

Clearstream Filters Inc.

57 Arnold Sayeau Dr
Delhi, Ontario, Canada, N4B 2W9

Telephone (519) 582-8446
Fax (519) 582-1936

Clearstream News Letter, Fall 2010

What's New?

Clearstream Filters celebrated our 15th Anniversary this October. After a few changes of location in the past 15 years, Clearstream has found home in Delhi, Ontario where we have been manufacturing filters for the past five years. By early 2011 Clearstream will expand it's facility in Delhi to accommodate more storage area for raw materials.

To benefit our fabrication process, Clearstream has invested in some new equipment. Our new machines will weld the top flange and the bottom of our filter bags. Clearstream will now be able to offer an all welded filter bag. Although sewn filters will still be available, we will be manufacturing the majority of our filter bags in an all welded construction.

Learning

Particle Size Retention Vs. Air Permeability

The majority of filter fabric manufacturers use similar specification tests for their filter fabrics. One of the most common tests is "**Frazier CFM**". This is an air permeability test to measure the ease with which air will pass through the fabric. It is measured in cubic feet of air passing through one square foot of fabric in one minute at a given pressure differential across the fabric. Most filter fabric providers will tell you that "The efficiency of the fabric increases as the Frazier CFM number decreases." This is only true if all the fabrics are manufactured in the same way using the same type and size of fibers, which they are obviously not.

A common mistake made by filter media providers is to assume that if their customer is currently using a filter media with a certain air permeability, they can substitute another material with the same air flow rating and expect the same particle retention. For example: a machining facility has incorporated a gravity filter into their process for removing steel particles from their coolant stream. The OEM filter media provided has a CFM of 500 and this gives them a particle retention of 25 micron at 65% efficiency. The OEM filter fabric was manufactured with polyester fibers that had a denier (fiber weight) of 6. The supplier then finds a media that is much less expensive. The CFM on the inexpensive media is also 500 but the denier size is 8. Since the fiber weight is larger, the particle retention size is larger thus allowing larger steel particles to enter the coolant stream causing potential problems with the machining equipment.

Another important note on filter fabric: All fabric materials react differently when exposed to water. It can not be assumed that a polyester fabric and a polypropylene fabric with the same dimensional and weight characteristics will handle the same amount of flow

because they have the same CFM rating. Polypropylene repels water causing a much slower flow rate. A product like nylon will have much less resistance to water so it will handle more flow. This is another reason why air permeability should never be used to judge the quality of liquid filtration.

Applications

MyCo Media Filter for Pre-Treatment to E-Coat

Over the past few years, the MyCo media filter has found itself removing debris from the pre-treatment side of the paint department in many major automotive assembly facilities with great success. The MyCo filter has revolutionized the way this process works. It saves energy, is easily retrofit, and removes solids non-selectively.

For many years, automotive manufacturers have relied on centrifugal separators to remove solids from the e-coat pre-treatment process. Centrifugal separators remove heavy solids at a very decent efficiency. Because of this they were selected in this application to remove the large percentage of “weld balls”. Weld balls are small pieces of steel that are removed from the vehicle in the grinding process. However, a centrifugal separator does not remove semi-solids such as sealer or lightweight solids like kevlar. Another issue using centrifugal force is the oil content found in these auto-baths. Oil is technically a liquid, so the centrifugal separator will not stop it. Oil can also bypass the pressurized finishing stages of filtration like filter bags, elements or cartridges.

The MyCo filter’s major benefit is that the removal of solids is non-selective based on type of solid or semisolid. The filter removes the weld balls but also removes sealer, kevlar, or any other unwanted debris. Because the MyCo is not pressurized, it removes a large percentage of free oil as well.

Clearstream FOS Filter Bags for Oil Removal

Clearstream manufactures a filter bag called the Filter Oil Sponge (FOS). The FOS bag was designed to remove undesired oils from fluid streams. An excellent example of an application is at airports. When de-watering airport runways a certain amount of oil can be expected to collect under parked planes, service and fuel vehicles. In order for the water taken off the runway to be disposed of, the water must be free of oil. A simple and cost effective way to do this is with the FOS bag. The FOS material has adsorption properties allowing it to hold up to 20 times it’s own weight in oil.

Cooling Towers

Cooling towers are vital parts of most manufacturing facilities throughout the world. The Clearstream MyCo filter is a perfect fit for this application. The MyCo filter should be mounted between the cooling tower and the underlying basin so the water can flow via gravity. One major benefit to the self-indexing style media filter is that it does not backwash. Back-washing systems cause high energy consumption and can potentially waste chemicals that have been added to the water. Clearstream has had many successful installations into this application. The filter is easily retrofit into existing systems and has a space saving footprint.

