

Automatic Self-cleaning Strainers

2596 Series

Continuous flow, simplified maintenance, and worry-free operation



MODEL 2596 -TYPICAL APPLICATIONS

- Automatic self-cleaning strainers are used to strain fresh, brackish, or salt intake water for plant services such as cooling, process, and fire protection. The strainers allow water to be recycled within the plant, reducing costs.
- Process Industry—Protect heat exchangers, pumps, valves, and spray nozzles.
- Power Industry—Pump seal protection and cooling water.
- Pulp and Paper Industry—Remove and separate bark and chips for recycling and prevent clogging of nozzles.
- Sewage and Water Treatment Plants—Strain secondary effluent prior to discharge and provide clean plant service water.
- Primary Metal Industry—Provide clean water for quenching, descaling, and blast furnace cooling.

The Eaton 2596 Automatic Self-cleaning Strainer is a motorized strainer designed for the continuous removal of entrained solids from liquid in pipeline systems. This strainer is ideal for applications that demand uninterrupted flow, a major consideration in plant operations.

Eaton Automatic Self-cleaning Strainers are available in the following pipe sizes, 2" to 8" cast iron or stainless steel, 10" to 16" cast ductile iron only

and 10" to 60" fabricated carbon steel and stainless steel. Custom designs and exotic materials are available upon request. A wide range of screen designs are offered from $\frac{1}{8}$ " perf to 200 mesh.

They are used for straining cooling water from ponds, lakes or rivers, cooling towers, plant service water, boiler feed water, secondary effluent, irrigation, and municipal water intake for equipment protection.

The determining factors are the level of solids content and the ability to handle the backwash discharge flow. They are a worthwhile investment when loading is high or upset conditions occur.

These strainers also provide worry-free operation. Continuous flow is assured, even while the system is being backwashed, providing uninterrupted protection for nozzles, pumps, valves, heat exchangers, and other process equipment.

Frequent cleaning and servicing of manual strainers is costly, and if not properly done, serious disruptions to the entire piping system can occur. Eaton Automatic Self-cleaning Strainers will significantly reduce these maintenance costs. They are ideal replacements for either simplex or duplex manual strainers.

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MODEL 2596 FEATURES / BENEFITS

- **Quality Construction:** Eaton Automatic Self-cleaning Strainers are designed and constructed in accordance with ASME Section VIII, Division 1. ASME Code Stamp is available. Seismic qualification is also available.
- **idL™ Seal:** The unique Eaton idL Shaft Seal prevents troublesome leakage. This special quad seal means that the strainer always stays dry and clean in service with no process media leaking down the sides of the strainer.
- **Ease of Maintenance:** Unitized modular assembly—the motor, gear reducer, cover, and complete internal operating mechanism lift off as a unit, making all components easily accessible. This greatly simplifies maintenance and reduces costs.
- **Low Backwash Fluid Requirements:** Only a small portion of system flow is used during backwash due to the efficient hydraulic design.
- **Choice of Screen Elements:** DuraWedge®, Perforated, or Mesh elements.
- **Minimal Power Consumption:** 1/4 HP drive motor in 2" through 16", 1/3 HP in 18" through 24", 1/2 HP in 30", 1 HP in 36" through 42", and 2 HP in 48".
- **No Bypass of Contaminants:** 2" to 8" element caps are epoxy sealed to screen media. O-ring seals on body cover prevent bypass around element. 10" to 60" element caps are epoxy sealed to screen media. A machined cover and body provide metal-to-metal sealing and prevents bypass around the element. For those elements whose retention is below 300 micron (60 mesh) an elastomer seal is provided on top and bottom of the element.
- **Cover Seat Design:** O-ring permits resealing without time-consuming gasket replacements and adjustment.
- **Manual Operation if Required:** Utilizing extended shaft.

MODEL 2596 APPLICATION CONSIDERATIONS

For coarse straining applications, such as raw water intakes from lakes, ponds, and streams, the convoluted perforated elements will perform well and offer the most economical unit pricing.

On applications in which pre-screening of the fluid has been performed, but finer filtering of the fluids is desired, the sinter-bonded mesh element may be selected.

On applications in which the fluid being strained encounters fibrous materials, the DuraWedge element will minimize the impact of the fibers stapling to the screen.

Debris: Cleaning the straining element is accomplished by using the pressure differential between line pressure and atmosphere. During the cleaning cycle, when the backwash valve is opened to atmosphere, a portion of the strained fluid reverses flow back across the isolated section of element, lifts off the debris, and ejects it out of the strainer.

Sticky or greasy debris are more difficult to backwash and may require longer backwash cycle durations. Sand, dirt, and pipe scale should backwash easily. The quantity of debris coming into the strainer also can be a problem. Ensure that the volume of the suspended solids does not exceed 200 ppm or 0.02 percent. If the application requires heavier loading consult Eaton.

Backwash Requirements: The quantity of fluid required to clean a straining element is dependent upon the type and quantity of debris. Under normal conditions, approximately five percent of the line flow will be used for cleaning of the straining element during the cleaning cycle. To minimize the loss of fluid through the backwash, it is recommended that a manual throttling valve be added downstream of the automated valve.

Pressure and Temperature

- Cast Iron and Ductile Iron are rated at 150 psi @ 150 °F.
- Fabricated units are rated at 150 psi @ 150 °F. However, other ratings are available, consult Eaton.
- The minimum operating pressure is 20 psi.

Cenpeller™ Technology

A common problem in many automatic self-cleaning strainers is inefficient backwashing due to debris lodged in the strainer element.

The Model 2596 2" - 8" strainer features a unique vane plate positioned at the inlet of the strainer element where it contacts the process media before it enters the element. The vane causes the incoming liquid to move in a circular motion forcing the debris to lay

up against the surface of the strainer element rather than lodging in the element's openings. Lodged debris can negatively impact the differential pressure across the strainer, resulting in a shut down of the strainer and manual cleaning of the element.

Cenpeller Technology helps prevent this situation and delivers easier and more efficient backwashing.



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