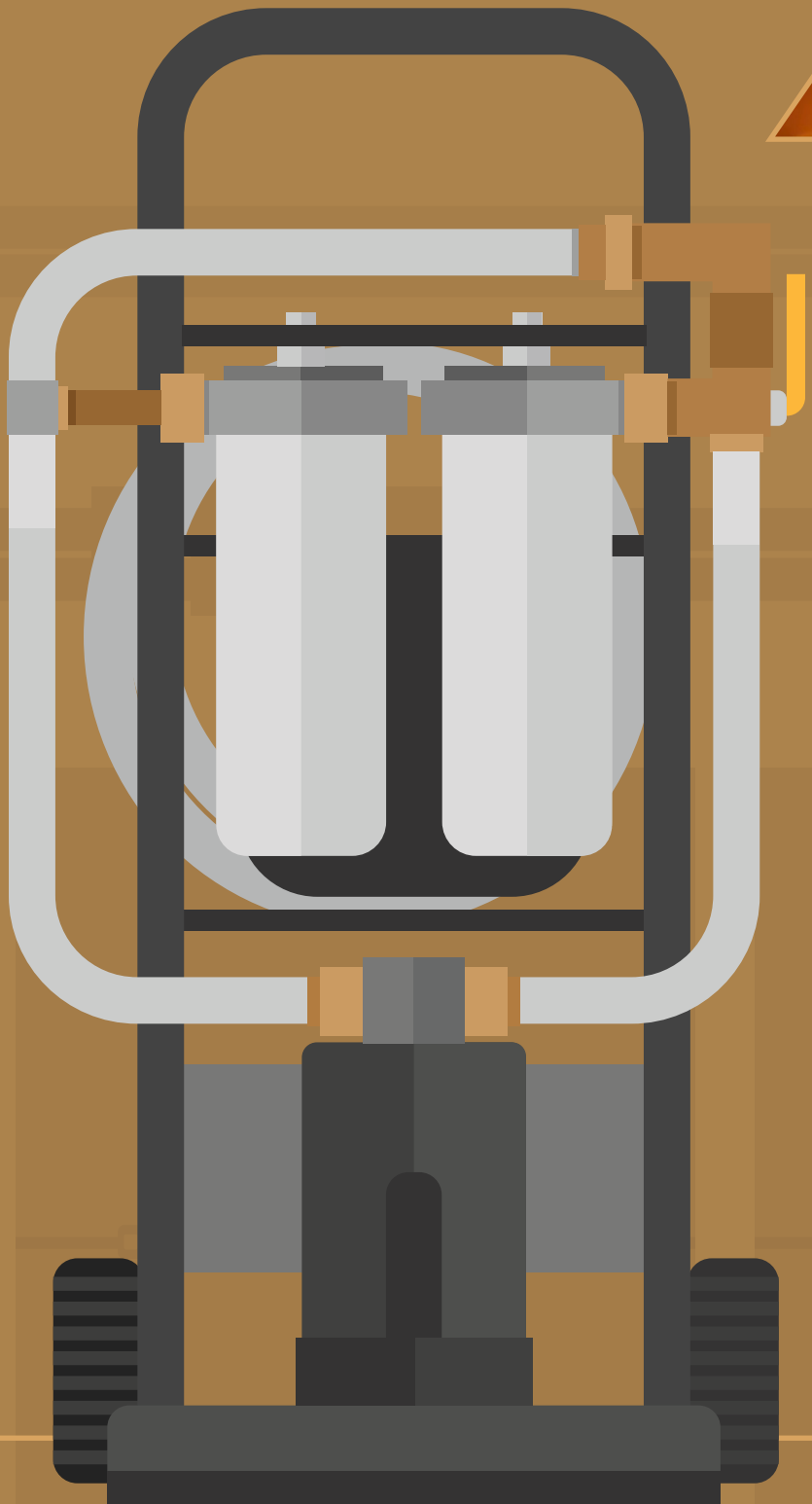
HOW TO SELECT A FILTER CART FOR MAXIMUM VALUE



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INTRODUCTION

In the past decade the filter cart has gone from being a specialty item to being a standard lubrication tool for maintenance professionals. As organizations place more and more emphasis on precision lubrication and contamination control, they have come to realize just how valuable these systems can be. However, there are a lot of common mistakes made when it comes to selecting portable filtration units and a lack of knowledge of these issues can prove costly. By carefully considering the following items, you will be able to avoid these costly mistakes and obtain maximum value from your filter cart purchase.

SELECTING THE RIGHT FILTER ELEMENTS

Before choosing the appropriate filter element, you must determine the target cleanliness for your applications. If the filter cart is to be used for a hydraulic system with a target cleanliness of ISO 15/13/10, a filter element rated at 10 microns will never work. In general, you should select a filter element pore size that is at least as small as the particle size with which you are interested.

The following are good rules of thumb that fit most applications:

Application	Pore Size	Beta Rating
Gearboxes	6µ	$\beta_x \geq 200$
Hydraulics	3µ	$\beta_x \geq 200$
Bearings and Circulating Systems	3µ	$\beta_x \geq 200$

When considering filter carts that have dual elements in series, a larger pore size is often selected for the first filter to cut down on the consumption of the more costly fine filter. As noted in the rules of thumb, it is important to specify not only the pore size, but the Beta rating as well. Without a Beta rating or capture efficiency, filter particle sizes are really meaningless. Another important property of the filter element is its dirt holding capacity. When considering the cost of different filter elements, you should consider the cost per unit of contamination removed rather than just the cost of the filter.

SELECTING THE RIGHT PUMP

There is really no “one size fits all” when it comes to filter cart selection. Before making a purchase, you should consider all of the different applications where you might use the unit and fluid viscosity used in those applications. Pumps designed for ISO VG 68 fluid will not typically perform well for ISO VG 460. Make sure you inform your filter cart supplier of the fluid viscosity with which the unit will be used.

Another pump consideration is the desired flow rate. A pump capable of only 2 gpm is probably inappropriate for a 6,000 gallon reservoir. Ideally, the filter cart would be able to pump up to 10% of the reservoir volume per minute. This will allow for maximum efficiency, while keeping the flow rate safe for “running” equipment. At a minimum, the pump should be able to turn over the entire reservoir volume once per hour.

Power Source

Electricity is no longer the only option for powering filter carts. Today’s filter carts are typically available with air motors as well as single or 3 phase motors. This is a specification that is often overlooked but should be carefully considered based on the power source availability in your facility.

INTENDED USE

Filter carts aren’t just for offline filtration anymore. Many maintenance professionals have discovered that portable applications including dispensing new oil, performing oil changes, cleaning parts, and flushing new components to name a few. Before selecting your filter cart you should consider things like weight and portability. Offline filtration units are available in a variety of configurations from compact handheld units to large skid mounted systems.

Filter carts can be equipped with a number of attached-storage options, as well as a filter bypasses for easy sampling.

INTENDED USE

If you intend to use the filtration unit on a gearbox that requires a ladder for access, how will you get the unit in place? Does the unit need to be transferred up or down stairs? If the unit will be used for performing oil changes, it should be fitted with a bypass valve to avoid contaminating the filter elements with old oil. If you will be taking an oil sample, it should have a sample valve. These are just some of the items you should cover with your supplier before making the purchase.

For applications not easily reached by cart, consider permanently-mounted solutions or handheld options.

ADDITIONAL CONSIDERATIONS

In an effort to keep costs low, many filter cart manufacturers offer stripped down versions of their products. When evaluating different units, don't assume that they all have the same features and accessories. Listed below are some common options to consider.

Hoses and Fittings

Make sure that the hoses and seals with the unit are made of quality material that
Will hold up with the type of fluid you're using and at the likely fluid temperatures to which they will be exposed.
Also consider how you will attach the unit to your various applications. The safest and most efficient method is to use high quality hydraulic fittings that will allow for quick set up and minimize oil spills.

Filter Heads

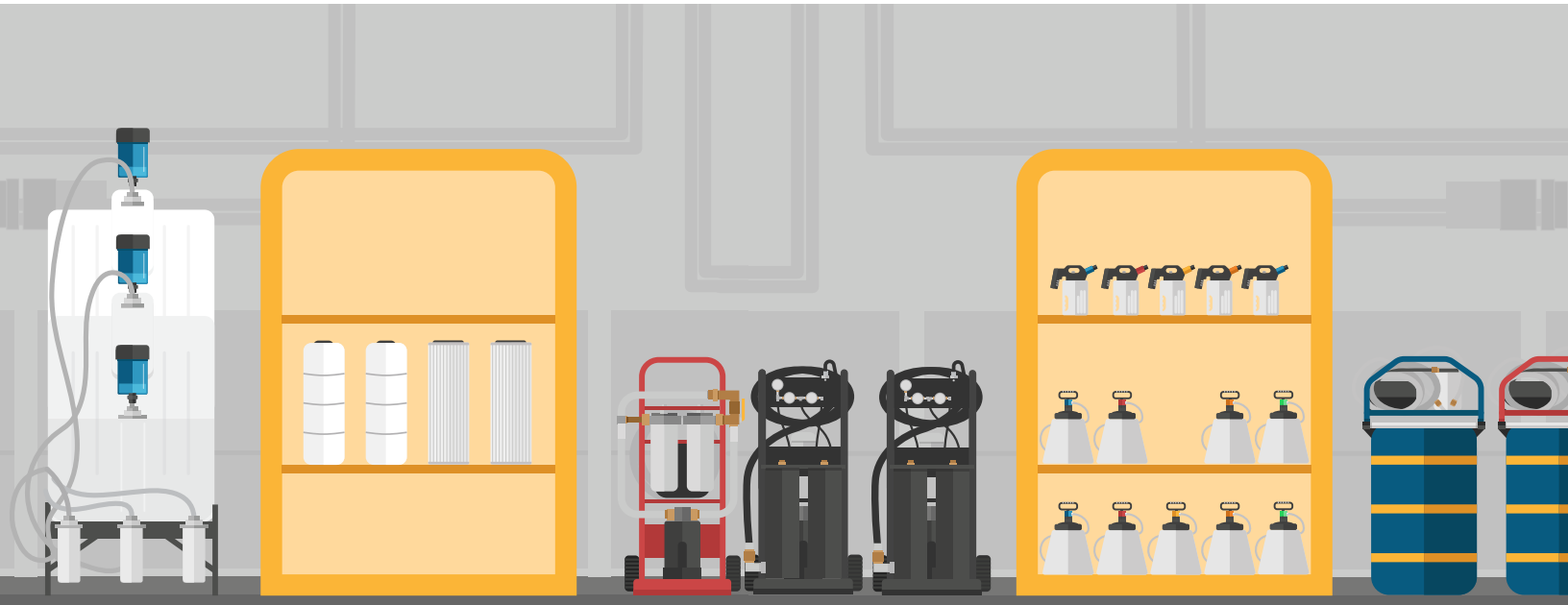
The filter heads or canisters on the unit should be of appropriate quality and fitted with pressure differential gauges that allow for easy identification of plugged filters.

Sample Valves

If you will be collecting oil samples from the unit, it is preferred to have sample valves installed before and after the filter elements.

SUMMARY

A little planning goes a long way in selecting the right fluid handling solution. Careful evaluation of your situation—including existing and desired cleanliness levels for filter selection, fluid viscosity for pump selection, location for frame selection, and specific application for other options—will help you determine which filtration solution can best meet your needs most efficiently and cost-effectively.



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