OHIO FABRICATORS COMPANY

news YOU CAN use

ISSUE 7

"Unparalleled Delivery Times on Custom and Standard Filtration Products"

HYDRAULIC Suction Strainers

We are highlighting our suction strainers again because this has been a very successful campaign and customers are realizing the importance of protecting the pump when it comes to hydraulic system operation. They realize more and more that if the pump breaks down, the system will break down. Click here to visit our Standard Products page. From there take a look at the options available for hydraulic strainers. We can help!

THE NEW OHFAB.com

When was the last time you checked out our new and constantly updated website? We continually update it with new products, ideas, resource information, educational instruction, industry news, and more. Take a moment to visit our website and navigate around a bit. You may find it useful.

Hydraulic Machines Quiz

1. The basic idea behind any hydraulic system is very simple. Force that is applied at one point is transmitted to another point using _____.
   (a) A compressible fluid; **(b)** a non-compressible fluid; **(c)** a cold compress
2. It's important for a hydraulic system to contain what?
   (a) air bubbles; **(b)** no air bubbles; **(c)** compressible fluid
3. Where can you look in your car to see a good example of a piston-driven hydraulic system?
   (a) the power steering system; **(b)** the instrument panel; **(c)** the brake system
4. Large hydraulic machines usually have these to hold the difference in the volume of oil displaced by the two sides of the cylinder.
   (a) large diameter lines; **(b)** external reservoirs; **(c)** men with buckets
5. It's not uncommon for a large hydraulic machine (one with 6 or 8 large hydraulic cylinders, for example), to require how much hydraulic fluid?
   (a) 100 gallons; **(b)** 10 gallons; **(c)** 1 gallon

See upside down answers to questions on page 2

A Simplified Study in Filtration

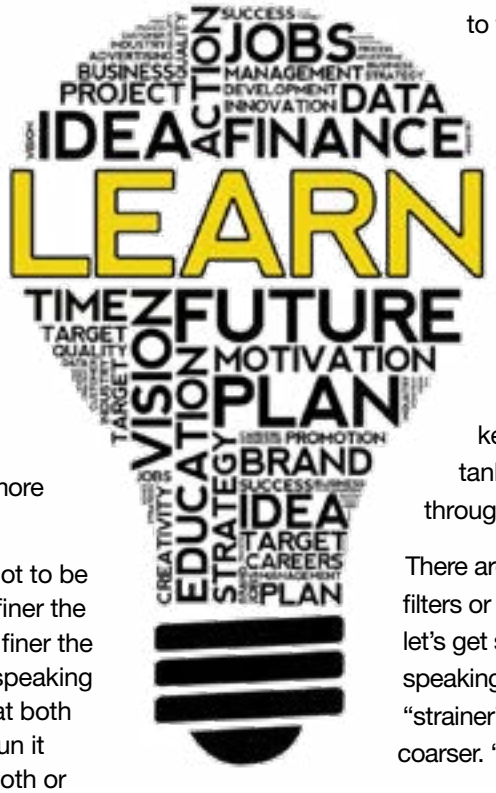
PART 4 OF 10

Filter Placement in a Typical Hydraulic System

Before we get started let's define a couple terms.

Micron. A unit of length equal to one-millionth of a meter. One micron is equal to .000039 of 1 inch. The lower limit of visibility, the finest the naked eye can see, is 40 microns.

Mesh. The number of openings in one inch of wire cloth. For example, 100 mesh will have 100 openings in a measurement of a 1" piece of wire cloth running one way and 100 openings running the other way on a piece of 1" wire cloth. When comparing mesh to microns, 100 mesh is equal to approximately 149 microns (See chart for more information).



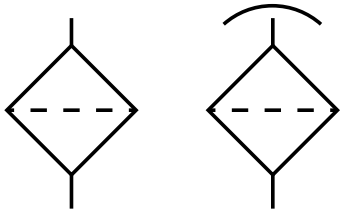
IMPORTANT POINT: Keep in mind so as not to be confused... the lower micron number, the finer the filtration, the higher the mesh number, the finer the filtration. It can be easily confusing when speaking to someone. That is why it is important that both parties be on the same page. In the long run it could mean the difference between a smooth or poor operation and could eventually cause system damage.

Before making a determination of where to place filters in a hydraulic system, understand that the reservoir (tank) can be considered a filter itself. When a reservoir is filled with oil, the contamination will settle to the bottom if there is no turbulence in the reservoir due to high speed return line flow. Therefore, all oil above the area in which the settlement has occurred is cleaner than the oil at the bottom of the tank. Most tanks are built with a "V" shaped bottom to accommodate the dirt with a baffle running the length of the center of the tank so much of the dirt will stay at the bottom through system operation. This design keeps the flow of the oil returning to the tank to not interfere with oil that travels back through the inlet.

There are, at the very least, four locations in which filters or strainers should be located. First of all, let's get some terminology out of the way. I'm speaking of filters vs. strainers. In this article, when "strainer" is mentioned, it refers to 74 microns or coarser. "Filter" refers to anything finer than 74 microns. Filter people like to talk in terms of micron, while wire cloth people like to talk in terms of mesh.

Remembering the reservoir can be considered a filter itself, next time we will take a look at the first two locations a filtration device should be installed.

FILTER SYMBOLS



Basic Filter Breather Filter

Hydraulic Machines Quiz Answers
Answers: b, b, c, b, a

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