



# Eaton Filtration, LLC

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**Installation, Operation &  
Service Manual**

**All Metal Bag Filter  
Housings**

**Read all instructions before installation or operation of equipment. Failure to comply with these instructions could result in bodily injury or property damage.**

**IMPORTANT:** Before installing the bag filter housing, check that the piping system operating conditions do not exceed their maximum pressure and temperature rating limit of the filter. Also make certain that the product which will be flowing through the filter vessel are chemically compatible with the materials used for the filter housing including the O-rings and the filter bag media.



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### Introduction

Eaton bag filter housings are intended to be installed in pipeline systems to remove unwanted solids from fluids. All Eaton filters systems are designed to withstand rated pressures and are manufactured under an authorized ISO 9001:2000 program. Single bag and multi-bag filter housings should be installed only in systems where the flow can be interrupted in order to change the filter bags. Duplexed housings allow bag change out without shutting down the flow.

For additional information regarding Bag Filter Housings visit our website at:

[www.filtration.eaton.com.com](http://www.filtration.eaton.com.com)

## Receiving

Inspect the vessel after unpacking for damage that might have occurred during transit. Report any damage to the carrier and vendor immediately. Remove instructions and all temporary packaging materials.

## Filter Housing Installation

Remove the plastic protective caps from the flanges and/or threads. Position the filter so that the fluid enters the inlet connection. Support the housing by mounting legs or brackets (included with some models, or available as an option), or use pipeline hangers. Connect inlet and outlet piping, along with any gauges, valves, or vents, using industry standards for proper thread or flange connection.

## Filter Bag Installation

Filter housings are not delivered with the filter bags installed, they must be installed as follows: Open the cover. Remove the bag hold down ring (s). If opening the housing for the first time remove restrainer basket and clean the inside of the housing to remove any shipping dust or packing debris. Inspect all O-rings, lubricate with compatible lubricant. Place the restrainer basket (if not already installed) into the filter housing. If the filter housing is fitted with an O-ring under the top lip of the restrainer basket, particular attention should be paid to ensure that this O-ring is correctly positioned prior to closing the housing.

Insert the filter bag into the restrainer basket after first removing the label from the bag. Be certain that the filter bag is pushed to the bottom of the basket\* and that the collar of the filter bag is pushed into the rim of the restrainer basket so as to achieve a tight seal.

*\*Consider ordering a reusable filter bag positioning device to assure that the bag is easily and properly seated in the restrainer basket. Also consider ordering SENTINEL® welded filter bags, SENTINEL Filter Bags fit securely into place, providing the perfect seal.*

Single Bag Housings: The bag hold down ring should then be placed into the vessel.

## Filter Bag Installation...Continued

Multi-Bag Housings: Place the bag hold down rings over each basket and turn to secure under the hold down clips.

Before closing the cover, ensure that the sealing surfaces along with the cover O-ring are clean and damage free.

## V-Clamp Adjustment

If the vessel has a V-Clamp, it should be opened and tightened by hand (single bag housings: turn handle counterclockwise to open and clockwise to close).

## Swing Bolts

If the housing has a swing bolt cover closure, to avoid misalignment of the cover, tighten cover bolts in the sequence indicated in Figures 2 or 3.

## Start-Up

**WARNING: The piping system should be purged of air before full pressure is applied.**

1. Close the valve on the outlet of the bag filter.
2. Open the bag filter vent.
3. Slowly and partially open the valve on the inlet of the bag filter.
4. Carefully vent all the air from the bag filter. Close the vent when liquid begins to discharge.
5. Fully open the inlet valve.
6. Fully open the outlet valve.

The system is now in operation.

## Maintenance

The filter housing does not require any special maintenance other than cleaning with normal use. All parts should be regularly checked for corrosion and other damage. Install a new filter bag at every product change or if the bag becomes blinded. Differential pressure (the difference in pressure before and after the filter) will reveal if blinding has occurred. Eaton recommend changing the filter bag at a differential pressure of 20 psi; higher levels cause inefficient operation of the filter system and may force particulate through the filter bag material and contaminate the downstream liquid.

## Shut-Down

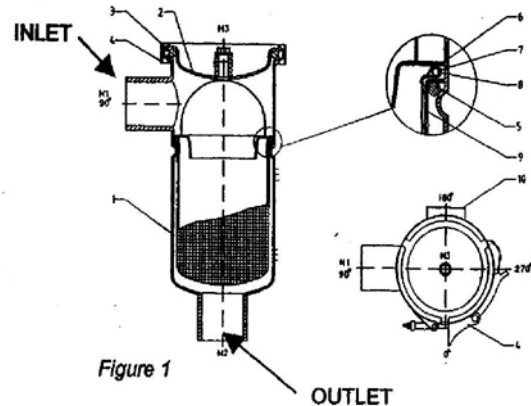
Tightly close the valves near the inlet and outlet of the filter, release the pressure in the housing by opening the vent or drain valve. Open the cover carefully, and remove the filter bag. Attention should always be given to the O-rings and sealing surfaces, ensuring that they are clean and undamaged. Damaged O-rings should be replaced. Eaton recommends that O-rings be replaced each time the pressurized housing is opened. Reused O-rings may result in a faulty seal. Leaks from damaged O-rings or gaskets in no way indicate defects in the system.

## Multi-Bag Housing Spring Lift

The cover lifting spring mechanism is maintenance free. If the mechanism starts to emit noise, remove dust cover and spray in a small amount of oil. The mechanism is balanced at the factory for the weight of the cover. Additional fixtures, such as gauges, can increase the weight and make a re-adjustment necessary. Remove the dust cover from the bottom of the spring cover; loosen the two lock nuts. Adjust the spring tension by simultaneously turning the two adjusting nuts that are located above each lock nut. Turn the nuts clockwise to increase the tension and increase the lifting capacity. Turn the nuts counterclockwise to decrease the tension and lifting capacity. After making adjustments, re-tighten the lock nuts and replace the dust cover.

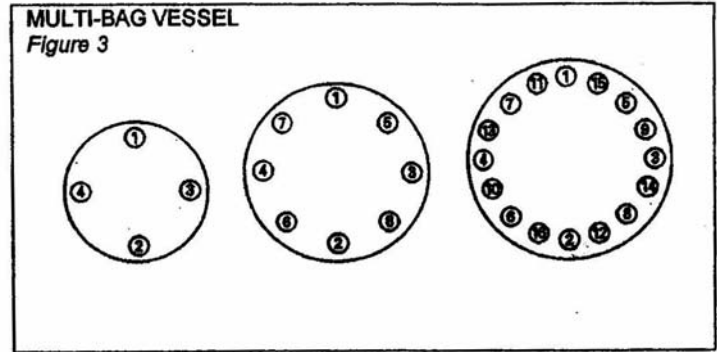
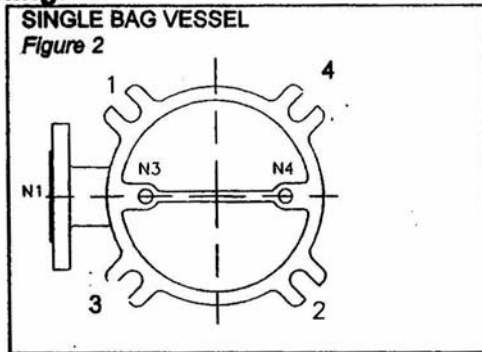
**CAUTION:** Despite the ease with which the cover is lifted, the cover is very heavy. Do not place any part of your body under the cover while it is moving. The cover should always be in the fully opened position before changing the filter bag.

## Typical Design



1. Filter housing body
2. Cover
3. Cover O-Ring
4. Closure
5. O-ring/gasket (not all models)
6. Filter bag hold down
7. Filter bag (not included)
8. Filter bag ring (part of filter bag)
9. Restrainer basket

**Bolting:**



1. Place the O-ring on the surface to be sealed.
2. Bring the sealing surface into contact with the O-ring.
3. Clean bolts and lubricate them with suitable lubricant.
4. Position the bolts and finger tighten the nuts.
5. Follow bolting sequence suggested in sketches above.
6. During the initial tightening sequence, do not tighten any bolts more than 30%. Doing so may cause misalignment of the flange and the O-ring maybe be crushed.
7. Continue bolt tightening (following sequence) until tight, making certain that the bolts have been stressed evenly.

# More From Eaton Filtration

## Pipeline Strainers

Eaton provides the most complete range of standard cast pipeline strainers for coarse filtration available from any manufacturer. These include Simplex, Duplex and Y Type Strainers, in Iron, Bronze, Carbon and Stainless Steel. For ultra-pure applications, strainers of all plastic construction are available. Cast Pipeline Strainers range in size from 1/2" to 36" and larger.

When a cast strainer won't meet the applications requirements because of size, weight or design Eaton offers standard fabricated strainers to meet exact customer requirements. without any trade-offs. When a standard design fabricated strainer will not meet an application's requirements Eaton's design team can work with customers to create a unique one that will.

Eaton also offers Automatic Self-Cleaning strainers. These are motorized strainers designed for the continuous removal of entrained solids from liquids in pipeline systems. The strainer operates un-attended and the system flow never has to be shut down for strainer element cleaning. These strainers are available in both cast and fabricated types.

Find out more on the web at:  
[www.Filtration.Eaton.com](http://www.Filtration.Eaton.com)

## Gas/Liquid Separators

Eaton's Gas/Liquid Separators have been the "Industry Standard" for over 100 years. Nobody knows more about gas/liquid separation than us.

Eaton Gas/Liquid Separators are used to remove 99% of damage causing moisture and particulate matter from air, gas and steam pipelines. They protect valuable system components like air compressors and turbines from damage.

Eaton has a wide selection with hundreds of different Gas/Liquid Separators. When a standard model isn't right for an application, Eaton Engineers can work with customers to create a custom fabricated model that fits the application requirements exactly.

Find out more on the web at:  
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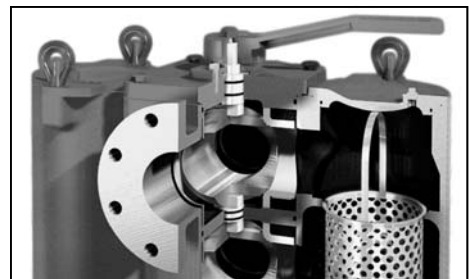
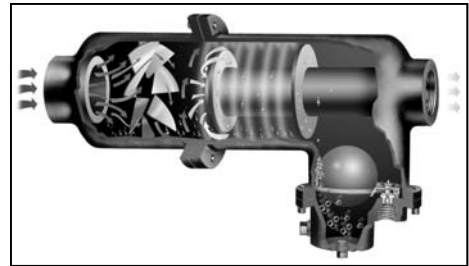
## Filtration Systems

With Eaton Filter Housings you have your choice of high grade investment cast construction or engineered fabricated construction in stainless steel or carbon steel. Or, for extremely corrosive or ultra-pure services, you can choose all-plastic construction. You can be sure Eaton Filter Housings will meet specifications because they are all made to ISO 9001:2000 Standards. Eaton has representatives in over 40 countries, experienced professionals to provide the filtration help you need, when and where you need it.

Choosing the correct filter bag is critical to the success of you application. Don't trust anything less than a filter bag from Eaton. They're made under ISO 9001:2000 Standards to ensure

the consistent, reliable performance that you demand. Eaton Filter Bags fit all Eaton Filter Housings and the housings of most other manufacturers as well.

Find out more on the web at:  
[www.Filtration.Eaton.com](http://www.Filtration.Eaton.com)



Eaton Filtration warrants its products against defective material and workmanship only. Eaton assumes no responsibility for damage or injury resulting from improper installation, abuse, or misapplication of any product. Eaton assumes no responsibility for damage or injury resulting from chemical incompatibility between its products and the process fluids to which they are subjected. The end user should always test to determine application suitability. Contact your Eaton Representative for complete warranty information.

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