trioxide.

Chemical Compatibility, Model 9933-11

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%).
Limited Use: Water at 176°F (80°C); acetone; MEK, acetaldehyde; ammonia (to 25%).
Unsuitable: Water above 158°F (70°C). alcohols; glycols, phenol; aniline; DMF; concentrated acids; chlorine.

Parker Hannifin offers a manual drain valve for removal of coalesced liquids from the Type 8833-11-DX.

Drain Valve: 1/8" NPT (male) x 1/8" ID Tubing. (Requires elbow part No. 11972). Part No. 20-125

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Flow Rates — Water Flow Rate, Gallons per Hour

DFU Model	Volume of Housing Gallons	Volume of Housing Liters	Initial Pressure Drop	Grade DQ, DX	Grade CQ, CX	Grade BQ, BX	Grade AQ	Grade AAQ
9922-05	0.003	0.01	1 psi	12	10	3	1.5	0.4
4433-05								
9933-05			5 psi	30	25	15	7.3	1.9
9922-11	0.0005	0.02	1 psi	18	15	5	2.5	0.6
9933-11			5 psi	45	37	26	12	3.1

Flow Rates — Air Flow at 2 psi drop, standard, cu. ft. per min. (SCFM) at indicated line pressure.

Model	2 psig	20 psig	40 psig	60 psig	80 psig	100 psig	125 psig
8833-11-DX	1.8	3.6	5.8	8.0	10.0	12.0	14.6
8833-11-BX	0.9	1.8	2.9	4.0	5.0	6.0	7.3
9900-05-BK 4433-05-BX	0.4	0.8	1.3	1.8	2.2	2.7	3.3

Principal Specifications

Model	9922-05	9900-05	4433-05	9933-05	9922-11	9933-11	8833-11
Inlet and Outlet Ports	1/4" Tubing	1/4" Tubing	1st Tier/Barb 1/4" Tube 2nd Tier/Barb 3/8" Tube	1/4" Tubing	1/4" Tubing	1/4" Tubing	1/4" Tubing
Drain	None	None	None	None	None	None	1/4" Tubing
Material of Construction	PVDF	Nylon	Nylon	Nylon	PVDF	Nylon	Nylon
Filter Cartridge Length	1.25" (3.2 cm)	1.25" (3.2 cm)	1.25" (3.2cm)	1.25" (3.2 cm)	2.25" (5.7 cm)	2.25" (5.7 cm)	2.25" (5.7 cm)
Maximum Temperature (1)	275°F (135°C)	230°F (110°C)	230°F (110°C)	230°F (110°C)	275°F (135°C)	230°F (110°C)	230°F (110°C)
Maximum Pressure (2)	125 psig	125 psig	125 psig	125 psig	125 psig	125 psig	125 psig
Dimensions	1.0"D X 3.25"L (2.5 cm X 8 cm)	1.0"D X 3.25"L (2.5 cm X 8 cm)	1.0"D X 3.43"L (2.5 cm X 8.72 cm)	1.0"D X 3.25"L (2.5 cm X 8 cm)	1.4"D X 4.6"L (3.6 cm X 12 cm)	1.4"D X 4.6"L (3.6 cm X 12 cm)	1.4"D X 4.6"L (3.6 cm X 12 cm)

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

Model	9922-05	9900-05	4433-05	9933-05	9922-11	9933-11	8833-11
Box of 10 DFUs	9922-05-❑	9900-05-❑	4433-05-❑	9933-05-❑	9922-11-❑	9933-11-❑	8833-11-❑ (4)
Available only in Q-grades Box 10 DAU'S (3)	9922-05-❑	N/A	4433-05-❑	9933-05-❑	9922-11-❑	9933-11-❑	N/A

Notes:
1 At 0 psig
2 At 110°F (43°C)
3 To designate adsorbent in the DAU, insert adsorbent numbers after DAU designation. For example, to obtain a miniature clear nylon DAU with carbon adsorbent, order 9933-05-000. Adsorbent numbers are listed on page 28.

Installation Information

To pressure pipe or tubing: Compression fittings for 1/4" O.D. tubing may be obtained from the following manufacturers. Hoke, Inc. ("Gyrolok"); Crawford Fitting Co. ("Swagelok"); Parker-Hannifin Corp. ("CPI"); Legris, Inc. (push-on fittings); Jaco Mfg. Co. (plastic fittings).
The following brass fittings which seal by O-ring compression and which may be completely recovered and reused when changing filters may be purchased from Parker/Balston:

Connector: 1/4" tubing to 1/4" NPT female - Part No. 11970 (1 per pkg.)

Connector: 1/4" tubing to 1/4" tubing - Part No. 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 Hannifin 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: Part No. 14000 (bag of 20 barbs)

DFU to 1/8" ID tubing: Part No. 14001 (bag of 20 barbs)

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Stainless steel construction

Pressure to 5000 psig

Temperature to 400°F (204°C)

Ideal for high pressure applications

Models 27/35 and 27/80
(27/35 Shown)

Models 26/35D-3000
and 26/35D-5000

Models 27/35, 27/80 and 15/80S6

Model 27 housings are among the largest 316 stainless steel filters available with high pressure capability. The 27/35 and 27/80 housings are used when 800 psig rating is required. The 27/35-3000 and 27/80-3000 models are suitable for service up to 3000 psig. The Model 15/80S6 is designed for 2" pipe systems and pressures to 500 psig.

Models 26/35D-3000 and 26/35D-5000

Model 26/35D filter housings are constructed of carbon steel for high pressure applications. The Model 26/35D-3000 is ASME Code stamped at the rated pressure of 3000 psig. The Model 26/35D-5000 complies with ASME Code design criteria.

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Principal Specifications

Model	27/35	27/35-3000	27/80	27/80-3000	26/35D-3000,	15/80S6 26/35D-5000
Inlet and Outlet Ports	1" NPT	1" NPT	1" NPT	1" NPT	1" NPT	2" NPT
Drain Port	1/4" NPT	1/4" NPT	1/4" NPT	1/4" NPT	1/4" NPT	1/4" NPT
Materials of Construction						
Head	316SS (1)	316SS (1)	316SS (1)	316SS (1)	Carbon Steel	Stainless Steel
Bowl	316SS (1)	316SS (1)	316SS (1)	316SS (1)	Carbon Steel	Stainless Steel
Internals	316SS (1)	316SS (1)	316SS (1)	316SS (1)	Stainless Steel	Stainless Steel
Seals	Viton	Viton	Viton	Viton	Buna-N	Viton
Maximum Temperature	400°F(204°C)	400°F(204°C)	400°F(204°C)	400°F(204°C)	250°F(120°C)	400°F(204°C)
Maximum Pressure	800 psig (2)	3000 psig (2)	800 psig (2)	3000 psig (2)	3000 psig (3)	500 psig (2)
Shipping Weight	16 lbs (7.3 kg)	25 lbs. (11 kg)	33 lbs. (14.9 kg)	42 lbs. (19kg)	80 lbs. (36 kg) (4)	32 lbs. (14.4 kg)
Dimensions	4.0"D X 16"L (10 cm X 41 cm)	4.3"D X 16"L (11 cm X 41 cm)	4.0"D X 27"L (10 cm X 69 cm)	4.3"D X 27"L (11 cm X 69 cm)	7.0"D X 17"L (18 cm X 93 cm)	6.3"D X 28"L (16 cm X 71 cm)

Ordering Information

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

Filter Housing Model	27/35	27/35-3000	27/80	27/80-3000	26/35D-3000,	15/80S6 26/35D-5000
Support Core, Required for Liquid Filtration	SS-200-35	SS-200-35	SS-200-80	SS-200-80	Included	SS-200-80
Filter Cartridges	200-35-❑	200-35-❑	200-80-❑	200-80-❑	200-35-❑	200-80-❑
Use only these cartridge types	XE, H, Q, CI (5)	XE, H, Q, CI (5)	XE, H, Q, CI (5)	XE, H, Q, CI (5)	XE, H, Q, CI (5)	XE,H,Q,CI(5)

Notes:

1 Constructed of materials which comply with NACE Specification MR-01-75. Request certificate of compliance

2 Maximum pressure ratings are for temperatures to 200°F (93°C). Please consult factory for maximum pressure ratings at elevated temperatures.

3 Vessel is ASME Section VIII, Div. 1 code stamped for rated pressure at 200°F (93°C). For 5000 psig pressure rating without the ASME code stamp, order Model 26/35D-5000.

4 Shipping weight of Model 26/35-5000 is 170 lbs (77kg)

5 To order CI Cartridges, indicate type of adsorbent desired by putting three digit designation after size code. For example, to order a carbon cartridge for Model 27/35 housing, order CI-200-35-000. CI cartridges are sold in boxes of 1.

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Stainless steel construction

Pressure to 5000 psig

Temperature to 400°F (204°C)

Ideal for removing solids and large quantities of liquids from gas

Model 85

Models 37/12, 37/25
(37/25 Shown)

Model 85

The Model 85 filter housing is constructed of 316 stainless steel, and has a pressure rating of 5,000 psig. This Model can accommodate extended life, X-type filter cartridges and is used when larger quantities of liquids are expected.

Models 37/12 and 37/25

These T-type filter housings are also constructed of 316 stainless steel, and have a 4000 psig rating. These models are used as sample filters for on-line sample analyzers when a larger line size, higher flow rate, or larger bowl reservoir capacity is required.

Principal Specifications

Model	85	37/12	37/25
Inlet and Outlet Ports	1/4" NPT	1/2" NPT	1/2" NPT
Drain Port	1/4" NPT	1/8" NPT	1/8" NPT
Materials of Construction			
Head	316SS (1)	316SS (1)	316SS (1)
Bowl	316SS (1)	316SS (1)	316SS (1)
Internals	316SS (1)	316SS (1)	316SS (1)
Seals	Viton	Viton	Viton
Maximum Temperature	400°F (204°C)	400°F (204°C)	400°F(204°C)
Maximum Pressure (2)	5000 psig	4000 psig	4000 psig
Shipping Weight	4 lbs. (2 kg)	6 lbs. (3 kg)	10 lbs. (5 kg)
Dimensions	2.5"D X 5"L (6cm X 13cm)	2.75"D X 5.75"L (7cm X 14.6cm)	2.75"D X 10.25" L (7cm X 26cm)

Notes:

1 Constructed of materials which comply with NACE Specification MR-01-75. Request certificate of compliance

2 Maximum pressure ratings are for temperatures to 200°F (93°C). Please consult factory for maximum pressure ratings at elevated temperatures.

3 To order CI Cartridges, indicate type of adsorbent desired by putting three digit designation after size code. For example, to order a carbon cartridge for Model 27/35 housing, order CI-200-35-000. CI cartridges are sold in boxes of 1.

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

Filter Housing Model	85	37/12	37/25
Support Core, Required for Liquid Filtration	Included	SS-100-12	SS-100-25
Filter Cartridges	050-11-❑	100-12-❑	100-25-❑
Use only these filter cartridge types (3)	XE, H, Q	XE, H, Q, CI, SMF	XE, H, Q, CI

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Stainless steel construction

Pressure to 425 psig

Temperature to 220°F (104°C)

Models 33S6 and 45S6

Models 33S6 and 45S6 Filter Housings are constructed of stainless steel and have 1/2" NPT ports. The Model 33S6 uses a 2 1/2" long filter cartridge, and the Model 45S6 uses a 7" long filter cartridge. Both filters are also available with a transparent Pyrex glass bowl (100 psig rating) with breakage-protecting external plastic shield.

Models 33G and 45G

These models offer a transparent Pyrex glass bowl (100 psig rating) with breakage-protecting external plastic shield. They also offer convenient molded gaskets to ensure quick and safe filter change-outs.

Filter Cartridges

X-type cartridges with integral prefilters are recommended for filtration of all liquids with high solids content, including samples from cooling water, well water, and effluent streams.

Models 33S6 and 45S6
(45S6 Shown)

Models 33G and 45G
(45G Shown)

Principal Specifications

Model	33G	45G	33S6	45S6
Inlet and Outlet Ports (1)	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT
Materials of Construction				
Head	316SS	316SS	316SS (5)	316SS (5)
Bowl	Pyrex	Pyrex	316SS (5)	316SS (5)
Internals	316SS	316SS	316SS (5)	316SS (5)
Seals	Viton	Viton	Viton	Viton
Maximum Temperature	160°F (71°C) (2)	160°F (71°C) (2)	400°F (204°C) (3)	400°F (204°C) (3)
Maximum Pressure	100 psig (3)	100 psig (3)	425 psig (3)	250 psig (3)
Shipping Weight	3 lbs (1.4 kg)	5 lbs. (2.3 kg)	3 lbs. (1.4 kg)	5 lbs. (2.3 kg)
Dimensions	2.6"D X 4.5"L (6.7cm X 12cm)	2.6"D X 9.3"L (6.7cm X 24cm)	2.6"D X 4.5"L (6.6cm X 11.4cm)	2.6"D X 9"L (6.6cm X 22.9cm)

Notes:

1 Also available with 1/4" ports. To order with 1/4" NPT ports, use designation Model 33G-1/4, etc.

2 Limited by maximum temperature of acrylic bowl guards.

3 Maximum pressure ratings are for temperatures to 160°F (71°C). Please consult factory for maximum pressure ratings at elevated temperatures.

4 Support core for use with X-type cartridges. Flow is outside-inside.

5 Materials comply with NACE Specification MR-01-75. Request certificate of compliance.

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

Filter Housing Model	33G	45G	33S6	45S6
Filter Cartridge	100-12-❑	100-25-❑	100-12-❑	100-25-❑
Use only these Filter cartridge types	LP, M, XE	LP, XE	LP, F, XE	LP, XE
Support Core (4)	SS-100-12	SS-100-25	SS-100-12	SS-100-25

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Stainless steel, Teflon®, or Monel construction

Pressure to 5000 psig

T-type construction allows for non-disruptive maintenance

Ideal sample filters for on-line analyzers

Models 91S6, 95A, 95M, 95S6, 95T
(95S6 Shown)

Model 105S6

Models 91S6, 95A, 95M, 95S6, 95T, 105S6

These models are miniature T-type filters constructed of 316 stainless steel (5000 psig), Teflon® (150 psig), and other specialty materials. With only 19 ml internal volume and the opportunity for by-pass or slipstream filtration using the drain port as an exit port, the model 95 filters are ideal sample filters for on-line analyzers. The model 105S6 has a small internal volume of 15 ml, which is ideal for applications requiring fast sampling response time.

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Principal Specifications

Model	105S6	91S6	95A	95M	95S6	95T
Inlet and Outlet Ports (1)	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT
Drain Port	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT
Materials of Construction						
Head	316SS (2)	316SS (2)	Aluminum	Monel	316SS (2)	Teflon (2)
Bowl	316SS (2)	316SS (2)	Aluminum	Monel	316SS (2)	Teflon (2)
Internals	316SS (2)	316SS (2)	Aluminum	Teflon	316SS (2)	Teflon (2)
Seals	Viton	Viton	Viton	Viton	Viton	Teflon/Viton
Maximum Temperature	400°F (204°C)	400°F (204°C)	200°F (93°C)	400°F (204°C)	400°F (204°C)	300°F (149°C)
Maximum Pressure (3)	5000 psig	1500 psig	2500 psig	5000 psig	5000 psig	150 psig
Shipping Weight	1 lb. (0.4 kg)	1 lb. (0.4 kg)	0.5 lb. (0.2 kg)	1 lb. (0.4 kg)	1 lb. (0.4 kg)	0.5 lb. (0.2 kg)
Dimensions	1.8"D X 3.3"L (4cm X 8cm)	1.5"D X 3.7"L (3.8cm X 9.4cm)	1.8"D X 4"L (4cm X 10cm)	1.8"D X 4"L (4cm X 10cm)	1.8"D X 4"L (4.6cm X 10.2cm)	1.8"D X 4"L (4.6cm X 10.2cm)

Notes:

1 Also available with 1/4" NPT ports. To order with 1/4" NPT ports, use designation Model 95S6-1/4, etc.

2 Constructed of materials which comply with NACE Specification MR-01-75. Request certificate of compliance.

3 Maximum pressure ratings are for temperatures to 200°F (93°C). Please consult factory for maximum pressure ratings at elevated temperatures.

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

Model	105S6	91S6	95A	95M	95S6	95T
Support Core, Required for Liquid Filtration	Included	Included	Included	Included	Included	Included
Filter Cartridges	050-07-❑	050-11-❑	050-11-❑	050-11-❑	050-11-❑	050-11-❑
Use only these filter types	Q, H	Q, H	Q, H	Q, H, M	Q, H, M	Q, H, M

Parker Hannifin Corporation
Filtration and Separation Division
Haverhill, tel:(86)21-56303616 56906381
www.parker.com/balston

Stainless steel construction

Pressure to 250 psig

Temperature to 400°F (204°C)

Compact design

Models 31G, 41G
(41G Shown)

Models 91S6

Models 31S6, 41S6
(31S6 Shown)

Models 91S6, 31S6, 31G, 41S6, 41G

These models offer compact designs and half the dead volume of other sample filters resulting in faster sampling times. They are constructed of stainless steel and available with a variety of seals for easy adaptation to demanding applications. If larger amounts of condensate are expected, specify 33 or 45 series.

Principal Specifications

Model	91S6	31G	41G	31S6	41S6
Inlet and Outlet Ports (1)	1/8" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT
Drain Port	1/4" NPT	1/4" NPT	1/4" NPT	1/4" NPT	1/4" NPT
Materials of Construction					
Head	316SS (2)	316SS	316SS	316SS	316SS
Bowl	316SS (2)	Pyrex	Pyrex	316SS	316SS
Internals	316SS (2)	316SS	316SS	316SS	316SS
Seals	Viton	Viton	Viton	Viton	Viton
Maximum Temperature	400°F (204°C)	160°F (71°C)	160°F (71°C)	400°F (204°C)	400°F (204°C)
Maximum Pressure (3)	1500 psig	100 psig	100 psig	425 psig	250 psig
Shipping Weight	1 lb. (0.4 kg)	2 lbs/0.9 kg	4 lbs/1.8 kg	3 lbs/1.4 kg	5 lbs/2.3 kg
Dimensions	1.5"D X 3.7"L (3.8cm X 9.4cm)	2.2"D X 5.5"L (5.7cm X 14cm)	2.2"D X 10.0"L (5.7cm X 26cm)	2.25"D X 5.5"L (5.7cm X 14cm)	2.25"D X 10"L (5.7cm X 25.4cm)

Notes:

1 Also available with 1/4" NPT ports. To order with 1/4" NPT ports, use designation Model 31G-1/4 etc.

2 Constructed of materials which comply with NACE Specification MR-01-75. Request certificate of compliance.

3 Maximum pressure ratings are for temperatures to 200°F (104°C). Please consult factory for maximum pressure ratings at elevated temperatures.

Ordering Information

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

Filter Housing Model	91S6	31G	41G	31S6	41S6
Support Core, Required for Liquid Filtration	Included	SS-100-12	SS-100-25	SS-100-12	SS-100-25
Filter Cartridges	050-11-❑	100-12-❑	100-25-❑	100-12-❑	100-25-❑
Use only these Filter cartridge types	Q, H, M	XE, H, Q, M	XE, H, Q	XE, H, Q, M	XE, H, Q

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Stainless steel construction

Pressure to 425 psig

Temperature to 400°F (204°F)

Ideal when a large volume of condensed liquid is expected

Models 33S6 and 45S6
(45S6 Shown)

Models 33G and 45G
(45G Shown)

Models 33S6, 33G, 45S6, 45G

These models are higher flow rate filters. All models are available with 1/4" or 1/2" NPT ports. These filters are also available with clear Pyrex glass bowls (100 psig rating) with breakage protecting external plastic shields. These housings are useful for gas sampling when a large volume of suspended liquid is expected.

Principal Specifications

Model	33G	33S6	45G	45S6
Inlet and Outlet Ports (1)	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT
Drain Port	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT
Materials of Construction				
Head	316SS	316SS	316SS	316SS
Bowl	Pyrex	316SS	Pyrex	316SS
Internals	316SS	316SS	316SS	316SS
Seals	Viton	Viton	Viton	Viton
Maximum Temperature	160°F (71°C) (2)	400°F (204°C) (3)	160°F (71°C) (2)	400°F (204°C) (3)
Maximum Pressure (2)	100 psig	425 psig	100 psig	250 psig
Shipping Weight	3 lbs/1.4kg	3 lbs./1.4 kg	5 lbs./2.3 kg	5 lbs./2.3 kg
Dimensions	2.6"D X 4.5"L (7cm X 11cm)	2.6"D X 4.5"L (6.6cm X 11.4cm)	2.6"D X 9.3"L (6.6cm X 22.9cm)	2.6"D X 9"L (6.6cm X 22.9cm)

Notes:

1 Also available with 1/4" NPT ports. To order with 1/4" NPT ports, use designation Model 33G-1/4, etc.

2 Limited by maximum temperature of acrylic bowl guards.

3 Maximum pressure ratings are for temperatures to 200°F (93°C). Please consult factory for maximum pressure ratings at elevated temperatures.

4 To order CI Cartridges, indicate type of adsorbent desired by putting three digit designation after size code. For example, to order a carbon cartridge for Model 27/35 housing, order CI-200-35-000. CI cartridges are sold in boxes of 1.

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

Model	33G	33S6	45G	45S6
Support Core, Required for Liquid Filtration	SS-100-12	SS-100-12	SS-100-25	SS-100-25
Filter Cartridges	100-12-❑	100-12-❑	100-25-❑	100-25-❑
Use only these filter cartridge types	XE, H, Q, M, CI	XE, H, Q, M, CI	XE, H, Q, CI, M	XE, H, Q, CI, M

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