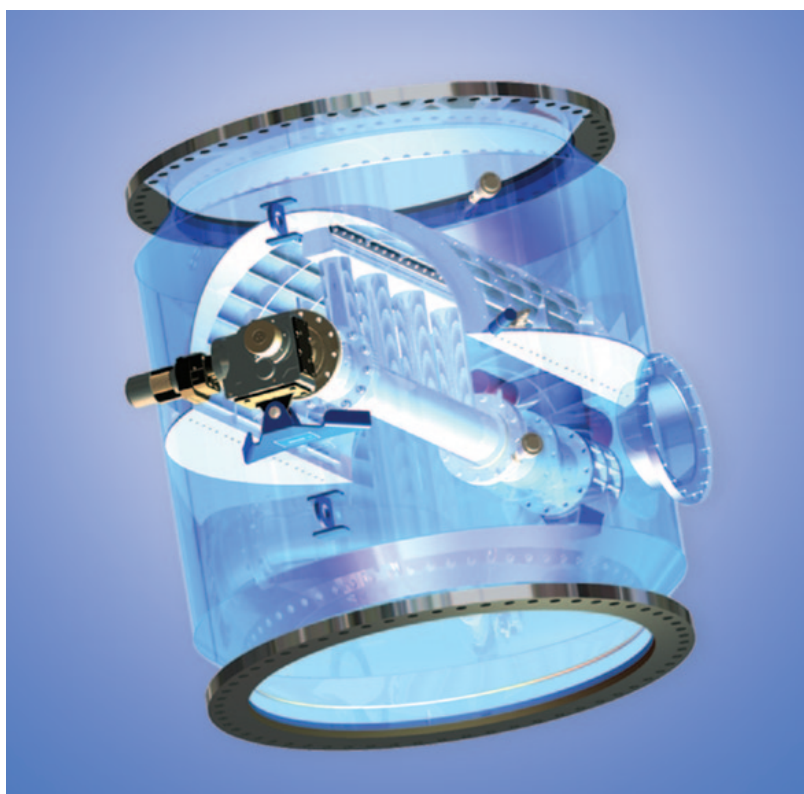


Brackett Green® Debris Filters

Continuous online condenser and heat exchanger protection

Key features & benefits

- Compact design suitable for new installations or retrofit
- Low pressure drop
- External drive mechanism with easy access to seals and gear box
- Suitable for high flows and a variety of filtration sizes
- Suitable for high debris loading and continuous operation
- Suitable for operation either upstream (negative operating pressure) or downstream (positive operating pressure) of the intake pump
- Can be manufactured to ASME, Nuclear and Power & Petrochemical Industry codes and standards



How we create value

- Custom design reduces installation costs
- High quality engineering suited to the most demanding applications
- Highly reliable, reducing maintenance requirements
- Design models anticipate field performance
- Ovivo experience in debris filter applications across a wide range of industries



Brackett Green® Debris Filters

Most power plants employ extensive pre-screening at cooling water intakes. Despite this, additional filtration can be required at locations where the cooling water is loaded with heavy debris and marine life. Brackett Green® debris filters provide a vital line of defense, efficiently intercepting and removing coarse particles, fibrous material, mussels, clams and other macro fouling related to problems downstream of pumps.

Ovivo understands the importance of the thermal performance of your plant to ensure plant output, and ultimately, profitability. Online, self-flushing Brackett Green debris filters are an effective solution to minimize fouling from the condenser tubes. This last line of defense for your cooling water system can increase or maintain your condenser's heat exchange rate by keeping the tubes clean, reducing operating costs and ultimately, your environmental footprint.

Prevents macro fouling

Built-up debris at the heat exchanger inlet and condenser tubes can stop or slow cooling water flow. This reduces the heat transfer rate and damages overall plant efficiency. Debris build-up also shortens tube service life through corrosion, erosion and pitting.

Automatic debris filtering prevents macro fouling of heat exchangers and condensers, lengthening service life and eliminating an array of potential performance problems. These include: insufficient cooling, ineffective temperature control, increased pressure drops, high energy consumption and costly downtime.

Compact design handles all debris

Ordinary self-flushing debris filters are installed externally to the cooling water line, demanding a large amount of space and additional pipework. Some are designed to handle coarse debris while others are more suitable for fibrous debris removal. Ovivo's unique Brackett Green automatic, self-flushing debris filters fit within the cooling water piping and can handle all forms of debris.

The Brackett Green debris filter's housing actually replaces a segment of the cooling water pipework, requiring no additional space or connections. The filtration mechanism is designed to remove coarse as well as fibrous debris including plastic, mussels, clams, fish, tree roots, seaweed, algae, rocks, wood chips, pine cones and leaves.

Optimum performance for minimal cost

The Brackett Green debris filter's unique design provides maximum debris removal at the lowest operating and maintenance cost. Ovivo Brackett Green debris filter incorporates a array of high efficiency features, including:

- Low operating pressure drop across the debris filter
- Maximum debris removal for minimum flush water discharge
- No external water required for flushing
- No external pump required for flushing



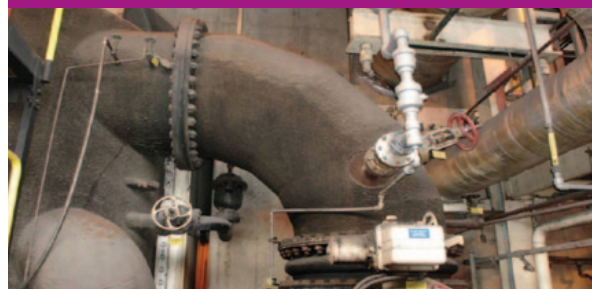
Condenser tubes without debris filter



Inside debris filter prior to cleaning cycle



Tube condition with debris filter



Before installation of debris filter



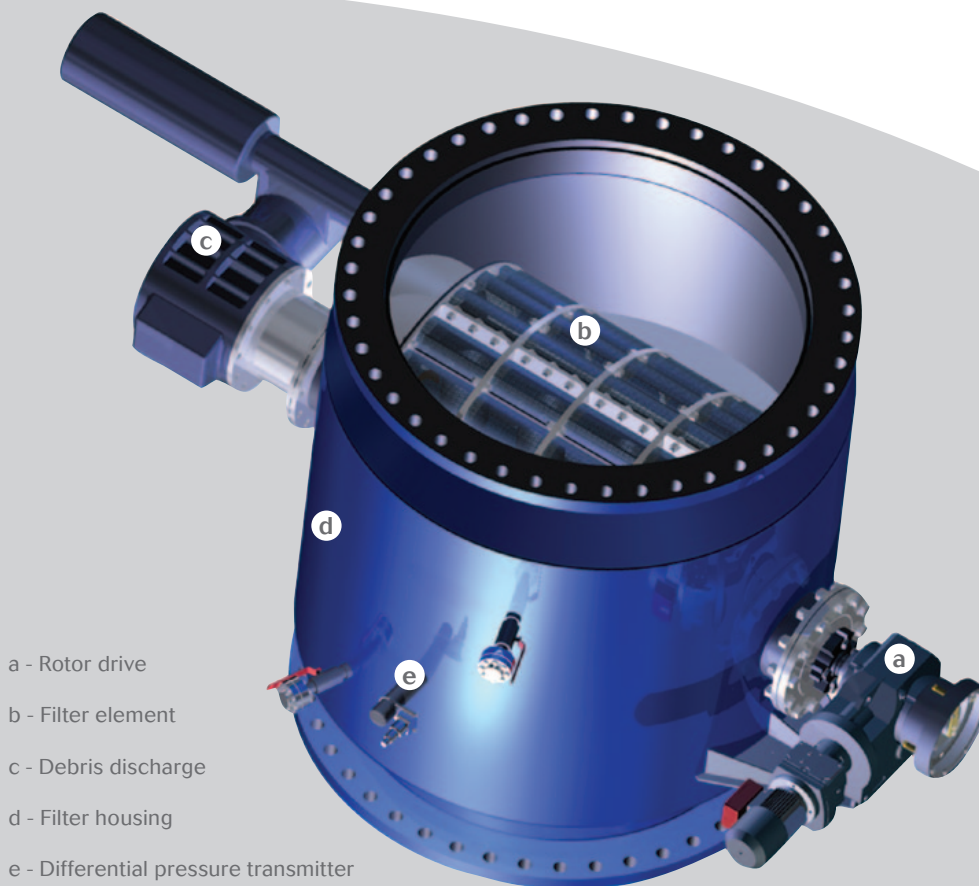
Debris filter installed

How it Works

Brackett Green debris filters continuously and automatically remove suspended solids from cooling water that might otherwise clog the heat exchanger and condenser tubes.

1. Inlet water enters the Brackett Green debris filter screening element. Various types of debris (including coarse and fibrous debris) are collected over the filter screening element. Screen elements are available in a variety of shapes and sizes (round, slot, or square).
2. A uniquely engineered rotor with several suction parts is housed within the filter. The rotor is designed for high volume debris removal of all types and sizes, with the minimum of cooling water discharged as waste. The rotor is operated by an electric motor.

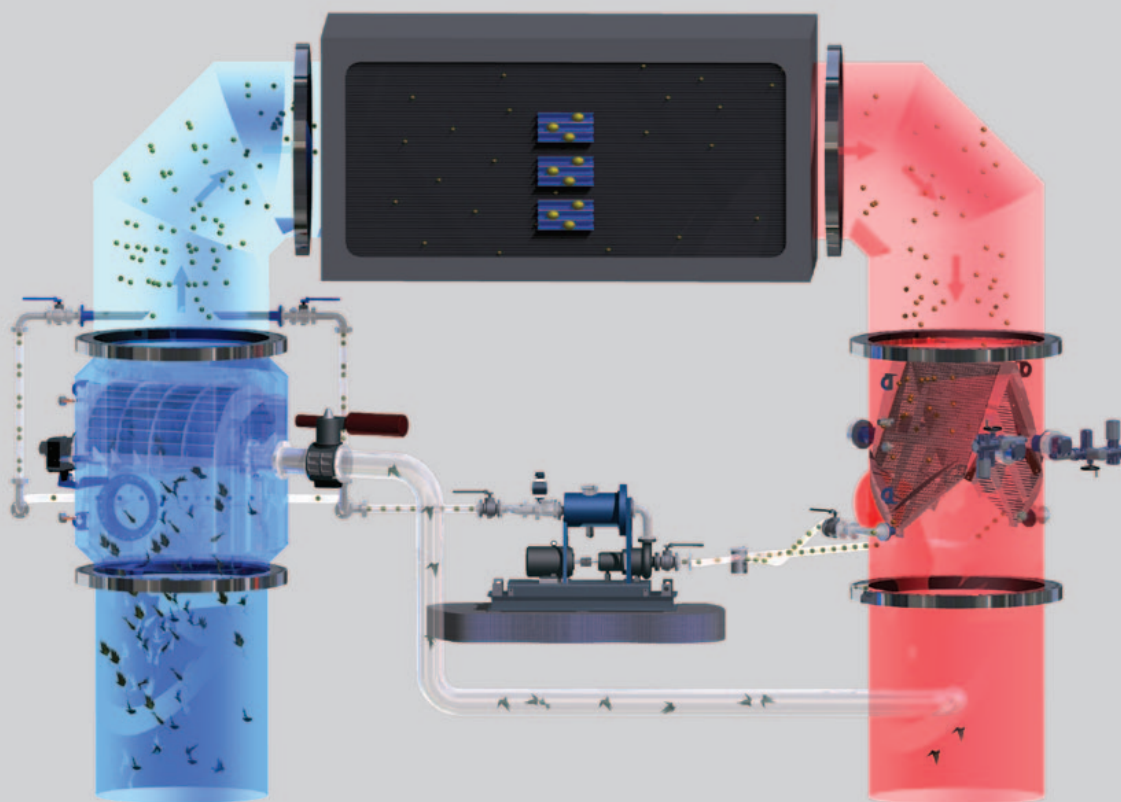
3. As debris accumulates, differential pressure across the screen is monitored. If the pressure drops below normal, the rotor begins to rotate while debris discharge is opened to a lower pressure discharge point. Since the pressure inside the debris filter housing is higher than that at the debris discharge point, the pressure on the clean side of the element will push debris into the rotor evacuation chamber while the rotor is turning. Debris is vacuumed off the filter element.
4. Once the filter element is cleaned, the rotor will stop and the debris discharge valve will close.



Condenser Protection System

Ovivo understands the importance of the thermal performance of your plant which results in plant output and ultimately in profitability. The use of both the Online Self Flushing Debris Filters and Online Automatic Tube Cleaning Systems is the most effective solution to eliminate the macro and micro fouling, scaling

and other deposits from the condenser tubes. This last line of protection in your cooling water systems increases or maintains your heat exchange rate of your condenser by keeping the tubes constantly clean reducing the operating cost and most importantly reducing your footprint on the environment.



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