

Adding a filter to your parts washer

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IOWA WASTE REDUCTION CENTER

University of Northern Iowa

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Adding a filter to your parts washer

Filtering parts washing solvent is a good way to increase the life of cleaning solvent, and improve the cleaning performance of a parts washer. There are several options when considering filtration. If a business is adding or replacing units, the reasonable thing to do is to simply purchase a parts washer with a filtering unit built in. However, if the cost of new units is a concern, or if the old units are in working order, it might be more desirable to add a filtration unit to the current system.



A typical add-on filtration unit

The idea of adding a filtration unit brings up the question of which unit to buy. There are a number of options available for reasonable cost, however many of these require that you also order replacement filters from the manufacturer. This is not necessarily the most inexpensive or convenient way to obtain filters, and has the potential to make the filtering system obsolete if the filter manufacturer discontinues the line.

An alternative to buying a system is to make one, using parts that are widely available and inexpensive. There are numerous ways to add filtration to your unit using automotive and truck oil and fuel filters. The following outlines a way to do just that, and the total cost is under \$50.

Automotive filters come in all forms. Most people are familiar with the spin-on oil filter. This is an obvious choice for a parts washer, because it's inexpensive, easy to change and readily available. Anyone who has worked with large diesel trucks is probably also familiar with spin-on fuel filters. These filters are very similar to the oil filter in appearance, price and design.

Investigation into each of these types of filters has demonstrated that there is little difference in the performance of the fuel and oil filters. However, oil

filters are typically more readily available than fuel filters, so this example will demonstrate how to install an oil filter onto a parts washer.



Parts Washer at the IWRC facility

First, obtain the required hardware to install the filter. Spin-on filters require a mounting plate with hose fittings to mount the filter. An oil-filter relocation kit, available at most retail automotive parts stores, provided everything that was needed.



An oil-filter relocation kit provided everything needed for this modification. This kit uses the popular early Ford-type filter.

The kit consisted of:

- 2 four foot lengths of 3/8 inch oil-compatible hose
- hose clamps
- an oil filter mount
- 3/8" hose fittings.



Only the filter mount and hose fittings were needed for this application. If the fittings supplied are not appropriate for the hoses on your parts washer, adapters are available at most hardware stores.



Step 1:

To install the filter, start by installing the proper size hose barbs onto the filter mounting plate.



Step 2:

Bolt the mounting plate to any acceptable surface on or near the parts washer.



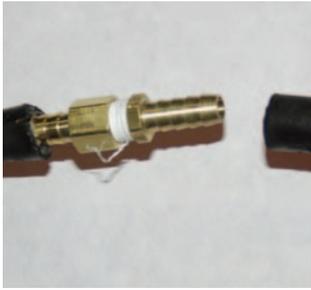
Step 3:

Cut the hose that connects the pump to the solvent outlet.



Step 4:

Determine the inner diameter of the hose. The oil filter kit comes with 3/8 inch hose barbs. If a different size is needed, they can be purchased at a local hardware store.



Step 5:

The oil transport hose supplied with the oil filter kit is appropriate for solvent. Use this hose if additional hose is needed. Connect the new hose to the old hose with a double barb or other appropriate fittings.



Step 6:

Once the fittings have been obtained and installed, test fit all of the hoses. Check that the direction of flow is consistent with the flow indicator on the filter mount.



Step 7:

Cut off any excess lengths. Install the hose and clamp the fittings.



Step 8:

Install a filter, then test the parts washer.



The oil filter installed on the parts washer

With the installation of the filter, you might be wondering what kind of flow restriction is introduced. In this test, there was no measurable decrease at all, even after several hundred grams of 'gunk' had accumulated. Depending on your system, there may be a slight reduction in flow, but there will be more than enough solvent to handle any cleaning job.



Cutting open the filter reveals that it really was working.

Results:

The filter performed excellently, providing clean solvent to the user while removing gunk that would have made cleaning parts more difficult. Dark, cloudy solvent was turned into clear, clean solvent, which could only be distinguished from new solvent by a slight tint.



Most aftermarket filter companies offer high-performance versions of these same filters. While most people mistakenly believe that a high-performance filter does a better job of filtering, the opposite is true. A high performance filter is designed to flow more quickly, and thus cannot be as restrictive as a standard filter. If the standard filters have a short life in a given application, it may be worthwhile to purchase a high-performance version.

Another thing to consider is that oil filters come in many different sizes, but frequently share the same mounting design. Several types of filters have significantly more capacity than the PH8A filter used for this study, and one of these filters might be a better choice for a parts wash cabinet that sees continuous use. The selection of filters available will depend on the design of the filter relocation kit. The kit used by the IWRC uses a Ford-type filter, so appropriate filters can be located by looking up part numbers for older Ford trucks and cars.

Disposal of used filters:

Used parts washer filters and used solvent are potentially hazardous due to their toxicity. For most applications, the used filters and solvent will need to be managed as hazardous waste, or subject to a TCLP test to determine if they can be managed as non-hazardous waste. Information on characterization of waste for businesses in Iowa can be obtained free of charge from the Iowa Waste Reduction Center (IWRC), located at the University of Northern Iowa, Cedar Falls IA. Visit the IWRC web page at www.iwrc.org or call 1-800-422-3109 for more information.



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