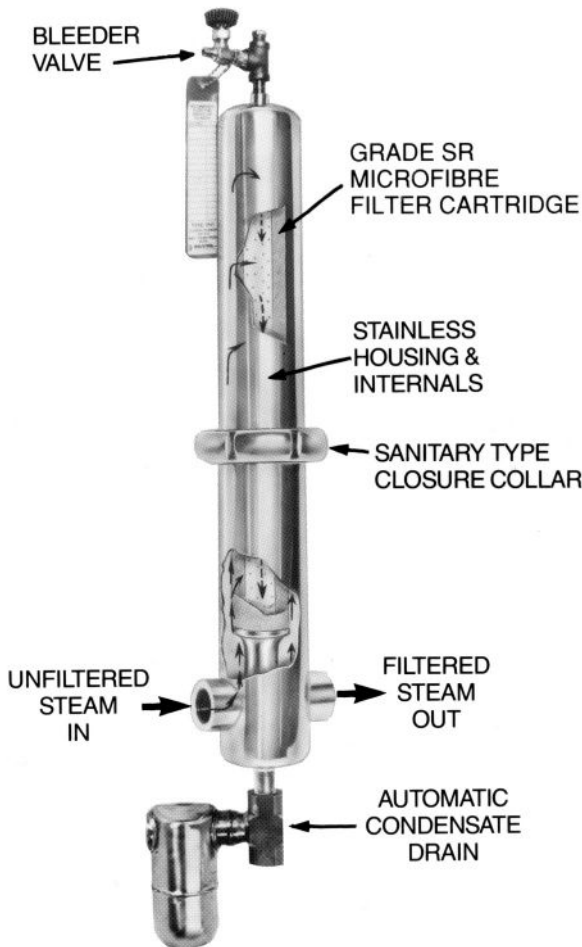


Balston® Series "SR" Steam Filters

Installation, Operation, and Maintenance Manual



USFDA, USDA, and 3A Compliance

Balston SR Steam Filters are in full compliance with the requirements of the United States Food, Drug and Cosmetic Act. These filters may be used with steam, air, and other gases which directly contact food and food ingredients, including milk, alcoholic and non-alcoholic liquids.

These filters 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 Balston SR Steam Filters are in full compliance with the 3A Accepted Practices (Number 609-03) for producing steam of culinary quality.

The Balston SR Steam Filters have also been accepted by the USDA for use in federally inspected meat and poultry plants.

The Balston 23SR Steam Filter What it is - How it works

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

As shown in the cutaway drawing, steam enters the housing into an expansion chamber, where much of the condensate is knocked out of the steam as a result of the abrupt change in flow direction and velocity. The steam then flows upward in the

housing, through the Balston Grade SR Microfibre® Filter Cartridge (outside-to-inside flow), and then downward to the exit port. The Grade SR Microfibre Filter Cartridge, rated at 98+% efficiency for 0.01 micron and larger particles, removes essentially all the suspended solid particles and the remaining water droplets. The water draining from the filter cartridge and the expansion chamber is automatically removed from the housing by the automatic condensate drain.

The Balston Grade SR Microfibre Filter Cartridge, the heart of the Model 23SR Filter, combines rugged construction with remarkably efficient filtration of solid particles and liquid droplets. Solid particles remain trapped in the depth of the filter cartridge, while liquid water drips from the filter cartridge to the automatic drain. The Microfibre Filter Cartridge is constructed from chemically inert borosilicate glass fibers and a fluorocarbon resin binder. The filter cartridge is completely free of impurities which could extract into the steam, and is in compliance with USFDA regulations as stated.

Bulletin TI-SteamSR-M

Capacities

For 3/4" and 1" Steam Lines

The Balston 23/75SR is recommended for applications in smaller lines with a steam flow up to 500 lbs. per hour. The filter is complete with filter cartridge, steam trap, and bleeder valve.

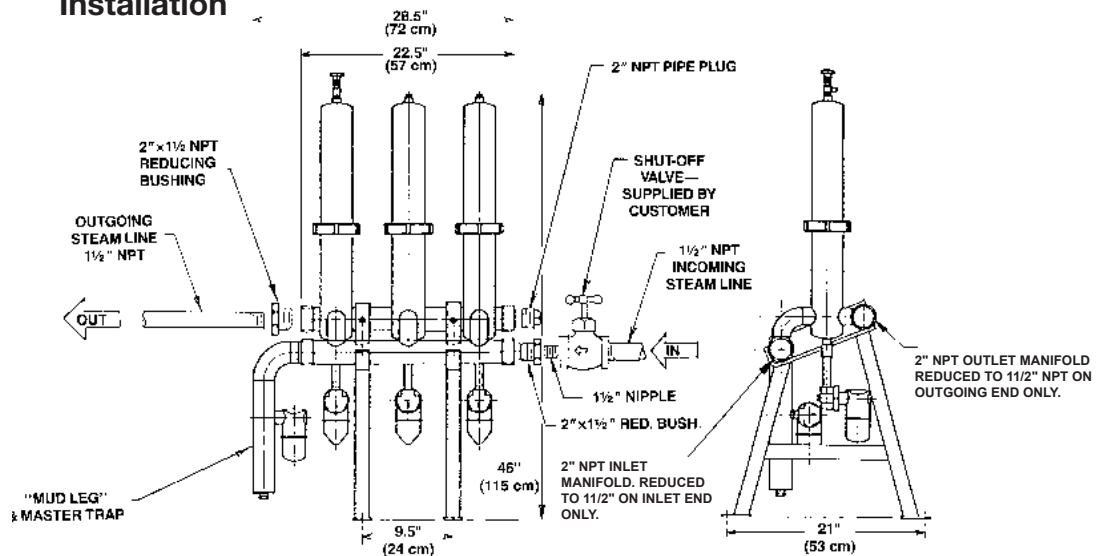
For 1-1/2" Steam Lines

The Balston SP2-23/75SR and SP3-23/75SR (three 23/75SR steam filters manifolded together) handle steam flows of up to 1000 and 1500 lbs. per hour, respectively. Each filter has its own steam trap to avoid "short circuiting". A master trap, at the end of the inlet manifold, disposes of most condensate before it reaches the filters. Manifolds can be connected to flow from left to right or right to left, allowing for convenient installation.

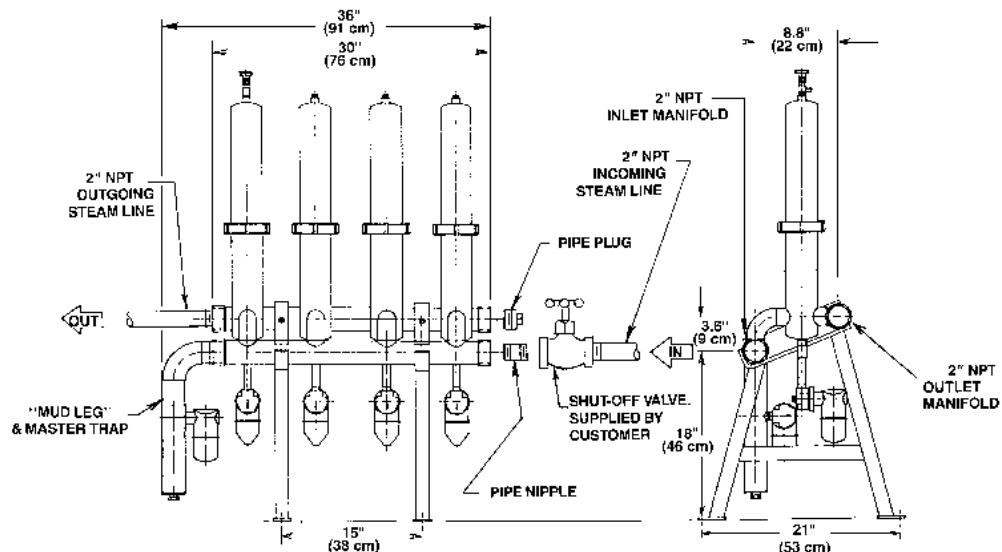
For 2" Steam Lines

The Balston SP4-23/75SR (four 23/75SR steam filters manifolded together) handles steam flow rates of up to 2000 lbs. of steam per hour. Steam trap and manifold features are the same as for Model SP3-23/75SR. The Balston SP6-23/75SR (Six 23/75SR filters manifolded together) handles steam flow rates of up to 3000 lbs of steam per hour.

Installation



Typical Installation - SP3-23/75SR Steam Filter



All installation, operation, and maintenance procedures for the Balston Series SR Steam Filters should be performed by suitable personnel using reasonable care. The Balston 23/75SR Steam Filter is shipped completely assembled, filter cartridge installed, ready to install on the steam line.



To avoid personal injury and/or property damage resulting from over pressurizing the housing, Parker recommends that the customer install a pressure relieving device set at 125% of the maximum pressure rating of the housing.

Model 23/75SR Installation

The single housing unit has 1" NPT inlet and outlet ports (Note: Assemblies with BSPP ports are also available). The filter weighs only 16 lbs. (7 kg) and can easily be supported by most steam lines. No mounting bracket or stand is required.

Insulate the housing (leaving the closure ring accessible) and the steam piping downstream from the filter to prevent condensation between the filter and the equipment. Iron pipe should be replaced with non-corroding pipe (stainless steel) downstream from the filter to prevent additional contamination.

Models SP2-23/75SR, SP3-23/75SR, SP4-23/75SR, and SP6-23/75SR General Instructions

The Balston SP2-23/75SR, SP3-23/75SR, SP4-23-75SR, and SP6-23/75SR Steam Filters are shipped assembled, ready to tie into the steam line. The filters are mounted on a stand and the filter cartridges are installed.

The "Mud Leg" and manifold end plugs (see installation diagram) have not been installed. The filter may be installed to flow from left to right, or from right to left, whichever is more convenient for your application.

The inlet manifold is at a lower level than the outlet manifold. This prevents steam condensate from climbing into the filter housings. Make sure that incoming steam is connected to this lower manifold.

The Balston SP2-23/75SR and SP3-23/75-SR Steam Filters are designed to handle 1000 and 1500 pounds of steam per hour respectively and are intended for 1-1/2" pipelines. The manifolds will accommodate 2" pipe size (reducing bushings are provided for connections to a 1-1/2" pipe line).

The Balston SP4-23/75-SR and SP6-23/75SR Steam Filters are designed to handle 2000 and 3000 pounds of steam per hour respectively and are intended for 2" pipelines.

Installation Procedures

- 1 Establish the location of the steam filter, determine the direction of flow, and lag the unit to the floor.
- 2 Assemble the "Mud Leg" to the end of the inlet manifold opposite from the incoming steam. A reducing bushing is not necessary. Use a thread sealant, such as "Rectorseal #5", to ensure a leaktight joint.
- 3 A condensate separator (optional accessory) may be installed on the upstream side of the inlet manifold.
- 4 Connect the steam supply line to the inlet manifold. Install a shutoff valve at this location to permit service and maintenance of the filter.
- 5 Outgoing (filtered) steam can be taken from either end of the outlet manifold. Use the appropriate fittings and thread sealant to complete the connections.
- 6 Connect the drain ports of the steam traps to any convenient drain line for disposal of condensate (water). Most of the water will come from the master trap in the "Mud Leg".

How to Change the Filter Cartridge



Operator must wear insulated gloves while servicing the Balston Steam Filter.

To replace a filter cartridge, shut off the steam valve and vent the steam from the housing by opening the bleeder valve slowly (on multiple housing assemblies, one bleeder valve will vent all of the housings). Loosen the external compression ring, using the spanner wrench supplied. Lift the bowl off the filter. Unscrew the element retainer and remove it from the tie rod. Pull the used filter cartridge off the support core. Slide the new filter cartridge down on the support core and replace the element retainer on the tie rod, making sure the spring is compressed. Replace the bowl and tighten the external compression ring with the spanner wrench. Close the bleeder valve. Write the date of the filter cartridge change on the date tag attached to the housing. Changing a filter cartridge takes approximately 5 minutes.

Note: Each time a filter cartridge is changed, spread a light coat of lubricant on the rubber sealing ring and on the threads of the metal compression ring. A new seal and lubricant is included with each box of replacement filter cartridges.

Maintenance

When to Change the Filter Cartridge

Since the Steam Filter is installed upstream from the steam control valve, it is exposed to steam at full line pressure at all times, regardless of the equipment operating schedule. As a result of this constant exposure, the filter cartridge should be replaced every six weeks regardless of the frequency of use of the equipment downstream. If the filter cartridge is allowed to remain in service considerably longer than six weeks, the resin binder in the cartridge will weaken and the cartridge will no longer filter at its initial efficiency. Filter cartridge life is based on steam pressure up to 125 psig (8.6 barg). Record the date of the cartridge replacement on the tag attached to the filter housing. The Balston Steam Filters are equipped with inverted bucket traps which function as automatic condensate drains. An integral strainer is included with the trap and may occasionally become plugged with pipe scale or other debris. To clean the debris from the screen, simply remove the steam trap from the filter and back flush the trap with tap water.

Steam Trap Maintenance

A continuous discharge of live steam accompanied by a violent bucket rattle, indicates that the trap has lost its prime. This can usually be corrected by closing the inlet valve for a few minutes and then gradually opening it.



Caution: Remove all steam pressure from filter before removing trap. After backflushing, reassemble trap to filter using RectorsealTM #5, or equivalent, on the threads.

Principal Specifications

23/75 SR	
Ports	1" NPT
Condensate Drain Connection	1/2" NPT
Bleeder Valve Outlet	1/4" NPT
Max Operating Pressure	125 psig
Max Operating Temperature	350°F
Flow Rate	500 lb/hr
Materials of Construction	304/304L
Seals	EPR
SP2-23/75SR, SP3-23/75SR	
Ports	1-1/2" NPT
Condensate Drain Connection	1/2" NPT
Bleeder Valve Outlet	1/4" NPT
Max Operating Pressure	125 psig
Max Operating Temperature	350°F
Flow Rate	1000, 1500 lb/hr
Materials of Construction	304/304L
Seals	EPR
SP4-23/75SR, SP6-23/75SR	
Ports	2" NPT
Condensate Drain Connection	1/2" NPT
Bleeder Valve Outlet	1/4" NPT
Max Operating Pressure	125 psig
Max Operating Temperature	350°F
Flow Rate	2000, 3000 lb/hr
Materials of Construction	304/304L
Seals	EPR



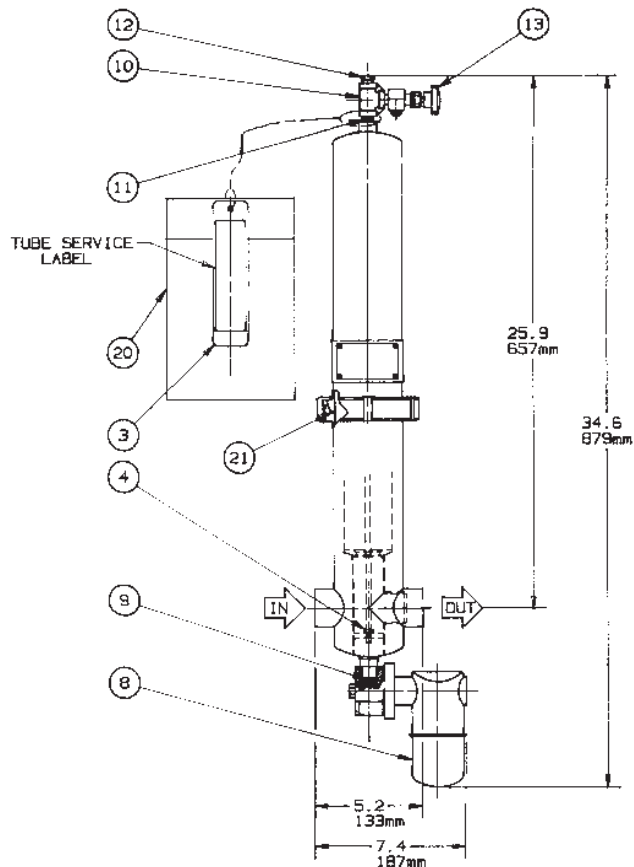
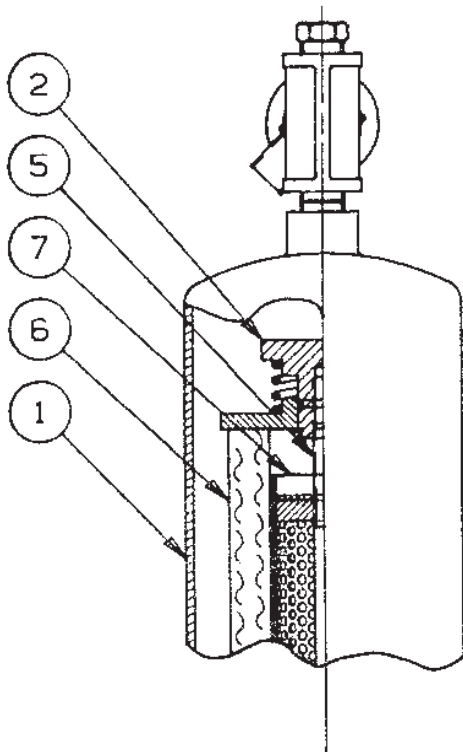
Balston

Replacement Parts

Replacement Parts for 23/75SR, SP2-23/75SR, SP3-23/75SR, SP4-23/75SR, and SP6-23/75SR					
Description	STD/OPT	Material	Fits	Item No.	Part No.
Silicone Lube Tube	STD	—	All	—	11215
Tee	STD	St.Stl.	All	10	11801
Plug - 1/4"	STD	St.Stl.	All	12	11925
Nipple	STD	St.Stl.	All	11	12516
Lock Nut	STD	St.Stl.	All	4	12561
Bleeder Valve	STD	St.Stl.	All	13	20219
Seal	STD	EPR (Food Grade)	All	21	22023
O-Ring for Elem. Retainer	STD	EPR (Food Grade)	All	—	22967
Filter Tube	STD	—	All	6	200-75-SR
Support Core	STD	St.Stl.	All	7	SS-200-75
Element Retainer Kit	STD	—	All	2	23921
Tie Rod	STD	St.Stl.	All	5	23075
Spanner Wrench	STD	Steel	All	—	23100
Condensate Drain	STD	St.Stl.	All	8	20512
Chain & Tag	STD	St.Stl.	All	3	23102
Strainer	STD	St.Stl.	All	9	20511-1

**Order by part number
(Not by item number)**

To ensure consistent product performance and reliability use only genuine Balston replacement parts and filter cartridges.





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