



## Eaton Filtration, LLC

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### Installation, Operation & Service Manual

### Models 80 & 85 Y-Strainers

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



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### Introduction

The Eaton Models 80 & 85 Y-Strainers are devices installed in a pipeline to remove dirt and other unwanted debris from fluids. They are designed for the full ANSI pressure rating @ 100°F that is shown on the strainer. Straining is accomplished by directing the fluid through sized openings in a screen. Y-Strainers are installed where fluid flow can be interrupted while the screen is removed for cleaning. Y-Strainers are designed to withstand the pressures of the piping system.

For additional information regarding Y-Strainers visit our website at:

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

## Receiving, Handling and Inspection

Unpack the strainer and inspect for damage occurring during transit. Report damage to the carrier. If the strainer is not installed immediately, see "Storage" instructions.

Remove any preservatives with solvent dampened cloths. Exercise care when using solvent and follow solvent manufacturer's instructions.

Verify that the rating of the strainer is greater than or equal to the maximum pressure & temperature of the installation.

Inspect strainer by checking for and removing any foreign or loose material that could be carried down stream when fluid is introduced into the strainer.

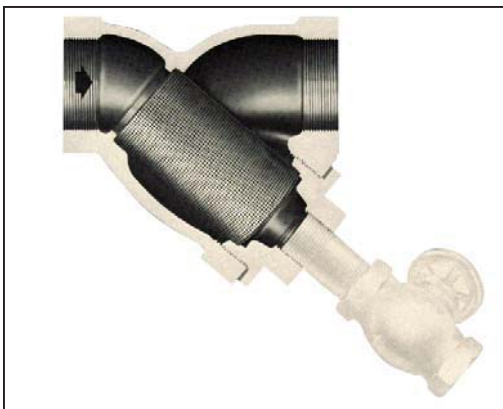
## Storage

Replace protective wrap, flange protectors etc. which may have been removed during receiving, handling and inspection. Store the strainer in a clean, dry environment.

## Installation

**CAUTION: Before installation, review the application and chemical compatibility of the process fluid to the materials of construction of the strainer.**

Remove protective wraps etc. before installing the strainer. Position the strainer in the pipeline so that the fluid enters the connection marked "IN", "INLET" or in the direction of the Arrow cast into the strainer.



**Figure 1.** Cross-section of threaded Y-Strainer with blow-off valve connected for quick clean-out.

## Installation, Continued

Always install the strainer with the blow-off (drain) in the lowest position. Flow must be downward into the inlet of the strainer for satisfactory operation for vertical piping installations.

**CAUTION: To lift the strainer, put slings under the inlet and outlet connections.**

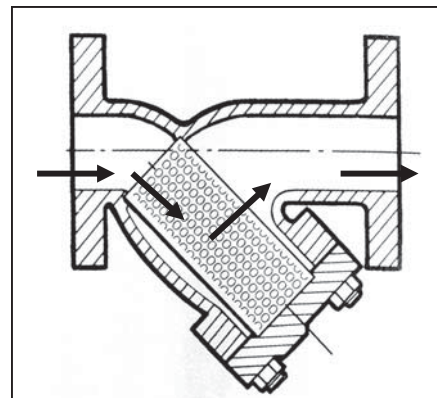
Be sure sufficient clearance is provided for easy opening of the cover (blow-off) and screen removal. Refer to the Sales Drawing for removal clearances.

For larger sized strainers, support the strainer firmly in the pipeline. Piping must allow for adjustments due to strainer connection tolerances. Strainer supports must prevent piping forces and movements from acting on the strainer.

Connect the strainer to the pipeline. On flanged strainers, be sure to use the same type of flange faces. **Do not bolt a raised face flange to a flat face flange.** Be sure flange gaskets are in place and fasteners are tight.

On strainers with other line connections use standard piping practice when installing the strainer.

**CAUTION: Eaton Y-Strainers are not designed to be anchor supports in the piping line. Be sure to properly support process piping on both sides of the strainer. Use care to prevent piping forces and movements from acting on the strainer connections. Damage may occur to the strainer if improperly connected.**



**Figure 2.** Direction of flow through a typical Y-Strainer

### Installation, Continued

Y-strainers have no provision to accept gauges. Pressure gauges near the strainer inlet & outlet are required to determine differential pressure across the strainer and cleaning frequency. Pressure gauges are essential for the safe operation of the strainer and should be installed using standard piping practices.

It is recommended that a compatible valve (and piping as needed) be installed in the cover (blow-off) for safe, quick clean out (normal blow-off cleaning).

**CAUTION:** To protect the operator during draining and clean-out, the fluid must be piped to a safe area by using the valve installed on the cover as described above. This requirement is for all fluids and water (temperatures above 120° F). The operator should wear appropriate protective equipment (goggles, gloves, vests, clothing etc.) consistent with the process fluid for strainer operation and servicing.

### Start-Up

Open the blow-off valve to expel air from the strainer and slowly allow fluid to enter the strainer.

**CAUTION:** Start system GRADUALLY. This eliminates sudden shock to the strainer and other equipment in the line. This is EXTREMELY important for steam service.

Close vent when air is expelled and fluid begins to flow.

### Shut-Down Periods

Slowly close the pipeline valves upstream and downstream from the strainer. Make sure these valves are tightly closed.

Relieve fluid pressure in the strainer by first opening the drain, then vent if provided. The strainer must be drained and internal pressure relieved prior to cleaning. Proceed to clean the screen.

### When to Clean the Screen

A differential pressure increase of 5 to 10 psi across the strainer indicates that the screen is full of debris and needs to be cleaned.

### When to Clean the Screen, Continued

**CAUTION:** To prevent screen damage, DO NOT permit differential pressure across the strainer to exceed 20 psi.

### Normal Blow-Down Cleaning

To avoid shutting down the piping system when possible, clean the screen of debris by opening the blow-down valve. Valve is to stay open until all debris has been blown out from the screen. Then close the valve and resume normal operation.

### Screen Removal, Cleaning and Replacement

Follow the shut-down procedures above. When the strainer's internal pressure is relieved, drain the fluid and loosen fasteners. Remove the cover (blow-off) and remove the debris laden screen.

Note: Do not permit the screen debris to dry, as it would be difficult to remove and clean the screen.

Invert the screen and wash out debris by directing a stream of air or water against the screen exterior. Use solvent if stained fluid is fuel or a chemical. Follow manufacturer's instructions when using a solvent to clean the screen.

Inspect screen at each cleaning for holes or tears. Replace as required. Inspect sealing surfaces and cover gasket. Clean sealing surfaces and cover (blow-off) seat. Replace cover (blow-off) gasket as necessary.

Note: If Model 80 Strainers have spiral wound gaskets, these gaskets must be replaced using only a genuine Eaton part each time the cover (blow-off) is removed.

Place the cleaned/new screen squarely on the seat in the cover (blow-off). Replace cover (blow-off) and tighten the fasteners uniformly. Close the valve (if provided) and follow the start-up instructions.

### Recommended Spare Parts

1 Eaton Replacement Screen

1 Eaton Replacement Gasket

When ordering spare parts specify all nameplate data as well as the description and quantity of parts. Always use genuine Eaton replacement parts for guaranteed fit and performance.

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

## 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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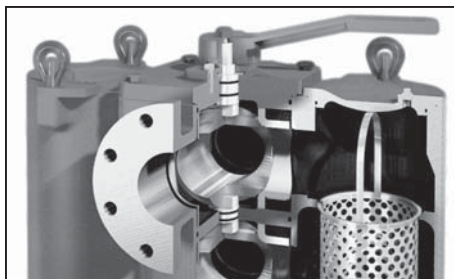
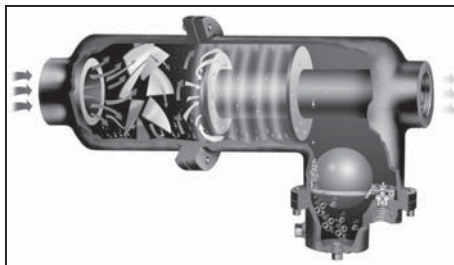
## Filtration Systems

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



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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