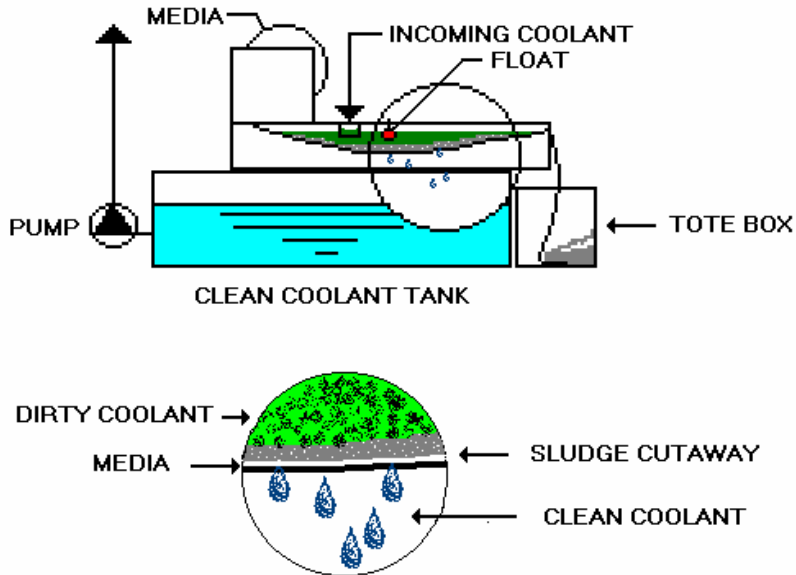


Gravity Filters Principle of Operation

GRAVITY FILTERS



General Information:

Gravity paperbeds are designed to provide a nominal 20 to 30 micron coolant clarity. In almost all instances they are sized gallons per square foot. Usually, flow per square foot is from one to a maximum of five gallons. It is at best a general purpose filter and because of its reliance on static head they are not recommended for flows over 150 gpm. Manufacturing space in all plants is at a premium and gravity filters become big quick.

Gravity systems are also known as, band filters and paperbeds.

Principle of Operation:

In actual operation paperbed filters index on an automated basis. As coolant laden with steel and wheel grit accumulates on the filter media. The coolant flow through the media begins to slow. Eventually, the filter cake becomes too dense to allow any flow of coolant through to the clean tank and the pool of coolant in the curved arc of the bed begins to rise. Because it's not cool to let coolant overflow on the floor a level probe or float signals to the controls to automatically index the filter media. The float or probe works much like a toilet bowl float and controls the on or off of the system. As the media indexes the coolant level begins to drop immediately because the clean paper is permeable. The cycle continues and eventually the media is used up and the customer calls us for more media.

1. Contaminated coolant is either gravity fed or pumped to the filter.
2. Particulate or dirt settles to the bottom of the coolant pool on top of the media. Typically a static head of four to six inches is common in most gravity filters. There are some filter designs that are built with as much as twenty four inches.
As the media blinds or becomes impermeable the coolant pool increases until such time a float set at a designed height reads a high level and initiates an index.
Most gravity filters use a “make– break “ switch and the media will index until new media is exposed and the coolant quickly runs through the media until cake generation begins.
5. As cake or dirt builds on the media the cycle of rising coolant goes on until the media roll is spent.

Typical Applications:

- Grinding of all types. Centerless, Thru Feed, Cylindrical, Roll Grinding, Surface, Belt, Double Disc, Honing.
- Tube Mills and Saws
- Tower Water
- Plating
- Parts Washers
- Paint Booths

Coolants Used on Gravity Filters: