Uncompromised
Quality.

FEIPL

Debris Filter

Debris Filter

Fouling phenomena are common and diverse, ranging from fouling of ship hulls, natural surfaces in the marine environment (marine fouling), fouling of heat-transfer components through ingredients contained in the cooling water or gases.

The following are examples of components that may be subject to fouling and the corresponding effects of fouling:

- Heat exchanger surfaces - reduces thermal efficiency, decreases heat flux, increases temperature on the hot side, decreases temperature on the cold side, induces under-deposit corrosion, increases use of cooling water;
- Piping, flow channels - reduces flow, increases pressure drop, increases upstream pressure, increases energy expenditure, may cause flow oscillations, slugging in two-phase flow, cavitation; may increase flow velocity elsewhere, may induce vibrations, may cause flow blockage;
- Ship hulls - creates additional drag, increases fuel usage, reduces maximum speed;
- Turbines - reduces efficiency, increases probability of failure;
- Solar panels - decreases the electrical power generated;
- Reverse osmosis membranes - increases pressure drop, increases energy expenditure, reduces flux, membrane failure (in severe cases);
- Electrical heating elements - increases temperature of the element, increases corrosion, reduces lifespan;
- Nuclear fuel in pressurized water reactors - axial offset anomaly[3], may need to de-rate the power plant;
- Injection/spray nozzles (e.g., a nozzle spraying a fuel into a furnace) - incorrect amount injected, malformed jet, component inefficiency, component failure;
- Venturi tubes, orifice plates - inaccurate or incorrect measurement of flow rate;
- Production zone of petroleum reservoirs and oil wells - decreased petroleum production with time; plugging; in some cases complete stoppage of flow in a matter of day.

We are your
Quality Partners.

Debris Filter

Technical features and benefits

- High performance with excellent performance ratios
- Low backwash flow rates and low pressure loss for minimized operational costs
- Extremely simple maintenance: all drives, bearings and sealings easy and accessible from outside
- Installation in any position, that means horizontally, vertically and under any angle to fit the space conditions of the pipes.
- Extremely short overall length creates installation possibilities under restricted space conditions, especially for retrofits.

We are your
Quality Partners.

Debris Filter

The basic structure of the debris filter is illustrated above:

(1)The filter membrane is cone shaped with debris laden water entering on the concave side. The size of the filter element perforations are supplied according to debris conditions. A debris evacuation conduit is located on the inlet side
(2) The conduit is set into bearings at its extremities and is rotated by a motorized drive mechanism
(6)The conduit features one or more slotted suction heads
(3) for removing fibrous material captured by the filter and impinged on the filter element surface. A broader suction head is located
(4) at the downstream end of the conduit to extract larger coarse and marine type particulates. The slotted heads have flexible sealing lips
(5) which concentrate suction on the filter surface directly at the point of treatment. Due to the rotation of the heads, the screen angle and flow direction, larger coarse debris is conveyed to the suction head
(4) at the apex of the filter for evacuation. The debris evacuation pipe
(7)is opened or closed by the built in valve
(8). A differential pressure monitor
(9)continuously assesses the amount of debris collected on the filter element and controls the operation of the debris evacuation apparatus.

When debris build up creates the critical predetermined differential pressure across the filter, the evacuation sequence is initiated. The valve on the debris evacuation pipe automatically opens and the debris evacuation aparatus is actuated. The differential pressure at the heads creates the vacuum by which all debris is evacuated. The filter continues to clean itself until the monitor indicates a clean condition exists. The rotation of the conduit then is automatically stopped and the valve on the evacuation pipe closed.
The debris filter is controlled by a PLC based local control panel. The front of the control panel has a mimic diagram and all the controls and instrumentation required to operate the system.

Filteration Engineers
Plot W 62B, TTC Industrial Area, MIDC Rabale,
Navi Mumbai 400701 India.
Phone: +91 22 27608501 / 27693111
Email: sales@feipl.com