

# « W » TYPE DEBRIS FILTER



## PURPOSE

- ◆ The BEAUDREY “W” debris filter is installed at the inlet of a condenser to arrest all debris that may obstruct or interfere with the cooling water flow in the condenser tubes and with the eventual downstream tube-cleaning system.
- ◆ The debris are those that have by-passed the intake screens or grown past them in the pump pits and culverts (seaweed, grass, shells, eels, etc).
- ◆ Debris generated by cooling towers are also to be removed (pieces of packing, etc).

## DESCRIPTION

- ◆ The water enters the cylindrical, flanged spool piece with a rotating screening wheel divided into a number of deep, radial, debris-collection compartments.
- ◆ The downstream face of the compartments is fitted with the patented low head-loss NOCLING™ screening panel which is also fish-friendly, jellyfish and fiber-proof.
- ◆ The water flows across the NOCLING™ element and the debris are arrested and stored in the compartments. When dirty (head-loss or timer actuation), the wheel starts rotating. It is driven by a peripheral gear and pinion device.
- ◆ Each compartment passes in front of an upstream scoop which is connected via the flushing valve and pipe to the downstream side of the condenser.
- ◆ The condenser head-loss provides the hydraulic head to create the backwash flow. All the debris are removed and sent to the condenser outfall.

## ADVANTAGES

- ◆ Keeps the condenser totally debris-free and avoids tube-sheet cleaning
- ◆ Increases the plant's power output by up to 1.5%
- ◆ Pay-back time is generally less than two years
- ◆ Avoids turbulence-generated tube decay and perforation
- ◆ Very low head-loss
- ◆ Improves the efficiency of condenser tube ball-cleaning systems
- ◆ Virtually no maintenance
- ◆ Fully accessible from the condenser water box
- ◆ Can handle any type of debris in large quantities
- ◆ Backed by over 80 years of experience and over a thousand references

## CONSTRUCTION DETAILS



Upstream side with suction scoop



Downstream side with pinion and spur rack



External side with motor and head loss sensor



## MAINTENANCE

- ◆ A regular maintenance intervention every 12 to 18 months is recommended. No other maintenance is required.

## INSTALLATION / RETROFIT

- ◆ Each debris filter is adjusted to meet the client's required length.
- ◆ The Beaudrey Debris Filter is **the most compact on the market**. As a result, the filter can be installed at any location in the plant: on a short piece of pipework, on an elbow or directly welded on the condenser water-box.



Short length <1m for a diameter of 1.8m



Filter directly welded on the condenser water box



Small elbow filter Dia.=0.6m



Big elbow filter Dia.=2.1m



Workshop fabrication / Site installation (USA)

- ◆ Beaudrey is your partner for the supply of debris filter but also for all corresponding field activities.
- ◆ This can be either simple site supervision assistance or a full turnkey project.
- ◆ Please contact our team for more information.

## OPTIONAL FEATURES

- ◆ Inspection manholes
- ◆ Debris concentrator / collector
- ◆ Ball-injection branches
- ◆ Support saddle
- ◆ Seismic qualification



## NECESSARY ANCILLARIES

- ◆ Differential pressure sensor
- ◆ Power-actuated flush valve
- ◆ Electrical control cabinet

## MATERIALS

- ◆ Shell :
  - For fresh-water applications: painted carbon steel
  - For seawater applications: lined carbon steel, duplex or super-duplex stainless steel
- ◆ Moving parts and internal fixtures including NOCLING™ panel :
  - For fresh-water applications: AISI 304L or AISI 316L stainless steel.
  - For seawater application: AISI 316L duplex or super-duplex stainless steel
- ◆ Valve lining: in all cases EPDM
- ◆ Valve obturator:
  - For fresh-water applications: AISI 304L stainless steel
  - For seawater applications: duplex stainless steel
- ◆ Pressure-sensing pipes: synthetic or stainless steel.

## SIZES AND DATA

- ◆ Standard sizes from DN300 (12") to DN3200 (128").
- ◆ Larger machines and special shell dimensions upon request.
- ◆ Head-loss about  $1.5 V^2/2g$  in most cases for a 6x6 mm mesh aperture (where "V" is the inlet velocity into the spool piece).
- ◆ Minimum condenser head-loss required for cleaning: 3 m H<sub>2</sub>O (10 ft).
- ◆ Available mesh sizes: 2, 3, 4, 5, 6, 10 mm (0.08, 0.12, 0.16, 0.20, 0.25, 0.40 inches).



Contact us for a quote at  
[www.beaudrey.com/contact](http://www.beaudrey.com/contact)