

### Balston® Steam Filters

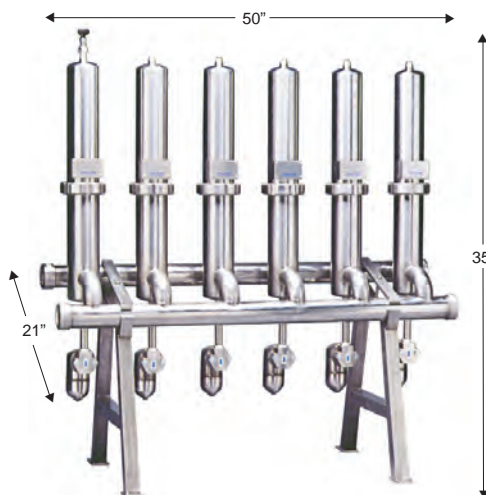
Balston Series SR Filters are in full compliance with the requirements of the US Food, Drug and Cosmetic Act. They also meet the regulations for Indirect Food Additives used as Basic Components for Repeated Use Food Contact Surfaces as specified in 21 CFR Part 177, and Current Good Manufacturing Practices, 21 CFR Part 110. These filters have been accepted by the USDA for use in federally inspected meat and poultry plants. Balston Steam Filters are in full compliance with the 3A Accepted Practices (Number 609-04) for producing steam of culinary quality. They are also in full compliance with the requirements of the Health Protection Branch of Health and Welfare Canada.

### Benefits

Balston Steam Filters eliminate particulate contamination of food products caused by direct contact with dirty steam. Other benefits include: reduction in steam condensate mixing with food products when steam is used for agitating, mixing, or cooking; eliminate taste and odor problems by reducing boiler feedwater carryover; Reduced maintenance requirements.



Model 23/75SR



Model SP6-23/75SR



Recommended Steam Filters

| For 3/4" and 1" Steam Lines  | For 1-1/2" Steam Lines   | For 2" Steam Lines  |
|--|--|---|
| Model 23/75SR is recommended in smaller lines with a steam flow of up to 500 lbs. per hour. The filter is complete with filter cartridge, steam trap, and bleeder valve. | Model SP3-23/75SR is recommended. It will filter up to 1500 lbs. of steam per hour. Each of the three filters has its own steam trap. A master trap disposes of most condensate before it reaches the filters. Manifolds can be connected to flow from left to right or right to left. | Model SP4-23/75SR is recommended. It will filter up to 2000 lbs. of steam per hour. The Model SP6-23/75SR will filter up to 3000 lbs of steam per hour. Steam trap and manifold features are the same as the Model SP3-23/75. |

- Notes:
- 1 Each SP3, SP4, SP6 filter is supplied mounted on a stand.
  - 2 Constructed of food grade EPR.
  - 3 Each Steam Filter Assembly is supplied with filter cartridges installed.

Principal Specifications

| Model                     | 23/75SR                     | SP2-23/75R                                  | SP3-23/75SR                                 | SP4-23/75SR                                 | SP6-23/75SR                                 |
|---------------------------|-----------------------------|---|---|---|---|
| Port Size                 | 1" NPT                      | 1 1/2" NPT                                  | 1 1/2" NPT                                  | 2" NPT                                      | 2" NPT                                      |
| Max Pressure              | 125 psig                    | 125 psig                                    | 125 psig                                    | 125 psig                                    | 125 psig                                    |
| Flow Rate                 | 500 lbs/hr                  | 1000 lbs/hr                                 | 1500 lbs/hr                                 | 2000 lbs/hr                                 | 3000 lbs/hr                                 |
| Materials of Construction | 304 SS                      | 304 SS                                      | 304 SS                                      | 304 SS                                      | 304 SS                                      |
| Seals (2)                 | EPR                         | EPR   | EPR   | EPR   | EPR   |
| Shipping Wt               | 26 lbs. (12 kg)             | Approx. 110 lbs                             | 190 lbs. (86 kg)                            | 220 lbs. (100 kg)                           | 280 lbs. (127 kg)                           |
| Dimensions                | 7"W X 35"L<br>(18cm X 88cm) | 22"W X 46"L X 11"D<br>(56cm X 117cm X 28cm) | 29"W X 48"L X 21"D<br>(74cm X 122cm X 53cm) | 36"W X 48"L X 21"D<br>(91cm X 122cm X 53cm) | 50"W X 48"L X 21"D<br>(74cm X 122cm X 53cm) |

Ordering Information

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

| Model   | 23/75SR   | SP2-23/75SR | SP3-23/75SR | SP4-23/75SR | SP6-23/75SR |
|---|-----------|-------------|-------------|-------------|-------------|
| Replacement Filter Cartridges (Box of 10) (3) | 200-75-SR | 200-75-SR   | 200-75-SR   | 200-75-SR   | 200-75-SR   |
| Filter Cartridges per housing                 | 1         | 2           | 3           | 4           | 6           |

Filters for the Food Industry

All 304 stainless steel construction, ideal standing up to aggressive washdown chemicals

Remove 99.99% of 0.01 micron particles of oil, water, and dirt from compressed air and other gases

For Sterile Air Requirements:

Remove all viable organisms

USDA accepted for use in federally inspected meat and poultry plants

Low pressure drop

Continuously trap and drain liquids

Remove trace oil vapor with adsorbent cartridges



Models 6006 and 6008

### Balston® Stainless Steel Compressed Air Filter Assemblies

Protect your equipment and delicate instruments from the dirt, water, and oil usually found in compressed air and other gases. These filters will remove contaminants at a very high efficiency - up to 99.99% for 0.01 micron particles and droplets. Liquid releases from the filter cartridge to an automatic drain as rapidly as it enters the filter. This allows the filter to continue removing liquids for an unlimited time without loss of efficiency for flow capacity. Select 1/4" to 1" line filters are constructed of 304 stainless steel and are designed to hold up to the harshest environments.

| Filter Cartridge Description                              |   |
|---|---|
| General purpose applications such as plant compressed air | Single stage filtration. Use a Grade DX filter cartridge  |
| Instrument air and other critical air requirements        | Two stage filtration is necessary. Use a Grade DX followed by a Grade BX filter cartridge. As a general rule, a Grade BX filter cartridge should not be used alone.                 |
| Removal of trace compressor oil vapor                     | For rare instances where even a trace amount of oil vapor can cause a problem, three stage filtration is necessary. Use a Grade DX followed by a Grade BX, and a type CI cartridge. |

| Physical Properties, Microfibre Filter Cartridges                    |  |
|--|--|
| Temperature Range  | -150°F to 300°F (-100°C - 149°C)   |
| Maximum Pressure Differential Across Filter, Inside-to-Outside Flow: | 100 psi  |
| Materials of Construction  | Borosilicate glass microfibers with fluorocarbon resin binder. Resistant to water, all hydrocarbon and synthetic lubricants. |

| Retention Efficiency |   |
|----------------------|---|
| Grade                | Efficiency for 0.01 Micron Particles and Droplets |
| DX                   | 93%   |
| BX                   | 99.99%  |

### Balston Filter Cartridges

Balston provides two grades of coalescing filter cartridges, Grade DX and Grade BX. Singly or in tandem, these filters satisfy all requirements for removing liquid and solid contaminants from compressed air. Balston also has an activated carbon adsorbent CI-type cartridge for the removal of trace oil vapors from a compressed air line. The activated carbon cartridge is Grade 000.

### How to Select the Filter Cartridge and Housing

- 1 Decide which grade(s) of filter cartridges fits the application (see selection boxes at left).
- 2 Select the filter housing with a port size equal to the line size where the filter is to be located.
- 3 For a new installation in which the line size has yet to be selected, determine the gas flow rate and pressure at the point where the filter will be located, and then refer to the flow chart on the reverse side of this data sheet. NOTE: The filter port size must be equal to or larger than the line size (when specified).

### How to Order the Filter Assembly

- 1 Build your own custom filter assembly using the guideline matrix on Page 16 and specify your model number. Example: 1/2" filter with DPI and Auto Drain with Grade DX Filter = 6004N-01A-DX.
- 2 Each assembly is shipped with the filter cartridge installed. To order additional filter cartridges, indicate the model number of the cartridges, and the grade. Examples 050-05-DX, 050-05-BX. The grade used for Type CI cartridges is 000 (CI-100-12-000).

Note: Assemblies with CI Cartridges are shipped with the adsorbent cartridge wrapped separately. This shipping method prolongs the life of the cartridge.

Filters for the Food Industry

### Model 6002, 6904

The 6002 series models are 1/4" line size filters designed for lower flow systems and installations with space limitations. It is offered with two drain options, a manual drain or an auto float drain for maintenance free operation. The model 6904 offers 1/2" inlet and outlet connections. For applications requiring 1/2" pipe with space limitation requirements.



Model 6002, 6904

Model 6004

### Model 6004

The 6004 series models are 1/2" line size filters designed for moderate flow rate systems. This series has increased liquid holding capacity which safeguards sensitive end use points from system upsets and morning start ups.

### Model 6006 and 6008

The 6006 and 6008 series models are 3/4" and 1" line size filters respectively. These are designed for high flow rate systems servicing multiple end use points. These are also offered with a high capacity auto float drain option.

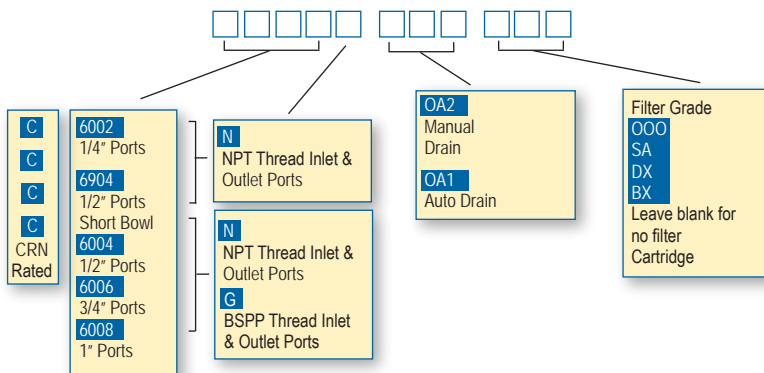


Models 6006 and 6008

### How to Order the Filter Assembly\*

Build your own custom filter assembly using the guideline matrix below and specify your model number. Example: 1/2" filter with Auto Drain and Grade DX Filter = 6004N-0A1-DX.

\*Consult Factory. Not all configurations are available.



Filters for the Food Industry



**Flow Rates**

| Filter Housing Model | Port Size | Filter Cartridge Grade | Flow rates (SCFM), at 2 psi drop at indicated line pressure. Refer to Principal Specification Charts in each product data sheet for maximum pressure rating of each housing PSIG |     |     |     |     |     |     |     |     |
|----------------------|-----------|------------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|
|                      |           |                        | 2  | 20  | 40  | 80  | 100 | 125 | 150 | 200 | 250 |
| 6002N<br>6904N       | 1/4"      | DX                     | 9  | 19  | 39  | 51  | 63  | 76  | 90  | 117 | 145 |
|                      |           | BX                     | 3  | 8   | 11  | 21  | 25  | 31  | 36  | 47  | 58  |
|                      |           | CI                     | 2  | 5   | 7   | 12  | 15  | 18  | 22  | 28  | 35  |
|                      |           | SA                     | ---  | 8   | 11  | 21  | 25  | 31  | 36  | --- | --- |
| 6004N                | 1/2"      | DX                     | 19   | 41  | 65  | 113 | 137 | 166 | 196 | 257 | 316 |
|                      |           | BX                     | 9  | 19  | 30  | 51  | 63  | 76  | 90  | 117 | 145 |
|                      |           | CI                     | 6  | 12  | 19  | 32  | 39  | 48  | 56  | 73  | 90  |
|                      |           | SA                     | ---  | 19  | 30  | 51  | 63  | 76  | 90  | --- | --- |
| 6006N                | 3/4"      | DX                     | 37   | 78  | 123 | 214 | 259 | 315 | 371 | 484 | 596 |
|                      |           | BX                     | 10   | 21  | 34  | 56  | 70  | 85  | 101 | 131 | 162 |
|                      |           | CI                     | 8  | 16  | 26  | 44  | 53  | 65  | 76  | 99  | 122 |
|                      |           | SA                     | ---  | 21  | 34  | 56  | 70  | 85  | 101 | --- | --- |
| 6008N                | 1"        | DX                     | 55   | 115 | 181 | 314 | 380 | 463 | 546 | 711 | 877 |
|                      |           | BX                     | 11   | 23  | 37  | 64  | 77  | 94  | 111 | 144 | 178 |
|                      |           | CI                     | 10   | 20  | 32  | 56  | 67  | 82  | 96  | 125 | 154 |
|                      |           | SA                     | ---  | 23  | 37  | 64  | 77  | 94  | 111 | --- | --- |

**Sterile Air Filters**

Balston grade SA filter cartridges, rated at 99.9999+% efficiency for 0.01 micron particles, is at least 30 times better than the accepted standard for sterile air filters developed by independent research organizations in the U.S. and U.K. (request bulletin TI-105A for a detailed discussion on Balston filter efficiency rating procedure, and Bulletin TI-935 for an independent test report on balstonSterile Air Filters). Balston Sterile Air Filters are in full compliance with the requirements of the FDA.

**Steam Sterilization Procedure**

In installations where the sterile air filter requires steam sterilization, we recommend the following procedures:

The steam sterilization pressure should not exceed 60 psig. Preferably, it should be held to 40 psig or less. A typical sterilization cycle is 30 psig steam for 30 minutes. Steaming time can be increased as desired without harm to the filter cartridges. The steam flow should not exceed the normal air flow for the unit. To ensure no buildup of condensate in the housing, condensate should be drained from the filter by a condensate drain valve during the steaming process. The cleanliness of the steam is an important factor influencing the life of the Sterile Air Filter cartridges. Parker strongly recommends using Model 23 Steam Filters to ensure optimum operating life. When autoclaving, the Grade SA filter cartridges will tolerate temperatures to 300°F (149°C) in dry gas. Viton or other heat resistant seals should be used in the housing.

Filters for the  
Food Industry

# Filters for the Food Industry

## Principal Specifications

| Model                     | 6002                      | 6904                      | 6004                       | 6006                        | 6008                        |
|---------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|-----------------------------|
| Port Size                 | 1/4" NPT                  | 1/2" NPT                  | 1/2" NPT                   | 3/4" NPT                    | 1" NPT                      |
| Materials of Construction |                           |                           |                            |                             |                             |
| Head                      | 304 Stainless Steel       | →                         | →                          | →                           | →                           |
| Bowl                      | 304 Stainless Steel       | →                         | →                          | →                           | →                           |
| Internals                 | Stainless Steel           | →                         | →                          | →                           | →                           |
| Seals                     | Buna-N Food Grade         | →                         | →                          | →                           | →                           |
| Maximum Temperature (1)   | 120°F (49°C)              | →                         | →                          | →                           | →                           |
| Maximum Pressure (2)      | 175 psig                  | →                         | →                          | →                           | →                           |
| Minimum Pressure (3)      | 15 psig                   | →                         | →                          | →                           | →                           |
| Shipping Weight           | 3.5 lbs.                  | 3.5 lbs.                  | 4.0 lbs.                   | 11 lbs.                     | 12 lbs.                     |
| Dimensions                | 3"W X 7"L<br>(7mm X 18mm) | 3"W X 7"L<br>(7mm X 18mm) | 3"W X 10"L<br>(7mm X 25mm) | 4"W X 10"L<br>(10mm X 25mm) | 4"W X 12"L<br>(10mm X 30mm) |

### Notes:

1 Max. temperature with auto drain. Max. temperature with manual drain is 275°F.

2 Max. pressure with auto drain. Max. pressure with manual drain is 250 psi.

3 Required for proper operation of auto drain.

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

### Assembly Ordering Information (4)

| Model P/N      | Filter Tube   | Drain (Manual) | Drain (Auto. Float) | Mounting Bracket (stainless steel) |
|----------------|---------------|----------------|---------------------|------------------------------------|
| 6002N-0A2-(?X) | 100-12-(?X)   | A03-0178       | N/A                 | C01-0094                           |
| 6002N-0A1-(?X) | 100-12-(?X)   | N/A            | A03-0179            | C01-0094                           |
| 6002N-0A2-SA   | 100-12-SA     | A03-0178       | N/A                 | C01-0094                           |
| 6002N-0A2-000  | CI-100-12-000 | A03-0178       | N/A                 | C01-0094                           |
| 6904N-0A2-(?X) | 100-12-(?X)   | A03-0178       | N/A                 | C01-0094                           |
| 6904N-0A2-(?X) | 100-12-(?X)   | N/A            | A03-0178            | C01-0094                           |
| 6904N-0A2-SA   | 100-12-SA     | A03-0178       | N/A                 | C01-0094                           |
| 6904N-0A2-000  | CI-100-12-000 | A03-0178       | N/A                 | C01-0094                           |
| 6004N-0A2-(?X) | 100-18-(?X)   | A03-0178       | N/A                 | C01-0094                           |
| 6004N-0A1-(?X) | 100-18-(?X)   | N/A            | A03-0179            | C01-0094                           |
| 6004N-0A2-SA   | 100-18-SA     | A03-0178       | N/A                 | C01-0094                           |
| 6004N-0A2-000  | CI-100-18-000 | A03-0178       | N/A                 | C01-0094                           |
| 6006N-0A2-(?X) | 200-176-(?X)  | A03-0178       | N/A                 | C01-0094                           |
| 6006N-0A1-(?X) | 200-176-(?X)  | N/A            | A03-0179            | C01-0094                           |
| 6006N-0A2-SA   | 200-176-SA    | A03-0178       | N/A                 | C01-0094                           |
| 6006N-0A2-000  | 200-176-000   | A03-0178       | N/A                 | C01-0094                           |
| 6008N-0A2-(?X) | 200-185-(?X)  | A03-0178       | N/A                 | C01-0094                           |
| 6008N-0A1-(?X) | 200-185-(?X)  | N/A            | A03-0179            | C01-0094                           |
| 6008N-0A2-SA   | 200-185-SA    | A03-0178       | N/A                 | C01-0094                           |
| 6008N-0A2-000  | 200-185-000   | A03-0178       | N/A                 | C01-0094                           |

(4) Use a "C" prefix to order models with CRN rating

### Replacement Filter Cartridge Ordering Information

| Model P/N                     | 6002          | 6004           | 6006           | 6008           |
|-------------------------------|---------------|----------------|----------------|----------------|
| Replacement Filter Cartridges |               |                |                |                |
| Number required               | 1             | 1              | 1              | 1              |
| Box of 5                      | 5/100-12-(?X) | 5/100-18-(?X)E | 5/200-176-(?X) | 5/200-185-(?X) |
| Box of 10                     | 100-12-(?X)   | 100-18-(?X)E   | 200-176-(?X)   | 200-185-(?X)   |
| Box of 10                     | 100-12-SA     | 100-18-SA      | 200-176-SA     | 200-185-SA     |
| CI Cartridges (box of 1)      | CI100-12-000  | CI100-18-000   | CI200-176-000  | CI200-185-000  |

Filters for the  
Food Industry



**Remove all viable organisms**

**USDA accepted for use in federally inspected Meat and Poultry plants**

**Low pressure drop**

**Full compliance with FDA requirements**

**Balston® Sterile Air Filters**

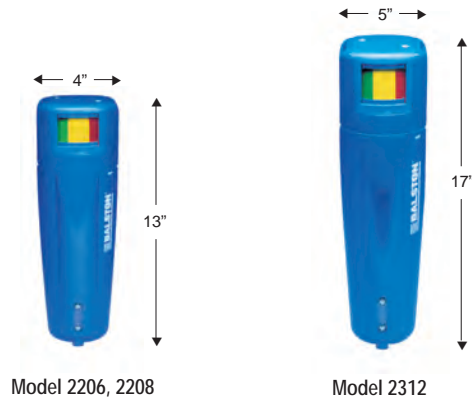
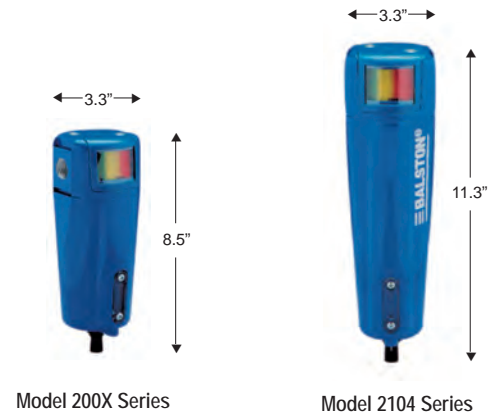
Balston grade SA filter cartridges, rated at 99.9999+% efficiency for 0.01 micron particles, is at least 30 times better than the accepted standard for sterile air filters developed by independent research organizations in the U.S. and U.K. (request Bulletin TI-105A for a detailed discussion on Balston filter efficiency rating procedure, and Bulletin TI-935 for an independent test report on Balston Sterile Air Filters). Balston Sterile Air Filters are in full compliance with the requirements of the FDA.

Here's what one of your colleagues found:

A Balston sterile air filter assembly, consisting of Models 200X Series, was tested at the University of Massachusetts, Department of Food Science and Nutrition, under the direction of Professor David A. Evans, Ph.D.

“This sterile air system produced commercially sterile air and, to the limits of detection, no viable colonies of microorganisms were found”.

- Professor David A. Evans, Ph.D.



Filters for the Food Industry



### Filter Cartridge Description

| 1st Stage:<br>Grade DX  | 2nd Stage:<br>Grade BX  | 3rd Stage:<br>Grade SA                              |
|---|---|---|
| For removal of large quantities of oil, water, and dirt from compressed air. Prefilter to Grade BX. | For complete removal of trace quantities of oil, water, and dirt. | For removal of bacteria when providing sterile air. |

### Physical Properties, Microfibre Filter Cartridges

|  |  |
|--|--|
| Temperature Range  | -150°F to 300°F (-100°C - 149°C)   |
| Maximum Pressure Differential Across Filter, Inside-to-Outside Flow: | 100 psi (60 psi for Grade SA Filter Tubes)   |
| Materials of Construction  | Borosilicate glass microfibers with fluorocarbon resin binder. Resistant to water, all hydrocarbon and synthetic lubricants. |

### Retention Efficiency

| Grade | Efficiency for 0.01 Micron Particles and Droplets |
|-------|---|
| DX    | 93% @ 0.01 µm                                     |
| BX    | 99.99% @ 0.01 µm                                  |
| SA    | 99.9999+% @ 0.01 µm                               |

## Balston Filter Cartridge and Housing Selection

Balston provides two grades of coalescing filter cartridges, Grade DX and Grade BX. Singly or in tandem, these filters satisfy all requirements for removing liquid and solid contaminants from compressed air. These filters are recommended as prefilters in sterile air systems. The Balston Grade SA filter removes bacteria from compressed air. It is the final filter in a sterile air system.

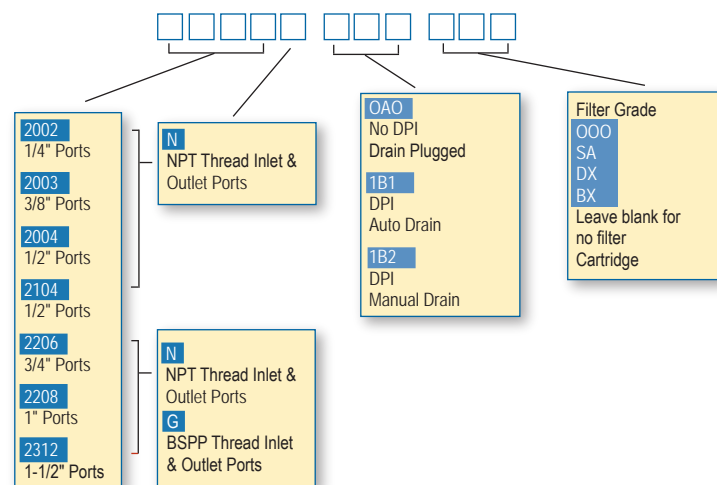
## How to Select the Filter Cartridge and Housing

- 1 Decide which grade(s) of filter cartridges fits the application (see selection boxes at left).
- 2 Select the filter housing with a port size equal to the line size where the filter is to be located.
- 3 For a new installation in which the line size has yet to be selected, determine the gas flow rate and pressure at the point where the filter will be located, and then refer to the flow chart on the reverse side of this data sheet. The filter port size must be equal to or larger than the line size (when specified).
- 4 If the sterile air filter assembly requires steam sterilization, stainless steel filter assemblies specifically designed for in-line steam sterilization must be used. These assemblies are identified by the RED print in the flow chart on the next page.

## How to Order the Filter Assembly

- 1 Build your own custom filter assembly using the guideline matrix to the left and specify your model number. Example: 1/2" filter with DPI and Auto Drain with Grade DX Filter = 2104N-1B1-DX.
- 2 Each assembly is shipped with the filter cartridge installed. To order additional filter cartridges, indicate the model number of the cartridges, and the grade. Examples 100-12-DX, 100-12-BX, or 100-12-SA, etc.

Filters for the Food Industry



**Steam Sterilization Procedure**

In installations where the sterile air filter requires steam sterilization, we recommend the following procedures:

The steam sterilization pressure should not exceed 60 psig. Preferably, it should be held to 40 psig or less. A typical sterilization cycle is 30 psig steam for 30 minutes. Steaming time can be increased as desired without harm to the filter cartridges. The steam flow should not exceed the normal air flow for the unit. To ensure no buildup of condensate in the housing, condensate should be drained from the filter by a condensate drain valve during the steaming process.

The cleanliness of the steam is an important factor influencing the life of the Sterile Air Filter cartridges. Parker strongly recommends using Model 23 Steam Filters to ensure optimum operating life (see steam filter section of this literature pack).

When autoclaving, the Grade SA filter cartridges will tolerate temperatures to 300°F (149°C) in dry gas. Viton or other heat resistant seals should be used in the housing.

| Filter Assemblies<br>Assemblies in RED are<br>Steam Sterilization |                |                                | Flow rates (SCFM), at 7 psi drop at indicated line pressure (over 3 stages)<br>Refer to Principal Specification Charts in each product data sheet for maximum Recommended for<br>pressure rating of each housing |      |      |      |      |      |      |      |
|---|----------------|--------------------------------|--|------|------|------|------|------|------|------|
| 1st Stage   | 2nd Stage      | 3rd Stage                      | Port Size  | 20   | 40   | 60   | 80   | 100  | 125  | 150  |
| 2002N-IBI-DX  | 2002N-IBI-BX   | 2002N-OAO-SA<br>A33B-SA        | 1/4"   | 8    | 11   | 16   | 21   | 25   | 31   | 36   |
| 2104N-IBI-DX  | 2104N-IBI-BX   | 2104N-OAO-SA<br>A45B-SA        | 1/2"   | 19   | 30   | 41   | 51   | 63   | 76   | 90   |
| 2208N-IBI-DX  | 2208N-IBI-BX   | 2208N-OAO-SA<br>A27/35B-SA     | 1"   | 23   | 37   | 50   | 64   | 77   | 94   | 111  |
| 2312N-IBI-DX  | 2312N-IBI-BX   | 2312N-OAO-SA<br>A27/80B-SA (1) | 1 1/2"   | 46   | 74   | 101  | 129  | 155  | 189  | 223  |
| A15/80-DX   | A15/80-BX      | A15/80-SA<br>A15/80-SA         | 2"   | 94   | 148  | 202  | 256  | 310  | 378  | 445  |
| AFF3-0128-HFC   | AFF3-0128-HEC  | AKC-0280-SA<br>AKSB-0280-SA    | 3"   | 190  | 300  | 400  | 510  | 620  | 755  | 890  |
| AFF4-0125-HFC   | AFF4-0125-HEC  | AKC-0480-SA<br>AKSB-0480-SA    | 4"   | 380  | 590  | 810  | 1020 | 1240 | 1510 | 1780 |
| AFF6-0136-HFC   | AFF6-0136-HEC  | AKC-0880-SA<br>AKSB-0880-SA    | 6"   | 750  | 1180 | 1620 | 2050 | 2480 | 3020 | 3560 |
| AFF8-0428-HFC   | AFF8-0428-HEC  | AKC-1480-SA<br>AKSB-1480-SA    | 8"   | 1310 | 2070 | 2830 | 3580 | 4340 | 5300 | 6230 |
| AFF10-0728-HFC  | AFF10-0728-HEC | AKC-2280-SA<br>AKSB-2280-SA    | 10"  | 2070 | 3270 | 4460 | 5660 | 6850 | 8340 | 9840 |

Notes:

1 Two Type A27/80B-SA in parallel required.

Filters for the  
Food Industry

| Principal Specifications  |                               |                                |                             |                             |                               |                               |
|---------------------------|-------------------------------|--------------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|
| Model                     | 2002,2003,2004(5)             | 2104(5)                        | 2206(5)                     | 2208(5)                     | 2312(5)                       | A15/80                        |
| Port Size                 | 1/4", 3/8", 1/2" NPT          | 1/2" NPT                       | 3/4" NPT                    | 1" NPT                      | 1 1/2" NPT                    | 2" NPT                        |
| Maximum Pressure          | 250 psig (1)                  | 250 psig (1)                   | 250 psig (1)                | 250 psig (1)                | 250 psig (1)                  | 250 psig (1)                  |
| Maximum Temperature       | 170°F (77°C)                  | 170°F (77°C)                   | 130°F (54°C)                | 130°F (54°C)                | 130°F (54°C)                  | 130°F (54°C)                  |
| Materials of Construction |                               |                                |                             |                             |                               |                               |
| Head                      | Anod. Alum.                   | Anod. Alum.                    | Anod. Alum.                 | Anod. Alum.                 | Anod. Alum.                   | Anod. Alum.                   |
| Bowl                      | Anod. Alum.                   | Anod. Alum.                    | Steel                       | Steel                       | Steel                         | Steel                         |
| Internals                 | Nylon                         | Nylon                          | St. Steel                   | St. Steel                   | St. Steel                     | St. Steel                     |
| Seals                     | Buna-N                        | Buna-N                         | Buna-N                      | Buna-N                      | Buna-N                        | Buna-N                        |
| Shipping Weight           | 2 lbs. (0.9 kg)               | 2.5 lbs. (1 kg)                | 8 lbs. (3.6 kg)             | 8 lbs. (3.6 kg)             | 15 lbs. (6.8 kg)              | 11 lbs. (5 kg)                |
| Dimensions                | 3.3"W X 8.5"L<br>(8cm X 22cm) | 3.3"W X 11.3"L<br>(8cm X 28cm) | 4"W X 13"L<br>(10cm X 33cm) | 4"W X 13"L<br>(10cm X 33cm) | 5.0"W X 17"L<br>(13cm X 43cm) | 6.3"W X 28"L<br>(16cm X 71cm) |

| Ordering Information   |                   |              |              |              |              |            |
|--|-------------------|--------------|--------------|--------------|--------------|------------|
| For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time |                   |              |              |              |              |            |
| Model  | 2002,2003,2004(5) | 2104(5)      | 2206(5)      | 2208(5)      | 2312(5)      | A15/80     |
| Assembly with Grade DX Filter Cartridge                                  | 200?-IBI-DX       | 2104N-IBI-DX | 2206N-IBI-DX | 2208N-IBI-DX | 2312N-IBI-DX | A15/80-DX  |
| Assembly with Grade BX Filter Cartridge                                  | 200?-IBI-BX       | 2104N-IBI-BX | 2206N-IBI-BX | 2208N-IBI-BX | 2312N-IBI-BX | A15/80-BX  |
| Assembly with Grade SA Filter Cartridge & Support Core                   | 200?-OAO-SA       | 2104N-OAO-SA | 2206N-OAO-SA | 2208N-OAO-SA | 2312N-OAO-SA | A15/80-SA  |
| Differential Pressure Indicator (optional)(2)                            | Included          | Included     | Included     | Included     | Included     | Included   |
| Filter Cartridges (3)  |                   |              |              |              |              |            |
| Number Required  | 1                 | 1            | 1            | 1            | 1            | 1          |
| Box of 3 (4)   | 3/100-12-□        | 3/100-18-□   | 3/150-19-□   | 3/150-19-□   | 3/200-35-□   | 3/200-80-□ |
| Box of 5 (4)   | 5/100-12-□        | 5/100-18-□   | 5/150-19-□   | 5/150-19-□   | 5/200-35-□   | 5/200-80-□ |
| Box of 10 (4)  | 100-12-□          | 100-18-□     | 150-19-□     | 150-19-□     | 200-35-□     | 200-80-□   |

**Notes:**

1 Maximum pressure ratings are for temperatures to 130°F (54°C). Please consult factory for maximum pressure ratings at elevated temperatures.

2 Differential Pressure Indicator is not supplied with assemblies containing Grade SA Cartridges. Maximum pressure rating for 41-082 is 250 psig. The DPI is sensitive in the range of 0-5 psi differential.

3 To order filter cartridges, indicate the grade of filter cartridge by placing the appropriate letter after the ordering number. Examples: 5/100-12-DX, 100-18-BX, 150-19-SA.

4 Grades BX, DX are available only in boxes of

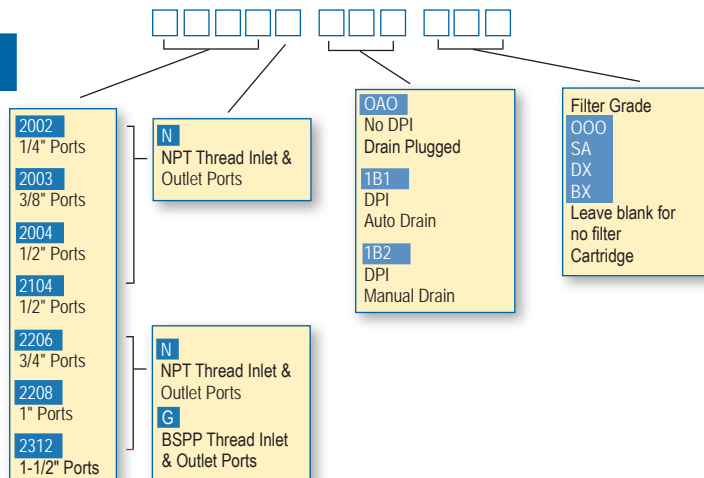
5 and 10. Grade SA is available in boxes of 3 and 10.

5 Lifetime (20 year) warranty included. Contact your local representative for details.

Filters for the Food Industry

### How to Order the New "2000 Series"

Build your own custom filter assembly using the guideline matrix to the right and specify your model number. Example: 1/2" filter with DPI and Auto Drain with Grade DX Filter = 2104N-1B1-DX



- Remove all viable organisms**
- Full compliance with FDA requirements**
- High flow rates**
- USDA accepted for use in federally inspected meat and poultry plants**

**Balston® Sterile Air Filters**

Balston grade SA filter cartridges, rated at 99.9999+% efficiency for 0.1 micron particles, is at least 30 times better than the accepted standard for sterile air filters developed by independent research organizations in the U.S. and U.K. (request Bulletin TI-105A for a detailed discussion on Balston filter efficiency rating procedure, and Bulletin TI-935 for an independent test report on Balston Sterile Air Filters). Balston Sterile Air Filters are in full compliance with the requirements of the FDA.

Here's what one of your colleagues found:

A Balston sterile air filter assembly, consisting of 1/4" NPT Models of Grade DX, Grade BX and Grade SA were tested at the University of Massachusetts, Department of Food Science and Nutrition, under the direction of Professor David A. Evans, Ph.D.

"This sterile air system produced commercially sterile air and, to the limits of detection, no viable colonies of microorganisms were found".

- Professor David A. Evans, Ph.D.



Model AKC-0280



Model AKC-1480

Filters for the Food Industry



### Principal Specifications

| Model                                 | AKC-0280   | AKC-0480                     | AKC-0880                     | AKC-1480                      | AKC-2280                      |
|---------------------------------------|--|------------------------------|------------------------------|-------------------------------|-------------------------------|
| Port Size                             | 3" Flange  | 4" Flange                    | 6" Flange                    | 8" Flange                     | 10" Flange                    |
| Maximum Pressure (1)                  | 250 psig   | 250 psig                     | 200 psig                     | 200 psig                      | 200 psig                      |
| Maximum Temperature (2)               | 230°F (110°C)  | 230°F (110°C)                | 250°F (110°C)                | 250°F (110°C)                 | 250°F (110°C)                 |
| Materials of Construction             | Carbon steel vessel with 303 Stainless Steel filter tube holders and Buna N seals. |                              |                              |                               |                               |
| Closure Type                          | Flat flanged top with swing bolts and Buna N "O" rings.                            |                              |                              |                               |                               |
| Shipping Weight                       | 132 lbs. (60 kg)   | 210 lbs. (95 kg)             | 360 lbs. (163 kg)            | 590 lbs. (268 kg)             | 880 lbs. (400 kg)             |
| Dimensions                            | 36"H X 16"W<br>(91cm X 40cm)   | 36"H X 21"W<br>(91cm X 53cm) | 38"H X 25"W<br>(97cm X 64cm) | 54"H X 34"W<br>(137cm X 86cm) | 56"H X 36"W<br>(142cm X 91cm) |
| Flange Center Line to Floor Dimension | 7.75" (20cm)   | 6.25" (11cm)                 | 7.5" (19cm)                  | 16.25" (41cm)                 | 17.25" (44cm)                 |

### Ordering Information (3)

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

| Model  | AKC-0280    | AKC-0480    | AKC-0880    | AKC-1480    | AKC-2280    |
|--|-------------|-------------|-------------|-------------|-------------|
| Assembly with Grade SA Filter Cartridge & Support Core | AKC-0280-SA | AKC-0480-SA | AKC-0880-SA | AKC-1480-SA | AKC-2280-SA |
| Filter Cartridges                                      |             |             |             |             |             |
| Number Required  | 2           | 4           | 8           | 14          | 22          |
| Box of 3 (4)   | 3/200-80-□  | 3/200-80-□  | 3/200-80-□  | 3/200-80-□  | 3/200-80-□  |
| Box of 5 (5)   | 5/200-80-□  | 5/200-80-□  | 5/200-80-□  | 5/200-80-□  | 5/200-80-□  |
| Box of 10  | 200-80-□    | 200-80-□    | 200-80-□    | 200-80-□    | 200-80-□    |

#### Notes:

- Vessel is ASME Section VIII, Division 1 code stamped for rated pressure. All AKC series housings have CRN registration numbers assigned in all Canadian provinces.
- Maximum operating temperature may be limited by seal material. Consult factory for recommendations at elevated temperatures.
- Filter assemblies are shipped complete with automatic drain, filter cartridges, and differential pressure indicator.

#### Automatic Drain

The maximum operating pressure for the Model 20-211 Automatic Drain is 400 psig. Minimum operating pressure is 10 psig.

#### Differential Pressure Indicator

The maximum operating pressure for the Differential Pressure Indicator Model 41-071 is 250 psig. The DPI is sensitive in the range of 0-5 psi.

The Automatic Drain and Differential Pressure Indicator are not included with assemblies containing SA cartridges.

4 To order filter cartridges, indicate the grade of filter cartridge by placing the appropriate letter after the ordering number. Examples: 5/100-12-SA, 100-18-SA, 150-19-SA.



Remove all viable organisms

In-line steam sterilization

Low pressure drop

Full compliance with FDA requirements

USDA accepted for use in federally inspected meat and poultry plants

### Balston® Sterile Air Filters

Balston grade SA filter cartridges, rated at 99.9999+% efficiency for 0.1 micron particles, is at least 30 times better than the accepted standard for sterile air filters developed by independent research organizations in the U.S. and U.K. (request Bulletin TI-105A for a detailed discussion on Balston filter efficiency rating procedure, and Bulletin TI-935 for an independent test report on Balston Sterile Air Filters). Balston Sterile Air Filters are in full compliance with the requirements of the FDA.

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A Balston sterile air filter assembly, consisting of 1/4" Models of Grade DX, Grade BX, and Grade SA were tested at the University of Massachusetts, Department of Food Science and Nutrition, under the direction of Professor David A. Evans, Ph.D.

*"This sterile air system produced commercially sterile air and, to the limits of detection, no viable colonies of microorganisms were found".*

- Professor David A. Evans, Ph.D



Model A33B-SA



Model A45B-SA



Model A27/35B-SA, A27/80B-SA

Filters for the  
Food Industry



### Principal Specifications

| Model                                    | A33B                            | A45B                             | A27/35B                          | A27/80B                          |
|--|---------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Inlet and Outlet Ports (1)               | 1/4" NPT                        | 1/2" NPT                         | 1" NPT                           | 1" NPT                           |
| Drain Port (2)                           | 1/8" NPT                        | 1/8" NPT                         | 1/4" NPT                         | 1/4" NPT                         |
| Materials of Construction                |                                 |                                  |                                  |                                  |
| Head                                     | 316SS                           | 316SS                            | 316SS                            | 316SS                            |
| Bowl                                     | 316SS                           | 316SS                            | 316SS                            | 316SS                            |
| Internals                                | 316SS                           | 316SS                            | 316SS                            | 316SS                            |
| Seals (3)                                | Viton                           | Viton                            | Viton                            | Viton                            |
| Maximum Temperature                      | 400°F (204°C)                   | 400°F (204°C)                    | 400°F (204°C)                    | 400°F (204°C)                    |
| Maximum Pressure (4)                     | 425 psig                        | 250 psig                         | 800 psig                         | 800 psig                         |
| Maximum Steam Pressure for Sterilization | 60 psig                         | 60 psig                          | 60 psig                          | 60 psig                          |
| Shipping Weight                          | 3 lbs. (1 kg)                   | 5 lbs. (2 kg)                    | 16 lbs. (7 kg)                   | 20 lbs. (9 kg)                   |
| Dimensions                               | 2.6"Dia X 4.9"L<br>(7cm X 12cm) | 2.6"Dia. X 8.4"L<br>(7cm X 21cm) | 4.0"Dia. X 16"L<br>(10cm X 40cm) | 4.0"Dia. X 27"L<br>(10cm X 69cm) |

### Ordering Information

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

| Model                                   | A33B        | A45B        | A27/35B     | A27/80B     |
|---|-------------|-------------|-------------|-------------|
| Assembly with Grade SA Filter Cartridge | A33B-SA     | A45B-SA     | A27/35B-SA  | A27/80B-SA  |
| Filter Cartridges:                      |             |             |             |             |
| Number Required                         | 1           | 1           | 1           | 1           |
| Box of 3                                | 3/100-12-SA | 3/100-25-SA | 3/200-35-SA | 3/200-80-SA |
| Box of 10                               | 100-12-SA   | 100-25-SA   | 200-35-SA   | 200-80-SA   |

#### Notes:

1 Adaptors are available which convert threaded ports to sanitary type clamp connections.

#### Ordering Information:

Part # 73803 1" NPT x 1" Sanitary

Part # 73804 1 1/2" NPT x 1 1/2" Sanitary

Part # 73805 2" NPT x 2" Sanitary

2 Condensate drain valve required. Supplied by customer.

3 Constructed of food grade Viton.

4 Maximum pressure ratings are for temperatures to 130°F (54°C). Please consult factory for maximum pressure ratings at elevated temperatures.

**Remove all viable organisms**

**In-line steam sterilization**

**High flow rates**

**Full compliance with FDA requirements**

**USDA accepted for use in federally inspected meat and poultry plants**



Model AKSB-0280-3-SA



Model AKSB-1480-SA

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Filters for the  
Food Industry



| Principal Specifications                 |                              |                              |                              |                              |                               |                               |
|--|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
| Model                                    | AKSB-0280-2-SA               | AKSB-0280-3-SA               | AKSB-0480-SA                 | AKSB-0880-SA                 | AKSB-1480-SA                  | AKSB-2280-SA                  |
| Port Size                                | 2" Flange                    | 3" Flange                    | 4" Flange                    | 6" Flange                    | 8" Flange                     | 10" Flange                    |
| Materials of Construction                | 316SS                        | 316SS                        | 316SS                        | 316SS                        | 316SS                         | 316SS                         |
| Seals (1)                                | Viton                        | Viton                        | Viton                        | Viton                        | Viton                         | Viton                         |
| Maximum Pressure (2)                     | 200 psig                     | 200 psig                     | 200 psig                     | 200 psig                     | 200 psig                      | 200 psig                      |
| Maximum Temperature                      | 200°F (93°C)                 | 200°F (93°C)                 | 200°F (93°C)                 | 200°F (93°C)                 | 200°F (93°C)                  | 200°F (93°C)                  |
| Maximum Steam Pressure for Sterilization | 60 psig                      | 60 psig                      | 60 psig                      | 60 psig                      | 60 psig                       | 60 psig                       |
| Shipping Weight                          | 140 lbs. (64 kg)             | 140 lbs. (64 kg)             | 210 lbs. (95 kg)             | 360 lbs. (163 kg)            | 590 lbs. (268 kg)             | 880 lbs. (400 kg)             |
| Dimensions                               | 16"W X 36"L<br>(41cm X 91cm) | 16"W X 36"L<br>(41cm X 91cm) | 20"W X 36"L<br>(53cm X 91cm) | 25"W X 38"L<br>(64cm X 97cm) | 34"W X 54"L<br>(86cm X 137cm) | 36"W X 56"L<br>(91cm X 142cm) |

| Ordering Information   |                |                |              |              |              |              |
|--|----------------|----------------|--------------|--------------|--------------|--------------|
| For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time |                |                |              |              |              |              |
| Model  | AKSB-0280-2    | AKSB-0280-3    | AKSB-0480    | AKSB-0880    | AKSB-1480    | AKSB-2280    |
| Assembly with Grade SA Filter Cartridge                                  | AKSB-0280-2-SA | AKSB-0280-3-SA | AKSB-0480-SA | AKSB-0880-SA | AKSB-1480-SA | AKSB-0280-SA |
| Filter Cartridges:   |                |                |              |              |              |              |
| Box of 3   | 3/200-80-SA    | 3/200-80-SA    | 3/200-80-SA  | 3/200-80-SA  | 3/200-80-SA  | 3/200-80-SA  |
| Box of 10  | 200-80-SA      | 200-80-SA      | 200-80-SA    | 200-80-SA    | 200-80-SA    | 200-80-SA    |
| Number per housing   | 2              | 2              | 4            | 8            | 14           | 22           |

Notes:

- 1 Constructed of food grade Viton.
- 2 Vessel is ASME Section VIII Division 1 Code stamped for rated pressure.





Aluminum Extrusion



Lead Free Soldering



Food Processing and Packaging



Chemical Tank Blanketing

# Nitrogen Generation Systems

Membrane and PSA technologies available

Lower cost...eliminates the need for costly gas cylinders

Eliminates unexpected shutdowns due to a "bad" or empty cylinder

Hassle-free, easy to install and operate

**Compact...frees up valuable floor space**

Safe and reliable



## Balston Nitrogen Generation Systems

Balston offers both membrane and PSA technology. Balston Membrane Nitrogen Generators produce up to 99.5% pure, commercially sterile nitrogen at dewpoints to -58°F (-50°C) from a compressed air supply. All Membrane Nitrogen Generators include a 0.01 micron membrane filter which ensures the nitrogen is completely free of suspended impurities.

Balston Monobed and Dualbed PSA Nitrogen Generators produce up to 99.99% pure, compressed nitrogen at dewpoints to -70°F (-21°C) from a compressed air supply. The generators are designed to continually transform standard compressed air into nitrogen at safe, regulated pressures without operator attention.

