

TECHNICAL INFORMATION

Installation, Operation and Maintenance Balston® H-Series and K-Series Filters and 8E24N-0A1-DX Housings

These instructions must be thoroughly read and understood before installing and operating this product. All installation, operation, and maintenance procedures for the Balston H-Series and K-Series filters should be performed by suitable personnel using reasonable care. If you have any questions or concerns, please call the Technical Services Department at 800-343-4048, 8 AM to 5 PM Eastern Time (North America only) or email at balstontechsupport@parker.com. For other locations, please contact your local representative.

General Description

When filtering compressed air or any other compressed gas, install the filter assembly so the flow of the compressed gas through the filter cartridges is from inside-to-outside. When the filter is installed correctly, the gas will flow into the housing through the inlet port, be directed upward through the center of the filter cartridges, flow through the filter cartridges and exit the housing through the outlet port. During filtration, fine liquid droplets that are removed from the compressed gas supply drain from the outside surface of the filter cartridge. The liquid is subsequently removed from the housing through the drain port. Particulate matter in the compressed air supply is trapped in the depth of the filter media.

Note: For sterile air filtration applications the flow direction must be outside to inside the filter cartridge (the opposite to a standard coalescing application).

Proper installation of the filter assembly includes provisions for draining the liquid that is removed from the compressed gas supply. Some Balston compressed gas filters are shipped with an automatic float drain (P/N 20-211). Others require the customer to purchase and install an appropriate draining mechanism. Allow adequate space around the drain port for the installation of a drain. **Note:** The pressure rating for the drain must meet or exceed the maximum operating pressure of the compressed gas supply.

Note: In applications where the compressed air supply contains heavy water loading, an adequately sized aftercooler and drip leg (with automatic drain) should be installed upstream from the filter assembly.

The replacement interval for the filter cartridges is dependent on the pressure drop across the filter housing. The pressure drop across the housing may be measured across the upstream and downstream pressure taps in the housing, and monitored by using a Balston Differential Pressure Indicator (DPI). Parker offers two different versions of DPI's, P/N 41-071 and 41-082. Request Bulletin FNS1 for more details.

Installation

Location

Install the filter as close to the point of use as possible to minimize the recontamination of the compressed gas supply by pipe scale, condensation, or other materials in the pipeline. If it is not convenient to install the filter close to the point of use, additional filtration at the point(s) of use is recommended. Parker manufactures a complete line of point-of-use filters to fit a variety of line sizes (Request Bulletin FNS1). The filter assembly must be installed in a vertical orientation (i.e., inlet and outlet ports parallel to the ground) if liquid drainage is expected. If the gas is dry, and no condensate is expected, the filter may be installed in any orientation which allows easy installation and service at the customer site. For any installation, allow adequate room for the cover to swing open and expose the filter cartridges. Provisions should be made to allow the operator to reach at least 12 inches down into the housing when changing the filter cartridges.

Filter Cartridges

The filter assembly will need to be removed from service and depressurized to change the filter cartridges. Changing the cartridges requires approximately 15-30 minutes (depending on the number of cartridges in the housing). If the filter assembly is part of a continuous process for which there is no convenient shutdown period, provisions must be made to bypass the filter assembly in order to change the cartridges on a regular basis. The procedure for installing the filter cartridges (if they are not installed at the factory) is outlined below:

- 1 Turn off compressed gas supply to housing. Depressurize housing if necessary. (If the housing is installed in a continuous flow process, switch the flow to bypass and depressurize the filter housing.)
- 2 Open the top cover of the housing.
- 3 Unscrew the element retainer and remove the spent filter cartridge.
- 4 Install a new filter cartridge over the tie rod. Make sure that the bottom of the cartridge slides over the centering guide at the bottom of the housing and that the cartridge seats squarely on the flat surface of the tube seat.
- 5 Thread the element retainer on to the tie rod until it "bottoms out" and tighten an additional 1-1/2 to 2 turns to ensure that the filter cartridge is securely sealed in place.
- 6 Inspect all seals and replace as needed.
- 7 Replace filter cover and tighten securely.
- 8 Initiate flow through the housing and return to normal service.
- 9 Replace the cover of the filter housing.

Draining

If liquid drainage is expected, the Balston filter assembly must be fitted with a drain. Some Balston filters are equipped with automatic drains. Others require the customer to install a manual or automatic drain valve. If a manual drain valve is installed, provisions must be made to drain the housing on a regular basis.

Note: Any drain installed on the filter assembly must have a pressure rating equal to or greater than the maximum operating pressure of the installation.

Maintenance

A Balston coalescing filter cartridge will remove liquids from a compressed gas supply for an unlimited period of time without loss of efficiency or flow capacity. Over time, solid particulate contamination will be trapped in the depth of the filter cartridge and will cause an increased pressure drop across the housing. The filter cartridge(s) should be changed when the pressure drop through the housing reaches an unacceptable level for the installation, or once per year (minimum). The procedure for changing the filter cartridge is detailed in the Installation section of this bulletin.

Some Balston filter assemblies are shipped with a differential pressure indicator (DPI). The DPI monitors the pressure drop across the housing and gives the operator a visual indication of when it is time to change the filter cartridges. (**Note:** Before installing a DPI on the Balston filter assembly, ensure that the pressure rating for the DPI is greater than or equal to the maximum operating pressure of the installation.)

