

Coolant jacket filter heater.

Here is a handy, cheap, and simple to make filter heater.. It is surprisingly effective considering its cost and ease of fabrication and can prove useful in several vegoil conversion applications.

An example of the finished jacket is pictured to the left.

White zipties have been used for image clarity but for a more professional appearance I normally use black zipties. The only tools required are a sharp knife to cut the hose to length, a pliers to tighten the zipties, and a wire cutter to nip off the ends of the zipties for a clean appearance.



The filter element used in the example is a Goldenrod Model#596 which is a 3.5" x 5"

element. Larger elements will require more hose to cover completely. The amount of heat added to the vegoil passing through the filter is directly proportional to the surface contact between the coolant filled coil so covering as much of the filter element as possible is best. A snug fit is also desirable since it will exaggerate the D shaped profile the hose takes on when it is coiled. This D shaped profile is what makes a flexible hose jacket several times more efficient at transferring coolant heat to the filter than a copper coil when combined with the ability to get a very snug fit.

Begin by purchasing a high quality flexible fuel line in sufficient quantity to not only make the jacket but to also reach the point at which you plan to tie in to the passenger heater coolant supply lines. In the example the amount needed just for the jacket alone was 11 feet. It is best to take a spare filter element along with you when you purchase the hose to help determine exactly how much is needed for the jacket portion. Buy the best quality fuel line possible but not "high pressure" fuel line which is up to 5 times more expensive than "regular" flexible "rubber" fuel line. If you want to spend the extra money for "injector system fuel line" it will also work....but I have found no advantage to using it.

Wrap the hose (which will later carry hot coolant) around the filter element snugly. It is best to use a clean spare filter element to work with as a form. Placing it in a plastic baggie may also help in the process to aid in easily slipping the filter in and out of the “basket” you will be making from the hose and zipties during the following steps.



Now, using 4 strips of duct tape about 1" wide secure the coil to itself so it will hold together when you remove it from the filter you have used as a form. Any sticky, strong tape will work but duct tape seems to work best.



For those tempted to use duct tape to form a skin over the hose coil and “forget” the zipties...don’t be. It seems simpler..but the heat of the coolant will cause the adhesive to fail.



Now carefully remove the taped coil from the filter element you have been using as a form. It will shift slightly but it should retain its basic form.

Being careful to not disturb the tape holding the coiled hose in place begin to tie the coil together using 6" zipties. If you look carefully at the examples you will see that I prefer to place the "head" of the ziptie in the position where I want it to end up and then push the other end through from the inside of the coil. This makes for a much cleaner installation but is not critical.

14 zipties were used in the example shown to the left but more can be used if you wish. Each ziptie will connect 3 hose coils to each other. Leave them loose enough at this point to allow some coil adjustment later. Don't tighten them yet!

By using an alternating pattern of zipties (look at the picture of the finished product at the top to see it) the individual coils of hose are connected to its neighboring coils and the entire unit becomes an open ended "basket" of hose and zipties.

Once you have all zipties loosely in place you can remove the tape and slip the coil back onto the filter/form. Adjust the ziptied and hose so it is once again snug on the filter and begin tightening the ties progressively using your pliers. Do this a little at a time and working around and around the coil. Do not pull the ties so tight that they deform the wall of the hose or cause them to ride up over each other. Once you are convinced that you have the right tension on the ties you can nip the ends off with your wire cutter.

You can remove the coil from the filter and it will retain its final form.

You may now wish to bring your inlet and outlet hose ends together in a "pigtail" which will make routing them to your coolant connections easier and cleaner. A single tie can be used to secure the bent hose to the coil as shown in the picture to the left and a few more can be added to the pigtail to hold it together as well.



And that is about all there is to it. You now have a simple but effective filter heater coolant jacket that will add a lot of heat to your vegoil as it passes through and is capable of thawing cold, solidified vegoil in a cold filter. This is not a substitute for a coolant/vegoil heat exchanger nor is it capable of boosting vegoil temps as high as the GoldenGlow electrically heated high temp filter.

For more information on similar simple to fabricate and inexpensive vegoil conversion components including:

The GoldenGlow filter conversion

The YellowJacket coolant/fuel heat exchanger

The Little Devil in line 12v vegoil heater

The HotRod combination coolant heated fuel pickup/tank heater

Simple Hose On Hose heated fuel line

or

Personal and commercial wvo prefiltering and dewatering units

Contact Dana Linscott at: danalinscott@yahoo.com

or

Visit the VegOil Conversions website at: <http://vegoilconversions.netfirms.com/>

Other useful links:

The InfoPop svo forum:

<http://biodiesel.infopop.cc/eve/ubb.x?a=frm&s=44709751&fs=447609751&f=159605551>

Ten steps to a basic vegoil conversion:

<http://biodiesel.infopop.cc/eve/ubb.x?a=tpc&s=447609751&f=159605551&m=347104314>