

# Steam Filters for Food Processing

Market Application Publication



## Background:

Steam is by definition, sterile in the sense that it contains no viable microorganisms. However, typical steam is far from “pure”. It contains particles of rust, pipe scale and other particulate matter. It contains condensed water. It contains chemicals from boiler feedwater additives. It is the interaction of these impurities that can cause changes in the food product in terms of taste, texture, color and appearance.



## Contact Information: Features and benefits:

**Parker Hannifin Corporation**  
**Gas Separation & Filtration Division**  
4087 Walden Ave.  
Lancaster, NY 14086

phone 716 686 6400 or 800 343 4048  
fax 877 587 3800

[www.balstonfilters.com](http://www.balstonfilters.com)

- 98+% capture rating @ .1 micron of solids, excess condensate and boiler feedwater additives
- Six week filter element life
- Prevents taste differences while eliminating unwanted additives to food
- Full compliance with FDA requirements
- USDA accepted for use in federally inspected meat and poultry plants
- Complies with 3-A sanitary standards and pasteurized milk ordinance
- Allows for direct injection cooking, making the process more efficient and ensures more even distribution of heat
- Safe for contacting food

## Application:

Direct steam injection systems for food processing usually cost less than heat exchangers, because the system configuration is smaller and incorporates less stainless steel. These systems also use less steam which translates into lower operating costs. This is because food absorbs heat faster from directly injected steam than it does through a stainless steel wall.

Direct steam injection also increases the speed of production and processing as food product will reach desired temperatures faster. However with direct injection of steam, removing contaminants from steam is essential and a requirement in the food processing industry. Parker Balston's steam filters are in full compliance with the requirements of the US Food, Drug and Cosmetic Act. The Parker Balston steam filters are in full compliance with the 3A Accepted Practices (# 609-04) for producing culinary quality steam. 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. The filters have also been accepted by the USDA for use in federally inspected meat and poultry plants.

## Case Study:

Cahoon Farms in Wolcott, New York uses a Parker Balston steam filter for their applesauce processing and production line. Cahoon Farms produces applesauce that is private labeled and supplied to various retailers.

With the understanding that direct injection of steam would be a faster, more cost effective method for producing the applesauce they also realized the steam used in this process travels through a significant length of pipe before reaching the production area and would contain scale and chemicals. Cahoon Farms wanted to ensure the highest degree of quality in the finished product by providing culinary quality steam to the 3A standard. Cahoon Farms invested in a Parker Balston steam filter to filter the steam to an efficiency of 98% at 0.1 micron removing all particles of rust, pipscale and other contaminate. Cahoon Farms is able to produce their product faster and at a lower cost but still ensure the product will retain its natural color, texture and desired taste on a consistent basis from batch to batch.



## Principal Specifications:

| Model                       | 23/75 SR                            | SP2-23/75R              | SP3-23/75SR (1)                             | SP4-23/75SR (1)                             | SP6-23/75SR (1)                             |
|-----------------------------|-------------------------------------|-------------------------|---|---|---|
| Port Size                   | 1" NPT                              | 1 1/2" NPT              | 1 1/2" NPT                                  | 2" NPT                                      | 2" NPT                                      |
| Max Pressure                | 125 psig (3.6 barg)                 | 125 psig (3.6 barg)     | 125 psig (3.6 barg)                         | 125 psig (3.6 barg)                         | 125 psig (3.6 barg)                         |
| Flow Rate                   | 500 lbs/hr (230 kg/hr)              | 1000 lbs/hr (450 kg/hr) | 1500 lbs/hr (680 kg/hr)                     | 2000 lbs/hr (910 kg/hr)                     | 3000 lbs/hr (1360 kg/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 (50 kg) | 190 lbs. (86 kg)                            | 220 lbs. (100 kg)                           | 280 lbs. (127 kg)                           |
| Dimensions<br>(18cm X 88cm) | 7"W X 35"L<br>(56cm X 117cm X 28cm) | 22"W X 46"L X 11"D      | 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) |

1 Every SP3, SP4, SP6 filter is supplied mounted on a stand.

2 Constructed of food grade EPR.

## Ordering Information:

For assistance, call 1-800-343-4048, 8AM to 5PM EST

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

2 Each Steam Filter Assembly is supplied with filter cartridges installed.

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