

# TECHNICAL INFORMATION

## Installation, Operation and Maintenance Balston® 23/75R Steam Filters

These instructions must be thoroughly read and understood before installing and operating this product. If you have any questions or concerns, please call the Technical Services Department at 800-343-4048, 8AM to 5PM Eastern Time (North America only) or email at [balstontechsupport@parker.com](mailto:balstontechsupport@parker.com). For other locations, please contact your local representative.

All installation, operation, and maintenance activities should be performed by suitable personnel using reasonable care.

### General Description

The Balston 23/75R Steam Filters have been designed for use with hospital sterilizers. The filter has an efficiency rating of 98+% at 0.1 micron for all suspended solid particles and condensate droplets. The Balston Grade R Filter Cartridge is constructed of borosilicate glass microfibers with a fluorocarbon resin binder. The filter cartridge is chemically inert and free of any impurities which may extract into the steam. The Balston Steam Filter housing is constructed of stainless steel and includes a stainless steel condensate drain and high quality bleeder valve. The Balston Grade R Steam Filter is shipped complete with a filter cartridge installed, and is ready for installation.

The Balston Steam Filter uses a combination of expansion and filtration to remove liquid (condensate) and solid contamination from the steam supply. Unfiltered steam enters the expansion chamber through the bottom of the filter housing (see Figure 1). The flow of steam is directed upward and through the filter cartridge. The abrupt change in flow velocity and direction causes most of the condensate to fall to the bottom of the housing. The steam then flows through the filter and exits the housing through the outlet port. Particulate contamination is trapped in the depth of the microfiber filter cartridge, and any remaining condensate droplets drain from the outside surface of the cartridge. The condensate, separated from the steam in the expansion chamber and through the filter cartridge, drains from the filter housing through the condensate drain.

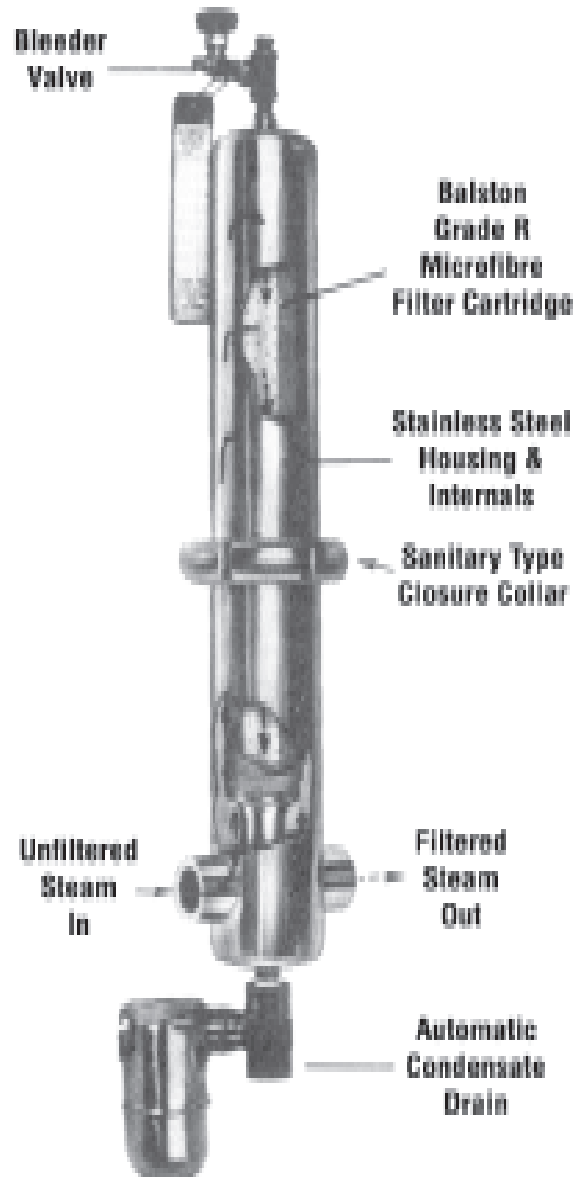


Figure 1

## Installation

**Parker Balston strongly recommends installing one dedicated steam filter for each sterilizer being served by the house steam supply.**

The Balston Model 23/75R Steam Filter is shipped with a Balston Grade R Steam Filter cartridge installed. The inlet and outlet ports for the Balston 23/75R Steam Filter are 1" NPT (female). The steam filter is easily supported by the (properly sized) steam line. No mounting bracket is required.

All piping used downstream from the steam filter should be of non-corroding materials (preferably stainless steel) to prevent contamination of the filtered steam.

Install the Balston Steam Filter **upstream** from the sterilizer pressure control valve, but as close to the sterilizer as possible. Insulate the lower half of the steam filter (up to the external compression ring) and all piping downstream from the filter to minimize condensation between the filter and the sterilizer.

For optimal performance of the Balston 23/75R Steam Filter, follow the installation recommendations outlined below.

- 1 Replace iron pipe with non-corroding pipe downstream from the filter.
- 2 Insulate the lower portion of the steam filter (up to the external compression ring) and downstream piping to prevent excess condensation between the filter and the sterilizer.
- 3 Install drain lines from the filter and steam supply at a downward pitch to ensure proper liquid drainage. Keep drain lines open to atmosphere. Back pressure on the drain lines will prevent proper operation of the condensate drain.
- 4 Clean the inside of the sterilizer according to the schedule recommended by the sterilizer manufacturer.
- 5 Follow the pack weight and chamber loading recommendations of the sterilizer manufacturer.
- 6 Monitor the condensate drain on a regular basis to ensure that it is operating properly and draining regularly. A malfunctioning condensate drain could cause condensate to be carried through the filter, into the sterilizer.
- 7 Follow the drying cycle times recommended by the sterilizer manufacturer for the materials being processed.
- 8 Some filming and staining are associated with wraps. If filming and/or staining continue or develop, try a different wrap.
- 9 Rinse all devices completely before sterilizing. Residues from the cleaning process may react with the steam.

**Before servicing the Balston 23/75R Steam Filter, isolate the filter from the steam supply and**

### Installation for Optimal Results

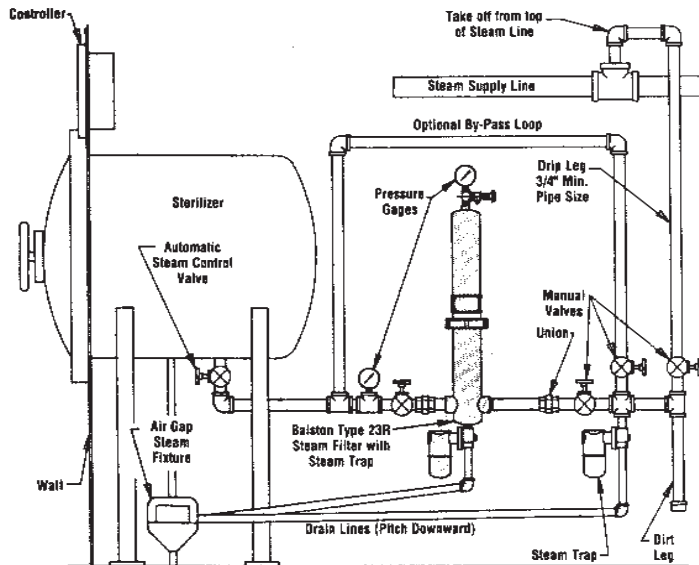


Figure 2 - Recommended Installation, Balston 23/75 Steam Filter



vent the residual steam from the housing by opening the bleeder valve slowly. Always wear insulated gloves when servicing the Balston Steam Filter.

The only maintenance tasks required for the Balston Model 23/75R Steam Filter are cleaning the condensate drain (as needed), replacing the o-ring (as needed), and changing the filter cartridge (every 6 weeks). A summary of the replacement part numbers and a replacement parts drawing are shown at the end of this Maintenance section.

Each Balston Model 23/75R Steam Filter includes a maintenance tag for recording the date of the last filter cartridge change. By following the recommended filter maintenance schedule, the user can be assured of optimal performance from the steam filter.

The condensate drain (P/N 20512) on the Balston Steam Filter is an inverted bucket steam trap equipped with a strainer. Occasionally, the strainer may become plugged with pipe scale or other debris. To clean debris from the screen, remove the steam trap from the filter and backflush the trap with tap water. After backflushing, re-attach the trap to the filter housing using Rectorseal #5 lubricant (or equivalent) on the threads.

**Note:** A continuous discharge of live steam accompanied by violent bucket rattle indicates that the trap has lost its prime. The trap can be re-primed by closing the inlet valve to the filter for a few minutes and gradually re-opening it.

Since the Balston Model 23/75R Steam Filter is installed upstream from the steam control valve, it is exposed to steam at full line pressure at all times. As a result of this constant exposure to full pressure steam, the filter cartridge in the Balston Steam Filter should be changed every six weeks, regardless of the sterilizer operating schedule. If the filter cartridge remains in service longer than six weeks, the resin binder in the cartridge will weaken and the cartridge will no longer filter at its initial efficiency.

**Note:** Estimated filter cartridge life is based on a steam operating pressure of 50 psig (3.5 barg) or less. Filter cartridge life will be shorter at higher pressures.

To change the steam filter cartridge, first loosen the external compression ring, using the spanner wrench supplied with the housing. Next, remove the upper half of the filter housing to expose the filter cartridge. Unscrew the element retainer from the tie rod and lift the spent filter cartridge off the support core. Replace the spent filter cartridge with a fresh one, screw on element retainer making sure the spring is compressed. Lubricate the o-ring (or replace if necessary) and the threads of the metal compression ring, and re-assemble the filter housing. Finally, close the bleeder valve and record the date on the maintenance tag.

The time required to change the filter cartridge on the Balston Model 23/75R Steam Filter is approximately 15 minutes.

## Condensate Drain Maintenance

## Filter Cartridge Replacement

## Replacement Parts for the Balston Series 23/75R Steam Filter

Order by part number,  
not by item number.

Description	Material	Fits	Item Number	Part Number
Silicone Lube Tube	—	All	—	11215 (1)
Tee	St. Stl.		10	11801
Plug - 1/4"			12	11925
Nipple			11	12516
Lock Nut			4	12561
Bleeder Valve	t		13	20219
Sealing Ring	EPR (Food Grade)		21	22023 (1)
O-Ring for Elem. Retainer	EPR (Food Grade)	t	—	22967
Filter Cartridge (box of 15)	—	23/75R	6	200-75-R (1)
Support Core	St. Stl.	23/75R	7	SS-200-75
Element Retainer Kit	St. Stl.	All	2	23921
Tie Rod	St. Stl.	23/75R	5	23075
Spanner Wrench		All	—	23100
Condensate Drain			8	20512
Chain & Tag			3	23102 (1)
Strainer	t	t	9	20511-1

Note: (1) Each box of Grade R Steam Cartridges is shipped with a replacement sealing ring, a tube of lubricant, and a new date tag.

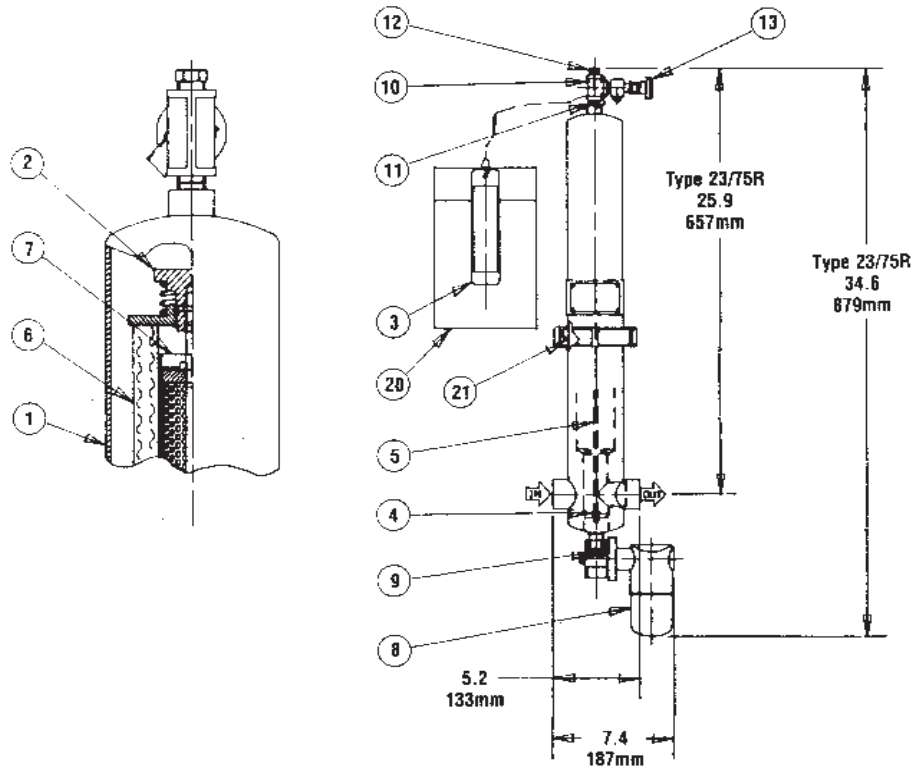


Figure 3 - Replacement Parts



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